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Cyclopædia, or, An universal dictionary of arts and sciences : containing the definitions of the terms, and accounts of the things signify'd thereby, in the several arts, both liberal and mechanical, ...

Chambers, Ephraim, 1680 (ca.)-1740
London: Printed for J. and J. Knapton [and 18 others], [s.d.]

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THEOLOGIA
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J. Sturt sculp.

CYCLOPÆDIA:

OR, AN

UNIVERSAL DICTIONARY

OF

ARTS and SCIENCES;

CONTAINING

The DEFINITIONS of the TERMS;

And ACCOUNTS of

The THINGS signify'd thereby,

In the ſeveral ARTS,
Both *LIBERAL* and *MECHANICAL*,

And the ſeveral SCIENCES,
HUMAN and *DIVINE*:

The Figures, Kinds, Properties, Productions, Preparations, and Uſes, of Things NATURAL and ARTIFICIAL;

The Riſe, Progreſs, and State of Things ECCLESIASTICAL, CIVIL, MILITARY, and COMMERCIAL:

With the ſeveral Syſtems, Sects, Opinions, *&c.* among Philoſophers, Divines, Mathematicians, Phyſicians, Antiquaries, Criticks, *&c.*

The Whole intended as a Courſe of Antient and Modern LEARNING.

Compiled from the beſt Authors, Dictionaries, Journals, Memoirs, Tranſactions, Ephemerides, *&c.* in ſeveral Languages.

In TWO VOLUMES.

By *E. CHAMBERS* Gent.

Floriferis ut apes in ſaltibus omnia libant,
Omnia nos——————LUCRET.

VOLUME the FIRST.

LONDON:

Printed for *James* and *John Knapton*, *John Darby*, *Daniel Midwinter*, *Arthur Betteſworth*, *John Senex*, *Robert Goſling*, *John Pemberton*, *William* and *John Innys*, *John Osborn* and *Tho. Longman*, *Charles Rivington*, *John Hooke*, *Ranew Robinſon*, *Francis Clay*, *Aaron Ward*, *Edward Symon*, *Daniel Browne*, *Andrew Johnſton*, and *Thomas Osborn*. M.DCC.XXVIII.

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VOLUME the FIRST.

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TO THE

KING.

SIR,

THE ARTS and SCIENCES humbly crave Audience of Your Majesty. The near Concern they have in the Happiness of a People, assures 'em of the favourable Attention of a Prince who makes that Happiness his own. 'Tis by These, the Parsimony of Nature is supplied, and Life render'd easy and agreeable under its numerous Infirmities. By these the Mind is reclaim'd from its native Wildness; and enrich'd with Sentiments which lead to Virtue and Glory. 'Tis these, in fine, that make the Difference between your Majesty's Subjects, and the Savages of *Canada*, or the *Cape of Good Hope*.

THE Protection of ARTS has ever been esteemed the proper Province of the Great. 'Tis a Branch of the Regal Office; which a Prince, like Your Majesty, equal to the whole Charge of a Crown, will not suffer to be alienated into other Hands. From this, do the first and most distinguish'd Names in the List of Fame, derive a large Share of their Glory: and if there be any Age or Nation more conspicuous than the rest, and which is look'd on with Envy by our own; 'tis that wherein the Sovereigns have signaliz'd themselves most in this Quality.——Indeed, the Time seems at hand, when we are no longer to envy *Rome* her AUGUSTUS and AUGUSTAN AGE, but *Rome* in her turn shall envy ours.

SOMETHING extraordinary is apparently intended by Providence in calling such a Prince, to such a People: A Prince who feels a generous Impulse to devote his Cares and all his Toils to the Welfare of Mankind; and a People conspiring with unexampled Ardor and Unanimity to all his glorious Views. Some of our best Princes have had their Hands ty'd down; check'd by reluctant Factions, who opposed every nobler Design: Your Majesty has found the happy Secret, to make even Contention do you Homage; and turn Opposition itself into Approbation, and Applause.

THERE is a Time reserv'd in Fate for every Nation to arrive at its Height; and the uppermost Place on the Terrestrial Ball is held successively by several States. May not the numerous Presages which usher in Your Majesty's Reign, give us room

to

to expect that our Turn is next; and that what *Greece* was under ALEXANDER, and *Rome* under AUGUSTUS *Cæsar*, *Britain* shall be under GEORGE and CAROLINE?

BUT even this were to under-rate our Hopes, which are rais'd, by Your Majesty, to something still more truly glorious. Greatness, so fondly coveted, has already cost the World very dear; and, tho still pursued by unthinking Men under almost every Shape, is only desirable in a few. Of it self it is rather an Object of Terror and Alarm, than Delight; and at best only pleases, when join'd with something naturally amiable. From the Practice of Your Majesty, Men may correct their Sentiments, and learn, that Greatness has no Charm except when founded in Goodness. To be Great, and a King, is but a small Matter with Your Majesty; 'tis a Quality many others enjoy in common with You, and to which some have even been doom'd, to their Infamy: 'tis what *Herod* was, and *Nebuchadnezzar* was; and *Nero*, and *Domitian* were. But, while other Princes chuse to be great in what is destructive, and others in things wholly indifferent; 'tis Your Majesty's Praise to be great in what is the Perfection of our Nature, and that whereby we approach nearest the Deity. Happy Choice! to use Power only as the Means of rendering your Beneficence more diffusive; and thus make Power and Royalty minister to the Happiness of Mankind, which they have too often invaded.

YOUR Majesty commands a People capable of every thing. Not more fitted to shine in Arms, or maintain an extended Commerce; than to succeed in the stiller Pursuits of Philosophy and Literature. And it will be Your Majesty's Glory, not to let any of their Talents lie unemploy'd.——If Your Majesty gives the Word, while some of 'em are busied in avenging Your Cause, by humbling some turbulent Monarch; some in extending your Dominions by new Settlements, and some in increasing your Peoples Wealth, by new Trades: Others will be employ'd in enlarging our Knowledge, by new Discoveries in Nature, or new Contrivances of Art; others in refining our Language; others in improving our Morals; and others in recording the Glories of your Reign, in immortal Verse.

THE Work I here presume to lay at Your Majesty's Feet, is an Attempt towards a Survey of the Republick of Learning, as it stands at the Beginning of Your Majesty's auspicious Reign. We have here the Boundary that circumscribes our present Prospect; and separates the known, from the unknown Parts of the Intelligible World. Under Your Majesty's Princely Influence and Encouragement, we promise our selves this Boundary will be removed, and the Prospect extended far into the other Hemisphere. Methinks I see Trophies erecting to Your Majesty in the yet undiscover'd Regions of Science; and Your Majesty's Name inscribed to Inventions at present held impossible!

I am, with all Sincerity and Devotion,

May it please Your MAJESTY,

Your Majesty's most Dutiful,

and Obedient Subject,

and Servant,

Ephraim Chambers.

THE PREFACE.

'TIS not without ſome Concern that I put this Work in the Reader's Hands; a Work ſo diſproportionate to a ſingle Perſon's Experience, and which might have employ'd an Academy. What adds to my Jealouſy, is the little meaſure of Time allow'd for a Performance to which a Man's whole Life ſcarce ſeems equal. The bare Vocabulary of the Academy *della Cruſca* was above forty Years in compiling, and the Dictionary of the *French* Academy much longer; and yet the preſent Work is as much more extenſive than either of them in its Nature and Subject, as it falls ſhort of 'em in number of Years, or of Perſons employ'd.

THE Reader might be here led to ſuſpect ſomething of Diſingenuity; and think I firſt put a Book upon him, and then give him Reaſons why I ſhould not have done it.-----But his Suſpicions will ceaſe, when he is appriz'd of the Advantages under which I engaged; which, in one Senſe, are ſuperior to what had been known in any former Work of the Kind; all that had been done in them accruing, of courſe, to the Benefit of this. I come like an Heir to a large Patrimony, gradually rais'd by the Induſtry, and Endeavours of a long Race of Anceſtors. What the *French Academiſts*, the *Jeſuits de Trevoux*, *Daviler*, *Chomel*, *Savary*, *Chauvin*, *Harris*, *Wolfius*, and many more have done, has been ſubſervient to my Purpoſes. To ſay nothing of a numerous Claſs of particular Dictionaries which contributed their Share; Lexicons on almoſt every Subject, from Medicine and Law, down to Heraldry and the Manage.

Yet this is but a Part. I am far from having contented my ſelf to take what was ready procured; but have augmented it with a large Acceſſion from other Quarters. No part of the Commonwealth of Learning, but has been traffick'd to on this Occaſion. Recourſe has been had to the *Originals* themſelves on the ſeveral Arts; and, not to mention what ſmall Matters could be furniſhed *de proprio penu*, the Reader will here have Extracts and Accounts from a great Number of *Authors* of all Kinds, either overlook'd by former Dictionariſts, or not then extant; and a Multitude of Improvements in the ſeveral Parts, eſpecially of Natural Knowledge, made in theſe laſt Years. I ſhould produce Inſtances hereof; but I hope this would be needleſs, as it is endleſs; and that there are few Pages which will not afford ſeveral.

SUCH are the Sources from whence the Materials of the preſent Work were derived; which, it muſt be allowed, were rich enough not only to afford Plenty, but even Profuſion: So that the chief Difficulty lay in the Form; in the Order, and Œconomy of the Work: To diſpoſe ſuch a Variety of Materials in ſuch manner, as not to make a confuſed Heap of incongruous Parts, but one conſiſtent Whole.-----And here it muſt be confeſs'd there was no Aſſiſtance to be had; but I was forced to ſtand wholly on my own Bottom. Former Lexicographers have not attempted any thing like Structure in their Works; nor ſeem to have been aware that a Dictionary was in ſome meaſure capable of the Advantages of a continued Diſcourſe. Accordingly, we ſee nothing like a Whole in what they have done: And hence, ſuch Materials as they did afford for the preſent Work, generally needed further Preparation, ere they became fit for our Purpoſe; which was as different from theirs, as a Syſtem from a Cento.

THIS we endeavoured to attain, by conſidering the ſeveral Matters not only abſolutely and independently, as to what they are in themſelves; but alſo relatively, or as they reſpect each other. They are both treated as ſo many Wholes, and as ſo many Parts of ſome greater Whole; their Connexion with which, is pointed out by a *Reference*. So that by a Courſe of References, from Generals to Particulars; from Premiſes to Concluſions; from Cauſe to Effect; and *vice verſa*, *i. e.* in one word, from more to leſs complex, and from leſs to more: A Communication is opened between the ſeveral Parts of the Work; and the ſeveral Articles are in ſome meaſure replaced in their natural Order of Science, out of which the Technical or Alphabetical one had remov'd them.

FOR an Inſtance----The Article ANATOMY is not only conſider'd as a *Whole*, *i. e.* as a particular Combination or Syſtem of Ideas; and accordingly divided into its Parts, *Humane* and *Comparative*: and Humane again ſubdivided into the Analyſis of *Solids* and *Fluids*, (which are referr'd to in the ſeveral Places in the Book, where they themſelves being treated of, refer to others ſtill lower, and ſo on) but alſo as a *Part* of MEDICINE; which accordingly it refers to, and which it ſelf refers to another higher, *&c.*-----By which means a Chain is carried on from one End of an Art to the other, *i. e.* from the firſt or ſimpleſt Complication of Ideas appropriated to the Art, which we call the *Elements* or Principles thereof; to the moſt complex or general one, the *Name* or Term that denotes the whole Art.

NOR is the Purſuit dropt here: but as the Elements or Data in one Art, are ordinarily *quæſita* in ſome other ſubordinate one, and are furniſhed thereby; (as here for Inſtance, the Elements of *Anatomy* are furniſhed by *Natural Hiſtory*, *Phyſicks*, and *Mechanicks*; and Anatomy may be conſidered as a Datum, or Element furniſhed to Medicine) We carry on the View farther, and refer out of one Art or Province into the adjoining ones, and thus lay the whole Land of Knowledge open: It appears indeed with the Face of a Wilderneſs; but 'tis a Wilderneſs thro' which the Reader may purſue his Journey as ſecurely, tho not ſo expeditiouſly and eaſily, as thro' a regular Parterre.

IT may be even ſaid, that if the Syſtem be an Improvement upon the Dictionary; the Dictionary is ſome Advantage to the Syſtem; and that this is perhaps the only Way wherein the whole Circle or Body of Knowledge can be deliver'd. In any other Form, many thouſand Things muſt neceſſarily be hid and overlook'd: All the Pins, the Joints, the binding of the Fabrick muſt be inviſible of courſe; all the leſſer Parts, one might ſay all the Parts whatſoever, muſt be in ſome meaſure ſwallowed up in the Whole. The Imagination, ſtretch'd

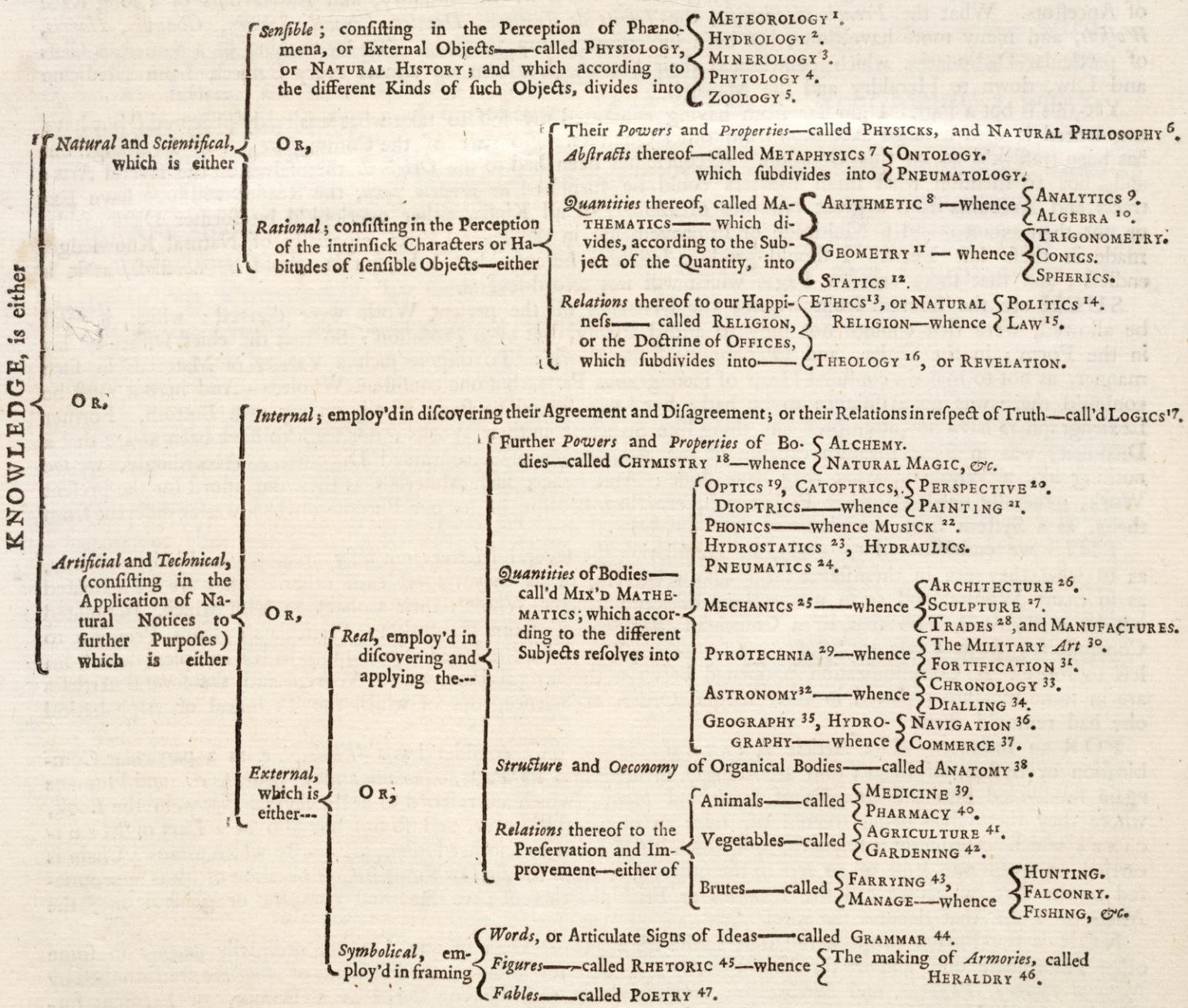
and amplified to take in ſo large a Structure, can have but a very general, indiſtinguiſhing Perception of any of the Parts.-----Whereas the Parts are not leſs Matter of Knowledge when taken ſeparately, than when put together. Nay, and in ſtrictneſs, as our Ideas are all Singulars or Individuals, and as every Thing that exiſts is one; it ſeems more natural to conſider Knowledge in its proper Parts, *i. e.* as divided into ſeparate Articles denoted by different Terms; than to conſider the whole Aſſemblage of it in its utmoſt Compoſition: which is a thing merely artificial and imaginary.

AND yet the latter Way muſt be allow'd to have many and real Advantages over the former; which in truth is only of uſe and ſignificance as it partakes thereof: For this Reaſon, that all Writing is in its own Nature artificial; and that the Imagination is really the Faculty it immediately applies to. Hence it ſhould follow, that the moſt advantageous way, is to make uſe of both Methods: To conſider every Point both as a Part; to help the Imagination to the Whole: and as a Whole, to help it to every Part.-----Which is the View in the preſent Work—ſo far as the many and great Difficulties we had to labour under would allow us to purſue it.

IN this View we have endeavoured to give the Subſtance of what has been hitherto found in the ſeveral Branches of Knowledge both natural and artificial; that is, of Nature, *firſt*, as ſhe appears to our Senſes; either ſpontaneouſly, as in Natural Hiſtory; or with the Aſſiſtance of Art, as in Anatomy, Chymiſtry, Medicine, Agriculture, *&c.* *Secondly*, to our Imagination; as in Grammar, Rhetorick, Poetry, *&c.* *Thirdly*, to our Reaſon; as in Phyſicks, Metaphyſicks, Logicks, and Mathematicks. With the ſeveral ſubordinate Arts ariſing from each; as Architecture, Painting, Sculpture, Trade, Manufactures, Policy, Law, *&c.* and numerous remote Particulars, not immediately reducible to any of theſe Heads; as Heraldry, Philology, Antiquities, Cuſtoms, *&c.*

THE *Plan* of the Work, then, I hope, will be allow'd to be good; whatever Exceptions may be taken to the Execution of it. It wou'd look extravagant to ſay, That half the Men of Letters of an Age might be employ'd in it to advantage; and yet it will appear, that a Work accompliſh'd as it ought to be, on the Footing of this, would anſwer all the Purpoſes of a Library, except Parade and Incumbrance; and contribute more to the propagating of uſeful Knowledge thro' the Body of a People, than any, I had almoſt ſaid all, the Books extant.---After this, let the Reader judge how far I may deſerve Cenſure for engaging in it, even diſadvantageouſly; and whether to have fail'd in ſo noble a Deſign, may not be ſome degree of Praiſe.

BUT, it will be here neceſſary to carry on the Diviſion of Knowledge a little further; and make a preciſe Partition of the Body thereof, in the more formal Way of Analyſis: The rather, as an Analyſis, by ſhewing the Origin and Derivation of the ſeveral Parts, and the Relation in which they ſtand to their common Stock and to each other; will aſſiſt in reſtoring 'em to their proper Places, and connecting 'em together.



THIS is a View of Knowledge, as it were, *in ſemine*; exhibiting only the grand, conſtituent Parts thereof. It would be endleſs to purſue it into all its Members and Ramifications; which is the proper Buſineſs of the Book it ſelf. It might here, therefore, ſeem ſufficient to refer from the ſeveral Heads thus deduced, to the ſame in the Courſe of the Work; where their Diviſion is carried on. And yet this would ſometimes prove inconvenient for the Reader; who to find ſome particular Matter muſt go a long Circuit, and be bandied from one part of the Book to another: To ſay nothing of the Interruptions which may frequently happen in the Series of References. To obviate this we ſhall take a middle Courſe, and carry on the Diſtribution further, in a Note in the Margin;

gin; but this in a looſer manner, to prevent the Embarraſs of an Analyſis ſo complex and diffuſive as this muſt prove. Some of the principal Heads of each Kind will here come in ſight, and ſuch as will naturally ſuggeſt, and lead to the reſt; ſo that this will afford the Reader a ſort of Summary of the Whole: And at the ſame time will diſpenſe a kind of auxiliary or ſuccedaneous Order thro'out the Whole; the numerous Articles omitted, all naturally enough ranging themſelves to their proper Places among theſe. A Detail of this Kind is of the more Conſequence, as it may not only ſupply the Office of a *Table of Contents*, by preſenting the diſperſed Materials of the Book in one View; but alſo that of a *Directory*, by indicating the Order they are moſt advantageouſly read in.-----*Note*, then, That the *initial* Articles here, tally to the *final* ones of the Analyſis; and that the ſeveral *Members* hereof, are ſo many *Heads* in the Book.

I

[1] METEOROLOGY, or the Hiſtory of AIR and ATMOSPHERE: including, 1°, that of its Contents, *Æther, Fire, Vapour, Exhalation*, &c. 2°, Meteors form'd therein, as *Cloud, Rain, Shower, Drop, Snow, Hail, Dew, Damp*, &c. *Rainbow, Parhelion, Halo, Thunder, Water-ſpout*, &c. Winds, *Mon-ſoon, Hurricane*, and the like.

[2] HYDROLOGY, or the Hiſtory of WATER; including that of *Springs, Rivers, Acidulæ*, &c. of *Lake, Sea, Ocean*, &c. of *Tides, Deluge*, and the like.

[3] MINEROLOGY, or the Hiſtory of EARTH; 1°, Its Parts, as *Mountain, Mine, Moſs, Bog, Grotto*; and their Phænomena, as *Earthquake, Volcano, Conflagration*, &c. Its Strata, as *Clay, Bole, Sand*- &c. 2°, Foſſils or Minerals, as *Metals, Gold, Silver, Mercury*, &c. with Operations relating to 'em, as *Fuſion, Refining, Purifying, Parting, Eſſaying*, &c. *Litharge, Lavatory, Pinea*, &c. Salts, as *Nitre, Natron, Gemma, Allum, Armoniac, Borax*, &c. Sulphurs, as *Arſenic, Amber, Ambergreaſe, Coal, Bitumen, Naphtha, Petrol*, &c. Semimetals, as *Antimony, Cinnabar, Marcaſite, Magnet, Biſmuth, Calamine, Cobalt*, &c. Stones, as *Marble, Porphyry, Slate, Asbeſtos*, &c. Gems, as *Diamond, Ruby, Emerald, Opal, Turcoiſe*, &c. *Emery, Lapis*, &c. whence *Ultramarine, Azure*, &c. Petrifactions, as *Cryſtal, Spar, Stalactites, Trochites, Cornu Ammonis*, and the like.

[4] PHYTOLOGY, or the Hiſtory of PLANTS; their Origin, in the *Seed, Fruit*, &c. Their Kinds, as *Tree, Herb*, &c. extraordinary Species, as *Tea, Coffee, Paraguay, Vine, Ginſeng, Cotton, Tobacco*, &c. *Coral, Muſhroom, Truffle, Paraſite, Miſſelto, Moſs*, &c. Parts, as *Root, Stone, Flower*; *Wood*, as *Guaiacum, Saſſafras, Ebony, Aloes*, &c. Leaf, as *Foliation, Roll*, &c. Bark, *Quinquina*, &c. *Piſtil, Farina, Stamina*, &c. Operations thereof, as *Vegetation, Germination, Circulation*, &c. Circumſtances, as *Perpendicularity, Parallelism, Fertility*, &c. Productions, as *Honey, Wax, Balm, Sugar, Manna*, &c. *Gum, Reſin, Camphor*, &c. *Indigo, Opium, Galls*, and the like.

[5] ZOOLOGY, or the Hiſtory of ANIMALS: Their Origin in *Egg, Embryo, Fœtus, Generation, Conception, Geſtation, Hatching, Migration*, &c. Their Kinds, as *Quadruped, Bird, Fiſh, Inſect, Reptile, Ruminant, Carnivorous*, &c. Extraordinary Species, as *Unicorn, Torpedo, Tarantula, Tortoiſe, Cameleon, Salamander*, &c. *Barnacle, Anchovy, Death-Watch*, &c. Monſters, as *Double Animals, Hermaphrodite, Mule, Pigmy, Giant*, &c. Metamorphoſes, as *Aurelia, Metempſychoſis*, &c. Parts, as *Head, Hand, Foot, Finger, Tail, Fin, Wing, Gills*, &c. Covering, as *Hair, Wool, Silk, Feathers*, &c. Armature, as *Nail, Sting, Horn, Tooth, Shell, Proboſcis, Web*, &c. Productions, as *Pearl, Bezoard, Caſtoreum, Civet, Meconium, Mummy, Uſnea*, &c. *Kermes, Cochineal*, &c. Motion, as *Flying, Swimming*, and the like.

[6] PHYSICS, or the Doctrine of CAUSES; as *Nature, Law*, &c. Occaſions or Means, as *Principle, Matter, Form*, &c. Their Compoſition or Conſtitution, in *Element, Atom, Particle, Body. Chaos, World, Univerſe, Space, Vacuum*, &c. Properties of Body, as *Extenſion, Solidity, Figure, Diviſibility*, &c. Powers thereof, as *Attraction, Cohesion, Gravitation, Repulſion. Elaſticity, Electricity, Magnetiſm*, &c. Qualities, as *Fluidity, Firmneſs, Ductility, Hardneſs, Volatility, Denſity, Polarity*, &c. *Light, Heat, Cold*, &c. Operations or Effects thereof, as *Motion, Rarefaction, Dilatation, Condenſation. Diſſolution, Ebullition, Freezing, Evaporation, Fermentation, Digeſtion, Effervescence*, &c. *Viſion, Seeing, Hearing, Feeling, Smelling*, &c. Modifications or Changes, as *Alteration, Corruption, Putrefaction, Generation, Degeneration, Tranſmutation*, &c. Syſtems or Hypotheſes hereof, *Corpuſcular, Epicurean, Ariſtotelian, Peripatetic, Carteſian, Newtonian*, &c.—— Occult and Fictitious Qualities, Powers, and Operations, *Antiperiſtaſis, Sympathy, Antipathy, Archæus*, &c. *Magic, Witchcraft, Virgula Divina, Ligature, Taliſman, Cabbala*, &c. *Druid, Bard, Brachman, Gymnoſophiſt, Magi, Roſicrucian*, and the like.

[7] METAPHYSICS, or the Doctrine of ENS, *Eſſence, Exiſtence, Power, Act, Underſtanding*, &c.——The MIND, Its Faculties, *Apprehenſion, Judgment, Imagination, Reaſon, Wit*, &c. Its Operations, *Retention, Reflection, Aſſociation, Abſtraction*, &c. Its Perceptions, as *Subſtance, Accident, Mode*, &c. Relations, as *Unity, Multitude, Infinity, Univerſal*, &c. *Quantity, Quality, Whole, Part*, &c. *Genus, Species, Difference*, &c. *Proper, Oppoſite, Circumſtance, External*, &c. Effects hereof, *Knowledge, Science, Art, Experience*, &c. Conditions, *Probability, Certainty, Fallacy*, &c. Syſtems hereof, *Nominals, Scotiſts*, &c.

[8] ARITHMETIC, including the Doctrine of DISCRETE or *Diſcontinuous* QUANTITY, viz. *Number, Ratio, Proportion*, &c. Kinds, as *Integer, Fraction, Decimal, Surd*, &c. Relations, as *Root, Power, Square, Cube*, &c. Rules or Operations thereof, as *Notation, Numeration, Addition, Subtraction*, &c. *Reduction, Practice, Poſition*, &c. *Extraction, Approximation*, &c. Inſtruments ſubſervient thereto, as *Logarithms, Nepair's Bones*, &c.

[9] ANALYTICS, or the Reſolution of PROBLEMS by *Species* or Symbolical Expreſſions: Rules or Operations hereof, *Addition, Subtraction, Multiplication*, &c. Application thereof, in *Combinations, Permutations, Magic Squares, Chances, Gaming*, &c. *Series, Progreſſions*, &c. *Methods de Maximis, Fluxions, Exponentials, Tangents*, &c.

[10] ALGEBRA, or the Doctrine of EQUATIONS; *Simple, Quadratic, Cubic*, &c. Operations thereof, as *Reduction, Conſtruction*, &c.

[11] GEOMETRY, or the Doctrine of EXTENDED, or *Continuous* QUANTITY, viz. 1°, Lines, *Right, Perpendicular, Parallel, Oblique*, &c. Angles, *Acute, Scalenous, Vertical, Oppoſite*, &c. 2°, Figures, or Surfaces, *Triangle, Square, Parallelogram, Trapezium, Polygon*, &c. Circumſtances hereof, as *Perimeter, Area*, &c. Operations relating hereto, as *Biſſecting, Dividing, Multiplying, Meaſuring*, &c. Inſtruments uſed therein, as *Compaſſes, Ruler, Square, Parallelism, Scale*, &c. Curves, as *Circle, Cycloid, Ciſſoid, Catenaria, Cauſtic, Evolute, Quadratrix*, &c. Circumſtances thereof, as *Axis, Diameter, Radius, Centre, Circumference, Abſciſs, Ordinate*, &c. *Arch, Chord, Sine, Tangent, Secant*, &c. Inſtruments uſed herein, as *Artificial Lines, Canons*, &c. Operations ariſing herefrom, as Surveying, taking *Angles* or *Bearings*, &c. with *Quadrant, Plain-Table, Semicircle, Circumferentor*, &c. taking *Diſtances*, with *Chain, Perambulator*, &c. *Plotting* into *Draught, Map*, &c. with *Protractor*, &c. 3°, Solids or Bodies, as *Cube, Parallelopiped, Priſm, Pyramid, Cylinder, Polyhedron*, &c. Their *Surface, Solidity*, &c. Operations relating hereto, as *Cubature*, meaſuring of *Timber, Gauging*, &c. Inſtruments uſed herein, as *Carpenters Rule, Sector, Sliding Rule, Gauging Rod*, &c.——The Sphere, its Doctrine, *Projection*, &c. Application thereof, in *Planiſphere, Analemma*, &c.——The Cone, its *Sections, Ellipſis, Parabola, Hyperbola*, &c. Their *Aſymptotes, Foci*, &c. Their *Conſtruction, Quadrature, Rectification*, &c.

[12] STATICS, or the Doctrine of MOTION; Its Laws, *Velocity, Momentum*, &c. Cauſes, as *Gravity, Percuſſion, Communication*, &c. Modifications, as *Compoſition, Acceleration, Retardation, Reflection, Refraction*, &c. Kinds, as *Aſcent, Deſcent, Central, Centripetal*, &c. *Oſcillation, Undulation, Projection*, &c. Powers or Applications thereof, in *Lever, Screw*, &c. *Pendulum, Projectile*, &c. Operations directed hereby, as *Gunnery*, the *Mechanical Arts*, &c. enumerated hereafter.

[13] ETHICS, or the Conſideration of *Natural Inclinations, Paſſions, Taſtes*, &c. Objects thereof, as *Good, Evil, Virtue, Vice, Beauty, Deformity*, &c. *Pleaſure, Pain*, &c. *Rectitude, Equity, Conſcience*, &c. *Law, Obligation*, &c. *Will, Liberty, Action, Aſſent*, &c. *Neceſſity, Premotion, Providence*, &c. Syſtems hereof, *Stoiciſm, Platoniſm, Academy, Cynic*, and the like.

[14] POLICY, or the Conſideration of SOCIETY and COMMONWEAL; Its Origin, in *Contract*, &c. Conſtitutions and Forms thereof, as, 1°, *Monarchy, Deſpotiſm*, &c. Powers thereof, *King, Queen, Prince, Duke. Emperor, Sultan, Sophy, Caliph, Cæſar, Czar, Inca, Ethnarch, Tetrarch, Deſpot*, and the like. Their Titles, *Majeſty, Highneſs, Grace, Excellence*, and the like. Their Regalia, *Crown, Sceptre, Tiara, Faſces*, &c. 2°, Ariſtocracy; its Powers, as *Archon, Dictator, Doge, Senate, Council*, &c. 3°, Democracy; *States-General, Stadtholder, Protector*, &c. Their Succeſſion, *Elective, Hereditary*, by *Primogeniture*, &c. Their Tranſactions, as *Peace, War, Treaty, Union, League, Croiſade*, &c. By *Armies, Fleets, Embaſſies. Secretary, Plenipotentiary, Envoy, Legate, Nuntio*, &c. Their Territories, *Empire, Principality, Signory*, &c. Their Eſtates, *Nobles, Commons, Clergy. Cenſus, Enumeration, Tribe, Quarter*, &c. *Province, Circle, County, City, Town*, &c. Magiſtrature, *Chancellor, Judge, Sheriff, Juſtice, Mayor, Alderman, Bailiff, Conſtable. Inter-Rex, Conſul, Pretor, Cenſor, Vizir. Tribune, Triumvir, Provoſt, Ephori, Ædile, Prefect, Queſtor, Proconſul. Vice-Roy, Lieutenant, Steward, Warden, Keeper. Juriſconſultus, Procurator, Advocate, Barriſter, Prothonotary, Cuſtos, Philazer, Chirographer, Uſher, Clerk*, &c. Their Juriſdiction; Courts, as *Areopagus, Comitia*, &c. *Parliament, Diet, Divan. Chamber, Aſſize, Privy Council*, &c. *Chancery, King's-Bench, Exchequer, Admiralty, Verge, Seſſions, Turn, County Court, Leet, Eyre*, &c. *Terms, Circuits, Commiſſions, Oyer. Convocation, Arches, Prerogative, Faculties, Delegates. Rota, Inquiſition*, &c. Their Revenues, *Treaſury, Fiſc, Exchequer, Tally, Political Arithmetic. Duties, Cuſtoms, Gabel, Exciſe*, &c. *Coinage, Money, Intereſt, Uſury*, &c. Their Houſhold, *Chamber, Green-Cloth, Ward-robe*, &c. Under *Steward, Chamberlain, Comptroller, Cofferer, Aga, Oda*, &c. *Guard, Stables, Ordnance*, &c. directed by *Captain, Maſter, Equerry*, &c. Militia, *Navy, Poſt, Timariot, Arriere-ban*, &c. Dignities, *Dauphin, Elector, Palatine, Grave, Palſgrave. Thane, Earl, Count, Knight, Garter, Baronet, Bath, Teutonic, Malta, Elephant*, &c. *Gentleman, Yeoman*, &c. Their *Names, Sirnames, Titles, Precedence*, &c. Factions, *Patrician, Guelf, Tory*, &c. Corporations, or leſſer *Communities, Univerſity, Academy, Colleges*;

I MIGHT here have ended my Preface; and perhaps the Reader would be willing enough to be thus dismiss'd. But something has been already started which will require a further Disquisition.-----The Distribution we have made of Knowledge is founded on this, That the several Branches thereof commence either *Art* or *Science* according to the Agency or Non-agency of the human Mind in respect thereof: It remains to take the Matter up a little higher; and explain the Reason and Manner of this Operation. To consider Knowledge in its Principles,

lege, Society, Chapter, School, Hospital, Inn. Public *Edifices, Guild-hall, Prison, Tower, Arsenal, Library, Musæum, Circus,* &c. Solemn *Ceremonies,* as *Triumph, Tournament, Carrousel, Quadril. Donative, Medal, Trophy, Monument, Funeral, Tomb, Catacomb,* &c.

[15] LAW, or the Rules and Measures of SOCIETY; publish'd in *Act, Statute, Charter, Rescript, Constitution, Decretal, Senatus-consultum, Pragmatic Sanction,* &c. Recorded, in *Institute, Code, Novel, Register, Pandect, Corpus, Domesday,* &c. Kinds, *Civil, Canon, Sumptuary,* &c. Respecting, 1°, Persons, as *the King*; his *Prerogative, Royalties,* &c. *viz.* granting *Dispensation, Pardon, Commendam, Exemption. Dignities, Franchises. Forest, Park, Purlieu, Vert, Chase. Impost, Subsidy, Toll, Tax, Aid, Hidage, Scutage, Prisage. Waif, Estray, Escheat, Treasure Trove,* &c. Officers and Magistrates, created by *Writ, Warrant, Commission,* &c. Their *Oath, Test, Declaration. Visitation, Procuration,* &c. Corporations, *Regular, Secular,* &c. made by *Charter, Patent,* &c. dissolved by *Quo Warranto, Mandamus,* &c. Subjects, as *Denizen, Naturalization. Husband, Wife, Marriage, Concubine, Separation, Alimony, Dower, Affinity, Bastard. Adoption, Emancipation. Lord, Tenant, Villain, Vassal. Client, Patron. Servant, Slave, Retainer. Manumission, Enfranchising,* &c. *Tenure, Service, Homage, Fealty, Serjeanty, Escuage, Relief, Guardian, Wardship, Socage. Heir, Intestate, Ancestor,* &c.——2°, Estates or Things; either Real, as *Tenements, Hereditaments. Freehold, Fee, Customary, Tail, Gavelkind, Courtesy,* &c. In *Reversion, Mortgage, Hypotheca,* &c. *Manor, Demesn, Honours. Common, Glebe, Advowson,* &c. Acquired by *Occupancy, Prescription, Descent, Deed, Feoffment, Fine, Recovery. Defeizance, Lease, Devise, Attournment, Investiture, Livery,* &c. Lost by *Alienation, Mortmain, Disseisin, Abatement. Surrender, Discontinuance, Disclaimer, Forfeiture, Resignation, Deprivation, Lapse,* &c. Or Personal, as *Goods, Chattels, Emblements, Annuity, Debts, Specialty, Recognizance,* &c. Acquired by *Succession, Heriot, Mortuary, Heir Loom. Testament, Executor, Administrator, Ordinary. Judgment, Fieri facias,* &c.——3°, Wrongs or Injuries; either Criminal, and to Persons, as *Treason, Parricide, Murder, Felony, Assault, Rape, Assassin. Adultery, Fornication, Defloration, Polygamy, Heresy,* &c. Prosecuted by *Indictment, Accusation, Actions of Conspiracy,* and *upon the Case, Habeas Corpus,* &c. Punish'd, with *Hanging, Crucifixion, Wheel, Furca, Scala, Pillory, Transportation, Divorce, Scaphism,* &c. Or Civil, and to Things; as *Trespass, Nuisance, Deforcement,* &c. Remedied by Writs of *Quare Impedit, Darrein Presentment, Appeal, Atteint, Error, Right, Disceit, Supersedeas, Audita Querela,* &c. Suit, or Course of Proceedings whereby Redress is procured; including, 1°, *Process,* either by *Bill, Summons, Subpœna, Attachment, Capias, Exigent,* &c. to which belong *Appearance, Attorney, Bail, Essoign, Default, Nonsuit, Arraignment,* &c. 2°, Pleading; whence *Count, Declaration, Aid Praier, Voucher, Age Prier, Bar, Abate, Release, Replication, Outlawry, Sequestration,* &c. 3°, Issue; whence *Demurrer.* 4°, Trial; whence *Proof, Evidence, Presumption, Oath, Affidavit, Affirmation. Jury, Challenge, Array, Verdict. Battel, Duel, Champion, Purgation, Ordeal,* &c. *Paine fort & duret, Rack, Torture,* &c. 5°, Judgment; whence *Arrest,* &c. 6°, Execution; whence *Scire facias, Reprieve,* &c.

[16] THEOLOGY, or the Consideration of GOD: his Nature and *Attributes,* as *Eternity, Ubiquity,* &c. His *Unity, Trinity,* &c. *Persons, Hypostasis,* &c. Our Duty to him, discover'd by *Inspiration, Revelation, Prophecy,* &c. by the *Messiah, Evangelists, Apostles,* &c. In the Bible, *Pentateuch, Hagiographa, Psalter, Gospel, Apocalypse,* &c. *Canon, Deuterocanonical, Apocrypha,* &c. Circumstances thereof, *Style, Allegory, Type, Parable, Mystical,* &c. *Text, Version, Septuagint, Vulgate,* &c. *Paraphrase, Targum,* &c. *Points, Quotations,* &c. Matter thereof; Declarations, of *Incarnation, Passion, Crucifixion, Miracle,* &c. Injunctions, as *Worship, Prayer, Sacrifice,* &c. Sacraments, as *Eucharist, Baptism,* &c. Promises, as *Grace, Justification,* &c. Decrees, as *Predestination, Election, Reprobation,* &c. Breaches on our Part, *Sin, Apostacy, Imputation,* &c. Remedies thereof, by *Repentance, Confession,* &c. Rewards and Punishments allotted thereto, *Heaven, Hell, Resurrection, Immortality,* &c. His Ministers, *Angels, Devil,* &c. His Church, either *Triumphant,* as *Saints, Martyrs, Confessors, Fathers, Doctors,* &c. or *Militant,* &c. Its Offices, *Creed, Liturgy, Decalogue, Doxology, Trisagion,* &c. Discipline, Rites, &c. as *Absolution, Anathema, Excommunication,* &c. *Catechumen, Confirmation, Genuflexion,* &c. Its Priesthood, as *Bishop, Priest, Deacon,* &c. *Patriarch, Archbishop, Primate, Dean, Canon, Prebend, Archdeacon, Chantor,* &c. Their Ensigns, *Mitre, Crozier, Pallium,* &c. Their *Ordination, Consecration, Collation, Imposition,* &c. *Benefices, Revenues, Tithes,* &c. Places set apart, as *Church, Chapel, Oratory,* &c. *Cathedral, Parochial, Cardinal,* &c. *Choir, Nave, Altar, Font,* &c. *Diocese, Province,* &c. Assemblies, as *Synod, Council, Convocation, Consistory, Chapter, Presbytery,* &c. *Feasts, Fasts, Lent, Vigils,* &c. *Easter, Epiphany, Pentecost, Annunciation, Purification, Presentation,* &c.——Particular Systems or Professions thereof, *viz. Reform'd* or Protestant, as the *Church of England, Lutheranism, Calvinism,* &c. Romish or *Latin*; its *Mass, Breviary, Legend,* &c. *Transubstantiation, Extreme Unction, Supererogation, Penance,* &c. *Hierarchy*; *Pope, Cardinal,* &c. *Secular, Regular, Monk, Religious, Abbot, Prior,* &c. *Order, Congregation, Monastery, General,* &c. *Jesuit, Carthusian, Carmelite, Franciscan, Dominican,* &c. *Third* Order, *Cenobite, Anchorite, Hermit, Recluse, Monastery, Cell,* &c. *Rule, Vow, Reform, Noviciate,* &c. *Image, Relicks, Saint, Virgin, Rosary,* &c. *Canonization, Beatification,* &c. *Indulgence, Jubilee, Exorcism,* &c.——Greek, its *Anthologue, Prothesis, Particles,* &c. *Maronite, Jacobite, Thomæan,* &c. *Armenian, Cophti, Solitary,* &c.——Sects, and Heresies; as *Manichees, Gnostics, Arians,* &c. *Ebionites, Nestorians, Millenaries, Quartodecimans,* &c. *Montanists, Socinians, Arminians,* &c. *Presbyterians, Anabaptists, Independents, Quakers,* &c. *Quietists, Servetists, Pre-adamites,* &c. *Deist, Atheist, Spinosism,* &c.——Jewish, its *Talmud, Tradition,* &c. *Temple, Tabernacle, Sanctuary, Ark,* &c. *Pontiff, Levite, Tribe,* &c. *Ephod, Theraphim, Circumcision, Sabbath, Sanhedrim,* &c. *Rabbin, Doctor, Cabbala, Massora,* &c. *Pharisee, Sadducee, Essean, Caraite,* &c. *Nazarite, Therapeuta,* &c. *Samaritan, Dosithean, Hellenist,* &c. *Passover, Scenopegia, Gehenna,* &c.——Mahometan; Their *Alcoran, Mufti, Dervice, Mosque, Mussulman,* &c.——Heathen; Their *Idolatry, Theogony,* &c. Their Gods; *Penates, Lares, Lemures,* &c. *Panes, Sylvans, Nymphs, Tritons,* &c. *Demi-god, Hero, Fortune, Destiny, Dæmon, Genius,* &c. *Apotheosis, Sacrifice,* &c. *Feast, Lustration,* &c. as *Eleusinia, Saturnalia, Cerealia,* &c. Ministers thereof; *Rex, Pontifex, Flamen, Vestal, Corybantes,* &c. Games; *Olympic, Isthmean,* &c. *Divination, Oracle, Pythian, Sibyl,* &c. *Augur, Auspex,* &c. *Temple, Fane, Pagod,* &c. Sects; as *Banians, Bramans, Sabæans,* &c.

[17] LOGICS, or the Consideration of IDEAS or NOTIONS; Their Kinds, *Simple, Complex, Adequate,* &c. Disposition, into *Classes* or *Categories, Predicaments, Predicates,* &c. Their Composition, or Association into *Axioms, Propositions, Problems, Theorems, Theses, Hypotheses.* Arguments, as *Syllogism, Enthymeme, Sorites, Sophism, Dilemma, Crocodilus,* &c. Their Resolution, *Definition, Division,* &c. into *Premisses, Consequences, Terms,* &c. Their *Truth, Falshood, Evidence, Demonstration,* &c. Operations therewith, as *Argumentation, Induction, Discoursing, Philosophizing,* &c. *Disputation, Distinction, Contradiction, Reductio ad absurdum,* &c.

[18] CHYMISTRY, including the Use of FIRE, *Water, Baths, Ferments, Menstruums, Furnaces, Retorts,* and other Instruments; to change *Animal, Vegetable,* and *Fossil* Bodies; by inducing *Fusion, Putrefaction, Fermentation, Dissolution, Exhalation,* &c. and hereby procuring *Spirits, Salts, Oils. Acid, Alcaline, Aromatic, Urinous. Wines, Vinegars, Flowers, Calces, Crystals, Soaps, Tartars. Regulus, Magistery, Extract, Elixir. Cerus, Minium, Litharge. Quintessence, Phosphorus, Alcahest, Philosopher's Stone,* and the like; by the Operations of *Distillation, Expression, Cohobation, Sublimation, Rectification, Crystillization, Calcination, Amalgamation, Digestion, Precipitation, Vitrification, Fixation, Transmutation,* and the like.——*Arbor Dianæ, Aurum Fulminans, Artificial Earthquake, Magic, Divination,* &c.

[19] OPTICS, including the Laws and Consideration of VISION, and *Visible Objects*; effected by means of *Light,* its *Rays.* Their *Refrangibility, Reflexibility,* &c. *Focus, Transparency, Opacity, Shadow,* &c. ——Reflection thereof, in *Mirror, Looking-glass, Catoptric Cistula,* &c.——Refraction, in *Lens, Prism, Glass,* &c. Application, in *Telescope, Microscope, Magic Lanthorn,* &c. *Spectacle, Polemoscope, Polyhedron, Camera Obscura,* &c.

[20] PERSPECTIVE, or the PROJECTION of *Points, Lines, Planes,* &c. in *Scenography, Orthography, Ichnography, Anamorphosis,* &c.

[21] PAINTING, or the DESIGNING of Objects in *Clair-obscure, Proportion,* &c. with *Ordonnance, Expression,* &c. Circumstances hereof, *Attitude, Contrast, Group,* &c. Kinds, *Limning, Miniature, Camieux, Fresco,* &c. *Enamelling, Mosaic,* &c.

[22] PHONICS, or the Doctrine of SOUNDS, *Voice,* &c. Their Modifications in *Echo, Resonance, Whispering-Place, Speaking-Trumpet,* &c.——Their Tune, *Gravity, Interval,* &c. Time, *Triple,* &c. express'd by *Note, Chord,* &c. Comparisons thereof, *Concord,* as *Unison, Octave, Third, Fourth, Discord,* &c. Composition, as *Melody, Harmony, Counter-point. Symphony, Synaulia, Chime, Song, Rhythmus,* &c. Kinds, *Genera, Mode,* &c. Circumstances, *Key, Cleff, Signature, Transposition,* &c. *Staff, Scale, Gammut, Solfaing, Modulation,* &c. Instruments, *Organ, Bell, Trumpet, Lyre, Cymbal, Violin, Harpsichord,* &c.

[23] HYDROSTATICS, or the Consideration of FLUIDS; their *Specific Gravity, Density, Equilibrium,* &c. Instruments to measure the same, as *Areometer, Hydrostatical Balance,* &c. *Syphon, Torricellian,* &c.——Motion thereof, in *Pump, Fountain, Spiral Screw, Hydrocanisterium, Hydromantic,* &c.

[24] PNEUMATICS, or the Consideration of the AIR; its *Weight, Density, Pressure, Elasticity,* &c. *Condensation, Rarefaction, Motion, Wind,* &c. In *Air-pump, Suction, Vacuum,* &c. Measur'd by *Barometer, Thermometer, Hygrometer, Manometer,* &c. *Anemometer, Windmill,* &c.

[25] MECHANICS, including the Structure and Contrivance of MACHINES, as *Balance, Steelyard, Pully, Polyspast,* &c. *Wheel, Clock, Watch, Pendulum, Spring, Fusee,* &c. *Clepsydra, Coach, Rota Aristotelica, Perpetual Motion,* &c. *Mill, Press, Vice, Lath, Loom, Windlass,* &c. Operations of *Swimming, Diving, Flying,* &c.

[26] ARCHI-

ples, antecedent to such Intervention of ours; and even pursue it up to its Cause, and shew how it exists there, before it be Knowledge: And to trace the Progress of the Mind thro' the Whole, and the Order of the Modifications induced by it. This is a Desideratum, hitherto scarce attempted; but which we could not here decline entering upon, on account of its immediate Relation to the present Design. 'Tis the Basis of all Learning in general; the great, but obscure Hinge, on which the whole Encyclopædia turns.

TO

26 ARCHITECTURE, including the Construction of BUILDINGS; as *House, Temple, Church, Hall, Palace, Theatre,* &c. *Ship, Galley, Galleon, Ark, Buccentaur, Boat,* &c. *Pyramid, Mausoleum, Pantheon,* &c. *Capitol, Seraglio, Escurial,* &c. *Arch, Vault, Bridge, Monument, Tomb,* &c. Forms thereof, *Rotondo, Platform, Pinnacle,* &c. Plans, *Design, Ichnography, Profile,* &c. Parts, as *Foundation, Wall, Roof,* &c. *Door, Window, Stairs, Chimney,* &c. Orders, as *Tuscan, Doric, Corinthian,* &c. *Caryatides, Rustic, Gothic,* &c. Column, *Pilaster, Attic,* &c. Parts thereof, *Entablature, Capital, Pedestal,* &c. *Cornice, Frieze, Base,* &c. *Volute, Pediment, Modillion, Console,* &c. Mouldings, *Ogee, Tore, Astragal, Scotia. Abacus, Ovolo,* &c. Materials, as *Brick, Stone, Tyle, Slate, Shingle,* &c. *Timber, Wainscot, Glass, Lead, Plaster,* &c. *Beam, Rafter, Mortar, Nail, Hinge, Key, Lock,* &c. *Quarry, Masonry,* &c.

27 SCULPTURE, or the framing of *Statue, Figure, Ornament,* &c. in *Relievo, Creux,* &c. as *Carving, Pottery, Porcelain,* &c. Engraving, *Seal, Dye,* &c. *Etching, Cutting. Mezzo Tinto,* &c. Foundery, of *Bell, Letter, Ordnance,* &c. Coining, *Money, Medal, Medallion,* &c. *Pile, Legend,* &c. *Lapidary, Turnery, Inlaying, Vaneering, Damasqueening, Enchasing,* &c.

28 TRADES and MANUFACTURES; as *Printing, Paper-making, Book-binding,* &c. *Gilding, Japanning, Glass-making. Grinding,* &c. *Plumbery, Glaziery, Forging, Hammering,* &c. *Weaving, Bleaching, Whitening,* &c. *Fulling, Dying, Pressing, Sheering, Calendring, Tabying, Freezing,* &c. *Woollen, Silk, Linum Incombustibile,* &c. *Cloth, Serge, Taffety, Stocking,* &c. *Velvet, Tapistry, Hat,* &c. *Tanning, Currying, Tawing,* &c. *Chamoising, Chagreen, Marroquin,* &c. Making *Parchment, Glue. Gun-pouder, Smalt, Soap, Starch,* &c. *Candle, Taper, Torch,* &c. *Steel, Button, Pin, Needle, Pipe, Fan, Peruke,* &c.

29 PYROTECHNY, or *Artificial* FIRE-*Work*; including the Consideration and Use of *Gun-pouder, Match, Fusee,* &c. Of *Ordnance, Cannon, Gun, Mortar,* &c. *Carriage, Charge, Projection, Range, Point-blank, Recoil,* &c. *Petard, Carcass, Shot, Bomb, Granado,* &c. *Rocket, Star,* &c.

30 MILITARY *Art,* including the Consideration of ARMIES, *Fleets, Cavalry, Infantry,* &c. Consisting of *Regiments, Troops, Companies, Phalanx, Legion,* &c. Soldiers, *Dragoon, Grenadier, Fusileer, Cuirassier, Archer, Janisary, Spahi, Velites, Argyraspides, Gend'armery,* &c. Divided into *Squadron, Battalion, Brigade,* &c. Commanded by *General, Marshal, Bashaw, Admiral,* &c. *Lieutenant, Brigadier, Colonel, Captain, Serjeant. Major, Adjutant, Ensign, Quarter-Master. Tribune, Centurion, Primipilus,* &c. In *Battle, Siege, March, Camp,* &c. Ranged in *Line, Column,* &c. Motions, *Attack, Retreat, Halt,* &c. Evolutions, *Wheeling, Counter-wheeling,* &c. Signals, *Word, Drum, Chamade,* &c. Guards, *Garison, Piquet, Patroll, Round, Quarter, Place of Arms,* &c. *Standard, Banner, Eagle, Labarum,* &c. Their Arms, *Artillery, Carabine, Musquet,* &c. *Helmet, Buckler, Pelta, Cuirass,* &c. *Aries, Balista, Catapulta, Fundus,* &c.

31 FORTIFICATION, or the Construction of FORTRESSES; as *Citadel, Castle, Tower,* &c. *Fort, Star, Redoubt,* &c. Works, or Parts thereof, *Rampart, Bastion, Ditch, Counterscarp, Curtain,* &c. *Ravelin, Horn-work, Crown-work,* &c. Approaches, *Trench, Sap, Mine,* &c. *Line, Parallel, Circumvallation,* &c. *Battery, Attack,* &c.

32 ASTRONOMY, or the Doctrine of the HEAVENS; Their *Circles, Ecliptic, Zodiack, Meridian, Equator, Vertical, Azimuth. Galaxy,* &c. Points, as *Pole, Zenith, Nadir,* &c. Celestial *Bodies,* viz. *Stars, Sun,* &c. Assemblage thereof, into *Sign, Constellation,* &c. Their Precession, *Culmination, Refraction. Declination, Ascension, Longitude, Latitude. Altitude, Amplitude, Azimuth.* Planets, as *Saturn, Venus, Earth. Moon, Satellite, Comet,* &c. Their *Places, Aspects, Syzygy, Conjunction, Quadrature. Diameter, Distance, Period, Revolution, Orbit, Node,* &c. Their *Station, Retrogradation, Equation,* &c. Their *Phases, Eclipse, Penumbra, Occultation, Parallax, Crepusculum, Maculæ,* &c. Observations thereof, taken with the *Quadrant, Gnomon, Micrometer, Reticula,* &c. Collected in *Catalogue, Tables,* &c. Hypotheses, or Systems thereof, *Copernican, Tychonic, Ptolemaic,* &c. Exhibited in *Sphere, Globe,* &c.

33 CHRONOLOGY, or the Doctrine of TIME; measur'd by *Year, Month, Week, Day, Hour. Age, Period, Cycle,* &c. Commencing from *Epocha, Creation, Hegira,* &c. Laid down in *Fasti, Almanack, Calendar, Julian, Gregorian,* &c. Accommodated to *Feasts, Feriæ, Easter,* &c. by means of *Epact, Golden Number, Dominical,* &c.

34 DIALLING, including the *Furniture* and Projection of DIALS, *Horizontal, Declining, Reclining, Deinclining,* &c. *Moon-Dial, Ring-Dial, Horodictical,* &c. Instruments, as *Declinator, Analemma, Scales,* &c.

35 GEOGRAPHY, including the Doctrine of the EARTH, or GLOBE: its *Circles; Parallel, Tropic, Horizon, Axis, Poles,* &c. Its *Zones, Climates,* &c. Its *Places*; their *Longitude, Latitude, Distance, Elevation,* &c. Inhabitants, *Antipodes, Aborigines, Troglodites, Ascii, Perisci,* &c. Instruments relating thereto, *Globe, Map,* &c.

36 NAVIGATION, or the Consideration of SAILING; in *Ship, Frigate, Bark,* &c. Parts thereof, *Mast, Anchor, Sails, Yards, Cordage, Capstan, Rudder, Deck,* &c. Their *Course, Rhumb,* &c. shewn by *Compass, Needle, Variation,* &c. Directed by *Steerage, Current,* &c. Distance or *Reckoning,* by *Log, Observation, Longitude, Latitude,* &c. Taken by *Fore-staff, Back-staff, Astrolabe, Nocturnal. Sinical Quadrant,* &c. Wrought by *Gunter, Chart, Mercator, Traverse,* &c. The Operations of *Sounding, Weighing, Careening.* Signals, *Buoy,* &c.

37 COMMERCE, or the Affairs of MERCHANDIZE; including, Money, *Coin, Species,* &c. as *Pound, Crown, Shilling, Penny, Sterling. Ducat, Dollar, Piece of Eight. Talent, Sesterce, Shekel,* and the like. Weights, *Libra, Ounce,* &c. Measures, *Foot, Yard, Standard,* &c. Given in *Exchange, Truck, Permutation, Commutation,* &c. for *Manufacture, Spice, Drug, Woollen, Slave, Negro,* &c. *Imported, Exported, Transported, Convoy, Flota,* &c. Conditions thereof, *Tariff, Contraband, Charter-party, Freight, Average,* &c. *Customs, Duty, Tunnage, Poundage,* &c. *Bottomry, Assurance, Pike,* &c. Transacted by *Company*; as *Hans, Steel-yard, East India, Turky, Hamburg, Mississippi, South Sea, Assiento, Register. Colony, Fishery, Factory,* &c. At *Staple, Fair, Market, Bank, Burse,* &c. By *Commission, Factor, Broker,* &c. *Weighing,* paying by *Bill*; at *Usance, Acceptance, Par. Protest, Discount, Rechange,* &c. *Action, Subscription. Book-keeping,* &c.

38 ANATOMY, or the *Analysis* of ANIMAL BODIES, and their PARTS, *viz.* Bones, as *Cranium, Rib, Vertebra, Radius, Femur, Tibia. Sacrum, Pubis, Patella,* &c. Their *Articulation, Apophyses,* &c. Muscles, *Abductor, Adductor, Erector, Depressor, Deltoides, Sartorius, Cucullaris, Orbicularis, Sphincter,* &c. Their *Tendons, Fibres,* &c. Vessels, as *Artery, Aorta, Aspera, Trachea, Pulmonary,* &c. *Veins,* as *Cava, Porta, Jugular, Carotid,* &c. *Glands,* as *Pancreas, Parotides, Prostates,* &c. *Nerves; Optic, Olfactory, Auditory,* &c. *Lymphatic, Lacteal, Mesaraic, Mucilaginous,* &c. Their *Valves, Tunics, Anastomases,* &c. Their Humours, as *Chyle, Blood, Spirit, Seed, Gall, Urine, Milk, Sweat, Marrow,* &c. Membranes; *Pannicle, Cutis, Cuticula, Papilla,* &c. *Venters, Head, Meninges, Brain,* &c. *Eye, Ear, Pupil, Tympanum. Tongue, Teeth, Palate, Larynx, Glottis, Oesophagus,* &c. Viscera, *Stomach, Lungs, Heart,* &c. *Liver, Spleen, Kidney, Intestines, Bladder,* &c. Functions or Operations hereof, *Respiration, Deglutition, Digestion, Chylification, Sanguification, Circulation, Systole, Nutrition. Secretion, Excretion, Perspiration, Vomiting,* &c. Genitals, *Penis, Testicle, Clitoris, Matrix, Nympha, Hymen. Embryo, Zoophyte, Mole,* &c. *Erection, Generation, Conception, Gestation. Delivery, Lochia, Menses,* &c.

39 MEDICINE, including the Consideration of LIFE and HEALTH; Conditions thereof, *Longevity, Strength, Temperament,* &c. Means, as *Food, Drink, Exercise,* &c. Opposites, as *Death, Disease,* &c. Kinds hereof, *Chronic, Epidemic, Contagious,* &c. as *Plague, Fever, Gout, Apoplexy, Epilepsy, Palsy. Pox, Polypus, Palpitation. Madness, Hydrophobia, Spasm, Hypochondriac. Phthisis, Scorbutus, Dropsy, Tympanites. Lepra, Itch, Plica, Ophthalmia, Gutta, Cataract,* and the like. *Wound, Ulcer, Cancer. Fracture, Fissure, Caries,* and the like. Symptoms, *Sign, Diagnostic, Pulse, Urine,* &c. *Prescription, Crisis, Cure,* &c. *Regimen, Diet, Medicine,* &c. Kinds hereof, *Specific, Purgative, Emetic, Diaphoretic, Diuretic, Alterative. Styptic, Astringent, Emollient, Opiate. Absorbent, Caustic, Anodyne, Sympathetic. Cardiac, Cephalic, Febrifuge. Antimonial, Chalybeat, Mercurial,* and the like. Operations, as *Evacuation, Phlebotomy, Suture, Lithotomy, Amputation, Inoculation. Salivation, Couching, Cupping, Trepanning. Touching, Tapping, Stroking, Transfusion, Castration, Circumcision,* and the like.

40 PHARMACY, or the *Preparation* and *Composition* of REMEDIES; as *Mithridate, Treacle, Hiera Picra, Laudanum, Diasenna, Turbith, Calomel,* &c. in the Form of *Electuary, Confection, Extract, Tincture, Syrup. Troche, Pill, Pouder, Lohoc, Potion, Apazem, Drops,* medicated *Ales, Wines, Waters. Unguent, Emplaster, Purge, Clyster, Suppository, Pessary, Collyrium,* &c. From *Drugs,* or *Simples*; as, *Guaiacum, Sassafras, Colocynthis, Crocus, Rhubarb, Cassia, Senna, Cortex, Styrax, Jalap, Scammony, Opium,* &c. *Fats, Claws, Horns,* &c. of *Viper, Crab, Elk,* &c. *Cantharides, Millepedes, Mummy, Usnea, Ichthyocolla,* &c. *Antimony, Orpiment, Asphaltus, Bismuth, Marcasite, Bole, Cinnabar, Mars, Venus,* &c.

41 AGRICULTURE, or the *Tillage* and Improvement of SOILS, *Clay, Sand, Earth,* &c. By the Operations of *Ploughing, Fallowing, Burning, Sembradore, Sowing, Manuring,* &c. To produce, *Corn, Hemp, Flax, Liquorice, Saffron,* &c. For *Malt, Bread,* &c. *Granary, Threshing,* &c. The Culture of *Trees, Timber,* &c. by *Planting, Lopping, Barking,* &c. For *Coppice, Park, Paddock, Hedge, Pasture,* &c.

42 GARDENING, including the *Culture* of HERBS, *Flowers, Fruits,* &c. as *Dwarf, Standard, Stone, Wall, Espalier, Sallad,* &c.

TO be a little more explicit---*Words* are the next Matter of Knowledge; I mean, of Knowledge conſider'd as it now ſtands, communicable, or capable of being tranſmitted from one to another. We ſhould have known many Things without Language; but it would only have been ſuch Things as we had ſeen or perceived our ſelves. The Obſervations of others could no way have been added to our own; but every Individual muſt have gone thro' a Courſe for himſelf, excluſive of all Advantages to, or from, Cotemporaries, Predeceſſors, or Poſterity.-----'Tis evident that, in this Caſe, nothing like an *Art*, or *Science*, could ever have aroſe; not even in the Mind of the moſt ſagacious Obſerver: The little Syſtem of Things which come immediately in one Man's way, wou'd but have afforded a ſlender Stock of Knowledge; eſpecially to a Being whoſe Views were all to terminate in himſelf. Add, that, as the chief Occaſions of his Obſervation would be of the ſame kind with thoſe of other Animals; 'tis probable his Knowledge would not have been very different, whether we conſider its Quantity or Quality. 'Tis confeſs'd that all our Knowledge, in its Origin, is no other than Senſe; whence it ſhould follow, that one Being has no natural Advantage over another in its Diſpoſition for Knowledge, other than what it has in the ſuperior Number, Extent, or Acuteneſs of its Senſes.

'TIS, in effect, to Language that we are chiefly indebted for what we call *Science*. By means hereof our Ideas and Notices, tho things in their own nature merely perſonal, and adapted only to private uſe; are extended to others, to improve their ſtock: and thus, by a kind of ſecond Senſe, we get Perceptions of the Objects that are perceived by all Mankind; and are preſent, as it were by proxy, to things at all Diſtances from us: We hear Sounds made a thouſand Years ago, and ſee Things that paſs a thouſand Miles off. If the Eagle really ſees, the Raven ſmells, and the Hare hears, further and better than Man; their Senſe, at beſt, is but narrow, in compariſon of ours, which is extended, by the Artifice of Language, over the whole Globe. They ſee with their own Eyes only; we with thoſe of the whole Species.---In effect, by Language, we are upon much the ſame footing, in reſpect of Knowledge, as if each individual had the natural Senſe of a thouſand: an Acceſſion which alone muſt have ſet us far above any other Animals. But at the ſame time, this very acceſſion of a multitude of Ideas more than naturally belong'd to us, muſt have been in great meaſure uſeleſs; without certain other Faculties of ordering and arranging 'em; of abſtracting, or making one a Repreſentative of a Number; of comparing 'em together, in order to learn their Relations; and of compounding, combining 'em, *&c.* to make 'em act jointly. The Effect hereof is what we call *Diſcourſing* and *Philoſophizing:* And hence ariſe *Doctrines*, *Theories*, &c.

EVERY Word is ſuppoſed to ſtand for ſome Part, or Point of Knowledge; ſuch as do not, have no buſineſs in the Language, and ought of Conſequence to be thrown out of doors. It follows, that the Vocabulary of any Language, is repreſentative of the ſeveral Notices of the People among whom it obtains: I mean of the primary or abſolute Notices; for by the Conſtruction of theſe Words with one another, a new Set of ſecundary or relative Notices are expreſs'd.---To enter better into this, it is to be obſerv'd, that the ſeveral Objects of our Senſes, with that other Set of Things analogous hereto, the proper Objects of the Imagination, are repreſented by fixed Names *; denoting, ſome of 'em, Individuals †; others, Kinds ‡, *&c.* Now, theſe, which make the firſt or fundamental Part of a Language, 'tis obvious, are no other than a Repreſentation of the Works of Nature, as they exiſt in a kind of ſtill Life, or in a State of Independency one upon another. But in regard we do not conſider the Creation as thus quieſcent, but obſerve a great number of Mutations ariſe in the Things we are converſant among; we are hence put under a neceſſity of framing another Set of Words, to expreſs theſe Variations, and the Actions to which they are owing, with the ſeveral Circumſtances and Modifications thereof ‖. By this means, Nature is remov'd out of her dormant Conſtitution, and ſhewn in Action; and thus may occaſional Deſcriptions be framed, accommodate to the preſent State of Things.

HENCE ariſe two Kinds of Knowledge; the one *abſolute*, including the ſtanding Phænomena: the other *relative*, or *occaſional*, including what is done, or paſſes, with regard to them. The former is in ſome Senſe permanent; the latter merely tranſient, or hiſtorical. The firſt is held forth, as already obſerved, in the Vocabulary: the ſecond vague, and uncircumſcrib'd by any Bounds; being what fills all the other Books extant. In effect, this laſt, being in ſome meaſure caſual, may be ſaid to be infinite: for that every new Caſe, *i. e.* every new Application and Combination of the former, furniſhes a new Acceſſion.

IN the wide Field of Knowledge, appear ſome Parts which have been more cultivated than the reſt; either on account of the Goodneſs of the Soil, and its eaſy Tillage, or by reaſon they have fallen under the Hands of induſtrious and able Husbandmen. Theſe Spots, being regularly laid out and planted, and conveniently circumſcrib'd or fenced round, make what we call the *Arts*, and *Sciences:* And to theſe have the Labours, and Endeavours of the Men of Curioſity and Learning in all Ages, been chiefly confin'd. Their Bounds have been enlarg'd from time to time, and new Acquiſitions made from the adjoining Waſte; but ſtill the Space

The Operations of *Planting*, *Tranſplanting*, *Replanting*, *Watering*. *Engrafting*, *Inoculating*, *Pruning*, *Pinching*, *Variegating*, &c. Preventing *Diſeaſes*, *Blights*, *Gum*, &c. The Uſe and Ordering of a *Hot-bed*, *Green-houſe*, *Seminary*, *Nurſery*, *Garden*, *Vineyard*, &c. Their *Expoſure*, *Walls*, *Horizontal Shelter*, &c. *Walks*, *Graſs-Plot*, *Terrace*, *Quincunx*, *Parterre*, &c.

43 MANAGE, including the Conſideration of HORSES; their *Age*, *Colour*, *Teeth*, *Hoof*, *Star*, &c. Paces, as *Amble*, *Gallop*, &c. Airs, as *Volt*, *Demivolt*, *Curvet*, *Capriole*, &c. *Aid*, *Correction*, *Hand*, *Bit*, &c. *Saddle*, *Shoe*, *Bridle*, &c. Diſeaſes, as *Halting*, *Farcy*, *Staggers*, *Scratches*, *Yellows*, &c. Operations, as *Rowelling*, *Docking*, *Gelding*, &c.——Hawk, *Hawking*, *Hood*, &c. *Reclaiming*, *Caſting*, &c. *Pip*, *Filanders*, &c.——Hound, *Hunting*, &c. *Rut*, *Stalking*, *Birdlime*, *Tramel-net*, *Bat-fowling*, &c.——Fiſh, *Fiſhing*, *Fiſhery*, &c. *Angling*, *Hook*, *Rod*, *Float*, &c. *Bait*, *Fly*, *Huxing*, &c.

44 GRAMMAR, or the Conſideration of LANGUAGE; as *Engliſh*, *Latin*, *Greek*, *Hebrew*, *French*, &c. Their *Dialect*, *Idiom*, *Patavinity*, &c. Matter thereof, *Letter*; *Vowel*, *Conſonant*, *Diphthong*, *Aſpirate*, *Character*, *Symbol*, *Hieroglyphic*, &c. *Syllable*, *Particle*, &c. *Word*; Kinds hereof, *Noun*, *Pronoun*, *Verb*, &c. *Subſtantive*, *Adjective*, &c. Their *Conſtruction*, *Concord*, *Regimen*, &c. In *Caſe*, *Nominative*, *Genitive*, &c. *Gender*, *Maſculine*, &c. *Number*, *Perſon*, *Mood*, *Tenſe*, &c. Into *Sentence*, *Phraſe*, *Period*, &c. Diſtinguiſh'd by *Point*, *Accent*, *Comma*, &c. Deliver'd by *Pronunciation*, *Writing*, *Orthography*, &c.

45 RHETORIC, or the Means of PERSUASION; as Invention, *Amplification*, *Topic*, *Place*, *Argument*. *Paſſions*, *Manners*, &c. Diſpoſition, *Exordium*, *Narration*, *Confirmation*, *Peroration*, &c. *Elocution*, *Sublime*, *Style*, *Numbers*, &c. Figures, as *Exclamation*, *Pleonaſm*, *Epiphonema*, *Apoſtrophe*, *Proſopopœia*, *Antitheſis*, &c. Tropes, as *Metaphor*, *Allegory*, *Synecdoche*, *Sarcaſm*, *Hyperbole*, *Catachreſis*, &c. Action, *Geſture*, *Monotonia*, &c. Compoſitions, as *Oration*, *Declamation*, *Panegyric*, &c. *Parable*, *Eſſay*, *Dialogue*, *Hiſtory*, &c.

46 HERALDRY, or the Conſideration of COATS; conſiſting of *Field*, *Charge*, *Figure*, &c. as *Croſs*, *Chevron*, *Bend*, *Pale*, &c. with *Abatement*, *Difference*, *Quartering*, &c. Compoſed of *Colour*, *Metals*, *Points*, &c. Bore on *Eſcutcheon*, *Shield*, &c. Accompanied with *Supporters*, *Helmet*, *Creſt*, *Mantling*, *Motto*, &c. *Device*, *Emblem*, *Rebus*, *Enigma*, &c. And deſcribed by *Blazon*.

47 POETRY, including the Conſideration of VERSE; its *Meaſure*, *Feet*, *Quantity*, &c. as *Hexameter*, *Alexandrine*, *Spondee*, *Iambic*, &c. *Rhyme*, *Stanza*, &c. Compoſitions, as *Epigram*, *Elegy*, *Song*, *Madrigal*, *Hymn*, *Ode*, *Pindaric*, &c. *Eclogue*, *Satire*, *Georgic*, &c. *Anagram*, *Acroſtic*, *Burleſque*, *Macaronic*, *Leonine*, *Troubadour*, &c. Dramatic, as *Tragedy*, *Comedy*, *Hilaro-tragedia*, *Farce*, &c. Parts thereof, *Act*, *Scene*, *Protaſis*, *Epitaſis*, *Cataſtrophe*, &c. Circumſtances, *Prologue*, *Epilogue*, *Soliloquy*, *Chorus*, &c. Laws, *Unity*, *Action*, &c. Epic, its *Fable*, *Hero*, *Machines*, &c. *Characters*, *Manners*, *Sentiments*, &c. *Perſonification*, *Propoſition*, *Invocation*, *Epiſode*, &c. *Iliad*, *Odyſſee*, *Rhapſody*, &c.

* *Nouns.* † *Proper Names.* ‡ *Appellatives.* ‖ *Verbs*, *Participles*, *Adverbs*, &c.

of Ground they poſſeſs is but narrow; and there is room either to extend 'em vaſtly, or to lay out new ones. They ſhew like the *Cyclades* at a diſtance: *Apparent rari nantes in Gurgite vaſto.*

THEY were divided, or canton'd out by their firſt Diſcoverers, into a number of Provinces, under diſtinct Names; and have thus remain'd for time immemorial, with little Alteration. And yet this Diſtribution of the Land of Science, like that of the Face of the Earth or Heavens, is wholly arbitrary and occaſional; and might eaſily be broke thro', and alter'd, and perhaps not without advantage. Had not *Alexander* and *Cæſar* liv'd, the Diviſion of the Globe had doubtleſs been very different from what we now find it; and the Caſe would have been the ſame with the World of Learning, had no ſuch Perſon been born as *Ariſtotle*. The firſt Diviſions of Knowledge were as ſcanty and ill concerted as thoſe of the firſt Geographers; and for the like Reaſon: And tho future *Columbus's* and *Bacon's*, by opening new Tracts, have carried our Knowledge a great way further; yet the Regard we bear to the antient Adventurers, and the eſtabliſhed Diviſion, has made us take up with it, under all its Inconveniencies, and ſtrain and ſtretch things, to make our Diſcoveries quadrate thereto. I do not know whether it might not be more for the general Intereſt of Learning, to have all the Incloſures and Partitions thrown down, and the whole laid in common again, under one undiſtinguiſh'd Name. Our Inquiries, in ſuch caſe, would not be confin'd to ſo narrow a Channel; but we ſhould be led to explore, and purſue many a rich Mine and Vein, now doom'd to lie neglected, becauſe out of the way.

ART and *Science* are indeed two Words of familiar Uſe, and great importance; but, I doubt little underſtood. The Philoſophers have long labour'd to explain and aſcertain their Notion and Difference; but all their Explanation amounts to little more than the ſubſtituting one obſcure Notion for another. Their Attempts uſually terminate in ſome barren Definition, which rather caſts Obſcurity than Light on the Subject. Nor is the Reaſon far to ſeek, however it may have eſcap'd Notice; but evidently lies in an Abuſe of Language, whereby thoſe different Words come to be applied to Things of the ſame Nature; and each of 'em in their turn to Things wholly different. Whence, any Definition that can hold of 'em univerſally, muſt needs be very abſtracted, and general; and may hold of almoſt any thing elſe; and of conſequence can expreſs very little of the Eſſence, and obvious Phænomena thereof: To come at which, we muſt be at the Pains of a new Inveſtigation.

TO *SCIENCE*, then, belong ſuch Things as Men may diſcover by the uſe of Reaſoning, and Senſe: Whatever the Mind deſcries in virtue of that Faculty whereby we perceive Things, and their Relations, is matter of Science: Such are the Laws of Nature, the Affections of Bodies, the Rules and Canons of Right and Wrong, Truth and Error, the Properties of Lines and Numbers, *&c.* *Science*, in effect, is the Reſult of mere Reaſon and Senſe in their general or natural State, as imparted to all Men; and not modified, or circumſtantiated by any thing peculiar in the Make of a Man's Mind, the Objects he has been converſant among, or the Ideas he has preſent to him. Conſequently, Science is no other than a Series of Deductions, or Concluſions which every Perſon, endued with thoſe Faculties, muſt, with a proper degree of Attention, ſee, nay and draw: And A SCIENCE, *i. e.* a form'd Science, is no more than a Syſtem of ſuch Concluſions, relating to ſome one Subject, orderly and artfully laid down in Words, to ſave Others the Labour and Expence of making 'em at firſt hand. Thus a Perſon who has all the Ideas expreſs'd in *Euclid's* Definitions, and ſees the immediate Connexion of thoſe in his Axioms; which no Man acquainted with the Language can be ſuppoſed without; has it in his Power, with Attention and Induſtry, to form all the Theorems and Problems that follow: He has nothing to do but to range thoſe Ideas orderly in his Mind, compare 'em together, one by one, in all their Changes, and put down the immediate Relations obſerv'd in the Compariſon, *i. e.* their parity, imparity, *&c.* And after the Relations of each to each are thus got; which make a kind of primary Propoſitions; to proceed to combine 'em, and take down the Relations reſulting from a Compariſon of ſeveral Combinations. By ſuch means, without any other Helps than Penetration and Perſeverance, might he make out an infinite Number of Propoſitions: more by half than *Euclid* has done; there being a new Relation, *i. e.* a new Propoſition, reſulting from every new Combination.

TO *ART*, on the other hand, belong ſuch Things as mere general Reaſon would not have attained to: Things which lie out of the direct Path of Deduction, and which required a peculiar Caſt, or Byaſs of Mind to ſee or arrive at. A Man might call theſe the Reſults of particular, or perſonal Reaſon, in oppoſition to the former; but that ſuch a Denomination would be thought unphiloſophical. It may, perhaps, be more juſt to conſider the Reaſon, here, as modified, or tinctured with ſomething in the Complexion, Humour, or Manner of thinking of the Perſon*; or as reſtrain'd or diverted, out of its proper courſe, by ſome Views, or Notices peculiar to him.----The Difference between Art and Science, amounts to much the ſame as between *Wit* and *Humour*; the former whereof is a general Faculty of exciting agreeable and ſurprizing Pictures in the Imagination †, by the aſſociating of Ideas, which at the ſame time have both a notable Diverſity and a Congruity; and the latter, a particular one: The former is pure and abſolute in its kind; the latter tinged with ſomething foreign and complexional.

'TIS eſſential to *Art*, therefore, as to Humour, to partake of the Perſon from whom it proceeded; and conſequently there are as many Arts, as Inventors of Methods of performing, or doing things. Hence, there is no coming at an Art, otherwiſe than by learning it. A Perſon left to his own Thought, will ſcarce ever hit on the ſame thing, unleſs either we ſuppoſe a marvellous Agreement between the Characters and Circumſtances of the Perſons; or that the Art is in great meaſure ſcientifical, and partakes but little of the Genius and Humour of the Inventor.-----There is no ſuch thing, properly ſpeaking, as ſtudying an Art, or learning a Science: The firſt, every Man beſide the Inventor muſt be taught; the latter, every Man muſt find. In effect, to attain to an Art, there is ſome previous Knowledge requir'd, which a Man's own Reaſon would never have ſuggeſted; whereas a Science requires no more than clear Ideas, and cloſe Attention. With theſe Helps a Man may of himſelf go the whole length of a Science, ſo far as it is properly a Science. Indeed if the Improvers, or rather Writers thereof, have gone a jot out of the common way, in compliance with their own perſonal Views; they have ſo far adulterated the Science, and put it on the footing of an Art. And to this very Cauſe are owing a great part of the Difficulties we meet withal in attaining the Sciences: The reſt ariſe from want of Senſe, *i. e.* of Clearneſs and Preciſion in our Perceptions, and want of Perſeverance and Attention to 'em. Theſe render Geometry it-ſelf, little other than an Art: We want Preliminaries to it as to other Arts. And thus every Science is an Art to ſome People, and only to be attained, as we do mechanic Arts, by Habit, and Remembrance; inſtead of Contemplation and Deduction.-----Reaſon, clogg'd and embaraſs'd by Genius and Complexion, can no more riſe to the heights of Science, than when pure and refin'd, it can deſcend to the depths of Art.

* *Vid.* Boſſu, Traité du Poëme Epique, l. i. c. 1.

† Locke, *on Hum. Underſtand.* Lib. ii. c. 11.

AN

AN Art and a Science, therefore, only differ as leſs and more pure: A *Science* is a Syſtem of Deductions made by Reaſon alone, undetermin'd by any thing foreign or extrinſic to it-ſelf: An *Art*, on the contrary, requires a number of Data and Poſtulata to be furniſh'd from without, and never goes any length, but at every turn it needs new ones. 'Tis the Knowledge or Perception of theſe Data that in one Senſe conſtitutes the Art; the reſt, that is, the doctrinal Part, is of the nature of Science; which attentive Reaſon alone will deſcry.

AN Art, in this light, appears to be a Portion of Science, or general Knowledge, conſider'd, not in it-ſelf, as Science, but with relation to its Circumſtances, or Appendages. In a Science, the Mind looks directly backwards and forwards, to the Premiſes and Concluſions: in an Art we alſo look laterally, to the concomitant Circumſtances. A Science, in effect, is that to an Art, which a Stream running in a direct Channel, without regard to any thing but it-ſelf and its own progreſs; is to the ſame Stream turn'd out of its proper Courſe, and running in a different one diſpos'd into Caſcades, Jets, Ciſterns, Ponds, *&c.* and ſerving to water Gardens, turn Mills, and other particular Purpoſes. In which caſe, the Progreſs of the Stream is not conſidered with regard to it-ſelf, but only as it concerns the Circumſtances of the Works: every one of theſe Works, nay each part thereof, are ſo many Data, which modify the Courſe of the Stream, and vary it from its original Habitude. 'Tis eaſy to trace the Progreſs of the former, from its Riſe to its Iſſue; in regard it flows conſequentially: But a Man ever ſo well acquainted with this, will never be able, of himſelf, to diſcover that of the Second, for want of Acquaintance with the Circumſtances, which his Reaſon can never find out, in regard they depend on the Genius, Humour and Caprice of the Engineer who laid the Deſign.

THESE are ſo many different Characters, or Conditions of Art and Science: But there is a Difference between 'em prior to any of theſe, and of which theſe are only Conſequences. The Origin of 'em all lies higher, in the Principle of Action or Operation above ſpecified; namely, as the Mind is either active or paſſive therein. With regard to this; thoſe Things may be ſaid to belong to *Science* which we only ſee, or perceive; which flow from the Nature and Conſtitution of Things, by the ſole Agency of the Author thereof; ſubſervient only to His general Purpoſes, excluſive of any immediate Agency or Intervention of Ours: And, on the contrary, thoſe Things belong to *Art*, wherein ſuch Science or Perception is further modified and circumſtantiated in our Mind, and directed and applied by us, to particular Purpoſes and Occaſions of our own.-----From hence ariſe the ſeveral Differences abovemention'd: For the Matters of Art are only *Perſonal*, as they are according to the Meaſure of the Artiſt's natural Faculties, in reſpect of Quantity and Degree; and to the Complexion and Caſt of his moral Faculties, in reſpect of their Quality. The Perception, even of Matters of Art, is of the Nature of Science: ſo that thus far the two agree: And their Difference only commences from the ſuperinducing a further Modification, in the Matter of ſuch Perception; and the giving it a new Direction to ſome particular End. By means hereof, it becomes inveſted with a new Set of Conditions and Circumſtances, wholly perſonal; as being all framed and adapted to the particular View and Aim of the Artiſt, (which is the mere Reſult of his particular Diſpoſition, Humour, Manner of thinking, Situation, Occaſion, *&c.*) and conducted according to his particular degree of Knowledge, and Addreſs; which is the Effect of a particular Set of Objects, and a particular Organiſm of Body. In a word, in Art there is a moral View or Motive ſuperadded to the natural Science, or Perception; which Motive is the proper Principle, or *primum Mobile* of Art: Perception is its Matter; and ſome Member of the Body its Organ or Inſtrument. And from ſuch new Principle, *&c.* ariſe a new Set of ſecundary Perceptions, analogous to the natural and primary ones. The whole, therefore, ends in this, That Science ariſes from a natural Principle, Art from a moral one; or even, as moral Matters are alſo in one Senſe natural, Science may be ſaid to be of divine Original; Art, of human.

FROM this View may appear the deficiency of that eſtabliſhed Definition of Art; *Ars eſt habitus mentis cum recta ratione operativus*; A habit of the Mind operative according to right Reaſon: which is evidently taken from a partial Conſideration of the Subject. If it be the Character or Condition of Art to proceed according to right Reaſon; then, the more and purer this Reaſon, the more perfect the Art. But, in a great part of the Arts, Reaſon appears to have very little to do; and the leſs, as thoſe Arts are in greater Purity and Perfection.------Thus it is in Poetry; a Man that would undertake an Ode, or an Epic Poem on the ſtrength of his Reaſon, would be miſerably out: All his Efforts would never carry him above the humble Sphere of Verſification, where he muſt be contented to wait for an Impulſe of another kind. So far is Reaſon from leading the way, that it can ſcarce follow at a diſtance, ſo as to keep in ſight. The Principle of Motion is evidently ſomething other than Reaſon; otherwiſe, the greateſt Philoſophers would be the beſt Poets, and *vice verſâ*. On the contrary, moſt of us know of People very weak in Reaſon, who yet are powerful in Poetry: The Poetical Talent we have ſeen follow ſome People to *Bedlam*, others it has conveyed thither; and, which is ſtill more, ſome People have firſt found it there. Poetry is found an Appendage of one kind of Lunacy, and accordingly paſſes among Phyſicians for a Symptom thereof; nor is it to be queſtion'd, but, upon a Computation, *Moorfields* might number double the Poets with any other Spot of the like Dimenſions in the Kingdom.----Let not this paſs as any Reflection upon the Poets: A Spice of Madneſs is not ſo unreputable a thing as ſome imagine; and a Man that is ſeated on that Bench, finds himſelf in the beſt Company in the World. Some of the greateſt Philoſophers, Poets, Prophets, and Legiſlators; I might have ſaid Divines, Fathers, and Aſceticks too, of all Ages, are confeſſedly his Aſſeſſors. 'Tis remarkable with what Reſpect and Awe the Antients treated People ſuſpected to be touch'd: The very Names they call'd 'em by import the utmoſt Veneration, and place 'em, as it were, at the Threſhold of *Jupiter* *. One of their moſt common Appellations, *Numine afflati*, is at the ſame time the moſt juſt and philoſophical that can be thought of. In effect, a Share of Fury and Enthuſiaſm, is held by them a *ſine quâ non*, a Circumſtance abſolutely neceſſary to become any thing extraordinary; and hence ſo many Proverbial Expreſſions to that Purpoſe: " No great Genius *ſine aliqua mixtura* " *dementiæ*; No great Man *ſine aliquo afflatu Divino*, &c."----We may add, that the Poets themſelves have an hundred times expreſly attributed all their greater, and happier Thoughts, to Enthuſiaſm, Extaſy, and Fury; and they do it implicitly almoſt in every Piece they write: it being their ſtanding Practice, to take a formal leave of Reaſon, at firſt ſetting out, and call a Muſe for their future Guide: which, to talk out of the Poetical Style, is as much as to ſay, They reſign themſelves over to the Conduct of Genius and Imagination, which they now find ſtrong and prevalent in 'em. Thus inſpired, a new Scene of Objects ariſes; Caſtles on Caſtles: They ſee things inviſible to other Eyes, that is, the Phænomena of their own Fancy, which exiſt no where elſe. For tho what one Man's Reaſon perceives, all others, equally good and perfect, will perceive; even tho it have no Exiſtence but what that Perception gives it: yet it is not ſo with Imagination, which is a perſonal Thing, ariſing from the particular Diſpoſition or Organiſm, which is different in every two Perſons; whereas Reaſon ſprings from the general one, which is the ſame in the whole Species.----From ſuch prevalency of the Imagination, ariſes what we call Poetry, ΠΟΙΕΣΙΣ, q. d. *making*, *feigning*, *inventing*; which is common

* Θεομάντεις, ἐνθουσιασταὶ, ἐνθεαστικοὶ, θεόληπτοι, ἔνθεοι κάτοχοι, Ecſtatici, Phrenetici, Pythii, Siderii, &c.

to

to all Men in a greater or leſs degree: Philoſophers have a little of it, the Poets a great deal, but the Lunaticks ſcarce any thing elſe.

IT may look ſtrange to ſay that the Principle is preciſely of the ſame kind in 'em all. We are uſed to conſider it, in the two firſt, as Conſtitution; in the latter as Diſeaſe: In the one 'tis perpetual; in the other only occaſional: In the one, arbitrary and uncontroulable; in the other, limited and reſtrained. The Barque, in the one caſe, drives of neceſſity, as wanting Cable and Anchor to hold her; and in the other, ſails out of choice, as finding the Wind favourable and the Voyage deſirable. But all this amounts to little more than a difference in Degree, between the Fictions of the Poet and the Lunatic: The moving Principle is the ſame in both, tho its Effects be various. If the proper Balance and Adjuſtment between the Powers of Reaſon and Imagination be wanting, yet they ſtill retain their Nature; as the Wind is the ſame whether the Pilot direct the Helm or not.-----

SOME People give more ear to Authority than to Reaſon: to ſuch it may not be amiſs to obſerve, that this Doctrine is countenanc'd by the Antients; who, in ſome reſpects, ſeem to have had clearer and juſter Notions than the Moderns; as being leſs embaraſs'd with the Jargon, and Refinements of the ſcholaſtick Learning. Philoſophy, with them, was one degree more ſimple, and obvious than among us. Nature was not yet cover'd and conceal'd under ſo much Elucidation, but afforded more frequent and nearer Views of her-ſelf.----Accordingly, the Divine *Plato*, in his *Phædrus*, aſſerts, "That *Enthuſiaſm* and *Mania* are one and the "ſame thing;" and has a long, and cogent Diſcourſe, to prove that it muſt be ſo: And among the ſeveral Species of Enthuſiaſm, he expreſly ranks Poetry. In effect, Ποιητικὸν and Μαντικὸν, make two of the principal Branches in his Diviſion of Enthuſiaſm, or Inſpiration. And *Plutarch* *, tho he divide Enthuſiaſm ſomewhat differently from *Plato*; yet clearly agrees with him in making Poetry a Species of it. Nay, the moſt reſerved of all the antient Criticks, *Longinus*, declares, that "the Poet is poſſeſs'd with a kind of Enthuſiaſm; that he "believes he really ſees what he ſpeaks; and repreſents it ſo to others that they catch the Enthuſiaſm, and "ſee it likewiſe †." Add, that ſpeaking of the *Orators*, he does not ſcruple to uſe Πνεῦμα ἐνθουσιαστικὸν, as ſynonymous with Μανία.----But this Point will be conſider'd more fully hereafter.

THE Principle then of the Art of Poetry is ſomething other than Reaſon; and I know of no Art that has more of the Nature and Eſſence of an Art, than Poetry: Nothing that can faſhion, build, produce things, *&c.* at that rate: Sculpture, Architecture, Agriculture, *&c.* are Arts, but in a much inferiour Degree.----And yet, turning another ſide of Things forward, Poetry will ſcarce appear to have any thing of an Art in it, but rather to be all the Work of Nature; wherein human Thought and Study have the leaſt hand. It is produced by a Principle ſuperiour to that of Reaſon, *i. e.* a more immediate Action of the Author of Nature.---But the ſame may be ſaid of moſt of the other Arts; and when we ſay that Art produces Effects, we mean Nature does ſo. The Poet's Imagination may be conſidered as a Field, wherein the Author of all Things ſhews his Handy-work, by the Production of a Set of Objects which exiſted not before: New Images ariſe here, like new Plants, according to the ſettled Laws of the Creator; ſo fruitful is the Womb of Nature! New Worlds innumerable ariſe out of a ſingle old one.

THE Factive Arts, as ſome love to call 'em, *i. e.* thoſe from which permanent Effects ariſe, may be conſider'd as ſo many ſecondary or derivative Natures, rais'd by Engraftment from the old Stock, and ſpreading or projecting out from this, or that part thereof.-----Here, at firſt ſight, Man appears ſomewhat in quality of Creator; the Potter's power over his Clay has been made a Shadow or Similitude of that of the Deity over his Works: and yet the Potter, at beſt, is only acceſſary or occaſional to his own Productions. Nature, that is, the Power or Principle of Action and Motion to which we owe this viſible Frame and all the Appearances and Alterations therein, acts by fixed Laws, which neceſſarily produce different Effects, according to the different Circumſtances of Things: Thus a glaſs Globe being ſwiftly revolved about its Axis, and a Hand applied to its Surface; feels hot, emits Light, attracts Bodies, *&c. i. e.* is a hot, luminous, electrical Body, tho without theſe Conditions it has none of thoſe Properties. So Gunpowder, otherwiſe a Maſs of dark, inert, motionleſs Matter; being only touched with a lighted Brand, inſtantly blazes up, and ſmokes, with Noiſe; perhaps burſts a Rock, or drives a Ball, in a parabolic Direction, and levels a Tower, or other Work. Now, nothing ariſes here but in conſequence of pre-eſtabliſh'd Laws, which import that the Globe and the Powder, whenever by any means they come under theſe or t'other Circumſtances, ſhall have theſe or t'other Effects. There are no two Bodies in Nature more different than the ſame is from it-ſelf, under the different Circumſtances of Contiguity or Non-contiguity with this or the other Body, *e. g.* a Spark of Fire. But both States are equally natural; and in effect there muſt be a Law of Nature for the one, as well as the other.----Now the Agency of Man amounts to this, that he has it in his power to put Bodies in ſuch Circumſtances as are neceſſary to bring 'em under this or that Law, or to make this or that reſpective Law take effect. And this we call *Art*; and by this means we can produce a number of things, or bring 'em into act, which otherwiſe would have remained in eternal Non-entity, or barely *in Potentia*. Man may be ſaid to create 'em, but no otherwiſe than the Apothecary creates the Bliſter, or the Gardner the Apple; *i. e.* thoſe Effects would neceſſarily have ariſen, upon the ſame Poſition of the Cantharides and the Cutis, or the Scion and Stock, if there never had been Apothecary or Gardner in the World.

WE may define the Works or Productions of Art, therefore, to be all thoſe Phænomena or Effects which would not have aroſe without the Agency or Intervention of Man. Now Man can only be ſaid to act or intervene, ſo far as what he does is of his own Source or Principle, without being moved or directed by any eſtabliſhed Law of Nature, *i. e.* ſo far as he is exempted from the Influences of any neceſſary Laws of Nature concurring, however remotely, to ſuch Effect. So that if, as ſome Philoſophers have maintained, Man were not really and truly a free Agent; there would be no ſuch thing as Art, in the Senſe here underſtood: but *Art* would only be a name given to that Syſtem or Series of Effects, to which Man is made by Nature, and in her hands, ſubſervient; and might with equal reaſon be attributed to ſuch Effects as any other natural Production, *e. g.* a Plant, or Mineral, is ſubſervient.

HAD it not been for the inſpired Writers, we ſhould not have known but that the whole Syſtem of our World is a Production of Art; the Reſult of a new Application of Things made by ſome created Being, in virtue or conſequence of ſome pre-eſtabliſh'd Laws of the Almighty. Our general Laws of Nature, and Motion, might only be particular Caſes of ſome more univerſal one; ſpecial Inſtances, emerging out of ſome more general one, which it-ſelf was not perhaps the firſt. Thus there might be an infinite Series or Subordination of Syſtems of Nature, each more univerſal, extenſive, and, as we call it, more metaphyſical, *i. e.* nearer the Source of Power and Action, than other.

SOMETHING like this, we actually ſee in our own little Syſtem: The Mineral World is ſubſervient to the Vegetable; and this to the Animal. Mineral Matters, under certain Conditions which bring them under the Laws of Vegetation, paſs into Plants; and from particular Applications of Parcels of Plants, Animal

* In Ἔρωτ.

† Περὶ Ὕψους.

Subſtances ariſe. Under other Circumſtances, the ſame Matters become ſubject to other Laws, (*i. e.* other Actions of the Creator, for Laws are no other) and return the way they came; Animals into Plants, and theſe into Minerals.----Nothing can be more ſimple and uniform than the whole Diſpenſation: A Body is only what it is, in virtue of a Law of Nature, *i. e.* of the Will of the Creator; and conſequently 'tis this alone can alter it. Hence, a piece of Matter, under the different Circumſtances of Motion or Reſt, Contiguity with this or with that Body, falling in with new Laws; by the Concurrence and Activity thereof, becomes a Means of exhibiting different Phænomena: on occaſion whereof we give it a different Denomination, and range it under a different Claſs of natural Things: And to the Means whereby thoſe Circumſtances are determin'd, we give the Names of *Generation*, *Corruption*, *Putrefaction*, *Fermentation*, *Vegetation*, *Animation*, *Aſſimilation*, *Accretion*, &c. which are all accountable for on the ſame Principle. 'Tis no more wonderful, a *Fungus*, with all its Furniture of Flowers, Seed, *&c.* ſhould ariſe from a Mixture of Earth and Dung; than to behold ſo wonderful a Body as *Flame*, ariſe from a caſual Colliſion of Flint and Steel; or *Air* from the mere Diſſolution of a *Metal*.

WE ſee, then, how far Man is concern'd in the Productions of Art. Our Endeavours are contriv'd by Nature to be Means acceſſory to the Law's taking place, from whence the Effects are to ariſe. We are part of the Chain whereby the Effect is connected to the Cauſe. The Circumſtances are in our Power on which ſuch, and ſuch Laws depend; and thus far we may be ſaid to be *Active*, in the Caſe of Art: ſuppoſing that there is nothing higher, or further; and that the Chain ends with us; in a word, that our Agency is not ſubordinate, but collateral to that of the Almighty. But if there be other ſuperior Laws which reſpect thoſe ſame Circumſtances, and which are not in our Power, *i. e.* if the Circumſtances neceſſary to the former Law, be themſelves ſuppoſed neceſſary Laws, and the immediate Work of Nature; our Agency will dwindle into nothing. The utmoſt that can be ſaid of us in ſuch caſe, is, That we are Active in reſpect of the one, and Paſſive in that of the other; which to moſt People may appear a kind of Contradiction.-----The Statue can't be form'd, unleſs our Deſire or Inclination concur thereto; ſo far its Exiſtence depends on us: But are our Deſires and Inclinations with reſpect thereto of our own growth; or do they ariſe naturally, in conſequence of an Apprehenſion of Good, and Advantage in the Subject? That is, does any thing appear good and advantageous to us abſolutely and of it ſelf; or only what the Creator repreſents to us as ſo? And do we deſire or purſue this ſeeming Good, from any Principle or Tendency that is in us, other than what we owe to his Laws? The Difficulty ſeems to amount to this; whether between our Faculties of apprehending and willing, and their reſpective Objects, there be any Relation which he did not create or eſtabliſh?-----If any alledge, that 'tis ſuch Relation conſtitutes the Faculty; and therefore that the Queſtion ends in this, Whether our Faculties are from God or our ſelves: *i. e.* whether they can be the Cauſes of themſelves? I ſhould ſuſpect ſome Sophiſm in the Caſe, which at preſent I have not leiſure to detect.

BUT having traced the Agency of Man thus far, we muſt be obliged here to deſiſt; and from the *Factive Arts* reſume the Conſideration of the *Active* ones; *i. e.* paſs from what Art does out of us, to what it is in us: or rather, from the Arts whoſe Source is ſuppoſed in our ſelves, and which proceed outwards; to thoſe whoſe Source ſeems without us, and tend inwards: That is, from thoſe which ariſe from our Obſervation and Reaſon, directing us how to miniſter Occaſions to the Laws which obtain in the external World; to thoſe which flow into our Imagination, and furniſh Occaſions to the Laws which obtain in the internal World.----An Inquiry which may perhaps carry us where the Reader little imagines; but which will afford an ample Diſcuſſion of the Principle above eſtabliſh'd; and a further Inſight into the Origin and Cauſe of Science and Art; and the Nature and Meaſure of our Agency and Paſſion therein.

WE have already ſpoke ſomething concerning *Poetry*; not for its own ſake, but as a proper Inſtance to illuſtrate the Nature of *Art* in. It makes the loweſt Article in our *Analyſis*; which, in reality, is the higheſt in the Scale of Art; there being a ſort of progreſſive Riſing from the Beginning of the Analyſis to the End. It begins with the firſt Matter of Knowledge, the common Objects of our Senſes; and proceeds thro' the various Modifications they undergo by the other Faculties of Imagination and Reaſon, till thoſe ſenſible Objects become ſo much our own, are ſo aſſimilated to us, and as it were humaniz'd; that they are part of our ſelves, and obey and take Directions from our Will, and miniſter to all our Views and Purpoſes: of which, this of producing Images and making Fables, is in one Senſe the higheſt; inaſmuch as the greateſt Effects here ariſe from the ſlendereſt Means and Endeavours. The Poet ſtirs but little in the Matter; but Nature co-operates ſo ſtrongly with him, that this little ſuffices, even to make new Worlds. In effect, the Poet ſeems, as it were, to ſit nearer the Spring of Action than other Men; and to have only to do with the general and higher Principles thereof, which command and direct a Number of other ſubordinate ones, that he himſelf is not aware of.-----What we ſhall ſay of Poetry, therefore, will hold proportionally of all the other Arts; and we have only kept to that, becauſe the Influence or Inſpiration is here confeſſedly the pureſt, and the neareſt to Heaven of all others *. The Principle or Spirit of Poetry, may be ſaid to be that of Art in general; and hence many † Authors make no ſcruple to make all Arts the Invention of Poets: Thus it is *Homer* is often complimented with being the Father of all Arts.----This has, indeed, an Appearance of Truth; but 'tis only an Appearance: For *Homer*, ſuppoſing him the Inventor of Poetry, or at leaſt the beſt Poet; has no other Title to the Invention of other Arts, than what he derives either from a greater Share of the Spirit whereby they are produc'd, than other People; or from his having communicated that Spirit, by the Force of his Poems, thro' other People, where it has generated, and brought forth other Arts; or from the Seeds and Principles of Arts and Inventions, which his Imagination was ſo pregnant withal, and which he diſſeminated over the World, where many of 'em, by due Cultivation, have ſprung up into the Form and Maturity we now ſee 'em.

THE Mind is allowed to be paſſive in reſpect of the Matter of the Art of *Poetry*. We need not quote the Poets to prove it: No true Poet ever queſtion'd his Inſpiration: Every body knows that their whole Syſtem is built on the Suppoſition. And hence the Stories of *Apollo* and the *Muſes*, of *Helicon* and *Parnaſſus*; the Dreams of *Pindus*, and the *Aonian* Maids: with a thouſand other Reveries ‡. But the Philoſophers, and Criticks alſo, give 'em their Suffrages, and atteſt their Inſpiration, in the ſtrongeſt Terms. *Plato* has already been cited to this Purpoſe: He contends, at large, that all Poetry is "by immediate divine Inſpiration, in the proper, and literal Senſe of the Word ‖." *Ariſtotle* confirms it: "Ἔνθεον ἡ ποίησις, Poetry comes by divine Inſpiration **." And *Plutarch* ſays as much of all the Branches of Enthuſiaſm; Poetical, Divinatory, Bacchical or Corybantical, Martial, and Erotick: to all which, he aſſerts, the Appellation, Ἐνθουσιαστικὸν, or Ἐνθεαστικὸν πάθος †*, equally agrees.----And not only ſo, but they hold the Enthuſiaſm communicable from one to another. It ariſes from the Poet, as its Centre, and is diffus'd, *in Orbem*; in a leſs degree of intenſeneſs, the further it recedes from him. *Plato* aſſerts, that the Ῥαψῳδοὶ, or thoſe who ſung and rehears'd the Poets Works on the publick Theatres; nay, and the Spectators themſelves,

* Caſaub. *of Enthuſ.* Dacier's *Homer, in Pref.* Max. Tyrius. Porphyry, Περὶ τῆς Ὁμήρου φιλοσοφίας.

† Vid. Rapin. Reflex.

‡ *Vid.* Perſ. in Prol. ad Satyr. i.

** Περὶ Ποιητικῆς.

†* In Ἔρωτ.

‖ In Dial. Ion. or περὶ τῆς Ἰλιάδ.

were

were all divinely inſpir'd, in ſome degree: which he illuſtrates in the Caſe of a Needle touch'd by a Magnet, which communicates an attractive Property to another Needle; that, to a third; and ſo on, with a continual Diminution.----Nor does the Effect end here, but the Profeſſors of other Arts, as *Sculpture*, *Criticiſm*, and even *Philoſophy* it ſelf, borrow their Flame and Inſpiration from this Fire. Thus *Phidias* declared he was inſpired to make that wonderful Statue of *Jupiter Olympus*, by the reading of *Homer*: And thus *Ariſtotle* may be ſaid to have been inſpired by the ſame Poet, to compoſe his immortal *Poeticks*: The like is ſaid of *Longinus*; that he was inſpired by the Muſes, or with the Fire of a Poet *.

BUT after Poetry, *Rhetorick* comes neareſt, and ſhares moſt of the Spirit thereof, even more than Criticiſm. Accordingly, *Plato*, in his Dialogue inſcribed *Menon*, allows that "as we ſay Pythians, Prophets, and "Poets are divinely agitated; ſo we do Orators." Elſewhere he adds, "That they are certainly inſpir'd "of God, and plainly poſſeſs'd." So *Dion. Halicarnaſſeus* † relates, that "*Demoſthenes* did plainly ἐνθουσιᾶν." And adds, that the Diſtemper caught ſo among his Audience, that "they were poſſeſs'd at ſecond hand, "and brought to do many things againſt their own Reaſon, and Judgment:" And *Æſchines*, his profeſſed Enemy and Antagoniſt allows as much. I need not ſay that *Plutarch* relates the like of *Cicero*, in the Inſtance of his Oration to *Cæſar*, for *Ligarius*.

SOMETHING like this has been obſerved, even in the Caſe of *Prayer* to God: Several Hereticks are on record for poſſeſſing their Hearers that way. *Hacket*, executed for Blaſphemy under Queen *Elizabeth*, is ſaid, by the Hiſtorian, "to have raviſh'd all that heard him at his Devotions; and converted many in ſpite of their "Teeth:" And *Sarravia* relates, the People were perſuaded that "God directed his Tongue." St. *Baſil* even affirms ‡, "that our Prayers are never right or acceptable, till the Ardor thereof carry us out of our ſelves, ſo "that God poſſeſs us in ſome extraordinary manner." And hence the learned and pious *Caſaubon* eſtabliſhes a new kind of Enthuſiaſm, which he calls *Supplicative*, or *Precatory*; as he does divers others, as Muſical Enthuſiaſm, Mechanical Enthuſiaſm, *&c.* To ſay no more, the Author laſt mentioned makes no ſcruple to make even "the ordinary Delights and Benefits Men receive from the Harangues of Orators, Sophiſts, Preachers, *&c.* "the Effect of Enthuſiaſm and Inſpiration; as being what could never ariſe from mere Reaſon." And *Plutarch*, and others, make that *Ardor* which the Soldier feels in Battle, of the ſame kind with that which inſpir'd the Prophet, Orator, and Poet **.

WE have here little leſs than a Syſtem, ſufficient to account for moſt of the Phænomena in the Animal World, on Principles of *Enthuſiaſm*. Reaſon, it may be obſerv'd, has here little to do; and it ſhould ſeem, that Man ought rather to be defined, *Animal Enthuſiaſticum*, than *Animal Rationale*. And yet this is only a few, out of infinite Inſtances, of the immediate Agency and Inſpiration of the Deity. We find the ſame Principle in every Art, every Invention, every Diſcovery, where no natural and neceſſary Connection is perceiv'd between the Diſcovery, and ſomething known before, *i. e.* where the Reaſon of ſuch Diſcovery, is not apprehended by any intuitive Knowledge. What has no immediate Dependance either on what we perceive by Senſation or Reaſon, comes by the Vehicle of Inſpiration, *i. e.* of Imagination or Invention, for there it ends. The Imagination may be called the Medium of Art, as Senſe is of Science. The Faculty of Reaſon, can make no great Diſcoveries; it can only advance from one Step to another, which muſt be ready laid to its Hand; and if theſe be any where interrupted or diſcontinued, there it is at a Stand. 'Tis, in fine, a limited Principle, ſubject to very narrow Bounds; whereas the Imagination ſeems to be indefinite, and ſtill kept in the Creator's Hand, to be occaſionally made uſe of for the Conduct of Mankind.

THE Truth is, when we ſay, ſuch a Thing is the Effect of Enthuſiaſm, or Inſpiration; ſpeaking, I mean, of profane Matters; (the Inſpiration, for inſtance, of *Scripture*, being Matter of a very different Conſideration, and quite beſide our preſent Purpoſe) this does not remove it out of the ordinary Courſe of Things: It does not put it on any other Principle, different from that whereby Cauſes and Effects ſucceed each other in the phyſical World. We can account for the Phænomena of the Imagination, as well as thoſe of Senſation. They have their reſpective Laws, like other things; which they are ſubject to; and to which we have Arts, and Proceſſes appropriated. In effect, all the Inſpiration here ſpoke of, may be produced without any great Conjuration.----If the Reader will not take Offence at this novel Philoſophy, he may be convinc'd of it. And 1°, in the Inſtance of the *Muſical* Kind.

ENTHUSIASM is defined, in an antient Author ††, to be "when a Perſon engaged in ſome Office of "Religion; and hearing the Sound of Drums, Trumpets, Cymbals, *&c.* becomes alienated, or tranſported out "of himſelf, and ſees Things unſeen to others." And what is here called *Enthuſiaſm*, is more ſignificantly call'd by another *‡, καλκότυπος μανία, Madneſs occaſioned by the Sound of brazen Inſtruments: which coincides with the *Furor Corybanticus*, ſo much ſpoke of among the Antients.

NOW, as we do not know any immediate Correſpondence or Connexion between any one Sound, and any Idea; 'tis no more ſtrange that one Idea ſhould be excited by it, than another. There is a Law of the Creator, whereby a certain Order and Succeſſion of Vibrations of the Air, is arbitrarily made the Occaſion of a certain Perception in our Minds; and as the Circumſtances of this Vibration are alter'd, a different Idea ariſes: *i. e.* to every different Combination of ſuch Circumſtances, a different Idea is attach'd; to uſual and ordinary Combinations, ordinary Ideas; and to unuſual and extraordinary, extraordinary Ideas. And hence there is, perhaps, no Idea, no Image whatever, but may be raiſed by means of Sound. Now, I do not know what *Common Senſe* is, unleſs it be, the having common Ideas. Juſt ſo far as new Perceptions are rais'd in us, in Excluſion of the old ones; we may be ſaid to be removed out of our ſelves, *i. e.* we are ſo far got into another Syſtem; the Phænomena which now preſent themſelves to us, being ſo far different, from what they were before, and even from what they would ſtill be, to another Perſon in the ſame Place, but under other Circumſtances. On this Principle, we ſhall ſcarce find any thing but might be produced by Muſick; eſpecially, when to the Force of well-adjuſted Inſtruments, which the Antients ſeem to have ſtudy'd more, and underſtood better, than we; was added to the Solemnity of a Temple, the ſuppoſed Reſidence of a God, whoſe Statue there ſtood before 'em; with the awful Rites of Invocation; accompanied with furious Geſticulations, Dancings, and all the Devices that could be thought of, to unhinge the natural Senſe, and Reaſon, which we find is but frail and precarious at beſt, and apt to play us falſe when moſt duly looked to. Few People are able to ſtand up againſt mere Muſick; which, unaſſiſted with any thing elſe, has been made to produce, and remove ſettled Madneſs; cure Fevers ‡‡; drive Perſons to kill themſelves, or their Friends. 'Tis not long ſince the *Italian* died, who had reduced the turning of People mad by his Muſick, into a regular Art; which he could depend on at any time ‖.-----The Reader that has a mind to ſee further on this Head, may conſult the Articles, SOUND, MUSICK, TARANTULA, *&c.* in the Body of the Book.

* Pope's *Eſſay on Criticiſm.*
** Ubi ſupra.
†† Ὅροι, *or Collect. of Med. Defin. aſcribed to* Galen.
‡‡ Hiſt. de l' Acad. R. des Scien. An. 1708, & 1718.
† Περὶ τῆς Δημοσ.
‡ Apud. Caſaub. ubi ſupra, p. 274.
*† Epigr. in Anthol. Græc.
‖ Niewentiit, Rel. Philoſoph. Tom. I. Contemp. 14.

2°, THE Inſpiration of *Poetry* is of a ſtiller, and purer Kind; and needs leſs Artifice and Apparatus to produce it in an Imagination naturally diſpoſed for it. The attentive Conſideration of ſome intereſting Object, uſually ſuffices to ſet it a going. And the Gentlemen of that Faculty have all Nature to chuſe out of: The fineſt Seaſons, the moſt agreeable Scenes, and the moſt moving Objects. Hence it is, that they are continually harping on "Groves, and Shades, and Gods, and Nymphs, and Darts, and Flames."-----How do they riot in "Meadows trim with Daiſies pied; ſhallow Brooks, and Rivers wide: Towers and Battlements they "ſee, boſomed high in tufted Trees." Sometimes, they raiſe up "Knights, and Squires, and Maids "forlorn; or, Lover pendant on a Willow Tree, or Lady wandring by a River's Side." Then, "Tilts "and Tournaments, and Feats of Arms: Pomp, and Feaſt, and Revelry, with Maſque and antique Pageantry: "Stories of *Thebes* or *Pelops* Line; or the Tale of *Troy* divine: Of *Arthur* and *Cambuſcan* bold; of *Cambal* "and of *Algarſife*, and who took *Canace* to Wife."-----If theſe fail, they have all that is gloomy, and ſolemn, and terrible in Nature at their Beck; we may now expect to ſee "the red Bolt, or forked Lightning glare." Earthquakes and Tempeſts ſeldom roar in vain: if by chance they do, the "ill-boding Raven's Croke" is ready at hand; or elſe "the far-off Curfew ſounds, o'er ſome wide watery Shore, ſwinging ſlow with ſolemn roar." And now for "baleful Ebon Shades, and ragged low brow'd Rocks:" Next enter "horrid Shapes, and "Shrieks, and Sights unholy: Gorgons, and Hydra's, and Chimera's dire." Images of things moſt moving to Senſe, readily alarm and raiſe a Commotion in the Imagination. And the new Ideas thus procured, coming to be mixed, and combined in the Imagination, with others there before; new Effects ariſe from 'em, in conſequence of the Laws of the Creator: much as intelligibly as Fire and Flame, upon mixing two chymical Liquors.

SCALIGER, in his *Poetics*, makes two Kinds of Θεοπνεύστων, or Poets divinely inſpired. The firſt, thoſe on whom the Inſpiration falls, as it were, from Heaven; without any thought or ſeeking, or at leaſt by means of Prayer and Invocation. The ſecond, thoſe in whom it is procured by the Fumes of Wine.

ALL that is required to the firſt, is only a delicate, pregnant Imagination; ſuſceptible of any feeble Impreſſions that may happen to be made in the Courſe of Things; and ready to take fire at the leaſt Spark. The Surfaces of the finer Fluids, we find, are kept in continual motion by the bare Tremor of the Atmoſphere, tho to us inſenſible: And thus the Air is never ſo ſtill, but that the Aſpin Leaf feels its Impulſe, and bends and trembles to it; when others require a ruder Guſt to move 'em: Yet theſe, too, give way in a general Storm; whole Foreſts then totter indifferently: even the Trunks of ſturdieſt Oaks, now yield like the reſt. -----And, accordingly, we read, in antient Hiſtory, of whole Nations being at once ſeiz'd with the poetical Fury. Few of the Cities of *Greece*, not even *Athens* it ſelf, with all its Philoſophy, but has one time or other labour'd under theſe epidemical Enthuſiaſms.

WE have already obſerv'd, that Invention is the Principle, or Source of Poetry. An excellent modern Poet adds *, that 'tis this which furniſhes Art with all its materials; and that without it, Judgment it ſelf can, at beſt, but ſteal wiſely.-----Now, this Faculty of Invention it ſelf, is uſually no other than a Delicacy, or Readineſs of taking Hints: but even at moſt, what we are ſaid to *invent*, is only what reſults, or ariſes from ſomething already in us. There is no new Matter got by inventing: that can only come by the way of Senſe and Obſervation: All that paſſes in the other Caſe, is, that from the Memory of certain Things, *i. e.* the Compreſence of certain Ideas to the Mind; certain new Ideas ariſe, according to the Order of Things. The ſprightly Imagination is led, on various Occaſions, to compound its Ideas, and many of 'em ſo oddly and boldly, that we take its Productions for new Things; and thus think we invent 'em, becauſe they did not exiſt in us before in that form; tho the Matter or Elements thereof did. There is no more real Invention in the Poet, than in the Tapeſtry or Moſaic Worker, who ranges and combines the various colour'd Materials furniſh'd to his Hand, ſo as to make an Aſſemblage or Picture, which before had no Exiſtence.

THE Reader who has any doubt about this, need only take the firſt piece of Poetry that comes in his way, to be convinced, that all that is new and moving in it, is no other than new Compoſition or Combination of ſenſible Ideas. In the *Il Allegro* and *Il Penſeroſo*, for inſtance, two of the moſt poetical Pieces in our, or perhaps any other Language; how eaſy is it to reſolve all that is ſo magical and raviſhing, to the new, uncouth, and frequently wild and romantick Aſſemblages of Imagery. Indeed, who can contain himſelf at "——Sport which wrinkled Care derides, and Laughter holding both his Sides.——*Cynthia* peeping thro' a "Cloud, while rocking Winds are piping loud.——To hear the Lark begin her Flight, and ſinging ſtartle the "dull Night: Or the Cock with lively Din, ſcatter the Rear of Darkneſs thin: Or liſten how the Hound and "Horn, loudly rouſe the ſlumbering Morn.——Or, ſee glowing Embers thro' the Room, teach Light to "counterfeit a Gloom.——Or ſtoried Windows richly dight, caſting a dim religious Light.——Or hear *Orpheus* "ſing ſuch Notes as warbled to the String, drew Iron Tears down *Pluto*'s Cheek.——Or Verſe with many a "winding Bout, of linked Sweetneſs long drawn out, with wanton Heed and giddy Cunning, the melting Voice "thro' Mazes running; untwiſting all the Chains that tie the hidden Soul of Harmony."

PERSONIFICATION, which is of that Extent and Importance that it is uſually held the Life and Eſſence of Poetry; is a vaſt Source of new Imagery. By this, not only different Objects, but different Syſtems and Worlds, are combined and blended together; and what belongs to one Kind of Beings, Man, is attributed to every other: each Object, either of Senſe or Imagination, being occaſionally inveſted with all the Characters and Properties belonging to the human Kind. Thus, an Arrow grows *impatient*, and *thirſts* to *drink* the Blood of a Foe; or *loiters* and ſtops half way, *loth* to *carry* Death, *&c.* So an Action of the Body, *Laughter*, is above repreſented as it ſelf laughing, ready to burſt its Sides. And in the ſame Piece we have one of the Planets, the Moon, repreſented as *trick'd up* and *frounced*; and again, as *kerchief'd*, and in a decent Undreſs, and thus going a *Hunting*. To tell us, that a fine Spring Morning, attended with a gentle Gale of Wind, is very pleaſant; preſently,—"Zephyr "with Aurora playing, as he met her once a Maying, on a Bed of Violets blue, and freſh blown Roſes dipt "in Dew, fill'd her with a Daughter fair, yclep'd in Heaven *Euphroſyne*, and Mirth on Earth." How conſiſtent with the Nature of Things, that a Breath of Air ſhould lay an early Hour of the Day down; and that from a green Gown thus given, a Paſſion of the Mind ſhould in time be brought forth? In effect, the Inſpiration of the Poet amounts to little more than relating things that are naturally incongruous. He preſents new Objects, new Worlds, but 'tis only by differently combining the Parts of the old one. He does not make any thing, he only patches: He does not invent, he only tranſpoſes: Nor has he the leaſt Power to move, other than what he derives from the Novelty and Strangeneſs of his Combinations; to which nothing exiſts in the ordinary Syſtem, any thing conformable.——To ſay no more, if Invention furniſh Art; Memory furniſhes the Invention; and Senſation the Memory, where all Knowledge originally commences. And the whole Proceſs is nothing but the Action, or Operation of the Deity in a Courſe of Laws.

AS to the ſecond Kind of Poets, in whom the Inſpiration is promoted or excited by means of Wine; *Caſaubon* is perfectly frighted at it; judging it the higheſt Strain of Impiety, to ſuppoſe a Man may be divinely

* Pope *in Pref. to* Homer.

inſpir'd by the Fumes of Liquor.—And yet I don't know whether his Fright be not founded on a Miſapprehenſion. If *Scaliger* or any other Perſon alledge, that the Juice of the Grape may be an Occaſion of ſuch an Effect, *i. e.* a Means or Condition neceſſary to make the Laws that concur to Invention take place; I do not ſee what Religion has to do here, more than in any other Enthuſiaſm. The uſe of ſuch a Means, is no ways derogatory to the Power or Goodneſs of God; who ſtill remains the Author of this, as of any other Inſpiration; whether it be by Viſions, by Voices, Dreams, or the like. What matters it whether the Sound of a Cymbal, or the Sight of an Image, or the Effluvia of a Liquor be the Occaſion? So long as he is the Cauſe, what matters it what Inſtrument he makes uſe of? And of all the Bleſſings this Juice is made the Occaſion of to us; why ſhould it be precluded from that, which none of God's Creatures, not even the vileſt, but occaſionally miniſters? The Antients did not think ſo meanly of it: they ſet up a God on purpoſe to preſide over it; and it even had the largeſt Share in their moſt ſolemn Ceremonies of Religion.

THE Inſpiration of *Orators*, bears a near Relation to that of the Poets; tho being ſomewhat groſſer, it becomes more technical, and demands more Induſtry, and Art.——*Quintilian* tells us how a Rhetor is to get inſpir'd *; "not by ſupinely lolling and gazing at the next moveable, and careleſly turning things over in his Mind; but by "imagining the Judge and the Audience preſent, and ſtrongly repreſenting to himſelf the Time, the Occaſion," &c. He adds, that no body ought to pretend to be an Orator, unleſs he have this Art of Inſpiration at command; ſo that he can raiſe it at pleaſure.

WHAT has been ſaid above, contains ſome of the general Principles of Enthuſiaſm, and their Connection with other phyſical Effects: and 'twill be eaſy to trace and purſue the ſame, where they appear in other Caſes, and with other Circumſtances. Thus the Inſpiration excited by the Orator in his Audience, is reſolved, by *Caſaubon*, into the Muſick of the Speaker, *i. e.* the Tone and Cadence of his Voice; and the Συνθεσις, or order and placing of his Words: In which laſt, how ſimple and trivial ſoever it may ſeem, all the great Maſters on the Subject allow ſomewhat myſterious and unaccountably forcible; and accordingly make it the principal Part of Rhetorick. And yet there is nothing in the Whole, but what reſults from the Powers, Properties, &c. of the ſeveral Letters, conſider'd as ſo many Sounds, artfully combin'd. In effect, there is ſome Ρυθμὸς, or Dimenſion, and ſome Μετρον, or Numbers in all Diction; much more in that of Oratory: And Muſick it ſelf has no Charm in it, but what it derives from thoſe very Sources.

NOR muſt it be omitted, that the uſe of *Metaphors* contributes its ſhare to the Effect. The Secret whereof conſiſts in this, that they are, as it were, accommodated to the Senſes; and preſent ſuch Images to the Imagination, as move us moſt when perceived in the Way of Senſation †.

AS to that Enthuſiaſm felt in *Prayer*, its Cauſe is not far to ſeek. The Powers of Rhetorick, and Muſick; and of a peculiar Fervour of Imagination, rais'd by an Apprehenſion of the Preſence of God, &c. will go a great way. We may add, that the antient Heathens made uſe of Dithyrambics in all their moſt ſolemn Prayers; which *Proclus* obſerves, are peculiarly fit to ſtir up enthuſiaſtical Diſpoſitions. A Man that rides *Pindar*'s Horſe, cannot well fail of going at a great rate.

BUT the moſt extraordinary and unaccountable kind of Inſpiration is ſtill behind, *viz.* that of *Prophecy*, *Divination*, *diſcovering of Cures by Dreams*, &c. which yet may all be produced by Art; and accordingly, have all been taught and ſtudied like other Arts: not to ſay, alſo, practiſed like them, for a Livelihood. Schools and Colleges of Prophets, Divines, Augurs, &c. were numerous both among Jews and Gentiles; and there was little in their Diſcipline, but what may be reſolved into what has been already ſaid. Here, all the Means above mentioned, all the Springs of Enthuſiaſm, were uſed; and frequently combin'd together, to make the more compound and extraordinary Effect. The Sight of vaſt Objects, as Rocks and Mountains, wild Proſpects, ſolitary Groves, gloomy Caves, furious Rivers, Seas, &c. which we find to work ſo ſtrongly on the Mind, were indulged; and ‡ frequent Changes, and ſudden Tranſitions made from one to another **. Such unuſual Objects neceſſarily ſuggeſted unuſual Ideas; which were heighten'd by proper Applications to all the other Senſes. And when the Man was at length got out of the ordinary Syſtem of Thinking, into another more unuſual and extraordinary, tho equally phyſical, or if you will, mechanical one; what he utter'd was judged all oracular: It was not his Senſe, or Reaſon that ſpoke; and therefore it muſt be that of God himſelf. And among a large Train of Objects which preſented themſelves to him, ſome of 'em could not want an Analogy to Things that were really to come; at leaſt, in the Opinion of a Perſon already poſſeſſed with the Notion thereof. It may be added, that the Propheſies themſelves, had their Share in producing Futurity; the Events whereof partook of the Predictions, ſome more, others leſs, according to the degree of Poſſeſſion of the Parties concerned in them. In effect, the Revelations ſtill retain'd ſomething of the Means made uſe of to raiſe 'em. Thus, if the one were either agreeable or diſpleaſing, the other would be of the ſame Kind: And hence a Revelation was artificially produceable of the Complexion required: which was the very Apex of the Art. So that the Divination, when moſt perfect, really ſuppoſed a natural Knowledge of the Thing demanded, and was built on it.

AS to *Dreams*, &c. there was a Formula for 'em; the Circumſtances whereof might be appropriated to raiſe in the Imagination an Idea of the Thing required.——After a number of Ceremonies, the Party was to ſleep in the Temple: *Pellibus incubuit ſtratis, ſomnumque petivit.* And the Prieſts had not only the placing of his Body, and the ſtrewing of his Bed; but alſo the Management of Odours, Sounds, &c. in the Night-time. So that if any natural Means were known for the Cure, here was room enough to ſuggeſt it to the Patient's Imagination, which was made acceſſible to 'em, and as it were put into their Hands. But, if no proper Remedy were known; as, 'tis probable, they hardly enter'd ſo far into the Part: yet, what was thus ſuggeſted, perhaps at random, how ſtrongly muſt it operate, when inforced by the Opinion of its coming by Miracle and Inſpiration? We ſee what the bare Preſence and Aſſurance of a Phyſician will frequently do; even cure Diſorders far out of the Reach of his Skill: and what an Improvement would it not be to the Faculty, to have the further Aſſiſtance of a little Shew of Religion and Ceremony?-----A deal more might be ſaid on this Head, from the Practice of EXORCISMS, AMULETS, PHYLACTERIES, &c. to which the Reader may turn in the Book; as alſo to the Articles WITCHCRAFT, EPHIALTES, &c.

IT appears then, that 'tis in vain that we pretend to pervert the Order of Nature. Senſation does and muſt inevitably precede Imagination; which cannot by any human Means come at the ſmalleſt Grain of any thing, but what paſſes thro' that Canal. There is no harm in ſaying, that ſuch Things are of Divine Inſpiration; the Miſchief lies in ſuppoſing, that theſe are more ſo than others; that what appears only to the Imagination, is more of God than what appears to Senſation: which is, in effect, to ſay, that we have ſome Knowledge which we do not receive from God.

* Inſtit. Lib. v.

† Cicero 3. de Orat.

‡ Multos Nemora Sylvæque, multos Amnes aut Maria commovent, quorum furibunda mens, &c. *Cic. de Divin.*

** Livy, *relating the horrible Rites of the* Saturnalia, *ſays*, "*Men* "*would hereupon be taken as if mad, fall into ſtrange fanatical Agi-* "*tations of Body, and break out into Propheſies:*" Velut mente capti, cum agitatione fanatica corporis vaticinari. Dec. iv. l. 9.

NO body can imagine, that what we have ſaid tends to exclude God, and Providence out of the World; but rather to eſtabliſh, and confirm 'em in it. So far is it from ſhewing, that the Deity has no hand in the Production of ſuch and ſuch Effects; that it ſhews, nothing elſe has any. The Whole is His; and the Agency of Man is only circumſtantial. For, what neceſſary Connexion between any of the Means here uſed, and the Effect? And in whoſe Hand but God's, could ſuch incompetent Inſtruments produce ſuch Ends? In reality, we not only confeſs his Preſence and Agency in the great and extraordinary Phænomena; but ſee and admire it every where, in the moſt ordinary ones. Nor does this imply any thing to the Diſadvantage of Reveal'd Religion; which is a Point quite foreign to the preſent Purpoſe. The Inſpiration and Prophecy we have ſpoke of is all natural, and ordinary; and does not any way preclude *the Deity* from more extraordinary, and miraculous Manifeſtations of his Will. On the contrary, if weak Man can do ſo much, acting ſubordinately to certain Laws of Nature, and by means of others; what may we not conceive of the Author of thoſe Laws, whenever in the Wiſdom of his Councils, he ſhall think fit to interpoſe: as, in the two great Diſpenſations whereof the ſacred Writings ſpeak?

BUT, if we have not made Philoſophy encroach too far on Religion; it may, perhaps, be objected, that we have made Religion of too much Concern in Philoſophy; in that we are continually recurring to the dernier Reſort, the Deity; which is held unphiloſophical.——But let it be conſider'd what it is to *philoſophize*; and whether our *Theories* amount to any thing more, than Enumerations of Laws, *i. e.* Actions, of the Creator? 'Tis certain, all the Structure and Œconomy diſcover'd by Diſſection, Microſcopes, Injection, *&c.* furniſh no more ſcientifical Account of the Origin of an Animal, than of a Spark of Fire. The uſual Syſtem of Generation amounts to no more than Augmentation; as it ſuppoſes the Animal already form'd, and only undertakes to enlarge, and ſhow how it arrives at its Bulk. An Animalcule is to be given us, either *in ſemine*, or *in ovo*, or we labour in vain; Aſſimilation being all the Generation we have any Idea of. We find our ſelves loſt and bewilder'd, when we come to think "How the dim Speck of Entity began," and here begin to confeſs, and mourn the Imperfection of our Knowledge. As if there were any Difficulty here, which did not equally obtain in every Step of the Proceſs. All the difference is, in the one Caſe we are ſenſible we only know the *What*, and in the other we alſo think we know the *How:* Which is a Deluſion: And were it not for the Paradox, one might almoſt affirm, that we know thoſe Things beſt, which we think we know the leaſt. For that here we more immediately ſee the real Cauſe, without the Cloud and Embaraſs of Occaſions, which at other times confound us. Occaſions, are Cauſes, with reſpect to us, who only act at ſecond hand; and the great Source of our Error, is, that we can't eaſily ſee thro' 'em to the real Cauſe. Whence, the greater number of Means and Occaſions we perceive; the further is the Cauſe apt to be involved, and the more Attention is required to extricate it. And by this way alone can Philoſophy lead to Atheiſm.——Our Knowledge, in effect, is all relative; it reſpects our ſelves, and our uſes, either more or leſs immediately; and is chiefly applied in the Arts, and Affairs of Life, where Occaſions are Cauſes: And hence we take a Tincture, which we carry with us thro'out; and apply, unawares, the ſame Notion when we come to philoſophize, where we are leſs intereſted, and conſequently our Knowledge purer and more abſolute. And thus we are betrayed fatally to confound *Art* with *Nature*; *Firſt Cauſe* with *Second*; *God* with *our ſelves:* all which muſt be done, ere the Philoſopher can commence Atheiſt.

THIS not diſtinguiſhing between Cauſes and Occaſions, has produced an infinite deal of falſe Refinement; to the great detriment of our moſt obvious and palpable Knowledge. We continually over-ſhoot the Mark; and looking too far, miſs ſeeing what is cloſe to us. We are willing to leave God out of the Affair as far as we can, and only have recourſe to him when we are at a pinch. He is rarely wanted, unleſs now and then, for a Miracle, or ſo. The Deity is not to interpoſe, *niſi dignus vindice Nodus*, till we have occaſion for him; *i. e.* till the Caſe becomes ſo obvious and glaring, that the Charm is broke, and we are forced to ſee him in ſpite of all our Prejudice. The Occaſions are ſo viſibly inadequate, that our Conſcience cries out, and neceſſitates us to look to and confeſs a Cauſe.——But, tho we be well enough contented to find him at the End of the Chain; alas he muſt be alſo preſent at every Link, or the Whole will fall to pieces. He is not more concern'd in forming the original *Stamen* of a Fœtus, than in nouriſhing, aſſimilating, or bringing it at length to Light. We can as eaſily conceive the firſt Formation of a piece of unorganiz'd Matter into an Animal, as any other Production of Nature; or even, as we call it, of Art. Generation is effected after the ſame manner as other Arts; and the ſame Principles that will account for the making of a *Statue*, will account for that of a Child. If the Figure of a Man ariſe out of a Maſs of Clay; is it by any other Operation than that of Nature, which according to the Poſition of the Hand, determines the Parts of the Clay to move in this Direction, or that; according to certain Laws of Motion, and Percuſſion? And if the ſame be afterwards harden'd, upon ſtanding to the Fire; is it not by the ſame Nature acting by certain other Laws, the Set or Collection whereof makes the phyſical Proceſs called *Exhalation?* The Hand, you'll ſay, was the Occaſion. But what is an Occaſion? I doubt we have no juſt Idea to that Word; and that it implies ſomewhat of a Contradiction; at leaſt, if any thing of Cauſalty be denoted by it. Conſidering that we ſay, Light is the Occaſion of Shadow, Joy of Sorrow, and every thing of its Contrary. If a piece of Phoſphorus, upon becoming contiguous to Air, immediately begin to ſmoke, and produce Fire and Light, with all the wonderful Phænomena thereof, as Colour, Refrangibility, Reflexibility, alternate Fits of eaſy Refraction and eaſy Tranſmiſſion, have different Powers inherent in the different Sides of its Corpuſcles, be reſoluble by a Priſm into all the Appearances of a Rainbow, exhibit the Species of Objects, act on and conſume Bodies, give Senſations of Heat, Pain, *&c.* and all theſe Properties permanent, and immutable for ever; What a Syſtem of Laws, what an infinity of Springs muſt be play'd for all this? No Circumſtance whereof is in our hand, beſide that of Contiguity or Non-contiguity with the Air: which, for our own Glory, we dignify by the Name *Occaſion*, and ſuppoſe ſomething in it analogous to *Cauſe*; and thus put our ſelves in ſome meaſure on a footing with the Almighty.——We know, without Light the viſible Univerſe would ceaſe to be; and without Heat, all Motion and Action muſt be at an End: So that it may even be ſaid to be owing to Fire, that there is a World. And yet how eaſy is it to produce what thus contains in it all Things! In effect, Fire is an *Occaſion*; and contributes juſt as much to the Exiſtence of the World, as we do to that of Fire. When we are doing, we might as well go on, and make our ſelves the Cauſes or Occaſions of the Univerſe; which we are, in the very ſame Senſe, as of any one Phænomenon in it. And thus, the ſame Principle which appear'd ſo deſtructive to Religion, is found equally ſo to Philoſophy. So conſiſtent is the Nature of Things! one Error is ſubverſive of almoſt all Truth: One Wheel amiſs in the Machine of Knowledge, makes the whole a Lye.

OF this, many of the Antients ſeem to have had a juſter Notion than we; as, in effect, they may be ſaid to have had more Religion than we.——Their Mythology, which is ſuppoſed to be their Phyſics, ſpeaks of nothing elſe but God, under various Forms and Shapes, *i. e.* in various Views and Relations. The Poets, from whom it was taken, firſt perſonified God, or the firſt Cauſe; and then his Attributes. His *Power* they called *Jupiter*, which they conceiv'd as his reigning Attribute; his *Juſtice* was *Juno*, the Conſort of Power; his *Wiſdom*, *Minerva*, the Offspring of *Jove*'s Brain*, *&c.* And thus it is they are to be underſtood, when they

* *Vid.* Boſſu, Traité du Poëme Epique, L. i. c. 2.

ſay

ſay *Jupiter* did ſo, and ſo; *Juno* perſecuted the *Trojans*; *Minerva* inſtructed *Telemachus*, &c. which ſeems to be all the Polytheiſm the Inventors were guilty of; tho after-Ages, not perceiving that this was the Work of Poetry and Fiction, abſurdly took it in another Senſe.

IN effect, the whole Phyſics of the Antients, was no other than a Theology; as all juſt Phyſics ought to be. I may even add, that the making a Difference between the two Sciences, and erecting 'em into Provinces independent of, and oppoſite to each other, has proved moſt pernicious to both; and been the great Source both of Irreligion and Ignorance; which will never be dry'd up, till the two be reſtored to each other, and laid together again. To run any length in either of 'em, without having recourſe to the other; as the generality of Authors affect to do, is downright inconſiſtency. Some of our Syſtems of Theology, one would take for pure Inſpiration thro'out; as if the Authors ſuppoſed they could know any thing of God, otherwiſe than by means of Senſe, and Phænomena: or as if Enthuſiaſm it ſelf did not pre-ſuppoſe Senſe, or could ariſe without it.——And, on the other hand, ſome Treatiſes of Philoſophy ſeem to have refined God out of the World, by whom all things in it ſubſiſt; and which, in *Seneca*'s Philoſophy, was no other than God himſelf *. They have made us an Univerſe ſo fine, that it may ſtand of it ſelf, withoutany God, *i. e.* without any Cauſe, at all: Occaſion is the higheſt Cauſation they require. This is to abſtract with a witneſs; to diſtinguiſh the Knowledge of the Cauſe from that of the Effect, and *vice verſâ*: whereas there is no knowing any thing of either, other than by their Relations to each other.

I MAY add, that the further either of theſe Sciences is carried, on this footing, the more idle and extravagant it will become; and that the one tends to downright Madneſs, and the other to downright Atheiſm. On the one hand, to make a Syſtem without a God, is nothing leſs than to be a God one's ſelf: The Author's Imagination muſt ſupply the Place of a Deity, by animating the Maſs, and giving Connexion to the ſeveral Parts and Members, *i. e.* by eſtabliſhing the Relation of Cauſe and Effect, which is the very thing that denominates God. Yet even ſuch imaginary Syſtem it ſelf, cannot ariſe without God, acting by his Laws upon the Imagination, in the Courſe of Things; ſo as to produce ſuch Effect: And thus what tends moſt directly to exclude God, does at the ſame time ſuppoſe him.-----And, on the other hand, to make a God without a Syſtem; that is, to give a Theology or Doctrine of God, without a Phyſiology, or that of the World, is directly to make a God, not to find one. 'Tis to make an Effect antecedent to its Cauſe: Tis to do, I am aſham'd to ſay what!

I AM afraid I may ſeem to have been too long abſent from my Subject; but it has been all along in my Eye, and a little Recapitulation will convince the Reader, that we have not wander'd far out of the way.——We have ſhewn whence all our Knowledge originally riſes: that Senſation is its only Source; that what comes this way, comes by the Agency of the Divine Being: that it is further modified in the Memory or Imagination, where new Aſſemblages are frequently made, which is called *Invention*; that it is continually altering, by the Admiſſion of new Ideas from without; but ſtill remains ſubject to the Laws impoſed by the Creator, ſo that nothing happens therein, but in conſequence of ſuch Laws.——Thus far the Mind appears merely paſſive: And thus it ſtands with reſpect to the *Matter* of all Knowledge and Art.——It remains, now, to conſider its *Form*, or that whereby ſuch Knowledge becomes *Art*, *i. e.* becomes ſubſervient to human Purpoſes, and under the Direction of human Reaſon.

HERE, therefore, a new State of the Mind, *Agency*, and a new Faculty thereof, *Reaſon*, come in play: the Foundation and Office whereof, will be aſcertain'd, by inquiring, What there is in the Artiſt's, *e. g. Homer*'s, Mind, that concur'd with his Inſpiration or Invention, to the Production of his Poem? This will be found to reſolve into, *firſt*, an Inclination, or Deſire to produce ſome Piece, in the way of a Fable, that ſhall ſtrongly repreſent the Miſchiefs of Diſcord among Confederates; and, *ſecondly*, a Knowledge of the Means neceſſary to that End, or an Acquaintance with certain Rules and Meaſures which tend to produce ſuch Effect.

THE firſt is a *Moral View* or *Motive*, which has already been laid down as the Spring or Principle of all human Action, and which is founded on the Apprehenſion of Good or Advantage to ariſe from ſuch Poem. The ſecond, *viz.* the Knowledge of the *Means*, ſtands on the common Footing of the Knowledge hitherto diſcours'd of.

THE *Means* and Meaſures of an Art, make a kind of preliminary Doctrine, neceſſary or conducive thereto, called the *Theory of the Art*; which, alſo, in one Senſe, may be conſider'd as another *Art*, diſtinct from the former: At leaſt, to come at it is the Buſineſs of another Art.——If, for inſtance, a certain Poſition, or Set of Motions of the Body, be conſtituted by Nature the Occaſion of a poetick Inſpiration; and ſuch and ſuch Images and Ideas ariſing herefrom, be conſtituted the Occaſions of ſuch and ſuch Paſſions in the Mind of a Reader, and ſuch and ſuch Views conſequent thereon, *viz.* an Averſion to Enmity, and Contention: To form an Art productive of theſe Effects, we muſt firſt ſee and obſerve ſuch or the like Effects, to ariſe from ſuch or the like Cauſes; and argue or infer, that 'tis probable theſe Motions, or theſe Images, are the Occaſions thereof: and conſider and collect the Order, Manner, and Circumſtances thereof, to form the *Art*, or *Method*.——So that we have here, as before, 1°, *Matter*, *viz.* Phænomena, firſt furniſhed by Senſation, and preſerv'd in the Memory; 2°, *Form*, ariſing from the Moral View, which led us to frame an Art, and in order thereto, to conſider and dwell on the Phænomena, compare 'em together, and infer ſomething from 'em.—It appears, therefore, that we have two Arts of Poetry, very different from each other; coming from different Cauſes, tending to different Purpoſes, and rarely found, in any degree, in the ſame Perſon. The firſt Art *Homer* has in perfection, the ſecond, *Ariſtotle*.

BUT for all their difference, the two are really of the ſame general Nature, and Kind; and only differ in point of Degree, and Subordination; as they are nearer to, or further from, the Principle of all Knowledge and Art, Senſation.——*Homer*, we have ſhewn, was inſpired: He derived his Art only from Nature acting on him in the ordinary Courſe of Things, and firſt preſenting Objects to his Senſe, then to his Imagination: And others are inſpired from him, *i. e.* derive the Inſpiration from Nature thro' his means: among whom is *Ariſtotle*. Nature, as ſhe appears to the Senſes, is *Homer*'s Subject: as ſhe ſhews her ſelf in *Homer*, is *Ariſtotle*'s; by which time the Inſpiration is grown a degree cooler, and leſs forcible, and the Ideas thus excited at ſecond hand moving the Mind leſs, it can attend more ſteadily to 'em, and perceive their Relations better. In the firſt it falls like Lightning, immediately from Heaven; the ſecond may be compared to the Reflexion of the ſame in a Mirror. The reading of *Homer*, *i. e.* the exciting and calling up his Ideas and Images, does, as it were, impregnate *Ariſtotle*'s Imagination; and tranſplant the Poet's whole Nurſery into the Philoſopher's Garden, to be further cultivated. Accordingly, *Ariſtotle* applying his Apprehenſion and Reaſon to 'em, and examining 'em cloſely on all Sides, perceives divers Relations and Analogies between 'em, which *Homer* was not aware of; and which the Warmth of his Imagination, and the quick Succeſſion of new Ideas, would not give him room to attend to. Theſe Analogies he calls *Rules*, or *Laws*; the Aſſemblage or Syſtem whereof, make what we call *Ariſtotle*'s *Art of Poetry*.

* Totum hoc quo continemur & unum eſt & Deus; & ſocii ejus ſumus & membra. Epiſt. 92.

THE like Proceſs might be obſerv'd in the ſeveral other Arts. Thoſe we have hitherto chiefly kept to, have been of the ſymbolical Kind: we ſhall here give an Inſtance in what we call the real Kind, viz. *Architecture*. ——An *Athenian* Sculptor, then, obſerving an Acanthus ſhooting up under a Baſket; is pleas'd with the Figure it preſents, and taking the Hint, invents the Capital of a Column on the Model thereof: And by a number of like Steps, an entire Order gradually aroſe; and, in time, a whole Art.-----Things thus advanced; and another Perſon ſeeing a Building framed after ſuch manner; he attentively examines the ſeveral Members, their Forms, Proportions, *&c.* and puts 'em down in writing: And thus does another poſterior Art ariſe. And between the two, there ſtill remains the Subordination already obſerved between the Means, or Occaſions of producing 'em; *i. e.* the Rules thus formed being couched in Words, or Language, ſupply the Office of the external Objects they were originally deriv'd from, and prove Occaſions of raiſing Ideas or Images in the Imagination of future Artiſts, to be imitated in the proper Materials.

THE Arts, then, of Poetry and Architecture, come firſt in at *Homer*'s, and *Callimachus*'s Senſe, in the ſimple Quality of natural Phænomena, or Objects; which meeting with other Ideas in the Memory, or Imagination, and coming to be compared and combined therewith, by the Agency of the Moral View or Principle which ſuggeſted the making of a Poem, *&c.* as advantageous and deſirable; new Productions ariſe, *e. g.* a Poem, or a Building: which coming at length under the Cognizance and Conſideration of Reaſon, certain Relations or Analogies are diſcovered therein, which tend to propagate, and produce the like at any time.-----Reaſon returns Rules for Matter; which Rules, prove like the Philoſopher's Stone, which tends to turn all Materials it is applied to, into Gold; and the Materials thus tranſmuted, like the pretended multiplicative Virtue of the ſame Gold, from every thing they are applied to, produce Rules again.

REASON, in effect, which is the laſt Faculty the Matter of Art arrives at, is the firſt from which the Form or Rules thereof, which are to propagate it, ariſe. In which view, Reaſon may be laid down as the Principle of this ſecondary Art, or Theory; as Imagination of the primary one, or of the Matter. We ſtill ſee the Effect of the firſt Laws, even in the latter Art: External Objects ſtrike the Senſe and Imagination ſo ſtrongly; that they reach to Reaſon; which, like an infinitely elaſtick Subſtance, reflects 'em back again; and thus they again grow into Objects of Senſe: and ſo in a Circle.

THIS ſeems to make the two Arts differ very widely: And as Reaſon appears our higheſt Faculty, (inaſmuch as 'tis this alone that tends to produce, and multiply) and accordingly, all our Knowledge appears proportionably higher and purer, as Reaſon is more concern'd therein: the Rules or Theory of an Art, appears of infinitely nearer Conſequence than the Matter thereof. The former is in ſome Senſe active, and, like the Almighty Mind, tends to produce new Things, new Worlds, new Syſtems without end; the latter is mere Paſſion, and ends in bare Brute Perception.

YET, *Ariſtotle*'s Rules, it muſt be obſerv'd, do not tend to produce Poetry; I mean, not the Matter of Poetry; but only the Form. *Ariſtotle*'s Art is not the Art of Poetry in that Senſe; as its Rules don't tend to produce the Enthuſiaſm. They only give the human Part, and relate what Reaſon obſerves in the Productions of the Imagination, *i. e.* what there is in 'em that is a proper Object of this laſt Faculty, and comes under its Notice. In effect, Poetry is only ſubject to *Ariſtotle*'s Rules, as there is Reaſon, not as there is Inſpiration or Invention in it.

THE Source of Poetry, we have obſerved, lies out of Poetry, in a higher Ground; and to turn the Stream upon us, is the Buſineſs of this other Art of Inſpiration. The immediate Inſpiration, is not ſo immediate as we might imagine. It is not the ultimate Principle of Art, but is it ſelf ſubordinate to another further, or purer Art; ſo that we muſt not have only Art and Rules to produce Poetry, but alſo to produce the Principle thereof, Inſpiration, or Invention. And the ſame will hold of the Rules of this laſt Art, themſelves, which will require others; and ſo *in infinitum*. At leaſt, the Series will be infinite, if we only take our ſelves, and our own Agency into the Account.-----

TO clear up this a little farther; it is to be obſerved, that the Art, *e. g.* of Poetry, is not only the Reſult of another higher Art, as above laid down; but, as it conſiſts of Matter and Form; theſe are each of 'em the Subject of a particular Art, and each of 'em require another higher Art to produce 'em.-----The Means, for inſtance, neceſſary to Inſpiration, or the Invention of Images, make one Art; and thoſe for their Application to the preſent Purpoſe, another. So that the Art of Poetry reſolves it ſelf into two ſubordinate ones; the firſt of which may be called *the Art of Invention*, the other *the Art of Judgment*, or Criticiſm: each of which has all the Characters of the general Art; is come at like it, produces new Objects like it, and reſolves like it into Matter and Form.-----Nor does the Matter end here: For as each of theſe ſubordinate Arts, conſiſts, again, of Matter and Form; each of 'em reſolves lower into two other Arts: and the ſame may be ſaid of each of theſe; and ſo on. So that there is really an infinite Series of Arts, previous to any one, and acceſſory thereto; all diſtinct from each other, tho all of the ſame general Nature and Kind, and only differing in Point of Order, or Subordinacy. They ariſe ſubordinately from the ſame Cauſe, and tend ſubordinately to the ſame End: Which Difference, or Subordination, as already noted, ariſes only from their greater, or leſs diſtance from the Principle of all Knowledge, Senſation.

UPON the whole, ſenſible Nature furniſhes the Matter of them all, by means of the Imagination; and moral Nature the Form, by means, or light of Reaſon.-----The former Propoſition has been ſufficiently diſcuſs'd. It remains to inquire a little further into the latter: For, *that Reaſon furniſhes the Means*, &c. muſt be further qualified, ere it be receiv'd.-----Our Reaſon, it is to be obſerv'd, does not perceive any neceſſary and immediate Connexion between the Means, and the Effect: for there really is none. Conſequently Reaſon cannot be the Author of 'em; in regard, the Medium is wanting whereby it could poſſibly attain 'em. So that they muſt be procured by ſome other Canal; which will at length be found to end in Senſation. In effect, ere we know that ſuch Means conduce to ſuch End, we muſt firſt have obſerved, or found it ſo by Experience. Our Memory ſuggeſts to us, that ſuch or the like Cauſes, have been follow'd by ſuch or the like Effects; which is the only Foundation we have to expect any thing from 'em on the preſent Occaſion.----Thus, if *Homer*'s Reaſon direct him to retire into a Place free of Noiſe and Diſturbance, at a time when his Mind is clear and in due Temper; and there to apply himſelf with Attention and Earneſtneſs, to think on his Subject: In conſequence of which Means, new Ideas and Images preſent themſelves; ſome more immediately relative to the preſent Purpoſe, others leſs: Whence comes all this, but that *Homer* remembers, ſuch or the like Ideas as are now wanted, to have aroſe upon the uſe of ſuch or the like Means? And if, among the Crowd of Images, he chuſes only ſuch as are moſt proper, and immediately conducive to his End, and throw aſide or expunge the reſt; whence is this, but that he remembers ſuch, on former Occaſions, to have contributed more fully to Ends like his own; than ſuch others? So that the whole Proceſs appears to be little other than *Remembrance*; which, we know, reſolves into Senſe.

BUT,

BUT, Memory, it is to be here noted, deals only in *paſt* Things. It informs us, that on ſuch an Occaſion, ſuch Means, under ſuch Circumſtances, produced ſuch Effects: But its Notices are merely narrative, or hiſtorical; and relate only to thoſe numerical Means, Occaſion, Circumſtances, *&c.* which can never happen again. So that Memory ſpeaks nothing to the preſent Caſe; nor gives any Directions how the particular Purpoſe now in view is to be attain'd. Its Language is only this, "Such Means did produce ſuch and ſuch "Effects."----To make the Application of paſt Things to preſent, is the Office of Reaſon; which comes in where Memory ends; and ſubjoins, That "if ſuch Means have done ſo, ſuch others will now do ſo." And conſequently 'tis Reaſon that, in ſtrictneſs, preſcribes the preſent Meaſures.

OUR Inquiry now draws towards an Iſſue; and it only remains to ſhew, in what manner Reaſon attains this End, *i. e.* what farther or higher Means there are, whereby it is enabled to furniſh Meaſures for the preſent Exigent, from the Circumſtances of paſt ones?——This it effects by certain Perceptions of *Similitude* and *Diſſimilitude*, *Parity* and *Imparity*, *Congruity* and *Incongruity*, between former and preſent Means, Occaſions, *&c.* By virtue of theſe, the Mind infers, argues, or preſumes, That "inaſmuch as ſuch Means were followed by ſuch "Effect; ſuch others, by parity of Reaſon, will be followed by ſuch others:" And that "as there are ſuch "and ſuch Differences between former and preſent Occaſions and Circumſtances; there muſt be ſuch and ſuch "other correſpondent Variations in the preſent Meaſures, to keep up the Congruity." All which reſolves into that comprehenſive Word, *Analogy*.----Thus it is found, that every *Means*, every Step of an Art, includes what has been already ſhewn of the whole Art; and conſiſts of *Matter*, furniſh'd by Memory, from Senſe and Obſervation; and *Form*, furniſh'd by Reaſon, from Compariſon, and Analogy.

AND thus it is Reaſon that makes all our hiſtorical Knowledge of any ſignificancy to us. 'Tis this that makes former Caſes ſubſervient to the preſent Occaſion. We may look upon this, as the Inſtrument or Faculty of transferring; whereby the Effects of former Times and Places, are brought over to the preſent ones. Without this, Senſe would loſe its chief uſe; and Memory, with all its Copia, be no other than uſeleſs Lumber.----'Tis this Faculty alone that arranges our ſenſible Ideas into any thing of Subordinacy. Memory only preſents 'em ſuch as they firſt appear'd; wholly diſtinct all, and independent of each other; being connected by nothing but their Compreſence, or Co-exiſtence in point of Time and Place. The Eſtabliſhment of all other Relations is the Work of Reaſon; which, from theſe few ſenſible Relations, infers numerous others, *e. g.* from the Compreſence of two Things, in reſpect of Time, Place, *&c.* it concludes that ſome new Appearance perceiv'd in the one, was occaſioned by the other; and therefore, that there was ſome Power in the latter, by which this was effected, *&c.* And thus it is we come by the Relations or Perceptions of *Cauſe*, *Effect*; *Action*, *Paſſion*; *Property*, *Quality*, &c. So that, to this Faculty of Reaſon, we owe the whole Science of *Phyſicks*; which is no other than the Doctrine of Cauſes: At leaſt, the Form thereof. The Matter, *i. e.* the Senſations themſelves, being furniſhed by Senſe, conſtitute *Natural Hiſtory*, the Baſis of all Knowledge whatever.

WE are now got to the Top of all our *Natural* Faculties, *Reaſon*; and the moſt refined of all our Science, *Analogy*.----It remains to obſerve, that with this Natural Reaſon, is connected Moral Inclination. In the Caſe, for inſtance, of *Good*; to the Voice of Reaſon repreſenting a Thing as ſuch, is connected a *Deſire* or *Inclination* towards the ſame; which is the Spring or Principle of all human Action, or Operation; and commands a number of ſubordinate ones, the application of all which conſtitutes what we call the *Purſuit* of ſuch Good.

AND thus we are got to the bottom of all our moral Faculties, Deſire or *Inclination*.----Hence, as Reaſon is the End of Paſſion, or Perception; Inclination is the Beginning of Action: The one terminating in the Apprehenſion of Good, where the other commences. And again, as the Perception of Analogy is the ultimate Effect of Science; the Inclination ariſing by means hereof, is the Beginning of Art: the two being join'd, and as it were, inoſculated in ſome middle Point. And thus external or phyſical Things, come to influence or produce internal, or moral ones; thus the whole Effect of ſenſible Nature is applied to moral Nature. And thus do *Phyſics* take hold of *Ethics*; God, of Man.----Hence, moral Knowledge may be conſider'd as a kind of Medium between Perception, and Inclination; Action, and Paſſion; Science, and Art: Accordingly, it poſſeſſes a middle Region in the Orb of Knowledge; as being that by whoſe Mediation, a Communication is made between the two; and the Effects of the one imparted, or handed over to the other.

BUT, to determine the Nature and Origin of *Analogy*; and ſhew how theſe Notices or Perceptions of *Similitude*, *Parity*, &c. by means whereof Reaſon makes her Concluſions, are arrived at; and whether they ariſe in the ſame general manner as other Ideas, by the Agency of the divine Being, (the human Mind remaining wholly paſſive therein) or whether we perceive or diſcern 'em immediately, by ſome intuitive Power inherent in the Nature of the Mind; and ſo are active therein----will need a little farther Attention.

IT muſt be allow'd, then, that theſe Perceptions, Similitude, *&c.* are no proper Objects of Senſe: They do not come from without, as any part of the Matter of our Senſations: they are of no Colour, Figure, Solidity, or the like. Nor do they ſeem to ariſe immediately, and neceſſarily, upon any Objects being preſented; but rather to require ſome Action, or Operation of the Mind, to produce and give 'em being. The Truth is, they are not any immediate Objects, but reſult from a Compariſon between ſeveral; which Compariſon ſeems to be the Work of the Mind, bringing one to the other, and conſidering their Agreement and Diſagreement.

BUT, tho this bids much faireſt for Action of any thing yet alledg'd; yet will the whole hereof be found to reſolve into Senſe, and Memory.----If, ſeeing a Sword run thro' a Perſon, I find he dies upon it; and ſeeing afterwards a Spear run in like manner thro' another, I conclude he will likewiſe die: Whence is this, but that in the latter Caſe, ſome of the Circumſtances of the preſent Tranſaction, do neceſſarily recal the Memory of the former ones: Since, ſo far as they were alike, they were really the ſame? Conſequently, as the Idea of Death was connected to the former; it belongs equally to the latter. In effect, in two ſimilar things, ſo far as I ſee a Similitude, ſo far I ſee the ſame thing in both. Similitude is only a Repetition: and therefore what agrees to the one, muſt, ſo far as their Similitude goes, agree to the other, for the ſame Reaſon that it does to either. Hence, if I am paſſive in *remembering* the Sword, and paſſive likewiſe in *ſeeing* the Spear; and the one be in ſome reſpects the ſame with the other: I am not active in perceiving that Sameneſs: ſince 'tis only the Perception of one thing twice over. And my knowing it to be the ſame now, is only my remembring it to be what I had ſeen before; with this difference, that the Power which firſt repreſented it to me abſolutely; does now repreſent it with this additional Circumſtance, that I had ſeen it before.

AGAIN, if I argue or conclude that what agrees to, or ariſes from one thing; will do ſo in another thing ſimilar only in ſome Circumſtances: This is founded wholly on a Preſumption, that the Agreement reaches to thoſe Points upon which the former Effect depended. So that all phyſical Cauſation, in reſpect of us, is mere Preſumption. Accordingly, the great *Regulæ philoſophandi* eſtabliſhed by Sir *I. Newton*, that "Effects of the "ſame kind, ariſe from the ſame Cauſe:" and that "Qualities which agree to all the Bodies hitherto known, "agree univerſally to all;" are at bottom only Preſumptions. Yet are they juſt phyſical Laws; and the beſt the Subject will allow of.

THUS far, therefore, we ſee but little that looks like Activity, even in the Faculty of Reaſon. But Reaſon has not been yet ſhewn in its Height. Tho it have its Origin in phyſical Matters; and ſhew it ſelf firſt in the Eſtabliſhment of Cauſes, Properties, &c. it reaches much higher, and is ſeen in its Perfection in Metaphyſicks; where, making its own Productions its Object, it proceeds to examine the Nature and Eſſence of ſuch Cauſe, Property, &c. And hence the Doctrine of Quality, Quantity, &c. in the General or Abſtract.——Nor does the Matter ſtop here; but the Mind ſtill proceeds to erect a new and moſt magnificent Science of Quantities, Analogies, Proportions, &c. hereupon: founded on this Principle, that "ſo far as a thing unknown, agrees or is like "to another thing known; ſo far is ſuch former thing, its Nature, Effects, &c. known:" A Science infinitely extenſive, and productive of infinite Uſes; as being that whereby Knowledge is applied, or transferr'd from one thing to another: And of infinite Certainty, as being founded on a ſelf-evident Propoſition.——It proceeds by Definitions, Axioms, &c. But as the Things themſelves which are its Subject, are only Abſtracts, which are but a kind of Shadows of real and ſenſible things; ſo are its Definitions, which cannot be ſaid to be Definitions in the ſame Senſe as thoſe of a Concrete, *e. g.* a Plant, an Inſtrument, or the like; inaſmuch as they do not excite any Image or Idea in the Mind. And hence that Difficulty under which the Writers of the Principles of Mathematicks labour, to give intelligible Definitions of *Unity*, *Multitude*, *Number*, *Part*, *Whole*, &c.

ITS *Axioms* are only Duplicates of ſome Propoſition, or the ſame thing expreſs'd in two manners; the one direct, the other implicit; properly call'd *Identical Propoſitions*.——Thus that Axiom, "The Whole is equal to its "Parts;" eaſily reſolves into this other, "The Whole has the Nature and Characters of a Whole:" which amounts to this, "A Whole is a Whole."

TO illuſtrate the Progreſs of the Mind in this new Scene: Suppoſe, for inſtance, a Ball, or Sphere; and let it be divided into two Parts.——Our Senſes do not inform us that the two Segments thereof are equal to the whole one: On the contrary, they repreſent them as very unequal; and 'tis Reaſon alone that finds their Equality. The Cauſe hereof, is, that the Figure, &c. of the divided Sphere, which are the things the Eye takes cognizance of, are very different from thoſe of the whole one; and that the Quantity or Subſtance, in which alone the Equality conſiſts, is no Object of Sight, but only of Reaſon; which informs us that the two Segments are ſtill really the whole Sphere, only exiſting with ſome variety in reſpect of Figure, Place, &c. Hence we find it neceſſary, *i. e.* included in the Nature and Notion of a Whole, that the Sphere be equal to its Parts; and thus, by analogy, pronounce the ſame Ratio univerſally between every Whole and its Parts, and ſo make an Axiom which is the Foundation of a new kind of univerſal Knowledge. In effect, to ſay that the whole Sphere is equal to its Parts, is no more than to ſay, the Quantity or Subſtance is not altered by any Alterations made in its Figure, Place, Number, &c. which is as much as to ſay, that the Subſtance is the Subſtance, the Sphere, the Sphere.

FROM ſuch Axioms it proceeds to *Theorems* and *Problems*; every one whereof is reſolvable into Theſis and Hypotheſis; each of which may be again reſolved into Axioms or Identical Propoſitions, which is called *Demonſtrating*. In fine, all Demonſtration ſuppoſes Identical Propoſitions, and turns on 'em; and its Certainty ariſes from no other Principle, but the Identity or Sameneſs of the Thing implied in ſuch Propoſitions, with the Thing expreſs'd.

IT appears then, that the whole Proceſs conſiſts in abſtracting, or ſetting aſide the ſenſible Idea that gave the firſt Occaſion, and conſidering the Relations thereof by themſelves, as if they had diſtinct, independent Exiſtences. By thus excluding the Conſideration of the phyſical *Ens*, Senſation and Imagination are of courſe excluded, with all the Action and Inſpiration annex'd to 'em; and thus is Reaſon left in full play, without any thing to ſuperſede, or divert it.——Thus we may be ſaid to make a new World, and furniſh it with a new Set of Creatures; and a new Doctrine, which is, as it were, the Shadow of the former. Metaphyſicks, and Mathematicks, in effect, are the Science of *Entia humana*, or *rationis*, as Phyſics of *Entia naturæ*, or *ſenſus*.

BUT ſuch Abſtracts, *e. g.* Quantity, Meaſure, Weight, &c. tho no immediate Objects of Senſe, have yet a Connexion with things which have, whereby they become of the utmoſt import in the World. There is that Relation eſtabliſhed between the Faculties of Senſe and Reaſon, that tho the Objects of the one be not cognizable by the other, yet the Communication between 'em is by the all-wiſe Creator made very near and intimate: Such Dimenſions, Weight, &c. are combined by him with ſuch Effects, Motions, Reſiſtances, &c. and prove the Occaſion of ſuch and ſuch Effects: which is the great Principle of all human Action, and all truly artificial Production in the World.

BY means of this Communication, the firſt Impulſe is brought back again from the higheſt pitch of abſtracted Mathematicks, to the firſt Objects of Senſe; from Fluxions and Differences, the fartheſt Parts of the *Pais d' infini* Reaſon has ever travell'd to, to the groſſeſt and moſt palpable Objects that ſtrike every Senſe. And thus are Action and Paſſion, Senſation and Reaſon, Art and Science, found to reciprocate, and produce each other.

HAVING thus diſcuſs'd the Nature, and Characters of *Art* and *Science*; it remains to ſettle the Notion of *a TERM of Art*; a Diction as little underſtood as any thing in Language.——Art and Science, we have obſerved, are Denominations of Knowledge under this or that Habitude; and Words are Repreſentatives of the ſeveral Parts thereof. The whole Compaſs of Words, in all their Caſes, is ſuppos'd equivalent to the whole Syſtem of poſſible Science; tho 'tis only a ſmall Part thereof that is actual, *i. e.* only a few of the poſſible Combinations are, or ever will be, made.

THE Buſineſs of Knowledge, then, is canton'd out among the Body of Words: but they don't bear equal Shares thereof. Being Creatures of our own, we have dealt with 'em accordingly; and made ſome more, others leſs ſignificant, at pleaſure: ſome ſtand for large Tracts, or Provinces; others for little Spots, or petty Diſtricts thereof. In effect, the Order wherein we attain our Knowledge, has occaſion'd us to make a kind of Sortment and Package, if I may uſe the Word, in the Matter thereof. Tho the Mind only ſees and perceives Individuals, which alone are the proper Objects thereof; yet it has a Power of combining and complicating theſe together, for its own conveniency: And hence its progreſs from Particulars to Generals; from Simple, to Complex.-----Hence we come to have Words of all Orders, and Degrees; from the Simplicity of an Atom, to the Complexneſs of the Univerſe. 'Tis pleaſant to trace the Mind bundling up its Ideas, and giving Names to the ſeveral Parcels; to obſerve, for inſtance, how it proceeds from the ſimple Idea, *Thinking*, to the more complex one, *Knowledge*, thence to the more complex, *a Science*, thence farther to *Scientifical*, &c.

INDEED 'tis very few of our Words that expreſs ſingle, or ſimple Ideas. The Reaſon is, that obſerving certain Relations to obtain between the ſeveral Ideas; as, of Cauſe and Effect, Subject and Attribute, &c. we don't ſo much conſider them abſolutely and independently, as under ſuch Circumſtances and Relations to each other. The great Readineſs and Propenſity of the Mind to combine, and bundle up its Ideas, and thus pay, or receive 'em in Parcels, has left us very few ſimple ones; I mean, very few Names which denote only one Idea. The Words *Atom*, or *Mathematical Point*, uſually imply ſeveral Ideas; in regard, we are led to take their Attributes, and Relations, into the Conſideration of the Subject: Thus we conſider the *Atom* as hard, heavy, and inviſible; as the Principle of phyſical Magnitude; as contributing to the Conſtitution of Bodies, &c. Even the primary Qualities themſelves, as *hardneſs*, *heavineſs*, &c. ſimple as they are in their own Nature;

Nature; are ſo far combined with particular Circumſtances, *e. g.* their Cauſe, Effects, *&c.* that their Names become none of the leaſt complex.

NOW, what we call *a Term*, conſider'd as to its Nature and Origin, is no other than "a Word which "denotes an Aſſemblage, or Syſtem of Ideas relating to ſome one Point, which the Mind artfully complicates "or aſſociates together, for the conveniency of its own Operations." Or, "a Word which comprehends ſeveral "Ideas under a certain Relation to each other, whereby they repreſent ſome complex piece of Knowledge to "the Mind for the conveniency," *&c.* Or, "it is a Word, which holds ſeveral different Ideas combin'd toge-"ther in a Relation ſuch as they appear'd under when the Mind firſt conſider'd 'em as a ſtanding Phæno-"menon, and took Meaſures to have 'em fix'd or retain'd in that Quality."

THE Effect of *Terms* is, that by virtue thereof, we are enabled to receive, or communicate Knowledge with more eaſe and diſpatch; foraſmuch as having proper Combinations thereof always ready made, we are ſaved the Neceſſity of beginning *de novo*, and detailing it in Individuals: much as in Arithmetick, to avoid the Embarraſs of a large Number of Units, we tell by Tens, or Sixties, or Hundreds: With the like View, on ſome occaſions, we make up certain Sums of Money in Rouleaus, or in Purſes; and thus pay and receive 'em, without the Trouble of telling or enumerating the Contents.

IN this Senſe of Term, we ſhall find little elſe but Terms in Language: Among *Nouns*, little beſide proper Names, which indeed are out of the ordinary Caſe of Language, as ſerving occaſionally to denote an hundred different Subjects. Yet even theſe ſometimes become *Terms*; as, when any particular Ideas become conſtantly attach'd to 'em, *e. g.* In *Mæcenas*, *Machiavel*, *Auguſtus*, *Atlas*, *Bucephalus*, *Buccentaur*, *Royal Oak*, *Argo*, &c. And among Verbs, very few but are Terms, except the general ones, *to be*, *to do*, and *to ſuffer*. As all the others ſuppoſe theſe, and modify or ſuperadd ſome farther Circumſtance thereto; they commence Terms of courſe: ſuch, for inſtance, is the Word *to moiſten*; which, as it carries a farther meaning than the bare Act of applying a Fluid to a dry Body; and denotes, *e. g.* the *Modus* of its Effect, and the Alteration ſuperinduced by it, *viz.* the ſoftening, lubricating, *&c.* is a good Term. So, *to ſtrike*, as it not only implies a certain Motion of the Arm, but this Motion, effected by the ſucceſſive Contraction and Dilatation of certain Muſcles, *&c.* has every thing that is eſſential to a Term. In the ſame Senſe, a *Staff* is a Term as much as a *Lever*; and a *Pin*, as an *Axis in peritrochio*.

THIS may look like ſtretching a Point, eſpecially to thoſe who are uſed to conſider Terms as Things, I know not how, quaint, and myſterious; and make a Term and a hard Word the ſame thing. But there is no Remedy: Complexneſs is the only Characteriſtic that will be found to hold good of 'em all; and if there be any other more ſpecifick and diſtinguiſhing Properties in moſt of 'em, as we ſhall have occaſion hereafter to ſhew there are, yet theſe, not being univerſal, cannot be made the Foundation of a juſt Philoſophical Definition. They may perhaps be introduced, to good purpoſe, into a popular one; as they afford a more uſeful and adequate Knowledge of the Subject ſo far as they do obtain.

THUS much relates to what we may call *Terms of Knowledge*, which are one degree more ſimple than the Terms of an Art, or Science; and were, for that Reaſon, pitch'd upon to exhibit the common Nature, and Origin of both. Theſe latter ariſe out of the former, by the Superaddition of ſome new Character, or Condition. They were before Members of the Commonwealth of Knowledge; but are now incorporated into ſome certain Province, or City thereof; where they become of farther Significance and Conſideration than before: that is, ſome new Ideas and Circumſtances are now taken into the Combination, which before did not belong to it.----A Term of Art, then, "is a Word that has a Meaning beyond its general, or ſcien-"tifical one; and this Meaning reſtrain'd to ſome one Art." Or, it is "a Word uſed to denote a certain "Combination of Ideas, under ſome peculiar Relation; retained arbitrarily in ſome Art, and either not uſed "in any other Art, or for a different Combination, or with other Relations and Circumſtances."

TO make the way a little clearer to the Philoſophy of a Term of Art, it is to be obſerv'd, that from the primary or literal Senſe of Words, we frequently, by Abſtraction, form a ſecondary, general, or philoſophical one, expreſſing only the Quality moſt predominant in the former, excluſive of the particular Circumſtances of the Concrete. Thus the Word *Spirit*, literally and primarily ſignifying *Breath*; we thence frame a more ſimple general meaning, and uſe the Word for any thin, ſubtil Matter whatever.----Now, Terms of Art are not immediately formed from the literal, or grammatical, but from the general, or philoſophical, Acceptations of Words; which are their proper Baſis, or the Ground-work they are erected on. The general or abſtract Senſe of ſome Word already eſtabliſhed, being found to agree to ſomething which we have occaſion to give a Name to; we take the Word in that Senſe, and ſuperadd the other Incidents and Circumſtances which the preſent Occaſions furniſh, thereto: which being different according to the different Matter and Subject of the Art, ſpecify the meaning of the Term in this, or that Art. So that the Word which, to raiſe it to a philoſophical or ſcientifical Senſe, was generaliz'd; to form a Technical one is again particulariz'd, or appropriated, and inveſted with new Accidents. Which falls in with the Difference above laid down between *Art* and *Science*.

THUS, the ſame Word *Spirit*, which literally ſignifies *Breath*, and philoſophically any ſubtil Subſtance, is technically brought to denote diverſe other things; as, in Anatomy, a thin animal Juice ſecreted in the Brain, and detach'd thence thro' the Nerves for the Uſes of Senſation and muſcular Motion: in Chymiſtry, the Exhalations of Bodies expos'd to the Fire: in Theology, the third Perſon of the Trinity: in Metaphyſicks, any incorporeal Agent, or Intelligence, *&c.* In all which, we ſee the ſame *Subſtratum*, *viz.* a fine ſubtil Subſtance; but this modified a great diverſity of ways: each of which is ſuſceptible, by farther Super-additions, of infinite more. And hence Legions of ſorts of Spirits, both in the human Body, the Chymiſts Laboratories, the Hierarchy, *&c.*

THE Notion of a Term will receive ſome farther Light from that of a *DEFINITION*; which is, as it were, the Analyſis thereof.----By *Definition* we undo, what was done in the *Term*; that is, we reſolve the complex Ideas into ſimple ones, or reſtore the Ideas from their new and artificial State, to their primitive and vague one. A *Definition*, then, may be defined, "an Enumeration of the ſeveral ſimple Ideas couched under "any Term, in the Relation wherein they ſtand to one another."-----We have already ſhewn, that Terms are Words which have peculiar and determinate Meanings, reſulting from a certain Combination of Ideas; in which view, a Term may be ſaid to be, "a Word that is capable of Definition;" *i. e.* of having its Senſe explain'd, and aſcertained by an Enumeration of its Properties, and Relations: by which it is diſtinguiſh'd from other Words merely grammatical, whoſe Meanings are general and indeterminate, and may be uſed with equal propriety in a thouſand Caſes. We can explain a Term: A Word is inexplicable: all we can do towards this, amounts not to Definition, but only to *Subſtitution*.

THUS the Idea attached, for inſtance, to the Word *Force*, is abſolutely incommunicable by means of any Language; we can only try whether the Party have it not already, under another Name; to which end we may tell him 'tis *Power*, or *Energy*, or *Vigour*; if he have Ideas for any of theſe, he'll take in that of *Force*, by its Relation thereto; if he have not, we muſt proceed to try him with more, and tell him 'tis *Forza*, or

Vis,

Vis, or *Efficacia*, or *Potentia*, &c. or 'tis βία, or ἰσχὺς, *&c.* If none of theſe will do, it remains to try, whether he may not have it, without any Name to it; and ſay, 'tis "That whereby one thing, coming in "contact with another, moves, or ſhakes, or breaks it," *&c.*----If by any of theſe means he learns what *Force* is, he does not form any new Idea: he only learns a new Name; and finds that what he calls by one Name, others call by another; or that what he had never taken the Pains to diſtinguiſh by any Name, ſome others have. To get the Idea, he muſt have recourſe to Senſation, not to Language; it being a phyſical *Ens*, and only to be attain'd that way.

BUT the ſimple Idea called *Force*, being given; and coming to be afterwards modified or circumſtantiated by new Accidents added thereto, and thus form'd into Terms, in this or that Art; 'tis here in the Power of Language, alone, to excite 'em; by reſolving ſuch compound Idea into its ingredient ones, which being recompounded or put together again in the manner aſſign'd by the Definition, gives the full adequate Import thereof.----Thus the Idea of *Force* being variouſly modified, and combined with other Ideas of *Centre*, *Attraction*, *Repulſion*, *Will*, *Machine*, &c. in the Words, *Central Force*, *Centripetal Force*, *Centrifugal Force*, *Neceſſity* or *Moral Force*, *Mechanick Power*, &c. we can, by Definition, arrive at the Meaning thereof; by having thoſe Circumſtances ſpecified, or ſuperadded to the Idea of Force.----In this caſe, there is no coming at the Idea by Senſation; in regard 'tis a Creature of our own, and does not exiſt any where without us, to make an Object of Senſe.

HENCE appears all the diverſity of Definitions; *Technical* ones, comporting only to Terms, as to *Central Force*; *Scientifical* or *Philoſophical*, to Qualities, as *Forcibleneſs*; and *Nominal* or *Succedaneous*, belonging to ſimple Ideas, as *Force*.

'TIS the various Aſſemblage of ſimple Ideas denoted by common Words, that makes all the Variety of Terms; as 'tis of Simples in an Apothecary's Shop, that makes the Variety of his Medicines.----The Analogy goes farther; and it may be ſaid that Terms, like Medicines, only differ from each other as their ingredient Ideas, and the Relations thereof do differ.----If theſe be not all rehearſed in the Definition, the Term or Medicine is not ſpecified, or diſtinguiſhed from ſome other, which may have all except that one or two omitted. Conſequently, ſuch one or two are the Characteriſticks of that Term; which may be explain'd in ſome ſort, by only enumerating thoſe Characteriſticks, and couching all the reſt under that other Term. This amounts to little more than the *Subſtitution* abovementioned; and yet to this is reducible all that the Schoolmen teach of *Genus*, *Species*, and *Difference*.

BESIDE ſimple Words, which we have obſerved are, in their own Nature, inexplicable; there are divers others that become accidentally ſo: And ſuch are all the Data, or preliminary Principles of any Art, with reſpect to thoſe who confine themſelves to the Bounds of that Art. Thus, if it be demanded of an Apothecary, to define one of his Simples, e. g. *Mercury*; he muſt needs be at a ſtand, unleſs he be likewiſe verſed in Minerology; by reaſon it is putting him to explain a Datum, which his Art does not explain, but aſſume; the Explication thereof lying in another Province. For the Data or Principles of any Art, are only explicable from another, *e. g.* thoſe of *Chymiſtry*, *Pharmacy*, &c. from *Phyſicks*; *Phyſicks*, from *Phyſiology* and *Mechanicks*; *Mechanicks* from *Geometry*, &c. So that to explain *Mercury*, would to him be, in ſome meaſure, to explain a ſimple Idea. But aſk him to define *Calomel*, and he is prepared for you; and will readily enumerate the ſeveral Ingredients, and the manner of preparing it: which is the proper pharmaceutical Definition of Calomel.

HERE it may be obſerved, that the Words uſed in the Definition of a Term, do many of 'em repreſent complex Ideas; and conſequently ought themſelves to be defin'd, if we would have the Definition compleat. The Term has uſually divers ſubaltern ones; all which are reſolvable into it, and make part and parcel of the Knowledge held forth by it. Thus, if Calomel be defined, "A medicinal Pouder precipitated from "a Solution of crude Mercury in Aqua fortis, by adding thereto a Lixivium of Sea Salt; and then purified "by repeated Ablutions in a Filtre," *&c.* The Ideas, *Pouder*, *Precipitated*, *Solution*, *Mercury*, *Aqua fortis*, *Ablution*, *Filtre*, &c. remain to be explain'd, to furniſh the compleat Notion of Calomel.----But as this would be endleſs, and would defeat the Intention of a Definition; the Practice obtains, to ſuppoſe all other Terms known, except that particular one under Definition. By this means, we avoid the Embarraſs of bringing down every Word to its Principles, or ſimple Ideas; and acquit our ſelves by bringing it to the next complex ones: Since the bringing an unknown Term to ſeveral known ones, is a kind of indirect Definition.

SUCH is the Nature of a Technical Definition, which holds good or valid for thoſe of that Art, or Craft; who are to be ſuppoſed furniſhed with the neceſſary Data, or preliminary Notices. But to make a ſcientifical Definition, we muſt go ſtill lower; and bring down the Words, if not to their ſimple Ideas, yet to general or common ones. For it is to be obſerved, there are great numbers of complex Ideas current among moſt People, which therefore may be conſider'd as Data, and uſed as ſimple ones, for more conveniency ſake. All technical Apparatus, then, is to be here thrown by; and inſtead of giving five or ſix hard Words for one, the general Effect, and Meanings thereof are to be made uſe of. Thus, Calomel may be defined "a "white Pouder, which falls down from Quickſilver diſſolved in Spirit of Salt-petre, upon caſting Salt therein; "and is afterwards waſhed, again and again, by paſſing fair Water thro' it," *&c.* Where, tho ſeveral of the Words be complex; yet moſt People, in the ordinary Courſe of Life, have framed the complex Ideas belonging to 'em: ſo that they may be conſider'd as ſimple ones.----Yet the Definition can ſcarce be ſaid to be complete, even here: The general or philoſophical Senſe of Words, we have obſerved, is form'd from the grammatical one; and conſequently the Definition ought in ſtrictneſs to extend thither: The Solution, to be adequate, ſhould go as far as the Knot; the Analyſis as the Syntheſis.

THE Reader already begins to feel this Preface grow tireſom; and yet half the Buſineſs is ſtill behind. When ſo large a Work was to follow, he perhaps imagines he ſhould have been excuſed from a long Preface: and the like, probably, may the Author ſay; who, after ſo tedious a Work, cou'd not be over-fond of any ſupernumerary Fatigue. But, the Expediency of the Caſe, which ſway'd and determin'd the one; may ſuffice to ſatisfy the other. Several Matters were purpoſely waved in the Courſe of the BOOK, to be treated of in the PREFACE; which appear'd the propereſt Place for ſuch Things as have a regard to the whole Work. What has been hitherto inſiſted on, as well as what remains, immediately affects every Article in the Book; and tends, withal, to let a little needful Light into certain Points hitherto involved in great Obſcurity. I conſider a *Preface*, as a kind of Vehicle, wherewithal to convey the Reader commodiouſly from the *Title* into the *Book*. The Preface is a kind of Comment on the Title, the Book a Paraphraſe on it: Or, if you had rather, the Book is the Title *executed*, the Preface the Title *explain'd*.

HAVING, therefore, diſpatched the leading Words ART, SCIENCE, TERM, and DEFINITION; we proceed to conſider the Nature of a *DICTIONARY*.-----It were to be wiſhed that the many Adventurers in Print, who publiſh their Thoughts under this or that Form and Denomination, would frame themſelves a preciſe Notion of the Character and Laws thereof. There is ſomething arbitrary, and artificial in all Writings: They are a kind of Draughts or Pictures, where the Aſpect, Attitude, and Light, which the Objects are taken in, tho merely arbitrary, yet ſway and direct the whole Repreſentation. Books are, as it were,

Plans

Plans or Proſpects of Ideas, artfully arranged, and exhibited, not to the Eye, but to the Mind; and there is a kind of analogous Perſpective which obtains in 'em, wherein we have ſomething not much unlike Points of Sight, and of Diſtance. An Author, in effect, has ſome particular View or Deſign in drawing out his Ideas; either, nakedly to repreſent ſomething, or diſtort and ridicule it, or amplify, or extenuate, or diſcover, or teach, or prove, *&c.* whence ariſe divers kinds of Pieces, under the Names of *Hiſtories*, *Diſcourſes*, *Treatiſes*, *Eſſays*, *Inquiries*, *Examinations*, *Paraphraſes*, *Courſes*, *Memoirs*, *Burleſques*, &c. In all which, tho the Matter or Subject may be the ſame, the Conduct or artificial Part is very different; as much as a Still-Life from a Hiſtory, or a Groteſque, or a Nudity, or a Caricatour, or a Scene-work, or a Miniature, or a Profile, *&c.* Each of theſe Methods of Compoſition has its particular Characters, and Laws; and to form a Judgment of the Things repreſented, from the Pictures made of them, 'tis neceſſary we be able to unravel, or undo what is artificial in 'em, reſolve 'em into their former State, and extricate what has been added to 'em in the Repreſentation: That is, we ſhould know the manner thereof; whether, *e. g.* they be mere Nature, thro' this or that Medium, in a fore, or ſide-View, withinſide or without, to be ſeen from above or below; or Nature rais'd and improv'd, for the better, or the worſe.-----The Caſe amounts to the ſame as the viewing of Objects in a Mirror; where, unleſs the form of the Mirror be known, *viz.* whether it be plain, concave, convex, cylindrick, or conick, *&c.* we can make no Judgment of the Magnitude, Figure, *&c.* of the Objects.

'TIS beyond my Purpoſe to enter into the Nature of the ſeveral Methods of Compoſition abovemention'd. I ſhall only note, by the way, that the firſt Writers in each, mark'd and chalked out the Meaſures for all that came after them. The ſeveral Manners of compoſing amount to ſo many *Arts*; which, we have already ſhewn, are things in great meaſure perſonal, and depend on the Genius or Humour of the Inventors.

WERE we to inquire who firſt led up the way of *Dictionaries*, of late ſo much frequented; ſome little Grammarian, would, probably, be found at the head thereof: And from his particular Views, Deſigns, *&c.* if known, one might probably deduce, not only the general Form, but even the particular Circumſtances of the modern Productions under that Name. The Relation, however, extends both ways; and if we can't deduce the Nature of a Dictionary from the Condition of the Author; we may the Conditions of the Author from the Nature of the Dictionary. Thus much, at leaſt, we may ſay, that he was an Analyſt; that his View was not to improve or advance Knowledge, but to teach, or convey it; and that he was hence led to unty the Complexions or Bundles of Ideas his Predeceſſors had made, and reduce 'em to their natural parity; which is all that is eſſential to a Dictionariſt. Probably this was in the early Days of the *Phœnician* or *Egyptian* Sages, when Words were more complex and obſcure than now; and myſtic Symbols and Hieroglyphics obtain'd; ſo that an Explication of their Marks or Words, might amount to a Revelation of their whole inner Philoſophy: In which Caſe, inſtead of a Grammarian, we muſt put perhaps a *Magus*, a *Myſtes*, or *Brachman* at the head of Dictionaries. Indeed this ſeems the more probable; for that a grammatical Dictionary could only have place, where a Language was already become very copious, and many Synonyma's got into it; or where the People of one Language were deſirous to learn that of another: which we have no reaſon to think could be very early, till much Commerce and Communication had made it neceſſary.

WHEN a Path is once made, Men are naturally diſpoſed to follow it; even tho it be not the moſt convenient: Numbers will enlarge, and widen, or even make it ſtraighter and eaſier; but 'tis odds they don't alter its Courſe. To deviate from it, is only for the Ignorant and Irregular; Perſons who don't well know it, or are too licentious to keep it. And hence the Alterations and Improvements made in the ſeveral Arts, are chiefly owing to People of thoſe Characters. There is ſcarce a more powerful Principle in Nature than that of Imitation, which not only leads us to do *what* we ſee others do, but *as* they do it. 'Tis true there are Exceptions from every Rule: there are Heteroclites, Perſons in good meaſure exempted from the Influence of this Principle; and 'tis happy there are; witneſs ſuch as *Paracelſus*, *Hobbes*, *Leibnitz*, &c. In effect, If an Art were firſt broached by an happy Genius, it is afterwards cultivated, on his Principles, to advantage; otherwiſe not: and it may wait long for the anomalous Hand of ſome Reformer, to ſet it to rights. Some of our Arts have met with ſuch Hands, others ſtill want 'em.

WERE we, now, to give an abſolute and conſiſtent Definition of a *Dictionary*; we ſhould ſay, "It is a "Collection of Definitions of the Words of a Language."-----Whence, according to the different kinds of Words and Definitions above laid down, *i. e.* according to the different Matter, and the different View wherein ſuch Matter is conſidered, will ariſe different ſorts of Dictionaries: *Grammatical*, as the common Dictionaries of Languages, which for one Word ſubſtitute another of equal import, but more obvious ſenſe: *Philoſophical*, which give the general Force or Effect of the Words, or what is common to 'em in all the Occaſions where they occur: and *Technical*, which give the particular Senſe attach'd to 'em in ſome one or more Arts.

BUT, in truth, this is a little chimerical; and is to forget what has been already ſaid. Tho we have *Dictionaries* under all theſe Titles; it would perhaps be hard to find any conformable to this Partition; which is not ſo much taken from what really is, as what might, or ſhould be. Dictionariſts are far from conſidering their Subject ſo cloſely, or confining themſelves to ſo narrow, tho direct, a Channel: They muſt have more room; and think themſelves privileg'd by the general Quality of Lexicographers, to uſe all kinds of Definitions promiſcuouſly. 'Tis no wonder they ſhould not keep to Views which they had not, and which could only ariſe from Reſearches they never made. While the Notions of *Term* and *Art*, remain'd yet in the Rubbiſh they were left by the Schoolmen; thoſe of *Definition* and *Dictionary* muſt needs be vague and arbitrary enough; and the Dictionariſts and Expoſitors, profited by an Embarraſs it was their Buſineſs to have remov'd. They have not only built on it, but improv'd it, by a continual varying and confounding of Views, imperfect Enumerations, *&c.*

'TIS not to be imagin'd, the Miſchiefs, and Inconveniences that have aroſe from this ſingle Head; the great Uncertainty it has introduc'd into Language; and the Obſtacle it has been to the Improvement thereof. 'Tis certain it has, in great meaſure, defeated the Intention of Speech; and turn'd Knowledge which that was to be the Medium of, into Jargon and Controverſy. All the Confuſion of *Babel* is brought upon us hereby; and People of the ſame Country, nay the ſame Profeſſion, no longer underſtand one another.----The Effect is, that our Knowledge is grown into little other, than that of Peoples Miſunderſtandings or Miſapprehenſions of one another; which is the only kind of Knowledge that grows; and which will for ever grow: there being the Seeds already laid of ſuch Diſputes, as, according to the ordinary ſpreading of ſuch things, muſt overſhadow, and ſtarve every thing elſe. If all Men meant preciſely the ſame thing by the ſame Name; there would be no room for their differing, upon any Point, either in Philoſophy or any thing elſe: There is no more poſſibility of ſeeing the Relations of Things to each other, differently; than of altering their Nature, and overturning the Syſtem. Relations of Ideas are as immutable as the Creator's Will.-----Error, in effect, is no natural Production; nor is there any direct way of coming at it: We muſt go about for it; and find ſome Law of Nature, to put it in our Power. So that Error is in one ſenſe Truth ere it takes place; only 'tis not the Truth it is taken for.

THE Weakneſs of our Reaſon, which we complain ſo much of, is in great meaſure idle; the Fault is foreign, and lies wholly in the Confuſion of Language; which would not only puzzle us, but the very Angels in Heaven, to make any thing of: Witneſs abundance of our Explications of *Trinity*, *Hypoſtaſis*, *Subſtance*, *Accident*, *Faculty*, *Liberty*, *Cauſe*, *Nature*, *Attraction*, &c. which Divines and Philoſophers fatigue themſelves ſo much about. I am confident, that were the Almighty to inſpire us with a new Language, agreeable to Things themſelves; it would amount to a Revelation; and all our Duties, and Relations would be viſible therein.----The Diſeaſe, in effect, has ſpread ſo far, that there is little hopes of ſeeing it remov'd, or even alleviated, without a new Language, formed *ex poſt facto*, from what we now perceive.-----But ſomething of this will come under Conſideration hereafter; in the mean time we venture to pronounce, that "The Reforma-" tion of Science, amounts to little more than the Reformation of Language."

THERE are two Manners of writing: In the one, which we may call *Scientifical*, we proceed from Ideas and Things, to Words; that is, firſt lay down the Thing, then the Name it is called by.-----This is the way of Diſcovery, or Invention; for that the Thing ought to be firſt found before it be named. In this way, we come from Ignorance to Knowledge; from ſimple and common Ideas, to complex ones.

THE other, *Didactic*, juſt the Converſe of the former; in which we go from Words, and Sounds, to Ideas, and Things; that is, begin with the Term, end with the Explanation.----This is the hiſtorical Way, or the way of Teaching and Narration; of reſolving the extraordinary Knowledge of one Perſon, into the ordinary of another; of diſtributing artificial Complications, into their ſimple Ideas: and thus razing and levelling again what Art had erected.

THE *Dictionary* comes under the latter Kind. It ſuppoſes the Advances and Diſcoveries made, and comes to explain or relate 'em. The Dictionariſt, like an Hiſtorian, comes after the Affair; and gives a Deſcription of what paſs'd. The ſeveral *Terms*, are ſo many Subjects, ſuppoſed to be known to him; and which he imparts to others, by a Detail of the Particulars thereof.----Indeed, the Analogy between a *Dictionary* and a *Hiſtory*, is cloſer than People at firſt ſight may imagine: The Dictionariſt relates what has paſs'd with regard to each of our Ideas, in the Coalitions, or Combinations that have been made thereof: His Buſineſs is to deliver the Progreſſes made in the ſeveral Parts of Knowledge under his Conſideration, by an orderly Retroſpect and Deduction of the Terms, from their preſent complex, to their original ſimple State. The Dictionary of an Art, is the proper Hiſtory of ſuch Art: The Dictionary of a Language, the Hiſtory of that Language. The one relates that ſuch an Art, or ſuch and ſuch Parts thereof, ſtand ſo and ſo; are managed ſo and ſo; and the reſult ſo and ſo: The other, that ſuch and ſuch a Word is uſed as ſynonymous to ſuch and ſuch others. The Dictionariſt is not ſuppoſed to have any hand in the Things he relates; he is no more concerned to make the Improvements, or eſtabliſh the Significations, than the Hiſtorian to atchieve the Tranſactions he relates.

THE difference between what we commonly call the *Hiſtory* of an Art, and a *Dictionary* thereof, is only circumſtantial; ariſing from the different Views of the two Authors: The one chiefly regards the Time and Order *when* each Step, each Advance, was firſt made, *i. e.* how it ſtood with reſpect to ſuch and ſuch Æras, or Periods of Time; and might more properly be called the *Chronology* of the Art: the other regarding chiefly the Object or Intention of the Art, relates its preſent Conſtitution, and *how* it proceeds to attain the End propoſed. You may add, that the former primarily conſiders what is paſt, or already advanced; the other alſo what is preſent, or remains to be done: The one tells, *e. g.* how *Mercury* finding a dead Tortoiſe on the Shore, took its Shell, added Strings to it, and made it into a Lyre: The other, how a Lyre is, or may be made. And if you will likewiſe add this, that the Hiſtory intermixes divers foreign, and accidental Circumſtances with the Diſcovery; which the Dictionary abſtracts and ſets aſide, and ſo reduces it nearer to Science: you will have the full and adequate Difference between 'em. Thus the making of the firſt Lyre is related with ſome Circumſtances which have no place in the proper Structure of the Inſtrument, and are therefore to be omitted in the Dictionary, which only takes in what belongs to the Art, or Artiſts in general; not what belongs to ſome one of 'em.

THE whole, in effect, amounts to this, that the firſt time of doing a thing, is related by the Hiſtorian with the ſeveral Particulars which in any wiſe, tho occaſionally only and remotely, affected it: Whereas the Dictionariſt, coming afterward, keeps more cloſely and ſeverely to the Point, and relates nothing but what is eſſential; that is, the firſt time, the thing is conſider'd as now ariſing; a new Production or Phænomenon, from ſome analogous Principle; and therefore we attend to the foreign Cauſes that brought it forth: whereas afterwards, we conſider it as ariſing from the pre-exiſting Theory, or Preſcriptions of Artiſts, and thus reſolve the Cauſe into the Art it ſelf.

ANY other difference which there may ſeem to be between the two; is only as to more or leſs particular; which, indeed, is a thing that embarraſſes and amuſes us on many other occaſions: Thus in mere civil Hiſtories, if one relates the Series of a Campaign, another the Bombardment of a Town, and a third the Wounding and Death of a general Officer; tho the two latter Subjects be only Parts of the former, yet the firſt will be ſaid to have compoſed a Piece of *Hiſtory*, the ſecond a Piece of *Fortification*, and the third a Piece of *Chirurgery*. And yet there is no other difference between them, than between the Geography of a Country, and the Topography of a Village, or a Hillock; the Hiſtory of a Nation, and the Biography of a ſingle Perſon.

TO ſay no more, the Dictionary of an Art ſtands in much the ſame Relation to the Hiſtory thereof; that the Hiſtory of a People, does to the Lives of all the conſiderable and active Perſons therein. Their difference is only as to the Point of Sight; the Eye being ſuppoſed ſo near in the one Caſe, as to ſee the Parts diſtinctly, and in the other ſo far off, as to take in the Whole completely: whence the one gives you all the Incidents; the other only the greater. In effect, the one is all concerted to one point of view, moſt favourable to the Whole, and the great Parts; the other to many; the Eye being ſhifted for each Part, to furniſh an adequate Repreſentation thereof. In the one Caſe, it is ſuppoſed within the Work; ſo as only to ſee thoſe Parts next it, which neceſſarily hide the reſt; in the other, 'tis without, and can only take cogniſance of thoſe which lie outwards: So that the one chiefly diſcovers how things ſtand within; the other how they ſtand with regard to the adjacent ones.

I AM afraid to keep the Reader any longer in this painful way of Diſquiſition, wherein we are obliged to dig for every ſtep we take. It would doubtleſs ſeem a more agreeable, as well as more reputable Employment, to be raiſing things on high; than thus engaged in ſinking, and working under ground: A Caſtle in the Air is an Object of Pleaſure to every body, while it laſts; and withal is eaſily rais'd, and at ſmall Expences. Your Mines and ſubterranean Matters are mere drudgery, and Pioneers work; difficult to carry on, dubious of Succeſs, and overlook'd when done. Being therefore arrived near the Surface, we take this Opportunity to quit the Courſe, and emerge to open Air.

AFTER ſo ſevere an Inquiry into the Reaſon, Nature, and Perfections of a *Dictionary*; it may prove dangerous and impolitick to ſpeak any thing about the preſent one. From the Deſign of a Dictionary in general, to the actual Performance of any particular one, the Language muſt be much altered. A Man would make fine work

work, that ſhould examine the ſeveral Dictionaries extant, by the Standard here laid down: None of them could abide ſuch a Trial; even that here offered muſt go to wrack, like the reſt.——It may be remember'd, that the Thing executed is allowed to come ſhort of the Idea conceived: The former is only a Copy of the latter, and liable to all the Imperfections incident to other Copies. A thouſand things interfere: Lexicography, being of the Nature of an Art, deviates of courſe from what pure Reaſon would preſcribe; and its Productions come to degenerate ſtill farther, by the Accidents that attend their bringing forth. The Tools, the Materials, and forty things come into the Account: the former prove out of order; the latter obſtinate, and untractable, or perhaps not eaſy to be had. In effect, the Author's Situation, his want of Leiſure or Perſeverance, his Frailties and Foibles, nay his very Perfections and all, conſpire againſt it.

INDEED, a too ſervile Attachment to the Rules and Methods of an Art, in many Caſes proves incommodious and impertinent. We know that the Rules of an Art are poſterior to the Art it ſelf; and were taken from it or adjuſted to it, after the thing it ſelf was done. An Author, therefore, is ſtill in ſome meaſure left to his own Conduct, and may conſider himſelf as inveſted with a ſort of diſcretionary Power, whereby he can diſpenſe with ſome of 'em, and go by others of his own ſuggeſting, where he apprehends it for the general advantage of the Work. The Heights of Art are never to be reach'd by the Rules, but by Genius; by reaſon the Rules were accommodated to a certain Concourſe of Circumſtances, which rarely happens twice; ſo that Laws ſhould be made *de novo* for every new Caſe, or Condition of things. While a Perſon conſiders himſelf as following at ſecond hand, the Meaſures pointed out or preſcribed by others; he will not go on with that Spirit and Alacrity, as when he follows his own Bent. He ſhould therefore conſider himſelf in the Place of the firſt Inventor, or as his Repreſentative, or Succeſſor; and therefore qualified to enact with the ſame Authority for the preſent occaſion, as he did for another.

WHEN a Law is not founded on mere Reaſon, as we have ſhewn is the Caſe in Art; the Obſervation of ſuch Law cannot be enjoined on others. It may well obtain with reſpect to the Perſon that firſt eſtabliſh'd it, as being agreeable to his perſonal Reaſon, *i. e.* accommodated to his particular Combination of Genius, Situation, and other Circumſtances; but can't extend to thoſe in whom this Combination is different. Accordingly, few Laws of Art are univerſal. Small matter by what Laws and Preſcripts a People is guided, provided they be led on to Happineſs; or by what Courſe a Veſſel ſteers, if ſhe do but make a proſperous Voyage.

WITH this View, in the preſent Work, we have taken all the Advantages the nature of the Thing would afford us; and have frequently made our ſelves Delinquents againſt ſtrict Rule, for our Reader's good.----A Dictionary, by our own Confeſſion, is to be a Hiſtory; and yet we have not kept ſo cloſe to that Form, as to abandon the Benefit of all others. In the buſineſs of Mathematicks, for inſtance, the regular way is to relate, or enumerate the ſeveral Matters belonging thereto, without inveſtigating or demonſtrating their truth: Demonſtrations, ſtrictly ſpeaking, have nothing to do in a Dictionary, no more than anthentick Inſtruments, Declarations, *&c.* in a Hiſtory. To pretend to demonſtrate the ſeveral Properties and Relations, *e. g.* of *Lines*, *Angles*, *Numbers*, &c. in a Dictionary, were an Indiſcretion as great, as for an Hiſtorian to produce Certificates, and Copies of Pariſh Regiſters, of the *Births*, *Burials*, *Marriages*, &c. of the ſeveral Perſons whoſe Actions he relates.----And yet, on ſome extraordinary Occaſions, we have not forbore to give Demonſtrations; where, for inſtance, there was any thing very intereſting, or important in 'em: A Practice which Hiſtorians themſelves frequently give into; tho it be a confeſſed Irregularity, as it breaks in upon the Unity of the Narration, and accordingly gives their Work the Denomination of *Mix'd Hiſtory*.

BUT we are far from the Views of ſome Dictionariſts, who think it incumbent on 'em to demonſtrate every thing that is capable thereof. This is directly to forget their Quality; to corrupt the Integrity of the Work *mal à propos*; 'tis being licentious, and impertinent at the ſame time, and diſpenſing with the Rules to their own coſt. How dear, *e. g.* muſt a competent Demonſtration of moſt of *Euclid*'s Propoſitions be here purchaſed? Either the Reader muſt be at the Pains of picking it piecemeal from out of twenty ſeveral parts of the Book, where the Alphabet has happen'd to caſt it; or the Author muſt relinquiſh the Advantages of a Dictionary, and deliver things together, that properly belong to ſo many ſeveral places; or there muſt be a Repetition of the ſame thing a dozen times over. And for what? why, to make the *Dictionary* do the Buſineſs of an *Euclid*'s *Elements*; which it is the unfitteſt in the World for. You might with equal propriety make an ozier Baſket ſupply the Office of a Pleaſure-Boat; or a Sword-pummel that of a Portmanteau, as *Paracelſus* is ſaid to have done.

WHEN a thing has been once regularly demonſtrated, it may be aſſumed, or taken for granted: every body perhaps may be concerned in the Truth of it, but not to ſee the Truth of it. To make it a Principle to take nothing upon truſt, would be as troubleſome in the Sciences, as in Life; and we muſt remain for ever, both wretched, and ignorant. Not only Suppoſitions, but even Errors, frequently lead us to Knowledge otherwiſe inacceſſible. Mathematicians themſelves, who of all others keep moſt to Demonſtration, yet find themſelves under a frequent Neceſſity of admitting and making uſe of things as true, which they do not ſee to be ſo; and thus are ſway'd, like other People, by Authority. A Perſon who makes uſe of the Equality of the Square of the Hypothenuſe, to the Squares of the two Sides; upon the Credit of *Pythagoras*, or *Euclid*'s having demonſtrated it; does little more than what they themſelves do on many Occaſions, who aſſume and make uſe of Propoſitions they have no other evidence of, but the knowledge or remembrance of their having been demonſtrated.

THE Caſe is much the ſame with *experimenting*; which ſtands on the like footing as demonſtrating. They are both neceſſary in their kind; the latter, as it leads on our Knowledge, the former as it follows, and ſecures the Rear: But their uſe is to be reſtrained to theſe Purpoſes; and may be diſpens'd withal in Caſes where neither of theſe are concerned. A Perſon who would diſcover any Point in Phyſicks, or broach and eſtabliſh any Point in Mathematicks, muſt uſe 'em: But the Occaſion is in great meaſure private, and perſonal; and does not extend to the Publick in the ſame degree as the Knowledge of the Doctrines themſelves. That is, the particular means by which a thing was firſt come at, or is ſhewn to be true, do not intereſt us ſo immediately as the Knowledge of the thing it ſelf, which might have aroſe from various other means, and in other manners: A Man may know a thing in the way of *Preſumption*, of *Opinion*, of *Surmiſe*, of *Authority*, and forty other ways; which, tho all much inferior and leſs excellent than the way of *Demonſtration*, and *Certainty*; yet we are glad of 'em on many occaſions, and uſe 'em to good purpoſe. Every degree of Knowledge is valuable. It would be an unreaſonable, as well as an incommodious Sullenneſs in us, to refuſe all Light, except that of Noon-day. We find our Eaſe and Happineſs frequently depend on the doing of things by Twilight, or even Moon-light, or the ſtill more dubious Light of, perhaps, a Ruſh or a Glow-worm.

PYTHAGORAS, in all probability, was not ignorant of the Equality of the Square of the Hypothenuſe, *&c.* before he demonſtrated it; elſe, what ſhould have led him to look for the Demonſtration? And the like may be ſaid of many of Mr. *Boyle*'s Experiments. *Plato* even obſerves, that "the very putting a Queſ-"tion, implies ſome Knowledge of the thing demanded; ſince without this we ſhould not know that what is "returned is an Anſwer."

LESS

LESS might have ſufficed, to ſhew why in the Courſe of this Work we have uſually omitted the Apparatus of Demonſtrations, and Experiments; and given the Doctrines pure and uncumbred by any thing not eſſential to 'em. The Experiments, for inſtance, which led to the Theory of Light, and Colours, what would they be, but like the Scaffolding before a fine Building, which break and interrupt the Sight, and hide moſt of the Beauties of the Work? Such Scaffolding, 'tis true, would be of uſe to the Connoiſſeurs; who might have a mind to examine the Work, to meaſure the Proportions of the ſeveral Parts, and inquire whether every Stone were juſtly laid. But to the generality it would rather be an Incumbrance, much to the diſadvantage of the Work.—— Yet, in the Caſe of Experiments, as of Demonſtrations, we have receded a little from ſtrict Method, in favour of ſuch as have any thing very remarkable or beautiful in 'em. For the reſt, the Reader, if his Curioſity ſerve him, is told where to have 'em at firſt hand.

IN the Caſe of Definitions, too, we do not keep inviolably to what has been above laid down; but reſerve to our ſelves the diſcretionary Right above ſpecified.——We make uſe occaſionally of all ſorts of Definitions, as they beſt ſuit our Deſign, the conveying of Knowledge. In effect, we have uſually a Regard to the degree of notoriety, importance, *&c.* of the Term, tho a Point arbitrary, and indefinite enough; and endeavour to accommodate the Explication thereto. 'Tis a Rule with us, to ſay, *Communia proprie, propria communiter*; to expreſs common Things ſo as that even the Learned may be the better for 'em; and the more abſtract and difficult, ſo as even the Ignorant may enter into 'em. Accordingly, in popular Terms we endeavour to give a technical Definition, *i. e.* to wave the general and obvious Meaning, which is ſuppoſed to be known; and enter farther into the nature of the Thing, not known: As in defining of *Milk*, &c. But in the more remote Terms, the popular and nominal Definition is alſo given, as being ſuppoſed to be here wanted.

THE literal and technical Definitions of a Term, are lame and imperfect without each other; the firſt gives its Uſe and Effect, as part of general or abſtracted Science; the ſecond, as applied to ſome particular Subject. ——The literal Notion, *e. g.* of *Relation*, is that of "conformity, dependence, or compariſon of one thing to "another:" Thus much is common to *Relation*, both in Grammar, Logick, Geometry, *&c. i. e.* it expreſſes this, both when applied to *Words*, to *Propoſitions*, to *Quantities*, &c.——The technical Notion of Relation in Grammar, is "the dependence of Words in Conſtruction:" This makes the grammatical Notion of Relation, *i. e.* it limits or ties down the general abſtract Idea of *Relation*, to the particular Subject of Grammar, Words. Again, the technical Notion of *Relation*, with regard to Arithmetick, Geometry, *&c.* is "the conformity, or "dependence between two or more Lines or Numbers;" *i. e.* the Mathematicians adopting the Word into their Art, reſtrain its literal or general Meaning, to ſome particular Purpoſes of their own, *i. e.* to Quantities.

FROM the whole, it follows, that the two Kinds of Definitions differ as an Art and a Science; as general and particular Reaſon; and again, as abſtract, and concrete. And hence, from the ſeveral technical or particular Meanings, one might of themſelves run back to the general, or literal Meaning, by abſtracting; but not contrariwiſe, from the general or abſtract to the particular ones; in regard thoſe other are arbitrary, and depend on the good pleaſure of the Artiſt who firſt introduc'd them.

ACCORDING to ſtrictneſs, every Term ſhould be firſt given in its literal, or grammatical Meaning; eſpecially when the ſame is a Term in ſeveral Arts; as this helps to fill up the Series, and ſhew the orderly Derivation of the Word, *à primis naturalibus*, from the firſt ſimple Ideas that gave riſe to it, to its laſt, and utmoſt Compoſition. This is like giving the *Root* of the Family; which is certainly neceſſary to its Genealogy.—Yet we have not always kept to this Method. In ſome Words, there is a deal of the literal import of the Word preſerv'd in the Term or the technical one; as in the word *Free*, or *Freedom:* A Man who has a Notion of *Freedom* in its common or literal Senſe, will eaſily paſs on to all the particular ones, as *Free City*, *Free Port*, *Freedom of Speech*, *of Behaviour*, &c. So that in this Caſe, a literal Definition might almoſt alone ſuffice; the Word having ſuffer'd very little at the hands of Artiſts.——In other Words, the literal or primary import of the Word, is almoſt loſt in the Term: for inſtance, in the Term *Power*, in Arithmetick; which will ſcarce bear any tolerable Definition at all. Literally, the Word implies a Relation of Superiority or Aſcendency over ſomething, which in reſpect hereof is conceiv'd as weak, *&c.* According to the analogy of Language, therefore, the Arithmetical Power ſhould have ſomewhat of this relation of ſuperiority over the Root: But the Root it ſelf is alſo a *Power:* So that the Definition of Power muſt take in two oppoſite Relations, *viz.* Power and Subjection.

PERHAPS, to go in the moſt regular manner, and take up things from their Source; one ſhould begin with ſettling their Etymologies: but the great alterations Words undergo, and the great length they are run from their original Meanings, in being borrowed from one Language or Age to another, would frequently make this not only a tedious, but an uſeleſs Labour: ſo that here, too, we have uſed a diſcretionary Power, and only meddled with Etymologies where they appear'd of any ſignificance.

TO explain a Term as a Term, we uſually expreſs the Circumſtances wherewith it is attended in the Art to which it belongs, in their artful Names. This is agreeable to the manner of Artiſts, who writing of their reſpective Arts, uſe Terms as common Words, and ſuppoſe 'em to be known: and 'tis this that conſtitutes a technical Explanation; not the giving the general Effect or Force, in ſuch Words as may equally agree to all other Arts.——And yet in ſome Caſes we recede from this Rule, particularly in divers of the lower Claſs of Manual Arts, and the Structure of ſome Machines: Thus, *e. g.* in Turnery, we make no difficulty, for inſtance, inſtead of *Chuck*, to ſay a round piece of Wood, *&c.* The reaſon is, that where the ſeveral ſubordinate Terms of a Definition are themſelves explain'd in their places, we may ſuppoſe 'em underſtood; but where the Term defined is it ſelf ſo low, that we do not go lower to define the Parts couched under it; there we chuſe, as more ſcientifical, to ſubſtitute ſome more obvious Name, or the general Meaning of the Word for the Term it ſelf; and thus prefer the general or popular, to the technical Definition.

FOR it is to be obſerved, that the Dictionary has its Limits; it only carries Matters ſo low; to a certain pitch of Simplicity, where we ſuppoſe People may take 'em up, and carry 'em farther as they pleaſe. We bring 'em into their Sphere, and ſo leave 'em. So much Knowledge, *i. e.* ſuch a number of complex Ideas, as we may preſume 'em uſually to have got in the common Occurrences of Life, we are willing to ſuppoſe, as a Footing: where theſe end, our Dictionary is to begin, which is to take in the reſt.

IF at any time we explain a complex Idea, which it may be ſuppoſed moſt People have form'd; 'tis becauſe we think they don't take in all the ſimple Ideas that go to conſtitute it: as in the Caſe of *Milk*, *Blood*, or the like; where People are contented with two or three of the more obvious Properties and Phænomena, and ſlur over the reſt.——Thus in Milk, *Whiteneſs* and *Fluidity* are almoſt alone conſidered; and theſe, in the common Opinion, conſtitute *Milk*; ſo that whatever has theſe two Attributes, comes in for the denomination *Milky*. The Texture and component Parts of this Milk, the manner of that Fluid's being ſecreted, collected, *&c.* with the peculiar Properties, and Virtues reſulting from all theſe are left behind. So in Blood, 'tis enough it be *a reddiſh, pretty compact, animal Juice, when warm fluid and homogeneous*, &c. This is going a great way, and even the Dictionaries ſeldom go farther: But, for the component Parts, the *Cruor* and *Serum*; with the component Principles of theſe, *viz.* the *Oil*, *Phlegm*, &c. their Form, Properties, *&c.*

whence ariſe the Craſis, Colour, Heat, Specific Gravity, *&c.* of Blood; Writers don't ordinarily trouble themſelves.

IF, by the Artifice abovementioned, we get free of a vaſt load of plebeian Words, which muſt have greatly incumber'd us; the Grammar and Analogy of Language diſengages us from a ſtill greater number of all kinds. The various States of the ſame Word, conſider'd as it comes under different Parts of Speech, and accordingly aſſumes different Terminations, increaſes the Liſt of Terms immenſely: as, in *Dark*, *Darkneſs*, *Darkning*; *Project*, *Projection*, *Projectile*, *Projective*, &c. which may either be conſider'd as one and the ſame Word under different Habitudes; in regard there is a common Subſtratum of them all: or, as ſo many different Terms; in regard every one takes in ſomething not contained in the other.------This Latitude we make uſe of occaſionally; and either conſider the Words this way or that, as ſeems moſt advantageous to our purpoſe. In ſome Caſes, where the Alteration is merely grammatical, we content our ſelves to explain 'em in one ſtate, *e. g. Shearing*; and ſuppoſe the Reader able, by Grammar to form the reſt, as *Shorn*, &c. In others, where ſeveral particular Ideas are arbitrarily ſuperadded to the Word in one Part of Speech, which do not belong to it in another, we there explain it in all: as, *Precipitate*, *Precipitant*, *Precipitation*, &c.

THIS gives an occaſion to mention a ſtrange kind of Licenſe frequently practis'd in our Language. Tho there be ordinarily a great deal of difference between the ſeveral States or Modifications of the ſame Word, *e. g. Reflecting*, *Reflexion*, *Reflexible*, &c. the ſame as between the Action and Quality, the Power and the Exerciſe of it in this or that Caſe, the Cauſe and the Effect; yet Authors make no difficulty of uſing 'em promiſcuouſly: which would make downright Nonſenſe, were the Readers to keep to the ſtrict import of the Words. But the Truth is, we are not ſo critical about the Matter; if the Meaning come within our reach we jump at it, and are glad to take it; without waiting to ſee whether it would reach us in its preſent Direction, or whether it might not rather fall ſhort, or fly by us. What Confuſion ſhould we make, even in our beſt and cleareſt Writers, were we reſolved not to underſtand 'em but according to the ſtrict Rules of Grammar, and not indulge 'em the petty liberty of uſing *quid pro quo*, one part of Speech for another? In a thouſand Caſes, the ſame Idea is denoted by oppoſite Terms: Thus, we ſay, ſuch a Medicine is good *for*, or *againſt* the Worms, Plague, *&c.*

IT may be urged, that as Cuſtom has authoriz'd this latitudinarian Practice, it is become of grammatical Authority; and that as the Licenſe is known, it can't deceive us; ſince the Readers are led on ſuch occaſions to relax the Bands of Grammar, and annul the difference between the Parts of Speech, in order to admit one a ſubſtitute for another.——But I am afraid this expedient ſcarce indemnifies us from the Abuſe. Beſides the extraordinary embarraſs of reading what is thus promiſcuouſly wrote, 'tis not always we know when and how to ſuperſede the ſtrict import of an Author's Words, and make him ſpeak Senſe in his own deſpite. This I take to be none of the leaſt occaſions of Controverſy and Diſpute owing to Language, and which we may almoſt deſpair of ſeeing rectified, unleſs in a new one.

I SHALL not here enter upon the Merits and Defects of the *Engliſh Tongue*, conſidered as a Language: A great deal has been ſaid on that Head by others, for which the Reader may turn to the proper Article in the Dictionary it ſelf. This Place we reſerve, not for other Peoples Notions, but our own; and what we have to add, will be chiefly as it ſtands with regard to *Art*, and more particularly to a *Dictionary of Arts.*

I BELIEVE none will queſtion but we met with Difficulties enough in the Courſe of this Work. The very Bulk and Dimenſions of it confeſs as much, and the Variety and Uncertainty of its Matter ſtill more. But theſe were in ſome ſort natural Difficulties, and ought to be conſider'd as neceſſarily appendent to the very Eſſence of the Deſign; and therefore did not afflict us ſo much as thoſe that roſe from it at ſecond hand, or were ſuperadded to it, as it were, by Accident. And ſuch was the preſent wild State of our Language, which alone were ſufficient to have baffled the beſt Scheme, and broke thro' the beſt Meaſures that could be form'd.

WE have already repreſented *Language* as ſomething very important; and as having a near and neceſſary intereſt in Knowledge. *Names*, we here add, are ſolemn things, as they are Repreſentatives of Ideas themſelves, and uſed on moſt occaſions in their ſtead: and *Terms*, or Combinations of Ideas, are ſtill more ſo; as much as complex Engines, are of farther and nicer Conſideration than the ſimple mechanic Powers. But who would imagine this, to conſider the wanton uſe we make of 'em; and with how little Fear, or Diſcretion, Words are treated among us? Every body think themſelves privileg'd to alter, or ſet aſide the old, and introduce new ones at pleaſure. *England* is open to all Nations, at leaſt in this reſpect; and our Traders in this Commodity, import their Wares from every Country in all ſecurity. The mercantile Humour ſeems to have poſſeſſed every Part of us, ſo that we are not only unwilling to be without the natural Produce of our Neighbours Countries, but we even envy 'em their Faſhions, their Follies, and their Words. Scarce a petty Author that appears, but makes his Innovations: But when a Dictionary comes out, 'tis like an *Eaſt India* Fleet, and you are ſure of a huge Cargo. The Effect is, that our Language is, and will continue in a perpetual flux; and no body knows whether he is maſter of it or no. The utmoſt he can ſay, is, that he had it for ſuch a Day, excluſive of what has happen'd ſince.

A MAN never knows when he is at the end of the Terms, *e. g.* in Architecture. When he has got two or three Names, for ſome one Member, and thinks himſelf overſtock'd, 'tis odds he has not half. 'Tis not enough he knows what it is named in the *Engliſh*; but he muſt likewiſe learn what the *French*, *Italians*, *Latins*, and *Greeks*, likewiſe call it, or frequently find himſelf at a ſtand. Thus it is in the Caſe of *Fillets*, *Liſts*, *Liſtels*, *Reglets*, *Platbands*, *Bandeletts*, *Tænias*, and *Baguettes*; of *Chaplets*, *Aſtragals*, *Batoons*, and *Tores*; of *Gulas*, *Gueules*, *Doucines*, *Cimas*, *Cymatiums*, *Ogees*, and *Talons*; *Ovums*, *Ovolos*, *Echinus's*, *Quarter-rounds*, *Boultins*, &c. between which, there is no known, allowed differences; but they are either uſed indiſcriminately, or diſtinguiſh'd arbitrarily; one Perſon making this diſtinction, and the next another, or perhaps none at all. So that if we come ſtrictly to Dictionaries, we ſhould have a different one for every Author.

BUT the Miſchief does not end here: for as the antient Arts are in many reſpects different from the modern; the uſe of their Terms neceſſarily involves us in a new Confuſion, and makes the ſame Word ſtand in an ancient Author for one thing, and in a modern for another. Thus it is in *Paraſtata*, *Orthoſtata*, *Anta*, &c. In effect, there is that Alteration continually making in the Language of Architecture, that there ought, in Propriety, to be a different Dictionary of it for every different Age.

THE Truth is, a fourth part of the Words in ſome of our popular Dictionaries, ſtand on no better Authority, than the ſingle Practice of ſome one fanciful Author; who having an intemperate Deſire to ſhew either his Learning or Breeding, has met with Dictionary-Writers fond enough to take his Fripperies off his hands, and expoſe 'em to the Publick for legitimate Goods. By ſuch means, theſe Exotics have obtain'd a kind of Currency; ſo that a Dictionary would be thought defective without 'em. To omit even our Fopperies would be thought a Failing; and might even be eſteemed by many as the moſt unpardonable of all.——On theſe accounts we have been oblig'd to temporiſe a little, how much ſoever againſt our Will; and thus perhaps have contributed

contributed to the ſtill farther Eſtabliſhment of a number of Words, which we had much rather have ſeen proſcribed, or baniſh'd the Land.

UPON the whole, nothing could be more deſirable than an *Index expurgatorius*, to clear the Language of our ſuperfluous Words, and Equivocals; all the modern *French* and *Italian* Terms in the ſeveral Arts, where we have *Latin* and *Greek* ones; and even all the *Latin* and *Greek* ones, where we have *Engliſh* or *Saxon* ones, equal in Sound and Significancy. I think the learned Languages ought to have the preference to the modern, becauſe every Perſon may be ſuppoſed to have read, but not to have travelled; and our Country Words I would prefer to any others, becauſe there is the moſt analogy between 'em, and they uſually retain more of the Origin and Etymology than thoſe tranſplanted from other Languages.——Such a Reform would reduce our Dictionaries to more reaſonable Dimenſions; and diſincumber the Arts from half the difficulty now to be ſurmounted in attaining 'em.

BUT, there is another Spring of Words no leſs prolifick than that hitherto ſpoke of, and which has produced a Swarm of ſpurious, miſhapen Words, which no Nation but our own would ever have own'd: I mean the Itch of coining or making *Engliſh* Words, by a ſort of analogy, from the *Latin* and *Greek* ones. This Fault the Tribe of Lexicographers have carried to a ſtrange exceſs. How muſt a Man ſtare, to ſee what deteſtable Stuff ſome late Writers of that Claſs have complimented us with: Words of their own manufacture, ſcarce fit to do any thing with, except cure Agues! Witneſs ſuch as *Scopuloſity*, *Siticulous*, *Scatebroſity*, *Sicciſic*, *Pugnacity*, *Segnity*, *Sputative*, *Mulieroſity*, *Mugient*, *Gracility*, *Faſtuouſneſs*, *Exuccous*; and many thouſand more, at the Reader's ſervice, to be met withal in a Dictionary which few People are without. One would almoſt wiſh the Mold deſtroyed that ſuch Groteſques were caſt in, for fear of new Impreſſions. We are already overrun with this Author's Scarecrows: but what ſhall we be when, having thus anglicis'd all the *Greek* and *Latin* Words, he proceeds to do the ſame with the *Dutch*, *Iriſh*, *Welſh*, &c. Indeed, I am the leſs angry with him, for that he has carried the Abuſe ſo far, as muſt not only ſave People from being ſeduc'd, but bring the Practice into Contempt. Such Monſters can't poſſibly live long: if they have eſcap'd the Midwife, who ought to have ſtrangled 'em ere they came to light, yet if ever they ſtir abroad they muſt infallibly be knock'd o' the head.

HOW oddly will our Practice in this reſpect look, when confronted with that of our Neighbours? One of the moſt learned Men and greateſt Critics of the laſt Age, M. *Menage*, incurr'd an infinite deal of Cenſure, for only endeavouring to introduce the ſingle word *Proſateur*: and could not ſucceed in it, notwithſtanding that a Word of that import was confeſſedly wanting in the *French*; and both the Sound and Analogy of the new Word were unexceptionable.

TO return. The different ſtate of different Arts is very remarkable. Some of 'em are refined to a degree of ſubtilty that deſtroys 'em; as Metaphyſics, and Logics: others have had no refinement or poliſhing at all, but lie waſte and over-run for want of it; as Agriculture, Heraldry, *&c.* The groſſneſs of ſome is their fault; it being ſuch as diſguſts, and forbids a delicate Mind from purſuing them: in others, their ſubtilty and nicety is their bane, as leaving nothing for a hearty Appetite to feed on. What meagre fare, for inſtance, are the School Rules, and Doctrines of *Mediums*, *Extremes?* &c. They do indeed furniſh us with Relations, and true Relations too; but theſe ſo remote from all Purpoſes of Life, that they are in great meaſure inſignificant.

'TIS certain all our Knowledge and Arts ultimately refer to the great End of Preſervation. The Faculties of the Mind, like thoſe of the Body, were not given us for the mere Exerciſe, or Gratification of 'em; but in ſubſerviency to farther purpoſes. Our Knowledge is all of the Nature of Revelation; and the divine Being reveals nothing to us for the mere vague ſake of our knowing it, but that it may miniſter to his Ends, the being and well-being of his Creatures. Our Perceptions and Notices are all Inſtruments in his hands, which he has appointed to do his work, and bring about the wonderful and adorable Ends of the Creation. They are ſecond Cauſes, or at leaſt Occaſions of what we do; and no doubt are under the Direction of him for whom we do; whoſe Glory is ſerved thereby. Tho they extend to abundance of things, yet they all centre and terminate at laſt in our Preſervation; and accordingly, as they are farther from, or nearer to this Point, they are found fainter or ſtronger: very near they are palpable and cogent; as they recede, they continually abate of their clearneſs, and evidence; and when arrived at a certain diſtance, dwindle to nothing, and are loſt. At a great height from this Centre, the Nexus or Chain whereby things are held together, and in virtue whereof we proceed from things known to things unknown, becomes inſenſible; ſo that we loſe our hold, and wander on we don't know where. Our Faculties here faulter; the Objects they meet with are inadequate to 'em; the Air grows too thin for Reſpiration. But, where we leave off, there poſſibly ſome ſuperior Order of Beings may take it up.-----We have, indeed, a kind of *Comets* in the Affair of Learning, which ſeem to be got far out of the Orb; ſo that one would wonder how they came there, or what ſuſtains 'em; as alſo what they do there. Such are, mere Antiquaries, Etymologiſts, Microſcopiſts, Alchymiſts, Phyſiognomiſts, and other Searchers of Futurity: But theſe, for all their ſeeming diſtance and irregularity, do all reſpect the ſame central Point, and move by the ſame Law with others; and even anſwer very good Purpoſes to the whole.

IN effect, the ſeveral Arts have been cultivated to more or leſs purpoſe, as our Preſervation is more or leſs immediately intereſted in 'em; and by this Key one might almoſt venture to judge which Arts are capable of being carried ſtill farther, and which not.——Our Knowledge of very great and of very little things, is very imperfect, *e. g.* of very great and little Objects, Diſtances, Sounds, *&c.* And the reaſon, no doubt, is, that there is but little Relation between us and them; ſo that we are but little intereſted in the Knowledge of them. Thoſe things we have neceſſarily and immediately to do withal, are made to our reach: for the reſt, no matter, to the Creator's chief Purpoſe, what they are.

AND yet our Leiſure and Curioſity have found means of making even theſe more cognizable than otherwiſe they are: we can, in ſome meaſure, alter the eſtabliſhed Relation between our Faculties and their Objects; and make uſe of one Law of Nature, to undo or ſuperſede another.——Thus we can magnify a little Sound or little Body, or a little Diſtance, *&c.* or we can diminiſh large ones; and thus make things in ſome meaſure adequate Objects, that naturally are not ſo.

BUT there is no great advantage in this: We only, by theſe means, come at a better apprehenſion of things which Nature ſeem'd to put out of our way for no other reaſon but becauſe they did not concern us; leſt we ſhould be engaged to miſtake, and run after things that had no relation to us, to the neglect of thoſe which have.-----Thus, Anatomy is really found of much leſs uſe than at firſt ſight one would imagine; as being employ'd in taking things aſunder and conſidering their Parts, which Nature chiefly intended to be conſidered and dealt with together. There is I know not what ſecret Law, whereby the Effect of a thing is, as it were, attach'd to its integral State; ſo that in proportion as you either diminiſh it, by taking from it, or enlarge it by adding to it, its Effect is alter'd, in a manner beyond what we can well account for from the bare Conſideration of Magnitude.

ABUN-

ABUNDANCE of the leſs uſeful Notices, we find, were kept back, and left to be accidentally turned up in courſe of time: ſuch as the Knowledge of Glaſſes, and their Effects. 'Twas no very important matter whether they were known or not; their uſes were not immediate. If they had, the things themſelves would have been palpable, and neceſſarily diſcovered long ago. Men lived tolerably well without knowing how many Feet a Louſe had, or how many Years a Cannon Ball would be in travelling to the Sun. The *Refrangibility* of the Rays of Light in paſſing different Mediums, which is the great Foundation of all our optic Glaſſes; ſeems only a ſecondary Property or Effect ariſing from another Power, or property of *Attraction* between the Light and the Medium; which it ſelf probably ariſes from ſome other. And there ſeems nothing abſurd in imagining that Nature did not immediately intend ſuch Refrangibility; but that it follow'd accidentally, from ſome Principle which ſhe did intend: So that the great modern Invention of Glaſſes, might be an accidental Derivation, from ſome of Nature's Redundancies. In effect, the only things left to Study and Art, may be theſe very Redundancies; the other Matters, which primarily concern us, being learnt in a more immediate manner.

NO body will take this for a Reflection on Art: 'Tis only a Panegyrick on Nature: an Illuſtration of her Goodneſs in contriving that things moſt neceſſary and uſeful, ſhould be moſt obvious, ſo as to be almoſt diſcoverable by a ſort of Inſtinct; and the other leſs immediately uſeful ones, left to be accidentally turned up in the Courſe of Experiment and Diſquiſition. We may admire her Wiſdom ſtill farther in this, that ſhe ſhou'd as it were go out of her way, and annex a ſort of Pleaſure, beyond her main Purpoſe, to the Knowledge even of things not immediately uſeful; in order to engage us to Induſtry and Activity. This ſhews that ſhe has Ends to ſerve by that very Activity; and perhaps is the beſt Demonſtration in the World of the Neceſſity we are under to purſue Knowledge; and may raiſe a Suſpicion, that this very Purſuit may poſſibly contribute to our Preſervation in ſome farther manner not yet attended to.

'TIS no wonder the School Philoſophy ſhould be carried ſuch a length; conſidering the narrowneſs of its Subject, and the great number of hands to cultivate it for ſo long a time. Its chief Employment is in aſſigning, and enumerating the Characters and Differences of our Perceptions, or internal Objects, taken as they are excited in us in the natural Courſe of things; by which it is diſtinguiſhed from the Modern, which is chiefly imployed in means to vary and modify theſe Perceptions; and thus find out farther Relations and Differences than would otherwiſe have appear'd.——The Philoſophers of the former kind are contented to take Nature as ſhe comes home to 'em; and apply their Reaſonings thereto without more ado: Thoſe of the latter, go out in queſt of her, to have more Matter to reaſon upon. The former are more contemplative, the latter more active; the former, in fine, reaſon, abſtract, and diſcourſe more; the latter obſerve, try, and relate more.

HENCE we diſcover why the Old is much more perfect in its kind than the New. The former has little to do but compare, order, methodize, *&c.* what is ready at hand; the latter has likewiſe to find; after which all the labour of the other ſtill remains. The former takes Nature in all her Simplicity; the latter adds Art to her, and thus brings Nature into conſideration in all her diverſity: the former chiefly conſiders natural Bodies in their integral State; the latter divides, and analyſes 'em: So that the former finds moſt of the principal Relations, the latter many more curious, and amuſing ones. Hence, the former haſtes to its Perfection, and can't long hold out; for that its Matter is limited: the latter can ſcarce ever arrive at it, ſince Experiments are endleſs. To ſay no more, to have Philoſophy in its perfection, we ſhould have the Order, Preciſion, and Diſtinctneſs of the Old; and the Matter, the Copia of the New.

THE modern is yet wild and unaſcertain'd. 'Tis not arrived at the Maturity of Method; the Mine is but juſt open'd, and the Adventurers are yet only ſollicitous about the Matter to ſee what it affords. Circumſtances do not yet come in courſe; and 'twill be long ere it arrive at a juſt extent to give room and leiſure for reducing it to regularity. True, the Rules and Methods of the antient, are in ſome meaſure applicable to the new, and will go a good way towards the ordering and aſcertaining of it; but the preſent Philoſophers ſeem yet too warm and ſanguine for ſuch a Buſineſs; which muſt be left to the ſucceeding Age to think about. Add, that the farther they go on to dig Materials, ſtill the more difficult will the ranging of 'em be; inaſmuch as there is but one true and juſt Order to lay them in; and the more of 'em, the more intricate that Order, and the harder to find. This a Man may be poſitive of, he never will ſee half the Experiments and Obſervations already made, laid up or uſed in a Syſtem of Phyſics.

BUT when that is done, a deal will ſtill remain, ere we have the chief uſes of it. For phyſical Knowledge, ſtrictly conſider'd, is only a Step, a Means of arriving at a higher and farther kind. Hiſtories, Obſervations, and Experiments of the Kinds, Order, Strata, *&c.* for inſtance of Foſſils, are very uſeful and laudable things, as they tend to lay in a Stock of ſenſible Phænomena, for the Mind to work upon, digeſt, and draw new Notices from, for the Improvement of our own Faculties, and the better Conduct of Life: But 'tis a Shortſightedneſs to forget this farther View, and look only to the Things themſelves. The bare Acquiſition of new Ideas is no real advantage, unleſs they be ſuch as have ſome relation to our ſelves, and are in ſome ſenſe adequate, and adapted to the Circumſtances of our Wants, and Occaſions, or capable of being made ſo. Knowledge, in the firſt State, is like Food in the Stomach, which may pleaſe and ſatisfy us, but is of no uſe to the Body till farther prepared. It muſt be brought nearer us, and made more our own, more homogeneous to our ſelves, ere it feeds us.——The modern Philoſophy is not ſo properly a Philoſophy, as the Adit or Opening of one. Its Matter has yet only undergone the firſt Concoction: we are yet only converſant about new phyſical Relations, learnt by Senſation; whereas to bring it to the Perfection requir'd, it muſt have undergone the farther Operations of Imagination, and Reaſon. Mere Phyſics, as ſuch, do not make a Philoſophy; thoſe Phyſics muſt firſt be carried up to Metaphyſics and Ethics, ere we can ſafely ſtop. So far as it is Phyſics, it is foreign to the Mind, and its Occaſions; before it affect and influence our Reaſon and Judgment, it muſt be ſubtiliz'd vaſtly, and made more ſimilar to the Metaphyſical Nature of the Mind. While Phyſics, it remains under the Direction of the Author of Nature; and proceeds wholly by his Laws, and to execute his Purpoſes: ere it come under our Direction, and become ſubſervient to our Will, it muſt have laid aſide what was active, and neceſſary in it, and become paſſive to our Reaſon, *i. e.* it muſt have been tranſfer'd from the Dominion of the Almighty's Will, or Reaſon, and brought under ours; if that do not imply a Contradiction.

TO return. Senſible Phænomena, we have already ſhewn, are the Foundation of Philoſophy: but your Edifice will neither make any Figure, nor afford any Convenience, till you have carried it one or two Stories higher. 'Tis but, as it were, the Cellaring, or Ground-work; which one would think were no very comfortable place to live and ſpend all one's time in. 'Tis one extreme, to take our Lodging as ſome of the modern Virtuoſos are contented to do, under ground; and another to reſide altogether in Garrets, as the Schoolmen may be ſaid to have done.

THE School Philoſophy, however, is of ſome farther uſe, as Matter of Hiſtory: We learn by it how People have thought, what Views have obtain'd, and in what various Manners the ſame thing has been conceiv'd; which, tho it be Knowledge as it were once removed, yet is not intirely uſeleſs. The Hiſtory of human

human Thoughts is no doubt the moſt valuable of all others; it being this alone that can make the Baſis of a juſt Logic, as Phyſiology of a juſt Phyſics. We muſt know wherein People have fail'd, or fallen ſhort, or been deceiv'd, to learn the Reaſons thereof, or be able to form Rules for avoiding the like. The ſeveral Opinions that have obtain'd, may be conſider'd as ſo many Phænomena of the human Mind, which muſt be conſider'd and inquir'd into to find its Nature.——This alone were enough to have engaged us not to omit that part of Learning, in the preſent Work: tho there were not wanting other circumſtantial Reaſons which had alſo their ſhare; as, the neceſſity hereof to the underſtanding not only of the antient Writers, but even of the modern ones, who frequently combat, remark, *&c.* upon the antient Notions. To which it may be added, that abundance of our Terms and Dictions are derived from them, and therefore could not be ſo compleatly underſtood without 'em. The Language of the antient and modern Philoſophy is not very different: the chief Diverſity is in the different Ideas affixed to the ſame Words, and the different Applications of 'em. And happy had it been for the Moderns, had they form'd a new Set of Terms adapted to their new Notions: By adopting the old ones, they have not only introduced a world of Ambiguity and Confuſion; but have even loſt the Credit of many of their own Diſcoveries, which now lie blended and buried among thoſe of the Antients. One is at a loſs to think what could induce the great Philoſopher of our Age, to uſe the word *Attraction*, in the Senſe he has done. No doubt it was originally as pertinent as any other; but the Stamp and Impreſſion it had already taken from the Antients, made it leſs fit to receive a new one. It could at beſt but take it imperfectly; and the reſult was, a promiſcuous Image, wherein we neither ſee the one nor the other, diſtinctly. 'Tis ſcarce in the Power of Imagination, totally to diveſt a Sound of its received Meaning, and conſider it as indifferent to all things; any more than to annihilate the Characters on a piece of Paper, and conſider it as a mere Blank. Accordingly, tho the great Author abovementioned explain'd over and over, in the cleareſt Terms, the Senſe he fixed to his *Attraction*; yet Experience verifies how much he was overſeen; the chief Objections againſt his whole Syſtem being drawn from a Miſapprehenſion of this very Word, which keeps half the Philoſophers in *Europe* ſtill at a diſtance, afraid to admit a moſt excellent Doctrine, merely out of diſtruſt of the Vehicle that conveys it. But this *en paſſant:* The Reader who deſires to ſee farther, may turn to the Articles ATTRACTION, NEWTONIAN PHILOSOPHY, GRAVITATION, *&c.*

WHAT has been ſpoke of the *School Philoſophy*, reminds us of *Aſtrology*; the Terms whereof have not been omitted in this Work.----Were it only that it has once obtain'd, is ſtill extant in Books, and has given occaſion to abundance of Terms and Phraſes, adopted into other Arts; it would have a Title to be remember'd. "The Hiſtory of Mens Follies, *ſays the inimitable* Fontenelle, makes no ſmall part of Learning; and "unhappily for us, much of our Knowledge terminates there *." But this is not all; and they who abſolutely reject all Aſtrology as frivolous, don't know it. Every Art and Science has its Vanities, and Foibles; even Philoſophy, and Theology: and every one its good Senſe, even Aſtrology. The heavenly Bodies have their Influences: The Foundation, therefore, of Aſtrology is good: but thoſe Influences are not directed by the Rules commonly laid down, nor produce the Effects attributed to 'em: ſo that the Superſtructure is falſe. Aſtrology, therefore, ought not to be exploded, but reformed. Indeed a Reformation would reduce it into a little compaſs; but this little is too much to be loſt, as it now is, among that heap of Trumpery mixed with it.------We have even been careful to preſerve what is juſt and rational, in Phyſiognomy, Witchcraft, and many other fanciful Arts. The time was, when Phyſics was not much more worthy the Study of a Man of Senſe, than Aſtrology now is; ſo that one might propoſe an *Introductio ad ſanam Aſtrologiam*, as a Deſideratum.

THE *Preface* is now degenerated into a *Diſſertation* in good earneſt: at leaſt, it has got the Length and Formality thereof, and wants only the Accuracy and Preciſion.-----Enough has been diſcourſed of the general Nature, and Subject of the Work: You muſt now allow me to deſcend a little more to particular, and perſonal Matters; and thus end my Preface, where I might have had Precedents enough for beginning it.

I WILL at leaſt deal honeſtly with my Reader, and not be caught faulty in point of Morality, whatever I may be in any thing elſe.——What has been ſaid hitherto, has been on the advantageous ſide of my Work; and I ſhould not have acquitted my ſelf, ſhould I not likewiſe mention what may be alledg'd on the contrary Part.——The curious Reader, then, may expect, he will here meet with Omiſſions, and there with Redundancies: here the Method and Œconomy are not kept to; there an Article is imperfectly treated: here, a Paſſage from ſome other Language is not ſufficiently naturalized; there a Sentiment of ſome other Author is not ſufficiently digeſted: There, in fine, the Author was aſleep, and here the Printer.

ONE might palliate theſe Objections, by alledging, that "they are things not peculiar to this Work, but "extend to all of the Kind; that moſt of 'em are things not foreign and acccidental to it, but ariſe of neceſ-"ſity, from the very Nature and form of a Dictionary; and that many of 'em, are not peculiar even to a "Dictionary, but agree to all extenſive Undertakings, and are appendant to the very beſt Part of the Deſign, "its Univerſality:" but inſtead of extenuating, I had rather be guilty of inflaming, and aggravating 'em.

FOR *Errors*, they cannot be very few, conſidering the Hands thro' which moſt Parts of our Knowledge have paſſed, and from whom we are obliged to take our Accounts. What one Author, upon the moſt particular Subject, will you produce, that has not his ſhare of 'em? and what *Argus* could poſſibly ſee, and correct the Errors in all the Authors he had to do with? *Scaliger*, in his Exercitations againſt *Cardan*, has ſhewn ſome twenty thouſand, in one ſmall Work; and no body imagines he has pick'd it perfectly clean. Yet *Cardan* was no ill Author. *Bayle*'s Dictionary has been called the Errata of *Morreri*; yet is not *Bayle* himſelf without his Errors.------The moſt we can ſay, is, that we hope there will be few found in the preſent Work, in compariſon of others of the like kind. Many thouſands we have corrected, both in the Dictionaries and other Writings we have collected from, by means of the Light which other Parts of Knowledge afforded: But after ſo large a Harveſt, no doubt there remains a tolerable Gleaning. We flatter our ſelves, however, that what we have overlook'd, the Reader will frequently be enabled to correct, by the Means here afforded; and that there will be few Errors found in the Book, which the Book it ſelf will not help to rectify.

AS to *Omiſſions*, there is ſcarce any avoiding 'em; and the more intelligent the Reader is, the more of this kind he will neceſſarily meet withal: they being only ſuch in relation to his fulneſs. Indeed, I muſt own my ſelf greatly a Debtor on this ſcore; and tho at preſent inſolvent, yet if the Reader will give me Credit, it ſhall be my endeavour to ſee all I owe diſcharged; if not in a Lump, yet by a Courſe of Payments.

FOR *Redundancies*, you know there cannot well be richneſs without 'em. After you have picked what you think fit of this kind, and laid it by; 'tis ten to one but the next Perſon that comes, will reſtore half of 'em to their places; and tax your Temerity, and want of Taſte: and the next after him will go near to replace the other half.

AS to *Irregularities*, and breaches of Method, I will not claim Impunity on the Score of being the firſt that introduced any certain Rules, or Method into this way of writing at all: But there will be at leaſt this Satisfaction attending my Caſe, that I cannot be indicted for the Breach of any Laws but my own.-----Nor

* Hiſt. de l' Acad. R. An. 1708. p. 135.

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muſt it be forgot, that I pretend to have carried the *Dictionary-Way* to a pitch hitherto little thought of: So that if I have fallen ſhort of the Mark on one ſide; it may be ſome Atonement that I have gone beyond it in another. I am ſenſible, however, there is no Point I have been more delinquent in than this one of Method; and that I am at every turn forgetting my own View. The References, and neceſſary Connexions between the Parts, which ſhould ſhew their Relation, and help the Imagination to put 'em together, are but too frequently dropt, and the Reader left without his Clue.

AS to *Jejuneneſs*, and Crudity; no doubt there muſt be a deal of that kind, conſidering the Time ſo great a Load of Fruit had to hang and ripen. Much of it was gathered ere it could poſſibly be matured; ſo that 'tis no wonder it now and then taſtes of the Wood. But ſetting aſide this; if a Man may not be allow'd to ſay a good number of indifferent things, in the Compaſs of five hundred Sheets, I know not who would be an Author.

LASTLY, as to there being little in it *new*, and of my own growth; I muſt here change my Style; and from Confeſſion, turn to Vindication.-----The Work is, what it ought to be, a *Collection*; not the Produce of a ſingle Brain, for that would go but a little way; but of a whole Commonwealth. If any Perſon will undertake to write a Dictionary, even of ſome one particular Art, from his own Fund, alone; a Man may ſafely undertake to prove it good for nothing. I do not pretend to entertain my Gueſts at this rate, with juſt what my own ſcanty Barns afford: The whole Country is ranſack'd to make 'em the fuller Banquet. Call me what you will; a *Daw*, and ſay I am ſtuck over with other Peoples Feathers: with all my Heart; but it would be altogether as juſt to compare me to the *Bee*, the Symbol of Induſtry, as that of Pride. For tho I pick up my Matters in a thouſand Places; 'tis not to look gay my ſelf, but to furniſh you with Honey. I have rifled a thouſand Flowers; prickly ones many of 'em, to load your Hive. No body that fell in my way, has been ſpared; Antient nor Modern, Foreign nor Domeſtick, Chriſtian, nor Jew, nor Heathen: Philoſophers, Divines, Mathematicians, Critics, Caſuiſts, Grammarians, Phyſicians, Antiquaries, Mechanics, all are ſerved alike. The Book is not mine, 'tis every body's; the mix'd Iſſue of a thouſand Loins. The Prince of modern Authors, is pillaged to ſome purpoſe; and what Quarter then can any body elſe expect? If ever you wrote any thing your ſelf; 'tis poſſible there is ſomething in it of yours: ſo that you will at leaſt allow ſomething in it good.

NONE of our Predeceſſors can blame us for the uſe we have made of them; ſince it is their own Practice. It is a kind of Privilege attached to the Office of Lexicographer, if not by any formal Grant, yet by Connivance at leaſt. We have already aſſumed the *Bee* for our Device; and who ever brought an Action of Trover or Treſpaſs againſt that avowed Free-booter? If any body blames us, 'twill ten to one be ſome of thoſe very Drones, who are ſuſtained by our means.

'TIS idle to pretend any thing of Property in things of this Nature. To offer a thing to the Publick, and yet pretend a Right reſerved therein to one's ſelf, if it be not abſurd, yet it is ſordid. The Words we ſpeak; nay, the Breath we emit, are not more vague and common than our Thoughts, when divulged in print. You may as well prohibit People to uſe the Light that ſhines in their Eyes, becauſe it comes from your Candle: E'en clap it in a dark Lanthorn, and let us not be amuſed, and dazzled by it; if we may not be the better for good things, let's not be the worſe for the ill and indifferent ones mix'd with 'em.

WE ſee the ſame Thought, which was firſt ſtarted in one Author under a world of Crudity, borrow'd by another become farther improv'd and ripen'd; and at length tranſmitted to a third, yield Fruit in abundance. All Plants will not thrive in all Soils that will produce 'em; ſome languiſh in their Mother-Beds: whence the Gardner is under a frequent neceſſity of Replanting, Engrafting, *&c.*

TO do juſtice to a *Collection*, I mean a general and promiſcuous one; it has its Advantages. Where numbers of things are thrown precariouſly together, we ſometimes diſcover Relations among 'em, we ſhould never have thought of looking for: As, the Painter's and Sculptor's Fancy, is frequently led on to the boldeſt and moſt maſterly Deſigns, by ſomething they ſpy in the fortuitous Sketches of Chance, or Nature: inſomuch that a celebrated Author * makes no ſcruple to lay this down as the firſt Origin and Occaſion of all theſe Arts. 'Tis certain moſt of our Knowledge is empirical, the Reſult of Accident, Occaſion, and caſual Experiment: 'Tis but very little we owe to Dogmatizing and Method; which, as already obſerv'd, are poſterior Matters, and only come in play after the Game is ſtarted. 'Twas, in all probability, the hand of Chance that firſt threw Sulphur, Charcoal, and Salt-petre together; and what ſurprizing Effects have not aroſe from it; what Handle has it given to Art and Contrivance, to direct and apply this fortuitous Production?

'TIS indeed ſurprizing to conſider, what ſlender Experiments and Obſervations many of the capital Doctrines have aroſe from: The Blows of a Smith's Hammer on his Anvil, ſtruck out the Principles of Muſic; which *Guido*, a poor Friar, perfected by what he obſerved in conning over his Beads. The Inventions of *Printing*, of *Glaſs*, of the *Dipping Needle*, of *Phoſphorus*, of *Teleſcopes*, of *Taffata*, of *Antimony*, &c. are ſuppoſed to have aroſe in the like manner; as the Reader may find under their proper Articles: And how many more we know not, by reaſon the great Obſcurity of their firſt Riſe, ere they attain'd a degree of Uſefulneſs and Perfection ſufficient to be taken notice of, has buried the particular Circumſtances thereof. If we will hear the antient *Phœnicians*, and *Egyptians*, amongſt whom moſt of the Arts are ſuppoſed to aroſe; they all came from caſual Obſervations: Geometry from the Inundations of the *Nile*; the Flight of the Crane, gave occaſion to the Invention of the Rudder; the Ibis taught to adminiſter a Clyſter, *&c.* In effect, a new Obſervation in ſome Peoples Minds prepared for it, is like a Spark in a heap of Gun-pouder, which may blow a whole Mine.

WHAT Advantages may not Philoſophy derive from ſuch a Collection, or Farrago of Arts; when 'tis conſidered, that every Circumſtance, every Article of an Art, ought to be look'd upon as a Datum, a Phænomenon, or Experiment in Philoſophy; and that the leaſt of 'em may poſſibly be the Foundation of a new Syſtem?— To conſider only the *Tanning*, or *Currying* of Leather: what is the whole Proceſs, but a Series of phyſical Effects, ariſing from new applications of Body to Body? And how many Lectures will the Philoſopher have from Painting, Gardening, Agriculture, *&c.* touching *Planting*, *Engrafting*, *Pruning*, *Expoſure*, *Expreſſion*, *Walls*, &c. which might never have come in his way, but by ſuch a chance? When a thing is once ſtarted, it may be applied infinite ways, and no body knows where it will ſtop.

THRO'OUT the Whole, we have had a particular regard, both in the Choice of the ſeveral Heads, and in dwelling or amplifying upon 'em; to the extending our Views, dilating our Knowledge, opening new Tracks, new Scents, new Viſtas. We have endeavour'd not only to furniſh the Mind; but to inlarge it, and make it in ſome meaſure co-extend with the Dimenſions of all Minds, in all Ages and Places, and under all Situations and Circumſtances: as Language, in ſome meaſure, makes our Senſes do. With which view, we have given the Sentiments, Notions, Manners, Cuſtoms, *&c.* of moſt People, that have any thing new, unuſual, or hardy in 'em.

SUCH a Variety of Views, Principles, and Manners of thinking, is a ſure Remedy againſt being too violently attached to any one; and is the beſt way of preventing the making of Pedants, Bigots, *&c.* of any

* Leon Battiſta Alberti, della Statua.

kind. It may be ſaid, that every Art tends to give the Mind a particular Turn; and that the only way of maintaining it in its natural Rectitude, is by calling in other oppoſite ones, by way of Counter-ballance. Thus we find nothing more perverſe and unſufferable than a mere Mathematician, mere Critic, Grammarian, Chymiſt, Poet, Herald, or the like; and the proper Diſpoſition is only to be had from a juſt Temperament or Mixture of 'em all.

I OWN this is not the way to make a very great progreſs in any Art; but at the ſame time it is the only way to hinder our being ſpoil'd by any; and becoming Creatures rather of *Homer* or *Ariſtotle*'s making, than God's: and receiving our Taſtes, Views, Reliſhes, at ſecond hand, rather than from Nature her ſelf. This, however, is only to be underſtood with regard to perſonal Benefit. For no doubt the Publick is better provided for, by the mere Purſuers of particular Arts, than the general Appliers to all: ſince each is hereby brought to greater Perfection; and the Mixture and Temperament, wanting in the Individuals, is found in the Whole.

TO conclude, the ultimate View of a Work of this, or any other kind, ſhould be, the forming a ſound Mind, *i. e.* a Syſtem of Perceptions, and Notions agreeing to the Syſtem of Things, or in the Relation thereto, intended by its Author. The End of Learning and Study, is not the filling our Heads with other Mens Ideas; that is an Inrichment which may prove for the worſe, if it carry any ill Quality with it: Richneſs is not the chief thing aim'd at; 'tis only a Circumſtance, or Matter of a ſecondary Conſideration: Soundneſs is the firſt. There are many Manures which the Huſbandman dares not uſe, by reaſon they would corrupt the Land, at the ſame time they enriched it; and lay the Foundation of a Diſeaſe, which would in the End impoveriſh, and make it ſpend it ſelf in unprofitable Weeds. A little pure Logic, or Theology, or Chymiſtry, in ſome Peoples Heads, what Miſchief have they not produced?-----But it muſt be owned, Mens Heads are not ſo ſoon fill'd: the Memory is not ſo tenacious as we imagine; Ideas are tranſient things, and ſeldom ſtay long enough with us to do us either much good, or harm: Ten to one but what we read to-day, is forgot again to-morrow. And what chiefly makes new Ideas of any ſignificancy, is their extending and enlarging the Mind, and making it more capacious and ſuſceptible.-----But neither is this Enlargement the laſt Aim; but is chiefly of uſe, as it contributes to the increaſing our Senſibility, to the making our Faculties more ſubtil, and adequate, and giving us a more exquiſite Perception of things that occur; and thus enabling us to judge clearly, pronounce boldly, conclude readily, diſtinguiſh accurately, and to apprehend the manner and Reaſons of our Deciſions. In which view, ſeveral things may be uſeful, that are not ſo much direct Matters of Knowledge, as ſubſervient to the ſame End; for inſtance, much of the School Philoſophy, which by exerciſing and exciting the Mind, has a kind of collateral tendency to ſharpen its Faculties; and needs only be read, not retain'd, to produce its Effect.-----But neither does the Matter end here: Even this does not amount to the full and adequate End of Knowledge: This is only improving the Organ; and there muſt be ſome farther End in ſuch Improvement. No Man ſharpens his Weapon on the ſole Conſideration of having it ſharp, but to be the fitter for uſe. Briefly, then, our Faculties being only ſo many Inlets, whereby, and according to the Meaſure whereof, we receive the Intimations of the Creator's Will, or rather, the Effects of his Power and Action; all the Improvements made in 'em, have a tendency to ſubject us more entirely to his Influence and Direction; and thus make us conſpire, and move more in concert with the reſt of his Works, to accompliſh the great End of all things. In which our Happineſs and Perfection conſiſts; the Perfection of a ſingle Nature, ariſing in proportion as it contributes to that of the TO' ΠA^N.

ERRATA.

IN the Article *Angle*, Page 97. Column 1. Line ult. for *Centre* L, read *Centre* I.
Article Mean *Anomaly*, l. 10. inſert *Fig.* 64.
Article *Aſymptote* of a Logarithmic Curve, inſert *Fig.* 33.
Centre of Oſcillation, l. 11. for DEHB, r. DFHB.
Centripetal Force, l. 2. for *Fig.* 24. r. *Fig.* 25.
Centrobaryc, Corol. VI. for *divided into two* MD, r. *be biſected in* D, and for *m* O, r. *in* O.
Chord, p. 211. col. 2. l. 26. for *Fig.* 7. r. *Fig.* 6.
Circle, p. 221. col. 1. l. 27. for DE r. DF, and l. 36. inſert *Fig.* 7.
Circumſcribing, for *Fig.* 32. r. *Fig.* 29.
Commutation, l. 3. after *Earth* inſert *at* S, and for *Fig.* 24. r. *Fig.* 26.
Compaſſes, for *Geman Compaſſes* r. German *Compaſſes*.
Compoſition of Motion, l. 27. for *as far as e e*, r. *as far as c e*.
Conchilis, l. 7. for EE r. EF.
Cone, p. 300. col. 1. l. 13. for *Diameter of its Baſe*, r. *Diameters of its Baſes*.
Contact, l. 15. for *cuts* r. *touches*.
Crepuſculum, p. 344. l. penult. for *Sum of*, r. *Sun's*, and p. 345. l. 2. and 3. for, P Z *the Elevation of the Pole* P R, r. P Z *the Complement of the Elevation*, &c.
Curve, p. 361. col. 2. l. 26, and 59. for *Tab. Analyſis* r. *Tab. Geom.*
Cycloid, l. 4. for *Tab. Analyſis* r. *Tab. Geometry*.
Declinator, l. 25. for *Centre* E, r. *Centre* F.
Deſigning, l. 10. for *Fig.* 9. r. *Fig.* 15.
Diagonal, l. 77. for B S, r. B E.
Horizontal *Dial*, l. 9. for *Meridian Line* A B, r. *Meridian Line* A B; and l. 16. for D C, r. D E, and l. 22. for *a* B C *d* H, r. *a b c d* H.
Eaſt *Dial*, l. 11. for A C, r. D C.
Primary *Dial*, l. 20. for E E, r. E F.
Line of *Diſtance*, for *Fig.* 10, and 11. r. *Fig.* 12.
Diviſion in Lines, inſert *Tab. Geometry*, *Fig.* 17.
Eccentric, for *Fig.* 11. r. *Fig.* 1.
Equation, p. 335. col. 1. l. 15. for *given Poſition*, r. *given in Poſition*.
Flying, l. 20. for *Temporal Muſcles* r. *Pectoral Muſcles*.
Geocentric *Latitude*, l. 11. for, *e* T ☿ r. *e t* ☿.
Latus Tranſverſum, for *Fig.* 5. r. *Fig.* 1. and for GLRO r. DLRO.
Logiſtic Spiral, for *Fig.* 11. r. *Fig.* 22.
Article Concave *Mirror*, Law II. after F inſert *Fig.* 34 *.
Paracentric Motion of Impetus, for *Fig.* 25. r. *Fig.* 24. and dele T.——*Paracentric* Solicitation of Gravity, dele *Fig.* 26.
Parallax of Longitude, for *Fig.* 28. r. *Fig.* 29.——*Parallax* of Aſcenſion, for 29. r. 28.
Parallelogram, l. 17. for *Fig.* 39. r. *Fig.* 41. and l. 19. for CH r. CD.
Particula Exſors, for *Augment* r. *Argument*.
Perſpective of a Triangle, l. 14. for *ſince a, b, and are the Appearances*, r. *ſince a, b, and c are the Appearances*.
Inclined *Plane*, Law IX. after A C inſert *Fig.* 58. and in the Corol. of the ſame Law inſert *Fig.* 60. and in Law XIII. for BAK r. FG.
Projectile, Law III. after *deſcribe a Parabola* dele *in a Medium uniformly reſiſting*.
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Sine, p. 81. col. 1. l. 63. for *the Arch* E F C, r. *the Arch* F C.
Sine-Complement, l. 2. for A E, r. A H.
Solid Angle, l. 3. for *Fig.* 30. r. *Fig.* 31.
Star, p. 122. col. 2. l. 20. for *Fig.* 31. r. *Fig.* 7. and l. 24. for *the Star* C *deſcribing an equal Arch* C D H, r. *the Star* D *deſcribing an Arch equal to* C D H.
Triangle, p. 242. col. 2. l. 41. for AC, r. BC.

N. B. *The Figures relating to each Art are placed fronting the Name of the reſpective Art, in the Body of the Book; and are refer'd to under that Title: as, Tab.* Architecture, *Tab.* Geometry, *&c.—To each* Figure *is alſo annex'd the* Word *for whoſe Exemplification it ſerves: So that the Reader may either go from the Word to the Figure, which exemplifies it; or backwards, from the Figure, to the Word which explains it.*

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Samuel Strode of *Punsborne* in *Hertfordſhire*, Eſq;
William Scourfield jun. of *Moat* in *Pembrokeſhire*, Eſq;
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Mr. *Jonas Sedgley*.

T.

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The Right Hon. the Marquis of *Tweedale*.
The Right Honourable the Earl of *Tankerville*.
The Right Hon. the Lord Viſcount *Torrington*.
The Right Hon. the Lord *Tarbat*.
The Right Hon. *Richard Tighe*, Eſq; one of the Privy Council in *Ireland*.
The Honourable *Thomas Trevor*, Eſq;
The Honourable *John Trevor*, Eſq;
Cholmley Turner of *Kirkleatham*, Eſq;
Edmund Turner Eſq;
John Topp of the *Inner Temple*, Eſq;
John Thornhill Eſq;
John Threſher of the *Middle Temple*, Eſq;
William Triggs of the *Inner Temple*, Eſq;
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Brook Taylor L. L. D. F. R. S.
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CYCLOPÆDIA:

OR AN

UNIVERSAL DICTIONARY

OF

ARTS and SCIENCES.

A, A Vowel, and the first Letter of the *Engliſh* Alphabet. See LETTER, VOWEL, and ALPHABET; *where what relates to A, conſider'd in each of thoſe Capacities, is deliver'd.*

The Grammarians will needs have *A* the firſt Letter in all Languages; and ſome of 'em aſſign a natural Reaſon for it, *viz.* that it is the moſt ſimple, and the eaſieſt pronounc'd of all articulate Sounds. To confirm this, *Jul. Scaliger* obſerves, that *A* is the firſt Sound Nature puts forth at the crying or ſmiling of Infants; and that it needs no other Motion to form it, but a bare opening of the Lips. See VOICE.

Covarruvias, refining on this Sentiment of *Scaliger*, obſerves, very gravely, that the firſt Sound put forth by Boys is *A*; but that Girls firſt put forth E; each pronouncing the initial Letter of the Name of the firſt Parent of its reſpective Sex. Dr. *Littleton*, ſetting *Adam* aſide, makes the one ſpeak the final, and the other the initial Letter of the Name of the Mother of Mankind, *EvA*.

But 'tis in vain that Authors compare the *A* of the *Engliſh*, *Latin*, *French*, &c. with the *Aleph* of the *Hebrews*, or the *Eliph* of the *Arabs*. Thoſe two Letters have no Conformity with our *A*, except in this, that they are the firſt of their ſeveral Alphabets. What ſets 'em far aſunder, is, that theſe Oriental *A*'s are not Vowels. See VOWEL.

Some Criticks take the Hebrew *Aleph* to be neither Vowel, nor Conſonant, but what the Grammarians call an *Aſpirate*, or *pneumatic* Letter; like the H in the *Latin* and our Language: adding, that S. *Jerom* appears to have had the ſame Thought, who probably learnt it from the *Jews* of the School of *Tiberias*. But the Jeſuits *de Trevoux* give the thing another Turn: Thoſe Fathers have prov'd that the Hebrew *Aleph*, Arabic *Eliph*, and Syriac *Oleph*, are real Conſonants; and that the ſame holds of all the other Aſpirates. This is a Paradox in Grammar; but 'tis not the leſs true for being a Paradox. See ASPIRATE, and CONSONANT.

Of all the Letters, *A* is obſerv'd to be that which dumb Perſons are ſooneſt taught to pronounce. The Reaſon is, that it does not depend on the Muſcles, and other Organs of the Mouth, and Tongue, which are generally wanting in Mutes; but on thoſe of the Throat and Noſe, which they commonly have. See DUMBNESS.

This firſt, ſimpleſt Sound, yet ſerves us to expreſs moſt of the Movements of the Soul. 'Tis ſo much the Language of Nature, that upon all ſudden and extraordinary Occaſions, we are neceſſarily led to it, as the Inſtrument readieſt at hand. With this we ſpeak our Admiration, Joy, Anguiſh, Averſion, Apprehenſion of Danger, &c. Where the Paſſion is very ſtrong, we frequently heighten the *A*, by adding an Aſpirate, *Ah*. See INTERJECTION.

'Tis obſerv'd of the *Engliſh* Pronunciation, that we ſpeak the *a* with a ſlenderer, and more puny Sound than any of our Neighbours: Ordinarily, 'tis ſcarce broad enough for a French *e* Neuter; and comes far ſhort of the groſs *a* of the *Germans*, which wou'd make our *au*, or *aw*, or *o*. In ſome Words, however, as *talk*, *wall*, *ſtall*, &c. the *a* is broad, and deep enough. But this, 'tis obſerv'd, may not be the mere Sound of *a*; but the Effect of the antient Orthography, which, as low as Q. *Elizabeth*, added an *u* to the *a*, and wrote *taulk*, &c.

The *Romans* laid a mighty Streſs on their *a*; and diſtinguiſh'd exactly, both in writing and ſpeaking, when it was long, and when ſhort. To denote it long, they firſt wrote it double, *Aala*, for *Ala*; which not being enough, they inſerted an *h* between 'em, *Ahala*: At length they fell to the common long Accent *āla*, or *Āla*. See ACCENT.

A was one of the Numeral Letters among the Antients, and ſignify'd 500. With a Daſh atop, $\bar{A}$, it ſtood for 5000. See CHARACTER.

Baronius gives us a Set of antient Technical Verſes, wherein the Numeral Value of each Letter of the Alphabet is expreſs'd; whereof this is the firſt.

Poſſidet A numeros quingentos, ordine recto.

But we ſhall here obſerve, once for all, that it was not ſtrictly among the Antients that this Uſe of Numeral Letters had place, as is commonly ſuppos'd. *Iſidore Hiſpalenſis*, an Author of the VIIth Century, affirms it expreſly: *Latini autem Numeros ad Litteras non computant.* The Uſage was really introduc'd in the Days of Barbariſm. M. *du Cange*, explaining what that Uſage was, at the beginning of each Letter of his *Gloſſary*, the generality of Dictionary-Writers, who take it from him, miſtake him. The account, they all ſay, is found in *Valerius Probus*: whereas *du Cange* ſays no ſuch thing; but only that it is found in a Collection of Grammarians, among whom are *Valerius Probus*, and *Petrus Diaconus*. *Habetur verò illud cum Valerio Probo, Paulo Diacono,* (it ſhould rather have been *Petro*) *& aliis qui de numeris ſcripſerunt, editum inter Grammaticos antiquos.* See NUMERAL.

A is alſo us'd in the *Julian* Calendar, as the firſt of the ſeven Dominical Letters. See DOMINICAL.

It had been in uſe among the *Romans* long before the Eſtabliſhment of Chriſtianity, as the firſt of the eight *Nundinales Litteræ*; in imitation whereof it was, that the Dominical Letters were firſt introduc'd. See NUNDINAL.

A is alſo an Abbreviature, us'd in divers Arts, and with divers Intentions. See ABBREVIATURE. Thus,

Among *Logicians*, *A* is us'd to denote an univerſal Affirmative Propoſition; according to the Verſe,

Aſſerit A, negat E, verùm generaliter Ambæ.

Thus, in the firſt Mood, a Syllogiſm conſiſting of three univerſal Affirmative Propoſitions, is ſaid to be in *Bar-ba-ra*; the *A* thrice repeated, denoting ſo many of the Propoſitions to be univerſal, &c. See MOOD, BARBARA, &c.

Among the *Romans*, *A* was us'd in the giving of Votes, or Suffrages. When a new Law was propos'd, each Voter had two wooden Ballots put in his Hand; the one mark'd with a Capital *A*, ſignifying *Antiquo*, q. d. *Antiquam volo*; and the other with *V.R.* for *Uti rogas*. Such as were againſt the Law paſſing, caſt the firſt into the Urn, as who ſhould ſay, *I refuſe it*, *I antiquate it*; or I like the antient Law, and deſire no Innovation. See SUFFRAGE, CENTURY, &c.

In the Trials of Criminal Cauſes, the ſame Letter *A* denoted *Abſolution*: whence *Cicero*, *pro Milone*, calls *A*, *Littera ſalutaris*, a Saving Letter. Three Ballots were diſtributed to each Judge, mark'd with the Letters, *A* for *Abſolvo*, *C* for *Condemno*, and *N. L.* for *Non Liquet*, It is not clear. From the Number of each caſt into the Urn, the Prætor pronounc'd the Priſoner's Fate. If they were in equal number, he was abſolv'd. See ABSOLUTION, CONDEMNATION, &c.

In the antient *Inſcriptions* of Marbles, &c. *A* occaſionally ſtands for *Auguſtus*, *Ager*, *Aiunt*, &c. When double, it denotes *Auguſti*: and when triple *Auro*, *Argento*, *Ære*. *Iſidore* adds, that when it occurs after the Word *Miles*, it denotes him young. See INSCRIPTION.

On the Reverſe of antient *Medals*, *A* denotes 'em ſtruck by the City *Argos*. And among the later Coins, the ſame Letter is the Mark of *Paris*. See MEDAL, COIN, MONEY, &c.

Among *Engliſh* Writers, *A* is ordinarily us'd for *Anno*, as *A.D. Anno Domini*; for *Artium*, as *A.M. A.B.* &c. See CHARACTER.

Among Phyſicians, $\bar{a}$ or $\overline{aa}$, is us'd in Preſcription for *Ana*; to denote an equal Portion of divers Ingredients, whether in reſpect of Meaſure or Weight. See ANA.

Thus, ℞ *Sal. Volat. Oleoſ. Tinct. Croc.* $\overline{aa}$ ℥ſs. expreſſes *Sal Volatile Oleoſum, and Tincture of Saffron, of each half an Ounce.*

The ſame $\bar{a}$ or $\overline{aa}$ is alſo us'd in the like Senſe, without expreſſing any limited Quantity or Weight: Thus, $\bar{a}$ or $\overline{aa}$ *P. Æ.* denotes ſimply, *equal Parts* of the Ingredients there mention'd.

Laſtly, among Chymiſts, *A A A* ſignify an *Amalgama*, or the Operation of *Amalgamating*. See AMALGAMATION.

ABACTOR, a barbarous *Latin* Word, retain'd in our Dictionaries as a Law-Term, tho never yet naturaliz'd, nor its Idea agreed on.

Literally, it imports the ſame with *Abigeus*, or as others write it, *Abigevus*, or *Abigens*; form'd of *Abigo*, I drive away, *q. d. a Driver of Cattle.*

Technically, it is us'd to denote a *Thief*; but with ſomething particular in the manner of his Crime, to diſtinguiſh it from *Furtum*, or common Theft. 'Tis generally ſuppos'd to be one who ſteals, or drives off Cattel by Herds, or great Numbers: Thus *Bracton*, L. iii. c. 6. *Si quis ſuem ſurripuit, fur erit*; *& ſi quis gregem, Abigevus.* See THEFT.

Others will have *Abactors* to be ſtrictly thoſe who drive off Cattel openly, and by main Force. In the former Senſe, the Act of *Abaction* amounts to the *Abigeat*, and in the latter to the *Rapina* of the Civilians.

But the Diſtinction between *Fur* and *Abactor* has now no place among us.

So, among the antient Phyſicians, *Abactus* was us'd for a Miſcarriage procur'd by Art, or force of Medicines; in contradiſtinction to *Aborſus*, which is Natural. But the Moderns know no ſuch diſtinction. See ABORTION.

ABACUS, among the Antients, was a kind of Cupboard, or Buffet. See BUFFET.

In this Senſe *Livy*, deſcribing the Luxury into which the *Romans* degenerated after the Conqueſt of *Aſia*, ſays, They had their *Abaci*, Beds, &c. plated over with Gold. *Dec.* IV. *Lib.* ix.

The Word is *Latin*, but form'd from the *Greek*, ἄβαξ; which among that People ſignify'd the ſame thing. *Guichart* goes higher: He derives ἄβαξ, from the *Hebrew* אבך, *extolli*, to be elevated, rais'd; and ſuppoſes its primary Signification to be a *high Shelf*, or other Convenience for things to be laid upon out of the way.

ABACUS was particularly us'd among the Mathematicians, for a little Table ſtrew'd o'er with Duſt, on which they drew their Schemes and Figures. And hence the

ABACUS *Pythagoricus*, a Table of Numbers, contriv'd for the ready learning of the Principles of Arithmetic; denominated from its Inventor *Pythagoras*.

Hence alſo, from an Agreement in point of Uſe, the Names *Abacus* and *Abaco*, are us'd among the *Engliſh* and *Italians* for an *Alphabet*, or A B C, &c.

The *Abacus Pythagoricus* was, in all probability, no other than what we call *Multiplication-Table*. See TABLE.

Ludolfus and *Wolfius* give us Methods of performing Multiplication without the help of the *Abacus*; but they are too operoſe in ordinary Caſes for Practice. See MULTIPLICATION.

ABACUS, in Architecture, is the uppermoſt Member of the Capital of a Column; ſerving as a kind of Crowning, both to the Capital and the whole Column. See COLUMN.

Dr. *Harris*, and the reſt of the Dictionary-Writers, make the *Abacus* to be the Capital it ſelf; which is altogether as juſt, as to make the Crown of the Head the whole Head. See CAPITAL, and CROWNING.

Vitruvius, and others after him, who give the Hiſtory of the Orders, tell us, the *Abacus* was originally intended to repreſent a ſquare Tile laid over an Urn, or rather over a Baſket. An *Athenian* old Woman happening to place a Baſket thus cover'd over the Root of an Acanthus; that Plant ſhooting up the following Spring, encompaſs'd the Baſket all around, till meeting with the Tile, it curl'd back in a kind of Scrolls. An ingenious Sculptor paſſing by, took the Hint, and immediately executed a Capital on this Plan; repreſenting the Brick by the *Abacus*, the Leaves by the Volutes, and the Baſket by the Vaſe, or Body of the Capital. Such was the Riſe of the firſt regular Order. See ORDER, ACANTHUS, VOLUTE, CORINTHIAN, &c.

There is ſome difference in the Form of the *Abacus* in different Orders. In the *Tuſcan*, *Doric*, and antient *Ionic*, it is a flat, ſquare Member, well enough repreſenting its original Tile; whence the *French* call it *Tailloir*, Trencher. See TUSCAN, DORIC, and IONIC.

In the richer Orders it has loſt its native Form; its four Sides, or Faces, being arch'd, or cut inwards; with ſome Ornament, as a Roſe, or other Flower, or Fiſhes Tail in the middle of each Arch. See CORINTHIAN, and COMPOSITE; ſee alſo FLOWER, &c.

But ſome Architects take other Liberties in the *Abacus*, both in reſpect of its Name, Place, and Office. Thus, in the *Tuſcan* Order, where it is the largeſt and moſt maſſive, as taking up one third of the height of the whole Capital, it is ſometimes call'd the *Die* of the Capital.——In the *Doric* 'tis not always the uppermoſt Member of the Capital; a Cymatium being frequently placed over it.—In the *Ionic*, ſome make it a perfect Ogee, and crown it with a Fillet. See DIE, CYMATIUM, OGEE, &c.

Add, that the *Abacus* is not conſtantly reſtrain'd to the Capital of the Column; *Scamozzi* uſing the Name for a concave Moulding in the Capital of the *Tuſcan* Pedeſtal. See PEDESTAL.

ABAFT, in the Sea Language, denotes the *Stern*, or Hind-part of a Veſſel; call'd alſo *Aft*. See AFT.

The Stern, ſtrictly ſpeaking, is only the Outſide; *Abaft* includes both inſide and out. See STERN.

ABALIENATIO, in the *Roman* Law, is a Term ſcarce us'd in any *Engliſh* Writer; tho our Dictionaries would paſs it for *Engliſh*. Indeed, it is not very common among the *Latins*. The uſual Term among them was *Alienatio*; and in our Language *Alienation*. See ALIENATION.

ABAPTISTON, or ANABAPTISTON, a Name antiently given to an Inſtrument in Chirurgery, by the modern Writers call'd *Trepan*, *Modiolus*, *Terebra*, *Terebellum*, and *Trafine*. See TREPAN, MODIOLUS, &c.

The Word is a mere Stranger in our Language. It ſeems to be one of thoſe Exoticks imported by the Dictionaries; and never taken notice of but by themſelves.

ABARTICULATION, in Anatomy, is repreſented by *Blanchard*, and other Lexicographers after him, as ſynonymous with *Diarthroſis*: but the Definition they give of it, does not quadrate with that Notion.

'*Abarticulation*, or *Dearticulation*, ſay they, is a good 'Conſtitution of the Bones, whereby they become diſpos'd 'to move ſtrongly and readily.' But what this ſhould mean, it were hard preciſely to ſay. See DIARTHROSIS.

ABASING, literally denotes the taking a thing down, or bringing it lower.

In this Senſe the Word is us'd at Sea; where, *to abaſe* a Flag, is to lower, or take it in, as a Token of Submiſſion and Inferiority. See FLAG.

By an Ordonnance of *Philip* II. King of *Spain*, the Captains are peremptorily enjoin'd, rather to periſh than *abaſe* the Royal Flag.

ABASED, *Abaiſſe*, in Heraldry, is applied to the Vol, or Wings of Eagles, &c. when the Tip, or Angle looks downward toward the Point of the Shield; or when the Wings are ſhut: The natural way of bearing 'em being ſpread, with the Tip pointing to the Chief, or the Angles. See VOL.

A Chevron, a Pale, Bend, &c. are alſo ſaid to be *abaſed*, when their Points terminate in, or below the Centre of the Shield. See CHEVRON, PALE, &c.

Again, an Ordinary is ſaid to be *abaſed*, when below its due Situation. Thus, the Commanders of the Order of *Malta*, who have Chiefs in their own Arms, are oblig'd to *abaſe* 'em under thoſe of the Religion.

ABATEMENT,

ABATEMENT, in Heraldry, ſomething added to a Coat-Armour, to diminiſh its proper Value and Dignity, and note ſome diſhonourable Action, or Stain in the Character of the Perſon who bears it. See ARMS.

'Tis a little controverted among Authors, whether Heraldry allows of any ſuch thing as regular *Abatements*. *Leigh* and *Guillim*, without any Scruple as to their Reality, give us ſeveral Kinds.

Abatements, according to the laſt of thoſe Writers, are either made by Reverſion or Diminution.

Reverſion is either turning the whole Eſcutcheon upſide-down; or the adding another Eſcutcheon, inverted, in the former.

Diminution, is the blemiſhing any part by adding a Stain, or Mark of Diminution: Such are a *Delf*, a *Point Dexter*, a *Point Champaign*, a *Plain Point*, a *Goar Sinister*, and a *Guſſet*. See each under its proper Article, DELF, *Point* DEXTER, GOAR, GUSSET, *&c.*

It may be added, that theſe Marks muſt always be either Tawny, or Murrey; otherwiſe, inſtead of Diminutions, they become Additions of Honour. See TAWNY, MURREY, *&c.*

The laſt Editor of *Guillim* diſcards the whole Notion of *Abatements*, as a Chimera. He alledges, that no one Inſtance is to be met withal of ſuch Bearing; and that it implies a Contradiction to ſuppoſe it. Arms, being *Inſignia Nobilitatis & Honoris*, cannot admit of any Mark of Infamy, without ceaſing to be Arms, and becoming Badges of Diſgrace; which all would covet to lay aſide. Add, that as no hereditary Honour can be actually diminiſh'd; ſo neither can the Marks thereof. Both, indeed, may be forfeited; as in the Caſe of Treaſon, where the Eſcutcheon is totally revers'd, to intimate a total Suppreſſion of the Honour.

Some Inſtances, however, are produc'd to the contrary by *Colombiere*, and others. But theſe, tho they may ſhew ſome extraordinary Reſentments of Princes for Offences committed in their Preſence, do not amount to a Proof of ſuch Cuſtom or Practice; much leſs authorize the Being of particular Badges in the Hands of inferior Officers, as Kings at Arms.

ABATEMENT, in Law, is us'd for the defeating or overthrowing of a thing, as a Writ, Appeal, or the like.

Thus, the *Abatement of a Writ*, is the fruſtrating, or ſetting it aſide, by ſome Exception alledg'd and made good againſt it. Such Exception may be taken either to the Matter, as inſufficient; or to the Allegations, as uncertain, *e. g.* where one of the Parties or a Place are miſnam'd; or to ſome Variation between the Writ and Record; or to the Uncertainty of the Writ, Count, or Declaration; or to divers other Particulars. Upon any of which, the Defendant may pray that the Writ, or Plaint, may *abate*; *i. e.* that the Plaintiff's Suit may ceaſe for that time. See WRIT.

So we read in *Staundford*, 'The Appeal *abates* by Covin: that is, the Accuſation is defeated by Deceit.——In the old *Nat. Brev.* To *abate* a Caſtle, or Fortlet, is interpreted, to beat it down.

ABATEMENT is alſo an irregular Entry upon Lands, or Tenements, left vacant by their former Poſſeſſor, and not yet laid hold of by the next Heir.

As he that puts out the Poſſeſſor is ſaid to *diſſeize*; ſo he that interpoſes, or ſteps in between the former Poſſeſſor and his Heir, is ſaid to *abate*. See DISSEISIN.

Coke on Littleton diſtinguiſhes between *Abatement* and *Intruſion*; but the new Book of Entries renders *Abatement* by *Intruſio*. See INTRUSION.

ABBESS, the Superior of an *Abbey*, or Convent of Nuns. See ABBEY, and CONVENT.

The *Abbeſs* has the ſame Rights, and Authority over her Nuns, that the Abbots regular have over their Monks. See ABBOT.

The Sex indeed does not allow her to perform the Spiritual Functions annex'd to the Prieſthood, wherewith the Abbot is uſually inveſted; but there are Inſtances of ſome *Abbeſſes*, who have a Right, or rather a Privilege, to commiſſion a Prieſt to act for 'em. They have even a kind of Epiſcopal Juriſdiction, as well as ſome Abbots, who are exempted from the Viſitation of their Dioceſans. See EXEMPTION.

F. *Martene*, in his Treatiſe of the *Rites of the Church*, obſerves, that ſome *Abbeſſes* have formerly confeſs'd their Nuns. He adds, that their exceſſive Curioſity carry'd 'em ſuch lengths, that there aroſe a neceſſity of checking it.

S. *Baſil*, in his Rule, allows the *Abbeſs* to be preſent with the Prieſt at the Confeſſions of her Nuns. See CONFESSION.

ABBEY, or ABBY, a Monaſtery, or Religious Houſe, govern'd by an Abbot, or Abbeſs. See ABBOT, *&c.*

Abbies differ from *Priories*, in that the one are under the Direction of an Abbot, and the other of a Prior: but Abbot and Prior (we mean a *Prior Conventual*) are the ſame thing; and only differ in Name. See PRIOR.

Fauchet obſerves, that in the early Days of the *French* Monarchy, Dukes and Counts were call'd *Abbots*, and Duchies and Counties *Abbies*. Many Perſons of the prime Quality, without any Concern in the Monaſtic Life, took the ſame Quality; even ſome of their Kings are mention'd in Hiſtory under the Title of *Abbots*. *Philip* I. *Louis* VI. and afterwards the Dukes of *Orleans*, are call'd *Abbots* of the Monaſtery of S. *Agnan*. The Dukes of *Aquitain* were call'd *Abbots* of the Monaſtery of S. *Hilary*, at *Poictiers*; and the Earls of *Anjou* of S. *Aubin*, &c.

One third of the beſt Benefices in *England* were antiently, by the Pope's Grant, appropriated to *Abbies*, and other Religious Houſes; which, upon their Diſſolution under King *Henry* VIII. became Lay-Fees: 190 ſuch were diſſolv'd of between 200 *l.* and 35000 *l.* yearly Revenue, which at a Medium amounted to 2853000 *l. per Annum.*

ABBOT, or ABBAT, the Chief, or Superior of an *Abbey*, of the Male Kind. See ABBEY, and ABBESS.

The Name *Abbot* is originally *Hebrew*, where it ſignifies *Father*. The *Jews* call Father in their Language *Ab*; whence the *Chaldees* and *Syrians* form'd *Abba*; and thence the *Greeks* ἄββας, which the *Latins* retain'd, *Abbas*; and hence our *Abbot*, the French *Abbe*, &c.

St. *Mark* and St. *Paul* uſe the Syriac *Abba* in their *Greek*; by reaſon it was then commonly known in the Synagogues, and the primitive Aſſemblies of the Chriſtians; adding to it, by way of Interpretation, the Word *Father*, Ἀββα ὁ πατὴρ, *Abba*, *Father*, q. d. *Abba*, *that is to ſay*, *Father*.

The Name *Ab* and *Abba*, which at firſt was a Term of Tenderneſs and Affection, in the *Hebrew* and *Chaldee*, became at length a Title of Dignity and Honour. The *Jewiſh* Doctors affected it; and one of their moſt antient Books, containing the Sayings, or Apothegms of divers of 'em, is entitled, *Pirke Abbot*, or *Avoth*, i. e. Chapter of the Fathers.

'Twas in alluſion to this Affectation, that Jeſus Chriſt forbad his Diſciples to call any *Man* their *Father on Earth*: which Words S. *Jerom* turns againſt the Superiors of the Monaſteries of his Time, for aſſuming the Title of *Abbots*, or Fathers.

The Name *Abbot*, then, appears as old as the Inſtitution of Monks it ſelf. See MONK.

The Governors of the primitive Monaſteries aſſum'd indifferently the Names *Abbots* and *Archimandrites*. See ARCHIMANDRITES.

They were really diſtinguiſh'd from the Clergy, tho frequently confounded with 'em, becauſe a Degree above Laymen. S. *Jerom*, writing to *Heliodorus*, ſays expreſly, *Alia Monachorum eſt Cauſa, alia Clericorum.* See CLERGY, PRIEST, *&c.*

In thoſe early Days, the *Abbots* were ſubject to the Biſhops, and the ordinary Paſtors. Their Monaſteries being remote from Cities, built in the fartheſt Solitudes, they had no ſhare in Eccleſiaſtical Affairs. They went on Sundays to the Pariſh-Church with the reſt of the People: or, if they were too remote, a Prieſt was ſent 'em to adminiſter the Sacraments; till at length they were allow'd to have Prieſts of their own Body.

The *Abbot*, or Archimandrite himſelf was uſually the Prieſt: but his Function extended no farther than to the Spiritual Aſſiſtances of his Monaſtery; and he remain'd ſtill in obedience to the Biſhop.

There being among the *Abbots* ſeveral Perſons of Learning, they made a vigorous Oppoſition to the riſing Hereſies of thoſe Times; which firſt occaſion'd the Biſhops to call 'em out of their Deſarts, and fix 'em about the Suburbs of Cities; and at length in the Cities themſelves: from which Æra their Degeneracy is to be dated.

The *Abbots*, now, ſoon wore off their former Plainneſs and Simplicity, and began to be look'd on as a ſort of little Prelates. In time they would be Independent of the Biſhop; and became ſo inſupportable, that ſome ſevere Laws were made againſt 'em at the Council of *Chalcedon*: This notwithſtanding, in time, many of 'em carry'd the Point of Independency; and got the Appellation of *Lord*, with other Badges of the Epiſcopate, particularly the *Mitre*.

Hence aroſe new Species and Diſtinctions of *Abbots*, *Mitred*, and *not Mitred*; *Crozier'd*, and *not Crozier'd*, *Oecumenical*, *Cardinal*, &c.

Mitred ABBOTS, were thoſe privileg'd to wear the Mitre; and having, withal, a full Epiſcopal Authority within their ſeveral Precincts. Among us, theſe were alſo call'd *Abbots ſovereign*, and *Abbots general*; and were Lords of Parliament. Of theſe Sir *Edward Coke*, *de Jur. Eccleſ.* reckons 27 in *England*, beſide two Mitred Priors. See PRIOR.

The reſt, who were *not mitred*, were ſubject to the Dioceſan.

Peré Hay, a *Benedictine* Monk, in his Book entitled *Aſtrum Inextinctum*, maintains, that the *Abbots* of his Order have not only an Epiſcopal, but even a Papal Juriſdiction; *Poteſtatem quaſi Epiſcopalem, imo quaſi Papalem*; and as ſuch can confer the lower Orders of Deacon and Subdeacon. See ORDER.

When the *Abbots* firſt aſſum'd the Mitre, the Biſhops made heavy Complaints of their Privileges being invaded by the

the Monks; and were particularly offended, that in Synods and Councils there was no Diſtinction between 'em. On this Occaſion, Pope *Clement* IV. order'd, that the *Abbots* ſhould only wear their Mitres embroider'd with Gold, and leave Jewels to the Biſhops. See MITRE.

Crozier'd ABBOTS, are thoſe who bear the *Crozier*, or Paſtoral Staff. See CROZIER.

There are ſome *Crozier'd* and not *Mitred*; as the *Abbot* of the *Benedictine* Abbey at *Bourges*: and others, both the one and the other.

Among the *Greeks*, ſome even took the Quality of *Oecumenical Abbots*, or *Univerſal Abbots*, in Imitation of the Patriarch of *Conſtantinople*. See OECUMENICAL.

Nor have the *Latins* been much behind 'em in that reſpect: The *Abbot* of *Cluny*, in a Council held at *Rome*, aſſum'd the Title of *Abbas Abbatum*, *Abbot of Abbots*; and Pope *Calixtus*, gave the ſame *Abbot* the Title of *Cardinal Abbot*. See CLUNY.

To ſay nothing of other *Cardinal Abbots*, thus denominated from their being the principal *Abbots* of Monaſteries, which came to be ſeparated.

Abbots, again, are now chiefly diſtinguiſh'd into *Regular*, and *Commendatory*.

ABBOTS *Regular*, are real Monks, or Religious, who have taken the Vows, and wear the Habit of the Order. See REGULAR, RELIGIOUS, VOW, &c.

Such are all *Abbots* preſum'd to be; it being expreſly provided by the Canons, that none but a Monk have the Command over Monks.

ABBOTS *in Commendam*, are Seculars; tho they have undergone the Tonſure, and are oblig'd by their Bulls to take Orders when they come of Age. See SECULAR, TONSURE, &c.

Tho the Term *Commendam* inſinuates, that they have only the Adminiſtration of their Abbies for a Time; yet do they hold, and reap the Fruits of 'em for ever; as well as the *Regular Abbots*.

Their Bulls give 'em a full Power *tam in Spiritualibus*, *quam in Temporalibus*. And yet, 'tis true, that the *Commendatory Abbots* do not perform any Spiritual Offices; nor have they any Spiritual Juriſdiction over their Monks. So that the Phraſe *in Spiritualibus*, is rather ſomething of the *Roman* Stile, than a Reality.

Some of their beſt Canoniſts rank the *Commendam* in the Number of Benefices, *inter titulos Beneficiorum*. 'Tis no more than a Canonical Title, or Proviſion to enjoy the Fruits of a Benefice: But as ſuch Proviſions are contrary to the antient Canons, none but the Pope, by diſpenſing with the old Law, can grant 'em. See COMMENDAM, BENEFICE, &c.

Our own Hiſtory ſpeaks very little of theſe *Commendatory Abbots*; and 'tis probable the Practice never prevail'd much among us. Hence, many of our Writers have been led into the Miſtake, of ſuppoſing that all *Abbots* are Monks. Of this we have a remarkable Inſtance, at which many of our Countrymen have ſtumbled, in that Diſpute about the Inventor of the Lines for transforming of Geometrical Figures, call'd by the *French* the *Robervallian Lines*. Dr. *Gregory*, in the *Philoſophical Tranſactions*, *Anno* 1694. rallies the *Abbot Galloys*, who held the Abbey of S. *Martin de Cores*, *in Commendam*, with being a Monk: 'The good Father, ſays 'he, imagines we are return'd into that fabulous Age where-'in a Monk might be allow'd to ſay what he pleas'd.' Which Paſſage the *Abbot* takes hold of, and returns the Raillery, with Intereſt, on the Doctor, in the *Memoirs de l'Academ. Anno* 1703.

The Ceremony whereby *Abbots* are created, is properly call'd *Benediction*; or ſometimes, tho abuſively, *Conſecration*. See BENEDICTION, and CONSECRATION.

It antiently conſiſted in cloathing him with the Habit call'd *Cuculla*, Cowl; putting the Paſtoral Staff in his Hand, and the Shoes call'd *Pedales*, or *Pedules*, on his Feet. Theſe Particularities we learn from the *Ordo Romanus* of *Theodore* Archbiſhop of *Canterbury*.

The Title *Abbot* has alſo been given to certain Biſhops, by reaſon their Sees had originally been Abbeys; and that they were even elected by the Monks: Such are thoſe of *Catanea* and *Montreal*, in *Sicily*. See BISHOP.

The ſame Appellation is extended to the Superiors or Generals of ſome Congregations of Regular Canons; as that of S. *Genevieve* at *Paris*. See CANON, GENEVIEVE, &c.

ABBOT is alſo a Title bore by ſeveral Magiſtrates, and other Lay-Perſons. Among the *Genoeſe*, one of their principal Magiſtrates was call'd the *Abbot of the People*.

In *France*, particularly about the Time of *Charlemaign*, there were ſeveral Lords and Courtiers, who having the Inſpection of certain Abbeys committed to them, were ſtyl'd *Abba-Comites*, or Abbey-Counts. See ABBEY, COUNT, &c.

ABBREVIATURE, or ABBREVIATION, a Contraction of a Word, or Paſſage; made by dropping ſome of the Letters, and ſubſtituting certain Marks, or Characters in their Place. See SYMBOL.

Lawyers, Phyſicians, &c. uſe abundance of *Abbreviatures*; partly for the ſake of Expedition, and partly for that of Myſtery. A *Liſt of the principal Abbreviatures in the ſeveral Arts and Faculties, ſee under the Article* CHARACTER.

Of all People, the Rabbins are the greateſt Dealers in this way; their Writings are unintelligible, without an Explication of the *Hebrew Abbreviatures*. The *Jewiſh* Authors and Copiſts don't content themſelves to *abbreviate* Words, like the *Greeks* and *Latins*, by retrenching ſome of the Letters, or Syllables thereof; but they frequently take away all but the initial Letter. Thus, ר ſtands for *Rabbi*, and א ſtands for אל, ארזכי or אמר according to the Place it is found in.

But what is more, they frequently take the initial Letters of ſeveral ſucceeding Words, join 'em together, and adding Vowels to 'em, make a barbarous ſort of Word, repreſentative of all the Words thus abridg'd. Thus, *Rabbi Schelemoh Jarrhi*, in the Jargon of the *Hebrew Abbreviature*, is call'd *Raſi*; and *Rabbi Moſes ben Maiemon*, *Rambam*. And thus again, מבוא is put for מתן בסתר יכפה אף *Donum in abdito evertit Iram*.

Mercerus, *David de Pomis*, *Schindler*, *Buxtorf*, &c. have given Explications of this ſort of Ciphers. The moſt copious Collection of *Roman Abbreviations*, is that of *Sertorius Urſatus*, at the End of the *Marmora Arundelia*; *Sertorii Urſati Equitis de Notis Romanorum Commentarius*.

The Word is deriv'd from the Latin *brevis*, of the *Greek* βραχὺς, *Short*.

ABBREUVOIR, or ABREVOIR, in Maſonry, the Joint, or Jonćture of two Stones; or the Interſtice, or Space left between 'em to be fill'd up with Mortar. See STONE, MORTAR, MASONRY, &c.

The Word is *French*, and literally denotes *a Watering-place*.

ABBROACHMENT, an obſolete Term in ſome of our antient Law-Books, for the Act of ingroſſing, or buying up a Commodity by Wholeſale, in order to ſell it off by Retail. See FORESTALLING.

ABBUTALS, among Law-Writers, denote the Buttings or Boundings of a piece of Land; expreſſing on what other Lands, Highways, or the like, the ſeveral Extremes thereof do *abut*, or terminate. Thus, in *Croke*, the Plaintiff is ſaid to fail in his *Abbutals*, *i. e.* in ſetting forth how the Land is bounded.

In ſtrictneſs, 'tis only the extreme Corners are ſaid to *abut*; the Sides are ſaid to be *adjacent*. *Latera autem nunquam aiunt* Abuttare; *ſed terram proximam adjacere*. Camden.

The Word is apparently form'd of the French *abouter*, to terminate upon. Tho *Camden* advances another Etymology. —— 'They who have wrote of Limits, ſay, that certain 'Hillocks of Earth, term'd *Botentines*, were placed there-'in, by way of Marks: whence, perhaps, our *Buttings*, and 'Boundings.

ABDICATION, the Act whereby a Magiſtrate, or Perſon in Office renounces and gives up the ſame, for himſelf, and his Heirs. See RENUNCIATION.

Abdication is frequently confounded with *Reſignation*; but, ſtrictly ſpeaking, there is a difference: *Abdication* being done purely and ſimply; whereas Reſignation is done in favour of ſome third Perſon. See RESIGNATION.

In this Senſe, *Diocletian*, and *Charles* V. are ſaid to have *abdicated* the Crown; *Philip* IV. of *Spain reſign'd* it. The Parliament voted King *James*'s Violation of the Laws, and his quitting the Kingdom, without providing for the due Adminiſtration of Affairs in his abſence, to import an *Abdication* of the Crown.

Among the *Romans*, *Abdication* was alſo us'd in oppoſition to Adoption: Thus, a Father was ſaid to *abdicate* his diſobedient Son. See ADOPTION.

It differ'd from *Exheredation*, Diſinheriting, in this Circumſtance, that the *abdicated* Son was baniſh'd his Father's Family, and cut off from the Succeſſion by a ſolemn Act, during the Father's Life: whereas Exheredation only took place in virtue of his Teſtament. See EXHEREDATION.

ABDOMEN, in Anatomy, the *lower Belly*; or that Part of the Body between the Hips and the Diaphragm. See BODY.

Anatomiſts divide the Body into three Regions, or Venters; the Head; the Thorax, or Breaſt; and the *Abdomen*, or Belly, abſolutely ſo call'd; being the loweſt Part of the Trunk. 'Tis ſeparated from the Thorax by the Diaphragm, and reaches to the *Oſſa pubis*. See VENTER.

It is called *Abdomen*, from the Latin *abdo*, I hide; by reaſon that in its Cavity are wrapp'd up and conceal'd many of the principal *Viſcera*, *viz.* the *Stomach*, *Omentum*, *Inteſtines*, *Liver*, *Spleen*, *Bladder*, &c. See STOMACH, OMENTUM, INTESTINES, &c.

The *Abdomen* is lined internally with a thin, ſoft Membrane; which inveſting all the *Viſcera* abovemention'd, contains and keeps 'em in their Place, call'd the *Peritonæum*: upon a Rupture or Dilatation whereof, they are apt to fall, and form thoſe Tumors call'd *Hernias*. See PERITONÆUM, and HERNIA.

It is cover'd and defended with five Pair of Muſcles; which not only defend the *Viſcera*, but by their alternate Relaxations, and Contractions in Reſpiration, promote the Action of Digeſtion, and the Extruſion of the *Fæces* and Urine. By their Contraction, the Cavity of the *Abdomen* is ſtraighten'd, and promotes the deſcent of the Contents of the *Viſcera* thro' the Inteſtines. They are the proper Antagoniſts to the Sphincters of the *Anus* and Bladder, and forcibly expel the Excrements of thoſe Parts, as alſo the *Fætus* in Parturition. See RESPIRATION, DIGESTION, EXCRETION, DELIVERY, &c.

Theſe Muſcles are the *Obliqui Deſcendentes*, and *Aſcendentes*, *Linea alba*, *Recti*, and *Pyramidales*; ſee each under its proper Article, OBLIQUUS, RECTUS, PYRAMIDALIS, &c.

The *Abdomen* is ſubdivided into three leſſer Regions, or Cavities: the uppermoſt, call'd the *Epigaſtric*, commences from the Diaphragm and *Cartilago Enſiformis*, and terminates two Fingers breadth above the Navel: The ſecond, call'd the *Umbilical*, begins where the former ends, and terminates two Fingers breadth below the Navel: The third, call'd the *Hypogaſtric*, deſcends as low as the *Os Pubis*. See EPIGASTRIC, UMBILICAL, and HYPOGASTRIC.

Each of theſe Subdiviſions, the more accurate Writers divide further into three Parts; a middle, and two lateral ones, the *Hypochondriums*. The middle part of the Umbilical, is call'd the *Umbilicus*, or Navel; and its lateral Parts the *Lumbi*, Loins: The Middle of the Hypogaſtric, is call'd the *Hypogaſtrium*; and its Sides the *Ilia*, or Flanks. See each under its proper Place, EPIGASTRIUM, HYPOCHONDRIUM, UMBILICUS, LUMBI, &c.

ABDUCTION, in Logick, a kind of Argumentation, by the *Greeks* call'd *Apogoge*; wherein, the greater Extreme is evidently contain'd in the Medium, but the Medium not ſo evidently in the leſſer Extreme as not to require ſome further Medium, or Proof to make it appear.

Thus, in the Syllogiſm, *All whom God abſolves are free of Sin; but God abſolves all who are in Chriſt: Therefore, all who are in Chriſt are free of Sin.* The Major is evident; but the Minor, or Aſſumption is not ſo, without ſome other Propoſition to prove it; as, *God took Satisfaction for Sin in the Suffering of Jeſus Chriſt.*

It is call'd *Abduction*; becauſe, from the Concluſion, it *draws us on* to prove the Propoſition aſſumed.

ABDUCTOR, or ABDUCENT, in Anatomy, a Name common to ſeveral Muſcles, whoſe Action is the withdrawing, opening, or pulling back the Parts they are fix'd to. See MUSCLE.

The Name is *Latin*, compounded of *ab*, from, and *duco*, I draw: Their Antagoniſts are call'd *Adductores*. See ADDUCTOR.

ABDUCTOR *Auricularis*, or *of the little Finger*, ariſes from the Annular Ligament, and the third and fourth Bones of the *Carpus* in the ſecond Rank; and is inſerted externally into the firſt Bone of the little Finger: it ſerves to draw that Finger from the reſt. See FINGER.

In ſome Subjects it appears divided into two or three Muſcles, conſiſting of ſo many different Series of Fibres.

ABDUCTOR *Indicis*, or *of the fore Finger*, ariſes from the inſide of the Bone of the Thumb, and is inſerted into the firſt Bone of the fore Finger, which it draws from the reſt towards the Thumb.

ABDUCTOR *minimi digiti manus*. See ABDUCTOR *Auricularis*.

ABDUCTOR *minimi digiti pedis*, or *of the little Toe*, ariſes from the outſide of the *Os Calcis*, near the exterior Bone of the *Metatarſus*, and is inſerted laterally into the outſide of the ſecond Bone of that Toe, which it pulls from the reſt.

ABDUCTOR *Pollicis*, call'd alſo *Thenar*, ſprings from the Annular Ligament, and firſt Bone of the *Carpus*; from whence paſſing to the Thumb, it makes that fleſhy Body called *Mons Lunæ*: It draws the Thumb from the Fingers.

ABDUCTOR *Pollicis pedis*, or *of the great Toe*, ſprings from the inſide of the *Os Calcis*, and the greater *Os Cuneiforme*; and is inſerted into the outſide of the exterior *Os Seſamoideum pollicis*: It ſerves to draw the great Toe from the reſt. See TOE.

ABDUCTOR *Oculi*, or *of the Eye*, is one of the four *Recti*, or ſtrait Muſcles, ariſing from the bottom of the Orbit, and ſpread over the firſt proper Tunic; ſerving to draw the Eye towards the outer Canthus. See EYE, and RECTI.

ABECEDARY, ABCEDARY, or ABECEDARIAN, ſomething Alphabetical, or belonging to the Alphabet. See ALPHABET.

Among the Antients, the Term *Abecedarius* was peculiarly applied to thoſe Compoſitions wherein the initial Letters of each Strophe, or ſometimes even of each Verſe, follow'd the Order of the Alphabet.

Such, in Holy Scripture, are the CXVIIIth Pſalm, and the Lamentations of *Jeremy*: from which it ſhould ſeem, as if the *Hebrews* had been the Inventors of this Kind of Poetry; contrived, no doubt, to aſſiſt the Memory.

ABELIANS, ABELONIANS, ABELOITES, a Sect of Hereticks in *Africa*, not far from *Hippo*, cotemporary with S. *Auguſtin*. See HERETICK.

What diſtinguiſh'd 'em, was, that they made it a Duty to marry, and yet liv'd with their Wives in a profeſs'd Continence, without having any commerce together.

Theſe Hereticks, inconſiderable in themſelves, (for they were confin'd to a little compaſs, and laſted not long;) are become conſiderable, by the great Pains the Learned have taken to aſcertain the Principle they went upon, and the Reaſon of the Denomination.

Some will have 'em to have built on that Text of St. *Paul*, 1 *Cor.* vii. 29. *Let they that have Wives be as though they had none.* A late Writer concludes, that they regulated their Marriage on the Foot of the terreſtrial Paradiſe; alledging, that there was no other Union between *Adam* and *Eve*, but that of Hearts. He adds, they had likewiſe an Eye to the Practice of *Abel*, whom they held to have been married, but never to have known his Wife: and from him they deriv'd their Name.

Another Author obſerves, that it was a Tradition current throughout the Eaſt, That *Adam* conceiv'd ſo much Sorrow for the Death of *Abel*, that he was 130 Years without having to do with *Eve*. This, he ſhews, was the Sentiment of the *Jewiſh* Doctors; from whom the Fable was tranſmitted to the *Arabs*: And hence it was, according to *Gigeus*, that תאבל *Thabala*, in *Arabic*, came to ſignify, to *abſtain from one's Wife*. He concludes, that he is the moſt miſtaken Perſon in the World, or the Story had reach'd *Africa*, and given occaſion both to the Sect, and the Name.

'Tis true, the Rabbins do hold, that *Adam*, after the Death of *Abel*, remain'd a long time without any uſe of Marriage; and till the Time when he begot *Seth*: but to ſay that this was 130 Years is a manifeſt Error, and contrary to their own Chronologies, which place *Seth*'s Birth in the 130th Year of the World, or of *Adam*'s Life; as may be ſeen in their two *Seder Olams*.

Abarbanel ſays, it was 130 Years after *Adam*'s Fall; as believing, with the other Rabbins, that *Cain* and *Abel* were conceiv'd immediately after *Adam*'s Tranſgreſſion. But, ſay others, be this as it will, whether a Continence on occaſion of the Fall, or of *Abel*'s Death; 'twas the Continence of *Adam*, not of *Abel*, that theſe Hereticks imitated; who, on this footing, ſhould have been call'd *Adamites*, rather than *Abelians*.

In effect, 'tis more than probable, they took their Name from *Abel*, for no other Reaſon, but becauſe they had no Iſſue more than *Abel*: Not that he lived in Continence after Marriage; but becauſe he was kill'd before he had married.

ABETTER, or ABETTOR, in Law, one who incites, incourages, or ſets another on to perform ſomething criminal; or ſome way ſeconds and aſſiſts him in the Performance it ſelf.

Thus, they who procure others to ſue out falſe Appeals of Felony, or Murder againſt Men, to render 'em infamous, are particularly denominated *Abettors*.

So, *Abettors in Murder*, are ſuch as adviſe or procure a Murder to be committed, or are acceſſory thereto. See MURDER.

There are *Abettors* in Felony, but not in Treaſon: the Law looking on all thoſe concern'd in Treaſon as Principals. See TREASON.

ABEYANCE, or ABBAYANCE, an obſolete Law-Term, whoſe preciſe Signification is not eaſily gather'd; having been out of date as long ago as *Littleton*'s Days.

That Author gives it, as his Senſe of the Word, that to be *in Abeyance* is to be in the *Entendement*, *Remembrance*, & *Conſideration de la Loy*: In which Senſe, ſays he, the Right of Fee-ſimple is ſaid to be *in Abeyance*.

He adds, *Tiel Choſe & Tiel Droit qui eſt dit en divers Livres etre en* Abeyance *eſt a tant a dire en latine, Talis res vel tale rectum quæ vel quod non eſt in homine ad tunc ſuperſtite, ſed tantummodo eſt, & conſiſtit* in Conſideratione & Intelligentia Legis; & *quod alii dixerunt, talem rem, aut tale rectum fore* in Nubibus.

Sir *Edward Coke* obſerves, that among the antient Lawyers, things that are *in poſſe* only, and not *in eſſe*, are ſaid to be *in Abeyance*; q. d. *yet undetermin'd, and only in Expectation.—Quæ nondum ſunt definitæ, aut ſententiâ comprobatæ ſed ſunt adhuc in expectatione.*

This he confirms from the Etymology of the Word, from the *French* or *Flemiſh Bayer*, or *Beer*, to gape or wait for any thing with a longing Deſire.

Dr. *Harris*, improving ſomewhat on his Authorities, ſays, *Abeyance* ſignifies a Thing's being only *in poſſe*, and not *in actu*. Thus, adds he, when the Parſon of a Church dies, and the Church becomes void, the Fee is *in Abeyance*; becauſe it is not determin'd who ſhall ſucceed him.

In this Senſe, our *Abeyance* may be compar'd to the *Hæreditas Jacens* of the Civilians. 'Tis a Principle in Law, That of every Land there is a Fee-ſimple, or it is *in Abeyance*. See FEE-*Simple*.

AB-INTESTATE, in Law, the Heir of a Perſon who died inteſtate, and yet had the Power of making a Teſtament. See INTESTATE, and HEIR.

ABISHERSING, an antient Law-Term, denoting a being free, or exempt, from all Amerciaments for Tranſgreſſions of any kind. See AMERCIAMENT.

This Word, in a Charter or Grant, gives the Proprietor not only the Forfeitures, and Amerciaments of all others for Tranſgreſſions committed within his Fee; but alſo exempts him from all ſuch controul by any within that Compaſs.

According to *Spelman*, it originally ſignifies a Forfeiture, or Amerciament; and ſhould rather be wrote *Miſherſing*, *Miſhering*, or *Miskerring*.

ABJURATION, a ſolemn Renunciation, or Recantation of an Error, Hereſy, or falſe Doctrine. See RECANTATION.

The Word is form'd of the Latin *Abjurare*; which in *Cicero*, and other *Roman* Writers, ſignifies the denying a thing upon Oath. Thus, *Abjurare creditum*, was to forſwear a Debt, or to deny the owing it upon Oath, *&c.*

So, in our own Laws, *To* abjure *a Perſon*, is to renounce all Authority or Dominion of ſuch a Perſon. Thus, by the Oath of *Abjuration*, a Perſon binds himſelf not to own any Regal Authority in the Perſon call'd the Pretender, nor ever to pay him the Obedience of a Subject. See OATH, ALLEGIANCE, *&c.*

ABJURATION is alſo us'd in our antient Cuſtoms, for a ſworn Baniſhment for Life; or an Oath taken, to forſake the Realm for ever. See BANISHMENT.

This, in ſome Caſes, was admitted from Criminals in lieu of Death. The Devotion for the Church was ſo warm, from the Time of *Edward* the Confeſſor to the Reformation, that if a Man having committed Felony, could recover a Church or Church-yard before he were apprehended, it was an Aſylum from which he could not be brought to take his Trial at Law; but confeſſing his Crime to the Juſtices, or Coroner, and *abjuring* the Kingdom, he was at liberty. See ASYLUM.

After *Abjuration*, a Croſs was given him, which he was to carry in his Hand thro' the Highways, till he was got out of the King's Dominion; which was call'd the *Banner of Mother-Church*. *Plac. Hil. 26. Edw.* III.

In time, *Abjuration* dwindled into a perpetual Confinement of the Priſoner to the Sanctuary; wherein, after *abjuring* his Liberty and free Habitation, he was allow'd to ſpend his Life. By Stat. 21 *Jac.* I. all uſe of Sanctuaries, and conſequently of *Abjuration* is taken away. See SANCTUARY.

ABLACTATION, in Gardening, a Method of Engrafting, more uſually call'd *Inarching*, or *Grafting by approach*. See GRAFTING.

Ablactation is only practicable where the Stock to be grafted on, and the Tree from which the Graft is to be taken, ſtand ſo near, that the Branch or Cyon may be applied, without cutting off. Hence, 'tis chiefly uſed on Plants that grow in Caſes; as Orange, Lemon, Pomgranate, Vines, Jeſſamins, *&c.* The Seaſon is *April*. To perform it, the uſual Method is to take the Branch intended for the Graft, and pare it away, both the Rind and Wood, the length of three Inches; then, paring likewiſe the Stock, ſo that they may join cloſely to each other, they bind 'em together, and cover 'em over with Clay, or Grafting-Wax. As ſoon as they are found well incorporated together, the Head of the Stock is to be cut off four Inches above the Binding; and the Spring following, the Graft: leaving the Stock to ſubſiſt by it ſelf.

Or, the Operation may be done, by cutting off the Head of the Stock at firſt, and leaving the Top a little ſloped, and applying the Graft thereto, as in Shoulder-Grafting. But this Method is not found equally ſucceſsful.

The Word originally ſignifies the *weaning* a Child from the Breaſt; being form'd of *ab*, from, and *lac*, Milk.

ABLAQUEATION, a Name uſed by the antient Writers of Agriculture, for an Operation in Gardening, whereby Earth is dug from about a Vine, or other Fruit-Tree, and its Roots laid bare, to expoſe 'em more to the Sun, Rain, and Air, in order to promote its Fecundity. See FRUIT-*Tree*.

ABLATIVE, in Grammar, the ſixth Caſe of Nouns. See CASE.

The *Ablative* is oppoſite to the Dative; the firſt expreſſing the Action of taking away, and the latter that of giving. See DATIVE.

The Word is *Latin*, form'd *ab auferendo*, taking away. *Priſcian* alſo calls it the *Comparative* Caſe; as ſerving, among the *Latins*, for comparing, as well as taking away.

The *Ablative* ſcarce anſwers to the juſt Idea of a Caſe; at leaſt, it is the moſt vague of all others. 'Twill be ſhewn in its Place, that the *Engliſh*, and other modern Tongues, have properly no ſuch thing as *Caſes*: but even in the antient Languages, from which the Notion of Caſes is borrow'd, the *Ablative* is only a ſort of Supernumerary, or Supplement to the Caſes.

The five proper Caſes not being found ſufficient to expreſs all the Relations of Things to each other recourſe was had to an expedient; *viz.* the putting a Prepoſition before ſome of the other Caſes; and this made the *Ablative*. See PREPOSITION.

It may be added, that in the plural Number, the *Ablative* is ſtill more obſcure; as being only the Dative repeated.

In *Engliſh*, we have no preciſe Mark whereby to diſtinguiſh the *Ablative* from other Caſes; and we only uſe the Term in analogy to the *Latin*. Thus, in the two Phraſes, *The Magnificence of the City*, and *He ſpoke much of the City*; we ſay, that *of the City* in the firſt is Genitive, and in the latter *Ablative*: by reaſon it would be ſo, if the two Phraſes were expreſs'd in *Latin*.

ABLUENTS, *Abluentia*, in Medicine, a Name ſome Authors give to thoſe Remedies, better known under the Name of *Diluters*, and *Abſtergents*. See DILUTER, and ABSTERGENT.

ABLUTION, in Antiquity, a Religious Ceremony, in uſe among the *Romans*; being a ſort of purifying, perform'd by waſhing the Body, ere they enter'd on Sacrifice. See SACRIFICE.

Sometimes they waſh'd their Hands and Feet, ſometimes the Head, and oftentimes the whole Body: For which purpoſe, at the Entrance into their Temples were plac'd Veſſels made of Marble Triumphant (as *Du Choul* calls it) fill'd with Water.

This Cuſtom, without doubt, they learnt from the *Jews*; ſince we read in Scripture, that *Solomon* plac'd at the Entry into the Temple which he erected to the true God, a great Laver, which the Holy Text calls a Sea of Braſs, where the Prieſts waſh'd themſelves before they offer'd Sacrifice; having beforehand ſanctify'd the Water, by throwing into it the Aſhes of the Victim that was ſlain in Sacrifice.

ABLUTION, among the modern *Romaniſts*, is underſtood of the little Drop of Water and Wine, which they take after the Communion, to waſh down and facilitate the Digeſtion of the Hoſt.

The ſame Term alſo ſignifies that which ſerves to waſh the Hands of the Prieſt who conſecrated it.

ABLUTION, in Pharmacy, is a Preparation divers Remedies undergo, by waſhing 'em in Water, or ſome other Fluid, proper to cleanſe and free 'em of their Impurities. See LOTION.

The Word is ſometimes alſo uſed, tho with leſs Propriety, for the waſhing, or infuſing of certain Medicines in Water, to freſhen 'em, and diſſolve their Salts; call'd *Dulcifying*. See DULCIFYING.

ABOLITION, the Act of undoing, deſtroying, or throwing a Thing out of uſe.

Thus, in our Laws, the *Abolition* of a Law, Statute, or Cuſtom, is the abrogating or repealing it. See ABROGATION, REPEALING, STATUTE, *&c.*

So, the Leave given by the King or Judge, to a criminal Accuſer, to deſiſt from further Proſecution of the Accuſed, is peculiarly called *Abolition*.

The Word is form'd of the *Latin* Abolere, *ita extinguere & delere, ut ne* oleat *quidem*.

ABOMASUS, ABOMASUM, or ABOMASIUM, in Comparative Anatomy, one of the Stomachs, or Ventricles of Animals of the ruminating Kind. See RUMINATING.

Beaſts that chew the Cud are found to have four Stomachs; *viz.* the *Rumen*, or *Magnus Venter* or *Stomach*, properly ſo call'd, the *Reticulum*, *Omaſus*, and Abomaſus. See RUMINATION, *&c.*

The *Abomaſus*, popularly call'd the *Maw*, is the laſt; being the Place wherein the Chyle is form'd, and from which the Food deſcends immediately into the Inteſtines.

It is full of Leaves like the *Omaſus*; but its Leaves have this particular to 'em, that beſide the Membranes they conſiſt of, they contain a great number of Glands not found in any of the reſt. See OMASUS, *&c.*

'Tis in the *Abomaſus* of Calves and Lambs, that the Rennet or Earning is form'd, wherewith Houſwifes turn or curdle their Milk. See RENNET.

ABORIGINES, or ABORIGENES, in Geography, a Name ſometimes given to the primitive Inhabitants of a Country, or thoſe who had their original therein; in contradiſtinction to Colonies, or new Races of Inhabitants, deriv'd from elſewhere. See COLONY.

The Term *Aborigines* is famous in Antiquity: Tho now an Appellative, 'twas originally a proper Name, given only to certain People of *Italy*; and both the Reaſon and Origin of it are greatly diſputed among the Learned: The principal Opinions with regard thereto may be reduc'd to four.

The firſt is that of *Aurelius Victor*, who will have 'em called *Aborigines*, q. d. *Abeorigines*, Vagabonds; of *ab*, and *erro*, I wander here and there; and maintains, that they

they were the *Scythians* who came and ſettled in *Italy*. To this Sentiment *Feſtus* adheres.

2d, S. *Jerom* ſays, they were called *Aborigines*, as having no beginning; of *ab*, and *origo*, original; *i. e.* as being originally of that Country, and not a Colony deriv'd from elſewhere: or, as *Halicarnaſſæus* explains it, διὰ τὸ γενέσεις τοῖς μετ' αὐτὰς ἄρξαι as being Chiefs, or Leaders of the Race that inhabited that Country. Of this Opinion *Virgil* ſeems to be *Æneid.* L. VII. ver. 177.

Saturnuſque Senex Janique bifrontis imago
Veſtibulo adſtabant, aliique ab origine *Reges.*

For, according to the Remark of *Servius*, *ab origine Reges*, here ſtands for *Aboriginum Reges*. To which it may be added, that *Pliny*, L. IV. calls the *Tyrians*, *Aborigines Gadium*, the *Aborigines of Cadix*; as being the Founders thereof.

3dly, *Dion. Halicarnaſſæus* takes 'em to have been called *Aborigines*, Ἀβοριγῖνες, from their inhabiting the Mountains; as who ſhould ſay, Ἀπὸ ὄρεσι, *à Montibus*: Which Notion ſeems favour'd by *Virgil*, *Æneid.* L. VIII. ver. 321.

Is genus indocile ac diſperſum montibus altis
Compoſuit, Legeſque dedit.

Laſtly, Others hold, that *Cham*, the *Saturn* of the *Egyptians*, having gather'd together divers wandring Nations, conducted 'em into *Italy*, and that theſe were the *Aborigines*. *Livy* affirms, they came from *Arcadia*, under the Conduct of *Oenotrus* Son of *Lycaon*. *Genebrard* will have 'em the *Phænicians*, or *Canaanites* expell'd by *Joſhua*.

ABORTION, in Medicine, an immature Excluſion of the *Fœtus*; or the Delivery of a Woman with Child, before the legitimate Term; popularly call'd *Miſcarriage*. See DELIVERY, *&c.*

This may happen at any time of Pregnancy; but if before the ſecond Month after Conception, it is properly call'd a *falſe Conception*. See CONCEPTION.

We have Inſtances of *Abortions* by the way of the Mouth, the *Anus*, the Navel, *&c.* See FOETUS, EMBRYO, *&c.*

The uſual Cauſes of *Abortion*, are immoderate Evacuations, violent Motions, ſudden Paſſions, Frights, *&c.* Other Cauſes are the largeneſs and heavineſs of the *Fœtus*, Irritations of the Womb, Relaxation of the Ligaments of the *Placenta*, Weakneſs, and want of Nouriſhment in the *Fœtus*; exceſs of eating, long faſting or waking, the uſe of Buſks for the Shape, offenſive Smells, violent Purgatives; and, in the general, any thing that tends to promote the Menſes.

The Symptoms uſually preceding, are a Fever, either continual or intermitting; Pain in the Loins and Head, heavineſs in the Eyes, a bearing down and Conſtriction of the Abdomen. When the Time of Miſcarriage is juſt at hand, the Pains are much the ſame as thoſe in Labour. See DELIVERY.

Abortion is dangerous where the Time of Pregnancy is far advanc'd ſo that the *Fœtus* muſt be large, where the Cauſe is very violent, the Patient ſtrongly convulſed, a large Hemorrhage precedes or enſues, the *Fœtus* is putrify'd, *&c.* Under other Circumſtances it rarely proves mortal.

The Treatment is to be adapted to the particular Symptoms and Circumſtances: If the Patient be Plethoric, as ſoon as the firſt Symptoms diſcover themſelves, a Vein is to be open'd: In caſe of Flooding, recourſe is to be had to proper Aſtringents; or if thoſe fail, to Fomentations, Injections, and Suffumigations: If a *Teneſmus* attend, Rhubarb is to be us'd; and if there be an habitual Laxity of the Uterine Veſſels, Guaiacum.

ABORTION is alſo uſed where the Child dies in the Womb; tho it remain there many Years, or even as long as the Mother lives.

ABORTIVE, ſomething come before its due time, or before it has arriv'd at its Maturity and Perfection. See ABORTION.

F. *Jerom Florentius* has an expreſs Treatiſe of the Baptiſm of *Abortives*, or *abortive* Children. His Aim is to ſhew that an *Abortive* may, and ought to be baptiz'd, at what Time or Term ſoever it come into the World; by reaſon the preciſe Time when the *Fœtus* begins to be animated is not known. There are ſeveral curious and uncommon Things in this Work, which is intitled *Homo dubius, ſive de baptiſmo Abortivorum*. Lugd. 1674. 4to.

ABORTIVE *Velom*, is that made of the Skin of an *abortive* Calf. See VELOM.

ABRACADABRA, an Inſcription, antiently uſed as a Charm or Spell, for the curing of ſeveral Diſeaſes, and driving out Devils. See CHARM, PHYLACTERY, *&c.*

The Author of this piece of Superſtition, who is ſaid to have lived under the Emperor *Adrian*, form'd the Name from that of the Deity he adored, *Abraſax*, or *Abraxas*; whom he made God-paramount; having ſeveral petty Divinities under him, and particularly ſeven Angels who preſided over the ſeven Heavens; and to whom he attributed 365 Virtues or Powers, the Number of Days in the Year; with other idle Reveries.

This ΑΒΡΑΞΑΣ S. *Jerom* will have to be the ſame God whom the *Perſians* and other Heathens worſhip'd under the Name *Mitra*; which is warranted by ſome antient Grave-ſtones. 'Tis added, that moſt of the Fathers aſcribe the Fable of the God Αβρασάξ, to *Baſilides* and his Followers, a Branch of *Gnoſtics*. See BASILIDIANS.

The *Gnoſtics*, 'tis known, ſuppoſed wonderful Virtues in Numbers; and accordingly, this ſame *Abraxas*, or rather *Abraſax*, was thus denominated, as including or comprehending the Power or Virtue of 365 dependent Intelligences: which Number is expreſs'd by the *Greek* Letters of the Word; it being the Cuſtom of the *Greeks* to expreſs their Numbers by the Letters of their Alphabet: The Value of thoſe in the preſent Word are thus;

Α Β Ρ Α Ξ Α Σ
1. 2. 100. 1. 60. 1. 200.

which added together make the Number 365.

Abracadabra ſtill continues in uſe and eſteem among ſome ſuperſtitious People, who pretend to do Wonders hereby in the Cure of Agues and Fevers. The manner of preparing this extraordinary Medicine, they have been at the Pains to deſcribe in the following Verſes.

Inſcribas chartæ quod dicitur Abracadabra
Sæpius & ſubter repetas, mirabile dictu;
Donec in anguſtum redigatur littera conum.

That is, 'The Word is firſt to be wrote at length, *Abra-*
'*cadabra*; then, under that *Abracadabr*; and in the third
'Line *Abracadab*, &c.

ABRASION, is ſometimes uſed among Medical Writers for the Act of wearing away the natural *Mucus* which covers the Membranes, and particularly thoſe of the Stomach and Inteſtines, by ſharp corroſive Medicines, or Humors. See STOMACH, and INTESTINES.

The Word is compounded of the Latin *ab*, and *rado*, I ſhave, or ſcrape off.

ABRENUNCIATION. See RENUNCIATION.

ABRIDGMENT, a Summary, or Contraction of a Diſcourſe; wherein, the leſs material Things being more briefly inſiſted on, the whole is brought into a leſſer Compaſs. See EPITOME.

The *Abridgments* of the *Philoſophical Tranſactions*, of *Mr.* Boyle's *Philoſophical Works*, &c. are Works very uſeful in their kind: Tho there is a very great Fault in the former of theſe; the Authors having taken upon 'em entirely to omit a vaſt Number of ſuch Papers and Diſcourſes as were not ſo much to their own Taſte; which is not the Nature of an *Abridgment*, but of a Florilege, Analecta, or Excerpta.

ABRIDGMENT *of a Count*, or *Declaration*, in Law, is particularly uſed for the making it ſhorter, by ſubtracting ſome of its Subſtance. See DECLARATION.

Thus, a Man is ſaid to *abridge his Plaint*, in Aſſize, or a Woman her Demand in an Action of Dower, when, having put any Lands therein which are not in the Tenure of the Tenant or Defendant; and Non-Tenure, or the like, is pleaded to that Land in Abatement of the Writ; they are brought to *abridge*, *i. e.* to deſiſt from and leave that Parcel out of the Demand; and pray that the Tenant may anſwer to the reſt, to which he has not yet pleaded any thing.

Tho the Demandant hath *abridg'd* his Plaint or Demand; yet the Writ ſtill remains good for the reſt. The Reaſon is, that ſuch Writs run in general, and do not ſpecify Particulars.

ABROGATION, the Act of annulling or repealing a Law, or of aboliſhing or ſetting aſide the Authority thereof. See LAW, REPEAL, *&c.*

The Word, in this Senſe, is borrow'd from the Civil Practice of the *Romans*. Among that People, to propoſe a Law to the People for their Approbation, was call'd *Rogare Legem*: hence, to aboliſh it was call'd *Abrogare*; to take ſomething from it, *Derogare*; to add a Clauſe to it, *Subrogare*; and to limit or reſtrain it, *Obrogare*.

ABSCESS, in Medicine and Chirurgery, a Tumor ariſing on divers Parts of the Body, and tending to Suppuration. See TUMOR, SUPPURATION, *&c.*

Abſceſſes ariſe from Collections of peccant Humours in the internal Parts of the Body; and are alſo called *Impoſthumes*. See IMPOSTHUME.

Their Name *Abſceſs* comes from the *Latin* Verb *abſcedere*, to depart, or remove to another Place; in alluſion to the morbid Humors being deriv'd from elſewhere.

Abſceſſes ariſe oftener in Women after Delivery; and tho dangerous in themſelves, yet appear to be the Criſis of the Diſeaſe that gave riſe thereto. For the Cure, if they cannot be *diſcuſs'd*, *i. e.* be carried off by proper artificial Evacuations, as Phlebotomy, Purging, *&c.* with the uſe of Calomel between whiles, and gentle perſpirative Fotus's, Liniments and Cataplaſms; recourſe is to be had to the contrary Method, and they muſt be brought to Suppuration. When

When the Matter is fully ripen'd, they are to be open'd with a Lancet or Cauſtick, and their Cure attempted by Digeſtives and Incarnatives. See RIPENER, DIGESTIVE, INCARNATIVE, &c.

ABSCISSE, ABSCISSA, in Conics, a Part of the Diameter, or tranſverſe Axis of a Conic Section, intercepted between the Vertex or ſome other fix'd Point, and a Semiordinate. See CONIC *Section*.

Such are the Lines AP, AP, &c. (Tab. *Conics*, Fig. 20.) intercepted between the Vertex A and the Semiordinates PM, PM, &c.

They are called *Abſciſſes* of the Latin *Abſcindo*, I cut off; as being Parts cut off from the Axis. Others call 'em *Sagittæ*, Arrows. See SAGITTA.

In the Parabola, the *Abſciſs* is a third Proportional to the Parameter and Semiordinate; and the Parameter a third Proportional to the *Abſciſs* and Semiordinate. See PARABOLA, SEMIORDINATE, &c.

In the Ellipſis, the Square of the Semiordinate is equal to the Rectangle of the Parameter into the *Abſciſſe*, ſubtracting another Rectangle of the ſame *Abſciſſe*, into a fourth Proportional to the Axis, Parameter, and *Abſciſſe*. See ELLIPSIS.

In the Hyperbola, the Squares of the Semiordinates are to each other as the Rectangles of the *Abſciſſe* into another Line, compos'd of the *Abſciſſe* and the tranſverſe Axis. See HYPERBOLA.

ABSENT. See PRESENT.

ABSOLUTE, is underſtood of ſomething that is free, or independent of another. Hence, as there are various ways wherein one thing may be conſider'd as *free* in reſpect of another, there ariſe divers ſorts of *Abſolutes*.

Abſolute, *e. g.* ſometimes imports a Thing which does not include the Idea of Relation to another; in which Senſe it ſtands oppos'd to *Relative*.

Thus, *Man* is an *abſolute* Term; and, on the contrary, *Creature* and *Father* are Relatives, the one referring to Creator, the other to Children. See RELATIVE.

In the like Senſe, the Schoolmen hold *Abſolute* to imply a Thing's not being *in ordine ad*, in order to any other Thing. Thus, Man, Tree, &c. are *Abſolutes*; and every other Thing which has any real Exiſtence which it does not owe to another.

In this Senſe too, the Terms of a Propoſition are ſaid to be taken *abſolutely*; that is, without Relation to each other.

Thus, Man, conſider'd *abſolutely*, and in himſelf, is an *Abſolute* Reaſonable Creature.

Sometimes, *Abſolute* denotes a being free from Reſtriction, Limitation, or Modifications; in which Senſe, ſay the Schoolmen, it ſtands oppos'd to a τὸ *ſecundum quid*. Thus, a Prince is ſaid to be *Abſolute*, when his Will is his Law; or when he is no way reſtrain'd or tied down by any Laws of his Country. And thus a Thing is ſaid to be *abſolutely* and ſimply good.

Sometimes, again, *Abſolute* denotes a Thing's being free from Conditions: In which Senſe it ſtands oppos'd to Conditional. See CONDITIONAL.

Thus, the Decrees of God are ſaid to be *Abſolute* with reſpect to Men. The rigid *Calviniſts* maintain *abſolute* unconditional Predeſtination and Reprobation. A Prieſt does not forgive Men's Sins *abſolutely*, but on Condition of Repentance and Amendment. In this Senſe alſo, we ſay, an *Abſolute* Promiſe, an *Abſolute* Propoſition, &c.

The Divines frequently uſe *Abſolute* in a ſtill further Senſe, *viz.* in oppoſition to Declaratory: Thus, the Church of *Rome* holds that the Prieſt can forgive Sins *abſolutely*; the Proteſtants ſay, only declaratively and miniſterially. See DECREE, ABSOLUTION, &c.

Again, *Abſolute* is ſometimes uſed in reſpect of *Cauſe*; and denotes a Thing's being without any Cauſe. In which Senſe, God alone is *abſolute*.

ABSOLUTE *Number*, in Algebra, is the known Quantity which poſſeſſes one entire Side or Part of an Equation; being the Rectangle, or Solid whoſe Root or Value is to be found. See EQUATION, and ROOT.

Thus, in the Equation $a\,a + 16\,a = 36$, the *Abſolute Number* is 36; which is equal to *a* multiplied by it ſelf, added to 16 times *a*.

This is what *Vieta* calls *Homogeneum Comparationis*.

ABSOLUTE *Equation*, in Aſtronomy, is the Sum of the Optic and Eccentric Equations. See EQUATION.

Ablative ABSOLUTE, is a Diction detach'd, and independent of the reſt of the Diſcourſe; neither governing, nor being governed of any other Thing. See ABLATIVE.

This is frequent among the *Latins*; in Imitation of whom, the modern Languages have likewiſe adopted it: *Deleto exercitu*: The Army being cut to pieces. *All things conſider'd*, Reaſon will appear the beſt Guide in Matters of Religion.

ABSOLUTE *Place*. } See { PLACE.
ABSOLUTE *Space*. } See { SPACE.
ABSOLUTE *Motion*. } See { MOTION.

ABSOLUTELY, ABSOLUTE, in Philoſophy, and Theology. See ABSOLUTE.

In Grammar, we ſay, A Word is taken *abſolutely*, *Abſolute ſumptus*, when it has no Regimen, or Government. Thus, in the Phraſe *We ſhou'd pray without ceaſing*; the Word *pray* is taken *abſolutely*, as it governs nothing.

In Geometry, *Abſolutely* is taken for entirely, compleatly. Thus, we ſay, ſuch a thing is *abſolutely* round; in contradiſtinction from what is only partly ſo, as a Spheroid, Cycloid, &c.

ABSOLUTION, ABSOLUTIO, in the Civil Law, &c. a definitive Sentence, whereby a Perſon accuſed of any Crime, &c. is acquitted, and declared Innocent.

Among the *Romans*, the ordinary Method of pronouncing Judgment was this: After the Cauſe had been pleaded on both ſides, the Pretor uſed the Word *Dixerunt*, *q. d.* they have ſaid what they had to ſay. Then, three Ballots were diſtributed to each Judge; one mark'd with the Letter *A.* for *Abſolution*; another with *C.* for Condemnation; and a third with *N. L. non liquet*, it is not clear, to require reſpite of Judgment: and according as the Majority fell of this or that Mark, the Accuſed was *abſolved* or condemn'd, &c. If he were *abſolved*, the Pretor diſmiſs'd him with *Videtur non feciſſe*, or *nihil in eo damnationis dignum invenio*.

When the Votes are equally divided on the Sides of *Abſolution* and Condemnation, the Accuſed is *abſolved*: This Procedure is ſuppoſed to be founded on the Law of Nature. Such is the Sentiment of *Faber* on the 125th Law. *de Div. Reg. Jur.* of *Cicero*, *pro Cluentio*; of *Quintilian*, *Declam.* 254; of *Stralo*, Lib. IX.

ABSOLUTION, in the Canon Law, is a Juridical Act, whereby a Prieſt, as a Judge, and in virtue of a Power given him by Jeſus Chriſt, remits the Sins of ſuch as appear to have the Conditions requiſite thereto.

The *Romaniſts* hold *Abſolution* a Part of the Sacrament of Penance: The Council of *Trent*, Seſſ. XIV. cap. iii. and that of *Florence*, in the Decree *ad Arminos*, declare the Form or Eſſence of the Sacrament to lie in the Words of *Abſolution*, *I abſolve thee of thy Sins*.

This *Formula* of *Abſolution* in the *Romiſh* Church is Abſolute; in the *Greek* Church, Deprecatory; and in the Churches of the Reformed, Declarative. *Arcuvius*, indeed, contends that the *Greek Formula* is abſolute; and that it conſiſts in theſe Words, *Mea mediocritas habet te venia donatum*. But the Inſtances he produces are either no *Formula's* of *Abſolution*, or only of *Abſolution* from Excommunication.

ABSOLUTION is chiefly uſed in the Reformed Churches for a Sentence whereby a Perſon who ſtands excommunicated, is releas'd or freed from the ſame. See EXCOMMUNICATION.

In the Church of *Scotland*, if the Excommunicated ſhew real Signs of godly Sorrow, and if upon Application to the Presbytery a Warrant be granted for his *Abſolution*, he is brought before the Congregation to confeſs his Sin, and expreſs his Sorrow, as often as the Presbytery ſhall think meet: When the Congregation is ſatisfy'd of his Penitence, the Miniſter puts up a Prayer, deſiring Jeſus Chriſt who has inſtituted the Ordinance of Excommunication, (*i. e.* of binding and looſing the Sins of Men on Earth) with a Promiſe of ratifying the righteous Sentence above, to accept of this Man, to forgive his Diſobedience, &c. This done, he pronounces the Sentence of *Abſolution*; by which his former Sentence is taken off, and the Sinner is again receiv'd into Communion.

In the Church of *Rome* there are divers other Political *Abſolutions*; as *Abſolutio à fœvis*, which is neceſſary where a Perſon has been concern'd in ſeeing Sentence of Death executed on a Criminal, or has any other way diſqualify'd himſelf for the holding of a Benefice.

Abſolutio ad Cautelam, is that granted to a Perſon who has lodg'd an Appeal againſt a Sentence of Excommunication. It being a Maxim in the Papal Juriſprudence, that the Sentence ſtands good notwithſtanding any Appeal; this ſort of *Abſolution* is ſometimes granted till the Iſſue of his Appeal be known: by means hereof, ſome Articles, at leaſt, of his Excommunication are taken off; inſomuch that Perſons may converſe with him without danger: And beſide, in Caſe of Death, this Sentence is ſuppoſed to ſtand him in ſome ſtead.

ABSORBENTS, in Medicine, Remedies which by the Softneſs or Poroſity of their component Parts, become proper to ſheath the Aſperities of ſharp pungent Humors; or to imbibe or dry away, as with a Sponge, ſuperfluous Moiſtures.

Such are the Teſtaceous Pouders, Hartſhorn, Coral, Crabs Eyes and Claws, calcin'd Bones, burnt Ivory, &c.

Abſorbents are the ſame with what we otherwiſe call *Driers* and *Sweetners*.

The Term *Abſorbent* is frequently confounded with *Alcaly*; Alcalies having, really, the Effect of *Abſorbents* with reſpect to Acids. See ACID, and ALCALY.

ABSTEMIOUS, is properly underſtood of ſuch Perſons as refrain abſolutely from Wine. *Pliny* more expreſly ſays, *Vini abſtemius*; and *Apuleius*, *Invinius*.

In the Religious Senſe of the Word, they are ſaid to be *Abſtemious*, who in the Sacrament of the Supper cannot partake of the Cup, by reaſon of ſome natural Averſion to the Liquor. The Biſhop of *Meaux* pleads the Example of the *Abſtemious*, in behalf of excluding the Laity from Communion under that Kind.

The *Roman* Ladies, in the firſt Ages of the Republick, were all enjoin'd to be *Abſtemious*; and that it might appear whether or no they kept up to the Injunction, it was one of the Laws of the *Roman* Civility, that they ſhould kiſs their Freinds and Relations whenever they accoſted them.

The Word ſeems form'd of *abs* and *temetum*, an old Word ſignifying *Wine*.

ABSTERGENTS, or Abstersive *Medicines*, a Claſs of Remedies, whoſe Effect is to abrade and wipe away ſuch mucous Particles as they meet in their Paſſage; and thus cleanſe the Parts of viſcid or impure Adheſions, and carry off the morbid Matter of Wounds, Ulcers, &c. See Medicine, Mundificative, &c.

Abſtergents are more uſually call'd among Phyſicians *Detergents*. See Detergent.

Abſtergents are of the Genus of Balſamicks; and only differ in their degree of Subtilty and Efficacy, from Vulneraries. See Balsamick, and Vulnerary.

The principal Simples in the Claſs of Detergents, are the Leaves of *Wormwood*, *Garlick*, *Leeks*, *Capers*, *Scurvygraſs*, *Fumitory*, *Liverwort*, *Tanſy*, and *Vervain*; *Bitter Almonds*, *Figs*, *Jujebs*, *Raiſins*, *Dates*, *Juniper-Berries*; *Gum Ammoniac*, *Balſam of Capivi*, *Balm of Gilead*, *Tacamahaca*, *Sapo*; *Turpentines*; *Barberries*, *Liquorice*, *Turmeric*, *Madder*, *Parmaſitty*, *Mummy*, *Sulphur*, *Salt*, *Mercury*, and *Native Cinnabar*.——Moſt of which the Reader will find particularly deſcrib'd under their proper Articles.

The Word *Abſtergent* is compounded of the Latin *abs*, from; and *tergo*, I wipe.—Whence, alſo, *Abſterſion* is ſometimes uſed for the mechanical Act of *Terſion*, or Wiping. See Tersion.

ABSTINENCE, *Abſtinentia*, the Habit of reſtraining or containing one's ſelf from ſome Pleaſure, or Enjoyment. See Pleasure.

The Word is compounded of the Latin *abs*, from; and *teneo*, I hold.

The *Jews* were oblig'd to *abſtain* from their Wives at certain Seaſons.—The ſame is enjoin'd in the Apoſtolical Conſtitutions, on all faſt and meagre Days; and the Church of *England* recommends certain Days of Faſting and *Abſtinence*.—The Great Faſt, ſays St. *Auguſtin*, is to *abſtain* from Sin. See Fast.

The antient *Athletæ* liv'd in a perpetual *Abſtinence* from all kind of ſenſible Pleaſure, to render their Bodies more robuſt and hardy. See Athleta.

Abstinence is particularly uſed for a ſpare Diet, or a ſlender parſimonious uſe of Food. See Food, and Diet.

The Phyſicians relate Wonders of the Effects of *Abſtinence* in the Cure of many Diſorders, and the protracting the Term of Life.—The Noble *Venetian*, *Cornaro*, after all imaginable means had proved vain, ſo that his Life was deſpair'd of at 40; recover'd and liv'd to near 100, by mere dint of *Abſtinence*: as he himſelf gives the Account.

'Tis indeed ſurprizing to what a great Age the primitive Chriſtians of the Eaſt, who retir'd from the Perſecutions into the Deſarts of *Arabia* and *Egypt*, lived, healthful and chearful, on a very little Food: *Caſſian* aſſures us, that the common Rate for twenty four Hours was twelve Ounces of Bread, and mere Water: with this St. *Anthony* lived 105 Years; *James* the Hermit, 104; *Arſenius*, Tutor of the Emperor *Arcadius*, 120; St. *Epiphanius* 115; *Simeon Stylites* 112; and *Romualdus* 120.

Indeed, we can match, nay out-do theſe Inſtances of Longævity, at home: *Buchanan* writes, that one *Lawrence* preſerv'd himſelf to 140 by force of Temperance and Labour; and *Spotſwood* mentions one *Kentigorn*, afterwards call'd St. *Mougah* or *Mungo*, who lived to 185 by the ſame means.—Other Inſtances ſee under the Article Longævity.

In effect, moſt of the Chronical Diſeaſes, the Infirmities of old Age, and the ſhort Lives of *Engliſhmen*, are owing, according to Dr. *Cheyne*, to Repletion; and may be either cured, prevented, or remedied, by *Abſtinence*. See Repletion, Evacuation, &c.

Among the Brute Creation, we ſee extraordinary Inſtances of long *Abſtinence*.—'Tis the natural Courſe for divers Species to paſs four, five, or ſix Months every Year without either eating or drinking: Accordingly, the Tortoiſe, Bear, Dormouſe, Serpent, Swallow, Fly, &c. are obſerv'd regularly to retire, at thoſe Seaſons, to their reſpective Cells and hide themſelves, ſome in the Caverns of Rocks, or Ruins; others dig Holes under Ground; others get into the Woods, and lay themſelves up in the Clefts of Trees; others bury themſelves under Water, &c. See Migration, Passage, &c.

In effect, ſeveral Species of Birds, the whole Tribe almoſt of Inſects, and many among the other Tribes, are able to ſubſiſt all Winter, not only without Food, but many of 'em without Reſpiration too.—This furniſhes an admirable Inſtance of the Wiſdom of the Creator. The proper Food of theſe Creatures, eſpecially the Inſect-Tribe, being now wanting; there is a Proviſion for 'em to live without it. When the Fields are diveſted of their flowery Furniture, when the Trees and Plants are ſtripp'd of their Fruits; what would become of ſuch Animals as are ſubſiſted by the Produce of the Spring, and Summer? And when the Air is grown rigid and chilly with Froſt, what would become of thoſe many tender Species which are impatient of Cold? To prevent the total Deſtruction and Extirpation of many Species of Animals; the Author of Nature has provided, that Creatures thus bereav'd of their Food, ſhould be likewiſe impatient of Cold; to lead 'em thus to ſhelter themſelves out of the way of Danger; and that when there arrived, the natural Texture and Viſcidity of the Blood, ſhould diſpoſe it, by a further degree of Cold, to lag and ſtagnate in the Veſſels: ſo that the Circulation ſtopping, and the Animal Functions being in great meaſure ſuſpended; there is no ſenſible Waſte or Conſumption of Parts, but they remain in a kind of drouſy neutral State, between Life and Death; till the warm Sun revive both them and their Food together, by thawing the congealed Juices both of ſuch Animals and Vegetables. See Heat.

'Tis more than probable, that all Motion of the Animal Juices is extinct in Flies and other Inſects, when thus aſleep; in that, tho cut in pieces they do not awake, nor does any Fluid ooze out at the Wound; unleſs ſome extraordinary degree of Warmth have been firſt applied to unbind the Ice.—The Sleep of ſuch Animals is little elſe than a real Death; and their Waking, a Reſurrection.—For if Life do not conſiſt in a Circulation of the Blood, we don't know what it conſiſts in.——Animals thus aſleep, therefore, are rather ſaid to be alive potentially than actually; much as an Embryo is before Conception, or Incubation. See Life, Sleep, Blood, Circulation, Foetus, &c.

Hence 'tis no wonder that Tortoiſes, Dormice, Bears, &c. are found as fat and fleſhy after ſome Months *Abſtinence* as before.—Sir *G. Ent* weigh'd his Tortoiſe ſeveral Years ſucceſſively, at his going to Earth in *October*, and his coming out again in *March*; and found that of 4 Pounds 4 Ounces, he only uſed to loſe about 1 Ounce. *Philoſoph. Tranſact.* N° 194.

Indeed, we have Inſtances of Men paſſing ſeveral Months as ſtrictly *abſtinent* as other Creatures.—The Records of the *Tower* mention a *Scotchman* impriſon'd for Felony, and ſtrictly watch'd in that Fortreſs for ſix Weeks; in all which time he took not the leaſt Suſtenance: for which he had his Pardon. The *Ephem. German.* ſpeak of one *Martha Taylor*, who by a Blow on the Back fell into ſuch a Proſtration of Appetite, that ſhe took no Suſtenance beſide a few Drops with a Feather for thirteen Months: But this was a morbid and unnatural Caſe, for ſhe ſlept but little all the Time.—We may add the Inſtance of *S. Chilton* of *Tinsbury* near *Bath*, who in the Years 1693, 1694, 1695, ſlept ſometimes four Months, and ſometimes above ſix together, with very little Food; and ſix Weeks without any more than a little Tent, convey'd with a Quill into his Mouth thro' a hole in his Teeth. *Philoſoph. Tranſact.* N° 304.

It is to be added, that in moſt Inſtances of long *Abſtinence* related by Naturaliſts, there were apparent Evidences of a Texture of Blood and Humours, much like that of Summer-Beaſts, and Inſects.—Tho it is no improbable Opinion, that the Air it ſelf may furniſh ſomething for Nutrition. 'Tis certain, there are Subſtances of all Kinds, Animal, Vegetable, &c. floating in the Atmoſphere; which muſt be continually taken in by Reſpiration. And that an animal Body may be nouriſh'd thereby, is evident in the Inſtance of Vipers, which if taken when firſt brought forth, and kept from every thing but Air, will yet grow very conſiderably in a few Days. So the Eggs of Lizards are obſerved to increaſe in Bulk, after they are produced, tho there be nothing to furniſh the Increment but Air alone; after the like manner, as the Eggs or Spawn of Fiſhes grow, and are nouriſh'd with the Water. See Air, and Water.——And hence, ſay ſome, it is, that Cooks, Turn-ſpit Dogs, &c. tho they eat but little, yet are uſually fat. See Nutrition, Perspiration, &c.

ABSTRACT, Abstractum, in Philoſophy, that which is ſeparated from ſome other thing, by an Operation of the Mind called *Abſtraction*. See Abstraction.

An Abstract *Idea*, is ſome ſimple Idea, detach'd and ſeparated from any particular Subject, or Complex Idea; for the ſake of viewing and conſidering it more diſtinctly, as it is in it ſelf, its own Nature, &c. See Idea, Simple, Complex, &c.

Thus, Magnitude and Humanity are *Abſtracts* when conſider'd in themſelves, and without being attach'd to any par-

ticular Body, or Perſon; tho they cannot have any real Subſiſtence without ſuch Subjects, nor the Subjects without them.

Thus, alſo, *Whiteneſs* is an *Abſtract*, or *abſtract* Term; inaſmuch as it does not denote any one white Object, but that Colour or Idea in the general, wherever found. See GENERAL.

From the Knowledge of *Abſtracts* we arrive at that of *Concretes*, which is the oppoſite Term; Concrete denoting a General or *Abſtract* Idea's being attach'd to ſome particular Subject, or conſider'd as combin'd with ſome other Ideas; as, *great* Houſe, *white* Wall. See CONCRETE.

The School Philoſophers define an *Abſtract Term* from the Simplicity of its Signification.—*Abſtracts*, according to them, expreſs only the Forms of Things, or Attributes of Things, diſtinct from the Subjects whereof they are Forms or Attributes: as, *Juſtice*, *Crookedneſs*, &c.—They diſtinguiſh 'em into divers Kinds; *Metaphyſical*, as Humanity; *Logical*, as Whiteneſs; and *Phyſical*, as Life, in reſpect of an Animal.

All our ſimple Ideas, ſays Mr. *Locke*, have *abſtract*, as well as concrete Names; as, *Whiteneſs*, *white*; *Sweetneſs*, *ſweet*, &c.

The like alſo holds in our Idea of Modes, and Relations; as, *Juſtice*, *juſt*; *Equality*, *equal*; &c.

But as to our Ideas of Subſtances, we have very few *abſtract* Names at all—Thoſe few that the Schools have forged, as *Animalitas*, *Humanitas*, &c. hold no Proportion with the infinite Number of Names of Subſtances; and could never get admittance into common Uſe, or obtain the Licence of publick Approbation: which ſeems to intimate a Confeſſion of Mankind, that they have no Ideas of the real Eſſences of Subſtances; ſince they have not Names for ſuch Ideas.

It was only the Doctrine of Subſtantial Forms, and the Confidence of miſtaken Pretenders to a Knowledge they had not, which firſt coined, and then introduced *Animalitas*, *Humanitas*, and the like; which yet went very little farther than their own Schools, and could never get to be current among underſtanding Men. See SUBSTANCE.

But the Reality and Exiſtence of all *Abſtract* Ideas, and of any ſuch Faculty in the Mind as *Abſtraction*, has of late been controverted. See the Article ABSTRACTION.

In effect, if there were any ſuch Things as *Abſtracts*, *Abſtract Qualities*, &c. we don't ſee how they could be deſtroy'd; they muſt be permanent and immutable: For that which deſtroys the white warm Flame, cou'd not reach the Whiteneſs or the Warmth: That which deſtroys the figured, moving, ſolid Ball, could not hurt the Figure, Motion, Solidity, &c.—*Abſtract Ideas*, in fine, ſeem to tend to Subſtantial Forms. See *Subſtantial* FORM.

ABSTRACT is alſo extended to divers other Things, in reſpect of their Purity, Simplicity, Subtility, &c.——In this Senſe, we ſay,

ABSTRACT *Mathematicks*, are thoſe Branches of Mathematical Learning, which conſider Quantity and its Affections, ſimply, and abſolutely. See QUANTITY, and MATHEMATICKS.

Such are *Arithmetic*, *Algebra*, *Geometry*, *Trigonometry*, and *Analyticks*. See ARITHMETIC, ALGEBRA, GEOMETRY, &c.

They are thus denominated, in oppoſition to *Mixt* Mathematicks; where the ſimple and abſtracted Properties and Relations of Quantity deliver'd in the former, are applied to ſenſible Objects; and by that means become intermix'd with Phyſical Conſiderations——Such are *Hydroſtatics*, *Optics*, *Navigation*, &c. where Water, Light, &c. are concern'd.

In the like Senſe ſome Authors ſpeak of *Abſtract Numbers*; meaning no more thereby than Numbers, or Aſſemblages of Unities, conſider'd in themſelves, and not applied to denote any Collections of particular ſorts of Things. See NUMBER.

ABSTRACT is alſo uſed in Matters of Literature, for a compendious View, or Epitome of a larger Work. See EPITOME.

An *Abſtract* is ſuppoſed to be a degree ſhorter, and more ſuperficial than an Abridgment. See ABRIDGMENT.

ABSTRACTION, an Operation of the Mind, whereby we ſeparate Things naturally conjunct, or exiſting together; and form and conſider Ideas of Things thus ſeparated. See ABSTRACT.

The Faculty of *Abſtracting*, ſtands directly oppoſite to that of Compounding—By Compoſition we conſider thoſe Things together, which in reality are not join'd together in one Exiſtence. And by *Abſtraction*, we conſider thoſe Things ſeparately and apart, which in reality do not exiſt apart. See COMPOSITION.

Abſtraction is chiefly employ'd theſe three ways—Firſt, when the Mind conſiders any one Part of a Thing, in ſome reſpects diſtinct from the Whole; as a Man's Arm, without the Conſideration of the reſt of his Body.

Secondly, when we conſider the Mode of any Subſtance, omitting the Subſtance it ſelf; or when we ſeparately conſider ſeveral Modes which ſubſiſt together in one Subject. See MODE.

This *Abſtraction* the Geometricians make uſe of, when they conſider the Length of a Body ſeparately, which they call a Line; omitting the Conſideration of its Breadth and Depth.

Thirdly, it is by *Abſtraction* that the Mind frames general or univerſal Ideas; omitting the Modes and Relations of the particular Objects whence they are form'd.—Thus, when we would underſtand a thinking Being in general, we gather from our Self-conſciouſneſs what it is to Think; and omitting the Conſideration of thoſe Things which have a peculiar Relation to our own Mind, or to the human Mind, we think of a thinking Being in general.

Ideas fram'd thus, which are what we properly call *Abſtract Ideas*, become general Repreſentatives of all Objects of the ſame Kind; and their Names applicable to whatever exiſts conformable to ſuch Ideas.—Thus, the Colour that we receive from Chalk, Snow, Milk, &c. is a Repreſentative of all of that Kind; and has a Name given it, *Whiteneſs*, which ſignifies the ſame Quality, wherever found or imagin'd. See GENERAL.

'Tis this laſt Faculty, or Power of *Abſtracting*, according to Mr. *Locke*, that makes the great Difference between Man and Brutes; even thoſe latter muſt be allowed to have ſome ſhare of Reaſon: That they really reaſon in ſome Caſes, ſeems almoſt as evident as that they have Senſe; but 'tis only in particular Ideas. They are tyed up to thoſe narrow Bounds; and do not ſeem to have any Faculty of enlarging them by *Abſtraction*. *Eſſay on Human Underſtanding*, L. III. c. 3.

Such is the Doctrine of *Abſtract Ideas*, under the Improvements of that excellent Author.——In effect, 'tis the ſtanding Opinion, that the Mind has ſuch a Power or Faculty of framing *Abſtract Ideas* or *Notions* of Things; and on ſuch very Ideas do a great part of the Writings of Philoſophers turn. Theſe are ſuppoſed in all their Syſtems; and without them there would be nothing done.—They are more eſpecially reputed the Object of Logick and Metaphyſicks, and all that paſſes under the Notion of the moſt *abſtracted* and *ſublime* Learning.

Yet has a late eminent and ingenious Author, Dean *Berkeley*, conteſted the Reality of any ſuch Ideas; and gone a good way towards overturning the whole Syſtem, and conſequently towards ſetting our Philoſophy on a new footing.

The Qualities or Modes of Things, 'tis on all hands agreed, do never really exiſt apart, and ſeparated from all others; but are conſtantly mix'd and combin'd together, ſeveral in the ſame Object.—But, ſay the Philoſophers, the Mind being able to conſider each Quality ſingly, or *abſtracted* from other Qualities with which it is united, does by that means frame to it ſelf *Abſtract Ideas*, of a different Nature and Kind from the ſenſible ones.

For an Example hereof, The Eye perceiving an Object extended, coloured, and moved, reſolves this Compound Idea, into its ſimple, conſtituent ones; and viewing each by it ſelf, excluſive of the reſt, frames *Abſtract Ideas* of *Extenſion*, *Colour*, and *Motion* themſelves, or in their own Nature.—Not that it is poſſible for ſuch Colour and Motion to exiſt without Extenſion; but only that the Mind can frame to it ſelf, by *Abſtraction*, the Idea of Colour excluſive of Extenſion; and of Motion, excluſive both of Colour and Extenſion.

Again, ſay the ſame Philoſophers, the Mind having obſerv'd that in the particular Extenſions perceived by Senſe, there is ſomething common, and alike in all; and ſome other things peculiar; as this, or that Figure or Magnitude, which diſtinguiſh them one from another; it can conſider apart, or ſingle out by it ſelf, what is common; making thereof a general abſtract Idea of Extenſion, which is neither *Line*, *Surface*, nor *Solid*, nor has any *Figure* or *Magnitude*, but is an Idea entirely preſcinded from 'em all.——So, likewiſe, by leaving out of the ſeveral Colours perceived by Senſe, that which diſtinguiſhes them from one another, and only retaining what is common to all, it makes an Idea of Colour in the *Abſtract*, which is neither *red*, nor *blue*, nor *white*, &c.—After the ſame manner, by conſidering Motion abſtractedly, both from the Body moved, and from the Figure it deſcribes, and all particular Directions, and Velocities; an *Abſtract* Idea of Motion is framed, which equally correſponds to all Motions whatever.

They add, that as the Mind frames *Abſtract* Ideas of Qualities or Modes; ſo does it, by the ſame Faculty, attain *Abſtract* Ideas of the more compound Beings, which include many coexiſtent Qualities.——For an Example—Having obſerv'd that *Peter*, *James*, *John*, &c. reſemble each other in Shape, and other Qualities; we can leave out of the Complex Idea we had of *Peter*, *James*, &c. that which is peculiar to each, retaining only what is common to all, and ſo make an *Abſtract* Idea, wherein all the Particulars equally partake.

partake.—And thus it is we are ſuppoſed to come by the *Abſtract* Idea of *Man*, or of *Humanity*, or *Human Nature*; wherein there is indeed included Colour, becauſe no Man but has ſome Colour, but it is neither *white*, nor *black*, nor *brown*; becauſe there is no one particular Colour wherein all Men partake. So likewiſe there is included Stature, but then it is neither *tall*, nor *low*, nor yet *middle Stature*, but ſomething *abſtracted* from all theſe: And ſo of the reſt.

Farther yet, there being a general Variety of other Creatures, which partake in ſome Parts, but not all, of the Complex Idea of Man; the Mind leaving out thoſe Parts which are peculiar to Men, and retaining thoſe only which are common to all living Creatures, frames the Idea of *Animal*; which *abſtracts* or participates not only of all Men, but all Birds, Beaſts, Fiſhes, and Inſects.

The conſtituent Parts of ſuch *Abſtract Idea* of Animal, are Body, Life, Senſe, and ſpontaneous Motion.—By *Body*, is meant, Body without any particular Shape, or Figure; there being no one common to all Animals; without Covering, either of Hair, of Feathers, or Scales: nor yet naked; Hair, Feathers, Scales, and Nakedneſs, being the diſtinguiſhing Properties of particular Animals, and for that Reaſon left out of the *Abſtract* Idea. Upon the ſame Account, the ſpontaneous Motion muſt be neither walking, nor flying, nor creeping; it is nevertheleſs a Motion—But what that Motion is, it is not eaſy to conceive.

'I will not affirm, *ſays Dr.* Berkeley, that other People 'have not this wonderful Faculty of *abſtracting* their Ideas; 'but I am confident I have it not my ſelf.—I have, in- 'deed, a Faculty of imagining, or repreſenting to my ſelf 'the Ideas of Things I have perceived, and of variouſly 'compounding or dividing them: I can imagine a Man with 'two Heads, or the upper Parts of a Man join'd to the Bo- 'dy of a Horſe. I can conſider the Hand, the Eye, the 'Noſe, each by it ſelf, *abſtracted* or ſeparated from the reſt 'of the Body—But then, whatever Hand or Eye I ima- 'gine, it muſt have ſome particular Shape and Colour.—So, 'again, the Idea of a Man I frame to my ſelf, muſt be 'either of a white, or a black, or a tawny, a ſtrait or a 'crooked, a tall, or a low, or a middle-ſiz'd Man.

'I cannot by any Effort of Thought conceive the *Ab- 'ſtract* Idea above deſcribed; and it is equally impoſſible 'for me to form the *Abſtract Idea* of Motion, diſtinct from 'the Body moving, and which is neither ſwift nor ſlow, 'curvilinear, nor rectilinear.—And the like may be ſaid of 'all other *abſtract* general Ideas whatever.'

Since all things that exiſt are only Particulars, 'Whence, 'ſays *Mr.* Locke, is it, that we come by general Words, 'expreſſive of a thouſand Individuals?' His Anſwer is, 'Terms only become general, by being made the Signs of '*abſtract* and general Ideas;' ſo that the Reality of *Ab- ſtract* Ideas, ſhould follow from the Reality of General Words.——But this is a Deception.—A Word becomes General, by being made the Sign, not of an *abſtract* general Idea, but of ſeveral particular ones; any one of which it indifferently ſuggeſts to the Mind.—For an Example, when I ſay that *Whatever has Extenſion is diviſible*; the Propoſition is to be underſtood of Extenſion in general: not that I muſt conceive any *abſtract* general Idea of Extenſion; which is neither Line, Surface, nor Solid, neither great nor ſmall, *&c.*

To make this more evident, Suppoſe a Geometrician to be demonſtrating a Method of dividing a Line in two equal Parts: In order hereto, he draws, for inſtance, a black Line, an Inch long; and this, which in it ſelf is a particular Line, is nevertheleſs, with reſpect to its Signification, general; ſince it repreſents all Lines whatever: So that what is demonſtrated of this one, will hold of all others—And as that particular Line becomes general by being made a Sign; ſo does the Name *Line*: And as the former owes its Generality, not to its being the Sign of an *abſtract* or general Line, but of any or all particular right Lines that may poſſibly exiſt; ſo muſt the latter derive its Generality from the ſame Cauſe. See GENERAL *Term.*

Mr. *Locke*, ſpeaking of the Difficulty of forming *Abſtract Ideas*, ſays; 'And does it not require ſome Pains 'and Skill to form the general Idea of a Triangle, which 'yet is none of the moſt *abſtract* and comprehenſive; for 'it muſt be neither Oblique, nor Rectangular; neither E- 'quilateral, Iſoſceles, nor Scalenous; but all, and none of 'theſe, at once.'——'Now, let any Man look into his 'Thoughts, and try whether he has, or can attain to an 'Idea of a Triangle, correſpondent to this Deſcription.'

From the Notion of *Abſtract Ideas*, Dr. *Berkeley* endeavours to ſhew, it was, that Bodies firſt came to be ſuppoſed to have an Exiſtence of their own, out and independent of the Mind perceiving 'em.—Can there be a greater Strain of *Abſtraction*, ſays he, than to diſtinguiſh the Exiſtence of ſenſible Objects from their being perceiv'd, ſo as to conceive them exiſting unperceiv'd. See BODY, and EXTERNAL *World.*

We ſhall only add, that *abſtracting*, on the common Syſtem, is no more than generalizing: 'tis making one thing ſtand for an hundred, by omitting the Conſideration of the Differences between 'em: It is taking ſeveral Differents, *i. e.* different Combinations, ſetting aſide the Peculiarities in each, and conſidering only what is found alike in all.—— Thus it is that I ſay, *I love my Friend, love my Miſtreſs, love my ſelf, my Bottle, my Book, my Eaſe*, &c.—Not that it is poſſible I ſhould have the ſame Senſation with reſpect to ſo many different ſorts of things, things that ſtand in ſuch different Relations to me; but only that there appearing ſomething in them all that bears a reſemblance to the reſt, in ſome Circumſtances or other, I chuſe to call 'em all by one Name, *Love*. For if I conſider the Tendency of the Effects of them all, I ſhall find they lead me very different ways to very different Actions: and there is not more reſemblance between the Cauſes than between the Effects: All the Analogy there is between them, is a ſort of Pleaſure or Satisfaction, ariſing upon the Application of the particular Object to its proper Organ, or Senſe.——The *Abſtract Idea* of Love, then, will terminate in the Idea of Pleaſure: But, 'tis certain, there can be no Idea of Pleaſure, without a thing pleaſant to excite it. Any other *Abſtract Idea* of Pleaſure, will amount to no more than a View or Perception of the Circumſtances wherewith our Pleaſures have been attended: But theſe are mere Externals, foreign to the pleaſurable Senſation it ſelf; which nothing but an Object applied in ſuch and ſuch a manner, can excite.—To ſuppoſe an Idea of Pleaſure produced obliquely, by any other than the proper Cauſe, is as abſurd as to ſuppoſe an Idea of Sound, produced without a ſonorous Object. The Mind has no Power of making any Ideas, call 'em what you will, whether *Abſtract*, or Concrete; or General, or Particular: Its Activity goes no farther than to the perceiving of ſuch as are preſented to it: So that its Action is really no other than a degree of Paſſion. See SENSE.

ABSTRUSE, denotes ſomething to be deep-hidden, or far-removed from the common Apprehenſions, and ways of conceiving; in oppoſition to what is obvious and palpable.

In this Senſe, Metaphyſicks is an *abſtruſe* Science; the new Doctrine of Infinites is an *abſtruſe* Point of Knowledge; that few People attain to.—The Word is of *Latin* Original, *Abſtruſus*; form'd of *abs*, from, and *trudo*, I thruſt; *q. d.* being far off, and out of reach.

ABSURD, ABSURDUM, a thing that thwarts, or goes contrary to our common Notions and Apprehenſions. See ABSURDITY.

Thus, a Propoſition would be *abſurd*, that ſhould affirm, that two and two make five; or that ſhould deny 'em to make four. See PROPOSITION.

The Logicians have a way of proving the Truth of a Propoſition, by ſhewing the contrary is *abſurd*. See TRUTH.—This they call

Reductio ad ABSURDUM, or *arguing ex Abſurdo*. See REDUCTION.

ABSURDITY, ABSURDITIES, is a kind of Error, or Offence againſt ſome evident, and generally allowed Truth, or Principle. See ERROR, MAXIM, *&c.*

The greateſt of all *Abſurdities* is the *Contradiction*. See CONTRADICTION.

The Schoolmen make two Species of *Abſurdities*—The one, απλῶς, which contradicts the common Senſe of Mankind; the other τινὶ, which gives the Lye to ſome one or more Philoſophers; *e. g. Ariſtotle*.—The latter ſort may be a real Truth.

ABSYNTHIUM, *Wormwood*, a Medicinal Plant, of conſiderable Efficacy in quality of a Bitter and Stomachic. See STOMACHIC, *&c.*

There are divers Kinds hereof enumerated by Botaniſts, at leaſt 30. Thoſe which obtain in Medicine, are, 1°, the *Roman* or ſmall, call'd alſo *Pontic*; uſed as a Stomachic, Aſtringent, Diſcutient, and to prevent Putrefaction.—*Etmuller* ſays, there is not a chronic Diſtemper in which it is not ſerviceable.—A Conſerve of the *Roman Abſynthium* is now alſo much uſed.

2°, The *common* or large *Wormwood*, bitterer much than the former, and antiently uſed not only as a Stomachic and a Deſtroyer of Worms, but alſo a Detergent; and preſcrib'd againſt the Jaundice and Dropſy: But it is now grown into diſuſe in thoſe Intentions, as being prejudicial to the Eyes; and is now chiefly retain'd as an Ingredient in ſome of the Officinal Compoſitions; and particularly ſome cephalick diſtill'd Waters. See WATER.

Its Infuſion in Wine, makes what they call *Vinum Abſynthites*. See WINE.—The Pharmacopeias alſo mention an Extract of *Abſynthium*, *Extractum Abſynthii*; and a Syrup of *Abſynthium*, *Syropus de Abſynthio*.

Some will have this to yield the *Semen Sanctum*, or *Santonicum*, i. e. *Wormſeed*; but *Matthiolus* affirms the contrary. See SANTONICUM.

The

The Word is compounded of the Privative Particle α, and πινθιον, *potable*; *q. d.* not potable.

ABUNDANCE, *Copia*, *Plenty*. See FERTILITY, CORNUCOPIA, &c.

Abundance, when carried to an Exceſs, is a Fault, call'd *Redundance*, *Exuberance*, &c. See REDUNDANCE, EXUBERANCE, &c.

The Author of the *Dictionaire Oeconomique* gives divers Manners or Secrets of producing *Abundance*; an *abundant* Crop of Wheat, Pears, Apples, Peaches, &c. See FOECUNDITY.

ABUNDANT *Numbers*, are thoſe whoſe Quota-Parts added together, exceed the Number it ſelf whereof they are Parts. See NUMBER.

Thus, the Number 12 is *abundant*, its Quota-Parts 1, 2, 3, 4, and 6, amounting to 16.—In oppoſition to *Abundant Numbers* ſtand *Defective* ones. See DEFECTIVE.

ABUSE, an irregular Uſe of a thing; or ſomething introduced contrary to the proper Order, and Intention thereof.

The Buſineſs of Reformations, Viſitations, &c. is to correct *Abuſes* ſecretly kept into Diſcipline, &c.—*Conſtantine* the Great, by introducing Riches into the Church, laid the Foundation for thoſe numerous *Abuſes* which the ſucceeding Ages groaned under.

Self-ABUSE, is a Phraſe uſed by ſome late Writers for the Crime of Self-Pollution. See POLLUTION.——*Nero* is ſaid to have frequently *abuſed Britannicus*.

In Grammar, to apply a Word *abuſively*, or in an *abuſive* Senſe, is to miſapply or pervert its meaning. See CATACHRESIS.

A Permutation of Benefices, without the Conſent of the Biſhop, is deem'd *abuſive*, and conſequently null.

ABUTALLS, or ABBUTALS. See ABBUTTALS.

ABYSS, ABYSSUS, a profound, and as it were, bottomleſs Gulph, or Cavern. See GULF.

The Word is *Greek*, αβυσσος; compounded of the Privative α, and βυω, *I enter*, *reach*; *q. d.* ſomething impenetrable, or not to be fathom'd.

In Scripture, the Word *Abyſs*, αβυσσος, is uſed by the Septuagint, for the Waters which God created at the Beginning with the Earth, which encompaſs'd it round; and which our Tranſlators render the *Deep*. Thus it is that Darkneſs is ſaid to have been on the Face of the *Abyſs*.—The ſame Word is alſo uſed for that immenſe Cavern in the Earth where God collected all theſe Waters on the third Day; which in our Verſion is render'd the *Sea*; and elſewhere the *Great Deep*.

Dr. *Woodward* has let ſome Light into this great *Abyſs*, in his *Natural Hiſtory of the Earth*.——He aſſerts, That there is a mighty Collection of Waters incloſed in the Bowels of the Earth; conſtituting a huge Orb in the interior or central Parts of it; and over the Surface of this Water, he ſuppoſes the Terreſtrial *Strata* to be expanded.—This, according to him, is what *Moſes* calls *the great Deep*, and what moſt Authors render *the great Abyſs*.

That there is ſuch an Aſſemblage of Waters lodged in the Depths of the Earth, is confirmed by abundance of Obſervations. See EARTH, DELUGE, &c.

The Water of this vaſt *Abyſs*, he aſſerts, does communicate with that of the Ocean, by means of certain *Hiatus's*, or Chaſms paſſing betwixt it and the bottom of the Ocean: And this and the *Abyſs* he ſuppoſes to have one common Centre, around which the Water of both is placed; but ſo, that the ordinary Surface of the *Abyſs* is not level with that of the Ocean, nor at ſo great a diſtance from the Centre as the other, it being for the moſt part reſtrained and depreſſed by the *Strata* of Earth lying upon it; but wherever thoſe *Strata* are broken, or ſo lax and porous that Water can pervade them, there the Water of the *Abyſs* doth aſcend, fills up all the Cleſts and Fiſſures into which it can get admittance; and ſaturates all the Interſtices and Pores of the Earth, Stone, or other Matter all around the Globe, quite up to the Level of the Ocean. See STRATA, FOSSIL, &c.

ACACIA, in Medicine, an inſpiſſated Juice, of a Shrub of the Thorn kind; uſed as an Aſtringent. See ASTRINGENT.

There are two Kinds, the *Vera* and *Germanica*.

The *Acacia Vera*, is brought from the *Levant*; and ſuppoſed to be the Juice of the Pods of a large thorny Tree, growing in *Egypt* and *Arabia*.—Some Naturaliſts will have it the ſame Plant that yields the Gum Arabick.

It is very auſtere and binding; and on that account good againſt Fluxes.—Chuſe that of a tan-colour, ſmooth, and ſhining; and an aſtringent diſagreeable Taſte.—It is, or ſhould be, an Ingredient in the *Theriaca Andromachi*.

The *German Acacia* is a Counterfeit of the former; being made of the Juice of unripe Sloes, boil'd to the Conſiſtence of a ſolid Extract; and put up in Bladders, like the former.—It is diſtinguiſh'd from it chiefly by its Colour, which is as black as that of *Spaniſh* Liquorice.—It is uſed as a Subſtitute to the true *Acacia*.

ACACIA, among Antiquaries, is a kind of Roll, reſembling a Bag; ſeen on Medals in the Hands of ſeveral of the Conſuls and Emperors, from the Time of *Anaſtaſius*.

Authors are not agreed either about the Uſe of this Roll, or about the Subſtance whereof it conſiſts; ſome taking it for a plaited Handkerchief, which the Perſon who preſided at the Games threw out as a Signal for their beginning; whilſt others rather imagine it intended to repreſent a Roll of Memoirs, or Petitions. See further under the Article ROLL.

ACADEMICKS, ACADEMICI, ACADEMISTS, a Sect of antient Philoſophers, founded by *Plato*; and called, alſo, the *Academy*. See ACADEMY.

The *Academicks*, in the later Ages, have taken the Name of *Platoniſts*. See PLATONIST.

The great Dogma of the *Academicks* was this: *Unum ſcio, quod nihil ſcio*; 'I know this one thing, that I know 'nothing.'——Accordingly, they pleaded, that the Mind ought always to remain undetermin'd and in Suſpence; as having nothing to determine on but bare Probability or Veriſimilitude, which is as likely to lead into Error as Truth. See PROBABILITY, TRUTH, ERROR, &c.

It muſt be added, that *Plato*, in thus recommending it to his Diſciples to diſtruſt and doubt of every thing; had it not ſo immediately in View to leave 'em fluctuating, and in continual Suſpence between Truth and Error; as to guard againſt thoſe raſh precipitate Deciſions which young Minds are ſo liable to, and put 'em in a Diſpoſition to enable 'em the better to ſecure themſelves from Error, by examining every thing without Prejudice.

M. *des Cartes*, has adopted this ſame *Acatalepſia*, or Principle of Doubting; but, it muſt be allow'd, he makes a very different uſe of it.—The *Academicks* doubted of every thing, and were reſolved ſtill to doubt: *Des Cartes*, on the contrary, ſets out with doubting of every thing; but declares he will not always doubt; and that he only doubts at firſt, that his Determinations afterwards may be the ſurer. See CARTESIANISM.

'In *Ariſtotle*'s Philoſophy, ſay the Followers of *Des Cartes*, there is nothing doubted of; every thing is accounted 'for, and yet nothing is explain'd, otherwiſe than by barbarous unmeaning Terms, and dark confuſed Ideas: 'Whereas *Des Cartes* makes you even forget what you 'knew before: but from your new affected Ignorance, leads 'you gradually into the ſublimeſt Knowledge.'——Hence they apply to him what *Horace* ſays of *Homer*.

Non Fumum ex Fulgore, ſed ex fumo dare Lucem
Cogitat, ut ſpecioſa dehinc miracula prodat
Antiphatem, Scyllamque & cum Cyclope Charybdim.

'Tis thus the *Carteſians* talk: But we may add, that long before their Maſter, *Ariſtotle* himſelf had ſaid, that to know a thing well, a Man muſt firſt have doubted of it; and that 'tis with doubting all our Knowledge muſt begin. See PERIPATETIC, PYRRHONIAN, SCEPTIC, &c.

ACADEMICS, or rather ACADEMISTS, is alſo uſed among us for the Members of the modern *Academies*, or inſtituted Societies of learned Perſons. See ACADEMY.

ACADEMY, ACADEMIA, in Antiquity, a fine Villa, or Pleaſure-Houſe, ſituate in one of the Suburbs of *Athens*, about a Mile from the City; which gave the Denomination to the Sect of *Academiſts*. See ACADEMICK.

It took its Name, *Academy*, from one *Academus* or *Ecademus*, a Citizen of *Athens*, to whom it originally belong'd; and who uſed to have Lectures, and Aſſemblies of learned Men therein.—He lived in the Time of *Theſeus*.

Some, miſtakenly, derive its Name and Origin from *Cadmus* the *Phœnician*, as being the firſt who introduc'd Learning, and the uſe of Letters among the *Greeks*.

The *Academy* was further improved and adorn'd by *Cymon*, with Fountains, Trees, ſhady Walks, &c. for the Convenience of the Philoſophers and Men of Learning, who here met to confer, diſpute, &c.—It was alſo the Burying-Place of illuſtrious Perſons, who had deſerv'd well of the Republick.

Here it was that *Plato* taught his Philoſophy; and from him, all publick Places deſtin'd for Aſſemblies of the Learned and Ingenious, have been ſince call'd *Academies*.

Sylla ſacrific'd the delicious Groves and Walks of the *Academy*, planted by *Cymon* to the Laws of War; and employ'd thoſe very Trees to make Machines wherewith to batter the City.

Cicero had a Villa, or Country Retirement near *Puzzuoli*, which he call'd by the Name *Academia*; where he uſed to entertain his Philoſophical Friends.—'Twas here, ſays Dr. *Harris*, he compos'd his *Academical Queſtions*, and his Books *de Officiis*, *de Amicitia*, and *de Natura Deorum*.

ACADEMY is alſo uſed for a Sect of Philoſophers, called the *Academicks*. See PHILOSOPHER, and ACADEMICK.

We uſually reckon three *Academies*, or Sects of *Academicks*; tho ſome make five.—The *Antient Academy*, was that whereof *Plato* was the Chief. See PLATONISM.

Arceſi-

Arceſilaus, one of his Succeſſors, introducing ſome Alterations into the Philoſophy of this Sect, founded what they call the *Second Academy*.

The Eſtabliſhment of the *third*, call'd alſo the *New Academy*, is attributed to *Lacides*, or *Carneades*.

Some Authors add a fourth, founded by *Philo* and *Carmides*; and a fifth by *Antiochus*, called the *Antiochan*, which temper'd the *Antient Academy* with Stoiciſm. See STOICISM.

The *Antient Academy* doubted of every thing; and went ſo far as to make it a Doubt, whether or no they ought to doubt.—'Twas a ſort of Principle with them, never to be ſure or ſatisfy'd of any thing; never to affirm or deny any thing either for true or falſe.—In effect, they aſſerted an abſolute *Acatalepſia*. See ACATALEPSIA.

The *New Academy* was ſomewhat more reaſonable; they own'd ſeveral things for Truths, but without attaching themſelves to any with entire Aſſurance.——Theſe Philoſophers had found, that the ordinary Commerce of Life and Society was inconſiſtent with the abſolute and univerſal Doubtfulneſs of the *Antient Academy*: and yet, 'tis evident, they themſelves looked upon things rather as probable, than as true and certain; by this Amendment, thinking to ſecure themſelves from thoſe Abſurdities into which the *Antient Academy* had fallen. See DOUBTING, *&c.*

See alſo further in the *Academical Queſtions* of *Cicero*; where that Philoſopher explains and unravels the Sentiments of thoſe who in his Days call'd themſelves Followers of the *new* and *old Academy*, with great Clearneſs and Addreſs.

ACADEMY is particularly uſed among the Moderns, for a regular Society or Company of learned Perſons; inſtituted under the Protection of a Prince, for the Cultivation and Improvement of Arts, or Sciences. See SOCIETY.

Some Authors confound *Academy* with Univerſity; but, tho much the ſame in *Latin*, they are very different things in *Engliſh*.—An Univerſity is, properly, a Body compoſed of Graduates in the ſeveral Faculties; of Profeſſors, who teach in the publick Schools; of Regents or Tutors, and Students who learn under them, and aſpire likewiſe to Degrees. See UNIVERSITY.

Whereas an *Academy* is not intended to teach, or profeſs any Art, ſuch as it is, but to improve it: 'Tis not for Novices to be inſtructed in, by thoſe that are more knowing; but for Perſons of diſtinguiſh'd Abilities to confer in, and communicate their Lights and Diſcoveries to each other for their mutual Benefit.

The firſt *Academy* we read of, was eſtabliſh'd by *Charlemaign* at the Motion of *Alcuin*: It was compoſed of the chief Wits of the Court, the Emperor himſelf being a Member.—In their *Academical* Conferences, every Perſon was to give an account of what antient Authors he had read; and each even aſſumed the Name of ſome antient Author whom he affected moſt, or ſome celebrated Perſon of Antiquity. *Alcuin*, from whoſe Letters we learn theſe Particulars, took that of *Flaccus*, the Sirname of *Horace*: a young Lord, named *Augilbert*, took that of *Homer*: *Adelard*, Biſhop of *Corbie*, was called *Auguſtin*: *Riculfe*, Biſhop of *Mentz*, was *Dametas*; and the King himſelf, *David*. See SCHOOL.

This lets us ſee a Miſtake in ſome modern Writers, who relate, that it was in Conformity with the Genius of the learned Men of thoſe Times, who were great Admirers of *Roman* Names, that *Alcuin* took the Name of *Flaccus Albinus*.

Moſt Nations have now their *Academies*, *Ruſſia* not excepted: But, of all Countries, *Italy* bears the Bell in this reſpect.——We have but few in *England*.—The only one of Eminence is called by another Name, *viz.* the *Royal Society*: An Account whereof, ſee under the Article ROYAL *Society*.

Beſide this, however, we have a *Royal Academy* of Muſick; and another of Painting; eſtabliſh'd by Letters Patent, and govern'd by their reſpective Directors.

The *French* have flouriſhing *Academies* of all Kinds, eſtabliſh'd at *Paris*; moſtly by the late King.

Royal ACADEMY *of Sciences*, for the Improvement of Phyſicks, Mathematicks, and Chymiſtry; was firſt ſet on foot in *1666*, by Order of the King, tho without any Act of Royal Authority iſſued for that End.—In the Year *1699*, it had as it were a ſecond Birth; the ſame Prince, by a Regulation dated the *26th* of *January*, giving it a new form, and putting it on a new and more ſolemn Footing.

In Virtue of that Regulation, the *Academy* was to be compoſed of four Kinds of Members, *viz. Honorary*, *Penſionary*, *Aſſociates*, and *Eleves*.—The firſt Claſs to conſiſt of ten Perſons; and the reſt of twenty each.—The *Honorary Academiſts* to be all Inhabitants of *France*; the *Penſionaries* all to reſide at *Paris*; eight of the *Aſſociates* allowed to conſiſt of Foreigners; and the *Eleves* all to live at *Paris*.—The Officers, to be a *Preſident*, named every Year by the King, out of the Claſs of Honorary *Academiſts*; and a *Secretary* and *Treaſurer*, to be perpetual.

Of the Penſionaries, three to be Geometricians, three Aſtronomers, three Mechanicks, three Anatomiſts, three Chymiſts, three Botaniſts; the remaining two, Secretary and Treaſurer.——Of the twelve Aſſociates, two to apply themſelves to Geometry, two to Aſtronomy, two to Mechanicks, two to Anatomy, two to Botany, and two to Chymiſtry.—The Eleves to apply themſelves to the ſame kind of Science with the Penſionaries they are attach'd to; and not to ſpeak, except when called thereto by the Preſident.—No Regular or Religious to be admitted, except into the Claſs of Honorary *Academiſts*: Nor any Perſon to be admitted, either for Aſſociate or Penſionary, unleſs known by ſome conſiderable printed Work, ſome Machine, or other Diſcovery.—Further, no Perſon to be allowed to make uſe of his Quality of *Academiſt*, in the Title of any of his Books, unleſs ſuch Book have been read to, and approved by the *Academy*.

The Meetings of the *Academy* were appointed to be held twice a-week, on *Wedneſdays* and *Saturdays*, in the King's Library: (Tho ſoon after, they were removed to a more commodious Apartment in the *Louvre*) And to laſt, at leaſt, two Hours, *viz.* from Three to Five. At the Beginning of every new Year, each Penſionary to be oblig'd to declare in Writing what Work he intends chiefly to proſecute that Year; and the reſt to be invited to do the ſame. All the Obſervations the *Academiſts* bring to the Meeting to be left in Writing, in the Hands of the Secretary; who is to enter the Subſtance of what paſſes at each Aſſembly in a Regiſter: and at the End of every Year, to publiſh the Hiſtory, or Tranſactions of the *Academy* for that Year.

No Perſon, not a Member, to be preſent at their ordinary Meetings; unleſs ſuch as are introduced by the Secretary, to propoſe ſome new Machine or Diſcovery; tho their publick Meetings, twice a-year, ſhall be open to every body.

To encourage the Members to continue their Labours, the King engages not only to pay the ordinary Penſions; but even to give extraordinary Gratifications, according to the Merit of their reſpective Performances: furniſhing, withal, the Expence of the Experiments, and other Inquiries neceſſary to be made.—Their Motto, *Invenit & perfecit*.

In the Year *1716*, the Duke of *Orleans*, then Regent, made an Alteration in their Conſtitution; augmenting the Number of Honoraries, and of Aſſociates capable of being Foreigners, to twelve; admitting Regulars among ſuch Aſſociates; ſuppreſſing the Claſs of Eleves, and eſtabliſhing, in lieu thereof, a new Claſs of twelve *Adjuncts*, to the ſix ſeveral Kinds of Sciences cultivated by the *Academy*: and, laſtly, appointing a Vice-Preſident, to be choſe yearly by the King, out of the Honorary Members; and a Director and Sub-director out of the Penſionaries.

Their Secretary, M. *de Fontenelle*, has oblig'd the Publick with 28 elegant Volumes of the Productions of this illuſtrious Body; under the Title of *Hiſtoire de l'Academe Royale*, &c. *avec les Memoires de Mathematique & de Phyſique tirez des Regiſtres*, &c.

ACADEMY *of Painting*, was eſtabliſh'd fifty Years ago, under the Cardinal *Mazarin*, firſt Protector thereof; and the Chancellor *Seguier*, Vice-Protector.

It conſiſts of a Director, a Chancellor, four Rectors, a Treaſurer, twelve Profeſſors; Adjuncts to the Rectors and Profeſſors; Counſellors; a Secretary; a Profeſſor for Anatomy, and another for Geometry, and Perſpective.

Perſons are here admitted either in Quality of Painters or Sculptors.—The Painters are admitted according to their reſpective Talents; there being a Diſtinction made between thoſe who work in Hiſtory, and thoſe who only paint Portraits, or Landſkips, or Beaſts, or Fruits, or Flowers, or paint in Mignature; or only Deſign; or Engrave; or Carve, *&c.*

ACADEMY *of Medals and Inſcriptions*, was erected for the Study and Explanation of antient Monuments; and to conſecrate great and memorable Events to Poſterity, by ſimilar Monuments; as Medals, Relievo's, Inſcriptions, *&c.*

ACADEMY *of Politicks*, is compoſed of ſix Perſons, who meet on certain Days each Week at the *Louvre*, in the Chamber where the Papers relating to foreign Affairs are lodg'd.—Here they peruſe ſuch Papers as are put in their Hands, by order of the Secretary for foreign Affairs, who acquaints the King with the Progreſſes they make, and the Capacities of each, that his Majeſty may employ them accordingly.

French ACADEMY, eſtabliſh'd for the Improvement and Refining of the Language. See FRENCH, and LANGUAGE.

ACADEMY *of Muſick*, is no other than the Managers and Directors of the Opera. See OPERA.

The *French* have alſo conſiderable *Academies* in moſt of their great Cities; as, at *Montpelier*, a *Royal Academy of Sciences*, on the like Footing as that at *Paris*; being as it were a Counterpart thereof: At *Tholouſe*, an *Academy* under the Denomination of *Lanterniſts*: Others at *Niſmes*, *Arles*, &c.

The Royal Spaniſh ACADEMY, is an *Academy* eſtabliſh'd at *Madrid*, on the Model of the *French Academy*.——

The Deſign was laid by the Duke *d'Eſcalona*; and approv'd of by the King in 1714, who declar'd himſelf Protector thereof.—It conſiſts of 24 *Academiſts*; including the Director and Secretary.

Its Device is a Crucible on the Fire, with this Motto, *Limpia, fija, y da eſplendor.*

ACADEMY *of the Naturæ Curioſi*, in *Germany*, was firſt founded in 1652, by M. *Bauch* a Phyſician; and taken in 1670 under the Protection of the Emperor *Leopold.*

There are other *Academical* Inſtitutions at *Berlin*, and other Parts of the North; ſeveral of which having diſtinguiſh'd themſelves by their Journals, Ephemerides, *&c.* the Reader will find an Account of 'em under the Article JOURNAL.

Italy, alone, has more *Academies* of note than all the reſt of the World; not a City but furniſhes a Set of learned Perſons for an *Academy*, which to them ſeems an eſſential Part of a regular Conſtitution.—*Jarckius* has given us a Specimen of their Hiſtory, printed at *Leipſic*, in 1725; and gives us, withal, to expect a fuller and more perfect Account from ſeveral learned Perſons, who have been long 'employ'd about the ſame; as *Krauſius*, Profeſſor of Eloquence at *Leipſic*; *Hyacinth. Gimma*, and *Mich. Richeyus.*

Jarckius's Account goes no further than thoſe of *Piedmont*, *Ferrara*, and *Milan*; in which laſt City he reckons 25: But he adds a Liſt of all the reſt, to the Number of 550.—The Names of moſt of 'em are very curious.

The *Academiſts*, *e.g.* of Boulogne, are called *Abandonati*, *Anſioſi*, *Otioſi*, *Arcadi*, *Confuſi*, *Difettuoſi*, *Dubbioſi*, *Impatienti*, *Inabili*, *Indifferenti*, *Indomiti*, *Inquieti*, *Inſtabili*, *Della notte*, *Piacere*, *Sitienti*, *Sonnolenti*, *Torbidi*, *Veſpertini.*——Thoſe of Genoa, *Accordati*, *Sopiti*, *Reſuegliati*: Of Gubio, *Addormentati*: Of Venice, *Acuti*, *Allettati*, *Diſcordanti*, *Diſgiunti*, *Diſingannati*, *Dodonei*, *Filadelfici*, *Incruſcabili*, *Inſtancabili*: Of Rimini, *Adagiati*, *Eutrapeli*: Of Pavia, *Affidati*, *Della Chiave*: Of Fermo, *Raffrontati*: Of Moliſa, *Agitati*: Of Florence, *Alterati*, *Humidi*, *Furfurati*, *Della Cruſca*, *Del Cimento*, *Infocati*: Of Cremona, *Animoſi*: Of Naples, *Arditi*, *Infernati*, *Intronati*, *Lunatici*, *Segreti*, *Sirenes*, *Sicuri*, *Volanti*: Of Ancona, *Argonauti*, *Caliginoſi*: Of Urbino, *Affarditi*: Of Perugia, *Atomi*, *Eccentrici*, *Inſenſati*, *Inſipidi*, *Uniſoni*: Of Tarentum, *Audaci*: Of Macerata, *Catenati*, *Imperfetti*: Of—— *Chimærici*: Of Sienna, *Corteſi*, *Gioviali*, *Trapaſſati*: Of Rome *Delfici*, *Humoriſti*, *Lyncei*, *Fantaſtici*, *Illuminati*, *Incitati*, *Indiſpoſiti*, *Infeccondi*, *Malencolici*, *Negletti*, *Notti Vaticane*, *Notturni*, *Ombroſi*, *Pellegrini*, *Sterili*, *Vigilanti*: Of Padua, *Delii*, *Immaturi*, *Ordati*: Of Trepano, *Difficili*: Of Breſſe, *Diſperſi*, *Erranti*: Of Mutina, *Diſſonanti*: Of Recanatum, *Diſuguali*: Of Syracuſe, *Ebrii*: Of Milan, *Eliconii*, *Faticoſi*, *Fenici*, *Incerti*, *Naſcoſti*: Of Candia, *Extravaganti*: Of Peſaro, *Eterocliti*: Of Comachio, *Fluttuanti*: Of Arezzo, *Forzati*: Of Turin, *Fulminales*: Of Reggio, *Fumoſi*, *Muti*: Of Cortona, *Humoroſi*: Of Bari, *Incogniti*: Of Roſſano, *Incurioſi*: Of Brada, *Innominati*, *Pigri*: Of Acis, *Intricati*: Of Mantua, *Invaghiti*: Of Agrigento, *Mutabili*, *Offuſcati*: Of Verona, *Olympici*, *Uranii*: Of Viterbo, *Oſtinati*: Of —— *Vagabondi.*

ACADEMY, is alſo uſed among us for a kind of Collegiate School, or Seminary; where Youth are inſtructed in the Liberal Arts, and Sciences; in a private way. See SCHOOL, SEMINARY, COLLEGE, *&c.*

The Nonconformiſt Miniſters, *&c.* are many of them bred up in ſuch private *Academies*; as not reliſhing the common Univerſity-Education.

ACADEMY is alſo uſed in ſpeaking of the Schools of the *Jews*: *i. e.* thoſe where the Rabbins or Doctors inſtruct the Youth of their Nation in the *Hebrew* Tongue; explain to 'em the Talmud; teach 'em the Cabbala, *&c.* See RABBIN, CABBALA, *&c.*

The *Jews* have had of theſe *Academies*, ever ſince their Return from the *Babyloniſh* Captivity.

The *Academies* of *Tiberias* and *Babylon* are celebrated. See TIBERIAS, MASSORETES, TALMUD, *&c.*

ACADEMY is particularly underſtood of a *Riding-School*; or a Place where young Gentlemen are taught to ride the great Horſe, with other ſuitable Exerciſes; as Fencing, *&c.* See EXERCISE.

This is what *Vitruvius* calls *Ephebeum.* See GYMNASIUM, GYMASTIC, *&c.*

The Duke of *Newcaſtle* will have the Art of Riding to have had its Origin in *Italy*; and the firſt *Academy* of this ſort to have been eſtabliſh'd at *Naples*, by *Frederic Griſon*; who, he adds, was the firſt that wrote on the Subject; which he did like a true Cavalier, and a great Maſter.—*Henry* VIII. ſays the ſame Author, call'd over two *Italians*, Diſciples of *Griſon*, into *England*; who ſoon ſtock'd the Nation with *Ecuyers*, or Riding-Maſters.

He adds, that the greateſt Maſter *Italy* ever produc'd, was a *Neapolitan*, *Pignatelli* by Name; that *La Broue* rid under him five Years; *Pluvinel* nine; and *S. Anthoine* many Years: and that theſe three *Frenchmen* fill'd *France* with *French* Maſters; which till then had known none but *Italians.*

The Ground ſet apart in an *Academy*, for riding, is call'd the *Manage*; having uſually a Pillar in the Centre, and other Pillars, placed two by two, at the Sides. See MANAGE, and PILLAR.

ACADEMY, or ACADEMY-*Figure*, in Painting, is a Drawing or Deſign made after a Model, with a Crayon or Pencil. —Or the Copy of ſuch a Draught. See DESIGN.

ACANACEOUS, among Botaniſts, a Term applied to a Claſs of Plants, popularly known under the Name of the *Thiſtle Kind.* See THISTLE, and CARDUUS.

The Word is form'd of the *Greek* ακαζω, *Acuo*, I ſharpen; in regard of the Prickles they are beſet withal.

ACANTABOLUS, or ACANTHABOLUS, a Surgeon's Inſtrument; called alſo *Volſella.*

'Tis ſhaped like a Pair of Pincers; and is uſed to take out any prickly Subſtance that ſhall chance to ſtick to the Oeſophagus or Gullet; or the Fragments of corrupted Bones, Hair; or any thing that by chance remains in a Wound.

The ſame Term, *Acantabolus*, is alſo uſed for an Inſtrument wherewith People pull out the Hairs from their Eyebrows, *&c.*

It is form'd from the *Greek* ακανθα, *Spina*, and βαλλω, *jacio*, I throw away.

ACANTHA, among ſome Anatomiſts, is applied to the hind, or poſterior Protuberances of the *Vertebræ* of the Back; forming what we call the *Spina Dorſi.* See VERTEBRA, and SPINA.

ACANTHUS, in Architecture, an Ornament in the *Corinthian* and *Compoſite* Orders; being the Repreſentation of the Leaves of an Acanaceous Plant, in the Capitals thereof. See CAPITAL, and LEAVES.

It takes its Name from ακανθος, the Name given the Plant among the *Greeks*, as being prickly, or of the Thiſtle Kind. The *Latin* Botaniſts call it *Brancha Urſina*, Bears-foot, from ſome ſuppoſed reſemblance it bears thereto; or *Brancha Hircina*, by reaſon its Leaves bend and twiſt ſomewhat like a Goat's Horns.

There are two Kinds of the Plant *Acanthus*, one whereof grows wild, and is full of Prickles; the other grows in Gardens, and is by *Virgil* called *Mollis*, in regard it is ſoft, and without any Prickles.—The *Greek* Sculptors adorn'd their Works with the Figure of the latter; as the *Gothic* did with that of the former, which they repreſented not only in their Capitals, but alſo in other Ornaments.

The Garden *Acanthus*, is the moſt dented; bearing a good deal of reſemblance to Parſley, or Smallage: And thus it is we find it repreſented in the *Compoſite* Capitals of *Titus*, and *Septimius Severus* at *Rome.*

Theſe Leaves make the principal Character and Diſtinction of the two rich Orders from the reſt: and their different Number and Arrangement does alſo diſtinguiſh the two Orders from each other. See ORDER; ſee alſo CORINTHIAN, and COMPOSITE.

The Origin and Occaſion of the Ornament, ſee under the Article ABACUS.

ACATALECTIC, ACATALECTUS, in the antient Poetry, a Term applicable to ſuch Verſes as have all their Feet and Syllables; and are in no wiſe defective at the End. See VERSE, and FOOT.

As, on the contrary, *Catalectic* Verſes are thoſe which end too haſtily, and with a Syllable ſhort. See CATALECTIC.

The Words come from λήγω, *deſino*; whence καταληκτικος, *which wants ſomething at the End*; and the Privative α being prefix'd ακαταληκτικος, *which wants nothing at the End.*

In the following Strophe of *Horace*, the two firſt Verſes are *Acatalectic*, and the laſt Catalectic.

Solvitur acris hyems, grata vice
Veris & Favoni:
Trahuntque ſiccas machinæ carinas——

ACATERY, in the King's Houſhold, a kind of Check betwixt the Clerks of the Kitchen and the Purveyors. See PURVEYOR, CLERK, HOUSHOLD, *&c.*

The Officers of the *Acatery*, are a Sergeant, two Joint-Clerks, and a Yeoman of the Salt-Stores.

ACATALEPSIA, ACATALEPSY, in Philoſophy, *Incomprehenſibleneſs*; or the Impoſſibility of comprehending or conceiving a thing. See COMPREHENSION.

The *Pyrrhonians* and *Scepticks*, and even the Antient Academy, aſſerted an abſolute *Acatalepſia*: All human Science or Knowledge, according to them, went no further than to Appearances and Veriſimilitude. See PYRRHONIAN, SCEPTIC, and ACADEMY.

They

They declaimed much againſt the Senſes; and charg'd them with a principal Hand in ſeducing and leading us into Error. See SENSE, ERROR, TRUTH, FALSHOOD, DOUBTING, &c.

The Word is a Compound of the Privative *α*, and *καταλαμβανω*, *deprehendo*, I find out; of *κατα*, and *λαμβανω*, *Capio*, I take. See CATALEPSIS.

ACCAPITUM, in our antient Law-Books, ſignifies Relief to the Chief Lord.—Hence alſo,

ACCAPITARE, to pay Relief to the Chief Lord. See RELIEF.

ACCEDAS *ad Curiam*, is a Writ which lies for him who has received falſe Judgment, or fears Partiality, in a Court-Baron, or Hundred Court; being directed to the Sheriff.—The like Writ lies alſo for him that has received ſuch Judgment in the County-Court; and is called *de Falſo Judicio*.

The *Accedas ad Curiam* lies alſo for Juſtice delayed, as well as falſly given; and is a Species of the Writ *Recordari*. See RECORDARI.

ACCEDAS *ad Vice-comitem*, is a Writ directed to the Coroner, commanding him to deliver a Writ to the Sheriff; who having a Pone deliver'd to him, ſuppreſſes it. See PONE.

ACCELERATED *Motion*, in Mechanicks, is a Motion which receives continual Increments, or Acceſſions of Velocity. See MOTION.

If the Acceſſions of Velocity be equal in equal Times; the Motion is ſaid to be *uniformly accelerated*. See ACCELERATION.

The Motion of falling Bodies is an *accelerated Motion*: And ſuppoſing the Medium they fall thro', *i. e.* the Air, void of Reſiſtance; the ſame Motion may be alſo conſider'd as *uniformly accelerated*. See DESCENT, &c.

For the Laws of ACCELERATED Motion, ſee MOTION.

ACCELERATION, in Mechanicks, the Increaſe of Velocity in a moving Body. See VELOCITY, and ACCELERATED *Motion*.

Acceleration ſtands directly oppoſed to *Retardation*, which denotes a Diminution of Velocity. See RETARDATION.

ACCELERATION is chiefly uſed in Phyſicks, in reſpect of falling Bodies, *i. e.* of heavy Bodies tending towards the Centre of the Earth by the Force of Gravity. See GRAVITY, and CENTRE.

That Natural Bodies are *accelerated* in their Deſcent, is evident from various Conſiderations, both *à priori* and *poſteriori*.—Thus, we actually find, that the greater Height a Body falls from, the greater Impreſſion it makes, and the more vehemently does it ſtrike the ſubject Plane, or other Obſtacle.

Cauſe of the Acceleration *of Falling Bodies.*

Various are the Syſtems and Opinions which Philoſophers have produced to account for this *Acceleration*.—Some attribute it to the Preſſure of the Air: The farther, ſay they, a Body falls, the greater Load of Atmoſphere is of conſequence incumbent on it: and the Preſſure of a Fluid, is in proportion to the perpendicular Altitude of the Column thereof.—Add, that the whole Body of the Fluid preſſing in innumerable right Lines, which all meet in a Point, *viz.* the Centre; that Point, by the meeting of thoſe Lines, ſuſtains, as it were, the Preſſion of the whole Maſs: Conſequently, the nearer a Body approaches thereto, the Effect or Preſſure of more united Lines muſt it ſuſtain. See AIR, and ATMOSPHERE.

But what overturns this Account, is, that as the Preſſure of the Air downwards increaſes; ſo, by the known Laws of Staticks, does the Reſiſtance, or the Force wherewith the ſame Fluid tends to repel, or drive the Body upwards again. See FLUID.

Others inſiſt, that the incumbent Air is the groſſer and more vaporous, the nearer the Earth; and fill'd with more heterogeneous Particles, which are not true elaſtick Air: and hence, ſay they, a deſcending Body, meeting continually with leſs Reſiſtance from the Elaſticity of the Air, and having the ſame Force of Gravity ſtill acting on it, muſt neceſſarily be *accelerated*. See ELASTICITY.

But what overturns all Accounts where the Air or Atmoſphere are concern'd, is, that the *Acceleration* holds *in Vacuo*, and even more regularly than in Air. See VACUUM.

The *Peripatetic* Account is worſe than this: The Motion of heavy Bodies downwards, ſay they, ariſes from an intrinſick Principle, which makes 'em tend to the Centre, as their proper Seat, or Element, where they would be at reſt: Hence, add they, the nearer Bodies approach thereto, the more is their Motion intended. See ELEMENT, QUALITY, &c.

The *Gaſſendiſts*, on the other hand, hold that the Earth emits a ſort of attractive Effluvia, innumerable Threads whereof continually aſcend and deſcend; which Threads, proceeding like Radii from a common Centre, divaricate the more, the further they go: So that the nearer a heavy Body is to the Centre, the more of theſe magnetic Threads it receives; and hence the more is its Motion *accelerated*. See EFFLUVIA, and MAGNETISM.

But this is refell'd by an eaſy Experiment: for if a Ball be let fall out of the loweſt Window of a high Tower, and alſo out of the higheſt; the *Acceleration* will be the ſame in both Caſes, notwithſtanding the greater Vicinity to the Centre in the one, than in the other Caſe.

The *Carteſians* account for the *Acceleration*, from the repeated Pulſes of a ſubtil etherial Matter, which is continually acting on the falling Body, and impelling it downwards. See CARTESIANISM, ÆTHER, ELEMENT, MATTER, SUBTILE, &c.

After all, the Cauſe of *Acceleration* is nothing myſterious; the Principle of Gravitation, which determines the Body to deſcend, determining it to be *accelerated* by a neceſſary Conſequence. See GRAVITATION.

For, ſuppoſe a Body let fall from on high: the primary Cauſe of its beginning to deſcend, is, doubtleſs, the Power of Gravity; but when once the Deſcent is commenced, that State becomes in ſome meaſure natural to the Body; ſo that if left to it ſelf, it would perſevere in it for ever, even tho the firſt Cauſe ſhould ceaſe; as we ſee in a Stone caſt with the Hand, which continues to move, after it is left by the Cauſe that gave it Motion. See *Law of* NATURE.

But, beſide the Propenſity to deſcend impreſs'd by the firſt Cauſe, and which of it ſelf were ſufficient to continue the ſame degree of Motion once begun, *in infinitum*; there is a conſtant Acceſſion of ſubſequent Efforts of the ſame Principle, Gravity, which continues to act on the Body already in Motion, in the ſame manner as if it were at reſt.

Here, then, being a double Cauſe of Motion, and both acting in the ſame Direction, *viz.* directly towards the Centre of the Earth; the Motion they jointly produce muſt neceſſarily be greater than that of one of 'em.—And the Velocity thus increas'd, having the ſame Cauſe of Increaſe ſtill perſiſting, the Deſcent muſt neceſſarily be continually *accelerated*.

For, ſuppoſing Gravity, whatever it be, to act uniformly on all Bodies, at equal Diſtances from the Earth's Centre; and that the Time in which a heavy Body falls to the Earth, be divided into equal Parts infinitely ſmall: let this Gravity incline the Body towards the Earth's Centre, while it moves, in the firſt infinitely ſmall Part of the Time of its Deſcent; if after this, the Action of Gravity be ſuppos'd to ceaſe, the Body would proceed uniformly on towards the Earth's Centre, with a Velocity equal to the Force of the firſt Impreſſion.

But, now, ſince the Action of Gravity is here ſuppoſed ſtill to continue; in the ſecond Moment of Time, the Body will receive a new Impulſe downwards, equal to what it received at firſt; and thus its Velocity will be double of what it was in the firſt Moment: in the third Moment it will be triple; in the fourth quadruple, and ſo on continually: For the Impreſſion made in one Moment, is not at all alter'd by what is made in another; but the two are, as it were, aggregated, or brought into one Sum.

Wherefore, ſince the Particles of Time are ſuppoſed infinitely ſmall, and all equal to one another; the Impetus acquir'd by the falling Body, will be every where as the Times from the Beginning of the Deſcent.—And hence, ſince the Quantity of Matter in the Body given, continues the ſame; the Velocity will be as the Time in which it is acquir'd.

Further, the Space paſs'd over by a moving Body in a given Time, and with a given Velocity, may be conſider'd as a Rectangle made by the Time and the Velocity.—— Suppoſe A, (Tab. *Mechanicks*, Fig. 62.) a heavy Body deſcending, and let A B repreſent the Time of its Deſcent; which Line ſuppoſe divided into any Number of equal Parts, A C, C E, E G, &c. repreſentative of the Intervals, or Moments of the given Time.—Let the Body deſcend thro' the firſt of thoſe Diviſions, A C, with a certain equable Velocity ariſing from the propoſed Degree of Gravity: this Velocity will be repreſented by A D; and the Space paſs'd over, by the Rectangle C A D.

Now, as the Action of Gravity in the firſt Moment produced the Velocity A D, in the Body before at reſt; in the ſecond Moment, the ſame will produce in the Body ſo moving, a double Velocity, C F; in the third Moment, to the Velocity C F will be added a further degree, which together therewith, will make the Velocity E H, which is triple of the firſt, and ſo of the reſt. So that in the whole Time A B, the Body will have acquir'd a Velocity B K.—Again, taking the Diviſions of the Line, *e. g.* A C, C E, &c. for the Times, the Spaces gone thro' will be the Areas or Rectangles, C D, E F, &c. So that in the whole Time A B, the Space deſcribed by the Moveable, will be equal to all the Rectangles, *i. e.* to the dented Figure A B K.

Such would be the Caſe, if the Acceſſions of Velocity only happen'd in certain given Points of Time, *e. g.* in C, in E, &c. So that the Degree of Motion ſhould continue the ſame till the next Period of *Acceleration* come up.—— If the Diviſions or Intervals of Time were ſuppoſed leſs,

e. g.

e. g. by half; then the Dentures of the Figure would be proportionably ſmaller; and it would approach ſo much the nearer to a Triangle.—If they were infinitely ſmall, *i. e.* if the Acceſſions of Velocity were ſuppoſed to be made continually, and in every Point of Time, as is really the Caſe; the Rectangles thus ſucceſſively produced will make a juſt Triangle, *e. g.* A B E, (Fig. 63.)——Here, the whole Time A B, conſiſting of the little Portions of Time A 1, A 2, *&c.* and the Area of the Triangle A B E, of the Sum of all the little triangular Surfaces anſwering to the Diviſions of the Time: The whole Area or Triangle expreſſes the Space moved thro' in the whole Time A B; and the little Triangles A *i f*, &c. the Spaces gone thro' in the Diviſions of Time *a* 1, *&c.*

But theſe Triangles being ſimilar, their Areas are to one another, as the Squares of their homologous Sides A B, A 1, *&c.* and conſequently, the Spaces moved, are to each other as the Squares of the Times.

Laws of Acceleration.

Hence we eaſily infer the great Law of *Acceleration*, *viz.* "That a deſcending Body uniformly *accelerated*, deſcribes, "in the whole Time of its Deſcent, a Space which is juſt "half of what it would have deſcribed in the ſame Time, "with the *accelerated* Velocity it has acquir'd at the End "of its Fall."

For, the whole Space the falling Body has moved thro' in the Time A B, we have already ſhewn, will be repreſented by the Triangle A B E; and the Space the ſame Body would move thro' in the ſame Time, with the Velocity B E, will be repreſented by the Rectangle A B E F.—But the Triangle is known to be equal to juſt half the Rectangle.—Therefore, the Space moved, is juſt half of what the Body would have moved with the Velocity acquir'd at the End of the Fall.

Coroll.——Hence, 1°, we gather, that the Space moved with the laſt acquired Velocity B E, in half the Time A B; is equal to that really moved by the falling Body in the whole Time A B.

2°, If a falling Body deſcribe any given Length in a given Time, in double that Time it will deſcribe four times that Length; in thrice the Time, nine times, *&c.* and univerſally, if the Times be in Arithmetical Proportion, 1, 2, 3, 4, *&c.* the Spaces deſcribed will be 1, 4, 9, 16, *&c.*

3°, The Spaces deſcribed by a falling Body, in a Series of equal Moments or Intervals of Time, will be as the unequal Numbers 1, 3, 5, 7, 9, *&c.*—And ſince the Velocities acquir'd in falling are as the Times; the Spaces will alſo be as the Squares of the Velocities; and both Times and Velocities in a ſubduplicate Ratio of the Spaces.

The Motion of a Body aſcending, or impell'd upwards, is diminiſh'd or retarded from the ſame Principle of Gravity acting in a contrary Direction, in the ſame manner as a falling Body is *accelerated*. See RETARDATION.

A Body thus projected upwards, riſes till it has loſt all its Motion; which it does in the ſame Time that a Body falling would have acquir'd a Velocity equal to that wherewith the Body was thrown up.

And hence, the ſame Body thrown up, will riſe to the ſame height, from which, falling, it would have acquir'd the Velocity wherewith it was thrown up.

And hence, the Height which Bodies thrown up with different Velocities do aſcend to, are to one another as the Squares of thoſe Velocities.

ACCELERATION *of Bodies on inclined Planes*.—The ſame general Law obtains here, as in Bodies falling perpendicularly: The Effect of the Plane is, to make the Motion ſlower; but the Inclination being every where equal, the Retardation riſing therefrom will proceed equally in all Parts, at the Beginning and the Ending of the Motion.—The particular Laws, ſee under the Article *Inclined* PLANE.

ACCELERATION *of the Motion of Pendulums*.—The Motion of pendulous Bodies is *accelerated* in their Deſcent; but in a leſs Ratio than that of Bodies falling perpendicularly. *See the Laws thereof under the Article* PENDULUM.

ACCELERATION *of the Motion of Projectiles*. See PROJECTILE.

ACCELERATION *of the Motion of compreſſed Bodies*, in expanding or reſtoring themſelves. See COMPRESSION, DILATATION, TENSION, FIBRE, *&c.*

That the Motion of compreſs'd Air, expanding it ſelf by its Elaſticity to its former Dimenſions, is *accelerated*, is evident from various Conſiderations. See AIR, ELASTICITY, *&c.*

ACCELERATION is alſo applied in the antient Aſtronomy, in reſpect of the Fixed Stars.—This *Acceleration* was the Difference between the Revolution of the *Primum Mobile*, and the Solar Revolution; which was computed at 3 Minutes, and 56 Seconds. See STAR, PRIMUM *Mobile*, &c.

ACCELERATOR *Urinæ*, a Muſcle of the Penis, by ſome made a Pair of Muſcles; thus call'd from its Office in expediting the Diſcharge of the Urine and Semen. See MUSCLE, PENIS, *&c.*

It ariſes tendinous from the upper and fore-Part of the Urethra; but ſoon grows fleſhy, paſſes under the *Os Pubis*, and incompaſſes the Bulb of the cavernous Body of the Urethra.—Both ſides of this Muſcle meet in a middle Line, correſponding to the Seam in the Skin over it; and continue ſo united, the ſpace of two Inches; after which, it detaches two fleſhy Elongations, which become thin Tendons at their Terminations on the cavernous Bodies of the Penis.

Its upper Part covering the Bulb, when in Action, ſtreightens the Veins which paſs thro' it from the *Corpus Cavernoſum* of the Urethra; and hinder the Reflux of the Blood in an Erection; and by the repeated Contractions of this upper Part, drives the Blood in the Bulb towards the Glans. See ERECTION.

The two Elongations compreſs the Channel of the Urethra, and ſo force out the contain'd Seed, or Urine; whence the Muſcle takes its Name. See URINE, and SEED.

ACCENSION, ACCENSIO, in Phyſicks, the Act of *Kindling*, or ſetting a Body on Fire. See FIRE, FUEL, HEAT, *&c.*

Accenſion, on other Occaſions, is called *Inflammation*, *Ignition*, *Conflagration*, &c. See IGNITION, INFLAMMATION, CONFLAGRATION, *&c.*

Accenſion ſtands oppoſed to *Extinction*. See EXTINCTION.

The Word is form'd of the Latin *Accendo*, I kindle.

ACCENSUS, a *Roman* Officer, whereof there were two Kinds.

The firſt, were Officers of the Magiſtrates; that is, of the Conſuls, Pretors, Proconſuls, *&c.* who had their Name, *Accenſi*, *ab acciendo*; their principal Employment being to call Aſſemblies of the People, and ſummon People to appear in Court.

The other Order of *Accenſi*, were a kind of ſupernumerary Soldiers, kept on foot, to be ready to ſupply the Place of thoſe who were kill'd or wounded in Battel.—And theſe, according to *Aſconius Pedianus*, becauſe they were added to the proper Number, were called *Accenſi*, *quia adcenſebantur*, or *accenſebantur*, i. e. *ad cenſum adjiciebantur*.

ACCENT, ACCENTUS, a certain Inflection of Voice; or a peculiar Tone and manner of Pronunciation, contracted from the Country or Province where a Perſon was bred. See VOICE, and PRONUNCIATION.

In this Senſe, we ſay, the *Welch* Tone or *Accent*, the Northern *Accent*, the *Gaſcoign Accent*, *Norman Accent*, &c. See TONE, *&c.*

The Word is form'd of the Latin *Accentus*; compounded of *ad*, and *cano*, I ſing.

ACCENT is alſo a Tone or Modulation of the Voice, frequently uſed as a Mark of the Intention of the Speaker; and giving a good or an evil Signification to his Words.

One may give Offence with the ſofteſt and moſt ſoothing Words imaginable, by a proper Management of the *Accent*, and manner of rehearſing them.—The *Accent* frequently gives a contrary Senſe to what the Words themſelves naturally imported. See WORD, FIGURE, *&c.*

The *Accent*, properly, has only to do with high and low.—Tho the modern Grammarians frequently alſo uſe it in reſpect of loud and ſoft, long and ſhort; which confounds *Accent* with *Quantity*. See QUANTITY.

The Difference between the two may be conceiv'd from that which we obſerve between the Beat of a Drum, and the Sound of a Trumpet: the former expreſſes every thing belonging to loud and ſoft, and long and ſhort; but, ſo long as there is a μονοτονία in the Sound, there is nothing like *Accent*.

ACCENT is alſo uſed in Grammar, for a Character placed over a Syllable, to mark the Accent, *i. e.* to ſhew it is to be pronounced in a higher or a lower Tone, and regulate the Inflexions of the Voice in reading. See CHARACTER, TONE, VOICE, *&c.*

We uſually reckon three grammatical *Accents* in ordinary uſe, all borrow'd from the *Greeks*, *viz.* the *Acute Accent*, which ſhews when the Tone of the Voice is to be raiſed; and is expreſſed thus (′). See ACUTE.

The *Grave Accent*, when the Note or Tone of the Voice is to be depreſſed; and is figur'd thus (‵). See GRAVE.

The *Circumflex Accent* is compoſed of both the Acute and the Grave; it points out a kind of Undulation of the Voice, and is expreſſed thus (∧). See CIRCUMFLEX.

The Word *Accent* is alſo applied, ſomewhat abuſively, to the Characters which mark the Quantities of Syllables; or the Time the Voice is to dwell on them. See TIME.

The ſpurious Accents anſwer to the Characters of Time in Muſick; as *Crotchets*, *Quavers*, &c.—The genuine *Accents* anſwer to the muſical Notes, *Sol*, *fa*, &c. See NOTE, *&c.*

Such are, the *long Accent*, which ſhews that the Voice is to ſtop on the Vowel, and is expreſſed thus (¯).

The

The *ſhort Accent* ſhews that the Time of Pronunciation ought to be ſhort, and is marked thus (˘).

Some even rank the *Hyphen*, *Diaſtole*, and *Apoſtrophe*, among *Accents*. See HYPHEN, DIASTOLE, and APOSTROPHE.

The *Hebrews* have a Grammatical, a Rhetorical, and a Muſical *Accent*; tho the firſt and laſt ſeem, in effect, to be the ſame; both being comprized under the general Name of *Tonic Accents*, becauſe they give the proper Tone to Syllables: as the Rhetorical *Accents* are ſaid to be *Euphonic*; inaſmuch as they tend to make the Pronunciation more ſweet and agreeable.

There are four *Euphonic Accents*, and twenty five *Tonic*, of which ſome are placed above, and others below the Syllables; the *Hebrew Accents* ſerving not only to regulate the Riſings and Fallings of the Voice, but alſo to diſtinguiſh the Sections, Periods, and Members of Periods in a Diſcourſe; and to anſwer the ſame Purpoſes with the Points in other Languages. See POINT.

Their *Accents* are divided into *Emperors*, *Kings*, *Dukes*, &c. each bearing a Title anſwerable to the Importance of the Diſtinction it makes.—Their Emperor rules over a whole Phraſe, and terminates the Senſe compleatly; anſwering to our Point.—Their King anſwers to our Colon; and their Duke to our Comma.—The King, however, occaſionally becomes a Duke, and the Duke a King, as the Phraſes are more or leſs ſhort.——It muſt be noted, by the way, that the Management and Combination of theſe *Accents* differs in *Hebrew* Poetry from what it is in Proſe.

The Uſe of theſe Tonic or Grammatical *Accents* has been much controverted; ſome holding that they diſtinguiſh the Senſe, while others maintain that they are only intended to regulate the Muſick or Singing; alledging, that the *Jews* ſing rather than read the Scriptures in their Synagogues.

The Truth ſeems here to be between the two Opinions; for tho we are inclined to think, that the primary Intention of theſe *Accents* was to direct the Singing; yet the Singing ſeems to have been regulated according to the Senſe; ſo that the *Accents* ſeem not only to guide the Singing, but alſo to point out the Diſtinctions.—Tho it muſt be confeſs'd, that many of theſe Diſtinctions are too ſubtil and inconſiderable; nor can the modern Writers, or the Editors of old ones, agree in the Matter; ſome of them making twice as many of theſe Diſtinctions as others.

The *Hebrew Accents*, in effect, have ſomething common with thoſe of the *Greeks* and *Latins*; and ſomething peculiar to the *Hebrew*.—What they have in common, is, that they mark the Tones; ſhewing how the Voice is to be rais'd and ſunk on certain Syllables. What they have peculiar, is, that they do the Office of the Points in other Languages. See POINTING.

Be this as it will, 'tis certain the antient *Hebrews* were not acquainted with theſe *Accents*; ſo that, at beſt, they are not *Jure divino*.—The Opinion which prevails among the Learned, is, that they were invented about the VIth Century, by the *Jewiſh* Doctors of the School of *Tiberias*, called the *Maſſoretes*. See MASSORETES.

The learned *Hennin*, affirms 'em to be of *Arabic* Invention; and to have been adopted and transfer'd thence into the *Hebrew* by the *Maſſoretes*: He adds, that they were firſt brought to their degree of Perfection, by Rabbi *Juda Ben David Chiug*, a Native of *Fez*, in the XIth Century.—'Tis indeed poſſible, the *Jews* might borrow their Points from the *Arabs*; but how they ſhould have their *Accents* from 'em is hard to conceive, the *Arabic* Language having no ſuch thing as *Accents*, either in Proſe or Verſe.

The ſame *Hennin* makes the Arab *Alchabil Ebn Ahmed*, who lived about the Time of *Mahomet*, the great Improver of the *Arabic Accents*.—The chief ground of the Opinion, is, that this Writer is ſaid to have been the firſt who reduced Poetry into an Art; marking the Meaſures and Quantities of the Verſes, by the *Latins* call'd *Pedes*, and by us, *Feet*.—Add, that the Share *Hennin* gives Rabbi *Juda* of *Fez*, in compleating the *Hebrew Accents*, is chiefly founded on the common Opinion, that this Rabbin was the firſt Grammarian among the *Jews*. But the Opinion is erroneous; there having been a *Hebrew* Grammar compos'd by R. *Saadias Gaon*, many Years before R. *Juda*. In M. *Simon*'s Critical Hiſtory of the Old Teſtament, we have a Catalogue of *Hebrew* Grammars; at the Head of which is this of R. *Saadias*: M. *Simon*, on this Occaſion, obſerves, "That "after the *Jews* of *Tiberias* had added Points and *Accents* "to the Text of the Old Teſtament, the Doctors of the "other Schools began to do the like in their Copies, which "were afterwards imitated by the reſt."

As to the *Greek Accents*, now ſeen both in the manuſcript and printed Books, there has been no leſs Diſpute about their Antiquity and Uſe, than about thoſe of the *Hebrews*.—*Iſaac Voſſius*, in an expreſs Treatiſe *de Accentibus Græcanicis*, endeavours to prove them of modern Invention; aſſerting, that antiently they had nothing of this Kind but a few Notes in their Poetry, which were invented by *Ariſtophanes* the Grammarian, about the Time of *Ptolemy Philopater*; and that theſe were of muſical, rather than grammatical Uſe, ſerving as Aids in the ſinging of their Poems; and very different from thoſe introduced afterwards.

He adds, that *Ariſtarchus*, a Diſciple of *Ariſtophanes*, improved on his Maſter's Art; but that all they both did only tended to facilitate Youth in the making of Verſes.—— The ſame *Voſſius* ſhews from ſeveral antient Grammarians, that the manner of writing the *Greek Accents* in thoſe Days, was quite different from thoſe uſed in our Books.

Hen. Chriſt. Hennin, in a Diſſertation publiſhed to ſhew that the *Greek* Tongue ought not to be pronounced according to the *Accents*, eſpouſes the Opinion of *Voſſius*, and even carries the Matter ſtill further.—He thinks that *Accents* were the Invention of the *Arabians*, about nine hundred Years ago; and that they were only uſed in Poetry; that they were intended to aſcertain the Pronunciation of the *Greek*, and to keep out that Barbariſm which was then breaking in upon them; that the antient *Accents* of *Ariſtophanes* were perfectly agreeable to the genuine *Greek* Pronunciation, but that the modern ones of the *Arabs* deſtroy it.

Wetſtein, *Greek* Profeſſor at *Baſil*, in a learned Diſſertation, endeavours to prove the *Greek Accents* of an older ſtanding.—He owns that they were not always form'd in the ſame manner by the Antients; but thinks that Difference owing to the different Pronunciation which obtain'd in the ſeveral Parts of *Greece*.

He brings ſeveral Reaſons *à priori* for the Uſe of *Accents*, even in the earlieſt Days; as that they then wrote all in capital Letters, equidiſtant from each other, without any Diſtinction either of Words or Phraſes; which without *Accents* could ſcarce be intelligible: and that *Accents* were neceſſary to diſtinguiſh ambiguous Words, and to point out their proper meaning; which he confirms from a Diſpute on a Paſſage in *Homer*, mention'd by *Ariſtotle* in his *Poeticks*, Chap. V. Accordingly, he obſerves, that the *Syrians*, who have tonic, but no diſtinctive *Accents*, have yet invented certain Points, placed either below or above the Words, to ſhew their Mood, Tenſe, Perſon, or Senſe. See further in his *Diſſertatio Epiſtolica de Accentuum Græcorum Antiquitate & Uſu*. Baſil, 1686.

ACCENT, in Muſick, is a Modulation of the Voice, to expreſs a Paſſion. See PASSION.

Every Bar or Meaſure is divided into *accented* and *unaccented* Parts. See MEASURE.

The *Accented* Parts are the Principal; being thoſe intended chiefly to move and affect: 'Tis on theſe the Spirit of the Muſick depends. See BAR, and MUSICK.

The Beginning and Middle; or the beginning of the firſt half of the Baſs, and the beginning of the latter half thereof, in common Time; and the beginning, or firſt of the three Notes in triple Time; are always the *accented* Parts of the Meaſure. See TIME.

In Common Time, the firſt and third Crotchet of the Bar are on the *accented* Part of the Meaſure.—In Triple Time, where the Notes always go by three and three, that which is in the middle of every three is always *unaccented*; the firſt and laſt *accented*. But the *Accent* in the firſt is ſo much ſtronger, that in many Caſes the laſt is accounted as if it had no *Accent*. See COMPOSITION.

The Harmony is always to be full, and void of Diſcords in the *accented* Parts of the Meaſure. See HARMONY.—— In the *unaccented* Parts this is not ſo neceſſary; Diſcords here paſſing without any great Offence to the Ear. See DISCORD, COUNTERPOINT, &c.

ACCEPT. See ACCEPTANCE, and ACCEPTATION.

ACCEPTANCE, ACCEPTIO, ACCEPTATIO, in Matters of Law, an agreeing or conſenting to ſome Act already done; which, without ſuch Conſent, might have been undone, or render'd invalid.

The *Acceptance* of a Donation, is neceſſary to its Validity; is a Solemnity eſſential thereto.—*Acceptance*, ſay the Civilians, is the Concurrence of the Will or Choice of the Donee, which renders the Act compleat; and without which the Donor may revoke his Gift at pleaſure. See DONATION, &c.

In Beneficiary Matters, the Canoniſts hold, that the *Acceptance* ſhould be ſignify'd at the ſame time with the Reſignation; & *non ex intervallo*. See RESIGNATION.

In Common Law, *Acceptance* is particularly uſed for a tacit kind of Agreement to what has been done by another.—If Baron and Feme, ſeiz'd of Land in Right of the Feme, make a joint Leaſe, or Feoffment by Deed; reſerving Rent: The Baron dying, and the Feme receiving the Rent; ſuch Receipt is deemed an *Acceptance*, and ſhall make the Leaſe good: So that ſhe ſhall be barr'd from bringing the Writ *Cui in Vita*. See CUI *in Vita*.

In the *Romiſh* Theology, the manner of receiving or admitting the Pope's Conſtitutions; or the Act whereby they are receiv'd, is alſo call'd *Acceptance*. See CONSTITUTION, BULL, &c.

There are two Kinds of *Acceptances*; the one ſolemn, the other tacit.

The *Solemn Acceptance* is a formal Act, whereby ſome Error or Scandal which the Pope condemns, is expreſly condemn'd by the Acceptor.—Infinite Diſputes and Diſſentions have been rais'd in the Catholick World, eſpecially in *France*, on occaſion of the *Acceptance* of the Conſtitution *Unigenitus*: Many of the *French* Prelates ſtill refuſe to *accept* it.

When a Conſtitution has been ſolemnly *accepted* by thoſe it more immediately relates to; it is ſuppoſed to be tacitly *accepted* by all the other Prelates in the Chriſtian World, who have cognizance thereof: and this Acquieſcence is what they call *Tacit Acceptance*.

In this Senſe, *France*, *Poland*, &c. tacitly *accepted* the Conſtitution againſt the Doctrine of *Molinos*, and the *Quietiſts*.—And *Germany*, *Poland*, &c. tacitly *accepted* the Conſtitution againſt *Janſenius*. See MOLINIST, JANSENIST, &c.

ACCEPTANCE, in Commerce, is particularly underſtood in reſpect of Bills of Exchange.—To *accept a Bill* of Exchange, is to ſign, or ſubſcribe it; and thereby become principal Debtor of the Sum contain'd therein; with an Obligation to pay, or diſcharge it at a Time prefix'd. See BILL *of Exchange*.

The *Acceptance* is uſually perform'd by him on whom the Bill is drawn; upon its being preſented to him by the Perſon in whoſe behalf it was drawn, or his Order.—While the Acceptor is Maſter of his Signature, *i. e.* ere he have return'd the *accepted* Bill to the Bearer, he may eraſe his *Acceptance*: But not after he has once deliver'd it. See EXCHANGE.

Bills payable at Sight are not to be *accepted*; as being to be acquitted at their firſt preſenting; or, in defect of Payment, to be proteſted.—In Bills drawn for a certain Number of Days after ſight, the *Acceptance* muſt be dated; in regard the Time is to be accounted therefrom.—The Form of this *Acceptance*, is, *Accepted ſuch a Day*, and then the Signature.

Bills drawn payable on a Day named, or at Uſance, or double Uſance, need not be dated; Uſance being reckon'd from the Date of the Bill it ſelf. See USANCE.—On theſe 'tis ſufficient to write, *Accepted*, and the Signature.

If the Bearer of a Bill be contented with an *Acceptance* to be paid in twenty Days after Sight, where in the Bill it ſelf only eight Days are expreſs'd; he runs the Riſque of the twelve additional Days: So that if the Acceptor fail, he has no Remedy againſt the Drawer. And if the Bearer content himſelf to receive a leſs Sum than is expreſs'd, in part; he is to ſtand the Chance of the reſt. See PROTEST, ENDORSEMENT, &c.

ACCEPTATION, or ACCEPTION, in Grammar, the *Signification* of a Word; or the Senſe wherein it is taken and receiv'd. See WORD, &c.

Such a Word has ſeveral *Acceptations*.—In its firſt and moſt natural *Acceptation*, it denotes, &c.

ACCEPTILATION, in the Civil Law, an Acquittance given without receiving any Money: or a Declaration of the Creditor, in favour of the Debtor, ſignifying, that he is ſatisfy'd for his Debt, or that he forgives it him, and will make no further Demands.

ACCEPTION, or ACCEPTATION. See ACCEPTATION.

ACCEPTOR, *of a Bill of Exchange*, the Perſon who *accepts* the Bill. See ACCEPTANCE.

The *Acceptor* becomes perſonal Debtor by the Acceptance; and is obliged to pay it, tho the Drawer fail before it become due. See EXCHANGE.

ACCESS, literally ſignifies, Eaſineſs of Approach, or Entrance. See ACCESSIBLE.

Such a Perſon has *Acceſs* to the Prince: A Man of eaſy *Acceſs*: The *Acceſs* on that ſide was very difficult, by reaſon of Rocks, &c.

The Word is of *Latin* Original, *Acceſſus*, or *Acceſſio*; form'd of *Accedo*, I come to.

ACCESS, in Medicine, a Fit, or Return of ſome periodical Diſeaſe. See DISEASE, and PERIODICAL.

Thus, we ſay, an *Acceſs* of the Gout, an Ague, or an Intermitting Fever, &c. See GOUT, AGUE, *Intermitting* FEVER, &c.

Authors frequently confound *Acceſs* with *Paroxyſm*; but they are different things. See PAROXYSM.

ACCESSIBLE, ſomething that may be approached; or, that *Acceſs* may be had to. See ACCESS, and APPROACH.

Such a Place, a Fortreſs, is *Acceſſible* from the Sea-ward, *i. e.* the Paſſage to it is practicable. See FORTIFICATION, and FORTIFIED *Place*.

ACCESSIBLE *Height*, or *Diſtance*, in Geometry, &c. is either that which may be mechanically meaſur'd by the Application of a Meaſure to it; or it is a Height whoſe Baſe and Foot may be approach'd to; and a Diſtance meaſured thence on the Ground. See HEIGHT, DISTANCE, &c.

With the Quadrant, &c. we can take Altitudes both *Acceſſible* and Inacceſſible. See ALTITUDE, QUADRANT, &c.

Surveying, includes the Meaſuring, Plotting, &c. both of *Acceſſible* and Inacceſſible Diſtances. See SURVEYING.

ACCESSION, is particularly uſed for the Act whereby a thing *accedes*, *i. e.* joins or unites it ſelf to ſomething exiſting before. See ACCESSORY.

Thus, we ſay, the *Acceſſion* of a Governour to a Government, &c.—The firſt of *Auguſt* is obſerv'd in Memory of the King's *Acceſſion* to the Crown of *Great Britain*.—This Senſe of the Word coincides with INAUGURATION.

The Term is alſo uſed for the Act of engaging, and becoming a Party in a Treaty before concluded between other Powers; on the ſame Footing and Conditions as if originally comprehended in the Treaty it ſelf.—The *Acceſſion* of the States General to the Treaty of *Hanover*; of the Czarina to the Treaty of *Vienna*, &c. See TREATY.

ACCESSORY, or ACCESSARY, ſomething that *accedes*, or is added to another more conſiderable thing, or ariſes as a natural Conſequence therefrom. See ACCESSION.

In this Senſe, the Word ſtands oppoſed to *Principal*. See PRINCIPAL.

ACCESSORY, or ACCESSARY, in Common Law, is chiefly uſed for a Perſon guilty of a felonious Offence; not principally, but by Participation; as, by Advice, Command, or Concealment. See FELONY.

There are two Kinds of *Acceſſories*; *before the Fact*, and *after* it.—The firſt is he who commands or procures another to commit Felony, and is not preſent himſelf; for if he be preſent, he is a Principal. See PRINCIPAL.

The ſecond, is he who receives, aſſiſts, or comforts any Man that has done Murder or Felony, whereof he has Knowledge.

A Man may alſo be *acceſſory* to an *Acceſſory*, by aiding, receiving, &c. an *Acceſſory* to Felony.

An *Acceſſory* in Felony ſhall have Judgment of Life and Member as well as the Principal, who did the Felony; but not till the Principal be firſt attainted and convict, or outlaw'd thereon.——Where the Principal is pardoned without Attainder, the *Acceſſory* cannot be arraigned; it being a Maxim in Law, *Ubi non eſt principalis, non poteſt eſſe Acceſſorius*. But if the Principal be pardoned, or have his Clergy after Attainder, the *Acceſſory* ſhall be arraign'd.

In the loweſt and higheſt Offences there are no *Acceſſories*; but all are Principals: as in *Riots*, *Routs*, *Forcible Entries*, and other Treſpaſſes, which are the loweſt Offences.—So alſo in the higheſt Offence, which is High Treaſon, there are no *Acceſſories*. See TREASON.

Acceſſories in Petty Treaſon, Murder, and Felony, are not to have their Clergy.—There can be no *Acceſſory* before the Fact in Manſlaughter; becauſe that is ſudden and unprepenſed. See MANSLAUGHTER.

Acceſſory by Statute, is ſuch a one as abets, adviſes, aids, or receives one that commits an Offence made Felony by Statute. See STATUTE.

ACCESSORY *Nerves*, or ACCESSORIUS *Williſii*, or *Par acceſſorium*, in Anatomy, a Pair of Nerves, which ariſing from the Medulla in the *Vertebræ* of the Neck, aſcends and enters the Skull, and paſſes out of it again, with the *Par vagum*, wrap'd up in the ſame common Integument therewith; and after quitting the ſame, is diſtributed into the Muſcles of the Neck, and Shoulders. See NERVE, PAR *Vagum*, &c.

In its Aſcent towards the Head, it receives Branches from each of the firſt five Pair of Cervical Nerves, near their riſe from the Medulla; and ſends forth Twigs to the Muſcles of the Larynx, Gula, &c.—Uniting with a Branch of the Intercoſtal, it forms the *Plexus Ganglioformis*. See PLEXUS.

ACCIDENCE, ACCIDENTIA, a Name uſed for a little Book, containing the firſt Elements or Rudiments of the *Latin* Tongue. See GRAMMAR.

ACCIDENT, ACCIDENS, in Philoſophy, ſomething additional, or ſuperadded, to Subſtance; or not eſſentially belonging thereto, but capable, indifferently, either of being or not being in it, without the Deſtruction thereof. See SUBSTANCE.

Some will have the Word compounded of *ad aliud cadens*, *q. d.* falling or belonging to another; others ſuppoſe it form'd *ab accidendo*, happening caſually.

The Schoolmen diſtinguiſh three Kinds of *Accidents*; *Verbal*, *Predicable*, and *Predicamental*.

Verbal ACCIDENT, *Accidens Verbale*, ſtands oppoſed to *Eſſence*; and in this Senſe, the Adjuncts to a thing, tho Subſtances themſelves, are denominated *Accidents* thereof. See ADJUNCT.

Thus, the Clothes a Man has on, tho real Subſtances, yet, as they are not eſſential, but adventitious, or acceſſory to his Exiſtence, are *Accidents*. See ESSENCE.

Pre-

Predicable ACCIDENT, *Accidens Prædicabile*, is uſed in oppoſition to *Proper*.—Such is any common Quality; as, Whiteneſs, Heat, Learning, or the like. See QUALITY.

Thus, a Man may be ſick or well; and a Wall white or black; yet the one be ſtill a Man, and the other a Wall.

Theſe are call'd in the Schools *Predicable Accidents*; becauſe uſually laid down and explain'd in the Doctrine of *Predicables*. See PREDICABLE.

Predicable Accidents may either be taken in the Abſtract, as *Whiteneſs*, *Learning*; or in the Concrete, *White*, *Learned*. See ABSTRACT, and CONCRETE.

If taken in the Abſtract, as is done by *Porphyry*; the *Accident* is defined as above, that which may either be preſent or abſent, without the Deſtruction of its Subject.

If it be taken in the Concrete; *Accident* is uſually defin'd by the Schoolmen, to be ſomething capable of being *predicated* contingently, of many, in reſpect of Quality.—— As *Learning*, which may probably be *predicated* of You, He, &c.

Predicamental ACCIDENT, *Accidens Prædicamentale*; which alone properly anſwers to the Idea of an *Accident*; is a *Mode*, or Modification of ſome created Subſtance, inhering or depending thereon, ſo as not to be capable of ſubſiſting without the ſame. See MODE.

In this Senſe, *Accident* is oppoſed to *Subſtance*.—Whence, as Subſtance is defined a thing that ſubſiſts of it ſelf, and the Subſtratum of *Accidents*; ſo an *Accident* is ſaid to be that *cujus eſſe eſt ineſſe*: And therefore *Ariſtotle*, who uſually calls Subſtances ſimply ὄντα, *Entities*, *Beings*; commonly calls *Accidents*, ὄντῳ ὄντα, *Entities of Entity*; as requiring ſome Subſtance wherein to reſide, as their Subject of Inheſion.

An *Accident*, then, has an immediate and eſſential Dependence on its Subſtance; both as to its Production, its Continuation, and its Effects: It ariſes or is deduced from its Subject, is preſerved or ſubſiſted by it; and can only be affected by what alters or affects the Subject.

The Schoolmen, however, will not have *Accidents* to be mere Modes of Matter, but Entities really diſtinct from it; and, in ſome Caſes, ſeparable from all Matter.——But the Notion of real *Accidents* and Qualities is now exploded. See QUALITY.

Ariſtotle and the Peripateticks make nine Kinds or Claſſes of *Predicamental Accidents*; others contract 'em into a leſs Number. See PREDICAMENT, and CATEGORY.

Abſolute ACCIDENT, is a Term uſed in the *Romiſh* Theology, for an *Accident* which ſubſiſts, or may poſſibly ſubſiſt, at leaſt miraculouſly, and by ſome ſupernatural Power, without a Subject.

Such, they contend, are the *Accidents* of the Bread and Wine in the Euchariſt; *e. g.* the Colour, Flavour, Figure, &c. thereof, which remain after the Subſtances they belong'd to are changed into other Subſtances of Fleſh, &c. See EUCHARIST, SPECIES, TRANSUBSTANTIATION, &c.

This Abſurdity has been very ſtifly maintain'd by many of their Caſuiſts; and even decreed by ſome of their Councils.—The Euchariſt, ſay they, being a Sacrament, *i. e.* a Viſible Sign of an Inviſible Grace; 'tis neceſſary there be ſomething ſenſible therein: Now, this cannot be the Subſtance, that being deſtroy'd or tranſubſtantiated; and therefore muſt be *Accidents*.—Add, that in every Converſion there muſt be ſomething of the former Nature remaining after the Change; otherwiſe it would be no more than a ſimple Subſtitution of one thing for another: As, then, nothing of the Subſtance remains, it muſt be *Accidents*.—— Hence, the Council of *Conſtans* condemns the following Propoſition, which is the ſecond of *Wickliff*, as Heretical: *The* Accidents *of Bread do not remain without a Subject in the Sacrament*. Seſſ. VIII.

Some of the Fathers ſeem to give Countenance to the ſame Opinion.—S. *Baſil*, in his VIth Homily on the Creation, obſerves that Light, or rather Brightneſs, the Splendor of Light, τὸ φωτῳ ἡ λαμπρότης, is a thing diſtinct from its Subject, as Whiteneſs is from a white Body; and that it exiſted in the Beginning, without this Subject; having been created four Days before.

The *Carteſians*, to a Man, combat the Notion of *Abſolute Accidents*, it being their Doctrine, that the Eſſence of Matter conſiſts in Extenſion; and that *Accidents* are only Modifications thereof, in no wiſe diſtinct from it: An *Accident* without a Subject muſt be a Contradiction.—And hence, *Carteſianiſm* is branded as contrary to the Faith. See CARTESIANISM.

Various Expedients have been invented by the *Carteſians*, to account for Tranſubſtantiation, &c. without the Hypotheſis of *Abſolute Accidents*.—Some hold, that the uſual Impreſſions are made on the Senſe by the immediate Agency of God; and without any thing remaining of the former Nature. Others aſcribe the whole to heterogeneous Matters contain'd in the Pores of the Bread, &c. which remaining unalter'd by the Tranſubſtantiation, produce the ſame Senſations as the Bread produced.

ACCIDENT is alſo popularly uſed for a Contingent Effect; or ſomething produced caſually, and without any Foreknowledge or Deſtination thereof in the Agent that produced it. See CHANCE, FORTUNE, &c.

Per ACCIDENS, is frequently uſed among Philoſophers to denote what does not follow from the Nature of a Thing, but from ſome *accidental* Quality thereof: In which Senſe, it ſtands oppoſed to *per ſe*, which denotes the Nature and Eſſence of a Thing. See PER *ſe*.

Thus, Fire is ſaid to burn *per ſe*, or conſider'd as Fire, and not *per accidens*: But a piece of Iron, tho red hot, only burns *per accidens*, by a Quality *accidental* to it, and not conſider'd as Iron.

ACCIDENT, in Heraldry, is an additional Note, or Mark in a Coat-Armour, not neceſſarily belonging thereto, but capable either of being retain'd or omitted, without altering the Eſſence of the Armour.—Such are *Abatements*, *Differences*, and *Tincture*. See ABATEMENT, TINCTURE, and DIFFERENCE.

ACCIDENTAL, ſomething of the Nature of an *Accident*; or, that is not eſſential to its Subject, but indifferent thereto. See ACCIDENT, and ESSENTIAL.

Thus, Whiteneſs is *Accidental* to Marble; and Heat, to Iron.

ACCIDENTAL *Point*, in Perſpective, is a Point in the horizontal Line, where Lines parallel to one another, tho not perpendicular to the Picture or Repreſentation, meet. See POINT, PERSPECTIVE, &c.

ACCIDENTAL *Dignities*, and *Debilities*, in Aſtrology, are certain caſual Diſpoſitions and Affections of the Planets, whereby they are ſuppoſed to be either ſtrengthen'd or weaken'd, by their being in ſuch a Houſe of the Figure, &c.

ACCLAMATION, a confuſed Noiſe, or Shout of Joy, by which the Publick expreſs their Applauſe, Eſteem, or Approbation of any thing.

Theſe were formerly uſed in Churches, as well as Theatres; and the Biſhops and other Eccleſiaſtical Officers, were elected by the *Acclamations* of the People.—But their principal Uſe has always been at the ſolemn Entries of Princes and Heroes; where they are uſually attended with good Wiſhes, Prayers, Vows, &c. See VOW.

Antiquity has handed down to us ſeveral Forms of *Acclamations*; as, *Dii te nobis ſervent*, *veſtra ſalus*, *noſtra ſalus*: 'The Gods preſerve you for us; your Safety, our 'Safety.'——*In te omnia*, *per te omnia habemus*, *Antonine*. 'In you, *Antoninus*, and by you, we have every thing.' ——*Lampridius* relates, that at the Entry of *Severus*, the People cried out, *Salve Roma*, *quia ſalvus Alexander*. 'Oh 'Rome, be ſafe; ſince *Alexander* is ſafe.'——M. *Briſſon*, in his Treatiſe of *Formula's*, enumerates various ſorts of *Acclamations*, uſed by the Senate, the Army, &c.

The *Hebrews* uſed to cry *Hoſanna*.—The *Greeks*, *Aga the Tuche*, that is, Good Fortune. See HOSANNA.

ACCLIVIS, in Anatomy, a Muſcle, otherwiſe called *Obliquus Aſcendens*. See OBLIQUUS *Aſcendens*.

ACCLIVITY, the Steepneſs, or Slope of a Line or Plane inclined to the Horizon; reckon'd upwards. See *Inclined* PLANE.

The Aſcent of a Hill is an *Acclivity*; the Deſcent of the ſame a *Declivity*. See DECLIVITY.

Some Writers of Fortification, uſe *Acclivity* for *Talus*. See TALUS.

The Word is compounded of the Latin *ad*, and *clivus*, Hill, Eminence.

ACCOLA, properly denotes an Husbandman who came from other Parts to till the Land, *Eo quod adveniens terram colat*; by which he is diſtinguiſh'd from *Incola*. *ff.* Accola *non propriam*, *propriam colit incola terram*. Du Freſne.

ACCOLADE, a Ceremony antiently uſed in the conferring of Knighthood. See KNIGHT.

The *Accolade* conſiſted in the King's laying his Arms about the young Knight's Neck, and embracing him; in token of Friendſhip.—After the *Accolade*, the Prince giving him a little Blow on the Shoulder with the Flat of a Sword, he forthwith enter'd into the Profeſſion of Arms.

The Word is *French*, and literally denotes an Embrace, or Hugging; being form'd of *ad*, and *col*, Neck.

ACCOMMODATION, in Philoſophy, the Application of one thing, by Analogy, to another. See ANALOGY.

Thus, to know a thing by *Accommodation*, is to know it by the Idea of a ſimilar thing refer'd thereto.

A Prophecy of Scripture is ſaid to be fulfill'd various ways; *Properly*, as when a thing foretold comes to paſs; and *Improperly*, or *by way of Accommodation*, when an Event happens to any Place or People, like to what fell out ſome time before to another.——Thus, the Words of *Iſaiah*, ſpoke to thoſe of his own Time, are ſaid to be fulfill'd in thoſe who liv'd in our Saviour's; and are *accommodated* to them: *Ye Hypocrites*, *well did* Iſaias *propheſy of you*, &c. which ſame Words, St. *Paul* afterwards *accommodates* to the *Jews* of his Time.—This Method of explaining Scripture by *Accommodation*, ſerves as a Key for ſolving ſome of the Difficulties relating

relating to the Prophecies. See TYPE, PROPHECY, &c.

On many Occaſions, a Man finds it expedient to tranſlate by *Accommodation*: Thus, the Word *Librarius*, Scrivener, may be tranſlated, by *Accommodation*, a *Printer*; as it originally ſignifies thoſe who made it their Buſineſs to furniſh Copies of Books, before the Invention of Printing.

ACCOMMODATION, is alſo uſed for an amicable Agreement, or Compoſition between the two contending Parties.——The Proceſs is grown ſo intricate and perplex'd, that there is no Hopes of getting out of it but by an *Accommodation*.

Accommodations are frequently effected by means of Compromiſe and Arbitration. See COMPROMISE, and ARBITRATION.

ACCOMPANYMENT, ſomething attending, or added as a Circumſtance to, another; either by way of Ornament, or for the ſake of Symmetry, or the like. See CIRCUMSTANCE.

The Muſick, in Dramatic Performances, ſhould only be a ſimple *Accompanyment*.—The Organiſts ſometimes apply the Word to ſeveral Pipes which they occaſionally touch to *accompany* the Treble; as the Drone, Flute, &c.

In Heraldry, the *Accompanyments* are all ſuch things as are applied about the Shield, by way of Ornament; as the *Belt*, *Mantling*, *Supporters*, &c. See ESCUTCHEON, SHIELD, &c.

A Thing is alſo ſaid to be *accompanied*, *acompagne*, when there are ſeveral Bearings or Figures about ſome one principal one; as a Salteer, Bend, Feſs, Chevron, or the like.

ACCOMPLICE, *Complice*, one that has a hand in a Buſineſs; or is privy in the ſame Deſign or Crime with another. See ACCESSORY, PRIVY, &c.

ACCOMPLISHMENT, the entire Execution, Atchievement, or fulfilling of ſomething propos'd, or undertaken.

The *Accompliſhment* of the Prophecies of the Old Teſtament, in the Perſon of our Saviour, is the great Mark of his being the Meſſiah. See PROPHECY.

There are two ways of *accompliſhing* a Prophecy; *directly*, and by *Accommodation*. See ACCOMMODATION.

The Reverend Mr. *Sykes* has a particular Inquiry into the Meaning of thoſe Words us'd by the Evangeliſt, *That it might be fulfill'd*, or accompliſhed, *which was ſpoke by the Prophets*: where he ſhews, that the Word πληρωθῇ, *fulfill'd*, does not neceſſarily refer to a Prediction of a future Event *accompliſh'd*; but frequently a mere Accommodation of Words, borrow'd from ſome other Author, and accommodated to the preſent Occaſion. See TYPE.

ACCORD, in Muſick, is more uſually call'd *Concord*. See CONCORD.

The Word *Accord* is *French*, form'd, according to ſome, from the Latin *ad cor*; but others, with more probability, derive it from the French *Corde*, a String, or Cord; on account of the agreeable Union between the Sounds of two Strings ſtruck at the ſame time. See CHORD.

Whence alſo ſome of the Conſonances in Muſick come to be called *Tetrachord*, *Hexachord*, &c. which are a *fourth*, and a *ſixth*. See TETRACHORD, &c.

M. *Carre*, in the Memoirs of the Royal Academy of Sciences, lays down a new general Propoſition, of the Proportion which Cylinders are to have, in order to form the *Accords* or Conſonances of Muſick. And it is this—That the ſolid Cylinders, whoſe Sounds yield thoſe *Accords*, are in a triplicate and inverſe Ratio of that of the Numbers which expreſs the ſame *Accords*.

Suppoſe, *e. g.* two Cylinders, the Diameters of whoſe Baſes and Lengths, are as 3 to 2; 'Tis evident their Solidities will be in the Ratio of 27 to 8, which is the triplicate Ratio of 3 to 2: We ſay, that the Sounds of thoſe two Cylinders will produce a Fifth, which is expreſs'd by thoſe Numbers; and that the biggeſt and longeſt will yield the grave Sound, and the ſmalleſt the acute one.—And the like of all others. See SOUND, GRAVITY, and ACUTENESS.

ACCORD, in Law, is an Agreement between two, at the leaſt, to ſatisfy an Offence that the one hath committed againſt the other; whether it be a Treſpaſs, or ſuch like thing, for which he hath agreed to ſatisfy him.—This, if executed, becomes a good Bar in Law to any Suit to be brought for the ſame Matter.

ACCOUNT, or ACCOMPT, a *Calculus*, or Computation of the Number of certain things. See CALCULUS, and NUMBER.

There are various Ways of *accounting*; as, by Enumeration, or ſetting one by one; and by the Rules of Arithmetick, Addition, Subtraction, &c. See ARITHMETIC, ADDITION, SUBTRACTION, &c.

We *account* Time by Years, Months, &c. The *Greeks accounted* it by Olympiads; the *Romans* by Indictions, Luſtres, &c. See TIME, YEAR, OLYMPIAD, &c.——We *account* Diſtances by Miles, Leagues, &c. See MILE, LEAGUE, DISTANCE, &c. ſee alſo COMPUTATION.

Money of ACCOUNT, is an imaginary ſort of Species, contrived for the facilitating and expediting the taking and keeping of *Accounts*.—Such are *Pounds*, *Angels*, &c. See MONEY *of Account*; ſee alſo POUND, &c.

ACCOUNT is alſo a Relative Term, uſed in reſpect of a Company, or Society, when two or more Perſons have receiv'd, or diſburs'd for each other; or when this has been done by their Order or Commiſſion. See COMPANY, COMMISSION, FACTORAGE, &c.

ACCOUNT, or ACCOUNTS, is alſo uſed collectively, for the ſeveral Books or Regiſters which Merchants keep of their Affairs, and Negotiations. See BOOK-KEEPING, &c.

Hence, to make out an *Account*; to paſs one's *Accounts*, &c.——Bankrupts are oblig'd to ſurrender their *Accounts*. See BANKRUPT, &c.

ACCOUNT, or ACCOMPT, in a Legal Senſe, is a particular Detail, or Enumeration deliver'd to a Court, a Judge, or other proper Officer or Perſon, of what a Man has receiv'd or expended on the Behalf of another, whoſe Affairs he has had the Management of———.

In the Remembrancer's Office in the Exchequer, are enter'd the States of all the *Accounts* concerning the King's Revenue, for Cuſtoms, Exciſe, Subſidies, &c. See REMEMBRANCER; ſee alſo REVENUE, CUSTOM, EXCISE, &c.

The great *Accounts*, as thoſe of the Mint, Wardrobe, Army, Navy, Tenths, &c. are called *Impreſt Accounts*. See IMPREST.

All *Accounts* which paſs the Remembrancer's Office, are brought to the Office of the Clerk of the Pipe. See PIPE; ſee alſo TALLY, CLERK, AUDITOR, &c.

ACCOUNT, in LAW, is particularly uſed for a Writ which lies where an Agent, Steward, or other Perſon, who ought to render an *Account*, refuſes to give his *Account*. See STEWARD.

Chamber of ACCOUNTS, in the *French* Polity, is a ſovereign Court, of great Antiquity, wherein the *Accounts* relating to the King's Revenue are deliver'd in, and regiſter'd. See CHAMBER.

This anſwers pretty nearly to the Court of Exchequer in *England*. See EXCHEQUER.

There are Preſidents of *Accounts*, Maſters of *Accounts*, Correctors of *Accounts*, &c.

ACCOUNTANT, or ACCOMPTANT, a Perſon, or Officer appointed to keep or make up the *Accounts* of a Company, Office, Court, or the like. See ACCOUNT.

There are *Accountants* in the Cuſtomhouſe, the Exciſe, &c. See EXCISE, and CUSTOMHOUSE.

The ACCOUNTANT-*General of the Court of Chancery*. See CHANCERY.

ACCOUNTING- or ACCOMPTING- or COUNTING-*Houſe*. See COUNTING-*Houſe*, GREEN-*Cloth*, &c.

ACCOUTREMENT, an antient Term, uſed for an *Habillement*; or a part of the Apparatus, and Furniture of Soldier, Knight, or even a Gentleman. See HABILLEMENT.

The Word is *French*; form'd from the antient *German*, *Kuſter*.——In ſome Cathedrals in *France*, *e. g.* at *Bayeux*, the Name *Coutre* is given to the Sacriſtan, or Officer who has the Care of furniſhing and ſetting out the Altar, in the Church; call'd in *German Kuſter*, νεώκορος.

ACCRETION, the Growth or Increaſe of an organical Body, by the Acceſſion of new Parts. See NUTRITION.

Accretion is of two Kinds; the one, conſiſting in an external Appoſition of new Matter.

This is what we otherwiſe call, *Juxtapoſition*; and 'tis thus, Stones, Shells, &c. are ſuppoſed to grow. See STONE, and SHELL.

The other is by ſome fluid Matter received into proper Veſſels, and gradually brought to adhere or grow to the Sides thereof.

This is what we call, *Introſuſception*; and 'tis thus Plants and Animals are nouriſh'd. See PLANT, and ANIMAL; ſee alſo NUTRITION.

ACCRETION, ACCREMENT, in the Civil Law, a vague or vacant Portion of Ground, join'd or united with Grounds held or poſſeſs'd by another.—A Legacy given to two Perſons jointly, *tam re quam verbis*, falls wholly to him that ſurvives the Teſtator, by Right of *Accretion*.

Alluvion is another Species of *Accretion*. See ALLUVION.

ACCRUE, or ACCREW, denotes ſomething to fall by way of Acceſſion, or Accretion, to another. See ACCRETION, and ACCESSION.

ACCUBITOR, an antient Officer of the Emperors of *Conſtantinople*; whoſe Buſineſs was to lie near the Emperor.

The Word is *Latin*, form'd of the Verb *Accumbo*, I lie by; whence *Accubatio*, that State or Poſture of the Body when we ſit, and at the ſame time lean backwards.

ACCUMULATION, the Act of *heaping*, or amaſſing ſeveral things together.—The Word is compounded of *ad*, and *cumulus*, heap.

The Lawyers ſpeak of an *Accumulation* of Titles; as, when a Perſon claims Lands, a Benefice, or the like, in Virtue of ſeveral Titles, or Pretenſions of different Kinds; *e. g.* by Death, by Reſignation, &c.

In a like Senſe, we read of *Accumulative* Treaſon, &c. See TREASON.

ACCURSED, ſomething that lies under a Curſe, or under a Sentence of Excommunication. See ANATHEMA, EXCOMMUNICATION, &c.

ACCUSATION, ACCUSATIO, in the Civil Law, the intenting a criminal Action againſt any one, either in one's own Name, or that of the Publick. See ACTION, and CRIMINAL.

By the *Roman* Law, there was no publick *Accuſer*, for publick Crimes; every private Perſon, whether intereſted in the Crime or not, might *accuſe*, and proſecute the *Accuſed* to Puniſhment or Abſolution.

But the *Accuſation* of private Crimes was never received, excepting from the Mouths of thoſe who were immediately intereſted in them.—None but the Husband could *accuſe* his Wife of Adultery. See ADULTERY.

Indeed, it was not properly an *Accuſation* except in publick Crimes; in private ones it was call'd ſimply *Action*, or intenting an Action, *intendere Actionem*, or *litem*. See ACTION.

Cato, the moſt innocent Perſon of his Age, had been *accuſed* 42 times; and abſolved 42 times. See ABSOLUTION.

When the Accuſed *accuſes* the Accuſer, it is called *Recrimination*; which is not admitted till the *Accuſed* has been firſt purg'd. See RECRIMINATION.

By the cruel Laws of the Inquiſition, the Accuſed is forced to accuſe himſelf of the Crime objected to him. See INQUISITION.

It has formerly been the Cuſtom in ſome Parts of *Europe*, where the *Accuſation* was very heavy, either to decide it by Combat, or at leaſt to make the Accuſed purge himſelf by Oath; which, however, was not admitted, excepting a certain Number of his Neighbours and Acquaintance ſwore together with him. See DUEL, COMBAT, OATH, PURGATION, &c.

ACCUSATIVE, in Grammar, the fourth *Caſe* of Nouns that are declined. See CASE, and NOUN.

Its Uſe may be conceived from this, That all Verbs which expreſs Actions that paſs from the Agent, as, to *beat*, to *break*, &c. muſt have Subjects to receive thoſe Actions: for, if I beat, I muſt beat ſomething; ſo that a Verb evidently requires after it a Noun, or Name, to be the Subject or Object of the Action expreſs'd. See VERB.

Hence, in all Languages which have Caſes, the Nouns have a Termination which they call *Accuſative*; as, *amo Deum*, I love God; *Cæſar vicit Pompeium*, *Cæſar* overcame *Pompey*.

In *Engliſh*, we have nothing to diſtinguiſh this Caſe from the Nominative, but as we ordinarily place Words in their natural Order, it is eaſily diſcover'd, the Nominative conſtantly preceding, and the *Accuſative* following the Verb.—Thus, when we ſay, the Prince loves the Princeſs, and the Princeſs loves the Prince: The Prince is the Nominative in the firſt, and the *Accuſative* in the laſt; and the Princeſs the *Accuſative* in the firſt, and the Nominative in the ſecond. See NOMINATIVE.

ACEPHALUS, or ACEPHALOUS, ſomething without a Head. See HEAD.

The Word is compoſed of the Privative α, and κεφαλη, *Caput*, Head.

Pliny repreſents the *Blemmyes* as a Headleſs or *Acephalous* Nation. See BLEMMYES.——*Acephalous* Worms are frequent. See WORM, and VERMES.

ACEPHALUS is more frequently applied, in a figurative Senſe, to thoſe deſtitute of a Leader, or Chief.

Thus, the Name *Acephali* is ſometimes applied to ſuch Prieſts or Biſhops, as are exempted from the Diſcipline and Juriſdiction of their ordinary Biſhop or Patriarch. See EXEMPTION, PRIVILEGE, PECULIAR.

Anaſtaſius the Library-Keeper, calls this Exemption from the Juriſdiction of a Patriarch, *Autocephalia*. See PATRIARCH.

We find a great Number of Canons of Councils, Capitulars of Princes, &c. againſt *Acephalous Clerks*, &c.

In our antient Law-Books, the Term is alſo uſed for thoſe poor People who had no proper Lord; as holding nothing in Fee, either of King, Biſhop, Baron, or other Feudal Lord. *L. Hen.* I.

In Eccleſiaſtical Hiſtory, *Acephali* frequently occurs as the Denomination of divers Sects: Particularly, — 1°, Of thoſe who in the Affair of the Council of *Epheſus*, refuſed to follow either St. *Cyril*, or *John* of *Antioch*.—2°, Of certain Hereticks of the Vth Century, who at firſt follow'd *Peter Mongus*; but afterwards abandon'd him, upon his ſubſcribing to the Council of *Chalcedon*; they themſelves ſticking to the Errors of *Eutyches*.—3°, Of the Adherents of *Severus* of *Antioch*; and of all in general who refuſed to admit the Council of *Chalcedon*.

Some will have the Word properly to denote *Heſitator*; and ſuppoſe it applied on this Occaſion, by reaſon they ſtood neuter, or dubious, heſitating about coming into the Council: But the former Opinion is the more probable; *Acephalous* being never uſed in the latter Senſe.

In ſome Writers, the *Acephalous* Hereticks are called *Acepalites*, *Accphalitæ*.

ACERB, ACERBUS, a compound Taſte, conſiſting of ſour, with the Addition of a degree of Roughneſs. See TASTE.

Such is the Taſte of all Fruits before they are ripe. See FRUIT, MATURITY, &c.

The Phyſicians uſually make *Acerb* an intermediate Savour between Acid, Auſtere, and Bitter. See ACID, &c.

All Matters which come under this Denomination are Aſtringent. See ASTRINGENT.

ACERRA, in Antiquity, a kind of Altar, erected near the Gate of a Perſon defunct, among the *Romans*; whereon his Friends and Familiars daily offer'd Incenſe, till the time of his Burial. See ALTAR, FUNERAL, &c.

ACETABULUM, in Antiquity, a little Vaſe or Cup, uſed at Table; to ſerve up things proper for Sauce, or Seaſoning: much after the manner of our Salts, and Vinegar-Cruets. See VASE, and VESSEL.

Hence, *Agricola*, in his Treatiſe of *Roman* Meaſures, L. I. takes the Name to have been form'd from *Acetum*, Vinegar; as ſuppoſing it principally deſtin'd to ſerve Vinegar on.

ACETABULUM is alſo uſed for a *Roman* Meaſure, in uſe chiefly in Medicine, for liquid Matters. See MEASURE.

The *Acetabulum* contain'd a Cyathus and a half, as is proved by *Agricola*, from two Verſes of *Fannius*; who ſpeaking of the Cyathus, ſays, it weighs ten Drachms; and the *Oxubaphus* or *Acetabulum*, 15.

Bis quinque hunc faciunt Drachmæ, ſi appendere tentes,
Oxybaphus fiet ſi quinque addantur ad illas.

Binet, in his Treatiſe of Weights and Meaſures prefix'd to his Tranſlation of *Pliny*, makes the *Acetabulum* of Oil weigh two Ounces and two Scruples; the *Acetabulum* of Wine, two Ounces, two Drachms, a Grain, and a third of a Grain; and the *Acetabulum* of Honey, three Ounces, three Drachms, a Scruple, and two Siliquæ. See CYATHUS, COTYLE, &c.

ACETABULUM, is alſo uſed in Anatomy, for a deep Cavity, in certain Bones, appointed for the Reception of the large Heads of other Bones, in order to their Articulation. See BONE, and ARTICULATION.

Thus, the Cavity of the *Iſchium*, or Huckle-Bone, which receives the Head of the Thigh-Bone, is called *Acetabulum*, *Cotyla*, or *Cotyloides*. See ISCHIUM, FEMUR, COTYLE, &c.

The *Acetabulum* is lined and tipp'd round with a Cartilage, whoſe circular Margin is called *Supercilium*.—In its bottom lies a large mucilaginous Gland. See MUCILAGINOUS, &c.

ACETABULUM is alſo uſed by Anatomiſts in the ſame Senſe with *Cotyledon*. See COTYLEDONES.

ACETARIA, a Salade. See SALADE.

The Word is form'd of *Acetum*, Vinegar; in regard that Fluid is commonly uſed for the Seaſoning thereof.

ACETOUS, ſomething relating to *Acetum*, or Vinegar. See ACETUM, and VINEGAR.

Thus, we ſay, an *Acetous* Taſte; *Acetous* Qualities, &c. Wine, and all vinous Liquors, are render'd *Acetous* by exciting their Salts, and tempering or abating their Sulphurs. See WINE, and VINOUS.

The Chymiſts mention divers *Aceta*, or *Acetous* Liquors; as, *Acetum Alcalizatum*; made of diſtill'd Vinegar, with the Addition of ſome Alkaline, or Volatile Salt. See ALKALI.——*Acetum Philoſophorum*, a ſour kind of Liquor; made by diſſolving a little Butter of Antimony in a great deal of Water. *Boyle*.

ACETUM, in Medicine, &c. the ſame with *Vinegar*; the Properties, Uſes, and Preparation whereof, ſee under the Article VINEGAR.

The Word is pure *Latin*; form'd of *Aceo*, I am ſharp. See ACID.

There are ſeveral Medicines in the Shops, whereof this Liquor is the Baſis; as, *Acetum Diſtillatum*, diſtill'd Vinegar; chiefly uſed in other Preparations for Diſſolution, and Precipitation. See DISTILLATION, DISSOLUTION, PRECIPITATION, &c.

Spiritus Aceti, Spirit of Vinegar; made by drenching Copper Filings or Spittle Duſt with diſtill'd Vinegar, then evaporating it till the Fumes of the Vinegar cannot be ſmelt; the Saturation and Evaporation to be again repeated, till the Metal be ſatiated; which being then diſtill'd, the Spirit comes over.——Its Qualities and Uſes are much the ſame with thoſe of the former, only more powerful.

Acetum Roſarum, Vinegar of Roſes; made of Roſe-buds infuſed in Vinegar 40 or 50 Days; the Roſes then preſs'd out, and the Vinegar preſerv'd.—It is chiefly uſed by way of Embrocation on the Head and Temples, in the Head-ach.

After the ſame manner is made *Acetum Sambucinum*, Vinegar of Elders; *Acetum Anthoſatum*, Vinegar of Roſemaries, &c.

The *German* Diſpenſatories abound with medicated Vinegars, chiefly aim'd againſt peſtilential Diſeaſes: but they are not uſed among us.—The College retains ſome of 'em, as the *Acetum Theriacale Norimbergenſe*, but it is never preſcrib'd.

ACHAT, in our Law-*French*, ſignifies a Contract, or Bargain.

Purveyors were by Act of Parliament 36 *Ed.* III. ordained to be thenceforth called *Achators*. See PURVEYORS.

ACHE, or ACH, a painful Ailment in any part of the Body. See PAIN, and DISEASE.

Aches are either Scorbutick, Rheumatick, owing to violent Strains, or the like.

Head-ACH. See HEAD-*Ach*, and CEPHALALGY.

ACHERNER, or ACHARNER, in Aſtronomy, a Conſtellation of the firſt Magnitude in the Sign *Piſces*.—Its Longitude, Latitude, &c. See under the Article PISCES.

ACHILLES, a Name which the Schools give to the principal Argument alledg'd by each Sect of Philoſophers in their behalf. See SECT.

In this Senſe, we ſay, this is his *Achilles*; that is, his Maſter-Proof: Alluding to the Strength and Importance of *Achilles* among the *Greeks*.

Zeno's Argument againſt Motion, is peculiarly term'd an *Achilles*.—That Philoſopher made a Compariſon between the Swiftneſs of *Achilles*, and the Slowneſs of a Tortoiſe; whence he argu'd, that a ſlow Moveable that precedes a ſwift one by ever ſo ſmall Diſtance, will never be outrun by it. See MOTION.

The antient Botaniſts gave the Name *Achillæa* to ſeveral Plants; one of which is ſaid to be the ſame with our Milefolium; and took its Name from *Achilles*, who, having been the Diſciple of *Chiron*, firſt brought it into uſe for the Cure of Wounds and Ulcers.

The Tendon of ACHILLES, *Corda Achillis*, is a large Tendon, form'd by the Union of the Tendons of the four Muſcles of the Foot, called *Extenſores*. See TENDON, and FOOT.

It is ſo called, becauſe the fatal Wound whereby *Achilles* is ſaid to have been ſlain, was given there.

ACHILLEIS, or ACHILLEID, a celebrated Poem of *Statius*, wherein he propoſed to deliver the whole Life and Actions of that Hero. See POEM.

It only takes in his Infancy, the Poet being prevented from proceeding, by Death.

The *Achilleid* is of the Heroic or Epic Kind; but extremely faulty in the Plan, or Fable. See FABLE, &c.

'Tis a Point controverted among the Criticks, whether the whole Life of a Hero, *e. g.* of *Achilles*, be a proper ſubject Matter of an Epic Poem. See EPIC, and HEROIC.

ACHOR, ACHORES, in Medicine, the third Species or Degree of a *Tinea*, or Scald Head. See TINEA.

Achores are a ſort of ſpreading Ulcers, which break the Skin into a Number of little Holes, out of which oozes a viſcid Humour.—*Achores* only differ from *Favi* in this, that their Holes are ſmaller.

ACHRONICAL, in Aſtronomy, is applied to the *Riſing* of a Star when the Sun ſets; or the *Setting* of a Star when the Sun riſes. See RISING, and SETTING.

The *Achronical Riſing* of *Mars*, who is then found to be nearer the Earth than the Sun, has been one great Occaſion of exploding the antient *Ptolemaic* Syſtem, which places the Sun in the Centre of the World, and *Mars* beyond the Sun. See EARTH, MARS, &c.

The *Achronical* is one of the three Poetical Riſings and Settings of the Stars. See POETICAL.

The Word comes from the *Greek* α and χρόνος, Time.

ACID, ACIDUM, any thing which affects the Tongue with a Senſe of Sharpneſs, and Sourneſs. See TASTE.

Acids are uſually divided into *manifeſt* and *dubious*.

The *Manifeſt Acids*, are thoſe above defined, which impreſs the Idea ſenſibly.—Such are *Vinegar*, and its Spirit; the Juices of *Citrons*, *Oranges*; Spirit of *Nitre*, Spirit of *Alumn*, Spirit of *Vitriol*, Spirit of *Sulphur per Campanam*, Spirit of *Sea Salt*, &c. See VINEGAR, NITRE, VITRIOL, ALUMN, SULPHUR, &c.

Dubious Acids, are thoſe which do not retain enough of the *Acid* Nature to give ſenſible Marks thereof on the Taſte, but agree with the *Manifeſt Acids* in ſome other Properties, ſufficient to refer 'em to the ſame Claſs.—Hence it appears that there are ſome Characters of *Acidity* more general than that of the ſharp Taſte; tho 'tis that Taſte is chiefly regarded in the Denomination.

The great and general Criterion, then, of *Acids*, is, that they make a violent Effervescence, when mix'd with another ſort of Bodies, called *Alkalies*. See EFFERVESCENCE.

Yet is not this Property alone univerſally to be depended on, to determine a Body an *Acid*, without the joint Conſideration of the Taſte, and the Changes of Colour producible in other Bodies thereby. — To diſtinguiſh *dubious Acids* from Alcalies, mix 'em with a blue Tincture of Violets: If they turn it red, they are of the *Acid* Tribe; if green, Alkaline. See ALKALY.

Acids are all of the Tribe of Salts; and compoſe a particular Species thereof, called *Acid Salts*. See SALT.

Add, that the *Acid* Salts are all found to be volatile; by which they are diſtinguiſh'd from the reſt, which are either fix'd, or at leaſt have a urinous, inſtead of an *acid* Taſte. See VOLATILE, FIX'D, and URINOUS.

Some late Chymical Philoſophers have even made it very probable, that 'tis the *Acid* is the ſaline Part or Principle in all Salts.—They conſider it as a ſubtile, penetrating Subſtance, diffuſed thro' the ſeveral Parts of the Globe; which, according to the different Matters it happens to be united withal, produces different Kinds of Bodies: If it meets a foſſil Oil, it converts it into Sulphur; if it be received into the *Lapis Calcarius*, it coagulates with it, and becomes Alumn; with Iron it grows into green Vitriol; with Copper, into blue Vitriol, &c.

Of this Sentiment is Sir *I. Newton*.—'In decompounding 'Sulphur, *ſays that Author*, we get an *Acid* Salt, of the 'ſame Nature with Oil of Sulphur *per Campanam*; which 'ſame *Acid* abounding in the Bowels of the Earth, unites 'ſometimes with Earth, and thus makes Alumn; ſometimes 'with Earth and Metal, and makes Vitriol; and ſometimes 'with Earth and Bitumen, and thus compounds Sulphur.' *Opticks*.

In effect, all our native Salts, tho without any Mixture from Art, are yet found to be real Mixtures; and their Compoſition and Decompoſition is eaſily made.—'As many as they 'are, they may be all reduced, according to M. *Homberg*, 'to three Kinds, *viz. Salt-petre*, *Sea-Salt*, and *Vitriol*; 'each whereof has its ſeveral Species. Of the Combination of theſe with different oily Matters, are all the other 'Salts produced. By the Analyſes we have made of 'em, 'they all appear to be compoſed of an aqueous, an earthy, a ſulphurous, and an *acid* Part; but the *Acid* we 'hold the pure Salt: This makes our Chymical Principle 'Salt, the common Baſis of all Salts; and which, antecedent to its Determination to any particular Species, appears 'to be one ſimilar, uniform Matter, tho never found alone, 'but always accompany'd with ſome ſulphureous Mixture or 'other; which determines it to ſome one of the three ſorts 'of Foſſil Salts abovemention'd.' *Mem. de l'Acad. R. des Sciences*. An. 1708. See PRINCIPLE.

The *Acid*, accompany'd with its determining Sulphur, never becomes ſenſible to us, except when lodg'd either naturally in ſome earthy Matter, or artificially in an aqueous one.—In the firſt Caſe, it appears under the Form of a cryſtalliz'd Salt; as Salt-petre, Sea Salt, &c. In the ſecond, it appears in form of an *Acid* Spirit; which, according to the Determination of the Sulphur accompanying it, is either Spirit of Nitre, or Spirit of Salt, or Spirit of Vitriol.

What is here ſpoke of the three ſimple foſſil Salts, may be equally applied to all the compound Salts of Vegetables and Animals, with this difference, that the latter have always a larger Proportion of the earthy Matter than the ſimple ones, when in form of a concrete Salt; and a larger Proportion of the aqueous Matter, when in form of an *acid* Spirit.—And hence we account for two important Phænomena; 1°, That the *acid* Spirits of Animal and Foſſil Salts, are always weaker, and leſs penetrating, as well as lighter in Weight, than thoſe of the Foſſil Salts: 2°, That after a vehement Diſtillation, they leave a larger quantity of earthy Matter behind them than the Foſſil do.

The Salt naturally contain'd in Plants, may be conſider'd as a Mixture of Earth, Oil, a little Water, and an *acid* Salt: This laſt Ingredient being ſeparated from the Plant with a vehement Fire, ſhoots into a new Salt, which ſometimes retains an *acid* Taſte, as in the Tartar of Wine; ſometimes it aſſumes a Sweetneſs, as in Sugar; ſometimes is bitter, as in Quinquina; and ſometimes almoſt inſipid, as in Sage. This, M. *Homberg* calls the eſſential Salt of the Plant; which, by a gentle Diſtillation, reſolves into an inſipid Water, an *acid* Liquor, and a ruddy fetid one; containing part of the *acid* Salt, and part of the fetid Oil of the Plant: of the Combination of which, is compoſed a particular Kind of fetid Salt, ſmelling like Urine, called the Volatile Salt or Volatile Alcaly Salt of the Plant: And the Caput Mortuum remaining, being reduc'd into Aſhes, is ſeparated by Lixiviation into one Part of fix'd Alcaly Salt, and another of inſipid Alcaline Earth.—Add, that the eſſential Salt always diſſolves entirely in Water, even the earthy Part join'd with it. But if the ſame Salt have been robb'd, by means of Fire, of a great part of its *Acid*; the earthy Part will not wholly diſſolve, but a Sediment of inſipid Earth, indiſſoluble in Water, will be found at bottom; to which, if an *acid* Spirit be added, it then becomes entirely diſſoluble in Water: Whence it may be fairly concluded, that the other Part of the Aſhes, before diſſolved in the Water, and which after Evaporation appears in form of a fix'd lixivial Salt, was only diſſolved by Virtue of the *Acid* it contain'd; or as having retain'd enough of the *Acid* to effect a Diſſolution.

Again, when the Earth of the Plant, ſatiated with its *Acid*, becomes a cryſtalliz'd Salt; no more of the ſame *Acid* can be introduc'd into it: whereas the lixivious Salt drawn from

from the Aſhes, does not cryſtallize, but ſtill greedily imbibes the *Acid* Spirits.

Hence it may be probably concluded, that the Lixivious, or fix'd Alcaly Salt, is no other than the Earth of the Plant, which, notwithſtanding the Violence of the Fire, has retain'd a little Portion of its *acid* Salt, ſufficient to diſſolve it in Water; ſtill reſerving a ſufficient Number of *Loculi* or Pores, to lodge the firſt *Acid* that ſhall offer it ſelf, in lieu of that driven out of it by the Fire.——And as the Name *Alcaly* is only given to a Salt, in reſpect of its imbibing and retaining an *Acid* preſented to it, in order to the producing a cryſtalliz'd Salt; the Lixivious Salts of Plants may be ſaid to be more or leſs Alcaline, as they abſorb more or leſs of the *Acid*; or, which amounts to the ſame, as they contain more or fewer Vacuities to be fill'd with *Acids*.

An Alcaly, after it has been fully ſatiated with one ſort of *Acid*, will yet ſometimes admit and retain part of another *Acid*: This is chiefly obſerved where a Vegetable *Acid* has been received firſt, and a Foſſil one is offer'd after. And it ſeems owing to this, That the Vegetable *Acid* having undergone a greater degree of Fermentation in the Body of the Plant, is become rare and pervious, in reſpect of the more ſolid and weighty Particles of the Mineral *Acid*; which therefore force a way in.

The ſame is always the Caſe, where an *Acid* appears an Alcaly with reſpect to another *Acid*; that is, where, of two *Acid* Spirits, one whereof has a Mixture of ſome Alcaly; the rarer of the two having poſſeſs'd the Pores of the Alkaly, is compreſs'd by the other denſer *Acid*.——Thus, a Pin-cuſhion, tho ever ſo full of Cotton, will admit a good Number of Pins.

Now, urinous Salts are Alkalies as well as the Lixivious Kind, *i. e.* they greedily imbibe *Acids*, retain 'em, and together with 'em compoſe Salts which cryſtallize.—But their Volatility ſeems to make it plain, that they are not, like the former, a Compoſition of a mere earthy Matter, with a little *Acid*; in regard a mere Earth can never become Volatile by ſuch Admixture. Yet is there a great deal of Reaſon to imagine, that their Compoſition is no other than a Part of the ſame Matter, which would have produced the Lixivious Salt, intimately mix'd with a deal of the fetid Oil of the Plant; and that the Oil is the ſole Cauſe of the Volatility of theſe Salts.

M. *Homberg*, in his *Eſſai du Sel principe*, makes three Claſſes of *Acid* Salts, correſponding to the three Species of Sulphurs wherewith the primitive *Acids* may be combined.

The firſt Claſs conſiſts of ſuch as contain an Animal, or a Vegetable Sulphur, which amount nearly to the ſame.—To this Claſs belong all the diſtill'd *Acids* of Plants, Fruits, Woods, *&c.* which muſt neceſſarily retain part of the Oil of the Plant, which is their Sulphur. To this Claſs alſo belongs Spirit of Nitre; as being a Subſtance procur'd from the Excrements of Animals, *&c.*

The ſecond Claſs is of thoſe which contain a bituminous Sulphur.—Such are Vitriol, common Sulphur, and Alumn; which are all uſually procur'd from a Mineral Stone, wherein Bitumen is the prevailing Ingredient.

The third is of ſuch as contain a more fix'd Mineral Sulphur, approaching the Nature of a metalline one.—Such are the *Acids* drawn from Sea Salts and Sal Gemma's; the latter of which is chiefly found in Places near Mines of Metals, and the former probably ariſes from Rocks, or Veins of Sal Gemmæ running into the Sea, and there diſſolved.

From the peculiar Nature and Properties of the Sulphur thus accompanying the ſeveral Kinds of *Acid* Salts, their different Phænomena and Effects are to be accounted for.—*See the Article* SALT.

The *Acids* of Animals are doubtleſs chiefly derived from Plants, in the ordinary way of Food, and Nutrition; and thoſe of Plants, again, from thoſe of Minerals. So that there ſhould ſeem to be but one Spring of *Acidity*: The Diverſities ariſe from what happens to 'em in paſſing thro' the organiz'd Bodies of Plants and Animals. Hence it is, that Plants and Animals eſpecially, yield a very volatile Alkaly Salt; whereas, the Salts of Minerals are found altogether *acid*, and much more fix'd and concrete; tho 'tis the ſame Matter in both Caſes, under different aſſumed Forms.

Thus, the younger *Lemery* argues, that as Animals feed on Plants, and reciprocally, in the Inſtance of Salt-petre, *&c.* Plants feed on Animals; inaſmuch as their Vegetation is excited by Manure; it happens, that what was real Salt-petre in Plants, becomes only a nitrous Sal Ammoniac in Animals, and *vice verſa*.—The ſame Author accounts for this double Metamorphoſis, by ſuppoſing that the nitrous Principle remains the ſame in both Caſes, and in both Caſes is attach'd to the ſame Matrix, with this only difference, that the Matrix becomes more earthy in Plants, and by that means, fix'd; and in Animals, loſes its earthy Parts, and aſſumes other oily ones, which render it volatile. *Mem. de l'Acad.* An. 1717.

As to the Manner wherein Acids *act on Alcalies, the great Number of little Bubbles produced during their Action*, and the *Heat ariſing thereupon*.——M. *Homberg* explains it thus.—The Matter of Light, which he ſuppoſes to be the chymical Principle, Sulphur, and to poſſeſs the whole Extent of the Univerſe; is kept in a perpetual Motion by the continual Impulſes which the Sun and Fix'd Stars give it: But this Motion, happening on ſome Occaſions to be ſlacken'd, may be retriev'd again, and augmented by the near Approach of Flame, which that Author ſuppoſes the only Matter capable of giving Motion to Light.—This Motion of Light cannot proceed, without continually ſtriking againſt the ſolid Bodies, and even paſſing thro' all the porous ones, it meets in its way. See SULPHUR, and FIRE.

Suppoſe, now, *Acids* to be little, ſolid, pointed Bodies, ſwimming at liberty in an aqueous Fluid, and kept in continual Motion, by the repeated Impulſes of the Matter of Light; and Alcalies, to be ſpongious Bodies, whoſe Pores have formerly been fill'd with the Points of *Acids*, and which ſtill retain the Dents or Impreſſions thereof, and are ready to receive the like Points when driven within 'em. 'Tis eaſy to conceive, that if ſome of thoſe porous Alcalies float in the ſame Liquor wherein the ſolid *Acids* float; theſe latter, being impell'd by the Matter of Light, will enter the Cavities of the former, which are framed as it were on purpoſe for their Reception; and that they will do it the more readily, if the Motion of the Matter of Light, wherewith they are impell'd, have been accelerated by external Heat.

This Introduction of *Acids* into the Body of Alcalies, is, in all appearance, effected with a great Velocity and a deal of Friction; inaſmuch as it produces ſo conſiderable a degree of Heat: And as the Pores of the Alcalies were before fill'd with an aerial Matter, which is now expell'd by the Points of the *Acids*; that Air is put in Motion, and produces the Bubbles, which are ſo much the more ſenſible, as the Heat accompanying the Action is the greater. See AIR, and HEAT.

Sir *I. Newton* accounts for the Effects of *Acids* in a different manner, *viz.* from the great Principle of Attraction. See ATTRACTION.

'The Particles of *Acids*, he obſerves, are of a ſize 'groſſer than thoſe of Water, and therefore leſs volatile; 'but much ſmaller than thoſe of Earth, and therefore much 'leſs fix'd than they.—They are endu'd with a very great 'attractive Force, wherein their Activity conſiſts; it being 'by this that they affect and ſtimulate the Organ of Taſte; 'and by this alſo, that they get about the Particles of Bodies, either of a metalline or ſtony Nature, and adhere 'cloſely to 'em on all ſides; ſo as ſcarce to be ſeparable 'from them by Diſtillation or Sublimation: and when thus 'gather'd about the Particles of Bodies, by the ſame Power 'they raiſe, disjoin, and ſhake them one from another; 'that is, diſſolve 'em.' See DISSOLUTION.

'By their attractive Force, alſo, wherewith they ruſh towards the Particles of Bodies, they move fluid ones, and 'excite Heat; ſhaking aſunder ſome Particles, ſo as to turn 'them into Air, and generate Bubbles: and hence all violent Fermentation; there being in all Fermentation a latent *Acid*, which coagulates in Precipitation.' See FERMENTATION.

'*Acids*, alſo, by attracting Water as much as they do the 'Particles of other Bodies, occaſion the diſſolv'd Particles 'readily to mingle with Water, or ſwim or float in it; after 'the manner of Salts: And as this Globe of Earth, by the 'Force of Gravity, attracting Water more ſtrongly than it 'does lighter Bodies, cauſes thoſe Bodies to aſcend in Water, and go upwards from the Earth; ſo, the Particles of 'Salts, by attracting the Water, mutually avoid and recede 'from one another as far as they can; and are thus diffus'd 'throughout the whole Water.

'The Particles of Alcalies conſiſt of earthy and *acid* 'Parts united together; but theſe *Acids* have ſo great an 'attractive Force, that they can't be ſeparated therefrom by 'Fire; and that they even precipitate the Particles of diſſolv'd Metals, by attracting from them the *acid* Particles, 'which before had diſſolv'd, and kept them in Solution.' See PRECIPITATION.

'If theſe *acid* Particles be join'd with earthy ones, in a 'ſmall Quantity; they are ſo cloſely retain'd by the latter, as 'to be quite ſuppreſs'd and loſt, as it were, in them; ſo that 'they neither ſtimulate the Organ of Senſe, nor attract Water; but compoſe Bodies which are not *acid*, *i. e.* fatty and 'ſweet Bodies; as Mercurius Dulcis, Brimſtone, Luna Cornea, *&c.*—From the ſame attractive Force in theſe *acid* 'Particles thus ſuppreſs'd, ariſes that Property of fat Bodies, 'that they ſtick or adhere to almoſt all Bodies, and are eaſily inflammable.—Thus, the *Acid* that lies ſuppreſs'd in 'ſulphureous Bodies, by more ſtrongly attracting the Particles 'of other Bodies (earthy ones for inſtance) than its own; 'promotes a gentle Fermentation, produces and cheriſhes 'natural Heat, and carries it on ſo far ſometimes, as to the 'Putrefaction of the Compound; Putrefaction ariſing hence, 'that the *acid* Particles which have long kept up the Fermentation, at length inſinuate into the little Interſtices that

'lie

'lie between the Particles of the firſt Compoſition; and 'ſo intimately uniting with thoſe Particles, produce a new 'Mixture or Compound, which cannot be return'd into its 'original form.' See PUTREFACTION.

'Water has no great diſſolving Force, becauſe there is 'but a ſmall Quantity of *Acid* in it; for whatever ſtrongly 'attracts, and is ſtrongly attracted, may be reputed an *A-'cid*: But in ſuch things as are diſſolved in Water, the Diſ-'ſolution is ſlowly perform'd, and without any Efferveſcence.' See WATER, and MENSTRUUM.

'When theſe *Acids* are applied to the Tongue, or any 'excoriated Part of the Body; leaving the ſubtile Earth 'wherewith they were before united, they ruſh into the 'Senſory, act there as Menſtruums, and disjoin its Parts; 'thus cauſing a painful Senſation.'

The illuſtrious Author, it muſt be own'd, here carries the Notion of *Acidity* a great length: Diſſolution, according to him, is only effected by Attraction, and is proportional to the degree of attractive Power in the Diſſolvent; but all Bodies which attract much are *Acids*, on his Principle; and conſequently all powerful Menſtruums muſt belong to that Claſs.—And yet Spirit of Urine, which readily diſſolves Iron or Copper, even in the Cold, is allow'd an Alcaly; and accordingly makes a vehement Conflict with Aqua fortis. Boyle's *Imperfect. of Chym. Doct. of Qual.*

Some chymical Philoſophers, in the laſt Century, endeavour'd to derive the Qualities of Bodies, and the other Phænomena of Nature, from the Conſideration of *Alcaly and Acid*. See ALKALY.

It has been a Point much controverted among the Phyſicians, whether or no there be any ſincere *Acid* in human Blood? The generality ſtand for the Negative; and all Mr. *Boyle*'s Experiments, in his *Hiſtory of Blood*, ſeem to give the thing on that ſide.——But the accurate M. *Homberg* has at laſt turn'd the Scale the other way; and ſhewn, by repeated Experiments, that an *Acid*, or what is commonly call'd ſo, and judg'd ſuch by the Change of Colour it cauſes in a Tincture of Violets, may be drawn from the Blood of all Animals in general, and human Blood in particular. *Mem. de l'Acad. Roy. des Sciences.* An. 1712.

Hence, and from the careful Analyſes that Author has made of the Fleſh and Excrements of divers Animals, particularly Man; he infers, that the *Acid*, or Sea Salt of the Aliment taken into the Bodies of Animals; is not deſtroy'd therein, but paſſes into the Subſtance of 'em: the ſuperfluous Portion being return'd unalter'd along with the Excrements. See BLOOD, DIGESTION, *&c.*

Acids are preſcrib'd in Medicine, as Coolers, Antifebrificks, Antiſcorbuticks, Diaphoreticks, Alexipharmicks, *&c.* See SCURVY, PLAGUE, *&c.*

'*Acids*,' Mr. *Boyle* obſerves, 'not only diſturb the Body 'while they continue ſenſibly *acid*; but in many Caſes cre-'ate Diſtempers, whereof they ſhould ſeem the Remedies. '—Tho they be reputed to have an inciſive and reſolutive 'Virtue, and accordingly are preſcribed to cut tough 'Phlegm, and diſſolve coagulated Blood: yet there are 'ſome *Acids* which muſt evidently coagulate the animal 'Fluids, and produce Obſtructions, with all their Train of 'Conſequences.—Thus, it is known, that Milk readily cur-'dles with Spirit of Sea Salt, *&c.*' See COAGULATION.

ACID *Salts.* } See ACID.—See alſo SALT, and SPI-
ACID *Spirits.* } RIT.—See alſo PRINCIPLE.

ACIDITY, ACIDITAS, ACOR, the Quality which conſtitutes, or denominates, a Body, *Acid*; or that Senſation of Sharpneſs and Acrimony which *Acids* excite upon the Taſte. See ACID, QUALITY, TASTE, *&c.*

A little Vitriol leaves an agreeable *Acidity* in Water.—Vinegar and Verjuice have different ſorts of *Acidity*.

The Predominancy of *Acidities* in the Body, and their ill Effects, in coagulating the Blood, *&c.* is prevented by either repelling and mortifying them with Lixivious or Urinous Salts; or ſheathing and abſorbing 'em, with Alcalious Bodies.—Thus, Minium deſtroys the *Acidity* of Spirit of Vinegar; Lapis Calaminaris that of Sea Salt, *&c.* See ABSORBENT, *&c.*

ACIDULÆ, in Natural Hiſtory, a Species of Mineral Waters, which diſcover a degree of *Acidity* to the Taſte. See WATER.

Acidulæ are native Waters, impregnated with Particles of ſome acid Mineral; as Vitriol, Alumn, Nitre, or Salt. See WATER.

Sometimes there is alſo a vinous Flavour join'd with the Acid; by which they become peculiarly denominated *Vinous Waters*. See VINOUS.

The Claſs of *Acidulæ* are uſually very cold; whence ſome Authors define *Acidulæ* to be all ſuch Mineral or Medicinal Waters as are not hot. See BATH, *&c.*

The Phyſicians alſo frequently include Chalybeat or Ferruginous Waters, under the Claſs of *Acidulæ*. See CHALYBEAT, and FERRUGINOUS.

The Word is a Diminutive of *Acidum*; which is form'd from the *Greek* ακις, *Point, Edge*; in regard the Points of acid Subſtances prick and vellicate the Tongue.

We ſometimes alſo meet with *Acidulated, q. d.* ſomething wherein acid Juices have been put, in order to give it a Coolneſs, and Briſkneſs.

ACINI, in Botany, ſmall Grains, growing in Bunches; after the manner of Grape-ſtones.

The Word is *Latin*, and literally ſignifies *Grape-ſtone*.

Hence, Anatomiſts have called ſome Glands of a ſimilar Formation, *Acini Glanduloſi*. See GLAND.

ACINIFORMIS *Tunica*, the ſame with the *Tunica Uvea* of the Eye. See UVEA.

ACME, the *Height*, or Top of any thing.

The Word is *Greek*, ακμη, *Point, Tip*; of ακμαζω, *vigeo*, I flouriſh.

Acme is more eſpecially us'd to denote the Height of a Diſtemper; which is divided into four Periods by ſome Inſtitution-Writers.

1°, The *Arche*, the Beginning, or firſt Attack.—2°, *Anabaſis*, the Growth.—3°, *Acme*, the Height.—And, 4°, *Paracme*, which is the Declenſion of the Diſtemper. See DISEASE.

ACOEMETES, ACOEMETI, a Name given to certain Monks in the antient Church, who flouriſh'd particularly in the Eaſt; and who were thus called, becauſe they had Divine Service continually, and without Interruption, perform'd in their Churches.

The Word is *Greek*, ακοιμητ⊙, form'd of the Privative α, and κοιμαω, *I lay down*, or *ſleep in Bed*.

The *Acoemetes* divided themſelves into three Bodies, each of which officiated in their Turn, and reliev'd the others: So that their Churches were never ſilent, Night nor Day.

Nicephorus mentions one *Marcellus* as the Founder of the *Acoemetes*; whom ſome modern Writers call, *Marcellus* of *Apamea*.—In *Bollandus* we have "the Life of St. *Alexan-*"*der*, Inſtitutor of the *Acoemetes*, who were unknown before "him," ſays the Author of the Life, a Diſciple of St. *Alexander*. This Saint, according to *Bollandus*, lived about the Year 430. He was ſucceeded by *Marcellus*.

The *Stylites* were alſo called *Acoemetes*. See STYLITES.

There are a kind of *Acoemetes* ſtill ſubſiſting in the *Romiſh* Church; the Religious *of the Holy Sacrament*, coming properly enough under that Denomination; in regard they keep up a perpetual Adoration, ſome or other of them praying before the Sacrament, Day and Night. See SACRAMENT.

ACOLYTHES, ACOLYTHI, in Antiquity, a Term applied to ſuch Perſons as were *ſteady and immoveable in their Reſolutions*.

For this Reaſon, the Stoicks were called *Acolythes*; in regard, nothing could ſhake or alter their Reſolves. See STOICK.

Among Eccleſiaſtical Writers, the Term *Acolythes* is peculiarly applied to thoſe young People, who, in the primitive Times, aſpir'd to the Miniſtry; and for that Purpoſe, continually attended the Biſhops: Which Aſſiduity occaſion'd their being called *Acolythes*.

In the *Romiſh* Church, there are a ſort of *Acolythi* yet in being; but their Functions are different from thoſe of their firſt Inſtitution. They are ſuch as have only receiv'd the firſt of the four leſs Orders, whoſe Buſineſs is to light the Tapers, carry the Candleſticks and the Incenſe-Pot, to prepare the Wine and Water, *&c.* See ORDER, *&c.*

At *Rome* there were three Kinds of *Acolythes*, viz. *Palatini*, who waited on the Pope; *Stationarii*, who ſerved in Churches; and *Regionarii*, who, together with the Deacons, officiated in other Parts of the City. See STATIONARII, DEACONS, *&c.*

The Word is derived from the *Greek* ακολυθεῖν, *to follow*.

ACONITE, ACONITUM, a Plant, famous among the Antients, both in quality of a Poiſon, and a Remedy. See POISON.

The antient Botaniſts give the Name *Aconite* to ſeveral Plants of different Kinds.—One Species they called *Lycoctonum*, Λυκοκτόνον, *Wolfs-bane*; or Κυνοκτόνον, *Dogs-bane*; from its Effects: Of this they had likewiſe their Diviſions; as the *Napellus*, thus called *à Napo*, becauſe its Root reſembled the Turnip-Kind: another called *Anthora*, *Anti-Thora*, *q. d.* good againſt Diſorders of the *Thora*.

The whole Claſs of *Aconites* is held extreamly cauſtick and acrimonious, in Virtue whereof they produce mortal Convulſions, or Inflammations which end in Mortification; with which the Antients were ſo ſurprized, that they were afraid to touch 'em: And hence a thouſand ſuperſtitious Precautions about the manner of gathering them.—Their Roots are held of ſervice in Malignant Fevers; and accordingly make an Ingredient in ſome Orvietans, and other Alexipharmic Compoſitions.

Aconite is ſaid to take its Name from *Acona*, a City in *Bithynia*, where it grows in great abundance: tho it is alſo found

found in other Places, particularly the Mountains about *Trent*. Some derive its Name from ακρον, *a Rock naked or bare of Earth*, whereon the Plant readily thrives.—— It was alſo called μυοκτόνον; as killing Mice with its bare ſmell, according to *Pliny*.—The Poets feign it to have aroſe from the Foam of the Dog *Cerberus*, when *Hercules* drag'd him out of Hell.

The Antients uſed this Plant againſt the Sting of the Scorpion, which is ſaid to be deaden'd by the Touch of the *Aconite*, and reſtor'd to its Vigour by that of Hellebore.——*Theophraſtus* relates, that they had a way of preparing it in thoſe Days, ſo as it ſhould only deſtroy at the End of one or two Years.—Arrows dipt in its Juice prove mortal wherever they wound.—The *Indians* uſe *Aconite*, corrected in Cows Urine, with good ſucceſs againſt Fevers. *Letr. Edif. & Cur.*

ACONTIAS, a Name uſed by ſome Authors, for a ſort of Comet, or Meteor, whoſe Head appears round or oblong, and its Tail very long and ſlender, reſembling a Javelin. See COMET, and METEOR.

It takes its Denomination from a Serpent thus call'd, frequent in *Calabria* and *Sicily*; where it is alſo named *Saetrone*, by reaſon of its flying at Paſſengers like an Arrow; in order to which, it winds it ſelf up a Tree, to ſpring thence with the greater Violence. For the like Reaſon, the *Greeks* call it *Acontias*, of ακοντιον, *a Dart*, or *Arrow*.

ACOPUM, a Fomentation, of warm and emollient things, to allay the Senſe of Wearineſs, occaſion'd by too violent Labour or Exerciſe. See FOMENTATION, BATHING, &c.

The Word is compounded of the Privative α, and κοπος, *labor*.

ACORN, *Glans*. See FRUIT, SEED, SOWING, &c.

ACORUS, a Medicinal Plant, of the Ruſh or Flag Kind; frequently confounded by the Antients, and alſo by the modern Apothecaries, with the *Calamus Odoratus*. See CALAMUS.

There are two Species of *Acorus*; the *Verus*, or *true*, and the *falſe*.—They are diſtinguiſh'd by this, that from the middle of ſome of the Leaves of the former, there ariſes a longiſh Cluſter of an Infinity of little Flowers, the Thickneſs of the little Finger, and reſembling Macropiper, or Long Pepper.—The *falſe Acorus* is the common Sword-graſs.

'Tis only the Root of the *Acorus* that is uſed in Phyſick; and 'tis this we uſually call *Acorus*.—The *true* is brought from *Lithuania* and *Tartary*: It is knotty, reddiſh without, and white within; as thick as the little Finger, and half a Foot long.

It is ſpicy and bitteriſh; and uſed in Cephalic and Stomachic Compoſitions.—It is alſo an Ingredient in the *Theriaca Andromachi*.

Some rank Galangals as a Species of *Acorus*. See GALANGALS.

ACOUSTICKS, ACOUSTICA, the Doctrine or Theory of Sounds. See SOUND.

Acouſticks is what we otherwiſe call *Phonicks*. See PHONICKS.

ACOUSTICKS, or ACOUSTICA, or ACOUSTIC *Medicines*, are Remedies againſt the Imperfections and Diſorders of the Ear; or of the Senſe of Hearing. See EAR, and HEARING.

The Word is form'd of the *Greek* Ακοη, *Hearing*.

ACOUSTIC is particularly applied to *Inſtruments* uſed by thoſe who are ſlow of Hearing; to ſupply that Defect.

Dr. *Hook* ſays, it is by no means impoſſible to hear the loweſt Whiſper that can be made, to the Diſtance of a Furlong; and that he knows a way of hearing any Perſon ſpeak thro' a Stone-Wall three Foot thick. See WHISPERING-*Place*, and ECHO.

ACOUSTIC *Nerve*. See AUDITORY *Nerve*.

ACQUEST, or ACQUIST, is underſtood, in a legal Senſe, of Goods, or Effects, immoveable, not deſcended or held by Inheritance; but acquired, either by Purchaſe or Donation. See GOODS.

The Word is *French*; form'd of the Verb *Acquerir*, to acquire.—The *French* Laws make a deal of difference between *Acqueſts*, and hereditary Effects. The Civil Law allows none. See HEIR, HEREDITARY, &c.

The Word is alſo popularly uſed for Conqueſt, or Places acquired by the Sword.

ACQUIETANDIS *Plegiis*, a Writ lying for a Surety againſt the Creditor that refuſes to acquit him after the Debt is paid. See SURETY.

ACQUIETARE, in our antient Law-Books, ſignifies to pay the Debts of a Perſon deceas'd; as the Heir thoſe of his Father, &c.

ACQUISITION, properly ſignifies an *Acqueſt*. See ACQUEST.

ACQUITTAL, a Diſcharge, Deliverance, or ſetting free of a Perſon from the Guilt or Suſpicion of an Offence.—— The like Diſcharge in Civil Concerns, is called an *Acquittance*. See ACQUITTANCE.

Acquittal is of two Kinds; *in Law*, and *in Fact*.—When two are appealed or indicted of Felony, one as Principal the other as Acceſſory; the Principal being diſcharg'd, the Acceſſory is by Conſequence alſo freed: In which Caſe, as the Acceſſory is acquitted *by Law*, ſo is the Principal *in Fact*. See ACCESSORY.

ACQUITTAL is alſo uſed, where there is a Lord Meſn, and Tenant, and the Tenant holds Lands of the Meſn, and the Meſn holds over of the Lord Paramount: Here, the Meſn ought to *acquit* the Tenant of all Services claimed by any other for the ſame Lands; the Tenant being to do Service to the Meſn only, and not to divers Lords for one Parcel of Land. See MESN, and SERVICE.

ACQUITTANCE, or QUITTANCE, a Releaſe, or Diſcharge in Writing, of a Sum of Money, or other Duty which ought to be paid or done. See RECEIPT.

The Verb *Acquit*, the Participle *Acquitted*, and the Noun *Acquittal*, do alſo ſignify a Diſcharge from an Offence objected.—In this Senſe, we meet with *Acquitted* by Proclamation. See ACQUITTAL.

ACRASIA, ακρασια, is uſed by ſome Writers in Phyſick, for the Exceſs or Predominancy of one Quality above another; either in a Mixture, or in the Conſtitution of a human Body. See CRASIS, TEMPERAMENT, CONSTITUTION, &c.

ACRE, a Quantity of Land, containing four ſquare Roods, or 160 ſquare Poles. See MEASURE; ſee alſo ROOD, and PERCH.

By a Statute of 31 *Eliz.* it is ordain'd, That if any Man erect a new Cottage, he ſhall add four *Acres* of Land to it. See COTTAGE.

To find the Quantity of Acres *in a Piece of Ground*, &c. See SURVEYING.

The Word is form'd from the Saxon *Acher*, or *Acker*, Field; of the Latin *Ager*. Tho *Salmaſius* derives it from *Acra*, uſed for *Akena*, a Land-Meaſure among the Antients, containing 10 Feet.

The Kingdom of *England* contains by Computation 39038500 *Acres*: The United Provinces 4382000, &c. See POLITICAL *Arithmetick*.

ACREME, a Term ſometimes uſed in antient Law-Books, for ten Acres. See ACRE.

ACRIBEIA, a Term purely *Greek*, Ακριβεια, literally denoting an exquiſite or delicate Accuracy; ſometimes uſed in our Language for want of a Word of equal Significancy.

ACRIDOPHAGI, in the antient Geography, a Nation of People ſaid to feed on Locuſts.—The Word is compounded of the *Greek* ακρις, *Locuſt*, and φαγω, *I eat*.

The *Acridophagi* are repreſented as a People of *Ethiopia*, inhabiting near the Deſarts.—In the Spring they made Proviſion of a large kind of Locuſts, which they ſalted, and kept for their ſtanding Food all the Year: They lived to forty Years of Age, then died of a ſort of winged Worms generated in their Bodies. See St. *Jerom* againſt *Jovinian*, L. II. and on St. *John*, C. 4. *Diodor. Sicul.* L. III. c. 3. and 29; and *Strabo*, L. XVI.—*Pliny* alſo ſpeaks of *Acridophagi* in *Parthia*; and St. *Jerom* in *Libya*.

Tho the Circumſtances of theſe People be fabulous; yet may the *Acridophagia* be true; and to this Day they eat Locuſts in ſome Parts of the Eaſt.—And hence, St. *John* the Baptiſt is ſaid to have lived on Locuſts, ακριδες, and wild Honey, *Matt.* c. 3. v. 4. See HONEY.

Yet is the rendering of ακριδες by *Locuſts*, as the *Engliſh* Tranſlators have done, much controverted.—*Iſidore* of *Peluſium*, in his 132d Epiſtle, ſpeaking of this Food of St. *John*, ſays, They were not Animals, but the Tops of Herbs; and even charges thoſe who underſtood 'em otherwiſe of Ignorance: But St. *Auguſtin*, *Beda*, *Ludolphus*, and others, are of a different Sentiment. Accordingly, the Jeſuits of *Antwerp* reject with Contempt the Opinion of the *Ebionites*, who for ακριδες put εγκριδες, *a delicious Diet prepared of Honey and Oil*; that of ſome other Innovators, who read ἀχαριδες, or χαριδες, *Sea-Crabs*; and that of *Beza*, who reads ἀχραδες, *wild Pears*.

ACRIMONY, *Aſperity* or *Sharpneſs*, expreſſes a Quality in Bodies, by which they corrode, deſtroy, or diſſolve others. See CORROSION, &c.

Salts are only cauſtick in Virtue of their *Acrimony*. See SALT, CAUSTIC, &c.——The *Acrimony* of the Bile is ſuppoſed the Cauſe of divers Diſorders. See BILE.—A Catarrh is a Defluxion of *Acrimonious* Humour. See CATARRH, DEFLUXION, RHUME, &c.

ACROATICKS, a Name given to *Ariſtotle*'s Lectures in the more difficult and nice Parts of Philoſophy; to which none but Scholars and Friends were admitted. See ARISTOTELIAN, &c.

ACROMION, ACROMIUM, in Anatomy, the upper Proceſs of the *Omoplata*, or Shoulder-Bone. See OMOPLATA.

The Word is derived from ακρος, *ſummus*, and ωμος, *Humerus*, *q.d.* the Extremity of the Shoulder; and not from Anchor, on account of any reſemblance in Figure which the *Acro-*

mion bears to an Anchor, as *Dionis* has imagin'd.

Some have thought the *Acromion* to be of a Nature different from that of other Bones; in regard, during Infancy, it appears to be no more than a Cartilage, which offifies by little and little, and about the Age of twenty Years becomes hard and firm, like a common Bone. See BONE, and OSSIFYING.

ACROSPIRE, in Natural Hiſtory, *&c.* the ſame with *Plumule*. See PLUMULE; ſee alſo ACROSPIRED.

ACROSPIRED, is uſed in reſpect of Barley; which, in the Operation of making Malt, is apt, after *coming*, or ſprouting at the lower, or Root-End, to become *Acroſpired*, *i.e.* to ſprout alſo at the upper, or Blade-End. See MALT.

ACROSTICK, a kind of Poetical Compoſition, the Verſes whereof are diſpoſed in ſuch manner, as that the initial Letters make up ſome Perſon's Name, Title, or a particular Motto. See POEM, and POETRY.

The Word is derived from the *Greek* ἄκρος, *ſummus*, that which is at one of the Extremes, and στίχος, *Verſus*.

There are alſo *Acroſticks*, where the Name or Title is in the middle, or ſome other Part of the Verſe.—And others which go backwards; beginning with the firſt Letter of the laſt Verſe, and proceeding upwards.

Some Refiners in this trifling way, have even gone to *Pentacroſticks*; where the Name is to be repeated five times. See PENTACROSTICK.

The Name *Acroſticks* is alſo applied by ſome Authors to two antient Epigrams in the firſt Book of the *Anthology*; the one in honour of *Bacchus*, the other of *Apollo*: each conſiſts of 25 Verſes; the firſt whereof is the Propoſition or Argument of the whole, and the other 24 compoſed of four Epithets, beginning each with the ſame Letter; and thus following in the Order of the 24 Verſes of the *Greek* Alphabet: So that the firſt of the 24 Letters comprehends four Epithets beginning with α; the ſecond as many, with β; and ſo of the reſt, to ω; which makes 96 Epithets for each God. See EPIGRAM.

ACROTERIA, or ACROTERS, in Architecture, little Pedeſtals, uſually without Baſes, placed at the Middle, and at the two Extremes of Frontiſpieces, or Pediments; and ſerving to ſupport Statues. See PEDESTAL, and STATUE.

Thoſe at the Extremes ought to be half the Height of the Tympanum; and that in the Middle, according to *Vitruvius*, one eighth Part more. See PEDIMENT, *&c.*

ACROTERIA ſometimes alſo ſignify Figures, whether of Stone or Metal, placed as Ornaments, or Crownings, on the Tops of Temples, or other Buildings. See CROWNING.

Sometimes it alſo denotes thoſe ſharp Pinacles, or ſpiry Battlements, which ſtand in ranges about flat Buildings, with Rails and Balluſters. See PINNACLE, and BATTLEMENT.

The Word, in its original *Greek*, ſignifies the Extremity of any Body; as the Tip of a Rock, *&c.*

ACT, ACTUS, in Phyſicks, an effective Exerciſe or Application of ſome Power, or Faculty. See ACTION.

In this Senſe, the Word *Act*, ſtands oppoſed to *Power*, *Potentia*, which is the Capacity of *acting*. See POWER, and POTENTIA.

Tho the Word *Act*, properly and primarily, be only applicable where the Power might exiſt without being drawn forth into *Act*; yet the Schoolmen extend it further; defining it by the Preſence of any Power or Perfection, even tho it could not be abſent.—In this Senſe, God himſelf is ſaid to be a moſt pure *Act*; in regard his Perfections are always and neceſſarily preſent. And thus, Form is call'd an *Act*; inaſmuch as the Preſence hereof compleats the Power and Perfection of Matter.—Form, ſay ſome, is Matter reduced into *Act*. See MATTER, and FORM.

Even Exiſtence is termed an *Act*; by reaſon when this is given a Being, nothing further is wanted. See PERFECTION, and EXISTENCE.

In this Senſe, the *Greeks* call *Act*, ἐντελέχεια, a Term denoting an actual Poſſeſſion of Perfection, by the *Latins* render'd *Perfectihabia*. See ENTELECHEIA.

Metaphyſicians give various Diviſions of *Act*, *viz.* into *Infinite*, as the *Act* of Creating; and *Finite*, as the *Act* of Moving.—*Tranſient*, or thoſe exercis'd in other Beings, as Heating; and *Immanent*, which remain in their own Subject, as Thinking.—*Elicit*, and *Commanded*, &c. See ELICIT, *&c.*

ACT, in Logick, is particularly underſtood of an Operation of the Mind. See OPERATION.

Thus, to Diſcern and Examine, are *Acts* of the Underſtanding: To Judge and Affirm, are *Acts* of the Will. See UNDERSTANDING, WILL, LIBERTY, JUDGMENT, *&c.*

There are Voluntary *Acts*, and Spontaneous ones which ſeem produced without the Privity or Participation of the Soul. See VOLUNTARY, and SPONTANEOUS.

ACT, in a Legal Senſe, is an Inſtrument, or other Matter in Writing; of uſe to declare or juſtify the Truth of a thing.——In this Senſe, Records, Decrees, Sentences, Reports, Certificates, *&c.* are call'd *Acts*.—Authentick *Acts*; Solemn *Acts*, &c.

ACTS, in the Plural, denote the publick Deliberations, and Reſolutions of an Aſſembly, Senate, Council, Convocation, or the like; enter'd in a Regiſter. See REGISTER, *&c.*

Acts of Parliament are particularly denominated *Statutes*. See PARLIAMENT, and STATUTE.

The *Acts* of the Royal Society are called *Tranſactions*; thoſe of the Royal Academy of Sciences at *Paris*, *Memoires*: Thoſe of the Societies of *Berlin*, *Leipſic*, &c. ſimply *Acts*, *Acta Eruditorum*, &c. See SOCIETY, ACADEMY, TRANSACTION, JOURNAL, *&c.*

The *Acts* of the antient Councils were called *Canons*. See CANON.

The Edicts and Declarations of the Council of the *Roman* Emperors, were called *Conſiſtory Acts*, *Acta Conſiſtorii*.

Clerk of the ACTS, is an Officer of the Navy. See CLERK, and NAVY.

ACTS are alſo Matters of Fact tranſmitted to Poſterity in certain authentick Books, and Memoirs.—In this Senſe, we ſay, the *Acts of the Apoſtles*, *Acts of the Martyrs*, &c.

The *Acts of* Pilate *relating to* Jeſus, is a falſe and ſuppoſititious Relation of our Saviour's Trial before *Pilate*; impiouſly fram'd by the Enemies of Chriſtianity; and fill'd with the blackeſt Blaſphemy.——The Emperor *Maximin*, by a ſolemn Edict, order'd it to be ſent into all the Provinces of the Empire; and enjoin'd the Schoolmaſters to teach and explain it to their Scholars, and make 'em learn it by heart.

The Piece was wrote with ſo much Careleſſneſs or Ignorance, that our Saviour's Death was therein referred to the IVth Conſulate of *Tiberius*, that is, to the VIIth of his Empire; which is eleven Years before our Saviour's Paſſion, and five before *Pilate* was made Governor of *Judea*. See *Euſebius*, L. IX. c. 4. and 6. *Ruffin.* L. I. c. 5, *&c.*

The true and genuine *Acts* of *Pilate*, were ſent by him to *Tiberius*, who reported 'em to the Senate; but were rejected by that Aſſembly, becauſe not immediately addreſs'd to them: as is teſtified by *Tertullian*, in his *Apol.* C. 5, and 20, 21. *Euſeb. Hiſt.* L. II. c. 2. *Juſtin Martyr*, &c.

There are alſo ſpurious *Acts of the Apoſtles* compoſed in *Hebrew* by one *Abdias*; tranſlated into *Greek* by his Diſciple *Eutropius*; and thence into *Latin*, by *Julius Africanus*. *Wolffgang Lazius* publiſh'd the Piece in 1551, from a Manuſcript near 700 Years old; ſuppoſing it an authentick Work.—A Diſciple of *Manes*, named *Leucius*, or *Seleucus*, is alſo ſaid to have compoſed *Acts of the Apoſtles*, towards the Cloſe of the IIId Century.

There have formerly appear'd numerous other Pieces in this Way; as, the *Acts of St.* Thomas, the *Acts of St.* Andrew, the *Acts of St.* Paul *and* Thecla, the *Acts of St.* Matthew, *Acts of St.* Peter, *Acts of St.* John, *Acts of St.* Philip; all which have been declared Apocryphal.—The laſt were the Production of the Heretick *Leucius*: Thoſe of St. *Thecla* were the Work of a Prieſt in *Aſia Minor*, whom St. *John* degraded for his Offence.

ACT, in the Univerſities, is a Theſis maintain'd in publick, by a Candidate for a Degree; or, to ſhew the Capacity and Proficiency of a Student. See THESIS, DEGREE, *&c.*

The Candidates for the Degree of Batchelor and Maſter of Arts, are to hold *Philoſophy Acts*; thoſe for Batchelor of Divinity are to keep *Divinity Acts*, &c. See UNIVERSITY, DOCTOR, BATCHELOR, *&c.*

At *Oxford*, the Time when the Maſters or Doctors compleat their Degrees, is alſo called the *Act*; which is held with great Solemnity: At *Cambridge* they call it *Commencement*. See COMMENCEMENT.

ACT *of Faith*, or AUTO *de Fe*, is a ſolemn Day held by the Inquiſition, for the Puniſhment of Hereticks, and the Abſolution of the Innocent Accuſed. See INQUISITION.

They uſually contrive the *Auto* to fall on ſome great Feſtival; that the Execution may paſs with the more Awe and Regard.

The Criminals are firſt led to Church; where their Sentence is read to 'em, either of Condemnation or Abſolution. —Thoſe condemned to Death, are here ſurrender'd up by the Inquiſitors to the Secular Power, with an earneſt Intreaty that no Blood may be ſhed.—If they perſiſt in their ſuppoſed Errors, they are burnt alive.

ACTS, in Poetry, are certain Diviſions, or principal Parts in a Dramatic Poem, contrived to give a Reſpite or Breathing-time, both to the Actors and Spectators. See DRAMA, TRAGEDY, and COMEDY.

In the Interval between the *Acts*, the Theatre remains empty, and without any Action viſible to the Spectators; tho 'tis ſuppoſed all the while there is one paſſing out of ſight. See ACTION.

'Tis not however, purely for the ſake of the Reſpite, that theſe *Acts* are obſerv'd; but to give Affairs a greater degree of Probability, and render the Intrigue more affecting. For the Spectator who ſees the Action prepared that is to paſs in the Interval, cannot forbear acting, in his Imagination,

the Part of the abſent Actors; by which means, he is the more agreeably ſurprized, when a new *Act* coming upon the Stage, he ſees the Effects of that Action, which before he could but gueſs at. See PROBABILITY, *&c.*

To this it may be added, that Authors contrive to have the moſt dry and difficult Parts of the Drama tranſacted between the *Acts*; that the Spectators may have no Notion of theſe, excepting what their Fancy preſents them with at a diſtance; and that nothing may appear upon the Stage, but what is natural, probable, and entertaining.

The antient *Greek* Poets were unacquainted with this Diviſion of a Play into *Acts*; tho their Epiſodes or Chorus's ſerv'd almoſt the ſame Purpoſe. See EPISODE, and CHORUS.

'Tis true, they conſider'd their Pieces as conſiſting of certain Parts or Diviſions, which they called *Protaſis*, *Epitaſis*, *Cataſtaſis*, and *Cataſtrophe*: But there were no real Diviſions or Interruptions anſwering to 'em in the Repreſentation. See PROTASIS, EPITASIS, *&c.*

'Twas the *Romans* who firſt introduced *Acts* into the Drama; and in *Horace*'s Time, the Five *Acts* were grown into a Law, as appears by the Verſe,

Neu brevior quinto, neu ſit productior, actu.

This Law ſtands unrepeal'd to this Day; tho it ſeems to draw its Force from the Authority of *Horace*, rather than that of Reaſon or Nature.—All Plays are held irregular that have either more or fewer. See FARCE.

Some indeed have aſſerted, that every juſt Action conſiſts of five diſtinct Parts; and have undertaken to mark out the preciſe Share of the Action, which each of the five *Acts* ought to bear.

The firſt, ſay they, is to propoſe the Matter or Argument of the Fable, and to ſhew the principal Characters.—The ſecond to bring the Affair or Buſineſs upon the Carpet.—The third to furniſh Obſtacles and Difficulties.—The fourth either points a Remedy for thoſe Difficulties, or finds new in the Attempt.—The fifth puts an end to all by a Diſcovery.

Be this as it will, 'tis certain, on the Principles of that great Maſter of the Drama, *Ariſtotle*, we may have a juſt and regular Play, tho only divided into three *Acts*.

The *Acts* are ſubdivided into *Scenes*. See SCENE.

ACTIA, in Antiquity, ACTIAN *Games*, *Ludi* ACTIACI, ſolemn Games, inſtituted, or according to ſome only reſtored, by *Auguſtus*, in memory of the Victory over *Anthony* at *Actium*. See GAME.

Some will have 'em held every third Year; but the more common Opinion, is that they only return'd every fifth, and were celebrated in honour of *Apollo*.

By the way, it is a groſs Overſight in ſome Authors, to imagine that *Virgil* inſinuates 'em to have been inſtituted by *Æneas*; from that Paſſage *Æn.* III. v. 280.

Actiaque Iliacis celebramus littora Ludis.

'Tis true, the Poet there alludes to the *Actian* Games; but he only does it by way of Compliment to *Auguſtus*, to attribute that to the Hero from whom he deſcended, which was done by the Emperor himſelf: As is obſerved by *Servius*.

ACTIAN *Years*, *Anni* ACTIACI, were a Series of Years, commencing from the Æra of the Battle of *Actium*; called the Æra of *Auguſtus*. See YEAR, and EPOCHA.

ACTION, ACTIO, in Phyſicks, the Production of an *Act*, or the manner of an *active* Cauſe. See ACT, and ACTIVE.

The Idea of *Action* is ſo familiar to us, that a Definition may as eaſily obſcure as explain it.——Some Schoolmen, however, attempt to expreſs its Nature by "A Manifeſta-"tion of the Power or Energy of a Subſtance; made either "within, or without it."——Thus, ſay they, when the Mind *acts*, what does it more, than perceive a vital Power exerting it ſelf; as, in reality, the ſeveral *Actions* of the Mind, are no other than ſo many Indications of its Vitality.

'Tis a Point controverted among the Schoolmen, whether or no *Action*, thus taken, be a thing diſtinct both from the Agent, and the Term or Effect.—The Modiſts ſtand for the Affirmative, and the Nominaliſts aſſert the Negative.

Theſe latter obſerve, that the *Action* may be conſider'd two ways, Entitatively and Connotatively.—*Action Entitatively* taken, is what we call a Cauſe, or what may act: *Action Connotatively* conſider'd, is the ſame Cauſe, only conſider'd as acting, or connoting the Effect it produces. Now, ſay they, a Cauſe may be without an *Action*, connotatively taken, *i. e.* may be conſider'd as not producing an Effect; but cannot be without it entitatively, for that would be to be without it ſelf. Hence they conclude, that the Cauſe differs from the *Action* connotatively, not entitatively taken; and the Agent is the Cauſe of the *Action*, conſider'd connotatively, not entitatively.

Actions are divided, with reſpect to their Principle, into *Univocal*, where the Effect is of the ſame Kind with the Cauſe; as the Production of Man by Man: and *Equivocal*, where it is different; as the Production of Frogs by the Sun. See UNIVOCAL, and EQUIVOCAL; ſee alſo GENERATION, *&c.*——And again, into *Vital*; as Nutrition, Reſpiration, the *Action* of the Heart, *&c.* See NUTRITION, RESPIRATION, HEART, *&c.*——And *not Vital*; as Heating. See VITAL, HEAT, *&c.*

With reſpect to their Subject, *Actions* are divided into *Immanent*; which are receiv'd within the Agent that produced them: as are all vital Actions, Cogitation, *&c.* See THINKING, WILLING, *&c.*——And *Tranſient*, which paſs into another. See TRANSIENT, *&c.*

In reſpect of Duration, *Actions* are again divided into *Inſtantaneous*, where the whole Effect is produced in the ſame Moment; as the Creation of Light: And *Succeſſive*, where the Effect is produced by degrees; as Corruption, Fermentation, Putrefaction, Diſſolution, *&c.* See FERMENTATION, PUTREFACTION, DISSOLUTION, *&c.*

The *Carteſians* reſolve all Phyſical *Action* into Metaphyſical: Bodies, according to them, do not *act* on one another; the *Action* all comes immediately from the Deity: The Motions of Bodies, which ſeem to be the Cauſe, being only the Occaſions, thereof. See OCCASIONAL *Cauſe*.

'Tis one of the Laws of Nature, that *Action* and *Reaction* are always equal, and contrary to each other. See REACTION, and NATURE.

For the Actions of Powers, &c. See POWER, WEIGHT, MOTION, RESISTANCE, FRICTION, *&c.*

For the Laws of the Action of Fluids, &c. See FLUID, SPECIFIC *Gravity*, &c.

ACTION, in Ethicks, or *Moral* ACTION, is a Voluntary Motion, of a Creature capable of diſtinguiſhing Good and Evil; whoſe Effect, therefore, may be juſtly imputed to the Agent. See MORAL.

A Moral *Action* may be more fully defined to be whatever a Man, conſider'd as endued with the Powers of Underſtanding and Willing, and with reſpect to the End he ought to aim at, and the Rule he is to regard in acting; reſolves, thinks, does, or even omits to do; in ſuch manner as to become accountable for what is thus done or omitted, and the Conſequences thereof. See OFFICE.

The Foundation, then, of the Morality of *Actions*, is, that they are done Knowingly and Voluntarily. See UNDERSTANDING, and WILL.

All Moral *Actions* may be divided, with reſpect to the Rule, into *Good* and *Evil*. See GOOD, and EVIL.

ACTION, in Oratory, is an Accommodation of the Perſon of the Orator to his Subject; or, a Management of the Voice and Geſture, ſuited to the Matter ſpoken or deliver'd. See ORATORY.

Action makes one of the great Branches or Diviſions of Rhetorick, as uſually taught. See RHETORICK.

The Antients uſually call it *Pronunciation*. See PRONUNCIATION.

Action is a collateral or ſecondary Method of expreſſing our Ideas; and is ſuſceptible of a kind of Eloquence as well as the primary.—It is an Addreſs to our external Senſes; which it endeavours to move, and bring into its Party, by a well-concerted Motion and Modulation, at the ſame time that the Reaſon and Underſtanding are attack'd by force of Argument. Accordingly, *Tully* very pertinently calls it *Sermo Corporis*, the Diſcourſe of the Body; and *Corporis Eloquentia*, the Eloquence of the Body.—The *Roman* Mimes and Pantomimes, we read, had ſuch a Copia in this kind, ſuch a Compaſs even of mute *Action*, that Voice and Language ſeem'd uſeleſs to 'em: They could make themſelves underſtood to People of all Nations; and *Roſcius*, the Comedian, is particularly fam'd, as being able to expreſs any Sentence by his Geſtures, as ſignificantly and variouſly as *Cicero* with all his Oratory. See MIME, PANTOMIME, *&c.*

Quintilian gives us a Syſtem of the Rules of *Action*; taken not only from the Writings of the antient Orators, but from the beſt Examples of the *Forum*. See his *Inſtitut. Orat.* L. XI. c. 3. *de Pronuntiatione*.

The Force and Effect of *Action*, at leaſt as practis'd among the Antients, appears to be very great; ſcarce any thing was able to withſtand it. What we uſually attribute to Eloquence, was really the Effect of the *Action* only, as ſome of the greateſt Maſters in that way have frankly acknowledg'd.—*Demoſthenes* expreſly calls it, "the Begin-"ning, the Middle, and the End of the Orator's Office;" and *Cicero* profeſſes, that "it does not ſo much matter "what the Orator ſays, as how he ſays it." *Neque tantum refert qualia ſunt quæ dicas, quam quomodo dicantur.* De Orat.—Hence, the great *Greek* Orator is repreſented as practiſing and adjuſting his *Action* in the Glaſs: *Demoſthenes grande quoddam intuens ſpeculum componere* Actionem *ſolebat. Quintil.*

Every Part of the Body is by them liſted into the Service, and marſhall'd in its proper Place: The Hand, the Eye, Head, Neck, Sides, Cheeks, Noſtrils, Lips, Arms, Shoulders, *&c.*——*Præcipuum in Actione*, Caput *eſt.*——*Cum geſtu concordet*, & Lateribus *obſequatur.* Oculi, Lachrymæ, Super-

Supercilium, Genæ, Rubor.—*Non Manus ſolum ſed &* Nutus.—*Dominetur autem maxime* Vultus.—*Quin & in Vultu* Pallor.—Nares, Labia—Dentes, Cervix, Humeri, Brachia. ——Manus *vero, ſine quibus trunca eſſet Actio.*—Quintil. *ubi ſupra.*

The Hand is Maſter of a whole Language, or ſet of Signs, it ſelf.—Even every Finger is laid down by the Antients as having its diſtinct Office; and hence the different Names they ſtill bear, *Pollex*, *Index*, &c. See FINGER, *&c.*

By ſuch a Multitude of Rules and Obſervances, 'tis no wonder ſome of the Orators of thoſe, as of our Days, were perverted more than profited.—Rules only tend to perfect the *Action*, which muſt have its Origin from another Source, *viz.* Nature, and good Senſe: Where thoſe are deficient, Rules will ſooner make an Ape than an Actor. *Eloquentiæ*, ſays *Cicero*, *ſicut & reliquarum rerum fundamentum, ſapientia.*—And hence we find the great Maſters abovemention'd continually ſoftning, and even unſaying, and calling People off from the intemperate uſe of their own Rules.—*Nullæ argutiæ Digitorum, Non ad numerum Articulum Cadens.* *Cicero* even aſſures us, he was a whole Year in learning to keep his Hand within his Gown. *Pro Cæl.*—The ſame Author, recommending a Motion of the whole Body, ſays, the Orator ſhould make more uſe of his Trunk than of his Hand; *Trunco magis toto ſe ipſe moderans, & virili laterum flexione.* Brut.

Walking, *inceſſus*, is ſometimes recommended as highly deſerving to be cultivated; but *Cicero* will ſcarce allow it to be uſed at all. It ſeems, ſome of the active Orators of that Time had render'd it ridiculous; one of whom was pleaſantly aſk'd by *Flavius Virginius*, *How many Miles he had declamed?* *Caſſius Severus*, when he perceiv'd an Orator given to walking, uſed to cry out for a Line to be drawn round him, to keep him within Bounds.—The Orator *Tityus* improved Walking into a ſort of Dancing; and 'tis hence, as we are told by *Quintilian*, that the Dance *Tityus* took its Name.——*Junius* rallied his Father *Curio*'s inceſſant Libration, or toſſing from one ſide to another, by aſking *who that was, haranguing in a Ferry-boat?* And to the like Effect was that of *C. Sicinius*, when *Curio* having ſpoke with his uſual Buſtle near *Octavius*, who by reaſon of his Infirmities, had divers Liniments and Plaiſters on his Limbs; *You can never be enough thankful*, Octavius, *to your good Collegue, who has ſaved you this Day from being eaten by the Flies.*——*Demoſthenes*, being naturally apt to be too buſy, and eſpecially with his Shoulders, is ſaid to have reform'd himſelf by ſpeaking in a narrow Pulpitum, and hanging a Spear pointed juſt over his Shoulders; that if in the Heat of his Diſcourſe he ſhould forget himſelf, the Puncture might remind him.

After all, 'tis a Point will bear being controverted, Whether *Action* ought to be practis'd and encourag'd at all? A thing that has ſo much command over Mankind, 'tis certain, muſt be very dangerous; ſince it is as capable of being turn'd to our Diſadvantage, as our Advantage. 'Tis putting a Weapon in the Hands of another, which, if he pleaſes, he may make uſe of to ſubdue and enſlave us: And accordingly, Hiſtory is full of the pernicious Uſes made thereof.—For this Reaſon, Eloquence and *Action* are generally diſcourag'd in the modern Policy; and both the Bar and the Pulpit, are brought to a more frigid way of Delivery.

Perhaps the Foundation of all *Action* may be vicious, and immoral.—Voice and Geſture, we know, will affect Brutes; not as they have Reaſon, but as they have Paſſions: So far as theſe are uſed in a Diſcourſe, therefore, it does not regard an Aſſembly of Men, more than it would a Herd of Quadrupeds: That is, their whole Effort is ſpent not on the Rational Faculties, which are out of the Queſtion, but on the Animal ones, which alone they endeavour to poſſeſs and actuate, independent of Reaſon.—Nay more, our Reaſon and Judgment it ſelf is intended to be byaſs'd and inclined by them; *Action* being only uſed as an indirect way of coming at the Reaſon, where a direct and immediate one was wanting, *i. e.* where the Judgment cannot be taken by the proper means, Argument; it is to be taken indirectly, by Circuition, and Stratagem.

The natural Order of things, then, is here inverted: Our Reaſon, which ſhould go before, and direct our Paſſions, is drag'd after 'em: Inſtead of coolly conſidering, and taking cognizance of things; and according to what we perceive therein, raiſing our ſelves to the Paſſions of Grief, Indignation, or the like: We are attack'd the other way; the Impreſſion is to be carried backwards, by Virtue of the natural Connection there is between the Reaſon and the Paſſions: And thus the Helm, the Principle of our Actions, is taken out of our own Hand, and given to another.

The Caſe is much the ſame here, as in Senſation and Imagination: The natural and regular way of arriving at the Knowledge of Objects, is by Senſe; an Impreſſion begun there is propagated forward to the Imagination, where an Image is produced, ſimilar to that which firſt ſtruck on the Organ.—But the Proceſs is ſometimes inverted; in Hypochondriack, Lunatick, and other delirious Caſes; the Image is firſt excited in the Imagination; and the Impreſſion thereof communicated back to the Organs of Senſe: By which means, Objects are ſeen, which have no Exiſtence. See IMAGINATION.

To ſay no more, *Action* does not tend to give the Mind any Information about the Caſe in hand; is not pretended to convey any Arguments or Ideas which the ſimple Uſe of Language would not convey. But is it not that we ſhould form our Judgments upon? And can any think help us to make a juſt Judgment, beſide what ſome way enlarges our Underſtanding? When *Cicero* made *Cæſar* tremble, turn pale, and let fall his Papers; he did not apprize him of any new Guilt which *Cæſar* did not know of: The Effect had no Dependance on *Cæſar*'s Underſtanding; nor was it any thing more than might have been produced by the unmeaning Sounds of a muſical Inſtrument duly applied. Logs of Timber and Stone have often trembled on the like Occaſions. See PASSION, MUSICK, *&c.*

ACTION, in Poetry, is an Event, either real or imaginary, which makes the Subject of an Epick or Dramatick Poem. See EPIC, TRAGEDY, *&c.*

The *Action* of a Poem coincides with the *Fable* thereof; it being the uſual Practice, not to take any real Tranſaction of Hiſtory, but to feign or invent one; or at leaſt, to alter the Hiſtorical Fact, ſo as to render it in good meaſure fictitious. See FABLE.

F. *Boſſu* has two Chapters, *Of Real Action*, the Recitals whereof are Fables: and of *Feign'd Action* the Recitals whereof are Hiſtorical.

The Criticks lay down four Qualifications, as neceſſary to the Epick and the Tragick *Action*: The firſt, *Unity*; the ſecond, *Integrity*; the third, *Importance*; and the fourth, *Duration.*

For the *Unity* of the *Epic Action*. See UNITY, *&c.*

This Unity is not only to exiſt in the firſt Draught, or Model of the Fable, but in the whole epiſodiz'd *Action*. See EPISODE.

In order to the *Integrity* of the *Action*, 'tis neceſſary, according to *Ariſtotle*, that it have a Beginning, Middle, and End.—If the three Parts of a Whole, ſeem too generally denoted by the Words, Beginning, Middle, and End; *Boſſu* interprets 'em more expreſly, thus; The Cauſes and Deſigns of a Man's doing an *Action*, are the *Beginning*; the Effects of theſe Cauſes, and the Difficulties met withal in the Execution of thoſe Deſigns, are the *Middle* of it; and the unravelling and extricating of thoſe Difficulties, the *End* of the *Action.*

The Poet, ſays *Boſſu*, ſhould ſo begin his *Action*, that, on one hand, nothing ſhould be farther wanting for the Underſtanding of what he afterwards delivers; and, on the other, that what thus begins require after it a neceſſary Conſequence. The End is to be conducted after the like manner, only with the two Conditions tranſpos'd; ſo that nothing be expected after it, and that what ends the Poem be a neceſſary Conſequence of ſomething that went before it. Laſtly, the Beginning is to be join'd to the End by a Middle; which is the Effect of ſomething that went before it, and the Cauſe of what follows.

In the Cauſes of an *Action*, one may obſerve two oppoſite Deſigns; the firſt, and principal, is that of the Hero: The ſecond comprehends all their Deſigns, who oppoſe the Pretenſions of the Hero. Theſe oppoſite Cauſes do alſo produce oppoſite Effects, *viz.* the Endeavours of the Hero to accompliſh his Deſign, and the Endeavours of thoſe who are againſt it.—As the Cauſes and Deſigns are the Beginning of the *Action*; ſo thoſe contrary endeavours are the Middle of it, and form a Difficulty, Plot, or Intrigue, which makes the greateſt Part of the Poem. See INTRIGUE, KNOT, PLOT, *&c.*

The Solution or clearing up of this Difficulty, makes the Unravelling. See UNRAVELLING.

The Unravelling of the Plot or Intrigue, may happen two ways; either with a Diſcovery, or without. See DISCOVERY.

The ſeveral Effects which the Unravelling produces, and the different States to which it reduces the Perſons, divides the *Action* into ſo many Kinds.—If it change the Fortune of the principal Perſon; it is ſaid to be with a *Peripetia*; and the *Action* is denominated *Implex*, or *Mix'd*: If there be no Peripetia, but the Unravelling be a mere paſſing from Trouble to Repoſe; the *Action* is *Simple*. See PERIPETIA; ſee alſo CATASTROPHE.

For the *Duration* of the Epic *Action*, *Ariſtotle* obſerves, it is not ſo limited as that of the Tragic *Action*; the latter is confined to a natural Day; but the Epopea, according to that Critick, has no fix'd Time.—In effect, Tragedy being full of Paſſions, and conſequently of Violence, which cannot be ſuppoſed to laſt long, requires a ſhorter time: and the Epic Poem, being for the Habits which proceed more ſlowly, requires a longer time either for 'em to take hold, or to be rooted up: And hence the Difference between the Epic and Dramatic *Action*, in point of Duration.

Boſſu

Boſſu lays it down as a Rule, that the more vehement the Manners of the principal Perſonages are, the leſs Time ought the *Action* to laſt: Accordingly, the *Action* of the *Iliad*, containing the Anger and Paſſion of *Achilles*, &c. holds but 47 Days; whereas that of the *Odyſſee*, where Prudence is the reigning Quality, laſts eight Years and a half: and that of the *Æneid*, where the prevailing Character of the Hero is Piety and Mildneſs, nearly ſeven Years. See ILIAD, ÆNEID, and ODYSSEE; ſee alſo MANNERS, PASSIONS, &c.

As to the *Importance* of the Epic *Action*, there are two ways of providing for it: The firſt, by the Dignity and Importance of the Perſons. This way alone *Homer* makes uſe of; there being, otherwiſe, nothing great and important in his Models, but what might have happen'd to ordinary Perſons. The ſecond, by the Importance of the *Action* it ſelf; ſuch as the Eſtabliſhment, or Downfal of a Religion, or a State; which is *Virgil*'s *Action*, and in which he has much the Advantage of *Homer*.

Boſſu mentions a third way of making the *Action* important, *viz.* by giving a higher Idea of the Perſonages, than what the Readers conceive of all that is great among Men.—This is done by comparing the Men of the Poem with the Men of the preſent Time. See HERO; ſee alſo CHARACTER, &c.

ACTION is alſo uſed in Painting and Sculpture, for the Poſture of a Figure; or the *Action* it is ſuppoſed to be in; expreſs'd by the Diſpoſition of its Parts, or the Paſſion appearing in its Face. See ATTITUDE, EXPRESSION, &c.

In the Manage, *the* ACTION *of the Mouth*, denotes the Agitation of the Horſe's Tongue and Mandible, or his Champing on the Bit; diſcoverable by a white ropy Foam thereon.——This, with the Maſters, paſſes for a Sign of Health, Vigour, and Mettle.

ACTION, in Law, is defined a Right of demanding, and purſuing in a Court of Judicature, what is any Man's due. See RIGHT, COURT, JUSTICE, &c.

Or, *Action* is any kind of Proceſs which a Perſon enters for the Recovery of his Right. See CAUSE, and PROCESS.

Actions are divided, by *Juſtinian*, into two general Kinds; *Real*, or thoſe againſt the *Thing*; and *Perſonal*, or thoſe againſt the *Perſon*.—For whoever brings an *Action*, either does it againſt one obnoxious to him, in reſpect either of Contract, or of Offence: in which Caſe ariſe *Actions* againſt the Perſon, which require the Party to do, or give ſomething: Or, he does it againſt one not obnoxious, yet with whom a Controverſy is riſen touching ſome Matter; as, if *Caius* hold a Field, which *Julius* claims as his Property, and brings his *Action* for the ſame. See the *Inſtit.* L. IV. Tit. 4. where the principal *Actions* introduc'd by the *Roman* Law, are ſummarily explain'd.

In Common Law, from the two Claſſes of Real and Perſonal *Actions*, ariſes a third, called a *Mix'd Action*; which regards both the Perſon and Thing.

Perſonal ACTION, is that which one Man hath againſt another, on account of a Contract for Money or Goods; or of an Offence done by him, or ſome other Perſon, for whoſe Fact he is anſwerable. See PERSONAL.

Real ACTION, is that whereby the Demandant claims Title to Lands or Tenements, Rents or Commons, in Fee-ſimple, Fee-tail, or for Life. See REAL.

Real Actions are ſubdivided into *Poſſeſſory*, which lie for Lands, &c. of his own Poſſeſſion, or Seiſin; and *Anceſtrel*, of the Seiſin or Poſſeſſion of his Anceſtor. See ANCESTREL.

But *Real Actions*, formerly ſo numerous and conſiderable, as Writs of Rights, of Entry, &c. with their Appendixes, as Grand Cape, Petit Cape, Receipt, View, Aid-Prayer, Voucher, Counter-plea of Voucher, Counter-plea of Warranty, and Recovery of Value, are now much out of uſe; by reaſon of the uſual Admixture of perſonal Matters therewith, which change 'em into *Mix'd Actions*.

Mixed ACTION, is that laid indifferently for the Thing detained, or againſt the Perſon of the Detainer; being thus called, becauſe it has a mixed Reſpect, both to the Thing, and to the Perſon. See MIX'D.

Others better define it, a Suit given by Law to recover the Thing demanded, and Damages for the Wrong done.

Such is Aſſize of Novel Diſſeiſin, which, if the Diſſeiſor make a Feoffment to another, the Diſſeiſee ſhall have againſt the Diſſeiſor, and the Feoffee, or other Ter-tenant; to recover not only the Land, but Damages alſo.—And the like in *Action* of Waſte, *Quare impedit*, &c. See ASSIZE, &c.

ACTIONS are alſo divided into *Civil* and *Penal*.—*Civil Action*, is that which only tends to the Recovery of what, by reaſon of a Contract, or other like Cauſe, is a Man's due.—As, if a Man by *Action* ſeek to recover a Sum of Money formerly lent, &c. See CIVIL.

Penal Action, aims at ſome Penalty upon the Party ſued; either corporal or pecuniary. See PUNISHMENT, MULCT, &c.

Such is the *Action* of *Legis Aquiliæ*, in the Civil Law: And with us, the next Friends of a Man felonioufly ſlain, or wounded, ſhall purſue the Law againſt the Offender, and bring him to condign Puniſhment. See APPEAL.

ACTION is alſo diſtinguiſh'd, as it lies for the Recovery either of the ſimple Value of the Thing challeng'd; or of the double, triple, quadruple, &c.

Thus, a *Decies tantum* lies againſt Embracers; and againſt Jurors that take Money for their Verdict, of either, or both Parties. See DECIES *tantum*, EMBRACERS, &c.

To this Claſs alſo belong all *Actions* on a Statute, that puniſhes an Offence by Reſtitution, or Fine proportionable to the Tranſgreſſion.

ACTION, again, is divided into *Prejudicial*, called alſo *Preparatory*; and *Principal*.

Prejudicial Action, is that which ariſes from ſome Queſtion, or doubtful Point in the Principal one.

As, if a Man ſue his younger Brother, for Land deſcended from his Father; and it be objected, he is a Baſtard: This Point of Baſtardy muſt be tried, before the Cauſe can proceed: Whence the *Action* is termed *Prejudicialis*, *quia prius judicanda*.

ACTION, again, is either *Anceſtrel*, or *Perſonal*.—*Anceſtrel Action*, is that which we have by ſome Right deſcending from our Anceſtor.—*Perſonal Action*, in this Senſe, is that which has its Beginning in and from our ſelves.

There is alſo *Action Anceſtrel Droitural*, and *Action Anceſtrel Poſſeſſory*. Coke's *Inſt.*

ACTION *upon the Caſe*, *Actio ſuper Caſum*, is a general *Action*, given for the Redreſs of a Wrong done any Man without force, and not eſpecially provided for by Law. See CASE.

This, of all others, is now moſt in uſe.—Where there ariſes an Occaſion of Suit, that neither has a fit Name, nor certain Form already preſcrib'd; the Clerks of the Chancery, anciently, conceived a proper Form of *Action* for the thing in queſtion; which the Civilians call *Actionem in factum*, and we, *Action upon the Caſe*.

ACTION *upon the Statute*, *Actio ſuper Statutum*, is an *Action* brought againſt a Man, upon an Offence againſt a Statute whereby an *Action* is given that did not lay before. See STATUTE.

Thus, where one commits Perjury to the Prejudice of another, he who is damaged ſhall have a Writ *upon the Statute*, and a Cauſe accordingly.

ACTION *Popular*, only differs from an *Action upon the Statute*, in that, where the Statute gives the Suit or *Action* to the Party griev'd, or otherwiſe to one ſingle Perſon certain, it is called *Action upon the Statute*; and where the Authority is given by the Statute to every one that will ſo ſue, it is an *Action Popular*. See ACCUSATION.

ACTION is alſo divided into *Perpetual* and *Temporal*.

Perpetual Action, is that whoſe Force is not determin'd by any Period of Time.

Of this Kind were all Civil *Actions* among the antient *Romans*, *viz.* ſuch as aroſe from Laws, Decrees of the Senate, and Conſtitutions of the Emperors; whereas *Actions* granted by the Prætor died within the Year.

We have alſo *Perpetual* and *Temporary Actions* in *England*; all being perpetual, which are not expreſly limited.

So alſo divers Statutes give *Actions*, on Condition they be purſued within the Time preſcribed.—Thus, the Statute of 1 *Edw.* VI. gives *Action* for three Years after the Offences committed, and no longer; and the Statute of 7 *Hen.* VIII. *c.* 3. does the like for four Years; and that of 31 *Eliz. c.* 5. for one Year, and no more.

But, as by the Civil Law no *Actions* were ſo perpetual, but that by Time they might be preſcrib'd againſt; ſo, in our Law, tho *Actions* be called Perpetual, in Compariſon of thoſe that are expreſly limited by Statute; yet is there a Means to preſcribe againſt *Real Actions*, after five Years, by a Fine levied, or a Recovery ſuffer'd. See PRESCRIPTION; ſee alſo FINE, RECOVERY, and LIMITATION *of Aſſize*.

ACTION *of a Writ*, is when a Perſon pleads ſome Matter, whereby he ſhews, that the Plaintiff had no juſt Cauſe to have the Writ he brought, tho it be poſſible he might have another Writ or *Action* for the ſame Matter.—Such Plea is called, *a Plea to the Action of the Writ*.

When by the Plea it appears, that the Plaintiff has no Cauſe of any *Action* for the thing demanded; it is called, *a Plea to the Action*.

ACTION, in Affairs of Commerce, or ACTION *of a Company*, is a Part or Share in the Company's Stock, or Capital, which conſiſts of a Number of ſuch *Actions*. See COMPANY, and CAPITAL.

Thus, the Capital of a Company, which has three hundred *Actions* of a thouſand Livres each; conſiſts of three hundred thouſand Livres.

Hence, a Perſon is ſaid to have *four* or *ſix Actions* in ſuch Company, if he have contributed to the Capital, and be intereſted therein, for four or ſix thouſand Livres.

Actions, in *France* and *Holland*, amount to the ſame with *Shares*, or *Subſcriptions* in *England*. See SUBSCRIPTION, BUBBLE, &c.

ACTION is alſo an Obligation or Inſtrument, which the Directors of ſuch Companies deliver to thoſe who pay Money into their Stock. See ACTIONARY, BANK, &c.

The *Actions* are always riſing, and falling; according as the Company's Credit gains or loſes. The ſmalleſt Whiſper of an approaching War or Peace, true or falſe, ſhall frequently occaſion a conſiderable Alteration therein. In the Year 1719, the *French* Company of the Weſt, ſince called the *India Company*, arrived at ſuch an immenſe degree of Credit; that in ſix Months time, its *Actions* roſe to eighteen hundred *per Cent.* a pitch no other Company ever came near.

In 1672, the *Actions* of the *Dutch Eaſt-India* Company were at ſix hundred and fifty *per Cent.* which was the higheſt they were ever known at.—But the War with *France* then coming on; they fell 250 *per Cent.* in a few Months. After the Peace of *Nimeguen*, they roſe again; and in 1718 were almoſt 600 *per Cent.*

The *French* have three Kinds of *Actions*.—*Simple*, which are entitled to a Share in all, both the Profits and Loſſes of the Company.—*Rentieres*, entitled only to a Profit of two *per Cent.* ſure; for which the King is Security.—And *Intereſted Actions*, which claim the two *per Cent.* ſecur'd by the King; and are alſo to ſhare the Exceſs of the Dividend with the ſimple *Actions*.

There were ſeveral other Kinds of *Actions* introduc'd by the Brokers, in the buſy Days of the *Ruë Quinquempoix*, which have ſince dropt into Oblivion; as *Mother Actions*, *Daughters*, *Grand-mothers*, *Grand-daughters*, &c.

To *Melt or Liquidate an Action*, is to ſell, or turn it into Money, &c.

ACTIONARY, or ACTIONIST, a Term frequent in our News-Papers; denoting the Proprietor of an *Action*, or Share in a Companies Stock. See ACTION.

ACTIVE, ACTIVUS, ſomething that communicates Motion, or Action to another. See ACTION.

In this Senſe, the Word ſtands oppoſed to *Paſſive*. See PASSIVE.

Thus, we ſay, an *Active* Cauſe, *Active* Principles, &c. See CAUSE.

The Quantity of Motion in the World, Sir *I. Newton* ſhews, muſt be always decreaſing, in Virtue of the *Vis Inertiæ*, &c. So that there is a neceſſity for certain *Active Principles* to recruit it: Such he takes the Cauſe of Gravity to be, and the Cauſe of Fermentation. Adding, that we ſee but little Motion in the Univerſe, except what is owing to theſe *active* Principles. See MOTION, GRAVITATION, FERMENTATION, &c.

ACTIVE *Principles*, in Chymiſtry, are thoſe which are ſuppoſed to *act* of themſelves, and do not need to be put in action by others. See PRINCIPLE.

Salt, Sulphur, and Mercury, are uſually conſider'd by the Chymiſts as *Active* Principles; and Phlegm and Earth, as Paſſive ones. See SALT, &c.

M. *Homberg*, and ſome late Chymiſts after him, only make one *Active* Principle, *viz. Sulphur*, or Fire; which they take to be the Source or Principle of all the Motion and *Action* of the Univerſe. See SULPHUR, and FIRE.

The Term *Active Principles*, ſays Dr. *Quincy*, has been uſed to expreſs ſome Diviſions of Matter, that are, by ſome particular Modifications, comparatively *active*, in reſpect of others; as, *Spirit*, *Oil*, and *Salt*, whoſe Parts are better fitted for Motion, than thoſe of Earth and Water; but with how much Impropriety, will eaſily appear.

For, in a ſtrict Senſe, all Motion in Matter is rather Paſſion; and there is no *Active* Principle, unleſs we call ſo that known Property of Gravitation, on which the *Newtonian* Philoſophy is founded; which is a mutual Inclination of Bodies towards one another, in proportion to the Quantity of Matter, in all Bodies: ſo that let them exiſt under what Modifications ſoever, there can be no Alteration made of this univerſal Property.—Hence, the Diviſion of Matter into what, for Diſtinction-ſake, may be called *Spirit*, does not give it any Properties inconſiſtent with this general Law. See MATTER, MOTION, &c.

ACTIVE, in Grammar, is ſomewhat that has an *active* Signification, and ſerves to explain, or denote an Action. A *Verb Active*, a *Conjugation Active*, &c. an *Active Participle*, &c. See PARTICIPLE, CONJUGATION, &c.

Verbs ACTIVE, are ſuch as do not only ſignify Doing or Acting, but have alſo Nouns following 'em, to be the Subject of the Action or Impreſſion. See VERB.

Thus, *to love*, *to teach*, are *Verbs Active*; becauſe we can ſay, *to love a thing*, *to teach a Man*.

Verbs Neuter alſo ſignify an Action; but are diſtinguiſh'd from *Verbs Active*, in that they cannot have a Noun following 'em.—Such are, *to ſleep*, *to go*, &c. See NEUTER.

Some Grammarians, however, make three Kinds of Verbs *Active*: The *Tranſitive*, where the Action paſſes into a Subject different from the Agent; *Reflected*, where the Action returns upon the Agent; and *Reciprocal*, where the Action returns mutually upon the two Agents who produced it. See TRANSITIVE, &c.

ACTIVITY, the Power of *Acting*, or the *Active* Faculty. See FACULTY, &c.

The *Activity* of Fire exceeds all Imagination.—The *Activity* of an Acid, a Poiſon, &c.—Bodies, according to Sir *I. Newton*, derive their *Activity* from the Principle of Attraction.

The *Sphere of Activity* of a Body, is the Space which ſurrounds it, ſo far as its Efficacy or Virtue extends to produce any ſenſible Effect. See SPHERE, EFFLUVIA, &c.

ACTOR, in Dramatic Poetry, one who repreſents ſome Perſon or Character upon the Theatre. See PERSON, and CHARACTER.

Tragedy, in its Original, only conſiſted of a ſimple Chorus, who ſung Hymns in honour of *Bacchus*. See TRAGEDY, and CHORUS.

Theſpis was the firſt who took upon him to introduce a *Perſona*, or *Actor*; who was to eaſe the Chorus, by reciting the Adventures of ſome of their Heroes.

Æſchylus finding a ſingle Perſon tireſome, thought to entertain the Audience more agreeably by the Introduction of a ſecond Perſon, who ſhould converſe and make Dialogue with the firſt. He likewiſe dreſs'd his *Actors* a little more decently than they had been before; and put them on the Buſkin. See BUSKIN.

Sophocles finding the two Perſons of *Æſchylus* too few for the Variety of Incidents, added a third; and here the *Greeks* ſtopp'd; at leaſt, we don't find in any of their Tragedies, above three Perſons in the ſame Scene: tho in their Comedies, they took a further Liberty.

The Moderns have brought a much greater Number of *Actors* upon the Stage.—This heightens the Trouble, and Diſtreſs that ſhould reign there; and makes a Diverſity, in which the Spectator is ſure to be intereſted.

Horace ſpeaks of a kind of ſecondary *Actors* in his Time, whoſe Buſineſs was to imitate the firſt; and leſſen themſelves, to become better foils to their Principals. We have little Notion how theſe ſubaltern *Actors* behaved. See MIME, PANTOMIME, &c.

ACTUAL, ſomething real, and effective; or that exiſts truly and abſolutely. See REAL, EXISTENCE, &c.

In Philoſophy, we ſay, *Actual Heat*, or *Cold*; in oppoſition to Virtual or Potential. See POTENTIAL, &c.

Actual Heat, conſider'd actively, is the Act of producing Heat: Paſſively taken, it is the Quality whereby a Body is denominated *Hot*.—Virtual or Potential Heat, actively taken, is the Power or Faculty of producing Heat; paſſively taken, it ſhould be the Power or Faculty of being heated, or of receiving *Actual Heat*. See HEAT, COLD, &c.

In Theology, we ſay, *Actual Grace*; in oppoſition to *Habitual Grace*. See HABITUAL.

Actual Grace, is that which God gives us, to make or enable us to act, to do ſome Action.—*Habitual Grace* is ſanctifying Grace, a Habit of Charity, or a Habit inherent in the Soul, which renders us agreeable to God, and Objects of eternal Recompence. See GRACE.

So, *Actual Sin* is uſed in Oppoſition to *Original Sin*. See SIN.

Actual Sin is that committed knowingly, by a Perſon arrived at Years of Diſcretion. Original Sin is that we contract by Deſcent, as being Children of *Adam*. See ORIGINAL.

ACTUATE, to bring into Act; or put a thing in Action. See ACT, aad ACTION.

Thus, an Agent is ſaid by the Schoolmen to *actuate* a Power, when it produces an Act in a Subject.—And thus the Mind may be ſaid to *actuate* the Body.

ACUTE, *Sharp*, ſomething that terminates in a Point, or an Edge; diſpoſed either for piercing, or cutting. See POINT, EDGE, &c.

In this Senſe, the Word uſually ſtands oppoſed to Obtuſe. See OBTUSE.

ACUTE *Angle*, is that which is leſs than a right Angle; or which does not ſubtend 90 Degrees. See ANGLE.

Such is the Angle A E C, (Tab. *Geometry*, Fig. 86.)

ACUTE-*Angle Triangle*, is that whoſe three Angles are all *acute*, called alſo an *Oxygonous Triangle*. See TRIANGLE.

Such is the Triangle A C B, (Tab. *Geometry*, Fig. 68.)

ACUTE-*Angular Section*, of a Cone, was uſed by the antient Geometricians for the Ellipſis. See ELLIPSIS, and CONE.

ACUTE, in Muſick, is underſtood of a Sound, or Tone which is ſharp, or ſhrill, or high, in reſpect of ſome other. See SOUND.

In this Senſe, the Word ſtands oppoſed to *Grave*. See GRAVE.

Sounds conſider'd as *Acute* and Grave, that is, in the Relation of Gravity and *Acuteneſs*, conſtitute what we call *Tune*,

Tune, the Foundation of all Harmony. See TUNE, CONCORD, and HARMONY.

ACUTE *Accent*, in Grammar, is that which denotes a Syllable to be pronounced with a high or *acute* Tone of Voice. See ACCENT.

The *Acute Accent*, is a little Line, or Virgula, placed over the Vowel, a little ſloping or inclined in its Deſcent from right to left; as, ′.—It is not uſed either in *Engliſh* or *Latin*: the *French* indeed retain it; but 'tis only to mark the Cloſe or Maſculine *é*.

In the antient *Greek* Manuſcripts, the *Acute Accent* ſtoops a great deal more, than in the modern Writings or Editions.

ACUTE *Diſeaſe*, is that which terminates, or comes to its Period, in a few Days; or, as the Phyſicians expreſs it, *cito & cum periculo terminatur*. See DISEASE.

In this Senſe, the Word ſtands oppoſed to *Chronical*.—All Diſeaſes which hold above forty Days, are reputed Chronical. See CHRONICAL.

Dr. *Quincy* thinks an *Acute Diſeaſe* may be defined, that which is attended with an increaſed Velocity of Blood. See BLOOD, CIRCULATION, HEART, PULSE, *&c.*

Acute Diſeaſes are the more dangerous, in that, beſide the Violence of the Symptoms, if there be not time to empty the *Primæ Viæ*, 'tis very difficult to ſtop their Progreſs, and ſave the Patient. *Trev.*

Acute Diſeaſes are uſually divided into thoſe properly called *Acute*; and thoſe, which by reaſon of the Vehemence of the Symptoms, are called *Moſt Acute*.

ACUTENESS, in Muſick, *&c.* that which conſtitutes or denominates a Sound, *&c. acute*. See ACUTE.

There is no ſuch thing as *Acuteneſs* and *Gravity*, abſolutely ſo called; they are only Relations; ſo that the ſame Sound may be either *Acute* or *Grave*, according to that other Sound they refer or are compared to. See RELATION.

The Degrees of Gravity and *Acuteneſs*, make ſo many Tones, or Tunes of a Voice, or Sound. See TONE, TUNE, VOICE, *&c.*

For the Cauſe and Meaſure of Gravity and Acuteneſs, ſee GRAVITY, INTERVAL, *&c.*

ADAGE, ADAGIUM, a Proverb, or popular Saying. See PROVERB, *&c.*

Eraſmus has made a large and valuable Collection of *Greek* and *Roman Adages*, from their Poets, Orators, Philoſophers, *&c.*

Adage, Proverb, and Parœmia are the ſame thing; but differ from Gnomes, Sentences, and Apothegms. See GNOME, SENTENCE, APOTHEGM, *&c.*

The Word is compounded of *ad*, and *agor*, according to *Scaliger*, *Quod agatur ad aliud ſignificandum*, becauſe made to ſignify ſome other thing.

ADAGIO, in Muſick, one of the Words uſed by the *Italians*, to denote a Degree or Diſtinction of Time. See TIME.

The *Adagio* expreſſes a ſlow Time; the ſloweſt of any, except *Grave*. See ALLEGRO.

The Triple $\frac{3}{2}$ is ordinarily *Adagio*. See TRIPLE.

ADALIDES, in the *Spaniſh* Policy, are Officers of Juſtice, for Matters touching the Military Forces.

In the Laws of King *Alphonſus*, the *Adalides* are ſpoke of, as Officers appointed to guide and direct the Marching of the Forces in time of War.—*Lopez* repreſents 'em as a ſort of Judges, who take Cognizance of the Differences ariſing upon Excurſions, the Diſtribution of the Plunder, *&c.*

ADAMANT, ADAMAS, in Natural Hiſtory, *&c.* an antient Name for a Precious Stone, by us called a *Diamond*. See DIAMOND.

ADAMI *Pomum*, ADAM's *Apple*, in Anatomy, a little Prominence in the middle of the *Cartilago Scutiformis*. See POMUM *Adami*.

ADAMITES, ADAMITÆ, a Sect of antient Hereticks, who took upon them to imitate the Nakedneſs of *Adam*; as if Man had been reinſtated in his original Innocence.

They aſſiſted in the Temples naked, and had to do with Women in publick.

Prodicus was their Author, according to the Account given by *Theodoret*.—They were, in reality, a Branch ſprung out of the *Carpocratians* and *Baſilidians*. See CARPOCRATIAN, and BASILIDIAN.

This Sect is ſaid to have ſtarted up a-freſh in the XVth Century, under *Picard*, their Leader; who pretended to re-eſtabliſh the Laws of Nature, which, according to him, conſiſted in two things, *viz.* Community of Women, and Nakedneſs.—Theſe laſt walked naked in the publick Places; whereas the former only put off their Clothes in their Aſſemblies.—*Jovet* ſpeaks of *Adamites* in *England*.

Præ ADAMITES. See PRÆ *Adamites*.

The Criticks explain the Name *Adam*, אדם from whence theſe Terms ariſe, variouſly; ſome by *Earth*, others by *Red*, others by *Acquieſcence*.——Some of the *Greek* Interpreters explain it Cabaliſtically: According to them, the *A* ſignifies ἀνατολὴ, *Eaſt*; *D*, δυσις, *Weſt*; *A*, ἄρκτος, *North*; and *M*, μεσημβρία, *South*; as being King of the four Quarters of the World: or, in that he was to people it; or that he was a little World, μικρόκοσμος.

ADAPTING. See ACCOMMODATION.

We ſay, to *adapt*, or fit a Recipient to the Capital, *&c.* See RECIPIENT, ALEMBIC, *&c.*

ADDER-*Stung*, is uſed in reſpect of Cattel, when ſtung with any kind of venomous Reptiles; as Adders, Scorpions, *&c.* or bit by a Hedg-hog, or Shrew.

ADDICE, or ADZE, a ſharp Tool, of the Ax-kind, but different from the common Ax.—It is made crooked, and by that means more convenient for cutting the hollow ſide of any Board, or Timber; being what the Coopers generally make uſe of for that Purpoſe.

ADDICTIO, ADDICTION, in the *Roman* Law, a Tranſferring, or paſſing over Goods to another; whether by Sentence of a Court, or in the way of Sale, to him that bids moſt for 'em. See ALIENATION.

The Word ſtands oppoſed to *Abdictio*, or *Abdication*. See ABDICATION, *&c.*

It is form'd of *Addico*, one of the ſtated Words uſed by the *Roman* Judges, when they allow'd the Delivery of the Thing or Perſon on whom Judgment had paſs'd.

Hence, Goods thus adjudg'd by the Prætor, to the right Owner, were called *Bona addicta*; and Debtors deliver'd up in like manner to their Creditors, to work out their Debt, were called, *Servi Addicti*.

ADDICTIO *in Diem*, denoted the adjudging of a thing to a Perſon for a certain Price; unleſs by ſuch a Day the Owner, or ſome other Perſon gave more for it.

The Word is alſo uſed for taking an Adminiſtration, and paying the Debts of the Deceaſed. See ADMINISTRATION.

ADDITAMENT, ADDITAMENTUM, a thing added to another. See ADDITION.

Additaments, in Phyſick and Chymiſtry, are Things ſuperadded to the ordinary Ingredients of any Compoſition.

ADDITION, the Act of joining one thing to another; or of augmenting a thing, by the Acceſſion of others thereto. See AUGMENTATION, and ACCESSION.

In Matters of Holy Scripture, 'tis forbid to make any *Addition* to the Text, for fear of corrupting and altering the Senſe.—In Phyſicks, we ſay, that Natural Bodies are form'd by the *Addition* or Aggregation of Parts. See AGGREGATION, ACCRETION, *&c.*

ADDITION, is alſo uſed for the *Additament*, or the thing added it ſelf.—In the new Editions of Books, Authors uſe to make *Additions*; they frequently make needleſs *Additions*, in lieu of retrenching Superfluities and Impertinencies.

'Tis an Axiom, that if to equal Quantities you add unequal ones; the Exceſs of the Wholes, will be the ſame as the Exceſs of the *additional* Parts.

ADDITION, in Arithmetick, is the firſt of the four fundamental Rules, or Operations of that Art. See RULE, and ARITHMETICK.

Addition conſiſts in finding the Amount of ſeveral Numbers, or Quantities ſeverally added one to another.——Or, *Addition* is the Invention of a Number, from two or more homogeneous ones given, which is equal to the given Numbers taken jointly or together. See NUMBER.

This Number, thus found, is called the *Sum*, or Aggregate of the Numbers given. See SUM.

The Character of *Addition* is +, which we uſually expreſs by *Plus*. Thus 3+4 denotes the Sum of 3 and 4; and is read 3 *plus* 4. See CHARACTER.

To add any given Numbers together.

The *Addition* of ſimple Numbers is eaſy. Thus it is readily perceiv'd that 7 and 9, or 7+9 make 16, and 11+15 make 26.

In longer, or compounded Numbers, the Buſineſs is perform'd by writing the given Numbers in a Row, downwards; Homogeneous under Homogeneous, *i.e.* Units under Units, Tens under Tens, *&c.* and ſingly collecting the Sums of the reſpective Columns.

To do this, we begin at the bottom of the outmoſt Row or Column, to the right; and if the Amount of this Column do not exceed 9, we write it down at the Foot of the ſame Column: If it do exceed 9, the Exceſs is only to be wrote down, and the reſt reſerv'd to be carried to the next Row, and added thereto; as being of the ſame Kind, or Denomination.

Suppoſe, *e. g.* the Numbers 1357 and 172, were given to be added; write either of them, *v. gr.* 172, under the other, 1357; ſo, as the Units of the one, *viz.* 2, ſtand under the Units of the other, *viz.* 7, and the other Numbers of the one, under the correſpondent ones of the other, *viz.* the Place of Tens under Tens, as 7 under 5; and that of Hundreds, *viz.* 1, under the Place of Hundreds of the other, 3.—Then, beginning, ſay, 2 and 7 make 9; which write underneath; alſo 7 and 5 make 12; the laſt of which two Numbers, *viz.*

	1357
	172
	——
	1529

viz. 2. is to be written, and the other 1, reserved in your Mind to be added to the next Row, 1 and 3: then say, 1 and 1 makes 2, which added to 3 make 5; this write underneath, and there will remain only 1, the first Figure of the upper Row of Numbers, which also must be writ underneath; and thus you have the whole Sum, *viz.* 1529.

So, to add the Numbers 87899+13403+885+1920 into one Sum, write them one under another, so as all the Units make one Column, the Tens another, the Hundreds a third, and the Places of Thousands a fourth, and so on.—Then say, 5 and 3 make 8, and 8+9 make 17; write 7 underneath, and the 1 add to the next Rank; saying, 1 and 8 make 9, 9+2 make 11, and 11+9 make 20; and having writ the 0 underneath, say again, 2 and 8 make 10, and 10+9 make 19, and 19+4 make 23, and 23+8 make 31; then, reserving 3, write down 1 as before, and say again, 3+1 make 4, 4+3 make 7, and 7+7 make 14, wherefore write 4 underneath; and lastly, say 1+1 make 2, and 2+8 make 10, which in the last Place write down, and you will have the Sum of them all.

87899
13403
1920
885
104107

Addition *of Numbers of different Denominations*, for instance, of Pounds, Shillings, and Pence, is perform'd by adding or summing up each Denomination by it self, always beginning with the lowest; and if after the *Addition*, there be enough to make one of the next higher Denomination, for instance, Pence enough to make one or more Shillings; they must be added to the Figures of that Denomination, that is, to the Shillings; only reserving the odd remaining Pence to be put down in the Place of Pence.—And the same Rule is to be observ'd in Shillings, with regard to Pounds.

For an instance, 5 Pence and 9 Pence make 14 Pence; now in 14 there is once 12, or a Shilling, and two remaining Pence; the Pence, set down; and reserve 1 Shilling to be added to the next Column, which consists of Shillings. Then 1 and 8 and 2 and 5 make 16: the 6 put down, and carry the 1 to the Column of Tens; 1 and 1 and 1 make three Tens of Shillings, or 30 Shillings; in 30 Shillings there is once 20 Shillings, or a Pound, and 10 over: write one in the Column of Tens of Shillings, and carry 1 to the Column of Pounds; and continue the *Addition* of Pounds, according to the former Rules.

l.	*s.*	*d.*
120	15	9
65	12	5
9	8	0
195	16	2

Addition *of Decimals*, is perform'd after the same manner as that of Whole Numbers; as may be seen in the following Example. See also Decimal.

630.953
51.0807
305.27

987.3037

Addition *of Vulgar Fractions*, see under the Article Fraction.

Addition, in Algebra, or the Addition *of Species*, is perform'd by connecting the Quantities to be added, by their proper Signs; and also by uniting into one Sum, those that can be so united. See Quantity, Species, &c.

Thus, a and b make $a+b$; a and $-b$ make $a-b$; $-a$ and $-b$ make $-a-b$; $7a$ and $9a$ make $7a+9a$; $-a\sqrt{ac}$ and $b\sqrt{ac}$ make $-a\sqrt{ac}+b\sqrt{ac}$, or $b\sqrt{ac}-a\sqrt{ac}$; for it is all one in whatever Order they be written.

But, particularly, 1°, *Affirmative Quantities of the same Species or Kind, are united by adding the prefix'd Numbers whereby the Species are multiplied.* See Positive.

Thus, $7a+9a$ make $16a$. And $11bc+15bc$ make $26bc$. Also $3\frac{a}{c}+5\frac{a}{c}$ make $8\frac{a}{c}$; and $2\sqrt{ac}+7\sqrt{ac}$ make $9\sqrt{ac}$; $6\sqrt{ab-xx}+7\sqrt{ab-xx}$ make $13\sqrt{ab-xx}$. And in like manner $6\sqrt{3}+7\sqrt{3}$ make $13\sqrt{3}$. Again, $a\sqrt{ac}+b\sqrt{ac}$ make $\overline{a+b}\sqrt{ac}$, by adding together a and b, as Numbers multiplying $\sqrt{ac}$. And so $\frac{2a+3c\sqrt{3axx-x^3}}{a+x}+\frac{3a\sqrt{3axx-x^3}}{a+x}$ make $\frac{5a+3c\sqrt{3axx-x^3}}{a+x}$ since $2a+3c$ and $3a$ make $5a+3c$.

2°, *Affirmative Fractions, which have the same Denominator, are added together by adding their Numerators.*

Thus, $\frac{2}{5}+\frac{2}{5}$ make $\frac{4}{5}$, and $\frac{2ax}{b}+\frac{3ax}{b}$ make $\frac{5ax}{b}$; and thus $\frac{8a\sqrt{cx}}{2a+\sqrt{cx}}+\frac{17a\sqrt{cx}}{2a+\sqrt{cx}}$ make $\frac{25a\sqrt{cx}}{2a+\sqrt{cx}}$, and $\frac{aa}{c}+\frac{bx}{c}$ make $\frac{aa+bx}{c}$. See Fraction.

3°, *Negative Quantities are added after the same manner as Affirmative.* See Negative.

Thus, -2 and -3 make -5; $-\frac{4ax}{b}$ and $-\frac{11ax}{b}$ make $-\frac{15ax}{b}$; $-a\sqrt{ax}$ and $-b\sqrt{ax}$ make $-\overline{a-b}\sqrt{ax}$.

When a Negative Quantity is to be added to an affirmative one; the Affirmative must be diminish'd by a Negative one.

Thus, 3 and -2 make 1; $\frac{11ax}{b}$ and $-\frac{4ax}{b}$ make $\frac{7ax}{b}$; $-a\sqrt{ac}$ and $b\sqrt{ac}$ make $\overline{b-a}\sqrt{ac}$.

And note, that when the negative Quantity is greater than the Affirmative, the Aggregate or Sum will be Negative. Thus, 2 and -3 make -1; $-\frac{11ax}{b}$ and $\frac{4ax}{b}$ make $-\frac{7ax}{b}$; and $2\sqrt{ac}$ and $-7\sqrt{ac}$ make $-5\sqrt{ac}$.

Addition *of Irrational Quantities.*—If they be of different Denominations, reduce 'em to the same Denomination; and if they be then commensurable, add the Rational Quantities without the Vinculum; and to their Sum prefix the Radical Sign.—The rest as in the *Addition* of Rationals.

Thus, we shall find $\sqrt{8}+\sqrt{18}=2\sqrt{}+3\sqrt{2}=5\sqrt{2}=50$. On the contrary, $\sqrt{7}$ and $\sqrt{5}$ being incommensurable, their Sum will be $\sqrt{7}+\sqrt{5}$.

Addition, in Law, is that Name, or Title which is given to a Man, over and above his proper Name and Sirname; to shew of what Estate, Degree, or Mystery he is; and of what Town, Village, or Country.

Additions of Estate, or Quality, are Yeoman, Gentleman, Esquire, and such like. See Yeoman, Gentleman, Esquire, &c.

Additions of Degree, are those we call Names of Dignity; as, *Knight*, *Lord*, *Earl*, *Marquiss*, and *Duke*. See Knight, Lord, Duke, &c.

Additions of Mystery, are such as *Scrivener*, *Painter*, *Mason*, &c.

Additions of Place, are, of *Thorp*, of *Dale*, of *Woodstock*.—Where a Man hath Houshold in two Places, he shall be said to dwell in both; so that his *Addition* in either may suffice.

Knave was antiently a regular *Addition*. See Knave.

By Stat. 1 *Hen.* V. it was ordained, that in Suits or Actions where Process of Outlawry lies; such *Additions* should be made to the Name of the Defendant, to shew his Estate, Mystery, and Place where he dwells; and that the Writs, not having such *Additions*, shall abate, if the Defendant take Exception thereto; but not by the Office of the Court.—The Reason of this Ordinance was, that one Man might not be troubled by the Outlawry of another; but by reason of the certain *Addition*, every Person may bear his own Burden. See Chop-*Church*.

ADDOUBORS, in Law. See Redubbors.

ADDUCENT *Muscles*, or Adductors, are those which bring forward, close, or draw together, the Parts of the Body whereto they are annexed. See Muscle.

The Word is compounded of *ad*, to, and *duco*, I draw, or bring to.

Adducents, or *Adductors*, stand opposed to *Abducents* or *Abductors*. See Abducent, and Abductor.

ADDUCTION, in Anatomy, the Motion or Action of the *Adducent* Muscles. See Adducent, and Adductor.

ADDUCTOR *Oculi*, a Muscle of the Eye; so called, because it inclines its Pupil toward the Nose. See Eye.

It is also called *Bibitorius*; because it directs the Eye toward the Cup in drinking. See Bibitory.

Adductor *Pollicis*, is a Muscle of the Thumb, which arises tendinous, and ascends obliquely towards a broad Termination, at the superior Part of the first Bone of the Thumb.—Its Office is to bring the Thumb near the Fore-finger. See Finger.

Adductor *Pollicis Pedis*, called also *Antithenar*, is a Muscle of the great Toe, which arises from the inferior Part of the *Os Cuneiforme tertium*, and is inserted into the internal Part of the *Ossa Sessamoidea* of the great Toe; which it draws nearer the rest.

Adductor *Indicis*, is a Muscle of the Fore-finger, arising from the inside of the Bone of the Thumb, and inserted into the first Bone of the Fore-finger, which it draws towards the Thumb.

Adductor *minimi digiti Pedis*. See Transversalis *Pedis*.

ADELING, or Ethling, from the Saxon *Ædelan*, *q. d. Nobilis*; a Title of Honour among the *English Saxons*, properly belonging to the Successor, or Heir Apparent of the Crown. See Prince, &c.

King *Edward* the Confessor being without Issue, and intending to make *Edgar*, to whom he was great Uncle by the Mother's side, his Heir; first called him his *Adeling*.

Now, Antiquaries observe, that it was usual for the *Saxons* to join the Word *Ling* to the Christian Name, which signify'd a Son, or the Younger; as *Edmundling* for the Son of *Edmund*: so that *Adeling* signify'd the *Son of a King*. See King.

ADEMPTION, Ademptio, in the Civil Law, the Revocation of a Grant, Donation, or the like.

The *Ademption* of a Legacy, may be either *Expreſs*; as when the Teſtator declares in form, that he revokes what he had bequeathed: Or *Tacit*, as when he only revokes it indirectly, or implicitly.

ADEPS, in Anatomy, a Species of *Fat*, found in the Cavities of the Abdomen. See Fat.

The *Adeps* differs from the common *Fat*, called *Pinguedo*; in that it is thicker, harder, and of a more earthy Subſtance. See Pinguedo.

The *Adeps* is much the ſame with what we call *Sevum*, *Suet*, or *Leaf*. See Sevum.

Adeps is alſo uſed by the Phyſicians, as a general Name for Fat of either Kind.

The *Adeps Anſeris*, Gooſe's Fat; *Adeps Canis*, Fat of a Dog; *Adeps Hominis*, Fat of a Man; *Adeps Viperæ*, Vipers Fat; and *Adeps Urſi*, Bears Fat, are all uſed in Medicine, in quality of Ripeners, or Drawers; as being of a penetrating Nature, and thereby ſuited to diſſolve and rarify the Tumors, and bring 'em as it were to Maturity. See Ripener.

The ſpecific Virtues aſcribed to certain of 'em, do not ſeem well warranted. See Fat, Viper, &c.

ADEPTS, Adepti, a Denomination given to the Proficients in Alchymy; particularly thoſe who pretend to the Secrets of the Philoſopher's Stone, and the Univerſal Medicine. See Alchymy, Philosopher's *Stone*, Transmutation, Elixir, &c.

Ripley, *Lully*, *Paracelſus*, *Helmont*, *Hollandus*, *Centivoglio*, &c. are the Principal among the *Adepti*. See Chymistry.

The Word is Latin, *Adeptus*, form'd of the Verb *adipiſcor*, I obtain.

'Tis a ſort of Tradition among the Alchymiſts, that there are always twelve *Adepti*; and that their Places are immediately ſupplied by others, whenever it pleaſes any of the Fraternity to die, or tranſmigrate into ſome other Place, where he may make uſe of his Gold; for that in this wicked World it will ſcarce purchaſe 'em a Shirt.——*Harris*.

ADEQUATE, Adæquatum, ſomething equal to, or co-extended with, another; and filling the whole Meaſure and Capacity thereof. See Equality.

In this Senſe, the Word ſtands oppoſed to *Inadequate*. See Inadequate.

Adequate *Ideas*, or *Notions*, are ſuch Images or Conceptions of an Object, as perfectly repreſent it, or anſwer to all the Parts and Properties of it. See Idea.

M. *Leibnitz* defines an *Adequate Notion*, to be that of whoſe ſeveral Characters we have diſtinct Ideas.—Thus, a Circle being defined a Figure bounded by a Curve Line which returns into it ſelf, and whoſe Points are all equally diſtant from a certain intermediate Point therein: Our Notion of a Circle is *adequate*, if we have diſtinct Ideas of all theſe Circumſtances, *viz.* a Curve returning upon it ſelf, a middle Point, an Equality of Diſtance, &c. See Notion, Definition, &c.

All Simple Ideas are *adequate* and perfect; and the Faculty, be it what it will, that excites them, repreſents them entire. See Simple *Idea*.

The Ideas of Modes are likewiſe *adequate*, or perfect; except of thoſe Modes which occaſionally become Subſtances: for when we ſpeak of Modes ſeparately exiſting, we only conſider them ſeparate from the Subſtance by way of Abſtraction. See Mode, Accident, &c.

All Abſtract Ideas are alſo *adequate* and perfect; ſince they repreſent all that Part of the Subject which we then conſider.—Thus, the Idea of Roundneſs is perfect, or *adequate*, becauſe it offers to the Mind all that is in Roundneſs, in general. See Abstract.

Of the ſame Kind are all Ideas, of which we know no Original or external Object really exiſting out of them; by occaſion of which they were excited in us, and of which we think them the Images.—Thus, when a Dog is before us, it is the external Object without us which raiſes the Idea in our Mind; but the Idea of an Animal in general, has no external Object to excite it: 'tis created by the Mind it ſelf, and muſt of Neceſſity be *adequate*, or perfect. See Abstraction.

On the contrary, the Ideas of all Subſtances are inadequate and imperfect, which are not form'd at the Pleaſure of the Mind, but gather'd from certain Properties, which Experience diſcovers in them. See Substance.

This is evident, in regard our Knowledge of Subſtances is very defective; and that we are only acquainted with ſome of their Properties: Thus, we know that Silver is white, that it is malleable, that it melts, &c. but we do not know what further Properties it may have; and are wholly ignorant of the inward Texture of the Particles whereof it conſiſts.—Our Idea of Silver therefore, not repreſenting to the Mind all the Properties of Silver, is *inadequate* and imperfect.

ADESSENARII, a Sect in Religion, who hold that Jeſus Chriſt is really preſent in the Euchariſt; but in a manner different from what the *Romaniſts* hold. See Eucharist, &c.

The *Adeſſenarii*, call'd alſo *Impanatores*, are divided into four different Opinions touching the Point.—Some hold that the Body of Jeſus Chriſt is in the Bread; others, that it is about the Bread; others, that it is with the Bread; and laſtly, others, that it is under the Bread. See Impanation.

The Name *Adeſſenarii* was firſt framed by *Prateolus*, from the Latin Verb *adeſſe*, to be preſent.

ADFECTED *Equation*. See Equation.

ADHESION, Adherence, in Phyſicks, the State of two Bodies which are join'd or faſten'd to each other, either by the mutual Interpoſition of their own Parts; or the Compreſſion of external Bodies. See Cohesion, and Nexus.

The Word is compounded of the Latin *ad*, and *hæreo*, I ſtick or cleave to.

Anatomiſts ſometimes obſerve *Adheſions* of the Lungs to the Sides of the Thorax, the Pleura, and Diaphragma, which give occaſion to various Diſorders. See Lungs, Pleura, Pleurisy, Phthisis, Peripneumony, &c.

The *Adheſion* of two poliſh'd Planes, or two Hemiſpheres, is a Phænomenon urg'd in behalf of the Weight and Preſſure of the Atmoſphere. See Atmosphere.

The Schoolmen diſtinguiſh two Kinds of Certitude: the one of Speculation, which ariſes from the Evidence of the Thing; and the other of *Adheſion*, which has nothing to do with Evidence, but ariſes purely from the Importance of the Matter, and the Intereſt we have in its Truth. See Certitude, Testimony, Truth, Evidence, &c.

ADJACENT, or Adjoining, ſomething contiguous, or ſituate near another. See Contiguous.

The Word is compounded of *ad*, to, and *jacere*, to lie.

Adjacent *Angle*. See Angle.

ADIAPHORISTS, Adiaphoristæ, Adiaphorites, a Name given in the XVIth Century to the moderate *Lutherans*, who adher'd to the Sentiments of *Melancton*; and afterwards to thoſe who ſubſcrib'd the Interim of *Charles* V. See Lutheran.

The ſame Name might alſo be applied to thoſe now called *Indifferentiſts*. See Indifferentist.

The Word is originally *Greek*, ἀδιάφορος, *indifferent*.

ADIAPHOROUS, Adiaphorus, *q. d. Indifferent*, or *Neutral*; a Name given by Mr. *Boyle* to a Kind of Spirit diſtill'd from Tartar and ſome other Vegetable Bodies; and which is neither Acid, Vinous, nor Urinous; but in many reſpects different from any other ſort of Spirit. See Spirit; ſee alſo Neutral.

ADJECTIVE, *Noun* Adjective, or Adnoun, in Grammar, a Kind of Noun joined with a Noun Subſtantive either expreſs'd or underſtood, to ſhew its manner of being, that is, its Qualities or Accidents. See Noun, &c.

The Word is form'd of the Latin *adjicere*, to add to; as being to be added to a Subſtantive, without which it has no preciſe Signification at all.

Father *Buffier* defines *Adjective* in a new manner, and ſets it in a Light different from that of other Grammarians.——Nouns, according to him, are Subſtantives, when the Objects which they repreſent are conſider'd ſimply, and in themſelves, without any regard to their Qualities: On the contrary, they are *Adjectives*, when they expreſs the Quality of an Object. See Quality.

Thus, when I ſay ſimply, a Heart; the Word *Heart* is a Subſtantive, becauſe none of its Qualities are expreſs'd; but when I ſay a generous Heart, the Word *generous* is an *Adjective*; becauſe it adds a Quality or Attribute to the Heart.

Adjectives, then, ſeem to be nothing elſe but Modificatives.—In effect, the End of an *Adjective* being only to expreſs the Qualities of an Object; if that Quality be the Object it ſelf whereof we ſpeak, it becomes a Subſtantive; *e.g.* If I ſay, *this Book is good*; *good*, here, is an *Adjective*: But if I ſay, *Good is always to be choſen*, 'tis evident *Good* is the Subject I ſpeak of; and conſequently, *Good* there is a Subſtantive.

On the contrary, it often happens in other Languages, and ſometimes in our own, that a Subſtantive becomes an *Adjective*; as for inſtance, in theſe Words, *the King*, *Hero as he is*, *remembers he is a Man*: Where the Word *Hero*, tho ordinarily a Subſtantive, is yet apparently an *Adjective*.

From this new Idea of an *Adjective*, it appears that many of the Nouns which, in the common Grammars, are accounted Subſtantives are really *Adjectives*, and *vice verſa*; Grammar, in this and a thouſand other Inſtances depending upon Cuſtom. See Substantive.

AD *Inquirendum*, a Writ Judicial, commanding Inquiry to be made of any thing touching a Cauſe depending in the King's Court, for the better Execution of Juſtice; as of Baſtardy, and ſuch like. See Writ.

ADJOINING, Adjunctio, in Philoſophy, &c. See Adjunct, and Adjunctio.

ADJOINING is particularly us'd for the Aſſociating of a Perſon to another; or appointing him a Collegue, or *Adjunct*. See ADJUNCT, &c.

ADJOURNMENT, the putting off a Court, or Meeting; and appointing it to be kept at another Time, or Place. See COURT, &c.

In this Senſe, we meet with the Phraſe *Adjournment in Eyre*, for an Appointment of a Day when the Juſtices in Eyre intend to ſit again. See JUSTICE, EYRE, &c.

Adjournments of Parliament differ from Prorogations. See PROROGATION.

Each Houſe has the Privilege of *adjourning* it ſelf. See PARLIAMENT.

The Word is form'd of the Latin *ad*, to, and the French *jour*, Day; *q. d. to another Day*.

ADIPOSA, or ADEPOSA *Membrana*, in Anatomy, is a Membrane inveſting the Body, immediately under the Cutis; ſuppoſed to be the Baſis of the Fat, which is lodg'd in the Spaces between its Fibres, and in peculiar Cells form'd herein. See FAT, CUTIS, CELL, &c.

Anatomiſts are divided as to the Reality of this Membrane; moſt of the later Writers taking it to be no other than the exterior Membrane of the *Membrana Carnoſa*, or *Muſculorum Communis*. See MEMBRANE, CARNOSA, &c.

Vaſa ADIPOSA, *Fat-Veſſels*, make a Part of the Subſtance of the Omentum, or Caul. See OMENTUM.

ADIPOSE *Cells*, *Cellulæ* ADIPOSÆ, or *Loculi* ADIPOSI. See CELLULÆ *Adipoſæ*.

ADIPOSE *Ducts*, *Ductus* ADIPOSI. See DUCTUS *Adipoſi*.

Malpighi ſtarts a Doubt whether the *Adipoſe Ducts* may not be propagated from the Fibres which abound in the Spleen; or thoſe Fibres from them?——As alſo, whether there be not a yet undiſcover'd Communication between the Omentum and the *Membrana Adipoſa*.

ADIT, ADITUS, the Shaft, or Entrance into a Mine, Quarry, or the like. See MINE, QUARRY, &c.

ADJUDGE, in Law.—When a determinate Sentence is paſs'd in the Behalf of any one, the Caſe is ſaid to be *adjudged* for him. See SENTENCE.

We have various Collections of Decrees, Reports, *Adjudg'd* Caſes, &c. See COMMON *Law*.

ADJUDICATION, the Act of *adjudging*; or of giving any thing by Sentence, Decree, or Judgment. See ADJUDGED, and JUDGMENT.

The Word is particularly uſed for the Addiction or Conſigning a thing ſold by Cant, Auction, or the like, to the higheſt Bidder. See ADDICTIO.

ADJUNCTIO, a mere external joining, or adding of one thing to another. See ADDITION.

All *Adjunction* implies a Subordination.—The *Adjunct* is for the ſake of the Thing it is join'd to, not contrarywiſe; as, the Clothes for the Man; not the Man for the Clothes.—Whatever is a Part of a thing, cannot be called an *Adjunct* of it. See ADJUNCTS.

There are various Species of *Adjunction*; viz. *Adheſion*, *Appoſition*, *Adjacency*, *Accubation*, *Incubation*, *Impoſition*, *Aſſeſſion*, &c. See ADHESION, APPOSITION, &c.

ADJUNCT, ADJUNCTUM, in Philoſophy, ſomething added to a Being from without. See ADJUNCTIO.

Or, an *Adjunct* is an Additament or Acceſſion to a thing, not eſſentially belonging to it, but only accidental thereto. See ACCIDENT.

There are two Kinds of *Adjuncts*; the one, a Subſtance (whether Spirit or Body) accidentally ſuperadded to another, as its Subject.—Such is Water in a Spunge, or Veſſel, and the Soul in the Body. See SUBSTANCE.

The ſecond an Attribute, or Mode, accidentally likewiſe ſuperadded to a Subſtance; whether Body or Spirit.—Such is Figure in a Body, Knowledge in the Mind, &c. See MODE.

Some divide *Adjuncts* into *Abſolute*; which agree to the whole thing, without any Limitation: Thus, Paſſions are *Abſolute Adjuncts* of a Man.—And *Limited*; which only agree to their Subject, in reſpect of ſome certain Part thereof: Thus, Man only thinks, conſider'd as to his Mind; only grows, as to his Body, &c.

In Ethicks, we uſually reckon ſeven *Adjuncts*, popularly call'd *Circumſtances*; *Quis*, *quid*, *ubi*, *quibus auxiliis*, *cur*, *quomodo*, *quando*. See CIRCUMSTANCE.

ADJUNCTS, in Rhetorick and Grammar, are certain Words or Things added to others; to amplify the Diſcourſe, or augment its Force. See AMPLIFICATION, &c.

Such are Adjectives, Attributes, and Epithets, which are added to Subſtantives, Subjects, &c. to expreſs their Nature, Qualities, Accidents, &c. See ADJECTIVE, ATTRIBUTE, EPITHET, &c.

Arguments drawn from *Adjuncts*, are Supplements or Inforcements of the Proof ariſing from the Circumſtances of the Fact. See CIRCUMSTANCE, &c.

ADJUNCT, is alſo uſed in Civil Concerns, for a Collegue, or Fellow-Officer, aſſociated to another, to aſſiſt him in his Miniſtry, to ſhare the Functions thereof, or even have an Eye to his Actions. See COLLEGUE.

AD *Jura Regis*, is a Writ that lies for the King's Clerk, againſt him that ſought to eject him, to the Prejudice of the King's Title in right of his Crown. See WRIT.

ADJURATION, a Part of Exorciſm, wherein the Devil is commanded, in the Name of God, to depart out of the Body of the Poſſeſſed, or to declare ſomething. See EXORCISM, POSSESSION, &c.

The Word is *Latin*, form'd of *adjurare*, to adjure; of *ad*, and *juro*, I ſwear. See CONJURATION.

ADJUTANT, an Officer in the Army, whoſe Buſineſs is to *aid* or aſſiſt the Major. See MAJOR.

Adjutant is the ſame that we otherwiſe call *Aid Major*. See AID *Major*.

The Term is ſometimes alſo uſed for an *Aid de Camp*. See AID *de Camp*.

The Word is form'd of the Latin *adjutare*, to help, aſſiſt.

ADJUTORIUM, in Anatomy, a Bone of the Arm; ſo called, as being uſeful in lifting it up. See BONE, and ARM.

ADMEASUREMENT, ADMENSURATIO, a Writ which lies for the bringing thoſe to Reaſon, or Mediocrity, that uſurp more than their Share. See WRIT.

This Writ lies in two Caſes; the one termed *Admeaſurement of Dower*, *Admenſuratio Dotis*, where the Widow of the Deceaſed holds more from the Heir or his Guardian, on account of her Dower, than of right belongs to her. See DOWER.

The other *Admeaſurement of Paſture*, *Admenſuratio Paſturæ*, which lies between thoſe who have common of Paſture appendant to their Freehold, or common by Vicinage, in caſe any of them ſurcharge the Common with more Cattle than they ought. See COMMON.

ADMINICLE, ADMINICULE, ADMINICULUM, a Term uſed in ſome antient Statutes, for Aid, Help, or Support. See AID, &c.

In the Civil Juriſprudence, *Adminiculum* ſignifies the Beginning of a Proof; an imperfect Proof; a Circumſtance or Conjecture, tending to form or fortify a Proof.

Among Antiquaries, the Term *Adminicules* is applied to the Attributes, or Ornaments wherewith *Juno* is repreſented on Medals. See ATTRIBUTE.

ADMINISTRATION, the Government, or Direction of Affairs; particularly the Exerciſe of diſtributive Juſtice. See GOVERNMENT, and JUSTICE.

Indolent Princes confide the *Adminiſtration* of publick Affairs to their Miniſters. See MINISTER.

Civil Wars are uſually rais'd on Pretence of *Male-Adminiſtration*; or of Abuſes committed in the Exerciſe of Juſtice. See WAR.

ADMINISTRATION, in Law, ſignifies the diſpoſing of a Man's Goods, or Eſtate, that died inteſtate, or without any Will; with an Intent to give an Account thereof. See ADMINISTRATOR, INTESTATE, &c.

Inſtruments, or Powers of *Adminiſtration*, are taken out in the Prerogative Court. See PREROGATIVE.

ADMINISTRATION is ſometimes alſo uſed for the Direction of the Affairs of a Minor, a Pupil, a Lunatick, or the like. See MINOR, PUPIL, TUTOR, &c. ſee alſo GUARDIAN.

ADMINISTRATION is alſo uſed in reſpect of Eccleſiaſtical Functions.—The Parſon has the *Adminiſtration* of the Sacraments in his Pariſh. See PARSON, PARISH, &c.—The *Adminiſtration* of the Sacrament is prohibited to Perſons excommunicate. See EXCOMMUNICATION.

In Beneficiary Matters, they diſtinguiſh two Kinds of *Adminiſtration*; *Temporal*, which relates to the Temporalties of a Benefice, Dioceſe, &c. and *Spiritual*, to which belong the Power of excommunicating, &c. See TEMPORALTY, &c.

ADMINISTRATOR, in Law, he to whom the Ordinary commits the *Adminiſtration* of the Goods of a dead Man, in default of an Executor. See ADMINISTRATION, WILL, EXECUTOR, &c.

An Action lies for or againſt an *Adminiſtrator*, as for an Executor; and he ſhall be accountable to the Value of the Goods of the Deceas'd, and no further.——Unleſs there be Waſte or other Abuſe chargeable on him.

If the *Adminiſtrator* die, his Executors are not *Adminiſtrators*; but the Court is to grant a new Adminiſtration.—If a Stranger, who is neither *Adminiſtrator* nor Executor, take the Goods of the Deceaſed, and *adminiſter*; he ſhall be charged and ſued as an Executor, not as an *Adminiſtrator*.

If a Woman have Goods thus committed to her Charge, or Adminiſtration, ſhe is called *Adminiſtratrix*.

ADMIRAL, ADMIRALIUS, ADMIRALLUS, a great Officer, who commands the Naval Forces of a Kingdom or State; and before whom all Cauſes are cognizable, relating to the Sea. See NAVY, SEA, &c.

Authors are divided about the Origin and Denomination of this important Officer, whom we find eſtabliſh'd, with ſome Variation, in moſt Kingdoms that border on the Sea.——Some borrow it from the *Greeks*; the Captain of the Seas, under the Emperors of *Conſtantinople*, being called *Amiralius* or *Almiralis*, of αλμυρ&, *Saline*; or αλμη, *Salt Water*, and αρχ&, *princeps*; in regard his Juriſdiction lay on the Sea, which the *Latins* call *Salum*.—But it is to be obſerv'd, that this Officer had not the ſupreme Adminiſtration of Naval Affairs; that immediately belong'd to the *Dux Magnus*, or grand General; to whom the *Amiralius* was ſubordinate, in Quality of *Protocomes*, firſt Count, or Aſſociate. See COMES.

Others derive the Name from the Arabic *Amir* or *Emir*, Lord; and the *Greek* αλιος, *Marine*: and accordingly, we frequently find *Emir* in *Zonaras*, *Cedrenus*, *Nicetas*, and other *Greeks* of that Time, uſed in the Senſe of a Commander.—Add, that in the Life of St. *Peter Thomaſius*, we meet with *Admiratus Jeruſalem*, for the Governor of *Jeruſalem*, under the Soldan of *Egypt*. And hence, ſome will have both the Name and the Dignity of Oriental, and even *Sarazen* Extraction: As, in effect, there are no Inſtances of *Admirals* in this Part of *Europe*, before the Year 1284; when *Philip* of *France*, who had attended St. *Louis* to the Wars againſt the *Sarazens*, created an *Admiral*.

To ſay no more, *Du Cange* aſſures us, that the *Sicilians* were the firſt, and the *Genoeſe* the next after 'em, who gave the Denomination *Admiral* to the Commanders of their Naval Armaments; and that they took it from the Sarazen or Arabic *Amir*, a general Name for any commanding Officer.—The firſt *Admiral* we read of in our *Engliſh* Affairs, was under *Edward* I.

The *Lord High* ADMIRAL *of England*, in ſome antient Records called *Capitaneus Mariniorum*, is Judge or Preſident of the *Court of Admiralty*. See ADMIRAL's *Court*.

He takes Cognizance, by himſelf, his Lieutenant, or Deputies, of all Crimes committed on the Sea, or the Coaſts thereof; and all the Civil and Marine Tranſactions relating thereto: As alſo of what is done in all great Ships, riding in any great River, beneath the Bridges thereof next the Sea.

Antiently, the *Admiral* had alſo Juriſdiction in all Cauſes of Merchants and Mariners; not only on the Sea, but in all foreign Parts.——We have had no *High Admiral* for ſome Years; the Office being put in Commiſſion, or under the Adminiſtration of the Lords *Commiſſioners of the Admiralty*. See COMMISSION.

ADMIRAL is alſo uſed for the Commander in Chief of a ſingle Fleet, or Squadron. See FLEET.

Thus, we ſay, the *Admiral* of the Red; *Admiral* of the White; and *Admiral* of the Blue. See SQUADRON, NAVY, &c.

The Term is alſo applied to all Flag-Officers: In which Senſe it includes *Vice-Admirals* and *Rear-Admirals*. See FLAG-*Officer*.

Rear-ADMIRAL. } See { REAR-*Admiral*.
Vice-ADMIRAL. } See { VICE-*Admiral*.

Vice-ADMIRAL, is alſo an Officer appointed by the Lord High *Admiral*, in divers Parts of the Kingdom, with Judges and Marſhals ſubordinate to him; for the exerciſing of Juriſdiction in Maritime Affairs, within their reſpective Limits.

There are upwards of twenty *Vice-Admirals*.—From their Deciſions and Sentences, Appeal lies to the *Court of Admiralty* in *London*.

There are alſo *Admirals of the Galleys*. See GALLEY.

Monſtrelet makes mention of an *Admiral of the Archers*, or *Croſs-bow-Men*.

ADMIRAL, is likewiſe the Name of the principal Veſſel of a Fleet, which carries the *Admiral* on board. See FLEET, NAVY, &c.

When two Ships of War, bearing the ſame Colours, meet in the ſame Port; that which arrived firſt, has the Title and Prerogative of *Admiral*; and the other, tho of greater Strength and Rate, ſhall only be accounted *Vice-Admiral*.—'Tis pretty much the ſame with the Veſſels that go to *Newfoundland*: that which arrives there the firſt, taking the Title and Quality of *Admiral*, which it retains during the whole fiſhing Seaſon. See FISHERY.

ADMIRAL's *Court*, or the *High Court of* ADMIRALTY, is a Court held by the High *Admiral*; to which belongs the Deciſion of all Maritime Controverſies, Trials of Malefactors, and the like. See COURT, and ADMIRAL.

The Proceedings in this Court, in all Civil Matters, are according to the Civil Law; becauſe the Sea is without the Limits of the Common Law, and under the *Admiral*'s Juriſdiction. See CIVIL *Law*.

In Criminal Affairs, which ordinarily relate to Piracy, the Proceedings in this Court were antiently likewiſe by Information and Accuſation, according to the Civil Law; but that being found inconvenient, in regard no Perſon could be convicted without either their own Confeſſion, or an Eye-witneſs of the Fact, ſo that the greateſt Offenders often eſcap'd with Impunity: there were two Statutes made by *Henry* VIII. enacting, That Criminals ſhould henceforth be here tried by Witneſſes and a Jury; and this by ſpecial Commiſſion from the King to the Lord *Admiral*: wherein ſome of the Judges of the Realm are always to be Commiſſioners; and the Trial according to the Laws of *England*, directed by thoſe Statutes. See JURY, TRIAL, &c.

The *Court of Admiralty*, is ſaid to have been firſt erected in 1357, by King *Edward* III.——To the Civil Law, firſt introduc'd by the Founder, were afterwards added, by his Succeſſors, particularly *Richard* I. the Laws of *Oleron*; and the Marine Uſes and Conſtitutions of ſeveral People; as thoſe of *Genoa*, *Piſa*, *Marſeilles*, *Meſſina*, &c. See OLERON, and USES.

Under this Court is alſo a Court-Merchant, or Court of Equity; wherein all Differences between Merchants are decided, according to the Rules of the Civil Law. See MERCHANT.

Between the Courts of Admiralty and Common Law, there ſeems to be *diviſum imperium*; for in the Sea, ſo far as the Low-Water Mark, is accounted *infra corpus comitatus adjacentis*; and the Cauſes thence ariſing are determinable by the Common Law: yet when the Sea is full, the Admiral has Juriſdiction there alſo ſo long as the Sea flows, over Matters done between the Low-Water Mark and the Shore. See COMMON-*Law*.

ADMIRALTY.——*Court of* ADMIRALTY, *Commiſſioners of the* ADMIRALTY, &c. See ADMIRAL, ADMIRAL's *Court*, &c.

Among the *Hollanders*, the *Five Admiralties*, are ſo many Chambers, compoſed of the Deputies of the Nobles, the Provinces, and the Towns; to whom belong the equipping out of Fleets, and the furniſhing Proviſions for 'em.

ADMIRATION, in Grammar, a Point or Character, intimating ſomething worthy to be admired or wonder'd at.—It is expreſſed thus (!). See CHARACTER.

ADMISSION, ADMISSIO, in the Eccleſiaſtical Law, the Act whereby the Biſhop, upon Examination, admits or allows a Clerk to be able, or competently qualify'd for the Office; which is done by the Formula *Admitto te habilem*. See PRESENTATION, INDUCTION, INSTITUTION, &c.

ADMITTENDO *Clerico*, is a Writ granted to him who hath recover'd his Right of Preſentation againſt the Biſhop in the Common Pleas. See PATRON.

ADMITTENDO *in Socium*, is a Writ for the Aſſociation of certain Perſons to Juſtices of Aſſize formerly appointed. See JUSTICE, and ASSIZE.

ADNATA, in Anatomy, a pretty thick white Membrane, inveſting the Ball of the Eye; called alſo *Conjunctiva*. See TUNIC, and CONJUNCTIVA.

The *Adnata* makes what we commonly call the *White of the Eye*; whence it is alſo called the *Albuginea*. See EYE, &c.

AD *Octo*, *q. d.* to the eighth Number; a Term uſed by ſome antient Philoſophers, to denote the higheſt or ſuperlative Degree; becauſe in their way of diſtinguiſhing Qualities, they reckon'd no Degree above the Eighth. See DEGREE, HUMOUR, QUALITY, &c.

ADOLESCENCE, ADOLESCENTIA, the State of Youth; or that Period of a Perſon's Age commencing from his Infancy, and terminating at his full Growth. See AGE.

The State of *Adoleſcence* laſts ſo long as the Fibres continue to grow, either in Magnitude or Firmneſs. See FIBRE, NUTRITION, &c.

It is commonly computed to be between 15 and 25, or even 30 Years of Age; tho, in different Conſtitutions its Terms are very different.—The *Romans* uſually reckon'd it from 12 to 25 in Boys; and to 21 in Girls. See PUBERTY, &c.—And yet, among their Writers, *Juvenis* and *Adoleſcens* are frequently uſed indifferently, for any Perſon under 45 Years.

The Word is form'd of the Latin *adoleſco*, I grow.——The Fibres being arrived at the degree of Firmneſs, and Tenſion ſufficient to ſuſtain the Parts, no longer yield and give way to the Efforts of the Nutritious Matter, to extend 'em: So that their farther Accretion is ſtopp'd from the very Law of their Nutrition. See SOLID, DEATH, &c.

ADONIA, or ADONIC *Feaſts*, were antient Feaſts, inſtituted in honour of *Adonis*; and obſerved with great Solemnity among the *Greeks*, *Egyptians*, &c. See FEAST.

They were begun by the Women; who imitated the Cries and Lamentations of *Venus*, for the Death of her Paramour.—When they were well weary of this, they changed their Notes, and ſung his Praiſes; and made Rejoicings, as if he were raiſed to Life again: or rather, according to *Meurſius*, theſe two Offices made two diſtinct Feaſts, which were held at different times of the Year, the one ſix Months after the other; *Adonis* being ſuppoſed to paſs half the Year with *Proſerpine*, and half with *Venus*.——The Feaſt was alſo called *Salambon*.

ADONIC, in the antient Poetry, was a ſort of ſhort Verſe, conſiſting of a Dactyl and a Spondee; as, *Rara juventus*. See VERSE.

It is uſually placed at the End of each Stanza of Sapphic Verſes; and is ſo called from *Adonis*, in whoſe Praiſe it was firſt made. See SAPPHIC.

ADOPTION, ADOPTIO, an Act by which any one takes another into his Family, owns him for his Son, and appoints him his Heir. See FATHER, SON, &c.

The Word is derived from *adoptare*; whence came *adobare*, to make a Knight: whence alſo *Miles adobatus*, a a Knight newly made or dubb'd; he who knighted him, being ſaid in ſome Senſe to *adopt* him. See KNIGHT.

The Cuſtom of *adopting* was very familiar among the antient *Romans*, who had an expreſs Formula for it.—They firſt learnt it from the *Greeks*, among whom it was called υἱωσις, *Filiation*. See ADOPTIVE.

As *Adoption* was a ſort of Imitation of Nature, intended for the Comfort of thoſe who had no Children; Eunuchs were not allowed to *adopt*; as being under an actual Impotency of begetting Children. See EUNUCH.

Neither was it lawful for a young Man to *adopt* an elder; becauſe that had been contrary to the Order of Nature: but it was even requir'd, that the Perſon who *adopted*, ſhould be eighteen Years elder than his *adoptive* Son; that there might at leaſt appear a Probability of his being the natural Father.

The *Romans* had two Forms of *Adoption*; the one before the Prætor: the other at an Aſſembly of the People, in the Times of the Commonwealth, and afterwards by a Reſcript of the Emperor.

In the firſt, the Natural Father addreſs'd himſelf to the Prætor, declaring, that he emancipated his Son, reſign'd all his Authority over him, and conſented he ſhould be tranſlated into the Family of the *Adopter*. See EMANCIPATION.

The latter manner of *Adoption* was practis'd, where the Party to be adopted was already free; and was called *Adrogation*. See ADROGATION.

The Perſon adopted chang'd all his Names; aſſuming the Prename, Name, and Sirname of the Perſon who adopted him. See NAME.

They had likewiſe their *Teſtamentary Adoptions*, wherein Perſons were *adopted* by the Laſt Will of the Deceas'd; but theſe were never eſteem'd valid, till they had been confirm'd by the People. See TESTAMENT.

Of late Years, another Form of *Adoption* has taken place; and this is, by cutting off the Hair of a Perſon, and delivering it to the Father that is to adopt him. See HAIR, and TONSURE.

'Twas this way that Pope *John* VIII. adopted *Boſon* King of *Arles*; which perhaps is the only Inſtance in Hiſtory of *Adoption* in the Order of Eccleſiaſticks; a Law that profeſſes to imitate Nature, not daring to give Children to thoſe in whom it would be thought a Crime to beget any.

M. *Bouſſac*, in his *Noctes Theologicæ*, gives us divers modern Forms of *Adoption*; ſome perform'd at Baptiſm; others by the Sword, &c. See BAPTISM.

ADOPTIVE, ADOPTIVUS, or ADOPTITIUS, a Perſon *adopted* by another. See ADOPTION.

The Emperor *Adrian* preferr'd *Adoptive* Children to Natural ones; by reaſon we chuſe the former, but are oblig'd to take the latter at random.—*Adoptive* Children, among the *Romans*, were on the ſame Footing with Natural ones; for which Reaſon, they were either to be inſtituted Heirs, or expreſly diſinherited; otherwiſe the Teſtament was null.

M. *Menage* has publiſh'd a Book of Eloges, or Verſes addreſs'd to him; which he calls *Liber Adoptivus*, an *Adoptive* Book; and adds it to his other Works.—*Heinſius* and *Furſtemberg* of *Munſter*, have likewiſe publiſhed *Adoptive* Books.

ADOPTIVI, or ADOPTIANI, was an antient Sect in Religion; thus called, from the manner wherein they conceived our Saviour to be the Son of God.

They took their Riſe from *Felix* of *Urgel*, and *Elipand* of *Toledo*; the latter of whom writing to the former, for an Account of his Faith in that Point; was anſwer'd, that according to the Uſe of the Language which obtains in reſpect of Human Nature, Jeſus was not the Natural, but only the *Adoptive* Son of God.

This Opinion they both afterwards propagated, towards the Cloſe of the VIIIth Century.—And both were convicted and condemn'd; and both abjur'd their Error.

ADORATION, the Act of rendering divine Worſhip or Honours, to a Being. See GOD, and WORSHIP.

The *Adoration* of Idols is called *Idolatry*. See IDOLATRY.

The *Romaniſts* profeſs a ſubordinate *Adoration* to Saints, Images, Relicks, the Croſs, &c. See SAINT, IMAGE, RELICK, CROSS, &c.

The Word literally ſignifies, *to apply the Hand to the Mouth*; *Manum ad Os admovere*, *q. d.* to kiſs the Hand; this being, in the Eaſtern Countries, one of the great Marks of Reſpect and Submiſſion.

The Election of Popes is performed two ways, by *Adoration* and by Scrutiny.—In the Election by *Adoration*, the Cardinals ruſh haſtily, as if agitated by ſome Spirit, and fall without more ado to the *Adoration* of ſome one among them, and proclaim him Pope. See CARDINAL, POPE, &c.

In the Election by Scrutiny, *Adoration* is the laſt thing, and follows the Election; as in the other it is the Election it ſelf, or rather ſuperſedes the Election. See ELECTION, and SCRUTINY.

AD *Pondus Omnium*, the Weight of the Whole; an Abbreviation among Phyſicians, &c. ſignifying, that the laſt preſcrib'd Ingredient is to weigh as much as all the others before. See ABBREVIATURE.

AD *Quod Damnum*, a Writ directed to the Sheriff, commanding him to inquire what hurt may befal the King by granting a Fair or Market in any Town, or Place. See FAIR, MARKET, &c.

The ſame Writ alſo iſſues for an Inquiry to be made of what the King or other Perſon may ſuffer, by granting Lands in Fee-ſimple to a Convent, Chapter, or other Body Politick; by reaſon ſuch Land falls into Mortmain, or a dead hand: that is, into ſuch Condition, that the chief Lord loſes all Hope of Heriots, Service of Court, and Eſcheats, upon any traiterous or felonious Offence committed by the Tenant: For that a Body Politick dies not, nor can perform perſonal Service to the King, or their Meſn Lords; as ſingle Perſons may do. See MORTMAIN.

ADRAGANT, or TRAGACANTH, a ſort of Gum. See TRAGACANTH.

ADRESS, or ADDRESS, a Diſcourſe preſented to the King, in the Name of a conſiderable Body of his People; to expreſs, or notify their Sentiments of Joy, Satisfaction, or the like, on ſome extraordinary Occaſion.

Thus, we ſay, the Lords *Adreſs*, the Commons *Adreſs*.—*Adreſſes* were firſt ſet on foot under the Adminiſtration of *Oliver Cromwel*.

The Word is French, *Adreſſe*, form'd of the Verb *Adreſſer*, to ſend or direct any thing to a Perſon.—At *Paris*, their Office of Intelligence is called *Bureau d'Adreſſe*.

ADRESS, is alſo uſed for Dexterity. See DEXTERITY.

ADROGATION, among the *Romans*, was a kind of Adoption, only differing from it in this; That the Perſon here adopted was free, and conſented to be adopted by another; and that it was done at the Aſſembly of the People, while the Commonwealth ſubſiſted; and afterwards by a Reſcript of the Emperors. See ADOPTION.

AD *Terminum qui præteriit*, is a Writ of Entry, which lies where a Man, having leaſed Lands or Tenements for term of Life, or Years, is, after the Term expir'd, held from them by the Tenant, or other Stranger who enjoys the ſame, and deforceth the Leſſor.—The ſame Writ alſo lies for the Leſſor's Heir.

ADVANCE-*Foſſe*, or *Ditch*, is a Ditch of Water round the Eſplanade, or Glacis of a Place; to prevent its being ſurprized by the Beſiegers. See FOSSE, and GLACIS.

ADVANCE-*Guard*, or VAN-*Guard*, is the firſt Line or Diviſion of an Army ranged or marching in Battle-array; or that Part which is next the Enemy, or which marches firſt toward them. See LINE.

The whole Body of an Army is divided into *Advance-Guard*, Arrear-Guard, and Main Body. See ARMY, &c.

The Word is ſometimes alſo applied to a ſmall Party of Horſe, as 15 or 20, commanded by a Lieutenant, beyond and in ſight of, the Main Guard.

ADVANCER, among Hunters, is one of the Starts, or Branches of a Buck's Attire, between the back Antler and the Palm. See ATTIRE, HEAD, &c.

ADVENT, ADVENTUS, in the Calendar, the Time immediately preceding Chriſtmas; antiently employ'd in pious Preparation for the *Adventus*, or coming on, of the Feaſt of the Nativity. See NATIVITY, &c.

Advent includes four Sundays, or Weeks; commencing either from the Sunday which falls on St. *Andrew*'s Day, or that next after it.—But, it is to be noted, this Rule has not always obtain'd. In the *Ambroſian* Office, there are ſix Weeks mark'd for *Advent*; and St. *Gregory*, in his Sacramentary, allows five.

The firſt Week of *Advent*, in our way of reckoning, is that wherein it begins; but it was antiently otherwiſe, the Week next Chriſtmas being reputed the firſt; and the Numeration carried backwards.

Great Auſterity was practis'd in the antient Church during this Seaſon.—At firſt they faſted three Days a-week; but were afterwards obliged to faſt every Day: Whence the Seaſon is frequently called in antient Writers, *Lent*, and *Quadrageſima*. See LENT, and FAST.

The Courts of Juſtice were all ſhut.—Under King *John*, it was expreſly declared, that *in Adventu Domini nulla Aſſiſa capi debet*: But this was afterwards alter'd; and it was made lawful, in reſpect of Juſtice and Charity which ought at all Times to be regarded, to take Aſſizes of Novel Diſſeiſin, Mort d'Anceſter, and Darrein Preſentment, in the Time of *Advent*, Septuageſima, and Lent. See ASSIZE.

This

This is also one of the Times, from the Beginning whereof, to the End of the Octaves of the *Epiphany*, the solemnizing of Marriage is forbid, without express Licence. See MARRIAGE; see also ROGATION.

ADVENTITIOUS, something accruing, or befalling a Person or Thing, from without. See ACCESSION, *&c.*

Thus, *Adventitious* Matter, is such Matter as doth not properly belong to any Body, but is casually joined to it. See ACCRETION, ADJUNCTIO, *&c.*

ADVENTITIOUS, in the Civil Law, is applied to such Goods as fall to a Man, either by mere Fortune, or by the Liberality of a Stranger, or by Collateral Succession. See GOODS.

The Word is used in opposition to *Profectitious*; by which are signified such Goods as descend in a direct Line, from Father to Son. See PROFECTITIOUS.

AD *Ventrem inspiciendum*, in Law. See VENTRE *inspiciendo*.

ADVENTURE, an extraordinary, and surprizing Enterprize, or Accident, either real or fictitious. See FABLE.

Novels, Romances, *&c.* are chiefly taken up in relating the *Adventures* of Cavaliers, Lovers, *&c.* See NOVEL, and ROMANCE.

The Word is *French*, and literally denotes an Event, or Accident.

Company of Merchant ADVENTURERS, was an antient Denomination of the *Hamburgh* Company. See *Hamburgh* COMPANY.

ADVERB, ADVERBIUM, in Grammar, a Particle join'd to a Verb, Adjective, or Participle, to explain their manner of acting or suffering; or to mark some Circumstance or Quality signified by them. See PARTICLE, VERB, *&c.*

The Word is formed from the Preposition *ad*, and *verbum*; and signifies literally a Diction *join'd to a Verb*, to show *how*, or *when*, or *where*, one is, does, or suffers: As, the Boy paints *neatly*, writes *ill*; the Book is *there*, &c.

Not that the *Adverb* is confin'd purely to Verbs; but because that is its most ordinary use.—We frequently find it join'd to Adjectives, and sometimes even to Substantives, particularly where those Substantives signify an Attribute, or Quality of the Thing spoken of, *v. g.* He is *very* sick; he acts *prudently*; he is *truly* King.

An *Adverb* is likewise join'd, sometimes to another *Adverb*, to modify its meaning, *v.g. very devoutly*, &c. Whence some Grammarians chuse rather to call them *Modificatives*; comprizing under this one general Term, both *Adverbs*, Conjunctions, Prepositions, and even Adjectives. See MODIFICATIVE.

Adverbs are very numerous, but may be reduced under the general Classes of *Adverbs of Time*, of *Place*, of *Order*, of *Quantity*, of *Quality*, of *Manner*, of *Affirmation*, of *Doubting*, and of *Comparison*.

ADVERSARIA, among the Antients, was used for a Book of Accounts, like our Journal or Day-Book; thus called, *quod adversa parte etiam scriptis impleretur*, because wrote even on the Backside.

Hence, *Adversaria* is sometimes also used among us for a *Common-place-Book*. See COMMON-*Place*.

ADVERSARY. See ANTAGONIST, OPPONENT, COMBAT, DUEL, *&c.*

The Word is form'd of the *Latin* Preposition *Adversus*, against; from *ad*, and *verto*, I turn to.

ADVERSATIVE, in Grammar.—A *Particle*, or *Conjunction Adversative*, is that which expresses some Difference, or Opposition between what goes before, and what follows. See CONJUNCTION.

Thus, *or* is an *Adversative*, v. g. Yes, *or* no.

ADVERTISEMENT, an Intelligence, or Information, given to Persons interested in an Affair.

The Word is form'd of the French *Avertissement*, from the Latin *Advertere*, to advert, consider, regard.

ADULT, ADULTUS, one who is come to Years of Discretion; who is enter'd upon Manhood, or the Age of Adolescence; and is old and big enough to have Understanding, and Discernment. See AGE.

The Word is formed from the Participle of the Verb *adolesco*, I grow up. See ADOLESCENCE.

The Anabaptists confer the Sacrament of Baptism upon none but *Adults*. See BAPTISM, and ANABAPTIST.

There is a notable Difference between the Proportions of Infants and *Adults*.—A Man, M. *Dodart* observes, form'd like a Fœtus, would be a Monster, and wou'd scarce be acknowledg'd for one of the Species. See FOETUS, and EMBRYO.

ADULTERATION, ADULTERATIO, the Act of debasing a Medicine or other thing, with bad Ingredients; or the putting one thing for, and into another. See SOPHISTICATION.

To *adulterate* the current Coin, is a Capital Crime in all Nations. See MONEY, and COIN.

The Word is *Latin*; form'd of the Verb *Adulterare*, to corrupt by mingling something foreign to any Substance.

ADULTERINE, in the Civil Law, a Child issued from an *adulterous* Amour, or Commerce. See ADULTERY.

Adulterine Children are more odious than the illegitimate Offspring of single Persons.—The *Roman* Law even refuses 'em the Title of Natural Children; as if Nature disown'd 'em. See BASTARD.

ADULTERY, ADULTERIUM, in our antient Law Books call'd ADVOWTRY, a Crime committed by married Persons, against the Faith pledged to each other in Marriage; by having carnal Commerce with some other: or even by a Person not married; by having to do with another that is. See FORNICATION, MARRIAGE, *&c.*

The antient *Romans* had no formal Law against *Adultery*; but both Accusation and Punishment were arbitrary.—The Emperor *Augustus* was the first who brought them into a Law; which he had the Misfortune to see executed in the Persons of his own Children.——This was the *Julian* Law.

But, tho this Law left the Accusation of *Adultery* open to every body, yet 'tis certain, *Adultery* has been always look'd upon as a private and domestick Crime, rather than a publick one; so that Strangers were seldom suffer'd to prosecute, especially where the Marriage was peaceable, and the Husband made no Complaint.

Some of the succeeding Emperors abrogated this Law, which left the Accusation of *Adultery* open to Strangers; in regard such an Accusation could not be enter'd, without setting the Husband and Wife at Variance, throwing the Children into a State of Uncertainty, and bringing Contempt and Derision upon the Husband; for as the Husband is the nearliest interested in the Matter, 'tis supposed he will examine the Wife's Actions with more Circumspection than any other: So that where he is silent, 'tis not fair any body else should speak for him. See ACCUSATION.

For this reason, the Law, in some Cases, has made the Husband both Judge and Executioner in his own Cause; and has allow'd him to revenge himself of the Injury, by taking away the Lives of the *Adulterers* whom he should apprehend in the Act.—'Tis true, where the Husband made a Trade of his Wife's Infamy, or where having seen her Shame with his own Eyes, he yet suffer'd patiently, and dissembled the Affront; in these Cases, *Adultery* became a Crime of publick Concern: and the *Julian* Law provides Punishments for such Husbands, as well as their Wives.

In most *European* Countries, at this Day, *Adultery* is not a publick Crime; and none but the Husband is suffered to intermeddle, excepting where the Scandal is very notorious. —Even the King's Advocates, Attorney, or the like, may not intermeddle.

Add, that tho the Husband who violates the Conjugal Bond be guilty of *Adultery* as well as the Wife; yet is not the Wife allow'd to accuse, or prosecute him for the same. See WIFE, HUSBAND, *&c.*

Socrates relates, L. V. c. 8. that under the Emperor *Theodosius*, in the Year 380, Women convicted of *Adultery* were punish'd by a publick Constupration.

Lycurgus punish'd the *Adulterer* as a Parricide.—The *Locrians* tore out his Eyes; and most of the Orientals punish him very severely.

The *Saxons* formerly burnt the *Adulteress*, and over her Ashes erected a Gibbet, whereon the *Adulterer* was hang'd. —In *England*, King *Edmond* punish'd *Adultery* as Homicide; but *Canutus* ordained the Man to be banish'd, and the Woman to have her Nose and Ears cut off.——*Qui uxoratus faciet* Adulterium, *habet Rex vel dominus superiorem*; *Episcopus inferiorem*. *L.* Hen. I. *c.* 12. *De* Adulterio *per totam Client. habet Rex hominem*, *Episcopus mulierem*. Domesday, tit. Cestre Civit.

In *Spain*, they punish'd *Adultery* by cutting off that Part which had been the Instrument of the Crime.—In *Poland*, before Christianity was establish'd, they punish'd *Adultery* and Fornication in a very particular manner: The Criminal they carried into the Market-Place, and there fasten'd him by the Testicles with a Nail; laying a Razor within his reach, and leaving him under a Necessity, either of doing Justice upon himself, or of perishing in that Condition.

At present, the Laws are much more favourable: — To Divorce, and strip the *Adulteress* of her Dower, is all her Punishment among us: In the *Romish* Countries, they also shut 'em up in Nunneries.

The *Lacedæmonians*, instead of punishing *Adultery*, permitted it, or at least tolerated it; as we are told by *Plutarch*. See CONCUBINE.

According to some of the Papal Decisions, *Adultery* renders Marriage between the two Criminals unlawful; this making what the Schools call *Impedimentum Criminis*.

The *Greeks*, and other Christians throughout the East, adhere to the Opinion that *Adultery* dissolves the Band of Marriage: So that the Husband, without more ado, may marry another.—The Council of *Trent* condemns that Opinion; and even in some measure anathematizes those who hold it. *Sess.* XXIV. *Can.* 7.

ADULTERY is alſo uſed by ſome fanciful Aſtronomers and Aſtrologers, for an Eclipſe of the Sun, or Moon; happening in an unuſual, and as they ſuppoſe, irregular manner: as in the Caſe of horizontal Eclipſes; where, tho the Sun and Moon be diametrically oppoſite, yet they appear as if above the Horizon, by reaſon of the Refraction. See ECLIPSE, REFRACTION, &c.

ADVOCATE, ADVOCATUS, among the *Romans*, a Perſon ſkill'd in their Law, and who undertook the Defence of Cauſes at the Bar. See LAW.

The Word is compounded of *ad*, and *voco*, *q. d.* I call to my aid, or defence.

The *Roman Advocates* anſwer'd to one Part of the Office of a Lawyer among us, *viz.* the Pleading Part; for as to the giving Counſel, they never meddled with it: that being the Buſineſs of the Juris-conſulti. See JURISCONSULTUS.

The *Romans*, in the firſt Ages of their State, held the Profeſſion of an *Advocate* in great honour; and the Seats of their Bar were crouded with Senators and Conſuls; they, whoſe Voices commanded the People, thinking it an Honour to be employ'd in defending them.

They were ſtyled *Comites*, *Honorati*, *Clariſſimi*, and even *Patroni*; as if their Clients were not leſs oblig'd to them, than Freedmen to their Maſters. See PATRON, and CLIENT.

But the Bar was not then venal.—Thoſe who aſpired to Honours and Offices, took this way of gaining an Intereſt in the People, and always pleaded *gratis*.

But no ſooner was Luxury and Corruption brought into the Commonwealth, than the Bar became a Sharer in them.—Then it was that the Senators let out their Voices for pay, and Zeal and Eloquence were ſold to the higheſt Bidder.——To put a Stop to this Abuſe, the Tribune *Cincius* procured a Law to be paſſed, called from him, *Lex Cincia*; where the *Advocates* were forbid to take any Money of their Clients.—*Fred. Brummerus* has publiſh'd an ample Comment upon this Law.

It had before been prohibited the *Advocates* to take any Preſents or Gratuities for their Pleading.—The Emperor *Auguſtus* added a Penalty to it: notwithſtanding which, the *Advocates* play'd their Parts ſo well, that the Emperor *Claudius* thought he did a great thing, when he oblig'd 'em not to take above eight great Seſterces, which are equivalent to 35 Pounds Sterling, for pleading each Cauſe.

ADVOCATE is ſtill uſed in Countries where the Civil Law obtains, for thoſe who plead and defend the Cauſes of Clients truſted to them. See CIVIL *Law*.

In *Scotland* they have a College, or *Faculty of Advocates*, 180 in number; appointed to plead in all Actions before the Lords of Seſſion.——They have a Dean, Treaſurer, Clerks, Examinators, and a Curator of their Library.

By the Articles of the Union, none are to be named ordinary Lords of Seſſion, except thoſe who have been *Advocates*, or principal Clerks of Seſſion for five Years, &c.

In Doctors Commons, the *Advocates* are uſually called *Proctors*, or *Procurators*. See PROCTOR, and PROCURATOR.

In *France*, they have two Kinds of *Advocates*, viz. *Pleading Advocates*, *Avocats Plaidants*; and *Counſel Advocates*, *Avocats Conſultants*.

This Diſtinction was form'd with a View to the two Branches among the *Romans*, *Advocati*, and *Juriſconſulti*.—Yet there is this difference, that the Function of the Juriſconſulti, who only gave their bare Advice, was of a different Kind from that of the *Advocati*; being a ſort of private and perpetual Magiſtrature, principally under the firſt Emperors; as, on the other hand, the *Advocati* never became *Juriſconſulti*. Whereas in *France*, after the *Advocates* have attain'd to Reputation and Experience enough at the Bar, they quit ſo buſy a Province, and become as it were Chamber Council.

They have alſo their *Advocate General*, and King's *Advocate*, *Avocat du Roy*.

Lord ADVOCATE, in *Scotland*, is one of the Officers of State, whoſe Buſineſs is to give his Advice about the making and executing of Laws; to defend the King's Right, and Intereſt in all publick Meetings; to proſecute all Capital Crimes before the Juſticiary; and concur in all Purſuits before Sovereign Courts for Breaches of the Peace; and alſo in all Matters wherein the King, or his Donator, has Intereſt.—He intents no Proceſſes of Treaſon, except by Warrant of Privy Council.

The *Lord Advocate* is ſometimes an ordinary Lord of Seſſion; in which Caſe, he only pleads in the King's Cauſes: otherwiſe, he is at liberty to plead in all Cauſes.

Fiſcal ADVOCATE, *Fiſci* ADVOCATUS, was an Officer inſtituted by the Emperor *Adrian*, to defend the Cauſe, and Intereſts of the *Fiſcus*, or private Treaſury; in the ſeveral Tribunals where that might be concern'd. See FISCUS.

Conſiſtorial ADVOCATE, is an Officer of the Court of *Rome*, whoſe Office is to plead upon the Oppoſitions made to the Proviſions of Benefices in that Court. See PROVISION.——They are ten in number.

ADVOCATE *of a City*, or *Town*, is a Magiſtrate eſtabliſhed in ſeveral Places of *Germany*, for the Adminiſtration of Juſtice in that City, in the Emperor's Name. See ADVOWEE.

ADVOCATE *of a Church*, or *Eccleſiaſtical* ADVOCATE, a Perſon to whom it antiently belong'd, to defend the Rights and Intereſts of a Church, both in a Legal and a Military Capacity; more uſually called *Advouee*, or *Avowee*. See ADVOWEE.

The Word *Advocatus* or *Advowee* is ſtill retained, for what we uſually call the *Patron*, or he who has the Advowſon, or Right of Preſentation in his own Name. See PATRON, ADVOWSON, PRESENTATION, &c.

The Monaſteries had alſo their *Advocates*, or *Advowees*. See MOMASTERY, &c.

ADVOCATIONE *Decimarum*, a Writ which lies for the Claim of the fourth Part, or upward, of the Tithes that belong to any Church. See TITHE.

ADVOW, or Avow, *Advocare*, in Law, to juſtify or maintain an Act formerly done.

Thus, if one take a Diſtreſs for Rent, or other thing, and he that is diſtrained ſues a Replevin; the Diſtrainer, juſtifying or maintaining the Act, is ſaid to *avow*. See DISTRESS, REPLEVY, &c.

Bracton uſes the *Latin* Term *Advocare*, in the ſame Signification; as, *Advocatio diſſeiſinæ*, L. IV. c. 26. And in *Caſſaneus de Conſuet. Bur. Advocare* is uſed in the like Senſe. The Author laſt cited does alſo uſe the Subſtantive *Deſavohamentum*, for a Diſavowing, or refuſing to *avow*.

The original Uſe of the Word was this.—When ſtoln Goods were bought by one, and ſold to another, it was lawful for the right Owner to take them wherever they were found; and he in whoſe Poſſeſſion they were found, was bound, *Advocare*, *i. e.* to produce the Seller to juſtify the Sale, and ſo on till they found the Thief.

Afterwards, the Term was applied to any thing which a Man acknowledg'd to be his own, or done by him; in which Senſe, it is mentioned in *Fleta*, L. I. pars 4. *Si vir ipſum in domo ſua ſuſceperit, nutrierit & advocaverit filium ſuum.*

ADVOWEE, or AVOWEE, or ADVOCATE *of a Church*, was heretofore the Patron, or Defender of the Rights thereof. See ADVOCATE, PATRON, &c.

The Word is French, *Advoué*, or *Avoue*, of the Verb *Avouer*, to avow, own, acknowledge Dependence, Subjection, &c.——Whence alſo *Advowſon*. See Avow, and ADVOWSON.

There were alſo *Advowees* for Cathedrals, Abbies, Monaſteries, &c.—Thus, *Charlemaign* had the Title of *Advocate* of St. *Peter's*; King *Hugh*, of St. *Riquier*; and *Bollandus* mentions ſome Letters of Pope *Nicholas*, by which he conſtituted King *Edward* the Confeſſor, and his Succeſſors, *Advocates* of the Monaſtery at *Weſtminſter*, and of all the Churches in *England*.

Theſe *Advowees* were the Guardians, Protectors, and, as it were, Adminiſtrators of the temporal Concerns of the Churches, &c. and under their Authority, were paſs'd all Contracts which related thereto. See GUARDIAN, &c.

It appears alſo, from the moſt antient Charters, that the Donations made to Churches, were conferr'd on the Perſons of the *Advowees*.—They always pleaded the Cauſes of the Churches in Court, and diſtributed Juſtice for them, in the Places under their Juriſdiction.——They alſo commanded the Forces furniſh'd by their Monaſteries, &c. for the War; and even were their Champions, and ſtood Duels for them. See COMBAT, DUEL, and CHAMPION.

This Office is ſaid to have been firſt introduc'd in the IVth Century, in the Time of *Stilico*; tho the Benedictines don't fix its Origin before the VIIIth Century. *Act. Sanct. Benedict.* S. III. P. 1. Præf. p. 91, &c.

By degrees, Men of the firſt Rank were brought into it, as it was found neceſſary, either to defend with Arms, or to protect with Power and Authority.——In ſome Monaſteries they were called *Conſervators*; but theſe, without the Name, had all the ſame Functions with *Advowees*. See CONSERVATOR.

There were alſo ſometimes ſeveral *Sub-Advowees*, or Sub-Advocates in each Monaſtery, who officiated inſtead of the *Advowees* themſelves; which, however, proved the Ruin of Monaſteries; thoſe inferior Officers running into great Abuſes.

Hence, Husbands, Tutors, and every Perſon in general, who took upon him the Defence of another, were alſo called *Advowees*, or Advocates.—Hence ſeveral Cities, alſo, had their *Advowees*; which were eſtabliſh'd long after the Eccleſiaſtical ones, and doubtleſs from their Example.—Thus, we read in Hiſtory of the *Advowees* of *Augsburg*, of *Arres*, &c.

The Vidames aſſumed the Quality of *Advowees*; and hence it is, that ſeveral Hiſtorians of the VIIIth Century, confound the two Functions together. See VIDAME.

And hence alſo it is, that ſeveral Secular Lords in *Germany* bear Mitres for their Creſts; as having antiently been Advocates of the great Churches. See MITRE, and CREST.

Spelman diſtinguiſhes two Kinds of Eccleſiaſtical *Advowees*.—The one, of Cauſes, or Proceſſes, *Advocati Cauſarum*: the other, of Territory, or Lands, *Advocati Soli*.

The former were nominated by the King, and were uſually Lawyers, who undertook to plead the Cauſes of the Monaſteries.

The other, which ſtill ſubſiſt, and are ſometimes called by their primitive Name, *Advowees*, tho more uſually *Patrons*, were hereditary; as being the Founders and Endowers of Churches, &c. or their Heirs. See PATRON.

In this Senſe, Women were ſometimes *Advocateſſes*, *Advocatiſſæ*.—And, in effect, the Canon Law mentions ſome who had this Title, and who had the ſame Right of Preſentation, &c. in their Churches, which the *Advowees* themſelves had.

In a Stat. 25 *Edw.* III. we meet with *Advowee Paramount*, for the Higheſt Patron; that is, the King. See PARAMOUNT.

There were alſo *Advowees of Countries*, and *Provinces*.—In a Charter of the Year 1187, *Berthold* Duke of *Zeringhen*, is called *Advowee* of *Thureg*; and in the *Notitia* of the *Belgic* Churches, publiſh'd by *Mirœus*, the Count of *Lovain* is ſtiled *Count and* Advowee *of* Brabant.——In the XIth and XIIth Centuries, we alſo meet with the *Advowees* of *Alſatia*, of *Suabia*, &c.

Raymond de Agiles relates, that after the Recovery of *Jeruſalem* from the *Saracens*, it being propoſed to elect a King thereof; the Biſhops pleaded, *Non debere ibi eligi Regem, ubi Deus paſſus & coronatus eſt*, &c. That "they "ought by no means to appoint a King, in a Place where "God had ſuffer'd and been crown'd; but ſhould content "themſelves with electing an *Advowee*, or *Advocate of the* "*City*, to take Care of the Garriſon, &c."——In effect, *Dodechin*, a *German* Abbot, who wrote a Voyage to the Holy Land in the XIIth Century, calls *Godfrey* of *Bulloign*, *Advowee of the Holy Sepulchre*.

ADVOWSON, or ADVOWZEN, *Advouerie*, *Advocatia*, or *Advocatio*, the Quality, or Office of an *Advowee*, or Advocate, &c. See ADVOWEE, &c.

ADVOWSON, or ADVOUZEN, in Common Law, ſignifies a Right to preſent to a Benefice. See PRESENTATION.

In this Senſe, the Word imports as much as *Jus patronatus* in the Canon Law. See PATRONAGE.

The Reaſon of the Name *Advowſon*, *Advocatio*, is, that antiently, thoſe who had a Right to preſent to a Church, were Maintainers of it, or great Benefactors to it; and were ſometimes called *Patroni*, and ſometimes *Advocati*, or *Advowees*. See ADVOCATE, &c.

In the general, an *Advowſon* is where a Biſhop, Dean, or Chapter, and their Succeſſors, or any Lay Patron, have a Right to preſent whom they pleaſe to any ſpiritual Benefice, when it becomes void. See VACANCY and BENEFICE, &c.

This *Advowſon* is of two Kinds.—*Advowſon in groſs*, that is, not immediately reſtrained, or adhering to any Manor, as Parcel thereof.

And *Advowſon appendant*, which depends on a Manor, as appurtenant to it: This *Kitchin* calls an *Incident*, which may be ſeparated from its Subject.

Add, that as the Builders and Endowers of a Church were the Patrons of it; ſo thoſe who founded any Religious Houſe, had the *Advowſon* or Patronage of it.

Sometimes the Patron had the ſole Nomination of the Prelate, Abbot, or Prior; either by Inveſtiture, (or Delivery of a Paſtoral Staff) or by direct Preſentation to the Dioceſan: And if a free Election was left to the Religious, yet a *Conge d'Elire*, or Licence of Election, was firſt to be obtain'd of the Patron, and the Perſon elected was confirm'd by him.

If the Founder's Family was extinct, the Patronage of the Convent went to the Lord of the Manor.

ADVOWTRY. See ADULTERY.

ADUST, ADUSTUS, is applied, among Phyſicians, &c. to ſuch Humours, as by long Heat become of a hot and fiery Nature. See HUMOUR.

Such is Choler ſuppoſed to be.—Melancholy is uſually conſider'd as black and *aduſt* Bile. See CHOLER, MELANCHOLY, &c.

Aduſt Blood, ſays *Blanchard*, is, when by reaſon of extraordinary Heat, its more ſubtile Parts are all evaporated, leaving the groſſer, with all the Impurities therein, half torrify'd, as it were. See BLOOD.

The Word is form'd of the Latin *aduro*, I burn.

ADYTUM, Ἄδυτον, a ſecret or retir'd Place in the Pagan Temples, where Oracles were given, and into which none but the Prieſts were admitted. See TEMPLE, ORACLE, &c.

AE, or Æ, a Dipthong, or double Vowel, borrow'd from the *Greeks* and *Latins*. See DIPTHONG.

Authors are by no means agreed as to the Uſe of the *æ*.—Some, out of regard to Etymology, inſiſt on its being retain'd in all Words, particularly Technical ones, borrowed from thoſe Languages; while others, from a Conſideration that it is no proper Dipthong in our Language, its Sound being no other than that of the ſimple *e*; contend that it ought to be entirely diſuſed, except in Words which retain their *Latin* and *Greek* form in every thing elſe.

For our own part, till the Point is a little better ſettled, we muſt be contented to ſteer a kind of middle, or neutral Courſe; conforming our ſelves to Cuſtom as nearly as may be.—Such Articles, therefore, as are omitted under *Æ*, the Reader will find under *E*.

ÆACEA, in Antiquity, ſolemn Feaſts and Combats, celebrated in *Ægina*, in honour of *Æacus*; who had been their King, and who, on account of his ſingular Juſtice upon Earth, was ſuppoſed to have a Commiſſion given him, to be one of the Judges in Hell. See FEAST, &c.

ÆCHMALOTARCHA, in Antiquity, a *Greek* Term, ſignifying, Chief or Leader of the Captives.

The *Jews* who refuſed to follow *Zorobbabel*, and return with him to *Jeruſalem*, after the *Babyloniſh* Captivity; created an *Æchmalotarcha*, to govern them.—Not that the *Jews* themſelves call'd him by this Name, as ſome Authors have aſſerted; for that People ſpoke *Hebrew*, or *Chaldee*, not *Greek*. But *Origen*, and others, who wrote in the *Greek* Tongue, render'd the *Hebrew* Name ראש גלות *Roſch galuth*, q. d. *Chief of the Captivity*, by a *Greek* Name of the like import, ἀιχμαλωταρχη, form'd from ἀιχμαλωτος, of ἀιχμη, *a Point or Pike*, and ἀρχη, *Command*.

However, the *Jews* muſt have had Officers of this kind before the Return from *Babylon*: Witneſs the Hiſtory of *Suſannah*; the two Elders who condemn'd her, being *Æchmalotarchæ* that Year.—The *Jewiſh* Writers aſſure us, that the *Æchmalotarchæ* were only to be choſen out of the Tribe of *Judah*.

ÆDES, in Antiquity, an inferior kind of Temple, diſtinguiſhed by this, that it was not conſecrated by the Augurs. See TEMPLE, AUGUR, &c.

Such was the *Ærarium*, or Treaſury; called *Ædes Saturni*. See ÆRARIUM.

ÆDILIS, EDILE, in Antiquity. See EDILE.

ÆGILOPS, a Tumor, or rather Ulcer, in the great Canthus or Angle of the Eye, by the Root of the Noſe; either with or without an Inflammation. See EYE, TUMOR, and ULCER.

The Word, in its original *Greek*, ἀιγιλωψ, ſignifies a *Goat's Eye*; in regard, Goats are ſuppoſed extremely liable to this Diſtemper.

If the *Ægilops* be neglected, it burſts, and degenerates into a Fiſtula, which eats into the Bone. See FISTULA.

Authors frequently uſe *Ægylops*, *Anchylops*, and *Fiſtula Lachrymalis* promiſcuouſly: But the more accurate, after *Ægineta*, make a difference.—The Tumor, ere it becomes ulcerous, is properly called *Anchylops*; and after it has render'd the *Os Lachrymale* carious, *Fiſtula Lachrymalis*. See ANCHYLOPS, &c.

If the *Ægilops* be accompanied with an Inflammation; it takes its Riſe from the Abundance of Blood, which the too great Plenitude diſcharges upon the Corner of the Eye.—If it be without an Inflammation, it is ſuppoſed to proceed from a viſcous pituitous Humour, thrown upon this Part.

ÆGIPAN, in Antiquity, a Denomination given to *Pan*, and the *Panes*. See PANES.

The Word is compounded of αιξ, αιγος, *Goat*; as being repreſented with the Horns, Legs, Feet, &c. of that Animal.

The Antients alſo gave the Name *Ægipans* to a ſort of Monſters mention'd by *Pliny*, *Solinus*, and *Pom. Mela*, L. I. c. 8.—*Salmaſius*, in his Notes on *Solinus*, takes *Ægipan* to have ſignified the ſame in *Lybia* with *Sylvanus* among the *Romans*. See SYLVAN.

Voſſius rejects the Opinion, and ſhews, that the *Ægipans* had not Faces like Men, as the *Sylvans* had; but like Goats. In effect, the whole upper Part of the Body reſembled that Animal; and as to the lower, they painted it with a Fiſhes Tail. The Monſter repreſented on ſome Medals of *Auguſtus*, by Antiquaries called *Capricornus*; appears to be the true *Ægipan*.

ÆGYPTIACUM, in Pharmacy, a kind of deterſive Unguent; ſo called from its duſky Hue or Colour, which reſembles the ſwarthy Complexion of the *Ægyptians*. See DETERSIVE, and UNGUENT.

It is compoſed of Verdigreaſe, Vinegar, and Honey, boil'd to a Conſiſtence.

The Preſcription is *Meſue*'s.—It is chiefly uſed for eating off rotten Fleſh, and cleanſing foul Ulcers; particularly Venereal ones in the Throat, &c. It alſo deſtroys thoſe cancerous Eroſions apt to grow in Childrens Mouths.

ÆNIGMA. See ENIGMA.

ÆOLIC, or ÆOLIAN, in Grammar, the Name of one of the five Dialects of the *Greek* Tongue. See GREEK, and DIALECT.

It was firſt uſed in *Bœotia*; whence it paſs'd into *Æolia*, and was that which *Sappho* and *Alcæus* wrote in.

The *Æolic* Dialect throws out all the ſharp, harſh Accents; and agrees in ſo many things with the *Doric* Dialect, that the two are uſually confounded together. See DORIC.

ÆOLIC, or ÆOLIAN *Mode*, in Muſick. See MODE.

ÆOLIPILE, ÆOLIPILA, a hydraulick Inſtrument, conſiſting of a hollow metalline Ball, with a ſlender Neck or Pipe ariſing from the ſame; which being filled with Water, and thus expos'd to the Fire, produces a vehement Blaſt of Wind. See WIND.

This Inſtrument, *Des Cartes* and others have made uſe of, to account for the natural Cauſe and Generation of Wind. —And hence its Name, *Æolipila*, q. d. *pila Æoli*, *Æolus*'s Ball; *Æolus* being reputed the God of the Winds. See GOD.

Sometimes the Neck is made to ſcrew into the Ball, which is the moſt commodious way, becauſe then the Cavity may the more readily be filled with Water: If there be no Screw, it may be fill'd thus.—Heat the Ball red hot, and throw it into a Veſſel of Water; the Water will run in at a ſmall Hole, and fill about two thirds of the Cavity.

If, after this, the *Æolipile* be laid on, or before, the Fire; ſo that the Water and Veſſel become very much heated; the Water being rarified into a kind of momentary Air, will be forced out with very great Noiſe and Violence; but it will be by Fits, and not with a conſtant and uniform Blaſt.

Theſe Phænomena, the Reader will be eaſily enabled to ſolve, from what is ſhewn under the Articles, AIR, WATER, RAREFACTION, &c.

The Air or Vapour iſſuing out of the *Æolipile*, is found ſenſibly hot near the Orifice; but at a farther diſtance, cold; like what we obſerve of our own Breath: The Cauſe of which is controverted.—The *Corpuſcularians* account for it hence, that the Fire contain'd in the rarified Vapour, tho ſufficient to be felt near the Orifice, diſengages it ſelf in the Progreſs of the Stream; and becomes inſenſible ere arriv'd at the Journey's End. See FIRE.—The mechanical Philoſophers, on the other hand, hold that the Vapour, at its Exit from the Ball, is endued with that peculiar Species of circular Motion, which conſtitutes the Quality Heat; and that the further it recedes therefrom, the more is this Motion deſtroy'd, by the Reaction of the contiguous Air; till the Heat at length becomes inſenſible. See HEAT.

Chauvin ſuggeſts ſome further Uſes of the *Æolipile*.—1°, He thinks it might be applied inſtead of Bellows to blow the Fire, where a very intenſe heat is requir'd. 2°, If a Trumpet, Horn, or other ſonorous Inſtrument were fitted to its Neck, it might be made to yield Muſick. 3°, If the Neck were turn'd perpendicularly upwards, and prolong'd by a Tube or hollow Cylinder fitted to it, and a hollow Ball laid on the Orifice of the Tube; the Ball would be blown up, and kept fluctuating or playing up and down: As in the Stream of a Fountain. See FOUNTAIN.——And, 5°, it might ſerve to ſcent, or perfume a Room, if fill'd with perfum'd, inſtead of common Air.

ÆON, EON, Αἰων, q. d. *Age*; literally ſignifies the Duration of a thing. See AGE, and DURATION.

But ſome antient Hereticks have affix'd another Idea to it; in order to which, they have made uſe of the Philoſophy of *Plato*: giving Reality to the Ideas, which that Philoſopher had imagin'd in God; and even perſonifying them, and feigning them diſtinct from God, and to have been produced by him, ſome Male, others Female. See IDEA, and PLATONISM.

Theſe Ideas they call *Æons*; of an Aſſemblage whereof they compos'd the Deity, calling it πλήρωμα, a *Greek* Word, ſignifying Fulneſs.

Simon Magus is ſaid to have been the firſt Inventor of theſe *Æons*; which were afterwards brought to Perfection by *Valentinus*, who acknowledg'd thirty of 'em. See GNOSTICS, VALENTINIANS, &c.

ÆQUAL.	See	EQUAL.
ÆQUALITY.		EQUALITY.
ÆQUATION.		EQUATION.
ÆQUATOR.		EQUATOR.
ÆQUINOX.		EQUINOX.
ÆQUINOCTIAL.		EQUINOCTIAL.
ÆQUIPOLLENT.		EQUIPOLLENT.
ÆQUIVALENT.		EQUIVALENT.
ÆQUIVOCAL.		EQUIVOCAL.
ÆQUIVOCATION, &c.		EQUIVOCATION, &c.

ÆRA, in Matters of Chronology, ſignifies the ſame with *Epocha*; that is, any Point of Time, determin'd at Pleaſure, whence to begin the Computation of the Years elapſed ſince. See EPOCHA.

The generality of Writers agree, that the *Æra* was originally uſed in reſpect of the manner of reckoning Time among the *Spaniards*; whoſe *Æra* was thirty eight Years older than the Chriſtian Epocha, or Year of Grace.—— *Peter* the fourth King of *Arragon*, was the firſt who aboliſh'd the *Spaniſh Æra* in his States, in the Year 1350: As did *John* I. King of *Portugal*, in 1451.

The Origin of the Word is ſomewhat obſcure.—*Favyn* ſays, that in *Cicero* and *Lucilius*, the Word *Æra* is plural, and ſignifies the ſame thing with *Commentaria*, Leaves of a Book of Accounts, or a Merchant's Journal.

Others, according to the ſame Author, are of opinion, that *Æra* was uſed inſtead of *Hera*, for *Herus*, Maſter, Lord; and that it ſignify'd the Dominions of a Prince.

Others, according to *Iſidore*, derive it from *Æs*, *Æris*; on account of the Tax of a Piece of Silver, impos'd by *Auguſtus* on the Heads of all the Subjects of his Empire.

Others ſay, that the Word is form'd from the initial Letters of the three firſt Words in the publick Acts, *Annus* ER*at Auguſti*; but theſe three laſt Etymologies are rejected with good Reaſon.

ÆRARIUM, the publick Treaſury of a State or People. See TREASURY.

The Temple of *Saturn* at *Rome*, being the great Treaſury of the State, was firſt called *Ærarium*; from *Æs*, *Æris*, Braſs; that being the only Money in uſe before the Year of *Rome* 485. *Pliny*, L. III. c. 33.—See MONEY.

The *Ærarium Militare* was a Fund of Money, deſtin'd for the Maintenance of ſeveral Companies of Soldiers, to be in readineſs for the better Defence of the City.—It was firſt erected under *Auguſtus*, and maintained by a yearly voluntary Contribution; but that proving inſufficient, the twentieth Part of all Legacies and Inheritances, except of ſuch as fell to the next of kin or the Poor, were conſign'd to this Treaſury.

For the Cuſtody hereof, three of his Lifeguard were conſtituted *Præfecti Ærarii*. See PRÆFECTUS.

AERIAL, AERIUS, ſomething that conſiſts of Air, or has a relation or reſemblance to Air. See AIR.

The *Eſſeni*, the moſt refined and rational Sect among the *Jews*, held that the human Soul conſiſted of an *Aerial* Matter. See ESSENI.

Angels or Spirits, whether Good or Evil, ſaid ſometimes to appear, are ſuppoſed to aſſume an *aerial* Body, in order to come ſenſibly. See ANGEL.

Porphyry and *Jamblicus* admit a ſort of Demons or *aerial* Spirits, to which they give various Names. See DEMON, GENIUS, &c.

The Roſicrucians, and other Viſionaries, fill the Atmoſphere with *aerial* Inhabitants. See ROSICRUCIAN, SYLPH, GNOME, &c.

AERIAL *Perſpective*, is that which repreſents Bodies weaken'd and, diminiſh'd, in proportion to their diſtance from the Eye. See PERSPECTIVE.

Aerial Perſpective, has chiefly to do with the Colours of Objects, whoſe force and luſtre it takes off more or leſs, to make 'em appear as if more or leſs remote. See COLOUR, and CLAIR-OBSCURE.

It is founded on this, that the longer Column of Air an Object is ſeen thro'; the weaker do the viſual Rays emitted from it affect the Eye. See VISION.

AERIANS, AERIANI, in Antiquity, a Sect in Religion, denominated from *Aerius*; a Perſon alive in the Time of St. *Epiphanius*.

The *Aerians* had much the ſame Sentiments, in reſpect of the Trinity, as the *Arians*; beſide which, they had ſome Dogmas of their own, and particularly this: That there is no difference between Prieſts and Biſhops; but that the Prieſthood and Epiſcopate are abſolutely one and the ſame Order, or Dignity: An Opinion ſince ſtrenuouſly aſſerted by many modern Divines. See BISHOP, PRIEST, PRESBYTER, &c.

Aerius built his Doctrine chiefly on ſome Paſſages in St. *Paul*; and, among others, that in the firſt Epiſtle to *Timothy*, Ch. IV. v. 14. where that Apoſtle exhorts him not to neglect *the Gift he had receiv'd by the laying on of the Hands of the Presbytery*. Here, obſerves *Aerius*, is no mention of Biſhops; but *Timothy* evidently receiv'd his Ordination from the Presbyters or Prieſts.

St. *Epiphanius*, *Hær.* 75. ſtands up briſkly for the Superiority of Biſhops, againſt the *Aerians*.—The Word *Presbytery* in St. *Paul*, he obſerves, includes both Biſhops and Prieſts; the whole Senate, or Aſſembly of the Eccleſiaſticks of the Place: And in ſuch an Aſſembly had *Timothy* been ordain'd. See PRESBYTERY.

AEROMANCY, AEROMANTIA, a Kind of Divination, perform'd by means of the Air. See DIVINATION, and AIR.

The Word is compounded of the *Greek* ἀηρ, *Air*, and μαντεία, *Divination*. See HYDROMANCY.

AEROMETRY, AEROMETRIA, the Art of meaſuring the Air, its Powers and Properties. See AIR.

Aerometry

Aerometry includes the Laws of the Motion, Gravitation, Preſſion, Elaſticity, Rarefaction, Condenſation, &c. of that Fluid. See ELASTICITY, RAREFACTION, &c.

The Word *Aerometry* is but little uſed: In lieu hereof, we commonly call this Branch of Philoſophy, *Pneumatics*. See PNEUMATICS.

C. Wolfius, Profeſſor of Mathematicks at *Hall*, having reduced many of the Affections of this Fluid to geometrical Demonſtration; publiſhed *Elements of Aerometry*, at *Leipſic*, 1709, firſt in *High Dutch* and afterwards in *Latin*.—Thus is the Doctrine of the Air incorporated into the Mathematical Sciences. See MATHEMATICKS.

The Word is compounded of ἀηρ, and μετρεω, *to meaſure*.

ÆRUGO. See RUST.

ÆRUGO *Æris*, in Medicine, &c. See VERDEGREASE.

ÆRY, or AIRY, of Hawks, is what we call a Neſt in other Birds. See HAWK, and HAWKING.

ÆSCHYNOMENOUS *Plants*, among Botaniſts, are thoſe popularly called *Senſitive Plants*. See SENSITIVE.

ÆSNECY, in Law. See ESNECY.

ÆSTIMATIO *Capitis*, in our antient Law-Books. See WERE, WERELADE, WEREGILD, &c.

King *Athelſtan*, in a great Aſſembly held at *Exeter*, declared what Mulcts were to be paid *pro æſtimatione capitis*, for Offences committed againſt ſeveral Perſons according to their degrees; the *Eſtimation* of the King's Head to be 30000 *Thrymſæ*; of an Archbiſhop, or Satrapa, or Prince, 15000; of a Biſhop or a Senator, 8000; of a Prieſt, or a Thane, 2000, &c. Creſſy's *Church Hiſt.* fol. 834. *b.* and L. *Hen.* I.

ÆSTIVAL, or ESTIVAL, of or belonging to Summer. See SUMMER.

Thus, we ſay, the *Æſtival Solſtice*, &c. in oppoſition to *Brumal*. See SOLSTICE.

ÆSTUARY, ÆSTUARIUM, in Geography, an Arm of the Sea; running up a good way into the Land. See SEA.

Such is *Briſtol* Channel, many of the Firths of *Scotland*, &c.

ÆSTUARY, is ſometimes alſo uſed in Pharmacy, for a Vapour-Bath, *Balneum Vaporoſum*, See VAPOUR, and BATH.

ÆS *Uſtum*, called alſo *Crocus Veneris*, a Chymical Preparation, made of Copper cut into thin Plates, put into a Crucible with Sulphur and Salt, *ſtratum ſuper ſtratum*, and thus ſet in a hot Charcoal Fire, till the Sulphur be conſumed. See CROCUS, COPPER, VENUS, &c.

It is very deterſive; and is uſed for eating off dead Fleſh. They who make this uſe of it, are to heat it red hot in the Fire nine times; and quench it as often in Linſeed Oil. See EPULOTIC.

ÆTHER, is uſually underſtood of a thin, ſubtile Matter, or Medium, much finer and rarer than Air; which commencing from the Limits of our Atmoſphere, poſſeſſes the whole heavenly Space. See HEAVEN, WORLD, &c.

The Word is *Greek*, αἰθηρ, ſuppoſed to be form'd from the Verb αἰθειν, *to burn, to flame*; ſome of the Antients, particularly *Anaxagoras*, ſuppoſing it of the Nature of Fire. See FIRE.

The Philoſophers cannot conceive that the largeſt Part of the Creation ſhould be perfectly void; and therefore fill it with a Species of Matter under the Denomination of *Æther*.—But they vary extremely as to the Nature and Characters of this *Æther*.

Some conceive it as a Body *ſui generis*, appointed only to fill up the Vacuities between the heavenly Bodies; and therefore confined to the Regions above our Atmoſphere.—Others ſuppoſe it of ſo ſubtile and penetrating a Nature, as to pervade the Air, and other Bodies; and poſſeſs the Pores and Intervals thereof.—Others deny the Exiſtence of any ſuch ſpecifick Matter; and think the Air it ſelf, by that immenſe Tenuity and Expanſion it is found capable of, may diffuſe it ſelf thro' the interſtellar Spaces, and be the only Matter found therein. See AIR.

In effect, *Æther*, being no Object of our Senſe, but the mere Work of Imagination, brought only upon the Stage for the ſake of Hypotheſis, or to ſolve ſome Phænomenon, real or imaginary; Authors take the Liberty to modify it how they pleaſe.—Some ſuppoſe it of an elementary Nature, like other Bodies, and only diſtinguiſh'd by its Tenuity, and the other Affections conſequent thereon: which is the *Philoſophical Æther*.—Others will have it of another Species, and not Elementary; but rather a ſort of fifth Element, of a purer, more refined, and ſpirituous Nature than the Subſtances about our Earth; and void of the common Affections thereof, as Gravity, &c. The heavenly Spaces, being the ſuppoſed Region or Reſidence of a more exalted Claſs of Beings; the Medium muſt be more exalted in proportion.—Such is the antient and *popular* Idea of *Æther*, or *Æthereal Matter*. See ÆTHEREAL.

The Term *Æther* being thus embarraſs'd with a Variety of Ideas, and arbitrarily applied to ſo many different things; the later and ſeverer Philoſophers chuſe to ſet it aſide: and in lieu thereof, ſubſtitute other more determinate ones.

Thus, the *Carteſians* uſe the Term *Materia Subtilis*; which is their *Æther*: And Sir *I. Newton*, ſometimes, a *Subtile Spirit*, as in the Cloſe of his *Principia*; and ſometimes a *Subtile* or *Æthereal Medium*; as in his *Opticks*.

The Truth is, there are abundance of Conſiderations, which ſeem to evince the Exiſtence of ſome Matter in the Air, much finer than the Air it ſelf.—There is an unknown ſomething, which remains behind when the Air is taken away; as appears from certain Effects which we ſee produced *in Vacuo*.—Heat, Sir *I. Newton* obſerves, is communicated thro' a Vacuum, almoſt as readily as thro' Air: But ſuch Communication cannot be without ſome interjacent Body, to act as a Medium. And ſuch Body muſt be ſubtile enough to penetrate the Pores of Glaſs; and may be very well concluded to permeate thoſe of all other Bodies; and conſequently be diffuſed thro' all the Parts of Space: Which anſwers to the full Character of an *Æther*. See HEAT.

The Exiſtence of ſuch Æthereal Medium being ſettled; that Author proceeds to its Properties; inferring it to be not only rarer and more fluid than Air, but exceedingly more elaſtick, and active: In Virtue of which Properties, he ſhews, that a great part of the Phænomena of Nature may be produced by it.—To the Weight, *e. g.* of this Medium, he attributes Gravitation, or the Weight of all other Bodies; and to its Elaſticity, the elaſtick Force of the Air, and of nervous Fibres, and the Emiſſion, Refraction, Reflection, and other Phænomena of Light; as alſo, Senſation, Muſcular Motion, &c.—In fine, this ſame Matter ſeems the *Primum Mobile*, the firſt Source or Spring of phyſical Action in the modern Syſtem.—*See further under the Article Subtile* MEDIUM, ATTRACTION, GRAVITATION, REFRACTION, REFLECTION, &c. ſee alſo FIBRE, *Muſcular* MOTION, &c. ſee alſo NEWTONIAN *Philoſophy*, &c.

The *Carteſian Æther* is ſuppoſed not only to pervade, but adequately to fill all the Vacuities of Bodies; and thus to make an abſolute Plenum in the Univerſe. See *Materia* SUBTILIS; ſee alſo PLENUM; ſee alſo CARTESIANISM, &c.

But Sir *I. Newton* overturns this Opinion, from divers Conſiderations; by ſhewing, that the Celeſtial Spaces are void of all ſenſible Reſiſtance: For, hence it follows, that the Matter contained therein, muſt be immenſely rare, in regard the Reſiſtance of Bodies is chiefly as their Denſity; ſo that if the Heavens were thus adequately fill'd with a Medium or Matter how ſubtile ſoever, they would reſiſt the Motion of the Planets and Comets much more than Quickſilver, or Gold. See RESISTANCE, VACUUM, PLANET, COMET, &c.

ÆTHEREAL, ÆTHEREUS, ſomething that belongs to *Æther*, or is of the Nature of *Æther*. See ÆTHER.

Thus, we ſay, the *Æthereal* Space; *Æthereal* Regions, &c.—Some of the Antients divided the Univerſe, with reſpect to the Matter contain'd therein, into *Elementary* and *Æthereal*. See UNIVERSE, and ELEMENTARY.——Under *Æther*, or the *Æthereal* World, was included all that Space above the upper Element, *viz.* Fire. This they ſuppoſed to be perfectly, homogeneous, incorruptible, unchangeable, &c. See CORRUPTION, &c.

'Twas a Point controverted among 'em, Whether or no the *Æthereal* Matter had the Property of Gravity?—— Many late Philoſophers, not only at home but abroad, contend for its Gravity; and even for its being the Cauſe of Gravity in all other Bodies.—In effect, ſays *Chauvin*, Bodies do not deſcend by any inherent Principle; but by the Impulſe or Truſion of ſomething external: which can be nothing but Æther; in regard they fall *in Vacuo* as readily, nay more ſo, than in open Air: From the ſame Principle ariſes the Coheſion of Bodies, &c. *Lexic. Philoſoph. Voc. Æther*. See MEDIUM.

ÆTHEREAL *Oil*, is a fine, ſubtile Oil, approaching nearly to the Nature of a Spirit. See OIL.

Thus, the pure Liquor riſing next after the Spirit, in the Diſtillation of Turpentine, is called the *Æthereal Oil* of Turpentine. See TURPENTINE.

Some Chymiſts diſtinguiſh two Principles in Urine; the one a volatile urinous Salt, reſembling Spirit of Nitre; the other an *Æthereal Oil*, or *Sulphur*; partaking of the Nature of Spirit of Wine. *Dionis*. See URINE.

ÆTHEREAL *Heaven*. See *Æthereal* HEAVEN.

ÆTHIOPS *Mineral*, a Preparation of Mercury, made by grinding equal Quantities of crude Quickſilver and Flower of Sulphur, in a Stone or Iron Mortar; till they become incorporated into a black Pouder. See MERCURY.

It is preſcribed for the Worms, and all Crudities and Acrimony of the Humours; and is reputed infallible againſt the Itch, and other cutaneous Diſeaſes.

AETIANS, AETIANI, in Antiquity, a Sect or Branch of *Arians*, the Diſciples of *Aetius* of *Antioch*, ſirnamed the *Impious*; who, according to *Philaſtrius*, was firſt Smith, then Sophiſt, and laſtly Phyſician. See ARIAN.

The *Aetians* had divers other Denominations; as, *Pure Arians*, *Eunomians*, *Heterouſians*, *Troglodytes*. See EUNOMIANS, HETEROUSIAN, &c.

ÆTIOLOGY, Ætiologia, a Rationale, or Diſcourſe of the Cauſe of a Diſeaſe. See Disease.

In this Senſe, we ſay, the *Ætiology* of the Small Pox, of the Hydrophobia, of the Gout, the Dropſy, &c. See Hydrophobia, Pox, Gout, Dropsy, &c.

The Word is compounded of the *Greek* αιτια, *Cauſe*, and λογ☉, *Sermo*, *Diſcourſe*.

ÆTITES, in Natural Hiſtory, the *Eagle-Stone*. See Eagle-*Stone*.

The *Ætites*, or *Lapis Ætites*, is a kind of Stone, vulgarly ſaid to be found in the Eagle's Neſt; but this, as well as many of the Virtues aſcrib'd to it, ſeem to be fabulous. —It is found under ground in ſeveral Parts: Near *Treves* in *France*, one can ſcarce dig a few Feet, without finding conſiderable Strata or Beds hereof.

'Tis uſually hollow, aud has a kind of Core or Kernel in it, which, upon ſhaking, rattles: Some have two, and others three ſuch Cores.

It is found of various Forms, and Sizes; but its Texture or Conſiſtence is pretty uniform; conſiſting of two or three Lays or Coats of a Matter reſembling baked Earth: Eſpecially the innermoſt.—They are originally ſoft, and of the Colour of yellow Oker.

Dioſcorides ſays, it is of uſe in diſcovering a Thief; for by mixing it with his Meat, he'll be unable to ſwallow it.—*Matthiolus* informs us, that Birds of Prey never hatch their young without this Stone; and that they ſeek it as far as the *Indies*.

The Uſe now made of the Stone, is to aſſiſt Women in Labour; to which end, they faſten it about the Knee: it being a Tradition, that according as it is applied above or below the Matrix, it has the Faculty of retaining or excluding the Child. See Delivery.

Hence, it is ſometimes directed to be bore about the Arm to prevent *Abortion*. See Abortion.

The Word is form'd of the *Greek* αετος, *Aquila*, Eagle.

AFFECTION, Affectio, in Phyſicks, a Quality or Property of ſome natural Being. See Quality, and Property.

The Schoolmen define *Affection* an Attribute proper to any Being, ariſing from the Eſſence thereof. See Attribute, Proper, &c.

Affections are diſtinguiſh'd into thoſe of *Body*, and thoſe of the *Mind*.

Affections *of Body*, are certain Modifications thereof; occaſioned or induced by Motion; in Virtue whereof, the Body comes to be ſo and ſo diſpoſed. See Body, Matter, Motion Modification, &c.

Theſe are ſubdivided into *Primary*; as, *Quantity*, *Figure*, *Motion*, *Place*, *Quality*, and *Time*: and *Secondary*, as *Diviſibility*, *Continuity*, *Impenetrability*, *Regularity*, *Health*, *Strength*, &c. See each under its proper Article.

Affections *of Mind*, are what we more uſually call *Paſſions*. See Passion.

Mechanical Affections. See Mechanical *Affection*.

Affection is peculiarly uſed in Medicine, for a morbid or diſorderly State of a Part.—Thus, we ſay, ſuch a Part of the Body is *affected*, *i. e.* indiſpoſed, or ſeized with a Diſeaſe. See Disease.

The Sick are frequently miſtaken as to the Place *affected*, by means of the Conſent between the ſeveral Parts, which makes a Diſorder in one Part be felt in another. See Consent.

Hypocondriacal Affection, *Hyſterical* Affection, &c. See Hypocondriacal, Hysteric, &c.

Affection is ſomeimes alſo uſed in a Legal Senſe, for the aſſigning, making over, pawning, or mortgaging a thing, to aſſure the Payment of a Sum of Money, or the Diſcharge of ſome other Duty or Service.—His Effects were all *affected* to his Creditors.—The Revenues of ſuch a Benefice, of ſuch an Hoſpital, are *affected* to the Payment of Penſions, to the Support of Orphans.—There are certain Duties and Privileges *affected* to certain Offices, &c.

AFFEERORS, Afferatores, in Law, are thoſe appointed in Court-Leets, upon Oath, to ſettle and moderate the Fines of ſuch as have committed Faults arbitrarily puniſhable, or which have no expreſs Penalty ſet down by Statute. See Fine, &c.

The Word is form'd of the French *Affier*, to affirm; by reaſon thoſe appointed to this Office, do affirm upon their Oaths, what Penalty they think in Conſcience the Offender hath deſerved.

Kitchin joins the three Words as Synonymas; *Affidati*, *Amerciatores*, *Affirares*. *Bracton* has *Affidari Mulierem*, to be betrothed to a Woman.—In the Cuſtomary of *Normandy*, the Word *Affeure*, is render'd by the *Latin* Interpreter *Taxare*, to ſet the Price of a thing; as *Æſtimare*, *Indicare*, &c.

AFFERI, in Law. See Averia.

AFFIANCE, in Law, the plighting of Troth, between a Man and a Woman; upon an Agreement of Marriage to be had between 'em. See Marriage, and Affinity.

AFFIDATIO *Dominorum*, an Oath taken by the Lords in Parliament; thus called in the *Rot. Parl.* Hen. VI. See Oath, and Parliament.

AFFIDATUS, or Affidiatus, in our Law-Books, a Tenant by Fealty: Alſo a Retainer. See Tenant, and Retainer.

——Affidati *non proprie Vaſſali ſunt ſed quaſi Vaſſali, qui in alicujus fidem & clientelam ſunt recepti, recommendati dicti.* Laurentii Amalthæa. *Affidatio accipitur pro mutua fidelitatis connexione, tam in ſponſaliis, quàm inter Dominum & Vaſſallum. Proles de* Affidata *& non Maritata, non eſt hæres.* MS.

AFFIDAVIT, an Oath in Writing, ſworn before ſome Perſon who hath Authority to take ſuch Oath; and made uſe of, and read in Court, upon Motions, but not upon Trials. See Oath, Evidence, Witness, &c.

In the Court of Chancery is an *Affidavit Office*; under the Direction of a *Maſter*. See Chancery, &c.

AFFINAGE, is ſometimes uſed in antient Law-Books, for the Refining of Metals. See Refining.

AFFINITY, Affinitas, an Alliance, or Relation made between two Families, by Marriage. See Alliance, and Marriage.

In this Senſe, the Word ſtands contradiſtinguiſh'd to Conſanguinity; which is a Relation by Blood. See Consanguinity.

In the *Moſaical* Law, there are ſeveral Degrees of *Affinity*, wherein Marriage is expreſly prohibited; which yet ſeem not at all prohibited by the Law of Nature.——Thus, *Levit.* C. XVIII. ver. 16. a Man was forbid to marry his Brother's Widow, unleſs he died without Iſſue; in which Caſe, it became enjoined as a Duty. So it was forbid to marry his Wife's Siſter, while ſhe was living, *v.* 18. which was not forbidden before the Law, as appears from the Inſtance of *Jacob*.

The antient *Roman* Law is ſilent on this Head; and *Papinian* is the firſt who mentions it; on occaſion of the Marriage of *Caracalla*.—The Lawyers who came after him, ſtretch'd the Bonds of *Affinity* ſo far, that they plac'd Adoption on the ſame Foot with Nature. See Adoption.

Affinity, according to the modern Canoniſts, renders Marriage unlawful to the fourth Generation, incluſive: But this is to be underſtood of direct *Affinity*; and not of that which is ſecondary, or collateral.—*Affinis mei affinis, non eſt affinis meus.* See Direct, and Collateral.

It is further to be obſerv'd, that this Impediment of Marriage, does not only follow an *Affinity* contracted by lawful Matrimony, but alſo that contracted by a criminal Commerce; with this difference, that this laſt does not extend beyond the ſecond Generation; whereas the other, as has been obſerv'd, reaches to the fourth. See Adultery, Concubine, Fornication, &c.

The Canoniſts diſtinguiſh three Species of *Affinity*.—The firſt, that contracted between the Husband and the Relations by Blood of his Wife; and between the Wife, and the Relations by Blood of her Husband. The ſecond, between the Husband, and thoſe related to his Wife by Marriage; and the Wife, and thoſe ſo related to her Husband. The third, between the Husband, and the Relations of his Wife's Relations; and the Wife, and the Relations of her Husband's Relations.—By the IVth Council of the *Lateran*, held in 1213, it was decreed, That none but the firſt Kind was any real *Affinity*; the reſt being mere Refinements, which ought to be ſet aſide. *Tit. de Conſang. & Affin.*

The Degrees are reckon'd after the ſame manner in *Affinity*, as in Conſanguinity; and therefore differently in the Canon Law from what they are in the Civil Law. See Degree.

The Word is form'd of the Latin *Affinis*, Neighbour; of *ad*, and *finis*, Boundary, Limit.

The *Romaniſts* talk of a ſpiritual *Affinity*, contracted by the Sacrament of Baptiſm and Confirmation.——In that Church, a God-father may not contract Marriage with his God-daughter, without a Diſpenſation. See God-father, Baptism, &c.

AFFIRM, in Law.—To *affirm*, ſignifies to ratify, or confirm a former Law, or Judgment.—In the like Senſe, is the Subſtantive *Affirmance* uſed. See Affirmation.

AFFIRMATION, Affirmatio, a poſitive Propoſition, alledging the Truth of ſomething. See Proposition, and Truth.

Affirmation is defined by the Logicians, an Act whereby we attribute one Idea to another; as ſuppoſing it to belong, or agree thereto.—As when, conceiving Perfection to agree to the Deity, we ſay, *God is perfect*. See Attribute.

This, on other Occaſions, is called *Enunciation*, *Compoſition*, *Judging*, &c. See Enunciation, Composition, Judgment, &c.

Affirmation is alſo uſed in Grammar, by ſome late Refiners upon that Art, for what is uſually call'd a Verb; in regard the Office of that Part of Speech, is to expreſs what we *affirm*, or attribute to any Subject. See Verb.

AFFIRMATION, is particularly uſed in a Legal Senſe, for a ſolemn Form of atteſting the Truth; allow'd to be uſed by the Quakers, inſtead of an Oath, which they hold abſolutely unlawful. See QUAKER, and OATH.

This People, by their Refuſal of all Oaths, lay liable to much Trouble; particularly for declining the Oath of Allegiance, in the Time of King *Charles* II.—But by an Act paſs'd *Anno* 1689, it was decreed, That their ſolemn *Declaration* of Allegiance and Fidelity, ſhould be accepted inſtead of an Oath. See DECLARATION, and ALLEGIANCE.

In 1695, they alſo obtained, by a Temporary Act, that their ſolemn *Affirmation* ſhould be accepted in all Caſes where an Oath is by Law requir'd; except in Criminal Caſes, upon Juries, and in Places of Profit and Truſt under the Government.——In this form:

I, A. B. *do declare, in the Preſence of Almighty God, the Witneſs of the Truth of what I ſay*, &c.

This Act was afterwards continued; and at laſt made Perpetual.—But this Form not being ſuch as was deſir'd, and having, in reality, all the Eſſentials of an Oath; they applied to the Parliament for an Alteration, which they obtained *Anno* 1721: When the following Form was ſettled to their general Satisfaction, *viz.*

I, A. B. *do ſincerely, ſolemnly, and truly declare, and* affirm.

Which is the Form now uſed, in the ſame manner, and under the ſame Limitation with the former.—Any Perſon depoſing, upon his ſolemn *Affirmation*, a known Falſhood, incurs the Penalty of wilful and corrupt Perjury. See PERJURY.

AFFIRMATIVE, in Logick, &c. is underſtood of a Propoſition, or the like, which imports an *Affirmation*; or that ſays, A thing is. See AFFIRMATION.

In this Senſe, the Word ſtands oppoſed to Negative. See NEGATIVE.

There are univerſal *Affirmative* Propoſitions; and ſuch, uſually are the firſt of Syllogiſms. See UNIVERSAL, SYLLOGISM, &c.

In Algebra we have alſo *Affirmative or Poſitive Quantities*. See QUANTITY, and POSITIVE.

AFFIRMATIVE *Sign*, or *Character*. See CHARACTER.

In Grammar, Authors diſtinguiſh *Affirmative Particles*: Such is, *Yes*. See PARTICLE, ADVERB, &c.

The Term is ſometimes alſo uſed Subſtantively.——The *Affirmative* is the more probable ſide of the Queſtion: There were ſo many Votes or Voices for the *Affirmative*. See VOTE.

AFFIRMATIVE is particularly applied in the *Roman* Inquiſition, to ſuch Hereticks as own the Errors and Opinions they are charged withal; and maintain the ſame in their Examination with Firmneſs and Reſolution. See INQUISITION.

AFFORCIAMENTUM, in Law. See EFFORCEMENT.

AFFORESTING, AFFORESTATIO, the turning Ground into Foreſt. See FOREST.

In this Senſe, the Word ſtands oppoſed to *Deafforeſting*. See DEAFFORESTING.

The Conqueror, and his Succeſſors, continued *afforeſting* the Lands of the Subject, for many Reigns; till the Grievance became ſo notorious, that the People, of all Degrees and Denominations, were brought to ſue for Relief; which was at length obtain'd, and Commiſſions granted to ſurvey and perambulate the Foreſt, and ſeparate all the new *afforeſted* Lands; and re-convert them to the Uſes of their Proprietors, under the Name and Quality of *Purlieu*, or *Pourellee Land*. *See further under the Article* PURLIEU.

AFFRAY, or AFFRAYMENT, in Law, an Affright put upon one, or more Perſons.

This, according to the Lawyers, may be done without a Word ſpoke, or a Blow ſtruck.—As, where a Man ſhews himſelf arm'd or brandiſhes a Weapon, it may ſtrike a Fear into others unarm'd.

Affray is a common Injury; in which it differs from an *Aſſault*, which is always a particular Injury. See ASSAULT.

AFFREIGHTMENT, or AFFRETAMENT, AFFRETAMENTUM, in Law, ſignifies the Freight of a Ship. See FREIGHT.

The Word is form'd from the French *Fret*, which expreſſes the ſame thing.

AFFRONTE', in Heraldry, is underſtood of Animals bore in an Eſcutcheon, as facing, or with their Heads turn'd toward each other.—This is otherwiſe called *Confronté*.

The Word is *French*; and literally ſignifies the ſame thing.

AFILIATION. See ADOPTION.

Among the antient *Gauls*, *Afiliation* was a ſort of Adoption only practis'd among the Great.—It was perform'd with Military Ceremonies: The Father preſented a Battle-ax to the Perſon he was to adopt for his Son; as an Intimation that he was to preſerve the Effects he thus call'd him to ſucceed to, by Arms.

AFRICAN *Company*. See COMPANY.

AFRICANUS, a Quality or Sirname, given to ſeveral Perſons, in reſpect of the Country of *Africa*. See TITLE, QUALITY, NAME, SIRNAME, &c.

P. Cornelius Scipio had the Appellation *Africanus* beſtow'd on him, from his taking and demoliſhing the City of *Carthage*, and thus ridding the *Romans* of ſo formidable an Enemy.—In ſome Medals we find *Scipio*'s Head on one ſide, with the Inſcription, P. SCIPIO AFRIC; and on the other, *Scipio* in a Carr drawn by Horſes; with CART. SUBACT.

Africanus is alſo the Sirname of a celebrated Hiſtorian and Chronologiſt of the IIId Century, born in *Paleſtine*; of whom we have nothing extant beſide a few Fragments, preſerv'd in *Euſebius* and *Syncellus*.—His Name was *Julius Africanus*.——Authors frequently confound him with *Sextus*, or *Ceſtus Africanus*.

AFTER-BIRTH, among Midwives, the Coat or Membranes wherein the Fœtus is encloſed, *in Utero*. See FOETUS.

It is thus called, by reaſon it comes away ſome time *after* the Fœtus; by way of a ſecond Birth, or Delivery. See DELIVERY.

Phyſicians uſually call it the *Secundines*. See SECUNDINE.—See alſo HEAM, &c.

AFTER-*Pains*, are Pains felt in the Loins, the Groin, &c. after the Birth is brought away. See DELIVERY.

They ſeem to ariſe from a Diſtention of the Ligaments of the *Uterus* in time of Delivery; and are ſeldom dangerous, unleſs aggravated by a Detention of the Lochia.—To prevent 'em, Oil of ſweet Almonds, Sperma Ceti, Capillus Veneris, &c. are uſually preſcribed.

AFTER-*Math*, among Husbandmen, the *After*-Graſs, or ſecond Mowings of Graſs; or elſe Graſs or Stubble cut after Corn.

AGA, in the Language of the *Mogols*, &c. ſignifies a *powerful Man*, or a *Lord* and *Commander*.

In this laſt Senſe, the Term is alſo uſed among the *Turks*: Thus, the *Aga of the Janizaries*, is their Colonel; and the *Capi-Aga*, the Captain of the Gate of the Seraglio. See JANIZARY, CAPI-AGA, &c.

The Title *Aga* is alſo given by way of Courteſy, to ſeveral Perſons of Diſtinction; tho not in any Office or Command to entitle 'em to it.

On ſome Occaſions, in lieu of *Aga*, we ſay, *Agaſſi*: Thus, the *Aga* or Governour of the Pages, is called *Capi-Agaſſi*; and the *Aga* or General of the Horſe, *Spahilar Agaſſi*. See PAGE, ODA, SPAHI, &c.

AGAI, AGIO, in Matters of Commerce, a Term uſed, chiefly in *Holland*, and at *Venice*, for the Difference between the Value of Bank-Notes, and current Money. See BANK.

The *Agio* in *Holland* is ſometimes 3, or even 4 *per Cent.* in favour of the Bank-Notes. See DISCOUNT.

AGAPÆ, in Church Hiſtory, *Love-Feaſts*; a Name given to certain Feſtivals, celebrated in the antient *Greek* Church, to keep up a Harmony and Concord among its Members. See FEAST.

The Word is form'd of the *Greek* αγαπη, *Dilection*; of αγαπαω, *I love*.

In the primitive Days they were held without Scandal, or Offence; but in after-Times, the Heathens began to tax them with Impurity.—This gave occaſion to a Reformation of theſe *Agapæ*.

The Kiſs of Charity, with which the Ceremony had ended, was no longer given between different Sexes; and it was expreſly forbidden to have any Beds or Couches, for the Conveniency of thoſe who ſhould be diſpos'd to eat more at their Eaſe.

Notwithſtanding theſe Precautions, the Abuſes committed in them became ſo notorious; that they were ſolemnly condemn'd at the Council of *Carthage*.

Some Criticks will have it to be theſe *Agapæ* that St. *Paul* ſpeaks of, 1 *Cor.* ch. XI, under the Name of the *Lord's Supper*; which, they contend, was not the Euchariſt, but a Feaſt accompanying it; held by the Chriſtians of thoſe Times, in commemoration of our Saviour's inſtituting that Sacrament, in his Supper with the Apoſtles.—The Text ſeems to intimate, that the Feaſt was held before the Communion; but by an Ordinance afterwards made, they were oblig'd to communicate faſting; ſo that the *Agapæ* were poſtpon'd till the Sacrament was over.

Some Authors imagin'd this Ceremony to have been, not a Commemoration of our Saviour; but a Cuſtom borrow'd from the Heathens: *Mos vero ille, ut referunt*, ſays *Sedulius* on the XIth Chapter of the Epiſtle to the *Corinth. de Gentili adhuc ſuperſtitione veniebat*. And *Fauſtus* the *Manichee* is repreſented in St. *Auguſtin*, as reproaching the Chriſtians, with converting the Heathen Sacrifices into *Agapæ*: *Chriſtianos ſacrificia Paganorum converteſſe in Agapas*.

AGAPETÆ, in Eccleſiaſtical Hiſtory, *Well-beloved*; a Name given to certain Virgins, who in the antient Church aſſociated themſelves with Eccleſiaſticks, out of a Motive of Piety and Charity.

In the primitive Days, there were Women inſtituted Deaconeſſes; who devoting themſelves to the Service of the Church, took up their abode with the Miniſters, and aſſiſted them in their Functions. See DEACON.

In the Fervour of the primitive Piety, there was nothing ſcandalous in theſe Societies: But they afterwards degenerated into Libertiniſm; inſomuch, that St. *Jerom* aſks, with Indignation, *unde* Agapetarum *peſtis in eccleſias introiit*? This gave occaſion to Councils to ſuppreſs them.——St. *Athanaſius* mentions a Prieſt named *Leontius*, who, to remove all occaſion of Suſpicion, offer'd to mutilate himſelf, to preſerve his Companion.

AGARIC, or *Fungus* AGARICI, in Pharmacy, a kind of fungous Excreſcence growing on the Trunks, and large Branches of ſeveral Trees; but chiefly on the Larch-Tree, and certain Oaks. See FUNGUS.

Dioſcorides derives its Name from a Province of *Sarmatia*, called *Agaria*; whence it was firſt brought.—Several Authors, and among the reſt, *Galen*, take it for a Root; but the common Opinion is for its being of the Muſhroom kind.—It is brought from the *Levant*.

It is white, light, tender, brittle, of a bitter Taſte, pungent, and a little Styptic.—This is what the Antients call'd the *Female Agaric*: As for the Male, it is uſually yellowiſh and woody; and is generally excluded out of Phyſick, being only uſed in Dying.

Agaric was a Medicine in mighty uſe among the Antients; not only for the purging of Phlegm, but in all Diſtempers proceeding from groſs Humours and Obſtructions; as the Epilepſy, Madneſs, Aſthma, *&c.*—Yet they complain'd, that it weaken'd the Bowels, and purg'd too violently.

They had divers Correctors for it; chiefly of the Aromatic kind: But Dr. *Quincy* ſays, the beſt way is to baniſh it for good, as the preſent Practice has almoſt done: for that it rather makes People ſick, than purges them; being very nauſeous, and but little cathartic. See PURGATIVE.

By a chymical Solution, it paſſes almoſt wholly into Oil: It yields no volatile Salt; but abounds with a ſort of ſcaly Earth, and an acid Phlegm.

We read of *Pillulæ de Agarico*, and *Troches of Agaric*: but they are diſuſed.

Some Authors alſo mention a *Mineral Agaric*; which is a whitiſh Stone, found in the Clefts of Rocks in *Germany*; called alſo *Lac Lunæ*, and by ſome Naturaliſts, *Lithomagra*, and *Stenomagra*. See LAC *Lunæ*.

AGAT, ACHATES, in Natural Hiſtory, a precious Stone, partly tranſparent, and partly opake. See PRECIOUS *Stone*, and GEM.

The firſt *Agats* were ſaid to have been found in *Sicily*, along the Banks of the River *Achates*; whence, ſome will have it, the Name is deriv'd.

There are various Kinds of *Agats*; which, according to their different Colours, degrees of Tranſparency, *&c.* have different Names.—The principal may be reduc'd to theſe four, *viz.* the *Onyx*, the *Chalcedony*, the *Black*, and the *German Agats*. See ONYX, and CHALCEDONY.

The *Agat* has ordinarily a reddiſh Teint; but is finely variegated with Spots and Stains; many of which ſeem very naturally to repreſent Woods, Rivers, Trees, Animals, Fruits, Flowers, *&c.*—*De Boot* mentions one, of the Size of a Nail, wherein a Biſhop, with his Mitre, was very well repreſented: Turning it a little, a Man and Woman's Head were ſeen in its Place.

The *Sardines*, and *Sardonyx Agats*, are very valuable; the latter is of a ſanguine Colour, and is divided into Zones, which ſeem to have been painted by Art.—*Pliny*, *Strabo*, and *Cicero* ſay, that *Polycrates*'s Ring was a Sardonyx. See SARDONYX.

Authors alſo ſpeak of *Roman Agats*, *Egyptian Agats*, *Onyx-ſardonyx Agats*, &c.—The Antients mention a red *Agat*, ſpotted with Points of Gold, found in *Candia*; and called *Sacred*, as being a Preſervative againſt the Poiſon of Vipers, Scorpions, and Spiders.—*Pliny* has a whole Chapter of the Virtues of *Agats*.

Agat has always been eſteem'd for Seals; as being a Stone that no Wax will ſtick to. See SEAL, ENGRAVING, *&c.*

The Gold Wire-drawers buriniſh their Gold with an *Agat*; whence the Inſtrument made uſe of on that occaſion, is called *Agat*. See GOLD-*Wire*.

Mr. *Boyle* takes *Agats* to have been form'd of ſeparate Beds, or Strata of fine Clay or Earth, brought by a petrifying Liquor to coagulate into a Stone. See GEM.——The ſame Author obſerves, that the Fire will purge away the Colours of *Agat*. He alſo mentions an *Agat* with a moveable Spot or Cloud in it.

AGE, the natural Duration of any thing; and particularly of the Life of Man. See DURATION, and LIFE.

The ordinary *Age* of Mankind has been occaſionally varied, in ſuch manner as to afford a fine Inſtance of the Wiſdom of Providence. See the Article LONGÆVITY.

AGE is alſo uſed in Chronology, for a *Century*; or a Syſtem or Period of an hundred Years; called alſo *Seculum*. See SECULUM, and CENTURY.

An *Age* differs from a *Generation*. See GENERATION.

AGE is alſo underſtood of a certain State or Portion of the ordinary Life of Man; which is divided into four different *Ages*, viz. *Infancy*, *Youth*, *Manhood*, and *Old Age*.

Infancy, or Childhood, *Pueritia*, extends as far as the fourteenth Year. See INFANCY, and CHILDREN.

Youth, Adoleſcence, or the Age of Puberty, commences at 14, and ends at about 25. See YOUTH, ADOLESCENCE, PUBERTY, *&c.*

Manhood, or the *Virile Age*, terminates at 50. See VIRILE.

Old Age, *Senectus*, ſucceeds, which is the laſt: tho ſome divide this into two; reckoning it *decrepit Age* after 75. See OLD *Age*.

AGE, in Horſemanſhip, makes a conſiderable Point of Knowledge; the Horſe being an Animal that remarkably ſhews the Progreſs of his Years, by correſpondent Alterations in his Body. See HORSE.

We have Characteriſticks from his Teeth, Hoofs, Coat, Tail and Eyes. See TEETH, HOOF, *&c.*

The firſt Year he has his *Foal's Teeth*, which are only Grinders and Gatherers: The ſecond, the four foremoſt change, and appear browner and bigger than the reſt: The third, he changes the Teeth next to theſe; leaving no apparent Foal's Teeth, but two on each ſide above, and two below: The fourth Year, the Teeth next to theſe are changed, and no Foal's Teeth are left, but one on each ſide above and below. At five Years, his foremoſt Teeth are all changed; and the Tuſhes on each ſide are compleat: thoſe which come in the Places of the laſt Foal's Teeth, being hollow, and having a little black Speck in the midſt; which is called the *Mark in a Horſe's Mouth*, and continues till eight Years of *Age*. See MARK.——At ſix Years, he puts up new Tuſhes; near which appears a little Circle of young Fleſh, at the bottom of the Tuſh: the Tuſhes withal, being white, ſmall, ſhort, and ſharp.——At ſeven Years, the Teeth are all at their growth, and the Mark in the Mouth appears very plain.—At eight, all his Teeth are full, ſmooth, and plain, and the Mark ſcarce diſcernable; the Tuſhes looking yellowiſh.—At nine, the foremoſt Teeth ſhew longer, yellower, and fouler than before; and the Tuſhes become bluntiſh.—At ten, no Holes are felt on the inſide of the upper Tuſhes; which till then are very ſenſible: Add, that the Temples begin to be crooked, and hollow.—At eleven Years, his Teeth are very long, yellow, black, and foul; but he will cut even, and his Teeth ſtand directly oppoſite to one another.—At twelve, the upper Teeth hang over the nether.—At thirteen, the Tuſhes are worn cloſe to his Chaps, if he have been much ridden; otherwiſe they will be black, foul, and long.

2°, As to the *Hoof*.——If it be ſmooth, moiſt, hollow, and well-ſounding, 'tis a Sign of Youth: On the contrary, if rugged, and as it were ſeamed, one Seam over another, and withal dry, foul, and ruſty, 'tis a Mark of *Old Age*.

3°, For the *Tail*.——Taking him by the Stern thereof, cloſe at the ſetting on to the Buttock, and griping it between the Finger and Thumb; if a Joint be felt to ſtick out more than the reſt, the bigneſs of a Nut, the Horſe is under ten: but if the Joints be all plain, he may be fifteen.

4°, The *Eyes* being round, full, and ſtaring; the Pits that are over 'em filled, ſmooth, and even with his Temples; and no Wrinkles to be ſeen, either under or above: is a Mark of *Youth*.

5°, The Skin being pluck'd up in any Part betwixt the Finger and Thumb, and let go again; if it return ſuddenly to its Place, and remain without Wrinkles, he may be argued to be young.

6°, A dark-colour'd Horſe, growing griſly above the Eyebrows, or under the Main; or a whitiſh Horſe growing meanelled, either white or black, all over; may be infallibly concluded extremely aged.

Laſtly, a Horſe being young, the Bars of his Mouth are ſoft and ſhallow; otherwiſe they are deep, and feel hard and rough.

AGE, in Hunting.—Deer, and other Beaſts of Game, have different Denominations, according to their *Age*; which ſee under the Article HUNTING.

The firſt Head, called in fallow Deer, *Broches*, and in red Deer, *Pricks*, does not come till the ſecond Year of their *Age*: The next Year, they bear four or ſix ſmall Branches: the fourth Year, eight or ten; the fifth, ten or twelve; the ſixth, fourteen or ſixteen; the ſeventh Year, they bear their Heads beam'd, branch'd, and ſum'd, as much as ever they will be.

The

The *Age* of a Hart, *&c.* is chiefly judg'd of by the Furniture of his Head. See HEAD.

The Huntſmen have ſeveral other Marks, whereby to know an old Hart without ſeeing him; as, the Slot, Entries, Abatures, Foils, Fewmets, Gate, and Fraying Poſt. See HUNTING.

AGE *of the Moon*, in Aſtronomy, is underſtood of the Number of Days elapſed ſince the laſt Conjunction, or New Moon; called alſo her *Quarter*. See CONJUNCTION, QUARTER, *&c.*

To find the Moon's AGE. See MOON.

AGE, in Chronology.——The *Age* of the World, is the Time paſs'd ſince the Creation. See CREATION.

The ſeveral *Ages* of the World, may be reduc'd to theſe three grand Epocha's, *viz.* the *Age* of the Law of Nature, from *Adam* to *Moſes*.—The *Age* of the *Jewiſh* Law, from *Moſes* to Chriſt.—And the *Age* of Grace, from Chriſt to the preſent Year.

The firſt *Age*, according to the *Jews*, conſiſted of 2447 Years; according to *Scaliger*, of 2452; and according to *Uſher*, of 2513.—The ſecond *Age*, according to the *Jews*, conſiſted of 1312 Years; according to *Scaliger*. of 1508; and according to *Uſher*, of 1491.—Of the third *Age*, there have elapſed 1726 Years; tho this, too, is controverted by Chronologers.

Petavius will have our Saviour to have been born four Years before the vulgar Epocha; on which footing, the current Year ſhould be 1730; according to *Capella*, 1731; according to *Baronius* and *Scaliger*, 1728. See NATIVITY.

The *Romans* diſtinguiſh'd the Time that preceded them into three *Ages*: The *obſcure* or *uncertain Age*, which reach'd down as low as *Ogyges* King of *Attica*; in whoſe Reign the Deluge happen'd in *Greece*.—The *fabulous*, or *heroic Age*, which ended at the firſt Olympiad: And the *hiſtorical Age*, which commenc'd at the Building of *Rome*. See FABULOUS, HEROIC, HISTORICAL, *&c.*

Among the Poets, the four *Ages* of the World, are the *Golden*, the *Silver*, the *Brazen*, and the *Iron Age*. See the *Metamorphoſis* of *Ovid*, Lib. I. or rather, *Heſiod* in his Poem Ἔργα καὶ ἡμέραι, *Opera & Dies*, ver. 108, *&c.* He is the firſt that has deſcribed the four *Ages*, and the beſt.

The *Eaſt Indians* alſo reckon four *Ages* ſince the Beginning.—The firſt, which they repreſent as a ſort of Golden *Age*, laſted, according to them 1728000 Years: In this the God *Brahma* was born; and the Men were all Giants; their Manners innocent: They were exempt from Diſeaſes, and lived 400 Years.—In the ſecond *Age*, which laſted 1296000, their *Rajas* were born: Vice now crept into the World; Mens Lives were fallen to 300 Years, and their Size retrench'd proportionally.—Under the third *Age*, which laſted 8064000 Years, Vice being increas'd, Men only attain'd to 200 Years.—The laſt *Age* is that wherein we now live, of which 4027195 Years are already gone; and the Life of Man ſunk to one fourth of its original Duration.

AGE, in Law, is particularly underſtood of a certain State or Time of Life, wherein a Perſon is qualified to do ſomething, which before, for want of Years, and conſequently Diſcretion, they could not. See MAJOR, MINOR, *&c.*

There are two principal *Ages* in a Man: At fourteen, he is at the *Age of Diſcretion*; at twenty one Years, at *full Age*.

In a Woman, there were antiently ſix *Ages* obſerv'd: At ſeven Years, her Father might diſtrain the Tenants of his Manor for aid to marry her; for at thoſe Years ſhe may conſent to Matrimony. *Bracton*.——At nine Years old ſhe is dowable; for then, or within half a Year after, ſhe is ſaid to be able *promereri dotem & virum ſuſtinere*. *Fleta*.——At twelve Years, ſhe is able finally to ratify and confirm her former Conſent to Matrimony.—At fourteen, ſhe may take her Lands into her own Hands; and ſhould be out of Ward, if ſhe were at this *Age* at her Anceſtor's Death.—At ſixteen, ſhe ſhould be out of Ward; tho at the Death of her Anceſtor ſhe was under fourteen: The Reaſon is, that then ſhe might take a Husband able to perform Knight's-Service.—At twenty one Years, ſhe may alienate Lands and Tenements.

For a Man; at the *Age* of fourteen he may chuſe his own Guardian, and claim his Lands held in Soccage. *Dyer*, fol. 162. tho *Bracton*, Lib. II. limits this to fifteen Years; with whom *Glanville* agrees.—At fourteen, a Man may conſent to Marriage, as a Woman at twelve.—At fifteen he ought to be ſworn to the Peace, *An.* 24 *Edw.* I. Stat. 3.——At the *Age* of twenty one, a Man was oblig'd to be a Knight, if he had twenty Pounds Land *per Annum* in Fee, or for Term of Life, *Anno* 1 *Edw.* II. Stat. 1. But this Statute is repealed, 17 *Car.* I. cap. 10.——The ſame *Age* alſo enables him to make Contracts, and manage his own Eſtate; which, till that time, he cannot do with Security of thoſe that deal with him.

The *Age* of twelve Years, binds to Appearance before the Sheriff and Coroner, for Inquiry after Robberies, *Anno* 52 *Hen.* III. cap. 14.—The *Age* of twenty four Years enabled a Man to enter an Order of Religion, without Conſent of Parents, *Anno* 4 *Hen.* IV. cap. 17.

AGE *Prier*, a Petition, or Motion made in Court, by one in his Minority; having an Action brought againſt him for Lands coming to him by Deſcent; requeſting, that the Action may reſt till he come to full *Age*.—This, the Court, in moſt Caſes, ought to grant.

It is otherwiſe in the Civil Law; which obliges Children in their Minority to anſwer by their Tutors, or Curators. See TUTOR, CURATOR, MINORITY, PUPIL, *&c.*

AGEMOGLANS, or AZAMOGLANS, Children of *Tribute* rais'd every three Years by the grand Seignior, among the Chriſtians whom he tolerates in his Dominions.

The Commiſſioners appointed for this Levy, take them by force, even out of the Houſes of Chriſtians; always claiming one in three, and pitching upon ſuch as ſeem the handſomeſt, and promiſe to be the moſt handy.

Theſe are immediately convey'd to *Gallipoli* or *Conſtantinople*; where they are firſt circumcis'd, then inſtructed in the *Mahometan* Faith, taught the *Turkiſh* Language and the Exerciſes of War, till ſuch time as they become of Age to bear Arms.

Such as are not judged proper for the Army, they employ in the loweſt and moſt ſervile Offices of the Seraglio; as in the Kitchen, Stables, *&c.*

The Word, in its Original, ſignifies a Barbarian's Child; that is, a Child not a *Turk*.—It is compounded of two *Arabic* Words, אגם *Agem*, and עלאם *Child*; which among the *Turks* ſignifies as much as *Barbarous* among the *Greeks*; the former People dividing the World into *Arabs* or *Turks*, and *Agem*; as the latter into *Grecians* and *Barbarians*.

AGENT, AGENS, in Phyſicks, that whereby a thing is done or effected; or that which has a Power whereby it *acts* on another; or by its Action induces ſome Change in another. See ACT, and ACTION.

The Word *Agent* is uſed promiſcuouſly with *Efficient*; and in contradiſtinction to *Patient*. See EFFICIENT, PASSIVE, *&c.*

The Schools divide *Agents* into *Natural* and *Free*.

Natural or *Phyſical Agents*, are thoſe immediately determin'd by the Author of Nature, to produce one ſort of Effect; with an Incapacity to produce the contrary thereto.—Such is Fire, which only heats, and does not alſo cool.

Free or *Voluntary Agent*, is that which may equally do any thing, or the oppoſite thereof; as acting not from any Pre-determination, but from Choice.—Such is the Mind ſuppoſed to be; which may either will or nill the ſame thing. See PRE-DETERMINATION, LIBERTY, WILL, *&c.*

Natural Agents, again, are ſubdivided into *Univocal*; which are ſuch as produce Effects of the ſame Kind and Denomination with the *Agents* themſelves: and *Equivocal*, whoſe Effects are of a different Kind, *&c.* from the *Agents*. See EQUIVOCAL, and UNIVOCAL.

The Schoolmen reckon the following Circumſtances neceſſary to the Being of an *Agent*, *viz.* That it be contiguous to the Object, diſtinct from it, have a Power over it, a Sphere of Activity, and a Proportion or Rate of acting.

AGENT, is alſo uſed for a Perſon entruſted with the Management of the Affairs of a Corporation, or private Perſon: In which Senſe, the Word coincides with *Deputy*, *Procurator*, *Commiſſioner*, *Factor*, &c. See DEPUTY, PROCURATOR, COMMISSIONER, FACTOR, *&c.*

Among the Officers in the Exchequer, are four *Agents for Taxes*. See TAX, EXCHEQUER, *&c.*

AGENTS *of Bank and Exchange*, are publick Officers, eſtabliſh'd in the trading Cities of *France*, to negotiate Matters between Merchants, relating to Bills of Exchange; and the buying and ſelling of Goods. Theſe amount to what, among us, are called *Exchange-Brokers*. See BROKER, and ENCHANGE.

AGENT *and Patient*, in Common Law, is where a Perſon does, or gives ſomething to himſelf; ſo that he is at the ſame time both the Doer or Giver, and the Receiver or Party it is done to.—Such is a Woman, when ſhe endows her ſelf with part of her Husband's Inheritance.

AGEOMETRESIA, a Term purely *Greek*, Ἀγεωμετρησία, ſometimes uſed by *Engliſh* Writers; denoting a *Want or Defect in point of Geometry*.—*Kepler* not having taught any direct and geometrical Methods of finding certain Matters, in his Elliptic Theory; particularly, the true Anomaly, from the mean: has been charged with *Ageometreſia*. See ANOMALY.

AGER *Terræ*, in antient Writers, the ſame with an *Acre of Land*. See ACRE.

AGGLUTINANTS, AGGLUTINANTIA, in Medicine, a Species of ſtrengthning Remedies, whoſe Office and Effect is to adhere to the ſolid Parts of the Body, and thus recruit and ſupply the Place of what is wore off and waſted in the animal Actions. See MEDICINES, NUTRITION, *&c.*

Theſe are moſt of 'em of the glutinous Kind, or ſuch as eaſily form themſelves into Gellies and gummy Conſiſtences; whence the Name *Agglutinant*, which is form'd of *ad*, to, and *gluten*, glue. See GLUE, and AGGLUTINATION.

The Operation and Uſe of *Agglutinants*, ſee under STRENGTHENERS.

The principal Simples which come under this Claſs, are Iſing-glaſs, Olibanum, Gum Arabic, Dragons Blood, Caſſia, Sago, Vermicelli, Pulſe, Comfrey, Plantain, &c. See ISING-GLASS, GUM, OLIBANUM, DRAGON'S *Blood*, CASSIA, PULSE, &c.

AGGLUTINATION, literally, denotes the Act of joining, or cementing two Bodies together, by means of a proper Gluten, or Glue. See CEMENT, GLUE, &c.

In Medicine, the Term is peculiarly uſed for the Addition of new Subſtance; or the giving a greater Conſiſtence to the Animal Fluids, to fit 'em the more for Nouriſhment. See AGGLUTINANTS; ſee alſo ACCRETION, and NUTRITION.

AGGRAVATION, the Act of augmenting a Crime, or the Puniſhment thereof. See CRIME, and PUNISHMENT.

The Word is compounded of *ad*, to, and *gravis*, heavy, grievous.

In the *Romiſh* Canon Law, *Aggravation* is particularly uſed for an Eccleſiaſtical Cenſure, threatening an Excommunication after three Admonitions uſed in vain. See CENSURE.

From *Aggravation*, they proceed to *Re-aggravation*; which is the laſt Excommunication. See EXCOMMUNICATION.

AGGREGATE, the Sum, or Reſult of ſeveral things *aggregated* or added together. See AGGREGATION, and SUM.

Natural Bodies are *Aggregates*, or Aſſemblages of Particles or Corpuſcles, bound together by the Principle of Attraction. See BODY, PARTICLE, &c.

The Word is form'd of *ad*, to, and *grex*, *gregis*, a Flock, Company.

AGGREGATION, AGGREGATIO, in Phyſicks, a Species of Union, whereby ſeveral things which have no natural Dependence or Connection with one another, are collected together, ſo as in ſome Senſe to conſtitute one. See UNION.

Thus, a Heap of Sand, or a Maſs of Ruins, are Bodies by *Aggregation*.

In a like Senſe, they ſometimes ſay, To be of a Company or Community by *Aggregation*.—An *Aggregation* of ſeveral Doctors to the Faculty of Laws.—In *Italy*, *Aggregations* are frequently made of Houſes or Families; by Virtue whereof, they all bear the ſame Name, and Arms.

The Word *Aggregation*, ſtrictly ſpeaking, differs from *Congregation*; in that the former denotes a Coalition of ſeveral things in ſome Senſe equal; and the latter an Acceſſion of a leſs to a more conſiderable. See CONGREGATION.

AGGRESSOR, in Law, he, of two contending Parties, who makes the firſt Aſſault, or Attack; or who began the Quarrel, Encounter, or Difference.—In Criminal Matters, it is firſt enquir'd who was the *Aggreſſor*. See ATTACK, &c.

AGILDE, in our antient Cuſtoms, a Perſon ſo vile, that whoever kill'd him was to pay no Mulct for his Death. See *Æstimatio Capitis*.

The Word comes from the privative *a*, and the Saxon *Gildan*, *ſolvere*. See GILD.

AGILITY, AGILITAS, *Nimbleneſs*; a light and active Habitude, or Diſpoſition of the Members, and Parts deſigned for Motion. See MUSCLE, and MUSCULAR.

AGILLARIUS, in antient Law-Books, a Hayward, or Keeper of a Herd of Cattle in a common Field.

AGIST, in Law.—To *agiſt*, ſignifies to take in, and feed, the Cattle of Strangers, in the King's Foreſt; and gather the Money due for the ſame. See AGISTOR.

The Word is alſo extended to the taking in of other Mens Cattel, in any Man's Ground; at a certain Rate *per* Week.

It is alſo uſed metaphorically for a Charge or Burden on any thing.—In this Senſe, we meet with *Terræ ad Cuſtodiam Maris Agiſtatæ*, *i. e.* charged with a Tribute to keep out the Sea. *Seld. Mare Clauſ.*——So, *Terræ Agiſtatæ*, are Lands whoſe Owners are bound to keep up the Sea-Banks. *Spelman.*

The Word is form'd of the French *Giſte*, a Bed, or Lying-Place.

AGISTOR, an Officer of the Foreſt, who takes in the Cattle of Strangers, to feed therein; and receives for the King's Uſe, all ſuch Tack-Money as becomes due upon that account. See FOREST, and AGIST.

In *Engliſh*, they are otherwiſe called, *Gueſt-takers*, or *Giſt-takers*, and made, by Letters Patent, to the Number of four, in every Foreſt, where his Majeſty has any Pannage. See PANNAGE.

Their Function is term'd *Agiſtment*, and *Agiſtage*.

AGITATION, AGITATIO, properly ſignifies *Shaking*; or a reciprocal Motion of a Body this way and that. See MOTION.

The Prophets, Quakers, Pythian Prieſteſſes, &c. were ſubject to violent *Agitations* of Body, &c. See PROPHET, QUAKER, PYTHIA, &c.

Among Phyſiologiſts, the Term is ſometimes appropriated to that Species of Earthquake, call'd *Tremor*, or Trembling, *Arietatio*. See EARTHQUAKE.

Among Philoſophers, it is chiefly uſed for an inteſtine Commotion of the Parts of any natural Body. See INTESTINE.

Thus, Fire is ſaid to *agitate* the minute Particles of Bodies. See FIRE.—Fermentation, and Effervеſcence, are attended with a briſk *Agitation* of the Particles. See FERMENTATION, EFFERVESCENCE, and PARTICLE.

AGITATION *of Beaſts in the Foreſt*, antiently ſignify'd the Drift of Beaſts in the Foreſt. See DRIFT, and FOREST.

AGITATORS, in our *Engliſh* Affairs, were certain Officers, created by the Army in 1647, to take care of the Intereſts thereof.

Cromwel leagued himſelf with the *Agitators*, whom he found to have more Intereſt than the Council of War.—— The *Agitators* undertook to make Propoſals relating to the Reformation of Religion and the State.

AGLECTS, AGLETS, or AGLEEDS, among Floriſts, the Pendants hanging on the Tip-ends of Chives, and Stamina; as in Tulips, Roſes, Spike-graſs, &c. See CHIVE, STAMINA, &c.

AGNATI, in the Civil Law, a Term uſed in reſpect of the Male Deſcendents of the ſame Father, in different Lines. See AGNATION.

In this Senſe, the Word is contradiſtinguiſh'd to *Cognati*. See COGNATI.

AGNATION, AGNATIO, in the Civil Law, the Bond of Conſanguinity or Relation between the Male-Deſcendents of the ſame Father; as Cognation is the Bond of Relation between all the Deſcendents of the ſame Father, both Males and Females. See COGNATION.

The Difference, then, between *Agnation* and Cognation, conſiſts in this, that Cognation is the univerſal Name, under which the whole Family, and even the *Agnati* themſelves are contain'd; and *Agnation* a particular Branch of Cognation, which only includes the Deſcendents in the Male Line. See CONSANGUINITY.

By the Law of the Twelve Tables, Males and Females ſucceeded one another; according to the Order of Proximity, and without any regard to the Sex; but the Laws were afterwards chang'd in this reſpect, by the *Lex Voconia*; and Women were excluded from the Privileges of *Agnation*, excepting ſuch as were within the Degree of Conſanguinity, *i. e.* excepting the Siſters of him who died ab-inteſtate: and it was hence that the Difference between *Agnati* and *Cognati* firſt took its riſe.

But this Difference was again aboliſh'd by *Juſtinian*, and the Females were re-inſtated in the Right of *Agnation*, and all the Deſcendent's on the Father's ſide, whether Males or Females, were appointed to ſucceed each other indiſcriminately, according to the Order of Proximity.

Hence, Cognation came to take in all the Relations of the Father; and *Agnation* to be reſtrained to thoſe of the Mother.

Adoptive Children enjoy'd the Privileges of *Agnation*; which was called *Civil* in their reſpect, in oppoſition to the other, which was *Natural*. See ADOPTION.

AGNOITES, or AGNOETES, a Denomination given to certain antient Hereticks, who denied that Chriſt foreknew the Day of Judgment.

The Word is *Greek*, Ἀγνοῖται; form'd of ἀγνοέω, *Ignoro*, I do not know.

Eulogius, Patriarch of *Alexandria*, aſcribes this Hereſy to certain Solitaries in the Neighbourhood of *Jeruſalem*, who in defence hereof, alledg'd divers Texts of the New Teſtament, and among others, this of St. *Mark*, C. XIII. ver. 32. "Of that Day and Hour knoweth no Man; no "not the Angels who are in Heaven, nor the Son, but "the Father only."—The ſame Paſſage was made uſe of by the *Arians*; and hence the Orthodox Divines of thoſe Days were induced to give various Explications thereof: Some alledge, that our Saviour here had no regard to his Divine Nature, but only ſpoke of his Human. Others underſtand it thus, That the Knowledge of the Day of Judgment does not concern our Saviour conſider'd in his Quality of Meſſiah, but God only. Which is the moſt natural Explication.

AGNOMEN, among the *Romans*, a kind of Sirname, uſually given on occaſion of ſome particular Action, Habit, or other Circumſtance of the Bearer. See NAME, and SIRNAME.

Thus, one of the *Scipio's* was named *Africanus*, and the other *Aſiaticus*, from the brave Atchievements which the one did in *Africa*, and the other in *Aſia*.

The *Agnomen* was the third in order of the three *Roman* Names.—Thus, in *Marcus Tullius Cicero*, *Marcus* is the Prænomen, *Tullius* the Nomen, and *Cicero* the *Agnomen*. See NOMEN, PRÆNOMEN, &c.

AGNUS *Caſtus*, a Shrub, famous among the Antients as a Specific for the Preſervation of Chaſtity, and the preventing of all Venereal Deſires, Pollutions, &c.

The *Greeks* call'd it Ἄγνος, *Chaſt*; to which has ſince been added the Reduplicative *Caſtus*, q. d. *Chaſt*, *chaſt*.

The

The *Athenian* Ladies, who made Profeſſion of Chaſtity, lay upon Leaves of *Agnus Caſtus*, during the Feaſts of *Ceres*. See CEREALIA.

It is reputed a Cooler, and particularly of the Genital Parts; and was antiently uſed in Phyſick, to allay thoſe inordinate Motions ariſing from ſeminal Turgeſcences: But it is out of the preſent Practice. See POLLUTION.

AGNUS *Dei*, a piece of conſecrated Paſte, of great ſervice in the Church of *Rome*.

The Name literally ſignifies *Lamb of God*; this being ſuppoſed an Image or Repreſentation of the Lamb of God, &c.

They cover it up with a piece of Stuff, cut in form of a Heart, and carry it very devoutly in their Proceſſions.—The *Romiſh* Prieſts, and Religious, make a good Penny, by ſelling theſe *Agnus Dei's* to ſome, and preſenting them to others.

The Pope conſecrates freſh ones once in ſeven Years, the Diſtribution whereof, belongs to the Maſter of the Wardrobe; and they are receiv'd by the Cardinals with a world of Reverence, in their Mitres.—This Ceremony they pretend to derive from an antient Cuſtom of the Church, wherein part of the Paſchal Taper, conſecrated on Holy Thurſday, was diſtributed among the People, to perfume their Houſes, Fields, &c. in order to drive away Devils, and to preſerve them from Storms and Tempeſts. See PASCHAL *Taper*.

The Name *Agnus Dei*, is alſo popularly given to that Part of the Maſs, wherein the Prieſt, ſtriking his Breaſt three times, rehearſes, with a loud Voice, a Prayer beginning with the Words *Agnus Dei*.

AGON, in Antiquity, Ἀγών, q. d. *Combat*; a Diſpute or Contention for the Maſtery, either in ſome Exerciſes of the Body, or the Mind.

There were of theſe *Agones*, on certain Days, in moſt of their Feaſts, and other Ceremonies, in honour of Gods, or Heroes. See FEAST, and GAME.

There were alſo *Agones* eſtabliſh'd expreſly, and not attach'd to any other Solemnity.—Such was the *Agon Gymnicus*, at *Athens*; the *Agon Nemæus*, inſtituted by the *Argi* in the 53d Olympiad; the *Agon Olympius*, inſtituted by *Hercules*, 430 Years before the firſt Olympiad. See NEMÆAN, OLYMPIC, &c.

The *Romans* had alſo *Agones* inſtituted after the Example of the *Greeks*: The Emperor *Aurelian* eſtabliſh'd the *Agon Solis*, *Agon* of the Sun; and *Diocletian*, the *Agon Capitolinus*, which was held every fourth Year, after the manner of the Olympic Games.—Hence, the Years, inſtead of Luſtra, are ſometimes number'd by *Agones*.

AGON was alſo an Officer of Sacrifice, whoſe Buſineſs was to ſtrike the Victim. See SACRIFICE, and VICTIM.

The Name was derived hence, that ſtanding ready to give the Stroke, he frequently aſk'd *Agon*, or *Agone*? Shall I ſtrike?

The *Agon* was alſo called *Popa*, *Cultrarius*, and *Victimarius*. See POPE.

AGONALES, in Antiquity, an Epithet given to the *Salii*, conſecrated by *Numa Pompilius* to the God *Mars* ſirnamed *Gradivus*. See SALII.

They were alſo called *Quirinales*, aud *Palatini*. See QUIRINALES, and PALATINI.—*Roſinus* calls 'em *Agonenſes Salii*.

AGONALIA, or AGONEA, in Antiquity, Feaſts celebrated by the *Romans*, in honour of *Janus*; or, as ſome will have it, in honour of the God *Agonius*, whom the *Romans* uſed to invoke upon their undertaking any Buſineſs of importance. See FEAST.

Authors vary as to the Etymology of this Solemnity; ſome derive it from the Mount *Agon*, afterwards *Mons Quirinalis*, whereon it was held.—Others ſuppoſe it taken from that Ceremony in the Feaſt, where the Prieſt holding the naked Knife, and ready to ſtrike the Victim, which was a Ram, aſk'd, *Agone*? Shall I do it?—This is *Ovid*'s Opinion. *Faſt.* L. I. v. 319. See SACRIFICE.

AGONISTICI, in Antiquity, a Name given by *Donatus* to thoſe of his Sect, whom he ſent into the neighbouring Places, Fairs, Markets, &c. to preach his Doctrine; for which reaſon they were alſo called *Circuitores*, *Cercelliones*, *Catropitæ*, *Coropitæ*, and at *Rome*, *Montenſes*.

They were called *Agoniſtici*, from the *Greek* ἀγών, *Combat*; in regard they were ſent as it were to fight, and ſubdue the People to their Opinions.

AGONOTHETA, AGONOTHETES, in Antiquity, a Magiſtrate choſe among the *Greeks*, to preſide, and have the Superintendency of their ſacred Games, or Combats; to defray the Expences thereof, and adjudge the Prizes to the Conquerors. See GAME, COMBAT, &c.

The Word is compounded of ἀγών, *Combat*, *ſacred Sport*; and θετὴς, *he who diſpoſes*, *appoints*, *or dains*.——Among the *Romans*, the like Officer was denominated *Athelotheta*. See ATHELOTHETA.

AGONOCLITA, or AGONOCLITES, in Antiquity, a Sect in the VIIth Century; whoſe diſtinguiſhing Principle it was, never to kneel, but to deliver all their Prayers ſtanding. See GENUFLEXION.

The Word is compounded of the Privative Particle α, γόνυ, *Knee*, and κλίνω, *I bend*.

AGONY, AGONIA, the Extremity of Pain, or a Diſeaſe; when Nature makes her laſt Effort, or Struggle, to throw off the Evil that oppreſſes her. See PAIN, DISEASE, and DEATH.

The Word is form'd from the *Greek* ἀγών, *Certamen*, Combat; this being a kind of Strife, between Life and Death.

AGORONOMUS, in Antiquity, a Magiſtrate of *Athens*, eſtabliſh'd for the Maintenance of good Order, and Policy in the Markets; the Inſpection of the Weights, Meaſures, &c.

The *Agoronomus* was much the ſame with the *Curule Ædile* among the *Romans*. See EDILE.

The Word is compounded of the *Greek*, ἀγορὰ, *Market*, and νεμεῖν, *to diſtribute*.—*Ariſtotle* diſtinguiſhes two Kinds of Magiſtrates, the *Agoronomi*, who had the Intendance of the Markets; and the *Aſtynomi*, who inſpected the Buildings.

AGRARIAN, in the *Roman* Juriſprudence, a Denomination given to ſuch Laws as relate to the Partition, or Diſtribution of Lands. See LAW.

The Word is form'd of the Latin *Ager*, Field.

The AGRARIAN *Law*, *Lex* AGRARIA, abſolutely, and by way of Eminence ſo call'd, was a celebrated Law, publiſhed by *Spurius Caſſius*, about the Year 268, for the Diviſion of the Lands taken from the Enemy.—Thoſe other two in the *Digeſt*, the one publiſh'd by *Cæſar*, and the other by *Nerva*, only relate to the Limits or Boundaries of Grounds; and have no Relation to that of *Spurius Caſſius*.

There are fifteen or twenty *Agrarian Laws*, whereof, the principal are, The *Lex Apuleia*, made in the Year of *Rome* 653; the *Lex Bæbia*; the *Lex Caſſia*, in the Year 267; the *Lex Cornelia*, in the Year 673.; the *Lex Flaminia*, in the Year 525; the *Lex Flavia*; the *Lex Julia*, in the Year 691; the *Lex Licinia*, in 377; the *Lex Ælia Licinia*; the *Lex Livia*; the *Lex Marcia*; the *Lex Rubria*, made after the taking of *Carthage*; two *Sempronian* Laws, in the Year 620; the *Lex Servilia*, in 690; the *Lex Thoria*; and the *Lex Titia*.

AGREEMENT, AGREAMENTUM, in Law, is defined by *Plowden*, a joining or putting together of two or more Minds in any thing done, or to be done.

Of this there may be three ſorts.—The firſt, an *Agreement* executed at the Beginning; mention'd in the Stat. of 25 *Edw.* III. which ſays, 'That the Goods bought by 'Foreſtallers, being thereof attainted, ſhall be forfeited to 'the King; if the Buyer thereof have made *Gree* with 'the Seller:' Where the Word *Gree*, otherwiſe called *Agreement executed*, ſignifies Payment for the Things, or Satisfaction.

The ſecond is, where one does an Act, and another *agrees* or aſſents thereto, afterwards. See ASSENT.

The third is, when both Parties at one time are *agreed* that ſuch a thing ſhall be done in time to come; which is *Executory*, in regard the thing is to be done afterwards. See CONTRACT.

AGRESSES, or OGRESSES, in Heraldry, the ſame as *Pellets*, or *Balls*. See OGRESSES.

AGRICULTURE, the Art of tilling or cultivating the Earth, in order to render it fertile, and make it bear Plants, Trees, Fruits, &c. See EARTH, SOIL, CULTURE, PLANT, FRUIT, SEED, &c.

The principal and moſt general Operations in *Agriculture*, are *Manuring*, *Ploughing*, *Fallowing*, *Sowing*, *Harrowing*; as alſo, *Reaping*, *Mowing*, &c. See the Articles MANURE, PLOUGHING, FALLOWING, SOWING, &c.

To the Operations of *Agriculture* do alſo belong the Management of the Productions of particular Countries; as *Hops*, *Hemp*, *Vines*, *Tobacco*, *Saffron*, *Liquorice*, *Woad*, &c. See HOPS, HEMP, TOBACCO, SAFFRON, GLYCIRRHIZA, WOAD, &c.

To the ſame Art belong *Planting*, *Tranſplanting*, *Pruning*, *Engrafting*; the Culture of *Foreſts*, *Timber*, *Copſes*, &c. See PLANTING, TRANSPLANTING, PRUNING, ENGRAFTING, TIMBER, TREE, &c.

Even *Gardening*, or Horticulture it ſelf, is only a Branch of *Agriculture*. See GARDEN, and GARDENING.

The Word is form'd of the Latin *Ager*, Field, and *cultura*, of *colo*, I till.—Among the Antients, it is frequently called *Georgica*. See GEORGICKS.

We forbear to ſay any thing about the Antiquity or Uſefulneſs of this Art: Every Reader's Imagination will ſupply that Defect.——It has been cultivated by many of the greateſt Men among the Antients; as Emperors, Dictators, and Conſuls; and has been treated of by ſome of their greateſt

greateſt Authors: *Virgil* for inſtance, *Cato*, *Varro*, and *Columella*.

The later Authors on *Agriculture*, are *Palladius Conſtantinus*, *Cæſar*, *Baptiſta Porta*, *Heresbachius*, and *Agricola*, in *Latin*; *Alphonſo Herrara*, in *Italian*; *Stephens*, *Liebaut*, *de Serrée*, *de Croiſcens*, *Bellon*, and *Chomel*, in *French*; and *Evelyn*, *Mortimer*, *Switzer*, *Bradley*, and *Lawrence*, in *Engliſh*. See GEOPONICK.

AGRIPPA, a Name applied, among the Antients, to Children deliver'd in an unuſual, or irregular manner. See DELIVERY.

They were called *Agrippæ*, quaſi *ægre parti*.

AGRYPNIA, Αγρυπνια, a Watching, or dreaming Slumber. See COMA, WATCHING, SLEEP, &c.

AGUE, a periodical Diſeaſe, conſiſting in a cold ſhivering Fit, ſucceeded by a hot one; and going off in a Diaphoreſis, or Sweating. See DISEASE.

If the Coldneſs and Shivering be inconſiderable, and only the hot Fit felt; the Diſeaſe is called an *Intermitting Fever*. See FEVER.

According to the Periods or Returns of the Fits, the Diſeaſe is either a *Quotidian*, *Tertian*, or *Quartan Ague*, or *Fever*. See QUOTIDIAN, TERTIAN, QUARTAN, &c.

The next Cauſe of Agues, ſeems to be an obſtructed Perſpiration, or whatever by overloading the Juices, retards their Motion, or occaſions a Lentor in the Blood.—The Symptoms are Heavineſs and Reaching; a weak, ſlow Pulſe; Coldneſs, and Shivering, felt firſt in the Joints, thence creeping over the whole Body; Pain in the Loins, and an involuntary Motion of the under Jaw.

A *Vernal Ague* is eaſily cur'd; but an *Autumnal* one is more obſtinate, eſpecially in aged and cachectical Perſons; if complicated with a Dropſy, Peripneumony, &c. dangerous.—When an *Ague* proves fatal, it is uſually in the cold Fit.

The Cure is uſually begun with an Emetic of Ipecacuanha, an Hour before the Acceſs; and compleated with the Cortex Peruvianus, adminiſter'd in the Interval between two Fits; and continued at times, to prevent a Relapſe. See CORTEX.

Dr. *Quincy* endeavours to account for the Effect of the Bark, from the Irregularity, Aſperity, and Solidity of its Particles, which fit it to break thoſe Viſcidities in the Juices whereby the Capillaries were obſtructed, and to draw up the Solids into a Tenſion, ſufficient by the vigorous Vibrations enſuing thereon, to prevent any future Accumulation thereof.—The firſt Intention, he obſerves, is anſwer'd, by giving the Blood a greater Momentum; and the ſecond, by its corrugating the Nerves, and rendering the Contractions of the Veſſels more briſk and forcible.—Hence alſo its Effects upon ſuch as are apt to ſweat immoderately.

AID, or AIDE, *Auxilium*, literally denotes the Help, Succour, or Aſſiſtance, which any Perſon lends another, when too weak to do, or avoid ſomething. See ASSISTANT.

The Word is *French*, form'd, according to M. *Menage*, from the Italian *Aitare*; and that from the Latin *Adjutare*, whence the Spaniſh *Adjutant*.

AID, in Law, is when a Petition is made in Court, for the Calling in of *Help* from another Perſon intereſted in the Matter in Queſtion; who, 'tis probable, may not only ſtrengthen the Party's Cauſe, who thus prays for *Aid*, but alſo prevent a Prejudice ariſing to his own Right.

This is called *Aid Prier*, or *Aid Prayer*: But this Courſe of Proceeding is now much diſuſed.

A City or Corporation, holding a Fee-farm of the King, may *Pray in Aid* of him; if any thing be demanded of them relating thereto.

The *Aid Prier*, is ſometimes alſo uſed in the King's behalf, to prevent any Proceeding againſt him till his Council be call'd, and heard what they have to ſay for avoiding the King's Prejudice, or Loſs.

AID *de Camp*, an Officer in an Army, whoſe Buſineſs is to attend the general Officers, and receive and carry their Orders, as occaſion requires.

When the King is in the Field, he uſually appoints young Volunteers of Quality to carry his Orders, who are called the King's *Aids de Camp*.

AID *Major*, or *Adjutant*, is an Officer, whoſe Buſineſs is to eaſe the *Major* of part of his Duty; and to perform it all in his Abſence. See MAJOR, and ADJUTANT.

Some Majors have ſeveral *Aid-Majors*.—Each Troop of Guards has but one Major, who has two *Aid-Majors* under him; or more, according as the Buſineſs requires. See TROOP, and GUARD.

Every Regiment of Foot hath as many *Aid-Majors* as it contains Battalions.—When the Battalion is drawn up, the *Aid-Major*'s Poſt is on the Left, beyond all the Captains, and behind the Lieutenant-Colonel. See REGIMENT, BATTALION, &c.

AID, *Auxilium*, in our antient Cuſtoms, a Subſidy or Sum of Money due to the Lord, from his Tenants, on certain Occaſions. See SUBSIDY, SERVICE, &c.

It differ'd from a *Tax*, which is impoſed at any time when wanted; whereas the *Aid* could only be levied where it was Cuſtomary, and where the particular Occaſion fell out. See TAX.

Such was the *Aid de Relief*, due from the Tenants in Fee, upon the Death of the Lord Meſn, to his Heir; towards the Charge of a Relief of the Fee, of the ſuperior Lord. See RELIEF, FEE, LORD, &c.

Such alſo was the *Aid Chevel*, or *Capital Aid*, due by Vaſſals, to the chief Lord, or the King, of whom they held *in Capite*. See VASSAL.

Of this there are three Kinds.—The firſt, of Chivalry; or, as they call'd it, *Par fitz Chevalier*, towards making his eldeſt Son a Knight, when arrived at the Age of 15 Years: The ſecond, of Marriage, or *Par fille marier*, towards marrying his eldeſt Daughter.—Both theſe, with all Charges incident thereto, are taken away by Stat. 12 *Car.* II. See TENURE, CAPITE, &c.—Some will have 'em to have been firſt eſtabliſh'd in *England*, by *William* the Conqueror; and afterwards transferr'd to *Normandy*: But the more common Opinion is, that the Conqueror brought 'em with him: The third was of *Ranſom*, due when the Lord was taken Priſoner. See RANSOM.

In ſome Provinces there was a fourth kind of *Aid*; due whenever the Lord ſhould undertake an Expedition to the Holy Land. See CROISADE, &c.

We alſo read of *Aids* paid the Lord, when he was minded to purchaſe any Land or Tenement. Theſe were only granted once in his Life.——*Aids* for the Repairing and Fortifying of Caſtles, Seats, &c.

Theſe *Aids*, or Contributions, were at firſt impoſed by the Lord or King, at what Rate he pleas'd; but by a Stat. 3d *Edw.* I. a Reſtraint was laid on common Perſons being Lords, and they were tied down to a fix'd Proportion: By a ſubſequent Statute, the ſame Rate was extended even to the King.

They ſeem to have been firſt eſtabliſh'd with a View to the Clients and Freedmen of antient *Rome*, who made preſents to their Patrons towards his Daughter's Fortune, as alſo on his Birth-day, and other ſolemn Occaſions. See PATRON, and CLIENT.——Accordingly, *Bouteiller* relates, that in his Time, they depended on the Courteſy and Good-will of the Vaſſals; for which Reaſon they were called, *Droits de Complaiſance*.

The Biſhops alſo received *Aids* from their Eccleſiaſticks, called *Synodales*, and *Pentecoſtals*. They were to be paid at the Time of their Conſecration; or when they had a King to entertain; or when call'd by the Pope to his Court, or to a Council; as alſo when they went to receive the *Pallium*. See SYNODALES, &c.

Add, that the Archdeacons exacted *Aids* from the Clergy of their Juriſdiction. See PROCURATION, &c.

AIDS are alſo uſed in Matters of Polity, for any extraordinary Taxes or Impoſitions occaſionally levied by the King and Parliament, upon the Subjects; to ſupport the Charges of the Government, when the ordinary Revenue proves ſhort. See SUBSIDY.

AIDS, in the Manage, are Helps or Aſſiſtances, which the Horſeman contributes towards the Motion or Action requir'd of the Horſe; by a diſcrete uſe of the Bridle, Caveſon, Spur, Poinſon, Rod, Calf of the Leg, and Voice. See BRIDLE.

Such a Horſe knows his *Aids*, anſwers his *Aids*, takes his *Aids* with Vigour, &c.—The *Aids* are made uſe of, to avoid the Neceſſity of Corrections.—The ſame *Aids*, given in a different manner, become Corrections. See CORRECTION.

The *Aids* uſed to make a Horſe go in Airs, are very different from thoſe requir'd in going upon the Ground. *Newcaſtle*.

The inner Heel, inner Leg, and inner Rein, are called *inner Aids*.—The outer Heel, outer Leg, &c. are *outer Aids*.

AIGLETTE, in Heraldry. See EAGLET.

AIGUE *Marine*, in Natural Hiſtory. See AQUA *Marina*.

AIGUISCE, or AIGUISSEE, or EGUISCE, in Heraldry, a Term applied to a Croſs, when its four Ends are ſharpen'd, ſo however as to terminate in obtuſe Angles. See CROSS.

The Croſs *Aiguiſce* differs from the Croſs Fitchee, in that the latter goes tapering by degrees to a ſharp Point; whereas only the Ends of the former are taper'd. See FITCHEE.

AILE, in Law, a Writ which lies where the Grand-father, or Great Grand-father called *Beſaile*, was ſeized of Lands or Tenements in Fee-ſimple, on the Day he died; and a Stranger abates or enters the ſame Day, and diſpoſſeſſeth the Heir. The Word is form'd of the *French Aieul*, *Avus*, Grand-father.

AIR, Aer, in Phyſicks, a thin, fluid, tranſparent, compreſſible, and dilatable Body; ſurrounding the terraqueous Globe to a conſiderable Height. See Earth, and Terraqueous.

Air was conſider'd by ſome of the Antients as an Element; but then, by *Element* they underſtood a different thing from what we do. See Element.

'Tis certain, that *Air*, taken in the popular Senſe, is far from the Simplicity of an Elementary Subſtance; tho there may be ſomething in it, which bids fair for the Appellation. —Hence, *Air* may be diſtinguiſh'd into *Vulgar*, or *Heterogeneous*; and *Proper*, or *Elementary*.

Vulgar or Heterogeneous Air, is a Coalition of Corpuſcles of various Kinds, which together conſtitute one fluid Maſs, wherein we live and move, and which we are continually receiving and expelling by Reſpiration.—The whole Aſſemblage of this, makes what we call the *Atmoſphere*. See Atmosphere.

Where this *Air* or Atmoſphere terminates, there Æther is ſuppoſed to commence; which is diſtinguiſh'd from *Air*, in that it does not make any ſenſible Refraction of the Rays of Light, which *Air* does. See Æther, and Refraction.

The Subſtances whereof *Air* conſiſts, may be reduced to two Kinds, *viz.* 1°, The Matter of Light, or Fire, which is continually flowing into it from the heavenly Bodies. See Fire.—To which, probably, may be added the Magnetical Effluvia of the Earth. See Magnetism.

2°, Thoſe numberleſs Particles, which in form either of Vapours, or dry Exhalations, are rais'd from the Earth, Water, Minerals, Vegetables, Animals, *&c.* either by the ſolar, ſubterraneous, or culinary Fire. See Vapour, and Exhalation.

Elementary Air, or Air, properly ſo call'd, is a certain ſubtile, homogeneous, elaſtick Matter; the Baſis, or Fundamental Ingredient of the Atmoſpherical *Air*, and that which gives it the Denomination.

Nature and Production of Air.

The peculiar Nature of this *aerial* Matter, we know but little of; what Authors have advanced concerning it being chiefly conjectural. We have no way of examining it apart, or ſeparating it from the other Matters it is mix'd with; and conſequently no way of aſcertaining with Evidence what belongs to it abſtractedly from the reſt.

Dr. *Hook*, and ſome others, will have it to be no other than the *Æther* it ſelf; or that fine, fluid, active Matter, diffuſed thro' the whole Expanſe of the Celeſtial Regions; which coincides with Sir *Iſaac Newton's Subtile Medium*, or *Spirit*. See Æther, Medium, and Spirit.

In this View it is ſuppoſed a Body *ſui generis*, ingenerable, incorruptible, immutable, preſent in all Places, in all Bodies, *&c.*

Others, conſidering only its Property of Elaſticity, which they account its eſſential and conſtituent Character; ſuppoſe it mechanically producible; and to be no other than the Matter of other Bodies alter'd, ſo as to become permanently elaſtick.—Mr. *Boyle* gives us ſeveral Experiments, which he made "for the Production of *Air*; taking Pro- "duction for the obtaining a ſenſible Quantity thereof, from "Bodies wherein it did not appear either at all, or in ſo "great Plenty."——Among the ſeveral Ways of doing this, 'the fitteſt for Practice,' he obſerves, 'are Fermentation, 'Corroſion, Diſſolution, Decompoſition; the boiling of Wa- 'ters and other Fluids; and the mutual Action of Bodies, 'eſpecially ſaline ones, upon each other.' *Hiſt. of Air.*— He adds, 'that various ſolid and mineral Bodies, unſuſpect- 'ed of Elaſticity, being plunged in corroſive unelaſtick 'Menſtrua, will, by a proper Comminution of their Parts 'in the Conflict, afford a conſiderable Quantity of perma- 'nently elaſtick *Air*.' *Ubi ſupra*.

Of the ſame Opinion is Sir *I. Newton*; 'The Particles of 'denſe, compact, and fixed Subſtances, cohering by a ſtrong 'attractive Force, are not ſeparable without a vehement 'Heat, or perhaps not without Fermentation; and ſuch 'Bodies being at length rarified by ſuch Heat or Fermen- 'tation, become true permanent *Air*.' *Opticks*.—'Thus, the ſame Author adds, 'Gunpouder generates *Air* by Ex- 'ploſion.' *Ibid.*

We have here, therefore, not only the Materials whereof *Air* ſhould be made; but the Means of doing it: with regard to which, the *Air* is divided into *Real* or *Permanent*; and *Apparent* or *Tranſient*.—For, that all which appears to be *Air* does not continue ſuch, is evident from the Inſtance of an Æolipile; the Water of which being ſufficiently rarefy'd by the Fire, ruſhes out in a ſharp whiſtling Blaſt, perfectly reſembling *Air*, while the Motion laſts; but ſoon loſes that reſemblance, eſpecially in the Cold, and returns by Condenſation into its original Water: And the ſame may be obſerved of Alcohol of Wine, and other ſubtile and fugitive Spirits, rais'd by Diſtillation.—Whereas *real Air* is not reducible by any Compreſſion, Condenſation, or the like, into any other Subſtance beſide *Air*. See Æolipile.

Water, then, tho it may put on an *aerial* Nature for a-while, yet is not capable of perſiſting therein: And the ſame may be ſaid of other Fluids.—The furtheſt they can go, is to become Vapour; which is the Matter of the Fluid render'd much rarer, and put in a briſk Motion.——For a Subſtance to become *permanent Air*, it muſt be of a fixed Kind: otherwiſe, it is not capable of undergoing the Alteration neceſſary to be induced in it; but gives way and flies off too ſoon. So that the Difference between *Permanent* and *Tranſient Air*, amounts to the ſame as that between Vapour and Exhalation; the one, *e. g.* being dry, the other moiſt, *&c.* See Vapour, and Exhalation.

We can go a little further yet.—This elaſtick Property of *Air*, is ſuppoſed by many Philoſophers, to depend on the Figure of its Corpuſcles, which they ſuppoſe to be ramous: Some will have 'em ſo many minute Floculi, reſembling Fleeces of Wool; others conceive 'em roll'd up like Hoops, and curled like Wires, or Shavings of Wood, or coil'd like the Springs of Watches; and endeavouring to reſtore themſelves in Virtue of their Texture: ſo that to produce *Air*, muſt be to produce ſuch a Figure and Diſpoſition of Parts; and thoſe Bodies only are proper Subjects, which are ſuſceptible of ſuch Diſpoſition; which, Fluids, from the ſmoothneſs, roundneſs, and ſlipperineſs of their Parts, are not. See Fluid.

But Sir *I. Newton* puts the Thing another way; ſuch a Texture he thinks by no means ſufficient to account for that vaſt Power of Elaſticity obſerved in *Air*, which is capable of diffuſing into above a Million of times more Space than it before poſſeſs'd.—But, as all Bodies are ſhewn to have an attractive and a repelling Power; and as both theſe are ſtronger in Bodies, the denſer, more ſolid and compact they are: Hence it follows, that when by Heat, or any other powerful *Agent*, the attractive Force is ſurmounted, and the Particles of the Body ſeparated ſo far as to be out of the Sphere of Attraction; the repelling Power commencing thence, makes 'em recede from each other with a ſtrong Force, proportionable to that wherewith they before coher'd; and thus they become *permanent Air*.—— Hence, ſays the ſame Author, it is, that as the Particles of *permanent Air* are groſſer, and ariſe from denſer Bodies, than thoſe of *Tranſient Air*, or Vapour: true *Air* is more ponderous than Vapour; and a moiſt Atmoſphere lighter than a dry one. *Opticks*, p. 371, *&c.* See Attraction, Repulsion, *&c.*

But, after all, there may ſtill be Reaſon to doubt, whether the Matter thus produced from ſolid Bodies have all the Properties of *Air*; and whether ſuch *Air* be not tranſient, as well as that from humid ones; tho not to that degree.——Mr. *Boyle* argues, from an Experiment made in the *Air*-Pump with lighted Match; that thoſe light and ſubtile Fumes into which the Fire it ſelf ſhatters dry Bodies, have no ſuch Spring as *Air*; ſince they were unable to hinder the Expanſion of a little *Air*, included in a Bladder they ſurrounded. *Phyſ. Mech. Exper.*——Yet, in ſome ſubſequent Experiments, by diſſolving Iron either in Oil of Vitriol and Water, or in Aqua-fortis; a large *aerial* Bubble was produced, which had a real Spring; ſo as to hinder the ſurrounding Liquor from regaining its Place; and which, by the Application of a warm Hand, readily dilated it ſelf like other *Air*, and broke into the Liquor in ſeveral ſucceeding Bubbles; and even thro' the Liquor into the open *Air*. *Ubi ſupra*.

The ſame excellent Perſon further aſſures us, he procured a really elaſtick Subſtance from divers other Matters; as Bread, Grapes, Muſt, Ale, Apples, Peas, Beef, *&c.* and from ſome Bodies by only burning 'em *in Vacuo*, particularly Paper, Hartſhorn, *&c.* which yet, upon further Examination, was ſo far from being pure *Air*, that Animals incloſed in it, not only could not reſpire it without harm; but even died ſooner than *in Vacuo*, where there was nothing like *Air*. *Phyſ. Mechan. Exper.*

We may here add an Obſervation of the Members of the Royal Academy of Sciences at *Paris*; which imports, that the Property of Elaſticity is ſo far from conſtituting *Air*; that *Air* is render'd more elaſtick by the Admixture of ſome other Matters along with it, than it is in its Purity.— Thus, from ſome Experiments of M. *de la Hire* at *Paris*, and of M. *Stancari* at *Boulogne*, M. *Fontenelle* aſſures us, that *Air* moiſten'd with Water, is conſiderably more elaſtick, and expands further, than when pure.—M. *de la Hire* even found the moiſt *Air* eight times more elaſtick than the dry. *Hiſt. de l'Acad.* An. 1708.

But it muſt not be omitted, that Dr. *Jurin* explains the Experiments another way; and endeavours to ſhew, that the Concluſion does not neceſſarily follow from 'em. *Append. ad Varen. Geogr.*

Thus much for *Air* conſider'd in it ſelf.——But ſuch *Air*, we have obſerv'd, no where exiſts in its Purity.—That wherewith we are concern'd, and whoſe Properties and Effects are chiefly conſider'd, is acknowledg'd by Mr. *Boyle* to be the moſt heterogeneous Body in the Univerſe: *Boerhaave* even ſhews it to be an univerſal Chaos, or Colluvies of all the Kinds of created Bodies.—Whatever Fire can volatilize is found in the *Air*; but there is no Body that can withſtand the Force of Fire. See FIRE, VOLATILITY, BURNING-GLASS, &c.

Hence, for inſtance, the whole Foſſil Kingdom muſt neceſſarily be found therein: For all of that Tribe, as Salts, Sulphurs, Stones, Metals, &c. are convertible into Fume, and thus capable of being render'd part of the *Air*.—Gold it ſelf, the moſt fix'd of all natural Bodies, is found to adhere cloſe to the Sulphur in Mines; and thus to be raiſed along with it. See GOLD, &c.

2°, All the Parts of the Animal Kingdom muſt alſo be in the *Air*: For, beſide the copious Effluvia continually emitted from their Bodies, by the vital Heat, in the ordinary Courſe of Perſpiration; by means whereof an Animal, in the Courſe of its Duration, impregnates the *Air* with many times the Quantity of its own Body, (See PERSPIRATION, EFFLUVIA, &c.) Beſide this, we find that any Animal when dead, being expoſed to the *Air*, is in a little time carried wholly off, Bones and all. So that the Whole of what before was an Animal, *e. g.* a Man, an Ox, or the like, is now in the *Air*.

By the way, it may be noted what huge Swarms of the groſſer excrementitious Matters of Animals muſt ſwim in the *Air*: At *Madrid*, we are aſſured, they have no Neceſſary Houſes; and that they always make a Jakes of their Streets overnight: yet does the *Air* imbibe the Filth as faſt as 'tis laid; inſomuch, that there is no increaſe of any fetid ſmell.

3°, As to Vegetables, nothing of that Claſs can be ſuppoſed wanting; ſince we know that all Vegetables by Putrifaction become volatile; even the earthy or vaſcular Part, in time follows the reſt. See VEGETABLE, PLANT, &c.

Of all the Effluvia floating in this grand Ocean the Atmoſphere; one of the principal, are the Saline. Theſe, Authors commonly conceive, as chiefly of the nitrous Kind; but there is no doubt but that there are of all the ſorts, Vitriolick, Aluminous, Sea Salt, &c. See SALT, NITRE, &c.

Mr. *Boyle* even obſerves, that there may be many compounded Kinds of Salts in the *Air*, which we have not on Earth; ariſing from different ſaline Spirits, fortuitouſly meeting and mixing together.—Thus, the glaſs Windows of antient Buildings are ſometimes obſerv'd to be corroded, as if they had been Worm-eaten; tho none of the Salts abovemention'd have the Faculty of corroding Glaſs.

The Sulphurs, too, muſt make a conſiderable Article in the *Air*; on account of thoſe many Volcanoes, Grottos, Caverns, and other Spiracles chiefly affording that Mineral, diſperſed thro' the Globe. See SULPHUR, VOLCANO, &c.

And the Aſſociations, Separations, Attritions, Diſſolutions, and other Operations of one ſort of Matter upon another, may be conſider'd as a Source of numerous other neutral or anonymous Bodies, unknown to us.

Air, in this general Senſe, is one of the moſt conſiderable and univerſal *Agents* in all Nature; being concern'd in the Production of moſt of the Phænomena relating to our World.—Its Properties and Effects, including a great Part of the Reſearches and Diſcoveries of the modern Philoſophers, have ſome of 'em been reduced to preciſe Laws and Demonſtrations; in which form they make a Branch of Mathematicks, called *Pneumaticks*, or *Aerometry*. See MATHEMATICKS, PNEUMATICKS, and AEROMETRY.

Mechanical Properties and Effects of AIR.

I°, *Fluidity*.——That the *Air* is a Fluid, is evident from the eaſy Paſſage it affords to Bodies thro' it; as in the Propagation of Sounds, Smells, and other Effluvia: For this argues it a Body whoſe Parts give way to any Force impreſs'd, and in yielding, are eaſily moved among themſelves; which is the Definition of a Fluid. See FLUID.—See alſo SOUND, &c.

They who, with the *Carteſians*, make Fluidity conſiſt in a perpetual inteſtine Motion of the Parts, find *Air* alſo anſwers to that Character: Thus, in a darkned Room, where the Species of external Objects are brought in by a ſingle Ray; they appear in a continual Fluctuation; and thus even the more accurate Weather-Glaſſes are obſerv'd never to remain a moment at reſt. See WEATHER-*Glaſs*.

The Cauſe of this Fluidity of *Air*, is attributed by ſome late Philoſophers to the Fire intermix'd therewith; without which, they imagine, the Atmoſphere would harden into a ſolid, impenetrable Maſs.—And hence, the greater the Degree of Fire therein, the more fluid, moveable and pervious the *Air*: And thus, as the degree of Fire is continually varying; according to the Circumſtances and Poſition of the heavenly Bodies; the *Air* is kept in a continual Reciprocation. See FIRE.

Hence, in good meaſure, it is, that on the Tops of the higher Mountains; the Senſes of Smelling, Hearing, &c. are found very feeble. See MOUNTAIN.

II°, *Weight*, or *Gravity*.——That the *Air* is heavy, follows from its being a Body; Weight being an eſſential Property of Matter. See WEIGHT, and GRAVITY.

But we have infinite Arguments of the ſame from Senſe, and Experiment: Thus, the hand, applied on the Oriſice of a Veſſel empty of *Air*, ſoon feels the Load of the incumbent Atmoſphere.—Thus, glaſs Veſſels, exhauſted of their *Air*, are eaſily cruſh'd to pieces by the Weight of the *Air* without. So, two ſmall hollow Segments of a Sphere, exactly fitting each other, being emptied of *Air*, are preſs'd together with a Force equal to 100 Pound, by the Pondus of the ambient *Air*.

Further, a Tube cloſe at one end, being filled with Mercury, and the other End immerged in a Baſon of the ſame Fluid; and thus erected: The Mercury in the Tube will be ſuſpended to the Height of about 30 Inches above the Surface of that in the Baſon. The Reaſon of which Suſpenſion, is, that the Mercury in the Tube cannot fall lower, without raiſing that in the Baſon; which being preſs'd down with the Weight of the incumbent Atmoſphere, cannot give way, unleſs the Weight of the Mercury in the Tube, exceeds that of the *Air* out of it.—That this is the Caſe, is evident hence; that if the whole Apparatus be included in an Air-Pump; in proportion as the *Air* is exhauſted from the ſame, the Mercury falls: and gradually letting in the *Air* again, the Mercury reaſcends to its former height.—This makes what we call the *Torricellian Experiment*. See TORRICELLIAN.

To ſay no more, we can actually weigh *Air*: For a Veſſel, full even of common *Air*, by a very nice Balance, is found to weigh more than when the *Air* is exhauſted; and the Effect is proportionably more ſenſible, if the ſame Veſſel be weigh'd full of condenſed *Air*, and void of *Air*. See WEIGHING, and HYDROSTATICAL *Balance*.

The Weight of *Air* is continually varying, according to the different degree of Heat, and Cold.—*Ricciolus* eſtimates its weight to that of Water, to be as 1 to 1000; *Merſennus* as 1 to 1300, or 1 to 1356; *Galileo* only makes it as 1 to 400.—Mr. *Boyle*, by a more accurate Experiment, found it about *London*, as 1 to 938; and thinks, all things conſider'd, the Proportion of 1 to 1000 may be taken as a Medium; for there is no fixing any preciſe Ratio, ſince not only the *Air*, but the Water it ſelf, is continually varying. Add, that Experiments made in different Places neceſſarily vary, in regard of the different Heights of the Places, and the different Conſiſtences of *Air* ariſing therefrom. Boyle, *Phyſ. Mechan. Exper.*

It muſt be added, however, that by Experiments made ſince before the Royal Society; the Proportion of *Air* to Water was, firſt, found as 1 to 840; then, as 1 to 852; and a third time, as 1 to 860. *Phil. Tranſ.* N° 181.——And laſtly, by a very ſimple and accurate Experiment of the late Mr. *Hawksbee*; the Proportion was ſettled as 1 to 885. *Phyſ. Mechan. Exper.*——But theſe Experiments being all made in the Summer Months, when the Barometer was 29 Inches $\frac{3}{4}$ high; Dr. *Jurin* thinks, that at a Medium between Heat and Cold, when the Barometer is 30 Inches high; the Proportion between the two Fluids, may be taken as 1 to 800.

Air, then, being heavy and fluid; the Laws of its Gravitation, or Preſſure, may be inferr'd to be the ſame as in other Fluids; conſequently, its Preſſure muſt be as its perpendicular Altitude. See FLUID.

This is alſo confirmed by Experiment.—For, removing the Torricellian Tube to a more elevated Place, where the incumbent Column of *Air* is ſhorter; a proportionably ſhorter Column of Mercury is ſuſtained; it being found to deſcend at the Rate of one fourth of an Inch, for every 100 Foot of Aſcent. See LEVELLING.

On this Principle depends the Structure and Office of the Barometer. See BAROMETER.

From hence, alſo, it follows, that the *Air*, like all other Fluids, muſt preſs equally every way.—Which is confirm'd by what we obſerve of ſoft Bodies ſuſtaining this Preſſure without any Change of Figure; and brittle Bodies, without their breaking; tho the Preſſure upon 'em be equal to that of a Column of Mercury 30 Inches high, or a Column of Water of 32 Foot.—'Tis obvious, that no other Cauſe can preſerve ſuch Bodies unchanged, but the equable Preſſure on all Sides, which reſiſts as much as it is reſiſted. And hence, upon removing or diminiſhing the Preſſure on one ſide only; the Effect of the Preſſure is ſoon perceiv'd on the other.

For the Quantity and Effect of this Preſſure of the Atmoſphere on the human Body. See ATMOSPHERE.

From this Gravity of the *Air*, conſider'd with its Fluidity, ſeveral of its Uſes and Effects are deducible.—And, 1°, by means hereof, it cloſely inveſts the Earth, with all the

Bodies on it; and conſtringes and binds 'em down with a Force amounting, according to the Computation of M. *Paſchal*, to 2232 Pounds weight, upon every ſquare Foot, or upwards of 15 Pounds upon every Inch ſquare.—Hence, it prevents, *e. g.* the Arterial Veſſels of Plants and Animals, from being too much diſtended by the Impetus of the circulating Juices, or by the elaſtick Force of the Air ſo plentifully lodg'd in the Blood.—Thus, we ſee, in the Operation of Cupping, that upon a Diminution of the Preſſure of the *Air*, the Parts of the Body grow tumid; which neceſſarily alters the manner of the Circulation thro' the Capillaries, *&c.*

The ſame Cauſe hinders the Juices from oozing and eſcaping thro' the Pores of their containing Veſſels: This is experienc'd by ſuch as travel up high Mountains, who, in proportion as they aſcend, find themſelves grow more and more relaxed; and at length fall into a ſpitting of Blood, and other Hemorrhages; by reaſon of the *Air* not ſufficiently binding up the Veſſels of the Lungs.—The like is obſerv'd of Animals incloſ'd in the Receiver of an *Air*-Pump, who, as the *Air* is taken from 'em, ſwell, vomit, drivel, dung, urine, ſweat, *&c.* See VACUUM.

2°, The Mixture of contiguous Bodies, eſpecially fluid ones, is chiefly owing hereto.—Hence many Liquids, as Oils and Salts, which readily and ſpontaneouſly mix in *Air*, upon taking that away, remain quietly in their State of Separation.

3°, It determines the Action of one Body upon another.—Thus, the Fire which burns Wood immediately goes out, and its Flame diſſipates upon removing the *Air*; by reaſon ſomething is then wanting to preſs the Corpuſcles of Fire againſt thoſe of the Fuel, and prevent the too ſpeedy Diffuſion of the Flame. The ſame is obſerved of Aqua Regia, and Gold; that Menſtruum ceaſing any longer to operate on the Metal, after the *Air* is taken away. And upon the ſame determining Power of the *Air* it is, that *Papin*'s Digeſtor is built. See DIGESTOR.

Hence alſo it is, that on the Tops of high Mountains, as on the Pike of *Teneriffe*, the moſt ſavoury Bodies, as Pepper, Ginger, Salts, Spirit of Wine, *&c.* have no ſenſible Taſte; for want of their Particles being preſs'd upon the Tongue, ſo as to enter its Pores, but inſtead thereof, being diſſipated and blown away by its heat. The only thing that there retains its Savour, is Canary Wine, which is chiefly owing to its unctuous Quality; in Virtue whereof, it adheres cloſely to the Part, and is not eaſily blown away.

From this Principle of Gravity chiefly ariſe our *Winds*; which are only *Air* put in Motion by ſome Alteration in the Equilibrium thereof. See WIND.

III°, *Elaſticity*,—or a Power of yielding to an Impreſſion by contracting its Dimenſions; and, upon removing or diminiſhing the impreſſive Cauſe, returning to its former Space or Figure.——This elaſtick Force is accounted the diſtinguiſhing Property of *Air*; the other Properties hitherto enumerated being common to it with other Fluids.

Of this Power we have numerous Proofs.—Thus, a blown Bladder being ſqueez'd in the Hand; we find the included *Air* ſenſibly reſiſt; ſo as upon ceaſing to compreſs, the Cavities or Impreſſions made in its Surface, are readily expanded again, and fill'd up.

On this Property of Elaſticity, the Structure and Office of the Air-*Pump depends.* See AIR-*Pump*.

This Niſus or Endeavour to expand, every Particle of *Air* always exerts; and thus ſtrives againſt an equal endeavour of the ambient Particles; whoſe Reſiſtance happening by any means to be weaken'd, it ſtrait diffuſes into an immenſe Extent.—Hence it is, that thin glaſs Bubbles, or Bladders, full of *Air*, and exactly cloſed; being included in the exhauſted Receiver of an *Air*-Pump, burſt, by the Force of the included Air. So a Bladder quite flaccid, containing only the ſmalleſt Quantity of Air; ſwells in the Receiver, and appears quite full. And the ſame Effect is found, by carrying the flaccid Bladder to the Top of an high Mountain.

This Power does not ſeem to have any Limits aſſign'd it; nor does it appear capable, by any Means whatever, of being deſtroy'd or diminiſh'd.—Mr. *Boyle* made ſeveral Experiments, with a View to diſcover how long *Air*, brought to the greateſt degree of Expanſion he could reduce it to in his *Air*-Pump, would retain its Spring; and could never obſerve any ſenſible Diminution; even tho this poor thin *Air* was clog'd ſome Months with a Weight which one would wonder how it ſhould ſupport a Moment.

Yet, Mr. *Hawksbee*, by a later Experiment, has ſhewn, that the Spring of the *Air* may be ſo diſturb'd by a violent Preſſion, as to require ſome time to return to its natural Tone.

The Weight or Preſſure of the *Air*, it is obvious, has no dependence on its Elaſticity; but would be the ſame, whether the *Air* had ſuch Property or not.—But the *Air*, in being elaſtick, is neceſſarily affected by the Preſſure, which reduces it into ſuch a Space, as that the Elaſticity which re-acts againſt the compreſſing Weight, is equal to that Weight. See COMPRESSION.

In effect, the Law of this Elaſticity, is, that it increaſes as the Denſity of the *Air* increaſes; and the Denſity increaſes, as the Force increaſes wherewith it is preſs'd. Now, there muſt neceſſarily be a Balance between the Action and Re-action; *i. e.* the Gravity of the *Air*, which tends to compreſs it, and the Elaſticity of the *Air* which endeavours to expand it, muſt be equal. See DENSITY, REACTION, *&c.*

Hence, the Elaſticity increaſing or diminiſhing univerſally as the Denſity increaſes, or diminiſhes, *i. e.* as the Diſtance between the Particles diminiſhes or increaſes; 'tis no matter whether the *Air* be compreſs'd, and retain'd in ſuch Space by the Weight of the Atmoſphere, or by any other means: It muſt endeavour, in either Caſe, to expand with the ſame Force.——And hence, if *Air* near the Earth be pent up in a Veſſel, ſo as to cut off all Communication with the external *Air*; the Preſſure of the incloſed *Air* will be equal to the Weight of the Atmoſphere. Accordingly, we find Mercury ſuſtained to the ſame Height, by the elaſtick Force of *Air* incloſed in a glaſs Veſſel, as by the whole atmoſpherical Preſſure.—See further under the Article ELASTICITY.

On the ſame Principle may *Air* be *artificially condenſed*. See CONDENSATION *of Air*.

And hence *the Structure of the Wind-Gun*. See WIND-*Gun*.

Dr. *Halley* aſſerts, in the *Philoſoph. Tranſactions*, that from the Experiments made at *London*, and by the *Academy del Cimento* at *Florence*, it may be ſafely concluded, that no Force whatever is able to reduce *Air* into eight hundred times leſs Space than what it naturally poſſeſſes on the Surface of our Earth. In anſwer to which, Monſieur *Amontons*, in the Memoirs of the *French* Academy, maintains, that there is no fixing any Bounds to its Condenſation; that greater and greater Weights will ſtill reduce it into leſs and leſs compaſs; that it is only elaſtick in Virtue of the Fire it contains; and that as 'tis impoſſible ever abſolutely to drive all the Fire out of it, 'tis impoſſible ever to make the utmoſt Condenſation.

The *Dilatation* of the *Air*, by Virtue of its elaſtick Force, is found to be very ſurprizing; and yet, Dr. *Wallis* ſuggeſts, that we are far from knowing the utmoſt it is capable of.—In ſeveral Experiments made by Mr. *Boyle*, it dilated firſt into nine times its former Space; then into 31 times; then into 60; then into 150. Afterwards, it was brought to dilate into 8000 times its Space; then into 10000, and even at laſt into 13679 times its Space: and all this by its own expanſive Force, without any help of Fire.

On this depends the Structure and Uſe of the Manometer. See MANOMETER.

Hence, it appears, that the *Air* we breathe, near the Surface of the Earth, is compreſs'd by its own Weight into at leaſt the 13679th Part of the Space it would poſſeſs *in Vacuo*.—But if the ſame *Air* be condenſed by *Art*; the Space it will take up when moſt dilated, to that it poſſeſſes when condenſed; will be, according to the ſame Author's Experiments, as 505000 to 1. See DILATATION.

Hence, we ſee how wild and erroneous was that Obſervation of *Ariſtotle*, that *Air*, render'd ten times rarer than before, changes its Nature, and becomes Fire.

M. *Amontons*, and others, we have already obſerved, take the Rarefying of *Air* to ariſe wholly from the Fire contain'd in it; and hence, by increaſing the Degree of Heat, the Degree of Rarefaction may be carried ſtill further than its ſpontaneous Dilatation. See HEAT.

On this Principle depends the Structure and Office of the Thermometer. See THERMOMETER.

M. *Amontons* firſt diſcover'd that *Air*, the denſer it is, the more it will expand with the ſame degree of Heat. See DENSITY.

On this Foundation, the ſame ingenious Author has a Diſcourſe, to prove "that the Spring and Weight of the *Air*, "with a moderate degree of warmth, may enable it to "produce even Earthquakes, and other of the moſt ve"hement Commotions in Nature."

According to the Experiments of this Author, and M. *de la Hire*, a Column of *Air* on the Surface of the Earth, 36 Fathoms high, is equal in weight to three Lines Depth of Mercury; and it is found, that equal Quantities of *Air* poſſeſs Spaces reciprocally proportional to the Weights wherewith they are preſſed: The Weight of the *Air*, therefore, which would fill the whole Space poſſeſſed by the terreſtrial Globe, would be equal to a Cylinder of Mercury, whoſe Baſe is equal to the Surface of the Earth, and its Height containing as many times three Lines, as the Atmoſpherical Space contains Orbs equal in weight to that of 36 Fathoms, whereof the Experiment was made.—Hence, taking the denſeſt of all Bodies, *e. g.* Gold, whoſe Gravity is about 14630 times greater than that of *Air* in our Orb, it is eaſy to compute, that this Air would be reduced to the ſame Denſity as Gold, by the Preſſure of a Column of Mercury 14630 times 28 Inches high, *i. e.* 409640 Inches: ſince the Bulks of *Air*, in that Caſe, would be in the reciprocal Ratio of the Weights wherewith they are preſſed. This 409640 Inches, there-

therefore, expreſſes the height at which the Barometer muſt ſtand, where the *Air* would be as heavy as Gold, and the Number $2\frac{1632}{40640}$ Lines, the Thickneſs to which our Column of 36 Fathoms of *Air*, would be reduced in the ſame place.

Now, we know, that 409640 Inches, or 43528 Fathoms, is only the 74th Part of the Semidiameter of the Earth: and when you are paſt that, whatever Matters there be, they muſt be heavier than Gold: 'Tis not improbable, therefore, that the remaining Sphere of 6451538 Fathoms Diameter, may be full of denſe *Air*, heavier, by many degrees, than the heavieſt Bodies among us.—Hence, again, as it is proved, that the more *Air* is compreſſed, the more does the ſame degree of Fire increaſe the Force of its Spring, and render it capable of ſo much the greater Effect; and that, for inſtance, the Heat of boiling Water increaſes the Spring of our *Air*, beyond what it ordinarily is, by a Quantity equal to one third of the Weight wherewith it is preſſed: We may infer, that a degree of Heat, which in our Orb can only produce a moderate Effect, may have a very violent one in ſuch lower Orb; and that as there may be many degrees of heat in Nature, beyond that of boiling Water, 'tis probable there may be ſome, whoſe Violence, thus aſſiſted by weight of the *Air*, may be ſufficient to tear ſunder the ſolid Globe. *Mem. de l'Acad.* An. 1703.

This elaſtick Power of the *Air*, is the ſecond great Source of the Effects of this important Fluid.—In virtue hereof, it inſinuates into the Pores of Bodies, carrying with it this prodigious Faculty of expanding; and that ſo eaſy to be excited: whence it muſt neceſſarily put the Particles of the Bodies it is mix'd withal, into perpetual Oſcillations. In effect, the Degree of Heat, and the *Air*'s Gravity and Denſity, and conſequently its Elaſticity and Expanſion, never remaining the ſame for two Minutes together; there muſt be an inceſſant Vibration, or Dilatation and Contraction, in all Bodies. See VIBRATION.

This Reciprocation we obſerve in ſeveral Inſtances, particularly Plants, the Tracheæ or *Air*-Veſſels whereof, do the Office of Lungs: For the contained *Air* alternately expanding and contracting, as the Heat increaſes or diminiſhes, by turns preſſes the Veſſels, and eaſes 'em again; and thus promotes a Circulation of their Juices. See VEGETABLE, CIRCULATION, &c.

Hence, we find, that no Vegetation or Germination will proceed *in Vacuo*.—Indeed, Beans have been obſerved to grow a little tumid therein; which has led ſome to attribute that to Vegetation, which was really owing to no other than the Dilatation of the *Air* within 'em. See VEGETATION, GERMINATION, &c.

From the ſame Cauſe it is, that the *Air* contain'd in the Bubbles in Ice, by its continual Action, burſts the Ice: And thus Glaſſes and other Veſſels frequently crack, when their contained Liquors are frozen. Thus, alſo, entire Columns of Marble ſometimes cleave in the Winter time, from ſome little Bubble of included *Air*'s acquiring an increaſed Elaſticity.

From the ſame Principle ariſes all Putrefaction and Fermentation; neither of which will proceed, even in the beſt diſpoſed Subjects, *in Vacuo*. See PUTREFACTION, and FERMENTATION.

In this we have a ſingular Inſtance of the wonderful Efficacy of *Air*, that it can change the two Kingdoms, and convert Vegetable Subſtances into Animal, and Animal into Vegetable. See ANIMAL, &c.

In effect, all natural Corruption and Alteration ſeems to depend on *Air*; and Metals, particularly Gold, only ſeem to to be durable and incorruptible, in Virtue of their not being pervious to *Air*.—Accordingly, Names ſlightly wrote in the Sand, or Duſt, on the Tops of high Mountains, have been known to remain 40 Years, without being in the leaſt alter'd or effaced. See CORRUPTION, ALTERATION, &c.

Effects of the peculiar Ingredients of the AIR.

Air not only acts by its common Properties of Gravity, and Elaſticity, but there are numerous other Effects, ariſing from the peculiar Ingredients whereof it conſiſts.

Thus, 1°, it not only diſſolves and attenuates Bodies by its Preſſure and Attrition; but as a Chaos, containing all Kinds of Menſtruums, and conſequently having wherewithal to diſſolve all Kinds of Bodies. See DISSOLUTION.

'Tis known, that Iron and Copper readily diſſolve, and become ruſty in *Air*, unleſs well defended with Oil.—*Boerhaave* aſſures us, he has ſeen Pillars of Iron ſo reduced by *Air*, that one might crumble 'em to Duſt between the Fingers; and for Copper, it is converted by the *Air* into a Subſtance much like the Verdegreaſe produced by Vinegar. See IRON, COPPER, VERDEGREASE, &c.

Mr. *Boyle* relates, that in the Southern *Engliſh* Colonies, the great Guns ruſt ſo faſt, that after a few Years lying in the *Air*, large Cakes of Crocus Martis may be eaſily beat off 'em.—*Acoſta* adds, that in *Peru* the *Air* diſſolves Lead, and conſiderably increaſes its weight.—Yet Gold is generally eſteem'd indiſſoluble by *Air*; being never found to contract Ruſt, tho expoſed ever ſo long. The Reaſon hereof is, that Sea Salt, which is the only Menſtruum capable of acting on Gold, being very difficult to volatilize; there is but a ſmall Proportion of it in the Atmoſphere. In the Chymiſts Laboratories, where Aqua Regia is preparing; the *Air* becoming impregnated with an unuſual Quantity of this Salt; Gold contracts a Ruſt like other Bodies. See GOLD, &c.

Stones alſo undergo the common Fate of Metals.—Thus, *Purbeck* Stone, whereof *Salisbury* Cathedral conſiſts, is obſerved gradually to become ſofter, and moulder away in the *Air*; and the like Mr. *Boyle* relates of *Blackington* Stone. See STONE.——He adds, that *Air* may have a notable Operation on Vitriol, even when a ſtrong Fire could act no further on it. The ſame Author has even found the Fumes of a ſharp Liquor to work more ſuddenly and manifeſtly on a certain Metal, when ſuſtained in the *Air*, than the Menſtruum it ſelf did which emitted thoſe Fumes, on thoſe Parts of the Metals it cover'd.

2°, *Air volatilizes* fix'd Bodies.—Thus Sea Salt being firſt calcined, then fuſed by the Fire, and when fuſed expoſed to the *Air* to liquify; when liquified ſet to dry again, then fuſed again; and, the Operation thus repeated: will by degrees be almoſt wholly evaporated; nothing remaining but a little Earth behind. See VOLATILITY, VOLATILIZATION, &c.

Helmont mentions it as a mighty Arcanum in Chymiſtry, to render fixed Salt of Tartar volatile: but the thing is eaſily effected by *Air* alone; for if ſome of this Salt be expoſed to the *Air* in a Place replete with acid Vapours, the Salt draws the Acid to it ſelf, and when ſaturated therewith, is volatile. See TARTAR, &c.

3°, *Air* alſo *fixes* volatile Bodies.——Thus, tho Nitre or Aquafortis readily evaporate by the Fire; yet, if there be any putrified Urine near the Place, the volatile Spirit will be fix'd, and fall down in form of Aqua ſecunda. See FIXITY.

4°, Add, that *Air* brings many quieſcent Bodies into Action, *i. e.* excites their latent Powers.—Thus, if an acid Vapour be diffuſed thro' the *Air*, all the Bodies whereof that is a proper Menſtruum, being diſſolved thereby, are brought into a State proper for Action. See SALT, &c.

In Chymiſtry, not only the Preſence or Abſence of the *Air*, but even its being barely open, or incloſed, is of great conſequence.—Thus, Camphire fired in a cloſe Veſſel, runs wholly into Salts; whereas, if during the Proceſs, the Cover be removed, and a Candle applied, the whole flies off in Fume. So to make Sulphur inflammable, it requires a free *Air*: in a cloſe Cucurbit, it may be ſublimed a thouſand times without kindling. Sulphur being put under a glaſs Bell, and a Fire applied, riſes into Spirit of Sulphur *per Campanam*: But if there be the leaſt Chink whereby the included *Air* communicates with the Atmoſphere, it immediately kindles. So an Ounce of Charcoal, incloſed in a Crucible well luted, will remain without loſs for fourteen Days in the intenſeſt Heat of a melting Furnace; tho the thouſandth Part of the Fire in open *Air*, will preſently turn it into Aſhes.—*Helmont* adds, that the Charcoal remains all that while without any Alteration of its black Colour; but that if the minute *Air* is let in, it falls inſtantly into white Aſhes. The ſame holds of the Parts of all Animals and Vegetables; which can only be calcined in open *Air*: In cloſe Veſſels they never become any other than black Coals. See CALCINATION, COAL, &c.

The *Air* is liable to abundance of Alterations, not only in reſpect of its Mechanical Properties, Gravity, Denſity, &c. but alſo in reſpect of the Ingredients it conſiſts of.——Thus, in Places abounding with Marcaſites, a fretting vitriolick Salt is obſerved to predominate in the *Air*, which rots the Hangings, and is often ſeen lying on the Ground in a whitiſh Efflorescence.—At *Faſſblun* in *Sweden*, noted for Copper Mines, the mineral Exhalations affect the *Air* ſo ſenſibly, that their Silver Coin is frequently diſcoloured in their Purſes; and the ſame Effluvia change the Colour of Braſs.—Mr. *Boyle* was aſſured by a Gentleman who poſſeſs'd ſome Ground wherein there were ſeveral Veins of Metals, and other Minerals, that he had frequently ſeen Pillars of Fumes aſcending thence; ſome having no Scent, ſome an ill one, and ſome few a good one.—In *Carniola*, *Campania*, &c. where there are Mines of Sulphur, the *Air* at times becomes very unwholeſom; whence frequent epidemick Diſeaſes, &c.—'Tis added, that the Mines near the Cape of *Good Hope*, emit ſuch horrible Fumes from the Arſenic that abounds there, that no Animal can live near them; ſo that ſuch as have at any time been opened, were obliged to be immediately cloſed again.

The Effluvia of Animals alſo have their Effect in varying the *Air*; as is evident in contagious Diſeaſes, Plagues, Murrains, and other Mortalities which are ſpread by the *Air*. See PLAGUE.

The like is obſerved in Vegetables.——Thus, a good Part of the Clove-Trees which grew ſo plentifully in the Iſland of *Ternate*, being fell'd at the Sollicitations of the *Dutch*, in order to heighten the Value of that Fruit; ſuch a Change enſued in the *Air*, as ſhew'd the ſalutary Effect of the Effluvia of the Clove-Trees, and their Bloſſoms: the whole Iſland, ſoon after they were cut down, becoming exceeding ſickly. This, a Phyſician who had been upon the Spot, and from whom Mr. *Boyle* had the Relation; attributed to the noxious Steams of a Volcano there; the ill Quality whereof, had been corrected by the aromatick Effluvia of thoſe ſpicy Bloſſoms.

The *Air* is alſo liable to Alterations from the Seaſon of the Year.—Thus, few ſubterraneous Effluvia are emitted in the Winter; by reaſon the Pores are lock'd up by the Froſt, or cover'd by Snow; the ſubterraneous Heat being all the while at work, and preparing a Fund, to be diſcharged the enſuing Spring.—Hence it is, that if the ſame Seed be ſown in the ſame Soil, in Autumn and Spring, and the degree of Heat be the ſame, a very different Effect will be found; and for the like Reaſon, Rain-Water gather'd in the Spring, is found to have a peculiar Virtue in reſpect of Corns; which being ſteep'd therein, afford a much larger Quantity of Spirits than otherwiſe.—Hence alſo, we ſee why a very ſevere Winter, is uſually follow'd by a wet Spring and fruitful Summer; and *vice verſa*.

Again, from the Winter's Solſtice to the Summer's, the Sun's Rays growing ſtill more and more perpendicular; their Impulſe on the Earth's Surface becomes more and more powerful; by which the Glebe or Soil is more and more relaxed, ſoften'd and putrified; till he arrives at the Tropic: where, with the Force of a chymical Agent, he reſolves the ſuperficial Parts of the Earth into their Principles, Water, Oil, Salt, *&c.* which are all ſwept into the Atmoſphere.

And hence we conceive the Nature of Meteors, which are either Collections of ſuch Effluvia, or Diſperſions thereof. See METEOR.——Theſe Meteors, too, have conſiderable Effects on the *Air*; and thus Thunder is known to put Liquors upon fermenting afreſh.

In effect, whatever alters the Degree of Heat; will make a proportionable Alteration in the Matter of the *Air*. Mr. *Boyle* ſuggeſts ſomething further on this Head, *viz.* that the Salts, *&c.* which in a warm State of Weather were kept in a Fluor, and mix'd together, ſo as to be in a Condition to act conjunctly; upon a Remiſſion of the Warmth, may loſe their Fluidity and Motion, ſhoot into Cryſtals, and thus ſeparate again.

The Height or Depth of the *Air* makes a further Alteration, the Exhalations being few of 'em able to aſcend above the Tops of high Mountains, as appears from thoſe Plagues, where the Inhabitants of one ſide of a Mountain have all periſh'd, without the leaſt Diſorder on the other ſide.

Nor muſt Drought and Moiſture be denied their Share in varying the State of the Atmoſphere.——At *Guinea*, the Heat with the Moiſture, conduce ſo much to Putrefaction, that the pureſt white Sugars are often full of Maggots; and their Drugs ſoon loſe their Virtue, and many of them grow Verminous. 'Tis added, that in the Iſland of St. *Jago*, they are obliged to expoſe their Sweetmeats daily to the Sun, to exhale the Moiſture they had contracted in the Night, which would otherwiſe occaſion 'em to putrify.

On this Principle depends the Structure and Office of the Hygrometer. See HYGROMETER.

Theſe Diverſities in the *Air*, are found to have an Influence on the Operations, Experiments, *&c.* of Philoſophers, Chymiſts, and other Operators.

Thus, 'tis very difficult to procure Oil of Sulphur *per Campanam* in a clear dry Atmoſphere, its Parts being then ſo ready to eſcape into the *Air*: But in a thick, moiſt *Air*, the Oil comes in abundance.—So, all Salts melt eaſieſt in a cloudy *Air*; and when melted, act moſt forcibly. And all Separations ſucceed beſt in ſuch Weather.—If Salt of Tartar be expoſed in a Place where any acid Spirit is floating in the *Air*, it will imbibe the ſame; and of fixed become volatile. Hence, the Experiments made of Salts at *London*, where the *Air* is plentifully impregnated with Sulphur exhaled from Sea-Coal, prove different from thoſe made on the ſame Subjects in other Parts of the Kingdom, where Wood, Turf, *&c.* are the uſual Fuel. Hence alſo, metalline Utenſils, *&c.* ruſt much ſooner at *London*, than in other Parts, where there are fewer acid corroſive Corpuſcles in the *Air*; and Fermentation, which is eaſily raiſed and carried on in a Place free of Sulphur, is impracticable in Places where ſulphurous Exhalations abound.—If pure well-fermented Wine be carried into a Place where the *Air* is repleniſh'd with the Fumes of new Wine then fermenting; it will begin to ferment afreſh. So Salt of Tartar ſwells, and as it were ferments, when carried into a Place where Spirit of Nitre, Vitriol, or Sea Salt is preparing.—'Tis Matter of common Obſervation among Brewers, Diſtillers, Vinegar-makers, *&c.* that at the Time when thoſe ſeveral Plants uſe to be in flower, the reſpective Juices ferment, and the Proceſs ſucceeds the beſt.—Add, that Stains cauſed by vegetable Juices, are obſerved to be beſt taken out of Linen, at the Time when the ſeveral Plants that afford them are in their Prime. This, Mr. *Boyle* obſerves, has been experienc'd in the Stains of Juice of Quinces, Hops, *&c.* which latter, eluding all the endeavours that could be uſed to get it out, has vaniſh'd of it ſelf the next Hop-ſeaſon.

After all, ſome of our more curious and penetrating Naturaliſts, have obſerved certain Effects of *Air*, which do not appear to follow from any of the Properties, or the Materials above recited.—On this View, Mr. *Boyle* has compoſed an expreſs Treatiſe of *Suſpicions about ſome unknown Properties of the* Air.—The Phænomena of Fire and Flame *in Vacuo*, ſeem, according to him, to argue ſome odd unknown vital Subſtance diffuſed thro' the *Air*, on Account whereof that Fluid becomes ſo neceſſary to the Subſiſtence of Flame: but whatever this Subſtance be, it ſhould ſeem by its ſudden waſting or ſpoiling, that the Quantity thereof is very inconſiderable, in proportion to the Bulk of *Air* it impregnates with its Virtue; in regard, when the Flame can no longer ſubſiſt in it, the *Air*, upon Examination, is not found to have undergone any Alteration in any of its Properties. See FLAME.

Other Inſtances to countenance ſuch Suſpicions, are, the Appearance and Growth of Salts in many Bodies; which either afford 'em not at all, or not in that plenty, unleſs expoſed to the *Air*. Mr. *Boyle* mentions ſome Marcaſites dug from under ground, which being kept in a dry Room, were ſoon cover'd over with a vitriolick Efflorеſcence, and in a little time, by the Operation of the *Air* on 'em, were in great part crumbled into a Pouder exceeding rich in Copperas; tho they had probably lain many Ages entire under ground: So, the Earth or Ore of Allom, and many other Minerals, robb'd of their Salt, Metals, or the like, will in tract of time recover 'em; and the like is obſerved of the Cinders of Sea-Coal at the Iron Works. See MINE, METAL, IRON-WORKS, ASHES, *&c.*

Mr. *Boyle* adds, that ſome Lime in old Walls has in time gained a large Efflorеſcence of a nitrous Nature, from which Salt-petre was procurable. Add, that the Colcothar of Vitriol is not naturally corroſive, nor can any Salt be procured from it, even by the Affuſion of Water; but being expoſed a-while to the *Air*, it yields a Salt, plentifully. See COLCOTHAR.

The Exiſtence of ſuch hidden Properties, is alſo argued, from the Acceſs of the *Air* rendering Antimonial Medicines emetick, and diſpoſed to produce Faintings and Heartburnings; and from its ſpeedy corrupting and mouldering of Trees dug from under ground, which had for Ages remain'd firm, and almoſt impervious to the Ax. See ANTIMONY, and SUBTERRANEOUS.

To ſay no more, the Silks in *Jamaica*, if expoſed to the *Air*, ſoon rot; even while they preſerve their Colour: whereas, if kept from the *Air*, they hold both their Firmneſs and Dye: And the ſable Taffety worn at *Braſil*, becomes in a few Days of an iron-grey Colour in the *Air*; but in the Shops preſerves its Hue: And ſome Leagues beyond *Parigua*, white People ſoon grow tawny; but as ſoon recover their native Colour, upon removing out of that Quarter.——Theſe, out of a great Number of Inſtances tending the ſame way, may convince us, that notwithſtanding all the Diſcoveries hitherto made concerning *Air*, there ſtill remains a Field for future Inquiries.

AIR, in Medicine, *&c.* makes one of the ſix Non-Naturals. See NON-*Natural*, HEALTH, DISEASE, *&c.*

From Obſervations on Bleeding in Rheumatiſms, and after taking Cold, 'tis evident, the *Air* can enter with all its Qualities, and vitiate the whole Texture of the Blood, and other Juices. See BLOOD.

From the Palſies, Vertigoes, and other nervous Affections cauſed by Damps, Mines, *&c.* 'tis evident *Air* thus qualified can relax and obſtruct the whole nervous Syſtem. See DAMP, *&c.*——And from the Cholicks, Fluxes, Coughs, and Conſumptions produced by damp, moiſt, and nitrous *Air*, 'tis evident it can corrupt and ſpoil the noble Organs, *&c.*——*See further under the Article* ATMOSPHERE.

Innate AIR, is a fine *aerial* Subſtance, ſuppoſed by ſome Anatomiſts to be incloſed in the Labyrinth of the inner Ear, and to miniſter to the due Conveyance of Sounds to the Senſory. See LABYRINTH, SOUND, and HEARING.

But the Exiſtence of ſuch *Innate Air*, has of late been called in queſtion, and even diſproved. See EAR.

AIR, in Muſick, ſignifies the *Melody*, or the Inflection of a Muſical Compoſition. See MELODY.

The Word is alſo uſed for a Song it ſelf. See SONG.

AIRS, in Horſemanſhip, the artificial or practiſed Motions of a manag'd Horſe. See HORSEMANSHIP.

Such are the *Demi-volt*, *Curvet*, *Capriole*, *Croupade*, *Balotade*, and *Step and Leap*. See DEMIVOLT, CURVET, CAPRIOLE, SALT, *&c.*

Some Authors take *Airs* in a more extenſive Senſe; and divide 'em into *low*, and *high*.

The *low Airs* include the Natural Paces, as Trotting, Walking, Galloping, and Terra-a-Terra. See PACE, TROT, GALLOP, &c.

The *high*, or *rais'd Airs*, are all ſuch Motions as riſe higher than the Terra-a-terra; as the *Demivolt*, *Curvet*, &c.

AIR-PUMP, a Machine, by means whereof the *Air* may be exhauſted out of proper Veſſels. See AIR.

The Uſe and Effect of the *Air-Pump*, is to make, what we popularly call, a *Vacuum*; which, in reality, is only a Degree of Rarefaction ſufficient to ſuſpend the ordinary Effects of the Atmoſphere. *See the Article* VACUUM.

By this Machine, therefore, we learn, in ſome meaſure, what our Earth would be without an Atmoſphere; and how much all Vital, Generative, Nutritive, Alterative Power, depend thereon. See ATMOSPHERE.

The Principle on which it is built, is the Elaſticity of the *Air*; as that on which the common or Water-Pump is founded, is the Gravity of the ſame *Air*. See PUMP.

The Structure of the *Air-Pump* is, in it ſelf, more ſimple even than that of the Water-Pump.—The latter ſuppoſes two Principles, Gravity and Elaſticity likewiſe: So that the Water-Pump muſt firſt be an *Air-Pump*, *i. e.* muſt rarify the *Air* ere it raiſe the Water.—In effect, Water being a dormant unelaſtick Fluid, needs ſome external Agent to make it aſcend; whereas *Air* aſcends in Virtue of its own elaſtick Activity: its natural Tendency is, to ſeparate and leave a Vacuum; and all that remains to Art, is to prevent the ambient *Air* from ſupplying the Place of what thus ſpontaneouſly flies away.

To ſay no more, to make Water aſcend, the Force wherewith it is preſs'd downwards, is either to be diminiſh'd or increas'd in one Part, more than another; like a Balance in Equilibrio, one of whoſe Scales may be made to riſe, either by diminiſhing its own weight, or increaſing that of the other: the Water, therefore, recedes from the common Centre of Gravity, by the very Power wherewith it tends towards it, indirectly or ſecondarily applied; for that two ſimilar centripetal Forces being made to act contrary to each other, what the one over-balances the other, muſt have the Effect of a Centrifugal Force.—Whereas, the Principle whereby *Air* rarifies or diminiſhes, does not reſpect the Centre of the Earth, but the Centres of its own Particles; being no other than a certain implanted Power, whereby they immediately tend to recede from each other. See REPELLING *Power*.

The Invention of this noble Inſtrument, to which the preſent Age is indebted for ſo many fine Diſcoveries; is aſcribed to *Otto de Guerick*, the celebrated Conſul of *Magdeboyrg*; who exhibited his firſt publick Experiments therewith, before the Emperor and the States of *Germany*, at the breaking up of the Imperial Diet at *Ratisbon*, in the Year 1654.

Dr. *Hook* and M. *du Hamel*, indeed, aſcribe the Invention to Mr. *Boyle*; but that ingenious Author frankly confeſſes *de Guerick* to have been beforehand with him. Some Attempts, he aſſures us, he had made upon the ſame Foundation, before he knew any thing of what had been done abroad: but the Information he afterwards receiv'd from *Schottus*'s *Mechanica Hydraulico-Pneumatica*, publiſhed in 1657, wherein was an Account of *de Guerick*'s Experiments, firſt enabled him to bring his Deſign to any thing of Maturity.—From hence, with the Aſſiſtance of Dr. *Hook*, after two or three unſucceſsful Trials, aroſe a new *Air-Pump*; more eaſy and manageable than the *German* one: and hence, or rather from the great Variety of Experiments that illuſtrious Author applied it to, the Engine came to be denominated, the *Machina Boyleana*.

Structure and Uſe of the AIR-Pump.

The Baſis or eſſential Part in the *Air-Pump*, is a metalline Tube, anſwering to the Barrel of a common Pump, or Syringe; having a Valve at the bottom, opening upwards: and a moveable Piſton or Embolus, anſwering to the Sucker of a Pump, furniſh'd likewiſe with a Valve opening upwards.—The whole, duely fitted to a Veſſel, as a Recipient. See EMBOLUS, VALVE, and RECIPIENT.—See alſo SYRINGE.

The reſt, being only Circumſtances chiefly reſpecting Conveniency, has been diverſified and improved from time to time, according to the ſeveral Views and Addreſs of the Makers.—That of *Otto de Guerick* being leſs artleſs, laboured under ſeveral Defects, in reſpect of the Force neceſſary to work it, which was very great; and the Progreſs very ſlow: beſide that it was to be kept under Water; and allow'd of no Change of Subjects for Experiments.

Mr. *Boyle*, by degrees, removed ſeveral of theſe Inconveniences; and alleviated others: but ſtill the Working of his Pump was laborious, by reaſon of the Preſſure of the Atmoſphere, a great part of which was to be removed at every Exſuction, after a Vacuum was nearly arrived at.—But this Inconvenience has been ſince removed by Mr. *Hawksbee*, who by adding a ſecond Barrel and Piſton to the former, to riſe as the other fell, and fall as it roſe; made the Preſſure of the Atmoſphere on the deſcending one, of as much ſervice as it was of diſſervice in the aſcending one.

Some of the *Germans* have alſo brought the *Air-Pump* to do the oppoſite Office of a Condenſer: But this is not to make the Inſtrument ſo much better, as more complex. See CONDENSER.

The Structure of the Air-Pump, as now made among us, with all its Advantages, is repreſented in Tab. *Pneumaticks*, Fig. 16.

It conſiſts of two brazen Barrels or Cylinders, repreſented by *a a a a*; which communicate with each other by a Canal paſſing between them at *d d*; and with the Receiver *o o o o*, by means of the hollow Wire *h h*, one End whereof opens into the Canal of Communication, and the other into a like Canal *n n*; which penetrating the Plate *i i i i*, opens into the Receiver.

Within the Cylinders are two Emboli, or Suckers made of Braſs, and fitted with Cork and Leather to the Cavities of the Barrels, ſo as exactly to fill the ſame; each being furniſh'd with its Valve, and terminating at top in a Rack *c c*, by which it is to be work'd.

At the bottom of either Barrel is another Valve; by which the *Air* may paſs out of the communicating Canal *d d*, and conſequently out of the hollow Wire and the Receiver it ſelf, into the Cylinder, below the Piſton; from whence by the Valves of the Piſton it may proceed into the upper Space of the Cylinder, and thus into the open *Air*.

For the Application of this Mechaniſm.——The Winch *b b* being turn'd upward and downward; its Spindle *f*, catching by its Teeth into the Racks, will raiſe and depreſs the two Piſtons, alternately.—Now, the Conſequence of depreſſing a Piſton, is, that the *Air* before incloſed between it and the bottom of the Cylinder, being thus crowded into a leſs compaſs, will, by its elaſtick Force, which now exceeds the Preſſure of the Atmoſphere, puſh up the Valve of the Piſton, and thus eſcape; till what little remains be of the ſame Denſity with the external *Air* incumbent on the Valve.

This done, and the ſame Piſton being again raiſed in its turn, from the bottom of the Cylinder to the top; the little *Air* before left, will of neceſſity expand it ſelf, ſo as to poſſeſs the whole Space of the Cylinder thus deſerted by the Piſton: Upon which, its Force or Preſſure upon the Valve at the bottom of the Cylinder, being now inconſiderable; the other, denſer *Air* of the Receiver, hollow Wire, and Canal of Commnnication, by their ſuperior elaſtick Force, will lift up the Valve, and thus paſs into the Cylinder of rarified *Air*, till both be of the ſame degree of Denſity.

And thus is the *Air* in the Receiver diminiſh'd at each Elevation of the Piſton, by the Quantity of a Cylinder full; abating for what little remain'd between the depreſs'd Piſton, and the bottom: So that by thus repeating the Operation again and again; the *Air* in the Receiver is at length rarified to ſuch degree, that its Denſity does not exceed the thin *Air* remaining in the Cylinder when the Piſton is raiſed: which done, the Effect of the *Air-Pump* is at an end; the Valve cannot now be open'd, or if it could, no *Air* would paſs it; there being a juſt Equilibrium between the *Air* on each ſide.

To judge of the Degree of Exhauſtion, there is added a Gage, *l l*; conſiſting of a Tube, whoſe upper Orifice communicates with the Receiver; the lower being immerged in a Baſon of Mercury, *m m*.—Hence, the *Air* in the Tube rarifying as faſt as that in the Receiver; in proportion as the Exhauſtion advances, the Mercury will be raiſed by the Preſſure of the Column of external *Air*, prevailing over that of the Column of *Air* included; till the Column of *Air*, and Mercury together, become a Balance to that of the external *Air*. When the Mercury is thus riſen to the ſame Height as it ſtands in the Barometer, which is indicated by the Scale of Inches added to the Gage; the Inſtrument is a juſt Torricellian Tube; and the Vacuum may be concluded to be as perfect as that in the upper End of the Barometer. See BAROMETER, and TORRICELLIAN.

To let *Air* again into the exhauſted Receiver, the Cock *n* is to be turn'd; which makes a Communication with the external *Air*; upon which the *Air* ruſhing impetuouſly in, the Mercury in the Gage immediately ſubſides into the Baſon.

To the *Air-Pump* belongs a large Apparatus of other Veſſels, accommodated to the divers Kinds of Experiments. See APPARATUS.

Laws of Rarefaction in the Receiver of an Air-Pump.

1°, For the Proportion of *Air* remaining at any time in the Receiver, we have the following general Theorem.—

—*In*

'*In a Veſſel exhauſted by the* Air-Pump, *the primitive or natural* Air *contained therein, is to the* Air *remaining, as the Aggregate of the Capacity of the Veſſel and of the Pump*, (*i. e.* the Cylinder left vacant in an Elevation of the Piſton, with the Wire and other Parts between the Cylinder and Receiver) *rais'd to a Power whoſe Exponent is equal to the Number of Strokes of the Piſton, to the Capacity of the Veſſel alone raiſed to the ſame Power.*'

M. *Varignon* gives an Algebraical Demonſtration of this Theorem, in the *Memoires de l'Acad. R.* An. 1705. p. 397, but it may be alſo demonſtrated pneumatically, thus:——Calling the *Air* remaining after the firſt Stroke, the *firſt Reſidual*; that after the ſecond, the *ſecond Reſidual*, &c. and remembering that the *Air* in the Receiver is of the ſame Denſity as that in the Cylinder, when the Piſton is raiſed: it is evident, that the Quantity of *Air* in the Receiver, is to the Quantity of *Air* in the Cylinder, Wire, *&c.* as the Capacity of the Receiver to that of the Cylinder, *&c.* and conſequently, the Aggregate of the *Air* in the Receiver and the Cylinder, *i. e.* the whole primitive *Air*, is to the *Air* in the Veſſel alone, *i. e.* to the firſt Reſidual *Air*, as the Aggregate of the Capacity of the Receiver and the Cylinder, to the Capacity of the Receiver alone.—After the ſame manner may it be proved, that the Quantity of firſt reſidual *Air*, is to the ſecond Reſidual, as the Aggregate of the Capacity of the Receiver and Cylinder to the Capacity of the Veſſel alone. And the ſame Proportion does the ſecond Reſidual bear to the third, and ſo of the reſt.——Hence, the Product of the primitive *Air* into the firſt, ſecond, third, fourth, *&c.* Reſiduals, is to the Product of the firſt Reſidual into the ſecond, third, fourth, fifth, *&c.* as the Product of the Capacity of the Receiver and Cylinder together, multiplied as oft into it ſelf as the Number of Strokes of the Piſton contains Units; to the *Factum* ariſing from the Capacity of the Receiver alone, multiplied ſo often by it ſelf: That is, As the Power of the Aggregate of the Capacity of the Receiver and Cylinder together, whoſe Exponent is the Number of Strokes of the Piſton, to the Capacity of the Veſſel alone, raiſed to the ſame Power.—Conſequently the primitive *Air* is to the laſt Reſidual, in the Ratio of thoſe Powers. *Q. E. D.*

2°, The Number of Strokes of the Piſton, together with the Capacity of the Receiver and Cylinder with the Wire, *&c.* being given; to find the Ratio of the primitive *Air* to the *Air* remaining.

Subtract the Logarithm of the Capacity of the Receiver, from that of the Sum of the Capacity of the Receiver and the Cylinder; then, the Remainder being multiplied by the Number of Strokes of the Piſton, the Product will be a Logarithm, whoſe Natural Number ſhews how oft the primitive *Air* contains the Remainder requir'd.

Thus, if the Capacity of the Receiver be 460, that of the Cylinder 580, and the Number of Strokes of the Piſton 6; the primitive *Air* will be found to the remaining *Air*, as $146\frac{4}{10}$ to 1.

For, ſuppoſe the Capacity of the Veſſel $= v$; that of the Cylinder and Veſſel together, $= a$; the Number of Strokes of the Piſton $= n$; and the remaining *Air* $= 1$. Since the Primitive is to the remaining *Air* as a^n to v^n; the primitive *Air* will alſo be to the remaining *Air*, as $a^n : v^n$ to 1. Conſequently, if the remaining *Air* be 1, the Logarithm of the primitive *Air* is $a - v \times n$.

3°, The Capacity of the Receiver and the Barrel being given; to find the Number of Strokes of the Piſton required to rarify the *Air* to a given Degree.

Subtract the Logarithm of the remaining *Air* from the Logarithm of the primitive *Air*; and the Logarithm of the Capacity of the Receiver, from the Logarithm of the Aggregate of the Capacity of the Receiver and Cylinder; then, dividing the former Difference by the latter, the Quotient is the Number of Strokes requir'd.

Thus, if the Capacity of the Cylinder be ſuppoſed 580; that of the Receiver 460; and the primitive *Air* to the remaining *Air*, as 1464 to 10: The Number of Strokes required will be found to be 6.

Beſide the Effects, and Phænomena of the *Air-Pump*, recounted under the Articles VACUUM, AIR, *&c.* we may add ſome others; which, related at large, make the Subſtance of Mr. *Boyle*'s *Phyſ. Mech. Exper.* As,—That the Flame of a Candle uſually goes out in a Minute, tho it ſometimes laſts two, but the Wieck thereof continues ignited after; and even emits a Smoke, which aſcends upwards.—That a kindled Charcoal is totally extinguiſh'd in about five Minutes, tho in open *Air* it remain alive half an Hour; and that it goes out by degrees, beginning from the Top and the Outſides.—That red-hot Iron is not affected by the Abſence of the *Air*; and yet that Sulphur or Gunpouder will not be lighted thereby, but only fuſed.—That a Match, after lying ſeemingly extinct *in Vacuo*, a long time; revives again upon the Re-admiſſion of the *Air*.—That a Flint and Steel ſtrike Sparks of Fire as copiouſly *in Vacuo* as out of it; and that the Sparks move in all Directions, upwards, downwards, *&c.* here,' as in the *Air*.—That Magnets and Magnetick Needles, are the ſame *in Vacuo* as in *Air*.—That Smoke in an exhauſted Receiver, the Luminary being extinct, gradually ſettles to the Bottom in a darkiſh Body, leaving the upper part clear and tranſparent; and that inclining the Veſſel ſometimes on one ſide, and ſometimes on another, the Fume keeps its Surface horizontal, after the Nature of other Fluids.—That the Syphon does not run *in Vacuo*.——That Water freezes *in Vacuo*.—That Heat may be produced by Attrition in the exhauſted Receiver.——That Camphire will not take fire *in Vacuo*; and that Gunpouder, tho ſome Grains of a Heap be kindled by a Burning-glaſs *in Vacuo*, will not give Fire to the contiguous Grains.——That Glow-worms loſe their Light, in proportion as the *Air* is exhauſted; and at length become totally obſcure: but upon the Re-admiſſion of *Air*, preſently recover it all.—That Vipers and Frogs ſwell much *in Vacuo*, but will live an Hour and half, or two Hours; and tho ſeemingly ſtark dead in that time, come to Life again in ſome Hours in the *Air*.—That Snails ſurvive ten Hours; and Efts or Slow-worms, two or three Days; Leaches five or ſix.—That Oyſters will remain alive *in Vacuo* 24 Hours without harm.—That the Heart of an Eel taken out of the Body, continues to beat *in Vacuo*, more nimbly than in *Air*; and this for a good part of an Hour.—That warm Blood, Milk, Gall, *&c.* undergo a conſiderable Intumeſcence, and Ebullition *in Vacuo*.—That a Mouſe, or other Animal, may be brought, by degrees, to ſurvive longer in a rarified *Air*, than naturally it does.—That *Air* may retain its uſual Preſſure, after it is become unfit for Reſpiration.—That Silk-Worms Eggs will hatch *in Vacuo*, &c.

AIRY, or AIRIE, of Hawks. See AERY.

AIRY *Triplicity*, among Aſtrologers, the Signs of *Gemini*, *Libra*, and *Aquarius*. See TRIPLICITY.

AISIAMENTA, in Law. See EASEMENTS.

AJUSTING. See ACCOMMODATION.

AJUTAGE, in Hydraulicks, part of the Apparatus of an artificial Fountain, or *Jet d'Eau*; being a ſort of Tube, fitted to the Mouth or Aperture of the Veſſel; thro' which the Water is to be play'd, and by it determin'd into this or that Figure.

'Tis chiefly the Diverſity in the *Ajutages*, that makes the different Kinds of Fountains.—And hence, by having ſeveral *Ajutages* to be applied occaſionally, one Fountain comes to have the Effect of many.

The various ſorts of Ajutages, *their Structure*, *Application*, &c. *ſee under the Article* FOUNTAIN.

The Word is *French*, form'd of the Verb *Ajouter*, to adjuſt.

AKOND, an Officer of Juſtice in *Perſia*, who takes cognizance of the Cauſes of Orphans, and Widows; of Contracts, and other Civil Concerns.—He is Head of the School of Law, and gives Lectures to all the ſubaltern Officers; he has his Deputies in all the Courts of the Kingdom, who, with the ſecond Sadra, make all Contracts.

AL, an *Arabick* Particle, prefix'd to Words to exalt or give them a more emphatical Signification.—As, in *Al*chymy, *Al*gebra, *&c.*

AL, or ALD, in our antient Cuſtoms, ſignifies as much as *old*, *antient*.—This, being prefix'd to the Names of Places, expreſſes their Antiquity; as *Aldborough*, *Aldgate*, &c.

ALA, a *Latin* Term, literally ſignifying *Wing*. See WING.

ALA is alſo uſed in Anatomy, for ſeveral Parts of the Body, which bear ſome reſemblance to the Figure of a Wing.

Thus, the Lobes of the Liver are ſometimes called *Alæ*. See LOBE.

The ſoft, ſpongious Bodies in the *Pudendum Muliebre*, uſually called the *Nymphæ*, are alſo denominated *Alæ*. See NYMPHÆ.

The two Cartilages of the Noſe which form the Noſtrils, are alſo called *Alæ*. See NOSE, and NOSTRIL.

And the ſame Denomination is given to the Top of the Auricle. See AURICLE, and EAR.

ALA is alſo uſed in Botany, for the Angle which the Leaves, or the Stalks or Pedicles of the Leaves, form with the Stem or Branches of a Plant from which they ariſe. See LEAVE, *&c.*

This Angle is uſually acute, and always directed upwards.—The ſame Name is occaſionally applied to the Angle form'd by the Branches themſelves, with the Stem; which is alſo obſerved to be very regular and uniform. See BRANCH.

ALÆ, in the Military Art, are the two Extremes of an Army, ranged in form of Battle. See WING, ARMY, *&c.*

ALABASTER, ALABASTRIDES, in Natural Hiſtory, a kind of Stone, ſofter than Marble, yet harder than Plaiſter of Paris. See STONE.

It is found of all Colours; ſome extremely white and ſhining, which is the moſt common; ſome red, like Coral; and other called *Onyx* from its Colour, which reſembles that of the Onyx, tho very different from it in Nature. See ONYX.

Alabaſter cuts very ſmooth and eaſy, and is much us'd among Sculptors for little Statues, Vaſes, Columns, &c. See STATUE, FOUNDERY, &c.

They ſometimes alſo employ it like Plaiſter of Paris: in order to which, they burn and calcine it; after which, mixing it up with Water to a thin Conſiſtence; it is caſt into a Mould, where it readily coagulates into a firm Body. See PLAISTER.

Alabaſter, Mr. *Boyle* obſerves, being finely pouder'd, and thus ſet in a Baſon over the Fire; will, when hot, aſſume the Appearance of a Fluid, by rolling in Waves, yielding to the ſmalleſt Touch, and emitting Vapour; all which Properties it loſes again, on the Departure of the Heat, and diſcovers it ſelf a mere incoherent Pouder. See FLUID, and FLUIDITY.

Some derive the Word from the Latin *albus*, becauſe of the Whiteneſs of this Stone.—Others, from the Greek ἀλάβαστον, which they form from the Privative α and λαμβάνω, *capio*; this Stone being too ſmooth and ſlippery for the Hand to faſten hold of it.

The *Alabaſter* Box of precious Ointment, mention'd in St. *Matthew* XXVI. 7. *Mark* XIV. 3. and *Luke* VII. 37. has given the Criticks and Interpreters ſome Pain.—To ſuppoſe it a Vaſe of *Alabaſter*, does not ſeem conſiſtent with its breaking ſo eaſily, as is intimated by St. *Mark*.

F. *Kircher*, in his *Oedip. Ægyp.* notes, that *Alabaſter*, *Alabaſtrum*, was not only uſed for a Vaſe of odoriferous Liquor, but alſo for an *Egyptian* Meaſure, containing nine *Koſti*, or *Egyptian* Pounds; amounting, according to his Computation, to 24 *Roman* Sextaries, or Pounds. See MEASURE, WEIGHT, &c.

ALABASTRA, in a Plant, are thoſe little green Leaves which compaſs in the bottom of the Flower. See CALYX, &c.

ALAISEE, in Heraldry. See HUMETTY.

A-LA-MIRE, in Muſick. See NOTE, and GAMUT.

ALAMODE, a ſort of Silk, or Taffety. See STUFF, SILK, TAFFETY, &c.

ALANORARIUS, in our antient Cuſtoms, a Keeper or Manager of Spaniels, or Setting-Dogs, for the Sport of Hunting, Hawking, &c. See HUNTING, and HAWKING.

The Word is form'd from the Gothic *Alan*, a Greyhound.

ALARES, in Antiquity, are ſuppoſed by ſome Authors to have been a kind of Militia, or Soldiery among the *Romans*; ſo called from *Ala*, a Wing, becauſe of their Lightneſs and Swiftneſs in the Combat.

Others make them a People of *Pannonia*: but others, with more probability, take *Alares* for an Adjective or Epithet; and apply it to the *Roman* Cavalry; becauſe plac'd in the two Wings, or *Alæ* of the Army; for which Reaſon, a Body of Horſe was called *Ala*. See WING, CAVALRY, &c.

ALARES *Muſculi*, in Anatomy. See PTERYGOIDES.

ALARM, a Signal given by Shouts, or by Inſtruments of War, for the Soldiers to take to their Arms, at the unexpected Arrival of an Enemy.

The Word is form'd from the French *à l'arme*, to your Arms.

ALARM-*Poſt*, is the Ground appointed to each Regiment, by the Quarter-Maſter-General, for them to march to, in caſe of an *Alarm*.

In a Gariſon, the *Alarm-Poſt* is the Place where every Regiment is order'd to draw up, on all Occaſions. See PLACE.

ALB, ALBE, ALBA, antiently called *Camiſia*, a Robe or Veſtment of white Linen, hanging down to the Feet; wherein the *Romiſh* Prieſts perform divine Service.

The *Alb* correſponds to the Surplice among us.—It takes its Name from its Colour, *albus*, white.

ALBA *Firma*, or ALBUM, was a yearly Rent, payable to the Chief Lord of a Hundred; ſo called, becauſe paid wholly in white Money, or Silver, and not in Corn, which was called *Black Mail*.

ALBIGENSES, a Sect or Party of Reformers about *Tholouſe*, and the *Albigeois*, in *Languedoc*; who, in the XIIth Century, became remarkable for their oppoſition to the Diſcipline and Ceremonies of the Church of *Rome*. See REFORMATION.

They were alſo known by various other Names; as, the *Petrobruſſians*, *Arnoldiſts*, *Cathares*, *Patarins*, *Publicans*, *Tiſſerans*, *Bons-hommes*, *Paſſagers*, &c.

'Tis pretended, they received their Opinions from *Bulgaria*; which having been infected by the *Paulicians* of *Armenia*, diffuſed the ſame into *Italy*, *Germany*, &c. and that *Peter Bruys* was the firſt that brought 'em into *Languedoc*, about the Year 1126. See PETROBRUSSIAN.

The *Romaniſts* tax them with abundance of heterodox Opinions; as, for inſtance, that there are two Gods, the one infinitely Good, and the other infinitely Evil: That the good God made the inviſible World, and the Evil one that which we live in; and the reſt of the *Manichean* Tenets. See MANICHEE.

But this ſeems rather one of thoſe pious Frauds allowed particularly in that Church, which eſteems it a kind of Merit to blacken Hereticks.

However this be, the *Albigenſes* grew ſo formidable in a little time, that a Holy League or Croizade was agreed upon among the Catholicks; and War denounc'd againſt them, the Pope himſelf raiſing the firſt Standard.—In 1229, a Peace was ſtruck up, and an Inquiſition eſtabliſh'd at *Tholouſe*, from which time they dwindled by little and little, till the Times of the Reformation; when ſuch of them as were left, fell in with the *Vaudois*, and became conformable to the Doctrine of *Zuinglius*, and the Diſcipline of *Geneva*. See VAUDOIS.

ALBUGINEA, in Anatomy, the outermoſt Coat or Tegument of the Eye; called alſo the *Adnata*, *Conjunctiva*, &c. See ADNATA, CONJUNCTIVA, &c.

It takes the Name *Albuginea*, from its Whiteneſs; it being this that forms what we call the *White of the Eye*. See EYE.

The ſame Term is alſo applied to the Membrane immediately encompaſſing the Teſticle. See TESTICLE, and SCROTUM.

ALBUGO, or ALBUM *Oculi*, the ſame with the *Albuginea*, or *White of the Eye*. See EYE, ALBUGINEA, &c.

ALBUGO is alſo a Diſeaſe of the Eye; otherwiſe called *Leucoma*, and popularly, *Pin and Web*. See LEUCOMA, and PIN.

The *Albugo* is a whitiſh Speck or Film, growing, ſay ſome Authors, on the Cornea; and obſtructing the Sight.—Others, more juſtly, place the *Albugo* on the *Albuginea*; by this diſtinguiſhing it from the *Pterygium*, which is a ſimilar Speck on the Cornea. See PTERYGIUM.

It oftenеſt ariſes as a Scar, after an Inflammation or Ulcer in the Part; particularly in the Small Pox.—The Cure is the ſame as in the *Pterygium*.

ALBUM *Græcum*, or *Stercus Canis Officinale*, Dogs white Dung, is a Medicinal Drug, in the preſent Practice, uſed with Honey, to cleanſe and deterge, chiefly in Inflammations of the Throat; and that principally outwardly, as a Plaiſter.

ALBUMEN *Ovi*, the White of an Egg. See EGG.

It is uſed in Medicine, as being of a glutinous or binding Nature, on which Account it is often mixed with Bole Armoniac, &c. to prevent any ſtrained Part from riſing into a Tumor, and reſtore it to its Tone or Elaſticity.—It is alſo an Ingredient in ſome Mixtures for conſolidating freſh Wounds, and preventing too great a Loſs of Blood.

ALBURN *Colour*, Brown. See AUBURN.

ALCADE, or ALCALDE, or ALCAID, in the *Spaniſh* Policy, a ſort of Judge or Miniſter of Juſtice, anſwering to a Provoſt. See PROVOST.

The *Spaniards* borrow their *Alcade* from the Saracen *Alcaid*. See ALCAID.

ALCAICKS, in the antient Poetry, a Name common to ſeveral Kinds of Verſes; thus called from the Poet *Alcæus*, the Inventor thereof. See VERSE.

The firſt Species of *Alcaicks*, conſiſts of two Dactyls and two Trochees: As,

Exilium impoſitura cymbæ.

There is another Kind, conſiſting of five Feet, of which the firſt is a Spondee or Iambick; the ſecond an Iambick; the third a long Syllable; the fourth a Dactyl; the fifth a Dactyl or Amphimacer: As theſe of *Horace*,

Omnes eodem cogimur, omnium
Verſatur urna, ſerius, ocius
Sors exitura,———

Beſides theſe two Kinds of Verſes, which are call'd *Alcaick Dactylics*, there is a third ſort, called ſimply *Alcaick*; whereof the firſt is an Epitrite, the ſecond and third Choriambus's, and the fourth a Bacchius; as,

Cur timet fla|vum Tiberim | tangere? cur | olivum?

The ALCAICK *Ode*, conſiſts of four Strophes, each of which contains four Verſes; the two firſt are *Alcaick* Verſes of the ſecond Kind; the third an Iambick Dimeter Hypercatalectick, *i. e.* of four Feet and a long Syllable: As,

Sors exitura, & nos in æternum.

The fourth is an *Alcaick* of the firſt Kind.——The entire *Alcaick* Strophe is as follows:

Omnes eodem cogimur, omnium
Verſatur urna, ſerius, ocius
Sors exitura, & nos in æternum
Exilium impoſitura cymbæ.

ALCAID, the Governour of a City in *Barbary*. See ALCADE.

The Juriſdiction of the *Alcaid* is ſovereign, both in Civil and Criminal Concerns; and Fines and Puniſhments lie wholly at his Door.—The Word is form'd of the Particle *Al*, and the Verb אל *kad*, or *akad*, to govern, rule, adminiſter.

ALCALI, ALCALY, or rather ALKALY. See ALKALY.

ALCALIZATION, or ALKALIZATION, *Alcalizatio*, in Chymiſtry, the Act of impregnating a Liquor with an *alcaline* Salt. See ALKALY.

This is done either to make it a better Diſſolvent, for ſome particular Purpoſes; or to load the Phlegm, ſo as it may not riſe in Diſtillation, whereby the ſpirituous Parts may go over more pure. See DISSOLUTION, DISTILLATION, SPIRIT, &c.

ALCANTARA.—*Order of* ALCANTARA, was an antient Military Order, denominated from a City of that Name in the Kingdom of *Spain*. See KNIGHT, ORDER, &c.

Alphonſus IX. having recover'd *Alcantara* from the *Moors*, in the Year 1212; committed the Cuſtody and Defence thereof, firſt, to the Knights of *Calatrava*; and, two Years afterwards, to the Knights of the Pear-Tree, another Military Order, inſtituted in 1170, by *Gomez Fernand*, and approved by Pope *Alexander* III. under the Rule of St. *Benedict*: upon which they changed their Name, and took the Denomination of *Knights of Alcantara*.

After the Expulſion of the *Moors*, and the Taking of *Granada*; the Sovereignty of the Order of *Alcantara*, and that of *Calatrava*, were ſettled in the Crown of *Caſtile*, by *Ferdinand* and *Iſabella*. See CALATRAVA.

In 1540, the Knights of *Alcantara* ſued for leave to marry; which was granted 'em.

ALCHYMY, or ALCHEMY, a higher or more refined kind of Chymiſtry, employ'd in the more myſterious Reſearches of the Art. See CHYMISTRY.

The Word is compounded of the *Arabic* Particle of Augmentation, *Al*, and the Latin *Chymia*, Egyptian *Kemia*, or *Greek* χημια, *Chymiſtry*.

The Name *Alchymy* is of no long ſtanding: The firſt time it occurs, is in *Julius Firmicus Maternus*, an Author who lived under *Conſtantine* the Great, and who in his *Matheſis*, C. XV. ſpeaking of the Influences of the Heavenly Bodies, affirms, "that if the Moon be in the Houſe of "*Saturn*, at the Time a Child is born, he ſhall be ſkill'd "in *Alchymy*."

The great Objects or Ends purſued by *Alchymy*, are, 1°, The making of Gold; which is attempted three different ways: by Separation; by Maturation; and by Tranſmutation; which laſt is to be effected by means of what they call the *Philoſopher's Stone*. See GOLD.—See alſo TRANSMUTATION, PHILOSOPHER'S *Stone*, &c.

With a View to this End, *Alchymy*, in ſome antient Writers, is alſo called ποιητικη, *Poetice*, Poetry; and χρυσοποιησις, *Chryſopoetice*, *q. d.* the Art of making Gold.—And hence alſo the Artiſts themſelves are called ποιηται, *Poets*, *Makers*, and χρυσοποιηται, *Gold-makers*.

2°, An Univerſal Medicine, adequate to all Diſeaſes. See ELIXIR.

3°, An Univerſal Diſſolvent, or Alkaheſt. See ALKAHEST.

4°, An Univerſal Ferment; or a Matter which being applied to any Seed, ſhall increaſe its Fecundity to Infinity: If, *e. g.* it be applied to Gold, it changes the Gold into the Philoſopher's Stone of Gold; if to Silver, into the Philoſopher's Stone of Silver, *i. e.* into a Matter which tranſmutes every thing into Silver; if to a Tree, the Reſult is the Philoſopher's Stone of the Tree, which tranſmutes every thing it is applied to into Trees, &c.

The Origin and Antiquity of *Alchymy* are much controverted.—If regard may be had to Legend and Tradition, it muſt be as old as the Flood; nay, *Adam* himſelf is repreſented by the *Alchymiſts* as an Adept. A great part, not only of the Heathen Mythology, but of the *Jewiſh* and Chriſtian Revelations, are ſuppoſed to refer hereto: Thus, *Suidas* will have the Secret of the Philoſopher's Stone couch'd in the Fable of the *Argonauts*; others find it in the Books of *Moſes*, &c.

But, if the Æra of the Art be examin'd by the Monuments of Hiſtory; it will loſe a deal of this fancied Antiquity.—The learned *Dane*, *Ol. Borrichius*, has taken immenſe Pains to prove it known to the antient *Greeks* and *Egyptians*. *Her. Conringius*, on the contrary, with equal Addreſs, undertakes to ſhew its Novelty.

In effect, not one of the antient Poets, Philoſophers, or Phyſicians, from *Homer* till 400 Years after Chriſt, mention any ſuch thing.—The firſt Author who ſpeaks of making Gold, is *Zozimus* the *Panopolitan*, who lived towards the Beginning of the Vth Century, and who has an expreſs Treatiſe, περι της ἱερας τεχνης του χρυσου και του ἀργυρου ποιησεως, *Of the divine Art of making Gold and Silver*, ſtill extant in Manuſcript in the *French* King's Library. The next is *Æneas Garæus*, another *Greek* Writer, towards the Cloſe of the ſame Century, in whom we have the following Paſſage: "Such as are ſkill'd in the Ways of Nature, can take Silver "and Tin, and changing their Nature, turn 'em into Gold." The ſame Writer tells us, he was "wont to ſtyle himſelf "χρυσιχος, *Gold-finder*, and χημευτης, *Chymiſt*."——Hence we may gather, there was ſome ſuch Art in being in that Age; but, as neither of theſe Authors relate how long it had been known before, their Teſtimony will not carry us back beyond the Age wherein they liv'd.

Nor do we find any earlier, plainer Traces of the Univerſal Medicine: not a Syllable of any ſuch thing in all the Phyſicians and Naturaliſts, from *Moſes* to *Geber* the *Arab*, who is ſuppoſed to have lived in the VIIIth Century. In that Author's Work, intitled, *The Philoſopher's Stone*, mention is made of "a Medicine which cures all Lepras:" This Paſſage ſome Authors ſuppoſe to have given the firſt Hint of the Matter; tho *Geber* himſelf, perhaps, meant no ſuch thing: For, by attending to the *Arabick* Stile and Diction of this Author, which abounds in Allegory, it appears highly probable, that by *Man* he means Gold, and by Lepras or Diſeaſes, the other Metals, which are all impure in compariſon of Gold.

Suidas accounts for this total Silence of Authors in reſpect of *Alchymy*, by obſerving, that *Diocletian* procured all the Books of the antient *Egyptians* to be burnt; and that it was in theſe the great Myſteries of Chymiſtry were contained. —*Conringius* calls this Hiſtory in queſtion, and aſks how *Suidas*, who lived but 500 Years before us, ſhould know what happen'd 800 Years before him? To which *Borrichius* anſwers, that he had learnt it of *Eudemus*, *Helladius*, *Zozimus*, *Pamphilus*, &c. as *Suidas* himſelf relates.

Kircher aſſerts, that the Theory of the Philoſopher's Stone is deliver'd at large in the Fable of *Hermes*; and that the antient *Egyptians* were not ignorant of the Art, but declined to proſecute it. They did not need to tranſmute Gold, they had ways of ſeparating it from all kind of Bodies, from the very Mud of the *Nile*, and Stones of all Kinds. But, he adds, theſe Secrets were never wrote down or made publick, but confined to the Royal Family, and handed down traditionally from Father to Son.

The chief Point advanced by *Borrichius*, and on which he ſeems to lay the greateſt Streſs, is the Attempt of *Caligula*, mention'd by *Pliny*, for procuring Gold by Diſtillation from Orpiment. *Hiſt. Nat.* L. XXXIII. c. 14.—But this, it may be obſerved, makes very little for that Author's Pretenſions; there being no Tranſmutation, no Hint of any Philoſopher's Stone, but only a little Gold extracted or ſeparated from the Mineral. See ORPIMENT.

The principal Authors in *Alchymy*, are *Geber*, Friar *Bacon*, *Ripley*, *Lully*, *John* and *Iſaac Hollandus*, *Baſil Valentine*, *Paracelſus*, *Van Zuchten*, and *Centivoglio*.

ALCMANIAN, the Name of a kind of Verſe, compos'd of three Dactyls and a long Syllable; as,

Munera, lætitiamque Dei.

ALCOHOL, or rather ALKOOL, in Chymiſtry, an *Arabic* Term, chiefly underſtood of the pureſt Spirit of Wine, raiſed or rectify'd by repeated Diſtillations to its utmoſt Subtility, and Perfection; ſo that if Fire be ſet thereto, it burns wholly away, without leaving the leaſt Phlegm or Fæces behind. See SPIRIT, DISTILLATION, RECTIFICATION, &c.

The Word *Alcohol* is ſometimes alſo uſed for a very fine, impalpable Pouder. See POWDER.

The Word is form'd from the *Arabic* or *Hebrew* קאל *Kaal*, to leſſen, attenuate, ſubtilize.

ALCORAN, the *Mahometan* Goſpel; or the Revelations, Propheſies, &c. of the Impoſtor *Mahomet*. See MAHOMETANISM.

The Word *Alcoran* is *Arabick*, and literally denotes either Reading, or Collection; but 'tis in the firſt of theſe Senſes that the *Alcoran* of *Mahomet* ſeems beſt underſtood; *Mahomet* purpoſing to have his Book call'd *Reading*, by way of Eminence; in imitation of the *Jews* and Chriſtians, who call the New and the Old Teſtament *Writing*, *Scripture*, הכתוב *Books*, τα βιβλια, on the ſame account. See SCRIPTURE, and BIBLE.

The *Muſſulmen* alſo call it אלפרקאן *Alpharkan*; from the Verb פרק *Pharaca*, to *diſtinguiſh*: either by reaſon it makes the Diſtinction between what is true, and falſe, or between what is lawful to do, and what not; or elſe on account of its containing the Diviſions, or Heads of the Law: in which, again, they imitate the *Hebrews*, who give divers Books the like Name פרקים *Perakim*, q. d. *Capita*, *Capitula*, Chapters, Heads; *e. g.* the פרקו אבות *Capita Patrum*; פרקיר אליעזר *Capitula Rabbi* Eliezer. Laſtly, the *Alcoran* is alſo denominated *Alzechr*, Advertiſement, or Remembrance; as ſerving to retain or retrieve the Knowledge of the Law.

'Tis the common Opinion among us, that *Mahomet*, aſſiſted by one *Sergius*, a Monk, compos'd this Book; but

the *Muſſulmans* believe it as an Article of their Faith, that the Prophet, who they ſay was an illiterate Man, had no hand in it; but that it was given him by God, who, to that end, made uſe of the Miniſtry of the Angel *Gabriel*; that however it was communicated to him by little and little, a Verſe at a time, and in different Places, during the Courſe of 23 Years.—'And hence, *ſay they*, proceeds 'that Diſorder and Confuſion viſible in the Work;' which, in truth, is ſo great, that all their Doctors have never been able to adjuſt it. For *Mahomet*, or rather his Copiſt, having put all theſe looſe Verſes promiſcuouſly in a Book together, it was impoſſible ever to retrieve the Order wherein they were deliver'd.

Theſe 23 Years which the Angel employ'd in conveying the *Alcoran* to *Mahomet*, are of wonderful Service to his Followers; inaſmuch as they furniſh them with an Anſwer to ſuch as tax them with thoſe glaring Contradictions wherewith the Book is full: thoſe Contradictions they piouſly father upon God himſelf; alledging, that in the Courſe of ſo long time, he repeal'd and alter'd ſeveral Doctrines and Precepts, which the Prophet had before receiv'd of him.

M. *d'Herbelot* thinks it probable, that when the Hereſies of the *Neſtorians*, *Eutychians*, &c. had been condemn'd by Oecumenical Councils; many Biſhops, Prieſts, Monks, *&c.* being driven into the Deſarts of *Arabia* and *Egypt*, furniſh'd the Impoſtor with Paſſages, and crude ill-conceiv'd Doctrines out of the Scriptures: And it was hence, that the *Alcoran* became ſo full of the wild and erroneous Opinions of thoſe Hereticks.

The *Jews*, alſo, who were very numerous in *Arabia*, contributed their Quota to the *Alcoran*; nor is it without ſome Reaſon that they boaſt, twelve of their chief Doctors to have been the Authors of this deteſtable Work.

The *Alcoran*, it is to be obſerv'd, while *Mahomet* lived, was only kept in looſe Sheets: His Succeſſor, *Abubeker*, firſt collected 'em into a Volume, and committed the keeping thereof to *Haphſa*, the Widow of *Mahomet*, in order to be conſulted as an Original. And there being a good deal of Diverſity between the ſeveral Copies already diſperſed thro'-out the Provinces; *Ottoman*, Succeſſor of *Abubeker*, procur'd a great Number of Copies to be taken from that of *Haphſa*; at the ſame time ſuppreſſing all the others not conformable thereto.

The chief Differences, then, in the preſent Copies of this Book, conſiſt in the Points; which were not in uſe in the Time of *Mahomet* and his immediate Succeſſors, but were added ſince, to aſcertain the Reading; after the Example of the *Maſſoretes*, who put the like Points to the *Hebrew* Text of Scripture. See POINT.

The Work is divided into *Surates*, or Chapters; and the Surates ſubdivided into little Verſes, which are all compoſed in a broken inerrupted Style, reſembling Proſe rather than Verſe.—The Diviſion into Surates is but of a late ſtanding: The uſual Number of 'em is 60.

There are ſeven principal Editions of the *Alcoran*; two at *Medina*, one at *Mecca*, one at *Coufa*, one at *Barſora*, one in *Syria*, and the Common or Vulgate Edition. The firſt contains 6000 Verſes; the others ſurpaſſing this Number by 200, or 236 Verſes: But the Number of Words and Letters is the ſame in all, *viz.* 77639 Words, and 323015 Letters. See MASSORETES.

The Number of Commentaries on the *Alcoran*, is ſo large, that the bare Titles would make a huge Volume.—*Ben Oſchair* has wrote the Hiſtory thereof, intitled, *Tarikh Ben Oſchair*. The principal among 'em are *Reidhaori Thaalebi*, *Zamalchſchari*, and *Bacai*.

Beſide the *Alcoran*, which is the Baſis of the *Mahometan* Faith, they have alſo a Book containing their Traditions, which they call *Sonna*. See SONNA, TRADITION, MAHOMETANISM, *&c.*

The *Mahometans* have a poſitive Theology, built on the *Alcoran* and Tradition; as well as a Scholaſtical one, built on Reaſon.—They have likewiſe their Caſuiſts, and a kind of Canon Law; wherein they diſtinguiſh between what is of divine, and what of poſitive Right.

They have their Beneficiaries too, Chaplains, Almoners, and Canons, who read a Chapter every Day out of the *Alcoran* in the Moſques; and have Prebends for ſo doing.—The Hatib of the Moſque, is what we call the Parſon of the Pariſh; and the Scheics are the Preachers, who take their Text out of the *Alcoran*.

Among the *Perſians*, *Alcoran* likewiſe ſignifies a kind of Tower, or Steeple; very high and narrow; ſurrounded without by two or three Galleries, one over another; whence their Moravites or Prieſts repeat their Prayers thrice a Day, with a very loud Voice; making the Tour of the Gallery all the while, that they may be the better heard all around.

ALCOVE, in Building, a part of a Chamber, ſeparated by an Eſtrade, or Partition of Columns, and other correſponding Ornaments; in which is placed a Bed of State, and ſometimes Seats, to entertain Company.

The Word is deriv'd from the Spaniſh *Alcoba*; and that from the Arabick *Elcanf*, a Cabinet or ſleeping Place; or from *Elcobat*, a Tent.

ALCYON. See HALCYON.

ALDEBARAN, an *Arabian* Name, for a fixed Star of the firſt Magnitude, in the Head of the Sign or Conſtellation *Taurus*, or the Bull; and hence popularly called *the Bull's Eye*.

Its Longitude, Latitude, *&c. ſee among the reſt of the Conſtellation* TAURUS.

ALDERMAN, an Aſſociate to the Mayor or Civil Magiſtrate of a City or Town, for the better Adminiſtration thereof. See CITY, TOWN, *&c.*

The *Aldermen* are an Order of Magiſtrates, in our Cities, and moſt of the municipal or incorporate Towns; who form a kind of Council, and regulate Things relating to the Policy of the Place.—They ſometimes alſo take Cognizance of Civil and Criminal Matters; but very rarely, and only in certain Caſes.

Their Number is not limited; but in ſome Places more, in ſome leſs, from 6 to 26.

Out of theſe are annually elected the *Mayors* or chief Magiſtrates of Places; who, at the Expiration of their Mayoralty, return again into the Body of the *Aldermen*, whoſe Delegates they were before. See MAYOR.

The 26 *Aldermen* of *London*, preſide over the 26 Wards of the City. See WARD.

When any of 'em die, the Wardmote return two, out of which the Lord Mayor and *Aldermen* chuſe one.

All the *Aldermen* that have been Lord Mayors, and the three eldeſt *Aldermen* who have not yet arriv'd at that Dignity, are by Charter, Juſtices of the Peace.

Formerly, there were alſo *Aldermen* of the Merchants, of Hoſpitals, of Hundreds, *&c.* See SENATOR.

ALDERMAN, among our antient *Saxon* Anceſtors, was one of the three Orders or Degrees of Nobility. See NOBILITY.

Ætheling was the firſt, *Alderman* the ſecond, and *Thane* the loweſt. See ÆTHELING, and THANE.

The *Alderman* was the ſame as our Earl or Count; which Appellation, after King *Athelſtane*'s Time, took place in lieu of *Alderman*. See EARL, and COUNT.

In the Time of King *Edgar*, *Alderman* was alſo uſed for a *Judge*, or *Juſtice*.—In this Senſe, *Alwin* Son of *Ethelſtane*, is ſtiled *Aldermannus totius Angliæ*; which *Spelman* interprets, *Juſticiarius Angliæ*.

Thomas Elienſis, in the Life of St. *Ethelred*, interprets *Alderman* by Prince, or Count; *Egelwinus qui cognominatus eſt* Alderman, *quod intelligitur princeps ſive comes*.—*Matthew Paris*, in lieu of *Alderman*, uſes the Word *Juſticiarius*; and *Spelman* obſerves, that it was the *Norman* Kings, who, inſtead of the *Saxon Alderman*, introduc'd the Word *Juſtice*.

The Word in its original, is compos'd of *Alder*, Senior or Elder, and *Man*.

ALE, a popular, or *Beverage* Drink, made from Malt. See MALT, and DRINK.

For the Method of Brewing Ale, ſee BREWING.

Ale is chiefly diſtinguiſh'd from Beer, another potable Liquor made from the ſame Ingredients, by the Quantity of Hops uſed therein; which is greater in Beer, and therefore renders the Liquor bitterer, and fitter to keep. See BEER, HOPS, *&c.*

The Brewers alſo diſtinguiſh *Pale* or *Fine Ale*, *Brown Ale*, &c.——*Their ſeveral Properties, Effects*, &c. *ſee under the Article* MALT-*Liquor*.

The *Zythum* and *Curmi* mentioned by *Tacitus*, as the Beverage of the antient *Germans*, are ſuppoſed by *Matthiolus* to correſpond to our *Ale* and Beer.

ALE, *Cereviſia*, is alſo a Denomination given to divers medicated Liquors, or Diet-Drinks, whereof *Ale* is the Baſis, or Vehicle. See DIET-*Drink*.

The medicated Wines, Waters, and *Ales*, make a large Article in our Diſpenſatories. See WINE, WATER, *&c.*

Such are the *Cereviſia Oxydorica*, for the Eyes; *Cereviſia Anti-Arthritica*, againſt the Gout; *Cereviſia Cephalica*, for the Head; *Cereviſia Epileptica*, &c.

Gill ALE, is prepared by infuſing the dry Leaves of *Hedera Terreſtris*, *i. e.* Ground-Ivy, in Malt-Liquor; which hereby becomes impregnated with the Virtues of the Simple; and is therefore reputed Abſterſive, and Vulnerary; good in Diſorders of the Breaſt, and againſt Obſtructions of the Viſcera.

Dr. Butler's *Purging* ALE, is prepared of Polypody, Sena, Sarſaparilla, Aniſeeds, Scurvygraſs, Agrimony, and Maiden-hair, put up in a Bag, and hung in a Veſſel of *Ale*.

We alſo meet in ſome Diſpenſatories with *Syrop of Ale*, made by boiling that Liquor to a Conſiſtence; uſed againſt Obſtructions in the Kidneys, *&c.*

ALE-*Berry*, is *Ale* boil'd with Bread and Mace; ſweetned, ſtrain'd, and drank hot.

ALE-*Meaſure*. See MEASURE.

ALE-*Conner*, an Officer in the City of *London*, whoſe Buſineſs is to inſpect the Meaſures of the Publick Houſes.—There are four of them, and they are choſen by the Common-Hall of the City. See MEASURE.

ALE-*Silver*, a Rent or Tribute yearly paid to the Lord Mayor of *London*, by thoſe who ſell *Ale* within the City.

ALE-*Taſter*, is an Officer appointed, and ſworn in every Court-Leet, to look that there be a due Size and Goodneſs of Bread, *Ale*, and Beer, ſold within the Juriſdiction of the Leet. See ASSIZE, &c.

ALECTORIA, in Natural Hiſtory, a Stone ſometimes found in the Stomach, Liver, or rather Gall-Bladder of old Cocks. See STONE.

It is ordinarily of the Figure of a Lupine, and ſeldom exceeds the Bigneſs of a Bean.—It has abundance of Virtues attributed to it, but moſt of them are fabulous.

The Word is deriv'd from ἀλέκτωρ, *a Cock*.

ALECTOROMANTIA, an antient Kind of Divination, perform'd by means of a Cock. See DIVINATION.

This Art was in uſe among the *Greeks*; and the manner of it was this.—A Circle was made on the Ground, and divided into 24 equal Portions, or Spaces; in each of which Spaces was written one of the Letters of the Alphabet, and upon each of theſe Letters was laid a Grain of Wheat.

This done, a Cock was turn'd looſe into the Circle, and careful Obſervation made of the Grains he peck'd.—The Letters correſponding to thoſe Grains, were afterwards form'd into a Word; which Word was to be the Anſwer deſired.

'Twas thus that *Libanius* and *Iamblichus* ſought who ſhould ſucceed the Emperor *Valens*; and the Cock eating the Grains anſwering to the Spaces ΘΕΟΔ, they concluded upon *Theodore*, but by a Miſtake inſtead of *Theodoſius*.

The Word comes from the *Greek* ἀλεκτωρ, *a Cock*, and μαντία, *Divination*.

ALEMBICK, or LIMBECK, a Chymical Veſſel, conſiſting of a Matraſs, fitted with a roundiſh Head, perforated in a ſloping Tube, for the condenſed Vapours to paſs thro' in Diſtillation. See CUCURBIT, and DISTILLATION.

Alembick is popularly underſtood of the whole Inſtrument of Diſtillation with all its Apparatus; but in the proper Senſe of the Word, it is only a Part hereof, *viz.* a Veſſel uſually of Copper, whereto a concave, globular, metalline Head is cloſely luted; ſo as to ſtop the riſing Vapours, and direct them into its Roſtrum or Beak.

The Heat of the Fire raiſing the volatile Parts of the Subject, expoſed in the bottom of the Veſſel; they are received into its Head, where they are condens'd, either by the Coldneſs of the ambient Air, or by Water externally apply'd; and become a Liquor, which runs out at the Beak into another Veſſel, called the *Recipient*. See RECIPIENT.

The Head or Capital of the *Alembick*, is ſometimes incompaſſed with a Veſſel full of cold Water, by way of Refrigeratory; tho this Intention is now more commonly anſwered by a *Serpentine*. See REFRIGERATORY, SERPENTINE, &c.

There are divers Kinds of *Alembicks*: An *Open Alembick*, where the Capital and Cucurbit are two ſeparate Parts; a *Blind Alembick*, or Blind Head, where the Capital is ſealed Hermetically upon the Cucurbit, &c.

The Word is form'd of the *Arabick* Particle *Al*, and the *Greek* ἄμβιξ, a ſort of earthen Veſſel, mention'd by *Atheneus*, and *Heſychius*. Tho, *Matthæus Silvaticus*, in his *Pandect Medicinæ*, aſſerts the Word *Alembick* to be *Arabick*, and that it literally denotes the upper Part of a diſtilling Veſſel.

ALEXANDRINE, or ALEXANDRIAN, in Poetry, the Name of a kind of Verſe, which conſiſts of twelve and thirteen Syllables alternately; the reſt or Pauſe being always on the ſixth Syllable. See VERSE.

It is ſaid to have taken its Name from a Poem on the Life of *Alexander*, intitled, the *Alexandriad*; written, or at leaſt tranſlated into this kind of Verſe by ſome *French* Poets: tho others will have it denominated from one of the Tranſlators, *Alexander Paris*.

This Verſe is thought by ſome very proper in the Epopea, and the more ſublime Kinds of Poetry: for which Reaſon it is alſo called *Heroic Verſe*. See HEROIC.

It anſwers in our Language to the *Hexameters* in the *Greek* and *Latin*.—*Chapman*'s Tranſlation of *Homer*, conſiſts wholly of *Alexandrines*.

ALEXIPHARMIC, in Medicine, expreſſes that Property which a Remedy, either ſimple or compound, hath to reſiſt, or deſtroy every thing of a poiſonous Nature: For the Antients had a Notion, that there was Poiſon in all malignant Diſeaſes, and in the generality of thoſe whoſe Cauſe is unknown. See POISON.

Alexiterial, *Cardiac*, *Antidote*, *Alexipharmic*, and *Counterpoiſon*, are all Terms of the ſame Signification. See ANTIDOTE, COUNTERPOISON, &c.

Alexipharmics are ordinarily divided into ſuch as are general; and thoſe more particular, ſuppoſed only to combat ſome particular Diſeaſe.—But this Diviſion is founded more on Speculation than Experience.

Alexipharmic Medicines, contain a great Number of volatile Parts, and ſuch as render fluid the Maſs of Blood. The greateſt part of them are aromatick, and pungent to the Taſte. See AROMATIC.——Among the reſt, it is true, there are ſome acid Plants and Juices; but theſe are only reckon'd in the Number, on account of their Uſe in malignant, colliquative Fevers.

Alexipharmics chiefly act by exciting or increaſing a Diaphoreſis, or Perſpiration; by which the noxious Matter is thrown off. See DIAPHORETICKS, PERSPIRATION, &c.

Alexipharmics, whether ſimple or compound, are alſo eſteemed Preſervatives againſt malignant, and peſtilential Fevers: But they are to be uſed with Caution; ſome being only proper in Condenſations, and others in Colliquations of the Blood. See PRESERVATIVE, PLAGUE, &c.

The Word is derived from the *Greek* ἀλεξω, *arceo*, to drive out, or expel; and φάρμακον, *Venenum*, Poiſon.

ALEXIPHARMIC *Waters*, &c. See WATER, &c.

ALEXITERIAL, in Medicine, a Term of the ſame import with *Alexipharmic*. See ALEXIPHARMIC.

It is form'd from the *Greek* ἀλεξω, *arceo*, I drive away, or *Opitulor*, I aſſiſt.

ALFET, antiently ſignified the Cauldron in which boiling Water was put, for the Accuſed to plunge his Hand in up to the Elbow, by way of Trial or Purgation. See WATER.

ALGAROT, or ALGAREL, in the *Arabian* Chymiſtry, a Pouder prepared of Butter of Antimony; being in reality no more than the Regulus of that Mineral, diſſolv'd in Acids, and ſeparated again by means of ſeveral Lotions with lukewarm Water, which imbibes thoſe Acids. See REGULUS.

This is alſo called *Mercurius Vitæ*, or ſimply *Emetic Pouder*.—It purges violently both upwards and downwards. See ANTIMONY.

By collecting all the Lotions, and evaporating two third Parts, what remains is a very acid Liquor, called *Spirit of Philoſophical Vitriol*.

ALGEBRA, a Method of reſolving Problems by means of Equations. See PROBLEM, and EQUATION.

Some Authors define *Algebra* the Art of ſolving all Problems capable of being ſolv'd: But this is rather the Idea of *Analyſis*, or the *Analytic Art*. See ANALYSIS.

The *Arabs* call it, the *Art of Reſtitution and Compariſon*; or, the *Art of Reſolution and Equation*.—*Lucas de Burgos*, the firſt *European* who wrote of *Algebra*, calls it, the *Rule of Reſtoration and Oppoſition*.—The *Italians* call it, *Regula Rei & Cenſus*, that is, the Rule of the Root and the Square; the Root with them being called *Res*, and the Square *Cenſus*.—Others call it *Specious Arithmetick*; others *Univerſal Arithmetick*, &c.

Menage derives the Word from the *Arabic Algebra*, which ſignifies the ſetting of a broken Bone; ſuppoſing that the principal Part of *Algebra* is the Conſideration of broken Numbers.——Others rather borrow it from the *Spaniſh Algebriſta*, a Perſon who re-places diſlocated Bones; adding, that *Algebra* has nothing to do with Fraction; in that it conſiders broken Numbers as if they were entire, and even expreſſes its Powers by Letters, which are incapable of Fraction.

Some, with M. *d'Herbelot*, are of Opinion, that *Algebra* takes its Name from *Geber*, a celebrated Philoſopher, Chymiſt, and Mathematician, whom the *Arabs* call *Giaber*; and who is ſuppoſed to have been the Inventor.—Others, from *Gefr*, a kind of Parchment, made of the Skin of a Camel, whereon *Ali* and *Giafar Sadek* wrote in myſtick Characters the Fate of *Mahometaniſm*, and the grand Events that were to happen till the End of the World.—But others, with more probability, derive it from *Gebr*, a Word whence, by prefixing the Particle *Al*, we have formed *Algebra*, which is pure *Arabic*, and properly ſignifies the Reduction of broken Numbers to a whole Number.

However, the *Arabs*, it is to be obſerved, never uſe the Word *Algebra* alone, to expreſs what we mean by it; but always add to it the Word *Macabelah*, which ſignifies *Oppoſition and Compariſon*.—Thus, *Algebra-Almocabelah*, is what we properly call *Algebra*.

Algebra is a peculiar kind of Arithmetick, which takes the Quantity ſought, whether it be a Number, or a Line, or any other Quantity, as if it were granted; and by means of one or more Quantities given, proceeds by conſequence, till the Quantity at firſt only ſuppos'd to be known, is found to be equal to ſome Quantity or Quantities which are certainly known, and conſequently it ſelf is known. See QUANTITY, and ARITHMETIC.

Algebra is of two Kinds, *viz. Numeral*, and *Literal*.

Numeral, or *Vulgar* ALGEBRA, is that of the Antients, which only had place in the Reſolution of Arithmetical Queſtions.—In this, the Quantity ſought is repreſented by ſome Letter or Character; but all the given Quantities are expreſs'd by Numbers. See NUMBER, and NUMEROUS.

Literal,

Literal, or *Specious* ALGEBRA, or the *New* ALGEBRA, is that wherein the given or known Quantities, as well as the unknown, are all expreſſed or repreſented by their Species, or Letters of the Alphabet. See SPECIES, and SPECIOUS.

This eaſes the Memory and Imagination of that vaſt Streſs or Effort, requir'd to keep the ſeveral Matters neceſſary for the Diſcovery of the Truth in hand preſent to the Mind: For which Reaſon this Art may be properly denominated *Metaphyſical Geometry*.

Specious Algebra, is not, like the Numeral, confin'd to certain Kinds of Problems; but ſerves univerſally for the Inveſtigation or Invention of Theorems, as well as the Solution and Demonſtration of all kinds of Problems, both *Arithmetical*, and *Geometrical*. See THEOREM, &c.

The Letters uſed in *Algebra*, do each ſeparately repreſent either Lines or Numbers, as the Problem is Arithmetical or Geometrical; and together, they repreſent Planes, Solids and Powers more or leſs high, as the Letters are in a greater or leſs Number.—For inſtance, if there be two Letters, *ab*, they repreſent a Rectangle, whoſe two Sides are expreſſed, one by the Letter *a*, and the other by *b*; ſo that by their mutual Multiplication, they produce the Plane *ab*. Where the ſame Letter is repeated twice, as *aa*, they denote a Square.—Three Letters, *abc*, repreſent a Solid, or a rectangled Parallelopiped, whoſe three Dimenſions are expreſſed by the three Letters *abc*; the Length by *a*, the Breadth by *b*, and the Depth by *c*: ſo that by their mutual Multiplication they produce the Solid *abc*.

As the Multiplication of Dimenſions is expreſſed by the Multiplication of Letters, and as the Number of thoſe may be ſo great as to become incommodious; the Method is, only to write down the Root, and on the right hand to write the Index of the Power, that is, the Number of Letters whereof the Power to be expreſſed does conſiſt; as, a^2, a^3, a^4, a^5: the laſt of which ſignifies as much as *a* multiplied five times into it ſelf; and ſo of the reſt. See POWER, ROOT, EXPONENT, &c.

For the Symbols, Characters, &c. *uſed in* Algebra, *with their Application*, &c. *ſee the Articles* CHARACTER, QUANTITY, &c.

For the Method of performing the ſeveral Operations in Algebra, *ſee* ADDITION, SUBTRACTION, MULTIPLICATION, &c.

As to the Origin of this Art, we are much in the dark.—The Invention is uſually attributed to *Diophantus*, a *Greek* Author, who wrote thirteen Books, tho only ſix of 'em are extant, firſt publiſhed by *Xylander*, in 1575; and ſince commented on and improved by *Gaſper Bachet*, of the *French Academy*; and ſince by M. *Fermat*.

And yet *Algebra* ſeems to have been not wholly unknown to the antient Mathematicians, long before the Age of *Diophantus*: We ſee the Traces, the Effects of it in many Places; tho, it looks as if they had deſignedly concealed it.—Something of it there ſeems to be in *Euclid*, or at leaſt in *Theon* upon *Euclid*, who obſerves that *Plato* had begun to teach it.—And there are other Inſtances of it in *Pappus*, and more in *Archimedes* and *Apollonius*.

But the Truth is, the Analyſis uſed by thoſe Authors is rather Geometrical than *Algebraical*; as appears by the Examples thereof which we find in their Works: So that we make no ſcruple to ſay, that *Diophantus* is the firſt, and only Author among the *Greeks* who has treated of *Algebra* profeſſedly.

This Art, however, was in uſe among the *Arabs* much earlier than among the *Greeks*. And 'tis ſaid the *Arabs* too borrow'd it from the *Perſians*, and the *Perſians* from the *Indians*.—'Tis added, that the *Arabs* carried it into *Spain*; whence, ſome are of opinion, it paſs'd into *England*, before *Diophantus* was known among us.

The firſt who wrote on the Subject in this part of the World, was *Lucas Pacciolus*, or *Lucas de Burgos*, a Cordelier; whoſe Book, in *Italian*, was printed at *Venice* in 1494.—This Author makes mention of one *Leonardus Piſanus*, and ſome others, of whom he had learnt the Art; but we have none of their Writings.—He adds, that *Algebra* came originally from the *Arabs*; and never mentions *Diophantus*: which makes it probable, that that Author was not yet known in *Europe*.—His *Algebra* goes no further than Simple and Quadratick Equations. See QUADRATIC, &c.

After *Pacciolus* appear'd *Stifelius*, a good Author; but neither did he advance any further.

After him, came *Scipio Ferreus*, *Cardan*, *Tartalea*, and ſome others; who reach'd as far as the Solution of ſome Cubick Equations.—*Bombelli* follow'd theſe, and went himſelf a little further.—At laſt came *Nonnius*, *Ramus*, *Schoner*, *Salignac*, *Clavius*, &c. who all of them took different Courſes, but none of them went beyond Quadraticks.

About the ſame time, *Diophantus* was firſt made publick; whoſe Method is very different from that of the *Arabs*, which had been follow'd till then.

In 1590, *Vieta* enter'd on the Stage, and introduc'd what he call'd his *Specious Arithmetick*, which conſiſts in denoting the Quantities, both known and unknown, by Symbols or Letters.—He alſo introduced an ingenious Method of extracting the Roots of Equations, by Approximation; ſince much facilitated by *Raphſon*, in his *Analyſis Æquationum*.

Vieta was follow'd by *Oughtred*, who in his *Clavis Mathematica*, printed in 1631, improved *Vieta*'s Method; and invented ſeveral compendious Characters, to ſhew the Sums, Differences, Rectangles, Squares, Cubes, &c.

Mr. *Harriot*, another *Engliſhman*, cotemporary with *Oughtred*, left ſeveral Treatiſes at his Death; and among the reſt, an *Analyſis*, or *Algebra*, which was printed in 1631; where *Vieta*'s Method is brought into a ſtill more commodious form, being that which obtains to this Day.

In 1657, *Des Cartes* publiſh'd his Geometry, wherein he made uſe of the Literal Calculus and the *Algebraick* Rules of *Harriot*; and as *Oughtred* in his *Clavis*, and *Marin. Ghetaldus*, in his Books of Mathematical Compoſition and Reſolution publiſh'd in 1630, applied *Vieta*'s Arithmetick to Elementary Geometry, and gave the Conſtructions of Simple and Quadratick Equations; ſo *Des Cartes* applied *Harriot*'s Method to the Higher Geometry, explaining the Nature of Curves by Equations, and adding the Conſtructions of Cubic, Biquadratic, and other higher Equations.

Des Cartes's Rule for conſtructing Cubic and Biquadratic Equations, was further improved by *Tho. Baker*, in his *Clavis Geometrica Catholica*, publiſh'd in 1684; and the Foundation of ſuch Conſtructions, with the Application of *Algebra* to the Quadratures of Curves, Queſtions *de maximis* and *minimis*, the Centrobaryc Method of *Guldinus*, &c. was given by *R. Sluſius*, in 1668; as alſo by *Fermat*, in his *Opera Mathematica*; *Roberval*, in the *Mem. de Mathem. & de Phyſique*; and *Barrow*, in his *Lect. Geomet.*——In 1708, *Algebra* was applied to the Laws of Chance and Gaming, by *R. de Montmort*; and ſince by *de Moivre*, and *James Bernoulli*.

Thus much for the Progreſs of *Algebra*.—The *Elements of the Art* were compiled and publiſh'd by *Kerſey* in 1671; wherein the Specious Arithmetick, and the Nature of Equations are largely explain'd, and illuſtrated by variety of Examples: The whole Subſtance of *Diophantus* is here deliver'd; and many Things added concerning Mathematical Compoſition and Reſolution, from *Ghetaldus*. The like has been ſince done by *Preſtet* in 1694; and by *Ozanam* in 1703.—But theſe Authors omit the Application of *Algebra* to Geometry; which Defect is ſupplied by *Guiſnee* in a *French* Treatiſe expreſly on the Subject, publiſh'd in 1704; and *l'Hopital* in his Analytical Treatiſe of the Conic Sections, in 1707.—The Rules of *Algebra* are alſo compendiouſly deliver'd by Sir *I. Newton*, in his *Arithmetica Univerſalis*, firſt publiſh'd in 1707; which abounds in choice Examples, and contains ſeveral Rules and Methods invented by the Author.

Algebra has been alſo applied to the Conſideration and Calculus of Infinites; from whence a new and very extenſive Branch of Knowledge has aroſe, call'd the *Doctrine of Fluxions*, or *Analyſis of Infinites*, or the *Calculus Differentialis*. See FLUXIONS.——The Authors on this Subject, ſee under the Article ANALYSIS.

ALGEBRAICAL, ſomething that relates to *Algebra*. See ALGEBRA.

In this Senſe, we ſay, *Algebraical* Characters, or Symbols. See CHARACTER.

ALGEBRAICAL *Curve*, is a Curve, wherein the Relation of the Abſciſſes to the Semiordinates, may be defined by an *Algebraical* Equation. See CURVE.

Theſe are alſo called *Geometrical Lines*. See GEOMETRICAL *Lines*.

Algebraical Curves ſtand contradiſtinguiſh'd to Mechanical or Tranſcendental ones. See MECHANICAL, and TRANSCENDENTAL.

ALGEBRAICAL *Solution*. See RESOLUTION.

ALGENEB, in Aſtronomy, a Fixed Star of the ſecond Magnitude, on the right ſide of *Perſeus*.—Its Longitude, Latitude, &c. *ſee among the reſt of the Conſtellation* PERSEUS.

ALGOL, or *Meduſa*'s *Head*, a Fixed Star of the third Magnitude, in the Conſtellation *Perſeus*.——Its Longitude, Latitude, &c. *ſee under the Article* PERSEUS.

ALGORISM, a Term uſed by ſome *Arabick* Authors for the practical Operation of the ſeveral Parts of Specious Arithmetick, or Algebra. See ALGEBRA.——Sometimes it is alſo uſed for the Practice of common Arithmetick, by the ten numeral Figures. See ARITHMETICK.

ALGORITHM, an *Arabic* Term, which ſome Authors, and eſpecially the *Spaniards*, make uſe of to ſignify the Doctrine of Numbers. See NUMBER.

Algorithm is properly the Art of numbering truly, and readily; and comprehends the ſix Rules of common Arithmetick.—It is ſometimes called *Logiſtica Numeralis*. See ARITHMETICK, RULE, &c.

In this Senſe, we ſay, the *Algorithm* of Integers, the *Algorithm* of Fractions, the *Algorithm* of Surds, &c. See FRACTION, SURD, &c.

TAB. ALGEBRA.

Fig. 1. Construction

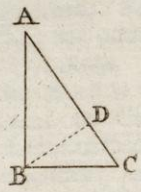


Fig. 2. Construction

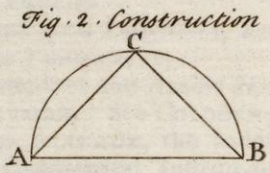


Fig. 3 & 4 Construction

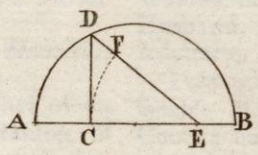


Fig. 6. Equation

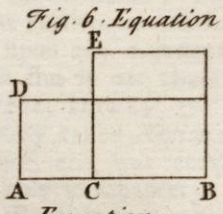


Fig. 7. Equation

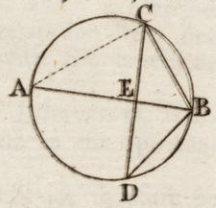


Fig. 8. Equation

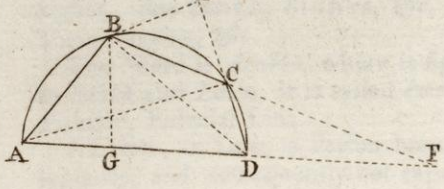


Fig. 8. Equation

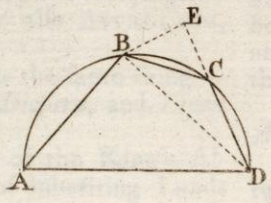


Fig. 9. Equation

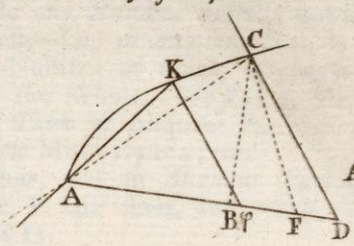
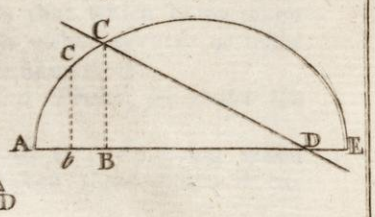


Fig. 10. Equation



TAB. ANALYSIS

Fig. 1. Conchilis

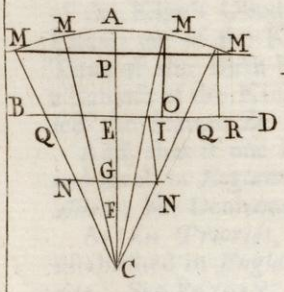


Fig. 2. Conchilis

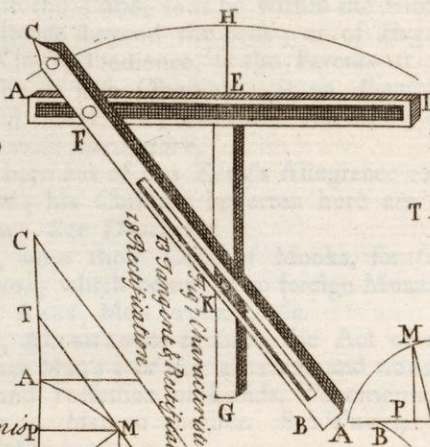


Fig. 4. Maximis & Minimis

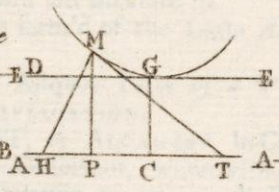


Fig. 5. Maximis & Minimis

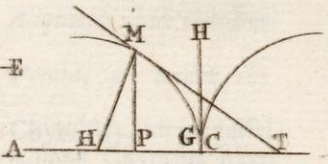


Fig. 26 Quadrature

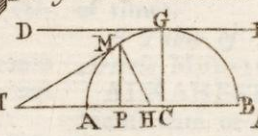


Fig. 6. Maximis & Minimis

Fig 15 Tangent

Fig 14 Tangent

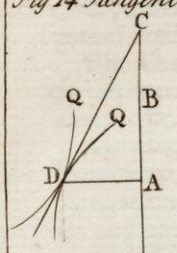


Fig 14 Tangent

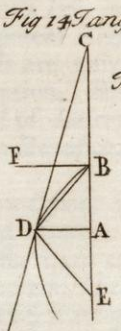


Fig 16 Tangent

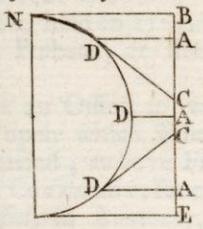


Fig 17 Tangent

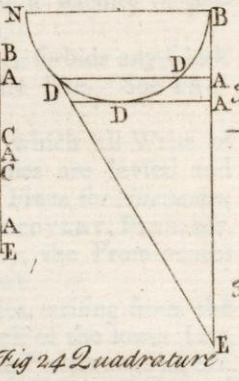


Fig 9 Cisoid

Fig 12 Osculum & Radius

Fig 18 Tangent

Fig 19 Rectification

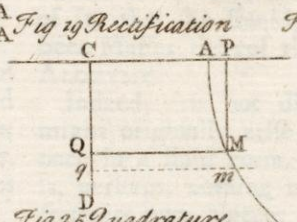


Fig 20 Rectification

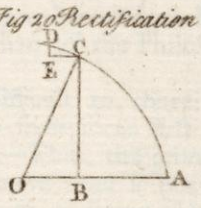


Fig 21 Quadratrix

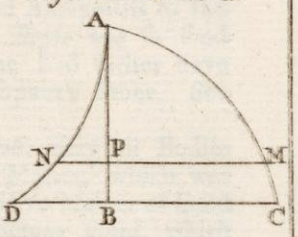


Fig 22 Logistic Curve and Quadratrix

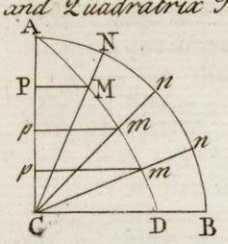


Fig 23 Quadratrix

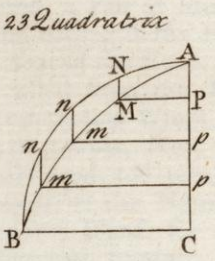


Fig 24 Quadratrix

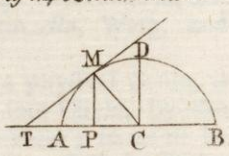


Fig 25 Quadratrix

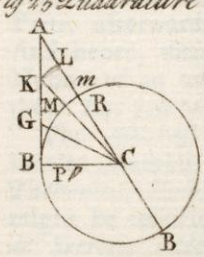


Fig 27 Quadratrix

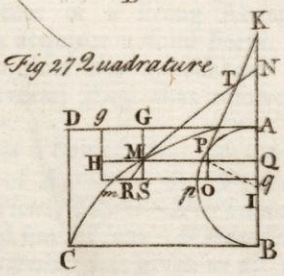


Fig 28 Quadratrix

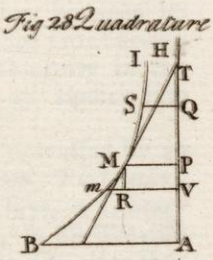


Fig 3 Locus

Fig 4 Locus

Fig 5 Locus

Fig 6 Locus

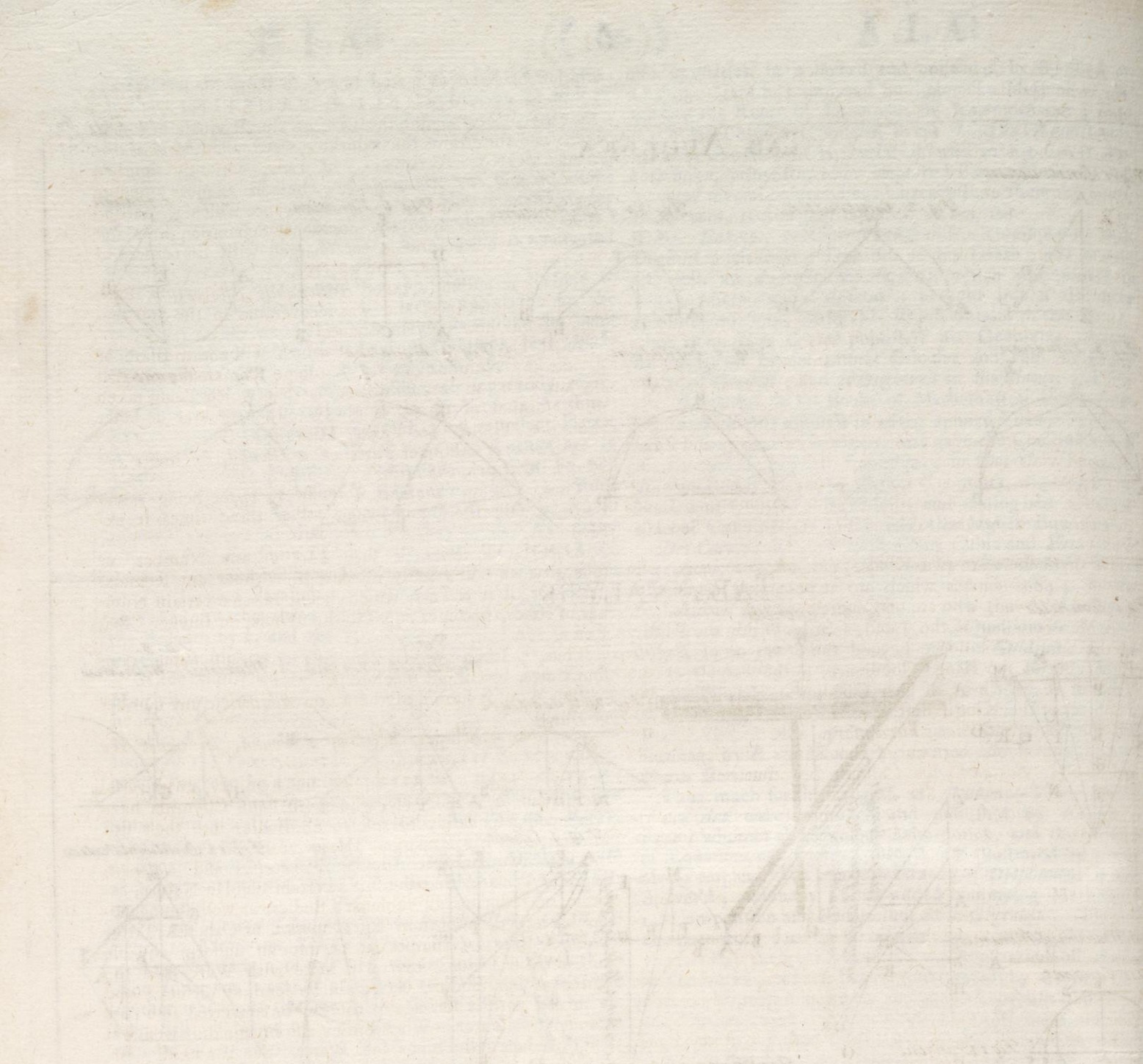
Fig 7 Locus

Fig 8 Locus

Fig 9 Locus

Fig 10 Locus

Fig 11 Logistic Curve



ALGUAZIL, in the *Spaniſh* Policy, a Serjeant or Officer, who arreſts People, and executes the Magiſtrate's Orders. See SERJEANT, *&c.*

ALHANDAL, a Term in the *Arabian* Pharmacy.—The Troches of *Alhandal*, *Trochiſci Alhandalæ*, are a kind of Troches, compoſed of Colocynthis, Bdellium, and Gum Tragacanth. See TROCHE.

They are eſteemed good Purgatives, and are uſed on divers Occaſions. See PURGATIVE.

The Word is formed of the Arabic *Handel*, or *Handhal*, a Name for Colocynthis. See COLOCYNTHIS.

ALHIDADE, or ALIDADE, the Index or Label of an Aſtronomical, or Geometrical Inſtrument, for taking of Heights or Diſtances.—The *Alhidade* is a kind of Ruler, moveable on the Centre of the Inſtrument; and carrying the Sights. See INDEX, SIGHTS, *&c.* See alſo ASTROLABE, THEODOLITE, *&c.*

The Word is *Arabic*, where it ſignifies the ſame thing.—In *Greek* and *Latin*, it is called *Διοπτρα*, *Dioptra*, and *Linea Fiduciæ*, Fiducial Line.

ALIEN, in Law, a Perſon born out of the King's Allegiance, and conſequently not capable of inheriting Lands in *England*, till naturaliz'd by Act of Parliament. See NATURALIZATION.

Of theſe there are two Kinds, *viz. Alien-Friends*, who are of thoſe Countries which are at peace and league with us; and *Enemies*, who are of Countries at war with us.

A Man born out of the Land, ſo it be within the Limits of the King's Obedience beyond the Seas; or of *Engliſh* Parents out of the King's Obedience, ſo the Parents at the Time of the Birth be of ſuch Obedience, is no *Alien*, but a Subject of the King: Stat. 2. 25 *Edw.* III. commonly called the Statute *De natis ultra mare.*

Add, that if one born out of the King's Allegiance come and dwell in *England*; his Children begotten here are not *Aliens*, but Denizens. See DENIZEN.

ALIEN *Priories*, were thoſe Cells of Monks, formerly eſtabliſhed in *England*, which belonged to foreign Monaſteries. See PRIORY, ABBY, MONASTERY, *&c.*

ALIENATION, ALIENATIO, in Law, the Act of making a thing another Man's; or the altering, and transferring the Property and Poſſeſſion of Lands, Tenements, or other Things, from one Man to another. See TRANSFERRING, POSSESSION, *&c.*

To *alienate*, or *alien*, *in Mortmain*, is to make over Lands or Tenements to a Religious Community, or other Body Politick. See MORTMAIN.

To *alienate in Fee*, is to ſell the Fee-ſimple of any Land, or other incorporeal Right. See FEE.

Crown-Lands are only *alienable* under a Faculty of perpetual Redemption. See REDEMPTION.

The Council of *Lateran*, held in 1123, forbids any Clerk to *alienate* his Benefice, Prebend, or the like. See PREBEND, *&c.*

ALIENATION-*Office*, is an Office to which all Writs of Covenants and Entry, upon which Fines are levied and Recoveries ſuffer'd, are carried; to have Fines for *Alienation* ſet and paid thereon. See COVENANT, RECOVERY, FINE, *&c.*

ALIFORMES *Proceſſus*, in Anatomy, the Prominences of the *Os Cuneiforme.* See CUNEIFORME.

ALIFORMES *Muſculi*, a Pair of Muſcles, ariſing from the *Pterygoide* Bone, and ending in the Neck of the lower Jaw, towards the internal Seat of the Head. See PTERYGOIDES, *&c.*

They are thus called from the Latin *Ala*, Wing, and *Forma*, Shape; as reſembling Wings.

ALIMENT, ALIMENTUM, *Food*, in a phyſical Senſe, is whatever may be diſſolved and turn'd into Chyle, by the Liquor of the Stomach, or the Natural Heat; ſo as to be afterwards converted into Blood, for augmenting the Body, or repairing the continual Expence of Parts. See FOOD, CHYLE, BLOOD, NUTRITION, *&c.*

The Word is *Latin*, form'd of the Verb *Alere*, to nouriſh.

ALIMENTARY, ALIMENTAL, ſomething that relates to *Aliment*, or Food. See FOOD.

The antient Phyſicians hold that every Humour conſiſts of two Parts; an *Alimentary*, and an Excrementitious one. See HUMOUR, and EXCREMENT.

ALIMENTARY *Duct*, *Ductus Alimentalis*, is a Name given, by Dr. *Tyſon* and ſome others, to that Part of the Body thro' which the Food paſſes, from its Reception into the Mouth, to its Exit at the Anus; including the Gula, Stomach, and Inteſtines. See DUCTUS *Alimentalis*, STOMACH, *&c.*

Alimentary Duct is ſometimes alſo underſtood of the Thoracic Duct. See THORACIC *Duct.*

ALIMENTARII *Pueri*, &c. in Antiquity, were certain Children maintained and educated by the Munificence of the Emperors, in a ſort of publick Places, not unlike our Hoſpitals. See HOSPITAL.

Trajan was the firſt that brought up of theſe *Alimentary Boys.* He was imitated by *Adrian.* *Antoninus Pius* did the ſame for a Number of Maids, at the Solli-

citation of *Fauſtina*: And hence, in ſome Medals of that Empreſs, we read PUELLÆ FAUSTINIANÆ.—*Alexander Severus* did the like, at the Requeſt of *Mammæa*; and the Maids thus educated were called *Mammeanæ.*

ALIMONY, ALIMONIA, in Law, antiently ſignify'd *Nouriſhment*, or *Maintenance*; but in a more modern Senſe, denotes that Portion, or Allowance which a married Woman ſues for, upon any occaſional Separation from her Husband, wherein ſhe is not charged with Elopement or Adultery. See WIFE, DOWER, *&c.*

This was antiently called *Rationabile Eſtoverium*, Reaſonable Maintenance, and was recoverable in the Spiritual Court; but now only in Chancery.

ALIQUANT *Part*, is that which will not meaſure or divide any Number exactly, but ſome Remainder will ſtill be left.—Or, an *Aliquant* Part, is that which being taken any Number of times, is always either greater or leſſer than the Whole. See PART, MEASURE, *&c.*

A Table of Aliquant Parts *of a Pound, ſee under the Article* MULTIPLICATION.

Thus, 5 is an *Aliquant Part* of 12; for being taken twice, it falls ſhort, and when taken three times it exceeds 12.

ALIQUOT *Part*, is ſuch Part of any Number, or Quantity, as will exactly meaſure it, without any Remainder.—Or, it is a Part, which being taken a certain Number of times, becomes equal to the Whole, or Integer. See PART, *&c.*

Thus, 3 is an *Aliquot Part* of 12; becauſe being taken four times, it will juſt meaſure it.

The Word is form'd of the Latin *Aliquoties*, any number of times.

A Table of Aliquot Parts *of a Pound, ſee under the Article* MULTIPLICATION.

ALKAHEST, or ALCAHEST, in Chymiſtry, an univerſal Menſtruum or Diſſolvent, wherewith ſome Chymiſts have pretended adequately to reſolve all Bodies into their firſt Matter. See MENSTRUUM, DISSOLVENT, MATTER, *&c.*

Thoſe two eminent Adepts, *Paracelſus* and *Helmont*, expreſly declare, that there is a certain Fluid in Nature, capable of reducing all ſublunary Bodies, as well homogeneous as mixed, into their *Ens primum*, or Original Matter whereof they are compos'd; or into an uniform equable and potable Liquor, that will unite with Water and the Juices of our Bodies, yet retain its ſeminal Virtues; and if mixed with it ſelf again, thereby be converted into pure elementary Water.—Whence they alſo imagin'd, it would at length reduce all Things into Water. See WATER.

This Declaration, ſeconded by the Aſſeveration of *Helmont*, who religiouſly ſwears himſelf poſſeſſed of the Secret, has excited the ſucceeding Chymiſts and Alchymiſts to the Purſuit of ſo noble a Menſtruum. Mr. *Boyle* was ſo fond of it, that he frankly acknowledges he had rather have been Maſter thereof than of the Philoſopher's Stone. See ALCHYMY.

Indeed, 'tis not difficult to conceive, that all Bodies might originally ariſe from ſome firſt Matter, which was once in a fluid Form.—Thus, the primitive Matter of Gold is, perhaps, nothing more than a ponderous Fluid, which from its own Nature or a ſtrong Attraction between its Parts, afterwards acquires a ſolid Form. See GOLD.——And hence, there does not appear any Abſurdity in the Notion of an univerſal *Ens*, that reſolves all Bodies into their *Ens genitale.*

The *Alkaheſt* is a Subject that has been canvaſſed by an infinite Number of Authors; as, *Pantaleon*, *Philalethes*, *Tachenius*, *Ludovicus*, &c.——*Boerhaave* ſays, a Library might be collected out of 'em. *Weidenfelt*, in his Treatiſe *de Secretis Adeptorum*, has given us all the Opinions that have been entertained about it.

The Term *Alkaheſt* is not peculiarly found in any Language: *Helmont* declares he firſt obſerved it in *Paracelſus*, as a Word that was unknown before the Time of that Author, who in his ſecond Book, *De viribus Membrorum*, treating of the Liver, has theſe Words: *Eſt etiam* Alkaheſt *liquor, magnam hepatis conſervandi & confortandi*, &c. "There is alſo the Liquor *Alkaheſt*, of great efficacy in "preſerving the Liver; as alſo in curing hydropical and all "other Diſeaſes ariſing from Diſorders of that Part. If it "have once conquer'd its like, it becomes ſuperior to all "other hepatick Medicines; and tho the Liver it ſelf "were broken and diſſolved, this Medicine ſhould ſupply "its Place."

'Tis this ſingle Paſſage of *Paracelſus*, that excited the ſucceeding Chymiſts to an Inquiry after the *Alkaheſt*; there being but one other indirect Expreſſion about it in all his Works.

Now it being a frequent Practice with this Author to tranſpoſe the Letters of his Words, and to make uſe of Abbreviations, and other ways of Concealment; as in Tartar, which he would write *Sutratar*; for *Nitrum*, *Mutrin*, &c. 'tis ſuppoſed *Alkaheſt* may be a Word thus diſguis'd.—

Hence ſome imagine it formed of *Alkali eſt*; and accordingly, that it was the Alkaline Salt of Tartar volatiliz'd. This ſeems to have been *Glauber*'s Opinion; who indeed performed ſurprizing things with ſuch a Menſtruum upon Subjects of all the three Kingdoms.

Others will have it the *German* Word *Algeiſt*, q. d. wholly ſpirituous, or volatile: Others are of Opinion, that *Alkaheſt* is taken from *Salls-geiſt*, which ſignifies Spirit of Salt; for the Univerſal Menſtruum, 'tis ſaid, is to be wrought from Water; and *Paracelſus* himſelf calls Salt the Centre of Water, wherein Metals ought to die, *&c.*—In effect, Spirit of Salt was the great Menſtruum he uſed on moſt Occaſions.—The Commentator on *Paracelſus*, who gave a *Latin* Edition of his Works at *Delft*, aſſures that the *Alkaheſt* was Mercury, converted into a Spirit.—*Zwelfer* judg'd it to be a Spirit of Vinegar rectify'd from Verdigreaſe.—And *Starkey* thought he diſcover'd it in his Soap.

There have been ſome ſynonymous and more ſignificant Words uſed for the *Alkaheſt*.—The elder *Helmont* mentions the *Alkaheſt* by the compound Name of *Ignis-aqua*, Fire-Water: But he here ſeems to mean the circulated Liquor of *Paracelſus*; which he terms *Fire*, from its Property of conſuming all things; and *Water*, on account of its liquid form.——The ſame Author calls it *Ignis-gehennæ*, infernal Fire; a Word alſo uſed by *Paracelſus*: He alſo intitles it '*Summum & feliciſſimum omnium ſalium*, the principal 'and moſt ſucceſsful among Salts, which having obtained 'the higheſt degree of Simplicity, Purity, and Subtility, 'alone enjoys the Faculty of remaining unchanged and un-'impaired by the Subjects it works on, and of diſſolving 'the moſt ſtubborn and untractable Bodies, as Stones, Gems, 'Glaſs, Earth, Sulphur, Metals, *&c.* into real Salt, equal 'in weight to the Matter diſſolved; and this with as much 'eaſe as hot Water melts down Snow.'—'This Salt, *con-'tinues he*, by being ſeveral times cohobated with *Paracel-'ſus*'s *Sal circulatum*, loſes all its Fixedneſs; and at length 'becomes an inſipid Water, equal in quantity to the Salt 'it was made from.'

Helmont is expreſs that this Menſtruum is intirely the Product of Art, and not of Nature.—'Tho, *ſays he*, a ho-'mogeneal Part of elementary Earth may be artificially con-'verted into Water, yet I deny that the ſame can be done 'by Nature alone; for no natural Agent is able to tranſ-'mute one Element into another.' And this he offers as a Reaſon why the Elements always remain the ſame.—It may let ſome light into this Affair, to obſerve that *Helmont*, as well as *Paracelſus*, took Water for the univerſal Inſtrument of Chymiſtry, and Natural Philoſophy; and Earth for the unchangeable Baſis of all Things: That Fire was deſigned as the efficient Cauſe of all Things; that ſeminal Impreſſions were lodged in the Mechaniſm of Earth; and that Water, by diſſolving and fermenting with this Earth, as it does by means of Fire, brings every thing to light; whence originally proceeded the Animal, Vegetable, and Mineral Kingdoms; even Man himſelf being thus at firſt created, agreeably to the account of *Moſes*.

The great Character or Property of the *Alkaheſt*, we have obſerved, is to diſſolve, and change all ſublunary Bodies; Water alone excepted.—The Changes it induces proceed thus: 1°, The Subject expoſed to its Operation, is converted into its three Principles, Salt, Sulphur, and Mercury; afterwards, into Salt alone; which then becomes volatile; and at length is wholly turned into inſipid Water.—The manner of Application is by touching the Body propoſed to be diſſolved, *e. g.* Gold, Mercury, Sand, or the like, once or twice with the pretended *Alkaheſt*; and if the Liquor be genuine, the Body will be converted into its own Quantity of Salt.

2°, It does not deſtroy the ſeminal Virtues of the Bodies diſſolved thereby.—Thus, Gold is, by its Action, reduced to a Salt of Gold; Antimony to a Salt of Antimony; Saffron to a Salt of Saffron, *&c.* of the ſame ſeminal Virtues, or Characters with the original Concrete.—By ſeminal Virtues, *Helmont* underſtands thoſe Virtues which depend upon the Conſtruction or Mechaniſm of a Body, and which make it what it is. Hence, an actual and genuine *Aurum potabile* might readily be gained by the *Alkaheſt*, as converting the whole Body of Gold into a Salt, retaining its ſeminal Virtues, and being withal ſoluble in Water.

3°, Whatever it diſſolves, may be render'd volatile by a Sand-heat; and if after volatilizing the Solvend, it be diſtill'd therefrom, the Body is left pure inſipid Water, equal in quantity to its original ſelf, but deprived of its ſeminal Virtues.—Thus, if Gold be diſſolved by the *Alkaheſt*, the Metal firſt becomes Salt, which is potable Gold; but when the Menſtruum is diſtilled therefrom, 'tis left mere Elementary Water. Whence it appears, that pure Water is the laſt Production or Effect of the *Alkaheſt*.

4°, It ſuffers no Change or Diminution of Force by diſſolving the Bodies it works on, and therefore ſuſtains no Reaction from them; being the only immutable Menſtruum in Nature.

5°, 'Tis incapable of Mixture, and therefore remains free from Fermentation and Putrefaction; coming off as pure from the Body it has diſſolved, as when firſt put thereon; without leaving the leaſt Foulneſs behind.

ALKALY, Alkali, or Alcaly, in Chymiſtry, a Name originally given, by the *Arabians*, to a Salt extracted from the Aſhes of a Plant called *Kali*; and by us Glaſs-wort, becauſe uſed in the making of Glaſs. See Kali, and Glass.

Afterwards, the Term *Alkaly* became a common Name for the lixivious Salts of all Plants; that is, for ſuch Salts as are drawn by Lotion from their Aſhes. See Lixivious, and Ashes.

And hence, again, in regard the original *Alkaly* was found to ferment with *Acids*; the Name has ſince become common to all volatile Salts, and all terreſtrial Subſtances which have that Effect. See Acid.

Alkaly, then, in its modern extenſive Senſe, is any Subſtance, which being mixed with an Acid, an Ebullition and Effervеſcence enſues thereon. See Effervescence, *&c.*

And hence ariſes the grand Diviſion of Natural Bodies into the two oppoſite Claſſes of *Acids* and *Alkalies*. See Acid.

Boerhaave ſcarce takes this Circumſtance to be enough to conſtitute any determinate Claſs of Bodies.—In effect, *Alkalies* are not of one ſimilar homogeneous Nature: but there are two ſeveral ſorts.

The firſt obtain'd from Vegetable and Animal Subſtances, by Calcination, Diſtillation, Putrifaction, *&c.* ſuch are Spirit of Urine, Spirit of Hartſhorn, Salt of Tartar, *&c.*—The ſecond are of the terreſtrial Kind; as Shells, Bole, *&c.*

The two Species, *Boerhaave* obſerves, differ widely from each other; having ſcarce any thing in common, but their being effervеſcible with Acids.—The one is a Claſs of native, fixed, ſcentleſs, inſipid, mild, aſtringent, foſſil Bodies: The other a Set of ſuch as are volatile, odorous, ſapid, cauſtick, aperitive, and procured by Art.

Hence, adds the ſame Author, mere Effervеſcence with Acids, muſt be allow'd to be of it ſelf inſufficient to determine the Nature of an *Alkaly*: and that ſuch a Name, which properly denotes a cauſtick fiery Subſtance, ſhould not be affixed to any mild and gentle Body, as Chalk, *&c.* but other Properties and Conſiderations are to be taken in, and particularly their Taſte, manner of procuring, and the Change of Colour they produce in Bodies.

With regard to this laſt Circumſtance, thoſe Liquors which being pour'd on Syrup of Violets, change it of a green Colour, are *Alkalies*; as thoſe which turn it red, Acids.—Thus Oil of Tartar turns it of a kindly green; and Oil of Vitriol of a Carmine red: And if to the Syrup thus made red by Oil of Vitriol, Oil of Tartar be pour'd, it turns that part wherewith it comes in contact, green; leaving the reſt red: and the like holds of Oil of Vitriol, pour'd on Syrup made green by Oil of Tartar.

To the like effect M. *Homberg* obſerves, that 'a mere heat 'and bubbling ariſing upon the Admixture of a Body with 'an Acid, does not ſeem an adequate Criterion of the *Alka-'line* Nature; ſince diſtill'd Oils of all kinds are found to do 'thus much; and many of 'em with more vehemence than '*Alkalies* themſelves, ſo as ſometimes even to take fire, which '*Alkalies* never do.'

To the Definition and Character of an *Alkaly* therefore, M. *Homberg* adds this Circumſtance; 'that after the Action, 'the Mixtures coaleſce and ſhoot into a Salt, or ſaline Mat-'ter.'—This excludes the Oils above mention'd; which do not, after Effervеſcence, unite with the Acids into a ſaline Subſtance, but rather compoſe a reſinous one.

All lixivious Salts have theſe Characters of *Alkaly*.—And not only lixivious, but alſo all urinous Salts; which are conſtantly found to imbibe Acids with great eagerneſs, and after Ebullition, to unite and cryſtallize with 'em. See Urinous *Salt*.

Hence we have two Kinds of *Alkaly Salts*, viz. *Fix'd*, or *Lixivious Alkalies*; and *Volatile*, or *Urinous* ones. See Salt; ſee alſo Fix'd, Volatile, *&c.*

But beſide *Alkaly Salts*, there are an Infinity of other Bodies, not ſaline; which anſwer to the Characters of *Alkaly*, *i. e.* produce much the ſame Effects with Acids, as the *Alkaly Salts* above mention'd.——And theſe *alkaline* Matters are in other reſpects of different Natures.

Some, *e. g.* are merely *Earthy*; as Quick-lime, Marble, Seal'd Earths, *&c.*—Others are *Metalline*; among which, ſome have their peculiar and appropriate Acids to act on 'em, as Gold, Tin, and Antimony, which only diſſolve with Aqua Regia; Silver, Lead, and Mercury, with Aqua fortis; and the others with other ſorts of Acids, as Iron, Copper, Zink, Biſmuth, *&c.*——There are others of the Animal Claſs; conſiſting, 1°, Of ſtony Matters found in the Viſcera of certain Species; as the Calculus humanus, Bezoards, Crabs Eyes, *&c.*——2°, Teſtaceous Matters and Shells; as Pearls, Oyſter-ſhells, Cuttle-fiſh Bones, the Shells or Coats of Lobſters, Crabs, *&c.*—3°, The Parts of Animals,

which

which by length of time, or ſome other Cauſe, are become ſtony, or even earthy; as the foſſil Unicorn's Horn, &c.—Laſtly, almoſt all Stone Marine Plants, as Coral, &c.

After all, the *Alkaline* Property does not appear to be native, but rather producible by Art.—This Opinion ſeems to have been firſt ſtarted by *Helmont*: before him, it was the ſtanding Opinion, that Fix'd *Alkalies* pre-exiſted in mix'd Bodies; and were only ſeparated or extricated from the Parts of the Compound. *Helmont* advanced, that they did not thus pre-exiſt in their *alkaline* Form, but were Productions of the Fire, by whoſe violent Action, part of the Salt which in the Concrete is all volatile, lays hold of ſome part of the Sulphur of the ſame Body; and both melting together, are fixed into an *Alkaly*: which Fixation he exemplifies, by what happens when Salt-petre and Arſenick, tho both volatile, being expoſed to the Fire, are flux'd by the Operation thereof, and made to fix each other.

Some late Chymiſts, and particularly M. *Geoffroy*, carry the Point ſomething further, and aſſert, that all *Alkaly Salts* whatever, both Fix'd and Volatile, are wholly the Effect of Fire; in that before any Action of the Fire, they did not pre-exiſt in the Mixt wherein they afterwards appear'd. See FIRE.

Notwithſtanding all the ſeeming Oppoſition and Hoſtility between Acids and *Alkalies*, they may be converted into one another; at leaſt, Acids are convertible into *Alkalies*; as is ſhewn at large by M. *Geoffroy* in a Diſcourſe expreſs, in the *Mem. de l'Acad.* An. 1717, where the Nature and Origin of *Alkalies* is excellently explain'd.

Alkaly Salts, according to this Author, are only Acids concentrated in little Molecules of Earth, and united with certain Particles of Oil, by means of Fire.

When an Acid, which we conceive in the general as a ſmall, ſolid, pointed Spiculum, happens to be abſorb'd or concentrated in a proper Portion of Earth; the whole becomes denominated a *Saline*, *Compound*, *Neutral*, or *Intermediate Salt*; by reaſon the Acid, thus incloſed in a Sheath, cannot excite the ſame Savour as when diſengag'd therefrom; and yet excites a ſaline Taſte: and for this reaſon is compound, &c.

Now, Fire is the only Agent capable of diſengaging the Acid, from the Earth it is thus inveſted withal. Upon this, the Acid being lighter than the Earth, riſes, and evaporates; leaving the Earth at the bottom of the Veſſel; which for this Reaſon is called *Fix'd*, in contradiſtinction to the Acid, which is *Volatile*. This Earth, thus bereav'd of its Acid, is left with its Pores open and empty, which before were fill'd; and withal, in ſuſtaining the Action of Fire, it neceſſarily retains ſome of the Particles thereof, which give it an acrimonious Taſte, that mere Earth could never have.—From this Taſte it is called *Salt*; and from its Pores being open, and thus diſpoſed to admit and imbibe new Acids, it is called *Alkaly Salt*. See EARTH, SALT, &c.

Now, it is not to be imagin'd, that an Earth which has once been impregnated with Acids, can ever be perfectly diveſted thereof; there will ſtill remain ſome, tho much leſs than before. So that an *Alkaly* may be conceived as only a too ſmall Quantity of Acid, incloſed in too large a Quantity of Earth.

The viſible and ſenſible Fire is not the only Agent capable of ſeparating Acids from their Earth; Fermentation has the ſame Effect, in virtue of that pure active Fire produced or concern'd therein. *Alkalies*, therefore, are the Production, either of the one, or the other Fire; and the ſame may be ſaid of the Acids diſengag'd therefrom; it being the Diſ-union of the Parts of the ſame Salt occaſion'd by Fire, that yielded both the Acids as well as the *Alkalies*. All the Difference is, that the *Alkaly* imbibes and retains certain Corpuſcles of the Fire, whereas nothing foreign is ſuperadded to the Acid.

On this Principle every Acid is volatile, and every *Alkaly* ſhould be fix'd, if the *Alkaly* were only Earth: But, in regard the little *Acid* ſtill remaining in the *Alkaly*, may be united with a Portion of Oil, as well as a Portion of Earth; and Oil is known to be volatile; the Compound, that is, the *Alkaly*, muſt be volatile, in caſe the Oil prevail therein.

In this Caſe, the *Alkaly* is found to have a ſtrong, penetrating, urinous Taſte and Smell; and is what we call a *Volatile urinous Alkaly Salt*.

Theſe things well conſider'd; it will be eaſy to aſſign what muſt enſue upon the Separations, or new Unions of the Parts of a Mixt.

An *Acid*, 'tis evident, may become an *Alkaly*, in that after having been ſeparated from its Matrix, it may be reſtored in a ſmall Quantity to another Matrix, either wholly earthy or earthy and oleaginous.—In the firſt Caſe, it will become a *Fix'd Alkaly*; in the ſecond, it may be, a *Volatile Alkaly*, if in the ſuppoſed Matrix the Proportion of Oil prevail over that of Earth; and in this Caſe it will be *urinous*.

Again, what before was a fix'd *Alkaly*, may become Volatile and Urinous, by depoſiting or letting go part of its Earth, and taking Oil in its ſtead.

Theſe Tranſmutations are not found equally eaſy and practicable in the three different Kinds of Mixts, or the three Kingdoms; by reaſon of the Diverſity of Circumſtances that muſt concur thereto.—They are much the moſt rare and difficult in the Mineral Realm; by reaſon, no doubt, that the Parts of Minerals are more cloſely ty'd together, and have, as it were, leſs play. The only inſtance Chymiſtry hath hitherto produced, of a Mineral Acid's being converted into a Fix'd *Alkaly*, is in the Operation of fixing Salt-petre.

The Vegetable Kingdom, it is obſerv'd, furniſhes a large Quantity of fix'd *Alkaly* Salt; and a little volatile *Alkaly*: The Animal Kingdom, on the contrary, affords a deal of volatile *Alkaly* Salt, and but little fix'd. The Foſſil Kingdom affords a very little native fix'd *Alkaly* Salt, as the *Egyptian* Natrum, and the Salts procured by Lotion from ſaline Earth about *Smyrna* and ſome other Places of the Eaſt; and the Chymiſts have alſo found a Method of converting Nitre into a fix'd *Alkaly*: But no body hath hitherto produced a volatile *Alkaly* from the Acids of the Mineral Kingdom.—And yet, if Acid Salts of the Vegetable Kind be convertible either into fixed or volatile *Alkalies*, why may not Mineral Acids be ſuſceptible of the ſame Change? ſince Vegetable Acids are originally no other than Mineral ones: For, from whence but the Earth ſhould Plants derive their acid Juice?

In effect, M. *Geoffroy* has at length ſhewn the Operation feaſable, by an actual Transformation of the ſame Acid, Nitre, into a volatile urinous *Alkaly*. See the *Mem. de l'Acad.* ubi ſupra. See alſo SALT-PETRE, &c.

By the way, it is to be noted, that the Inſtance of *Egyptian Natrum* or Nitre, furniſhes an Objection againſt the general Aſſertion of all *Alkalies* being artificial, or produced by Fire: Mr. *Boyle*, who had ſome of this Salt ſent him by the *Engliſh* Ambaſſador at the *Porte*; found that Vinegar would work briſkly on it, even in the Cold; "Whence, *ſays he*, it appears, that the *Egyptian* Nitre, "acknowledg'd to be a native Salt, and made only by the "Evaporation of the ſuperfluous Water of the *Nile*, is yet "of a lixivious Nature, or at leaſt abounds with Particles "that are ſo, tho produced without any precedent Incineration, and the Matter of it expoſed to no Violence of the "Fire, to make it afford an *Alkaly*." *Producib. of Chym. Princip.*——He adds, "However, he does not know any "other Body in Nature, except this, wherein the *Alkaline* "Properties are not produced." *Ibid.*—And proceeds to give Inſtances of *Alkalies* being made from Sea Salt, and other Acids; and ſhews, "how the ſame Body, without "the Addition of any other Salt, may by varying the manner of the Fire's Application, be made either to afford "little elſe than Acids, or a greater or leſs Quantity of *Alkaly*." *Id. ibid.*

For the Theory of the Operation of Acids upon Alkalies. See ACID.

Hypotheſis of ALKALY *and Acid.*

Tachenius, and *Sylvius de la Boe*, follow'd by the Tribe of vulgar Chymiſts, ſtrenuouſly aſſert Sal *Alkaly* and Acid to be the only univerſal Principles of all Bodies; and by means hereof, account for the Qualities of Bodies, and the reſt of the Phænomena of Nature; particularly thoſe in the Animal Oeconomy.—In a word, *Alkaly* and Acid are ſubſtituted in the ſtead of Matter, and Motion. See PRINCIPLE, ELEMENT, &c.

Mr. *Boyle* attacks this Hypotheſis with great force of Argument.—In effect, 'tis at beſt but precarious to affirm, that Acid and *Alkaline* Parts are found in all Bodies.

When the Chymiſts ſee Aqua fortis diſſolve Filings of Copper, they conclude, that the acid Spirits of the Menſtruum meet in the Metal with an *Alkaly*, upon which they work; but how unſafe a way of arguing this is, appears hence, that Spirit of Urine, which is allowed a volatile *Alkaly*, and accordingly makes a great Conflict with Aqua fortis, readily diſſolves Filings of Copper, and more genuinely than the acid Liquor.—So, when they ſee the Magiſtery of Pearl or Coral, prepared by dropping Oil of Tartar into the Solution of thoſe Bodies made with Spirit of Vinegar; they aſcribe the Precipitation to the fixed *Alkaly* of the Tartar, which mortifies the Acidity of the Spirit of Vinegar: whereas, the Precipitation would no leſs enſue, if, inſtead of the *alkalizate* Oil of Tartar, that ſtrong Acid, Oil of Sulphur *per Campanam*, were uſed.

It may alſo be doubted, whether it be juſt to ſuppoſe, that when an Acid is diſcover'd in a Body, the Operation of that Body on another, abounding with an *Alkaly*, muſt be the Effect of a Conflict between thoſe two Principles.—For, an acid Body may do many things, not ſimply as an Acid, but on account of a Texture or Modification, which endows it with other Qualities as well as Acidity. Thus, when the Chymiſts ſee an acid Menſtruum, as Aqua fortis, Spirit of Salt, Oil of Vitriol, &c. diſſolve Iron, they preſently aſcribe the Effect to an Acidity in the Liquors; tho well dephlegmed urinous Spirits, which they hold to have a great Anti-

tipathy to Acids, will readily diſſolve crude Iron even in the Cold.

Further, the Patrons of this Hypotheſis, ſeem arbitrarily to have aſſigned Offices to each of their two Principles, as the Chymiſts do to each of their *tria prima*; and the Peripateticks to each of their four Elements.——But 'tis not enough to ſay, that an Acid, for inſtance, performs theſe things, and an *Alkaly* thoſe; and that they divide the Operations and Phænomena of natural Bodies between them: Aſſertions of ſuch moment ought not to be received, without further Proof. Indeed, the very Diſtribution of Salts into Acids and *Alkalies*, has ſomewhat arbitrary in it; there being not only ſeveral things wherein the Acids agree with *Alkalies*, but alſo ſeveral things wherein each differs from it ſelf.—To ſay nothing of the Diverſity of fix'd and volatile *Alkalies* abovemention'd; ſome, as Salt of Tartar, will precipitate the Solution of Sublimate into an Orange-tawny; others, as Spirit of Blood and Hartſhorn, precipitate ſuch a Solution into a milky Subſtance; and Oil of Tartar very ſlowly operates upon Filings of Copper, which Spirits of Urine and Hartſhorn will readily diſſolve in the Fire. And among Acids themſelves the difference is no leſs; for ſome of them will diſſolve Bodies that others will not: and this even where the Menſtruum that will not diſſolve the Body, is reputed much ſtronger than that which does; as dephlegmated Spirit of Vinegar will diſſolve Lead reduced to minute Parts in the cold, which is an Effect that Chymiſts expect not from Spirit of Salt. Nay, one Acid will precipitate what another has diſſolved, and *è contra*; as, Spirit of Salt will precipitate Silver out of Spirit of Nitre. Add, the Properties peculiar to ſome particular Acids, as that Spirit of Nitre or Aqua fortis, diſſolves Camphire into an Oil, and coagulates common Oil into a conſiſtent Subſtance like Tallow; and tho it will both corrode Silver, Copper, Lead, and Mercury, and keep them diſſolved, it quickly lets fall almoſt the whole Body of Tin.

'Tis no wonder that the Definitions given of Acid and *Alkaly* ſhould be inaccurate and ſuperficial; ſince the Chymiſts themſelves do not ſeem to have any determinate Notion of ſure Marks, whereby to know them diſtinctly.—For, to infer, that, becauſe a Body diſſolves another, which is diſſoluble by this or that known Acid, the Solvent muſt alſo be Acid; or to conclude, that, if a Body precipitates a diſſolved Metal out of a confeſſedly acid Menſtruum, the Precipitant muſt be an *Alkaly*, is precarious: ſince Filings of Spelter will be diſſolved by ſome *Alkalies*, *viz.* Spirit of Sal Ammoniack, *&c.* as well as by Acids; and Bodies may be precipitated out of acid Menſtrua, by other Acids, and by Liquors wherein there appears not the leaſt *Alkaly*. Add, that a Solution of Tin-glaſs, made in Aqua fortis, would be precipitated both by Spirit of Salt, and by common Water.—Nor does that other Criterion of Acids and *Alkalies*, *viz.* the Heat, Commotion, and Bubbles excited upon their being put together, appear more determinate; ſince almoſt any thing fitted variouſly and vehemently to agitate the minute Parts of a Body, will produce heat in it.—Thus, tho Water be neither an Acid nor an *Alkaly*, it will quickly grow very hot, not only with the highly acid Oil of Vitriol, but with the *alkalizate* Salt of Tartar. See HEAT.

Neither is the Production of Bubbles, tho accompany'd with a hiſſing Noiſe, a certain Sign; ſuch Production not being a neceſſary Effect of Heat, excited by Conflict, but depending on the peculiar Diſpoſition of the Bodies put together, to extricate, produce, or intercept Particles of Air.—Hence, as Oil of Vitriol, mix'd in a due Proportion with fair Water, may be brought to make the Water very hot, without exciting Bubbles: ſo Mr. *Boyle* has found, that *alkalizate* Spirit of Urine, drawn with ſome kinds of Quick-lime, being mixed with Oil of Vitriol moderately ſtrong, would afford an intenſe heat, whilſt it produced either no manifeſt Bubbles at all, or ſcarce any; tho the urinous Spirit was ſtrong, and in other Trials operated like an *Alkaly*: and tho with the Spirit of Urine made *per ſe*, in the common way, Oil of Vitriol will produce a great hiſſing, and a multitude of conſpicuous Bubbles. On the other ſide, ſome acid Spirits, as of Verdegreaſe, made pure, poured on Salt of Tartar, will frequently make a Conflict, and produce a large froth; tho not accompany'd with any manifeſt heat. See EBULLITION.

Many make the Taſte the Touchſtone whereby to try Acids and *Alkalies*: But there is a multitude of Bodies, wherein we can ſo little diſcern by the Taſte which of the Principles is predominant, that one would not ſuſpect there was a Grain of either of them therein: Such are Diamonds, moſt Gems, and many ignobler Stones; Gold, Silver, Mercury, *&c.* There are alſo Bodies abounding with acid or *alkalizate* Salts; which either have no Taſte, or a quite different one from that of the chymical Principles.—Thus, tho Venice-glaſs be in great part compoſed of a fix'd *Alkaly*, it is inſipid on the Palate: And Cryſtals of Silver and Lead, made with Aqua fortis, and containing numerous acid Particles of the Menſtruum, manifeſt nothing of Acidity in the Mouth; the latter having a ſaccharine Sweetneſs, and the former an extreme Bitterneſs. And even in Vegetable Subſtances of a manifeſt Taſte, 'tis not eaſy to know by that, whether it be the Acid or the *Alkaline* Principle which predominates in 'em: As, in the eſſential Oils of Spices, and the groſs empyreumatical Oils of Wood; and even in Alcohol of Wine, which ſome contend to be an Acid, and others, an *Alkaly*. *Imperfect. of Chym. Doct. of Qual.*

ALKALIZATE, or ALKALINE *Bodies*, among Chymiſts, are ſuch as have their Pores naturally ſo formed, that they are fit to be pierced, and put into Motion by the Points of an Acid poured upon them. See ALKALY.

ALKEKENGI, a Medicinal Fruit, produced by a Plant of the ſame Denomination, and popularly called *Winter-Cherry*.

The Plant bears a near reſemblance to Solanum or Nightſhade; whence it is frequently called in *Latin* by that Name, with the Addition or Epithet of *Veſicarium*.—It is ſometimes alſo called *Halicacabum*.

The Fruit is celebrated for its lithontriptic Quality; and preſcribed to cleanſe the Urinary Paſſages of Gravel, and other Obſtructions. Its deterſive Quality alſo recommends it againſt the Jaundice, and other Diſorders of the Viſcera.

The *Trochiſchi Alkekengi*, prepared from it, are but little preſcrib'd in the modern Practice. See TROCHE.

ALKERMES, in Medicine, *&c.* a Term borrow'd from the *Arabs*.—The *Confection of Alkermes*, is a celebrated Remedy, of the Form and Conſiſtence of a Confection; whereof the Kermes Berries are the Baſis. See CONFECTION, and KERMES.

The other Ingredients, as preſcribed by the College, are Pippin-Cyder, Roſe-Water, Sugar, Ambergreaſe, Muſk, Cinnamon, Aloes Wood, Pearls, and Leaf Gold.—But the Sweets are uſually omitted.

It is much uſed as a Cordial; eſpecially, ſays Dr. *Quincy*, among Female Preſcribers, and in complaiſance to them: But that Author decries its Value in that Intention, and thinks it ought only to be regarded as a Sweetner.

ALLANTOIS, ALLANTOIDES, in Anatomy, a third Coat or Membrane of a Fœtus, inveſting part thereof, in manner of a Scarf, or Collar, extending from the *Cartilago Xiphoides*, to the bottom of the Hips. See FOETUS.

The *Allantois* makes part of the *Secundine*.—It is conceived as an urinary Tunic, placed between the Amnion and Chorion, which by the Navel and Urachus receives the Urine that comes out of the Bladder. See SECUNDINE, and URINE.

'Tis a Point controverted among Anatomiſts, whether the *Allantois* be found in Man.—M. *Drelincourt*, Profeſſor of Anatomy at *Leiden*, in an expreſs Diſſertation on this Membrane, maintains it peculiar to the Ruminating Kind. See RUMINANT.

Dr. *Hale*, on the contrary, has given an accurate Deſcription of the human *Allantois*; and aſſign'd the Reaſon why thoſe who believed its Exiſtence had not before fully found it out; and alſo an anſwer to thoſe who yet deny its reality. See *Philoſoph. Tranſact.* N° 271.

The Word is derived from ἀλλᾶς, *Farcimen*, a Gut, and εἶδος, *Forma*, Shape; becauſe, in many Brutes, it is in the Shape of a Gut-pudding: but in Man, and ſome others, it is round.—It is likewiſe called *Farciminalis*.

ALLEGATION, the Citation, or Quotation of an Authority, Book, Paſſage, *&c.* to make good any Point, or Aſſertion. See QUOTATION, CITATION, AUTHORITY, *&c.*

ALLEGIANCE, the legal Faith and Obedience, which every Subject bears to his Prince. See KING, FEALTY, *&c.*

This was antiently called *Ligence*; from the Latin *Ligare*, and *Alligare*, to bind, *q. d. Ligamen fidei*. See LIEGE.

Oath of ALLEGIANCE, is an Oath given in *England* to the King, in quality of a Temporal Prince or Sovereign; to diſtinguiſh it from the Oath given to him as Primate, or ſupreme Head of the Church, which is called the *Oath of Supremacy*. See OATH; ſee alſo KING, and SUPREMACY.

In this Senſe, the Word *Allegiance* comes from the Latin *ad Legem*.—The Quakers are diſpenſed with not taking the Oath of *Allegiance*; and in lieu thereof are only enjoin'd a Declaration. See DECLARATION.

ALLEGORY, ALLEGORIA, a Figure in Rhetorick, whereby we make uſe of Terms which in their proper Signification, mean ſomething elſe than what they are here intended to denote: Or, it is a Figure, whereby we ſay one thing, expecting it ſhall be underſtood of another, to which it alludes. See FIGURE, ALLUSION, *&c.*

An *Allegory* is properly a Series, or Continuation of *Metaphors*. See METAPHOR.

Such is that beautiful *Allegory* in *Horace*, Lib. I. Od. 14.

O Navis, referent in mare te novi
Fluctus, &c.

Where the *Ship*, ſtands for the *Republick*; *Waves*, for *Civil War*; *Port* for *Peace* and Concord; *Oars* for *Soldiers*; *Mariners* for *Magiſtrates*, &c.

The

The Old Teſtament is ſuppoſed by many to be a perpetual *Allegory*, or typical Repreſentation of the Myſteries of the New. See TYPE.

In effect, *Allegory* has a good Share in moſt Religions.—The *Jews*, we know, abound with 'em: *Philo Judæus* has three Books, *Of the Allegories* in the Hiſtory of the Six Days. See HEXAMERON.

Nor are the Heathens without *Allegories* in their Religion: it may even be ſaid, that the Uſe hereof is of a much earlier ſtanding in the *Gentile*, than in the *Jewiſh* World.—Some of their Philoſophers undertaking to give a Rationale of their Faith, and to ſhew the Reaſon and Scope of their Fables, and the antient Hiſtories of their Gods; found it neceſſary to put another Conſtruction on 'em, and maintain, that they ſignify'd ſomething very different from what they ſeem'd to expreſs.—And hence came the Word *Allegory*: for a Diſcourſe that in its natural Senſe, ἄλλο ἀγορεύει, ſignifies ſomething other than what is intended by it, makes what we properly call an *Allegory*.

This Shift they had recourſe to, in order to prevent People from being ſhock'd with thoſe Abſurdities which the Poets had introduced into their Religion; and to convince the World, that the Gods of *Greece* had not been thoſe vile Perſons which their Hiſtories repreſented them to be. By this means, the Hiſtory, as well as the Religion of *Greece*, was at once converted into *Allegory*; and the World left to ſeek for them both in a Heap of Fables, few of which have been ſolved to any purpoſe to this Day. See MYTHOLOGY.

The *Jews* finding the Advantages of this way of explaining Religion; made uſe of it to interpret the Sacred Writings, ſo as to render 'em more palatable to the Pagans.

The ſame Method was adopted by the primitive Writers of Chriſtianity. See ALLEGORICAL.

ALLEGORICAL, ſomething containing an *Allegory*. See ALLEGORY.

The Divines find divers Senſes in Scripture; a Literal, a Myſtical, and an *Allegorical* Senſe. See MYSTIC, *&c.*

The Prophecies, in particular, deliver'd in the Old Teſtament, are ſaid to be many of 'em accompliſh'd in the New; not in their primary and literal, but in their ſecondary, or *Allegorical* Senſe. See PROPHESY.

The Fathers, and other antient Interpreters of Scripture, are almoſt all *Allegoriſts*; as *Origen*, *Clemens Alexandrinus*, St. *Auguſtin*, *Gregory Nazianzen*, &c. See further under the Article TYPE.

ALLEGRO, in Muſick, a Word uſed by the *Italians* to denote one of the ſix Diſtinctions of Time. See TIME.

Allegro expreſſes a very quick Motion, the quickeſt of all excepting *Preſto*.

The uſual ſix Diſtinctions ſucceed each other in the following Order, Grave, Adagio, Largo, Vivace, *Allegro*, and Preſto.

It is to be obſerved, that the Movements of the ſame Name, as *Adagio* or *Allegro*, are ſwifter in Triple than in Common Time.—The Triple $\frac{3}{8}$ is uſually *Allegro*, or *Vivace*; the Triples $\frac{6}{4}$, $\frac{6}{8}$, $\frac{9}{8}$, $\frac{12}{8}$, are moſt commonly *Allegro*. See TRIPLE.

ALLELUJAH. See HALLELUJAH.

ALLEMAND, ALMAIN, a kind of grave, ſolemn Muſick, where the Meaſure is good, and the Movement ſlow. See MUSICK, SONG, MEASURE, *&c.*

ALLER *Good*, in our antient Writers.—The Word *Aller* ſerves to make the Expreſſion of ſuperlative Signification. So, *Aller Good* is the greateſt Good. Sometimes it is wrote *Alder*.



ALLERION, or ALERION, in Heraldry, a ſort of Eaglet, without either Beak, or Wings. See EAGLET.

The *Allerion* appears much the ſame with the *Martlet*, except that the Wings of the former are ſhut, and they are repreſented, as it were, Paſſant; whereas the *Allerion* is ſpread, and is repreſented In pale. Add, that among our Heralds, the Martlet has a Beak. See MARTLET.

The Name is *French*; and is ſaid to have been introduced for the Word *Eaglet*: 'Tis added, that the Practice of calling Eaglets, *Allerions*, and of repreſenting 'em ſpread, without Feet and Beaks, is not above an hundred Years old. Hence, *Menage* derives the Word from *Aquilario*, a Diminutive of *Aquila*.

ALLEU, or ALLODE, in our antient Cuſtoms. See ALLODIAL.

ALLEVIARE, in old Records, to levy or pay an accuſtomed Fine or Compoſition. See LEVY.

ALLEVIATION, the Act of *alleviating*, *i. e.* of allaying, or eaſing any Grievance: as a Pain, Diſeaſe, *&c.* See PALLIATING; ſee alſo PAIN, *&c.*——The Word is compounded of *ad*, and *levis*, Light.

ALLEY, in Gardening, a ſtrait parallel Walk, border'd or bounded on each hand with Trees, Shrubs, or the like. See GARDEN, WALK, EDGING, *&c.*

Alleys are uſually laid either with Graſs or Gravel. See GRASS-*Walk*, and GRAVEL-*Walk*.

An *Alley* is diſtinguiſh'd from a *Path*, in this; that in an *Alley* there muſt always be room enough for two Perſons, at leaſt, to walk a-breaſt: So that it muſt never be leſs than five Feet in breadth; and there are ſome who hold that it ought never to have more than fifteen.

Counter-Alleys, are the little *Allies* by the Sides of the great ones.—A *Front-Alley*, is that which runs ſtrait in the Face of a Building.—A *Tranſverſe-Alley*, that which cuts the former at right Angles.—A *Diagonal-Alley*, that which cuts a Square, Thicket, Parterre, *&c.* from Angle to Angle.—A *Sloping-Alley*, is that which either by reaſon of the Lowneſs of the Point of Sight, or of the Ground, is neither parallel to the Front, nor to the Tranſverſe *Alleys*.

An *Alley in Ziczac*, is that which has too great a Deſcent, and which, on that account, is liable to be damaged by Floods; to prevent the ill Effects whereof, it has Platbands of Turf running acroſs it from Space to Space, which help to keep up the Gravel. This laſt Name is likewiſe given to an *Alley* in a Labyrinth, or Wilderneſs, form'd by ſeveral returns of Angles, in order to render it the more ſolitary and obſcure, and to hide its Iſſue.

Alley in Perſpective, is that which is larger at the Entrance than at the Iſſue; to give it a greater Appearance of length.

Alley of Compartiment, is that which ſeparates the Squares of a Parterre.

The Word *Alley* is derived from the *French* Verb *Aller*, to go; the ordinary uſe of an *Alley* being for a Walk, Paſſage, or Thorow-fare from one Place to another.

ALLIANCE, the Union or Connection of two Perſons, or two Families, by means of Marriage; called alſo *Affinity*. See MARRIAGE, and AFFINITY.

The Law of the Twelve Tables forbids all *Alliance* between Perſons of unequal Rank and Condition.—And in *Portugal*, we are told, the Daughters of the Nobility are prohibited to *ally* with ſuch as have never been in the Wars.

The Word is form'd of the Latin *ad ligatio*, *q. d.* a tying together.

ALLIANCE is alſo extended to the Leagues, or Treaties of Peace concluded between ſovereign Princes and States, for their mutual Safety and Defence. See TREATY, LEAGUE, *&c.*

The *Triple Alliance* between *England*, *Holland*, and *Sweden*, is famous.—So is the *Quadruple Alliance*, between *England*, *Holland*, the Emperor, and King of *France*.

In this Senſe, we ſay, *Allies*, for Confederates: The King and his *Allies*; the *Allies* of the Treaty of *Hanover*, &c. See CONFEDERATE.

ALLIGATION, in Arithmetick, a Rule or Operation, whereby Queſtions are reſolved, relating to the Mixture of divers Commodities or Ingredients together, with the Value, Effect, *&c.* thereof. See RULE, MIXTURE, *&c.*

The Word is form'd of the Latin *Alligare*, to tie together; by reaſon, perhaps, of a ſort of Vincula, or circular Ligatures, ordinarily uſed to connect the ſeveral Numbers together.

Alligation is of two Kinds, *Medial* and *Alternate*.

ALLIGATION *Medial*, is when from the ſeveral Quantities and Rates of divers Simples given, we diſcover the mean Rate of a Mixture compounded out of 'em.

The ſeveral Caſes hereof, will come under the following Rules.

The Quantity of the Ingredients, and the Prices of each being given; to find the Price or Value of ſome part of the Mixture.——Multiply the Ingredients ſeverally by their own Prices, and divide the Sum of thoſe Products by the Sum of the Ingredients; the Quotient anſwers the Queſtion.

The Prices of the ſeveral Ingredients, and the Sum paid or received for the Mixture being given; to find what quantity of each was bought or ſold.——Divide the Sum paid or received, by the Sum of the particular Prices; the Quotient is the Anſwer.

The Ingredients of a Mixture being given, to augment or diminiſh the Mixture proportionally.—Sum up the Ingredients; then ſay, As that Sum is to the Augmentation or Diminution, ſo is the Quantity of each Parcel of the Mixture, to the Quantity of the Mixture deſired.

The Nature, Quality, &c. of the ſeveral Ingredients of a Mixture being given, to find the Temperament or Degree of Fineneſs reſulting from the Whole.—Place the ſeveral Quantities of the Mixture in Rows; againſt which place orderly their ſeveral Qualities of Fineneſs; and multiply each Quantity by its own Quality or Degree of Fineneſs: then, as the Sum of the Quantities is to their Products, ſo is Unity, to the Quality or Fineneſs of the Mixture.

The Quantities of a Mixture being given; to find the particular Quantities of any Ingredient in any part of the Mixture.——If the Mixture be of only two Things, ſay, As the Total of the Ingredients in the Compoſition, is to the Part of the Mixture propoſed; ſo is the Quantity of the Ingredient propoſed in the whole Compoſition, to the Quantity of the Ingredient in the Part deſired.—If the Mixture conſiſt of more Ingredients, repeat the Work for each.

Given the Total of a Mixture, with the whole Value, and the Values of the ſeveral Ingredients; to find the ſeveral

Quantities mixed, tho unequally.——Multiply the Total of the Mixture by the leaſt Value, ſubtract the Product from the total Value; and the Remainder is the firſt Dividend: Then take the ſaid leaſt Value from the greateſt valued Ingredient, and the Remainder is the firſt Diviſor. The Quotient of this Diviſion ſhews the Quantity of the higheſt-pric'd Ingredient, and the other is the Complement to the Whole. And when more Ingredients than two are in the Compoſition, the Diviſors are the ſeveral Remains of the leaſt Value, taken from the other: The Dividends are the Remains left upon the Diviſions, till none remain there; which will be one ſhort of the Number of Ingredients: and this defective Ingredient is to be ſupplied as a Complement; and in Diviſion, no more muſt be taken in every Quotient, than that there may remain enough for the other Diviſors; and the laſt to leave nothing remaining. See DIVISION.

ALLIGATION *Alternate*, is when the Rates or Qualities of divers Simples are given; and the Quantity of each is required neceſſary to make a Mixture of the given Rate or Quality.

Alligation Alternate, ſhews the due Proportion of ſeveral Ingredients; and counter-changes the Places of ſuch Exceſſes or Differences as ariſe between the mean Price and the Extremes; aſcribing that to the greater Extreme, which proceeds from the leſſer; and contrarily.

The Rules which obtain in *Alligation Alternate*, are as follow.

Every greater Extreme to be linked with one leſſer.

If either of the Extremes be ſingle, and the other Extremes plural; the ſingle Extreme to be linked to all the reſt.

If both greater and leſſer Extremes be not plural, they may be linked ſo diverſly, that ſeveral Differences may be taken, and a Variety of Anſwers be made to the Queſtion, yet all true: But if one of the Extremes be ſingle, there can be but one Anſwer.

The Numbers being linked, take the Difference of each from the mean or common Price; and place this difference againſt the Number it is linked to, alternately.

Every Number linked with more than one, muſt have all the Differences of the Numbers it is linked to, ſet againſt it.

Thoſe Differences reſolve the Queſtion, when the Price of every of the Ingredients is given without their Quantities; and the Demand is to mix them ſo as to ſell a certain Quantity at a mean Rate.

But when the Quantity of one, with the Price of all the Ingredients is given; and the Demand is to know the Quantities of the other Ingredients; then, the Rule of Three is to be uſed.

And when the Price of every Ingredient is given, without any of their Quantities, and the Demand is to make up a certain Quantity to be ſold at a mean Rate; then all the Differences added together will be the firſt Number in the Rule of Three; the whole Quantity to be mixed the ſecond Number; and each Difference apart the ſeveral third Numbers: And ſo many Sorts mixed, ſo many Operations of the Rule of Three. See RULE *of Three*.

We ſhall add an Example, wherein both the Kinds of *Alligation* have place.——Suppoſe a Mixture of Wine of 119 Quarts, required to be made of Wines of the following Prices 7 *d.* 8 *d.* 14 *d.* and 15 *d. per* Quart; and ſo, as that the Whole may be afforded at 12 *d. per* Quart.

Having linked 8 to 14, and 7 to 15, and counterchang'd their Difference from the common Price, 12 *d.* the Sum of their Difference is found to be 14; by which dividing 119, the Quotient is $8\frac{7}{14}$, or $8\frac{1}{2}$, or for conveniency in Operation, $\frac{17}{2}$.

		Quarts.
8 2	$\frac{17}{2} + 2 = \frac{34}{2} =$	17
14 3	$\frac{17}{2} + 4 = \frac{68}{2} =$	34
7 4	$\frac{17}{2} + 3 = 5\frac{1}{2} =$	$25\frac{1}{2}$
15 5	$\frac{17}{2} + 5 = 8\frac{5}{2} =$	$42\frac{1}{2}$
14		119

ALLIOTH, in Aſtronomy, a Star in the Tail of the Great Bear, whoſe Obſervation is much uſed at Sea. See STAR.

Its Longitude, Latitude, &c. ſee among the reſt of URSA *Major*.

To find the Latitude, or Elevation of the Pole by this Star. See LATITUDE, and POLE.

ALLOCATION, ALLOCATIO, the admitting, or allowing of an Article in an Account; and paſſing it as ſuch. See ACCOUNT.

The Word is form'd of the Latin *Alloco*.

ALLOCATION is alſo an Allowance made upon an Account; uſed in the Exchequer. See ALLOCATIONE.

ALLOCATIONE *Facienda*, a Writ directed to the Lord Treaſurer and Barons of the Exchequer, upon the Complaint of ſome Accountant; commanding them to allow him ſuch Sums as he hath in execution of his Office lawfully expended.

ALLODIAL, ALLODIAN, in antient Cuſtoms.——*Terra* ALLODIA, or ALLODIAL *Land*, is that whereof a Perſon has the abſolute Property; or which he holds without paying any Service or Acknowledgment to any Superior Lord. See PROPERTY, &c.

Such an Inheritance is *Allodial*, *i. e.* not ſubject to any Charge, Service, &c. See FREE *Land*.

In this Senſe, *Allodial* ſtands oppoſed to *Feudal*, or *Beneficiary*. See FEE, BENEFICE, &c.—See alſo ALLODIUM.

ALLODIUM, ALLODE, ALLODUS, or ALLEUD, Land held of a Man's own Right.—*Bollandus* explains *Allodium*, to be *Prædium, ſeu quævis poſſeſſio libera juriſque proprii, & non in Feudam Clientelari onere accepta*. See ALLODIAL.

After the Conqueſt of the *Gauls*, the Lands were divided in two manners, *viz.* into Benefices, *Beneficia*; and *Allodia*.

Benefices, conſiſted in Lands given by the King to his Officers and Soldiers; either for Life, or for a Time fixed. See BENEFICE.

Allodes, or *Alleuds*, were ſuch Lands as were left in Property to the antient Poſſeſſors.—The 62d Title of the *Salic* Law, is, *De Allodis*; where the Word ſignifies Hereditary Lands, or thoſe derived from a Man's Anceſtors. Whence, *Allodium* and *Patrimonium* are frequently uſed indiſcriminately. See PATRIMONY.

In the antient Capitulars of *Charlemaign* and his Succeſſors, we find *Allode* conſtantly oppoſed to Fee; but, toward the Period of the ſecond Race of Kings, it loſt the Prerogative; the Feudal Lords obliging the Proprietors of *Allodial* Lands to hold of them for the future. The ſame Change alſo happened in *Germany*, &c. See TENURE.

The Uſurpation of tke Feudal Lords over the *Allodial* Lands, went ſo far, that they were almoſt all either ſubjected to 'em, or converted into Fees: Whence the Maxim, *Nulla Terra ſine Domino*, No Land without a Lord.

The Origin of the Word is infinitely controverted. *Caſſineuve* ſays, it is almoſt as obſcure as the Head of the *Nile*. Few of the *European* Languages, but one Etymologiſt or other has derived it from.

ALLONGE, in Fencing, a Thruſt, or Paſs at the Enemy. See PASS, GUARD, &c.

The Word is *French*, form'd of the Verb *Allonger*, to lengthen out a thing by piecing another to it.

ALLOTTING, or ALLOTMENT *of Goods*, in Matters of Commerce, is when a Ship's Cargo is divided into ſeveral Parts, to be bought by divers Perſons, whoſe Names are wrote on as many Pieces of Paper, which are apply'd by an indifferent Perſon to the ſeveral *Lots* or Parcels; by which means, the Goods are divided without Partiality; every Man having the Parcel which the *Lot* with his Name on, is appropriated to.

ALLOY, or ALLAY, in Matters of Coinage, &c. a Proportion of a baſer Metal, mingled with a finer, or purer. See METAL, MIXTURE, &c.

Such is the Quantity of Copper mingled with Gold, in the Coining of Species of that Metal. See GOLD, MONEY, &c.

The Intention of *Alloy*, is to give the Gold a due hardneſs, that it may not waſte with wearing; and to increaſe its Weight, ſo as to countervail the Charges of Coinage. See SEIGNEURAGE.

Gold that has more of this, than it ought to have; is ſaid to be of a *coarſer* or *greater Alloy*, or below Standard. See STANDARD.

The Proportion of *Alloy* for Gold uſed in our Mints, is about a 12th Part. See COINING.

The Word ſeems derived from the French, *Loy*, Law; in regard the *Alloy* is fix'd by Law.

ALLUM, or ALUM, *Alumen*, a kind of Mineral Salt, of an acid Taſte, leaving in the Mouth a Senſe of Sweetneſs accompany'd with a conſiderable Degree of Aſtringency. See SALT.

The antient Naturaliſts allow of two ſorts of *Allum*; the one *Native*, the other *Factitious*.—The Natural is found in the Iſland of *Milo*, being a kind of whitiſh Stone, very light, friable and porous; and ſtreak'd with Filaments reſembling Silver.

The Factitious *Allum*, is prepared in different manners, according to the different Materials whereof it is made.

Allum is of divers Kinds, *Red*, *Roman*, *Citron*, *Plumoſe*, *Saccharine*, and *Burnt*. The three laſt of which, are not proper native *Allums*.

England, *Italy*, and *Flanders*, are the Countries where the *Allum* is principally produced.—The *Engliſh Allum*, called alſo *Roche-Allum*, *Allumen Rupeum*, is made from a bleuiſh mineral Stone, frequent in the Hills in *Yorkſhire* and *Lancaſhire*. This Stone they calcine on a Hearth or Kiln; then ſteep it ſucceſſively in ſeveral Pits of Water: then boil it for about 24 Hours: Laſtly, letting it ſtand for about two Hours; the Impurities ſubſide, and leave a pure Liquor; which, removed into a Cooler, and ſome Urine added to it, begins,

begins, in three or four Days, to gather into a Maſs; which being taken out, waſhed, and melted over again, is fit for uſe.

The Mineral Stone, before it is calcined, being expoſed to the Air, will moulder in pieces, and yield a Liquor whereof Copperas may be made; but being calcined it is fit for *Allum*.—As long as it continues in the Earth, or in Water, it remains a hard Stone.—Sometimes a Liquor will iſſue out of the Side of the Mine, which by the Heat of the Sun is turned into a Natural *Allum*.

In the *Allum*-Works at *Civita Vecchia*, the Proceſs, as deſcribed by M. *Geoffroy*, is ſomewhat different.—The Stone, which is of a ruddy hue, being calcined, they boil and diſſolve the Calx in Water; which imbibing the Salt, *i. e.* the *Allum*, ſeparates it ſelf from the uſeleſs Earth. Laſtly, leaving the Water thus impregnated with Salt to ſtand for ſome Days, it cryſtallizes of it ſelf, like Tartar about a But, and makes what they call *Roche* or *Roman-Allum*.

At *Solfatara*, near *Puzzuoli*, is a conſiderable oval Plain, the Soil whereof is wholly ſaline; and ſo hot, that the Hand cannot long bear it.—From the Surface hereof, in Summer-time, there ariſes a ſort of Flour, or ſaltiſh Duſt; which being ſwept up, and caſt into Pits of Water at the bottom of the Plain; the Heat of the Ground, without any other Fire, evaporates the Water, and leaves an *Allum* behind.

Allum diſſolves in Water, and what remains undiſſolved at bottom, is a ſort of Calx, which diſſolves readily enough in Oil, or Spirit of Vitriol.—And hence there ariſes ſome doubt, whether *Allum*, as it does not leave an Earth behind, does properly belong to the Claſs of Salts.—Mr. *Boyle* aſſures us, that *Allum* Ore robb'd of its Salt, does in tract of Time recover it again in the Air. See AIR.

The *Swediſh Allum* is made of a Mineral which contains a great deal of Sulphur and Vitriol, not to be taken away but by Calcination or Diſtillation. The Matter remaining in the Iron Veſſels uſed in ſeparating the Sulphur from the Mineral, being expoſed to the Air for ſome time, becomes a kind of blueiſh Aſhes, which they lixiviate, cryſtallize, and convert into *Allum*.

The Word *Allum* comes from the *Greek* ἅλς, *Salt*; or perhaps from the Latin *Lumen*, Light; becauſe it adds a Luſtre to Colours.

Allum is of ſome uſe in Medicine, in quality of an Abſorbent; but being apt to excite Vomiting, is not much uſed inwardly, and rarely without ſome ſmooth Aromatick, as a Corrector.—'Tis uſed outwardly in aſtringent Lotions, and is an Ingredient in ſeveral Dentifrices.

It is a principal Ingredient in Dying and Colouring; neither of which can be well performed without it.— It ſerves to bind the Colour upon the Stuffs, and has the ſame Uſes there, that Gum-water and glutinous Oils have in Painting. It likewiſe diſpoſes Stuffs to take the Colour, and adds a degree of Briſkneſs and Delicacy to it; as we ſee viſibly in Cochineal, and the Grain of Scarlet.

The Effects of *Allum* ſeem owing to its ſtyptick, or aſtringent Quality, by which it binds the finer Parts of Colours together, and prevents their exhaling. Hence alſo it preſerves Paper that has been dipp'd in its Water, from ſinking when wrote upon. See COLOUR, DYING, &c.

Saccharine ALLUM, bears a near reſemblance to Sugar.—It is a Compoſition of common *Allum* with Roſe-water, and Whites of Eggs, boil'd together to the Conſiſtence of a Paſte, and thus moulded at pleaſure. As it cools, it grows hard as Stone.

Burnt ALLUM, *Alumen Uſtum*, is *Allum* calcined over the Fire, and thus render'd whiter, more light, and eaſily pulveriz'd.

Plumoſe ALLUM, *Alumen Plumoſum*, is a ſort of ſaline, mineral Stone, of various Colours, moſt commonly white bordering on green; reſembling *Venetian* Talc, except that inſtead of Scales, it riſes in Threads or Fibres, reſembling thoſe of a Feather; whence its Name, from *Pluma*, Feather.

Some will have this to be the *Lapis Amianthus* of the Antients. See AMIANTHUS.

ALLUMINOR, or ENLUMINOR, or ILLUMINER, one who by Trade coloureth, or paints upon Paper or Parchment. See COLOUR, PAINTING, &c.

ALLUSION, ALLUSIO, in Rhetorick, a Figure whereby ſomething is applied to, or underſtood of, another, by reaſon of ſome Similitude of Name, or Sound.

Camden defines *Alluſion* a dalliance, or playing with Words like in Sound, but unlike in Senſe; by changing, adding, or ſubtracting a Letter, or two; whence Words reſembling one another, become applicable to different Subjects.

Thus the Almighty, if we may uſe ſacred Authority, chang'd *Abram*, *i. e.* high Father, into *Abraham*, *i. e.* Father of many.—Thus the *Romans* play'd on their tippling Emperor *Tiberius Nero*, by calling him *Biberius Mero*: and thus in *Quintilian* the four Fellow *Placidus*, is call'd *Acidus*.

Alluſions come very near to what we popularly call *Puns*. See PUN.

The Word is form'd of the Latin *ad*, and *ludere*, to play.

ALLUVION, ALLUVIO, in the Civil Law, an Acceſſion or Accretion made along the Sea-ſhore, or the Banks of large Rivers, by means of Tempeſts or Inundations. See ACCRETION, &c.

The Civil Law places *Alluvion* among the lawful means of Acquiſition; and defines it to be a latent imperceptible Accretion.——Hence, where any conſiderable Portion of Ground is torn away at once, by an Inundation; and join'd to ſome neighbouring Eſtate; this is not acquired by right of *Alluvion*, but may be claim'd again by the former Proprietor.

The Word is form'd of the Latin *Adluo*, I waſh to; compounded of *ad*, and *lavo*, I waſh.

ALMACANTARS, ALMACANTARAS, or ALMACANTARATS, in Aſtronomy. See ALMUCANTARS.

ALMACANTARS *Staff*. See ALMUCANTARS *Staff*.

ALMAGEST, the Name of a celebrated Book, compoſed by *Ptolemy*; being a Collection of many of the Obſervations and Problems of the Antients, relating both to Geometry and Aſtronomy.

In the Original *Greek* it was called σύνταξις μεγίστη, q. d. *Greateſt Conſtruction*, or *Collection*: Which laſt Word *Megiſte*, join'd to the Particle *Al*, gave occaſion to its being called *Almageſte* by the *Arabians*, who tranſlated it into their Tongue about the Year 800, by Order of *Maimon*, Caliph of *Babylon*.—The *Arabic* Word is *Almagheſti*.

Ricciolus has alſo publiſh'd a Reformed Aſtronomy, which he intitles, after *Ptolemy*, the *New Almageſt*; being a Collection of antient and modern Obſervations in Aſtronomy. See ASTRONOMICAL *Obſervation*.

ALMANACK, or EPHEMERIS, a Calendar or Table, wherein are ſet down the Days, and Feaſts of the Year, the Courſe of the Moon, &c. See CALENDAR, YEAR, DAY, MONTH, MOON, &c.

The Original of the Word is much controverted among Grammarians.—Some derive it from the *Arabick* Particle *Al*, and *Mana*, to count.—Others, and among them *Scaliger*, rather derive it from *Al*, and μηνὰς, the Courſe of the Months: Which is contradicted by *Golius*, who advances another Opinion; He ſays, that throughout the Eaſt, 'tis the Cuſtom for Subjects, at the Beginning of the Year, to make Preſents to their Princes; and among the reſt, the Aſtrologers preſent them with their Ephemerides for the Year enſuing; whence thoſe Ephemerides came to be called *Almanha*, i. e. *Handſels*, or New-Years Gifts. See EPHEMERIDES.

To ſay no more, *Verſtegan* writes the Name *Almon-ac*; and makes it of *Saxon* Original: Our Anceſtors, he obſerves, uſed to carve the Courſes of the Moon of the whole Year upon a ſquare Stick, or Block of Wood, which they called *Al-monaght*, q. d. *Al-moon-heed*.

The modern *Almanack* anſwers to the *Faſti* of the antient *Romans*. See FASTI.

The Neceſſaries for making an Almanack, *the Reader will find under the Article* CALENDAR.

Henry III. of *France*, very prudently decreed by an Ordonnance of 1579, that 'No *Almanack-Maker* ſhould preſume to give Predictions relating to Civil Affairs, either of States or private Perſons, in Terms either expreſs or covert.' See ASTROLOGY.

In the *Philoſoph. Collect.* we have a perpetual *Almanack*, deſcribed by Mr. *R. Wood*.

ALMANDIN, or ALBANDIN, a Precious Stone, of the Ruby Kind; ſomething lighter and ſofter than the Oriental Ruby: and as to Colour, partaking more of that of the Granat than the Ruby. See RUBY, GRANAT, &c.

It is rank'd among the richeſt of Stones; and takes its Name from *Albana*, a City of *Caria*, whence *Pliny* ſays it is brought. See PRECIOUS *Stone*.

ALMARIA, for *Armaria*, in our antient Records, the Archives of a Church, or the like. See ARCHIVE.

ALMERY. See AMBRY.

ALMOIN, in Law. See FRANK-*Almoin*.

ALMOND, *Amygdala*, a kind of Fruit, incloſed with a thick Stone, and under a thin Skin. See FRUIT.

The *Almond* is the Produce of a pretty tall Tree, reſembling a Peach Tree; frequent in *Germany*, *France*, and the neighbouring Countries; as alſo in *Barbary*, &c.—Its Flowers are pentapetalous, and ranged in the Roſe manner: The Piſtil becomes a fleſhy Fruit, containing a Seed, which is the *Almond*; and which drops out when the Fruit is arrived at Maturity.

Almonds are chiefly of two Kinds, *Sweet* and *Bitter*.

The *Sweet Almonds*, *Amygdalæ Dulces*, are of a ſoft, grateful Taſte; and are reputed cooling, healing, emollient, and nutritive: are much preſcribed in Emulſions, and found of good effect in all Diſorders from cholerick and acrimonious Humours.—The *Oil of Sweet Almonds*, drawn without Fire, is a ſafe and uſeful Remedy in nephritick Pains. It is alſo of good repute for Coſtiveneſs and Gripes in Children.

For the manner of procuring the Oil of Sweet Almonds, *ſee the Article* OIL.

Bitter Almonds, *Amygdalæ Amaræ*, are held aperient, deterſive, and diuretick; and on thoſe Accounts commended in Obſtructions of the Liver, Spleen, Uterus, *&c.*—Some eſteem 'em good to take off the Effects of Drunkenneſs. Accordingly, *Plutarch* relates, that *Druſus*'s Phyſician, a ſtout Drinker, took down at every Cup five *Bitter Almonds*, to allay the Heat and Fumes of the Wine.

The expreſs'd *Oil of Bitter Almonds*, is much uſed to ſoften and deterge the Wax out of the Ear.—Some affirm, that *Bitter Almonds* bruis'd, kill or ſtupify Fowl; ſo that they may be taken with the Hands: which, they ſay, is a Secret practis'd among the *Bohemians:* And that the Huſks remaining after the Oil is expreſs'd, have the ſame Effect.

The Word *Almond* comes from the French *Amande*; which *Menage* derives from the Latin *Amandala*, a Term occurring in the Capitulars of *Charlemaign:* Others rather derive it from the *Greek* ἀμύγδαλον, which ſignifies the ſame thing.

Almonds give the Denomination to a great Number of Preparations in Confectionry, Cookery, *&c.* whereof they are the Baſis; as *Almond* Cakes, *Almond* Cream, Criſp'd *Almonds*, *Almond* Milk, *Almond* Paſte, *Almond* Snow, *&c.*

ALMONDS *of the Throat*, called alſo *Tonſillæ*, and improperly *Almonds of the Ears*. See TONSIL.

They are two round Glands, placed on the Sides of the Baſis of the Tongue, under the common Membrane of the *Fauces*, with which they are covered. See GLAND, TONGUE, *&c.*

Each of 'em has a large oval Sinus, which opens into the Fauces; wherein are contain'd a great Number of leſſer ones, which diſcharge thro' the great Sinus a mucous and ſlippery Matter into the Fauces, Larynx, and Oeſophagus, for the moiſtening and lubricating of thoſe Parts. See LARYNX, *&c.*

When the Oeſophagus Muſcle acts, it compreſſes the *Almonds*; and as they are ſubject to Inflammation, they frequently are the Occaſion of what the common People call a *ſore Throat*. See OESOPHAGUS, RAUCEDO, *&c.*

ALMOND, or ALMAN-*Furnace*, is a peculiar kind of Furnace, uſed in Refining; to ſeparate all kinds of Metals from Cinders, parts of Melting-Pots, Teſts, Bricks, *&c.* See FURNACE, and REFINING.

The *Almond-Furnace*, called alſo the *Sweep*, is uſually ſix Foot high, four wide, and two thick; built of Brick, and having a Hole in the middle of the Top, eight Inches over; which grows narrower towards the bottom, where, on the Fore-part it ends in a Point, encompaſs'd with a Semicircle of Iron, to keep the melted Metal.—About the middle of the Back, there is another Hole, to receive the Noſe of a pair of Bellows, which require the continual Strength of two Men to work.

The Matter, then, on which the Operation is to be perform'd, being beat ſmall, they kindle Charcoal in the Furnace, to anneal it; and when hot, they throw in two or three Shovelfuls of Coals to one of the foremention'd Stuff; and ſo proceed during the whole Work, putting Lay upon Lay of one and the other. After eight or ten Hours the Metal begins to run; and when the Receiver below is pretty full, they lade it out with an Iron Ladle, and caſt it in Sows, in Cavities, or Forms made with Aſhes.

ALMONER, antiently alſo wrote ALMNER, or AUMONIER, an Officer in a King's or Prince's Houſhold, whoſe buſineſs is to diſtribute *Alms* to the Poor. See ALMS.

The *Lord Almoner*, or *Lord High Almoner*, is an Eccleſiaſtical Officer, who has the Forfeiture of all Deodands, and the Goods of *Felo's de ſe*, which he is to diſpoſe of to the Poor. See DEODAND.

He had likewiſe, by an antient Cuſtom, a Privilege to give the firſt Diſh from the Royal Table, to whatſoever poor Perſon he pleaſed, or, inſtead thereof, an *Alms*, in Money.

He alſo diſtributes daily to 24 poor Men, nominated by the Pariſhioners of the Pariſh adjacent to the King's Place of Reſidence, to each, 4*d.* in Money, and an Alms of Bread and Small Beer; each Perſon firſt repeating the Creed and the Lord's Prayer, in preſence of one of the King's Chaplains, deputed by the Lord *Almoner* to be his *Sub-Almoner*; who is alſo to ſcatter new-coin'd Two-pences in the Towns and Places thro' which the King paſſes in his Progreſs.

He has alſo the Charge of ſeveral poor Penſioners to the Crown, below Stairs; conſiſting of ſuch as have ſpent their Youth, and become ſuperannuated in the King's Service; or the Widows of ſuch Houſhold Servants as died poor, and were not able to provide for their Wives and Children, whom he duly pays.

Under the Lord *Almoner* is a *Sub-Almoner*, a *Yeoman*, and *two Grooms of the Almonry*, choſen by his Lordſhip.

ALMONRY, or AUMRY, the Office or Lodgings of the *Almoner*; alſo the Place where the *Alms* are given.

ALMS, *Eleemoſyna*, ſomething given out of Charity or Liberality, to the Poor. See CHARITY, ALMONER, *&c.*

The *Romaniſts* alſo extend the Term to what is given to the Church, or other pious Uſes.—Hence, what the Church holds on this footing, is called *Tenure in Alms*; for according to *Raſtal*, *Alms*, or *Tenure in Alms*, is Tenure by Divine Service. See TENURE, and SERVICE.

The Eccleſiaſticks were antiently ſubſiſted wholly on *Alms*. See CLERGY, TITHE, *&c.*

The *Alms* of the primitive Chriſtians were divided into three Parts; one whereof belong'd to the Biſhops, another to the Prieſts, and a third to the Deacons and Subdeacons. —Sometimes they divided 'em into four; the laſt whereof went to the Poor, and the Repairing of Churches.

Chrodedang, Biſhop of *Metz*, in the VIIIth Century, enjoins, in the 42d Chapter of his Rule, that a Prieſt to whom any thing was offer'd for ſaying of Maſs, or for Confeſſion; or a Clerk for ſinging of Pſalms, or Hymns; ſhould not receive it on ony other Condition than as *Alms*.

M. *Tillemont* obſerves, upon the *Theodoſian* Code, p. 257. that from the IVth Century there were Women employ'd to collect *Alms* for the Priſoners. In all probability theſe were the Deaconeſſes of the Churches. See DEACONESS.

St. *Paul*, in his ſecond Epiſtle to the *Corinthians*, C. IX. explains the manner of collecting *Alms* in the Aſſemblies of the primitive Chriſtians.——This Practice they had borrow'd from the *Jewiſh* Synagogue, where it ſtill obtains. *Leon de Modena* deſcribes it in the 1ſt Book of the *Ceremonies and Cuſtoms* of thoſe of his Nation, C. XIV.

The *Jews* call *Alms*, *Tſedeka*, *i. e.* Juſtice.—The Evangeliſts and Apoſtles have alſo given it the ſame Appellation in the New Teſtament.

ALMSFEOH, or ALMESFEOH, among our *Saxon* Anceſtors, *Alms-Money*; that is Peter-pence, antiently paid in *England* on the firſt of *Auguſt*; called alſo *Romefeoh*, *Romeſcot*, and *Heorthpening*. See PETER-*Pence*.

ALMS-*Houſe*, a Houſe built by a Perſon in a private Capacity, and endow'd with a Revenue, for the Maintenance of a certain Number of poor, aged, or diſabled People. See HOSPITAL.

ALMUCANTARS, ALMACANTARAS, or ALMUCANTARATS, in Aſtronomy, are Circles parallel to the Horizon, imagin'd to paſs thro' all the Degrees of the Meridian. See CIRCLE, and HORIZON. See PARALLEL.

As the Meridians paſs thro' the ſeveral Degrees of the Equator; the *Almucantars* paſs thro' thoſe of the Meridian of any Place. See MERIDIAN.

The *Almucantars* are the ſame Thing with regard to the Azimuths and Horizon, that the Parallels are with regard to the Meridians and Horizon.

They ſerve to ſhew the Height of the Sun and Stars; and are deſcribed on many Quadrants, *&c.* being alſo called *Parallels of Altitude*. See PARALLEL *of Altitude*.

The Word is form'd of the Arabic *Almocantharat*.

ALMUCANTARS-*Staff*, is an Inſtrument uſually made of Pear-tree or Box, with an Arch of 15 Degrees; chiefly uſed to take Obſervations of the Sun, about the Time of its riſing and ſetting; in order to find the Amplitude, and conſequently the Variations of the Compaſs. See AMPLITUDE, and VARIATION.

ALNAGE, or AULNAGE, *q. d. Ell-meaſure*; the meaſuring of woollen Manufactures with an Ell; and the other Functions of the *Alnager*. See ALNAGER.

The Word is *French*; form'd of *Aune*, or *Alne*, an Ell. See ELL.

All our Laws relating to the *Alnage*, Sir *J. Child* obſerves, contribute nothing to the well making of our Manufactures, but are rather chargeable, and prejudicial thereto.

ALNAGER, ALNEGER, or AULNEGER, q. d. *a Meaſurer by the Ell*; ſignifies a ſworn publick Officer, who, by himſelf or Deputy, is to look to the Aſſize of woollen Cloth made thro' the Land, *i. e.* the Length, Width, and Work thereof; and to the Seals for that purpoſe ordained. See ALNAGE, CLOTH, *&c.*

There are now three Officers relating to the *Alnage* or Regulation of Cloth; all which were antiently compriz'd in one Perſon.—Theſe bear the diſtinct Names of *Searcher*, *Meaſurer*, and *Alnager*.

A Duty being impoſed on woollen Cloths, for the Maintenance of an Office to look to that Manufacture, and the Loyalty, as they call it, of the Stuffs produced therein; the *Alnager*, who had the Direction of the whole, is now become only the Collector of that Duty or Subſidy granted to the King: tho he ſtill holds the antient Denomination, becauſe the Collection of that Subſidy was committed to him. —Nor was he abridg'd of his Meaſuring and Searching, till by his own neglect it was thought proper to ſeparate the two Offices. So that there is now a peculiar Meaſurer, diſtinct from the *Alnager*, or Collector, to allow the Aſſize of the Length and Breadth of every Cloth made in *England* and *Wales*.

ALOES, Aloe, in Medicine and Pharmacy, the inſpiſſated Juice of a ferulaceous Plant of the ſame Name; much uſed as a purgative Remedy. See Purgative.

The *Aloe*-Plant grows in divers Parts of the *Eaſt* and *Weſt-Indies*; and is alſo found in ſome Countries of *Europe*, as *Spain*, and particularly the Mountains of *Siera Morena*. ——Its Leaves are green, very thick, hard, and prickly; yielding a kind of Cotton, whereof Laces may be made. Out of the middle of the Leaves ariſes a Stem, which bears the Flower, and the Fruit, the Seed whereof is very light and hemiſpherical.

Dioſcorides, *Pliny*, and the antient Naturaliſts, ſeem only to have been acquainted with one Species of *Aloes*; which is the *Aloe Vulgaris* above deſcribed: But the late Travels into *Aſia*, *Africa*, and *America*, have occaſion'd the Diſcovery of forty more ſorts, unknown to Antiquity. Mr. *Bradley* aſſures us, he has ſeen above ſixty ſeveral Kinds in the Phyſick-Garden at *Amſterdam*. So that *Aloe* is now become the Denomination of a Genus.—Among the Number, however, there are not above twelve that yield the purgative Juice above mentioned.

The Juice or Extract of *Aloes*, is uſually diſtinguiſh'd into three Kinds.—The firſt, which is called *Succotrine* as being brought from *Succotra*, is the pureſt and moſt tranſparent; being friable, inodorous, black in the Lump, but of a beautiful yellow Colour when bruis'd.—It is brought in Skins from the *Levant* and *Eaſt Indies*.

The ſecond is called *Hepatic*, becauſe of its Liver-colour: It is reſinous, ſmells like Myrrh, has a yellow Colour when pounded, and is brought from *China*.—Some confound this with the following ſort; as, in effect, there are but two ſorts commonly known in our Shops.

The third is the moſt impure, the blackeſt, and the ſtrongeſt.—It was formerly uſed by the *Indians* to pitch their Veſſels withal: and is of little Uſe among us, excepting for Horſes and Cattle; for which reaſon it is call'd *Caballine*, *i. e.* Horſe-*Aloes*.

Beſides theſe, ſome mention another kind of *Aloes* prepared in *Barbadoes*, and brought over in large Gourds: but moſt Writers make this the Caballine kind.

Some have imagin'd, that theſe differences of *Aloes* were owing only to the greater, or leſs Purification of the Juice: But this is a Miſtake; it having been found that no Diſſolutions, how often ſoever repeated, will change Hepatic into Succotrine, nor Caballine into Hepatic *Aloes*.

The manner of preparing *Aloes* is very eaſy, there being nothing to do but to cut the Leaves of the Plant, and to expoſe the Juice that ſpontaneouſly oozes out of them to the Sun, till it becomes of a proper Conſiſtence.

Aloes is extremely bitter, and purgative; externally applied, either in Subſtance or Tincture, it prevents Putrefaction and Gangrene.—Its Bitterneſs makes it ſo nauſeous, that it is rarely uſed in liquid Forms, but is generally made into Pills, whereof half a Dram is an ordinary Doſe.—Scarce any of the Officinal Pills are without this in their Compoſition. See Pill.

Its cathartick Virtue, is beſt employ'd in watery, cold, and corpulent Conſtitutions, as it heats and attenuates; being bad for thin and hectick Conſtitutions. It is accounted efficacious in promoting the Menſes; and is alſo good to deſtroy Worms.

M. *Boulduc*, by his Analyſis of *Aloes*, has found that the Succotrine ſcarce contains half the Reſin or ſulphurous Part, but one third more of the ſaline Part, found in the Hepatic. Hence the Succotrine comes to be preferable for internal Uſes, and the Hepatic for external.

Aloe *Roſata*, is a Preparation of the *Aloes* Juice, made by diſſolving it in Juice of Damask Roſes, and evaporating it to the Conſiſtence of a Paſte. Then, more Juice is added, and the Evaporation repeated, again and again.—This is held a gentler and ſafer Cathartick than the *Aloes* alone.

Aloes is alſo a kind of fragrant *Indian* Wood; thus called from its exceeding Bitterneſs, which reſembles that of the *Aloes* Juice.

This *Aloes*, called alſo *Agallochum*, is infinitely valued; and divers ſtrange Fables have been invented as to the Origin of the Tree that yields it: Some feign that it grew in Paradiſe, and was only convey'd to us by means of the Rivers overflowing their Banks, and ſweeping off the Trees in their way. Others ſuppoſe it to grow on inacceſſible Mountains; where it is guarded by certain wild Beaſts, &c. —The *Siameſe* Embaſſadors to the Court of *France*, in 1686, who brought a Preſent of this Wood from their Emperor, firſt gave the *Europeans* any conſiſtent Account of it.

The Tree grows in *China*, *Lao*, and *Cochinchina*; and is much about the Size and Figure of our Olive Trees.—The Trunk conſiſts of three ſorts of Wood, very different in Colour, and Properties: Immediately under the Bark it is black, compact, and heavy, call'd by the *Portugueze*, *Pao d'Aquila*, *q. d.* Eagle-Wood. That next under this, is of a Tan-colour, light and veiny, reſembling rotten Wood; and called *Calambou*.

The Heart, or innermoſt part, is called *Tambac*; and more valued by the *Indians* than Gold it ſelf. It affords a very ſtrong, but agreeable ſmell; and is uſed as a Perfume; and is withal held a ſovereign Remedy againſt the Palſy, Deliquiums, Weakneſſes, &c.

'Tis the *Calambou* alone that is known among us.—It is brought in ſmall bits of a very fragrant ſcent; eſpecially when caſt on the Fire, where it melts like Wax. The beſt is of a blackiſh purple Colour, and ſo light as to ſwim on Water: It is hot and drying; and eſteem'd a great Strengthener of the Nerves.

Some pharmaceutical Writers make a Diſtinction between *Aloes*, *Lignum Aloes* and *Xylo Aloes*; which may amount to the three Orders of Wood abovemention'd. Tho among us they are the ſame thing.

ALOETICS, Medicines wherein *Aloes* is the chief and fundamental Ingredient. See Aloes.

The Word is form'd of *Aloe*, which is further derived from ἁλς, the *Sea*, or *Salt*; that Plant being chiefly found near the Sea-Coaſts.

ALOGII, or Alogians, a Sect of antient Hereticks; who denied that Jeſus Chriſt was the Eternal Word. See Arian.

Theodore of *Byzantium*, by Trade a Currier, having apoſtatiz'd, under the Perſecution of the Emperor *Severus*; to defend himſelf againſt thoſe who reproach'd him therewith, ſaid; That it was not God he denied, but only Man. Whence his Followers were called in *Greek* ἄλογοι, in regard they rejected the *Word*; from the Privative α, and λόγος, *Verbum*.

ALOOF, a Sea Term, ſignifying as much as, keep your Luff: being a Word of Command from him that conns, to the Man at the Helm, to keep the Ship near the Wind, when ſhe ſails upon a Quarter-wind. See Conner, &c.

ALOPECIA, or Alopechy, in Medicine, &c. a Falling of the Hair, from what Cauſe ſoever that ariſe. See Hair.

The Word is form'd from ἀλώπηξ, *Vulpes*, a Fox; whoſe Urine, it is ſaid, will occaſion Baldneſs; or becauſe ſuch a Diſeaſe is common to that Creature.

ALPHA, the Name of the firſt Letter of the *Greek* Alphabet. See Letter, and Alphabet.

The *Alpha*, in Compoſition, denotes, ſometimes, *Privation*, in the ſame Senſe with ἄτερ, *without*; ſometimes *Augmentation*, as ἄγαν, *much*; and ſometimes *Union*, as ἅμα, *together*.

It was alſo uſed as a Letter of Order, to denote the *firſt*; and of Number, to ſignify *one*; but when it was a numerical Letter, a little Stroke, or an acute Accent was drawn above it thus 'A, to diſtinguiſh it from the A, which was a Letter of Order.

The Word is originally *Hebrew*, and comes from אלף *Alaph*, which ſignifies *to learn*; whence אלוף *the Leader or firſt of a Company*. In this Senſe, the *Hebrews* call the firſt Letter of their Alphabet *Aleph*, the Syrians *Olaph*, the Arabs *Eliph*, and the Greeks *Alpha*. See A.

Alpha and *Omega*, in the Divine Writings, ſignify the Beginning and the End; and therefore the Hieroglyphick of God is form'd of theſe two Letters, A and Ω.

ALPHABET, the ſeveral Letters of a Language, diſpoſed in their natural or accuſtom'd Order. See Letter, and Language.

The Word is form'd from the Names of the two firſt Letters of the Greek *Alphabet*, *Alpha*, *Beta*; which were borrow'd from thoſe of the Hebrew, *Aleph*, *Beth*. See Alpha, &c.

In the Engliſh *Alphabet* we reckon 26 Letters, *viz. a b c d e f g h i j k l m n o p q r ſ t u w v x y z*. See each under its proper Article.

But as there is a much greater Number of different Sounds in our Language; 'tis not without Reaſon that ſome Grammarians maintain, that there ought to be a greater Number of Letters: As alſo, that the double Letters, *x* and *y*, and the ſuperfluous ones, *k* and *g*, ſhould be retrench'd. See Consonant, Vowel, &c.

The French *Alphabet* only contains 23 Letters.—*Paſquier* indeed maintains it to conſiſt of 25, by reaſon he adds the two double Letters & for *et*, and ⁹ for *us*; but thoſe are only Abbreviatures. The *Abbe d'Angeau*, on better Grounds, reckons 34 different Sounds in the *French* Tongue; and urges, that the *Alphabet* ought of Conſequence to conſiſt of 34 different Characters, ſetting aſide the double Letters *x* and *y*, and the ſuperfluous one *q*. See French.

The Difference between Languages, with reſpect to the Number of Letters, is very conſiderable: The *Hebrew*, *Chaldee*, *Syriac*, and *Samaritan Alphabets*, have each 22; the *Arabic* 28; the *Perſian* 31; the *Turkiſh* 33; the *Georgian* 36; the *Cophtick* 32; the *Muſcovite* 43; the *Greek* 24; the *Latin* 22; the *Sclavonick* 27; the *Dutch* 26; the *Spaniſh* 27; the *Italian* 20; the *Indians* of *Bengal* 21; the *Baramas* 19.

The *Æthiopic* has no leſs than 202 Letters in its *Alphabet*, there being 7 Vowels, which they combine with each of their 26

Conſonants; to which they add 20 other aſpirated Syllables. — The like is ſaid of the *Tartarian*; each of their Letters is a Syllable; having one of the Vowels joined to its Conſonant: as *La*, *Le*, *Li*, &c.

The *Chineſe* have no *Alphabet*, properly ſpeaking; except we call their whole Language their *Alphabet*; their Letters are Words, or rather Hieroglyphicks, and are in Number about 80,000. See CHINESE, and CHARACTER.

In effect, *Alphabets* were not contrived with Deſign, according to the juſt Rules of Reaſon and Analogy; but ſucceſſively framed, alter'd, &c. as occaſion offer'd.——And hence many grievous Complaints as to their Deficiencies; and divers attempts to eſtabliſh new, and more adequate ones in their place.

Biſhop *Wilkins* charges the *Alphabets* extant with great Irregularities, with reſpect both of the Order, Number, Power, Figure, &c.——As to the *Order*, it appears inartificial, precarious, and confuſed; in that the Vowels and Conſonants are not reduced into Claſſes, with ſuch order of precedence and ſubſequence as their Natures will bear.—— Even the Hebrew *Alphabet*, from which the reſt are derived, is not free from this Imperfection.

As to *Number*, they are both redundant, and deficient: Redundant, either by allotting ſeveral Letters to the ſame Power, and Sound; as in the *Hebrew* ב and ש, and the ordinary *Latin c* and *k*, *f* and *ph*: or by reckoning double Letters among the ſimple Elements of Speech; as in the *Hebrew* ש, the *Greek* ξ and ψ, the Latin *q cu*, *x cs*, and the *j* Conſonant, or Jod.—Deficient in divers reſpects, eſpecially in regard of Vowels, of which there are ſeven or eight kinds commonly uſed; tho the Latin *Alphabet* only takes notice of five; whereof two, *viz. i* and *u*, according to our *Engliſh* Pronunciation, are not properly Vowels, but Dipthongs.

Add, that the Difference among Vowels in reſpect of long and ſhort, is not ſufficiently provided for: The Antients, we know, uſed to expreſs a long Vowel by doubling its Character; as *Amaabam*, *Naata*, *Ree*, *Seedes*, *Sanctiſſimiis*; tho the Vowel *i*, inſtead of being doubled, was frequently prolonged, as ÆDILIS, PISO, VIVUS.—The ways uſed in *Engliſh* for lengthning and abbreviating Vowels, *viz.* by adding *e* quieſcent to the End of a Word, for prolonging a Syllable; and doubling the following Conſonants, for the ſhortening of a Vowel, as *Wane Wann*, *Ware Warr*, &c. or elſe by inſerting ſome other Vowel, for the lengthning of it, as *Meat Met*, *Read Red*, &c. are all improper; in that the Sign ought ever to be where the Sound is.

As to their *Powers*, again, thoſe are not always fixed to the ſame Signification: The Vowels, for inſtance, are generally acknowledg'd to have each of 'em ſeveral Sounds: *Vocales omnes pluriſonæ*, ſays *Lipſius*; and *Voſſius* aſſures us, the Antients uſed their Vowels very different ways, *aliquando tenuius exiliuſque*, *nunc craſſius*, *nunc intermedio ſono*. Thus the Power of the Vowel *e* is expreſſed in writing no leſs than ſix ſeveral ways, *viz.* by *e*; as in *he*, *me*, *ſhe*, *ye*: —by *ee*, in *thee*, *free*, *we*; —by *ie*, in *field*, *yield*, *ſhield*, *chief*;—by *ea*, in *near*, *dear*, *hear*;—by *eo*, in *people*;— by *i*, in *privilege*. So is the Power of the Vowel *a*; as in *all*, *aul*, *aw*, *fault*, *caught*, *brought*: which are all only various ways of writing the ſame long Vowel; beſides the other diſtinct ways of expreſſing the ſame Vowel when uſed ſhort: Again, the Power of the Vowel *o* is written five ways; *o*, as in *to*, *who*, *move*;—*oe*, in *doe*.—*oo*, in *ſhoo*, *moon*, *noon*;—*ou*, in *could*, *would*;—*wo*, in *two*; and ſo of the reſt.——Nor are the Conſonants of more determinate Powers: witneſs the different Pronunciation of the ſame Letter (*c*) in the ſame Word, *Circo*; and of *g* in *negligence*. —To ſay no more, the Letters *c*, *ſ*, *t*, are uſed alike, to denote the ſame Power; and the Letter *ſ*, is commonly uſed for *z*: and which is yet worſe, ſome Letters of the ſame Name and Shape, are uſed at one time for Vowels, and at another for Conſonants; as *j*, *v*, *w*, *y*; which yet differ from one another, ſays Biſhop *Wilkins*, *ſicut corpus & anima*.

From this Confuſion in the Power of Letters, there ariſe divers Irregularites; as, that ſome Words are diſtinguiſh'd in Writing, which are the ſame in Pronunciation, *e. g. Ceſſio* and *Seſſio*, &c. and others are diſtinguiſh'd in Pronunciation, which are the ſame in Writing; as *give*, *dare*, and *Give*, *vinculum*, &c. Hence alſo the Latin *Male*, is a Diſſyllable, and the Engliſh *Male*, a Monoſyllable.

The *Names* alſo, in moſt *Alphabets*, are very improperly expreſs'd by Words of divers Syllables; as *Alpha*, *Beta*, &c. in which reſpect, the Roman and our Engliſh *Alphabets*, which only name the Letters by their Powers, have a great Advantage over the reſt.

Laſtly, their *Figures* are not well concerted; there being nothing in the Characters of the Vowels anſwerable to the different Degrees of Apertion: nor in the Conſonants, analogous to the Agreements or Diſagreements thereof.

All theſe Imperfections are endeavour'd to be obviated in the *Univerſal Alphabets*, or Characters of Mr. *Lodowic*, Biſhop *Wilkins*, &c. See *Univerſal* CHARACTER.

In the *French* King's Library, is an *Arabic* Work, intitled *Sephat Alacham*; containing divers ſorts of imaginary *Alphabets*, which the Author diſtributes into Prophetical, Myſtical, Philoſophical, Magical, Taliſmanical, &c.

Monſieur *Leibnitz* had it in view to compoſe an *Alphabet of Human Thoughts*. *Mem. de l'Acad. R.* An. 1716.

'Tis no wonder that the Number of Letters in moſt Languages ſhou'd be ſo ſmall, and that of the Words ſo great; ſince from a Calculation made by Mr. *Preſtet*, it appears, that, allowing only 24 Letters to an *Alphabet*, the different Words or Combinations that may be made out of thoſe 24 Letters, taking them firſt one by one, then two by two, three by three, &c. would amount to the following Number, 139,172428,887252,999425,128493,402200. See COMBINATION.

It may be here obſerv'd, that every Combination may make a Word, even tho that Combination have not any Vowel in it; becauſe the *e* mute or quieſcent inſinuates it ſelf imperceptibly between the Conſonants, or after the Conſonants, where there are but two; the latter of which would not be heard without it.—The uſe of this quieſcent *e* is very remarkable in the *Armenian*, *Welch*, and *Dutch* Languages; wherein the generality of Words have ſeveral Conſonants together.

Nor muſt it be omitted, that every ſingle Letter may make a Word: which is very apparent, where that Letter is a Vowel; Words of that kind being found in moſt Languages. Thus, *a* and *o* make Words in the *Greek*; *a*, *o*, in the *Latin*; *a*, *i*, *o*, in *Engliſh*; *a*, *o*, *y*, in *French*; *a*, *e*, *i*, *o*, in *Italian*; *a*, *y*, in *Spaniſh*; *a*, *o*, in the *Portugueſe*; *o*, in moſt Languages, and even in the *Dutch* and *Swediſh*. A Conſonant alſo becomes a Word, by adding an *e* mute to it in Pronunciation.

In fine, tho a conſiderable Number of the poſſible Combinations of 24 Letters were retrench'd, yet the Number remaining would ſtill be immenſe, and vaſtly ſuperior to that of the Words in any Language known.

Of all other Languages, the *Greek* is look'd upon as one of the moſt copious, the Radices of which are only eſteem'd about 3244; but then it abounds exceedingly in Compounds, and Derivatives. Biſhop *Wilkins* thinks theſe may be moderately computed at about ten thouſand.

Hermannus Hugo, indeed, aſſerts, that no Language has ſo few as 100000 Words; and *Varro* is frequently quoted by learned Men, as if he affirmed that there are in the *Latin* no leſs than 500000: But upon inquiring into the Scope of the Paſſage, Biſhop *Wilkins* obſerves, that this Number is not intended by him to expreſs the juſt Number of Words in the *Latin*; but the great Variety made thereof, by the Inflection and Compoſition of Verbs.—To this purpoſe he lays it down, that there are above one thouſand Radical Verbs in the *Latin*; and that each Verb admits of five hundred ſeveral Varieties: He further ſuppoſes, that each of theſe may be compounded with nine Prepoſitions; as *ceſſit*, *receſſit*, *acceſſit*, *deceſſit*, &c. which amounts to five Millions. See WORD.

ALPHABET, in Matters of Polygraphy, is a duplicate of the Key or Cypher, which each of the Parties correſponding are to keep by them. See CYPHER.

It is properly an *Alphabet* of the uſual Letters diſpoſed in their Order; oppoſite to, or underneath which, are the ſecret Characters correſponding thereto, with the blank or uſeleſs Letters, and the other Signs or Symbols ſerving to obſcure, and render it difficult to decypher. See DECYPHERING.

ALPHETA, in Aſtronomy, a Fix'd Star in the *Northern Crown*; otherwiſe called *Lucida Coronæ*. See LUCIDA.

Its Longitude, Latitude, &c. *ſee among the reſt of the Conſtellation* CORONA *Septentrionalis*.

ALPHONSINE *Table*. See TABLE.

ALPHOS, in Medicine, a Diſtemper deſcribed by *Celſus*, under the Name of *Vitiligo*; wherein, the Skin is rough, and looks as if it had Drops of white upon it, not much differing from Morphew. See MORPHEW.

ALRAMECH, or ABRAMECH, in Aſtronomy, the *Arabic* Name of a Star, otherwiſe called *Arcturus*. See ARCTURUS.

ALT, in Muſick. See DIAGRAM, and SCALE; ſee alſo ALTO.

The Word is form'd of the Latin *altus*, high.

ALTAR, ARA, ALTARE, a Place or Pile whereon to offer Sacrifice to ſome Deity. See SACRIFICE.

The *Jews* had their Brazen *Altar*, for Burnt offerings, and a Golden *Altar*, or *Altar of Incenſe*. See TABERNACLE, &c.

Among the *Romans*, the *Altar* was a kind of Pedeſtal, either ſquare, round, or triangular; adorn'd with Sculpture, with Baſſo Relievo's, and Inſcriptions, whereon were burnt the Victims ſacrificed to Idols. See VICTIM.

Thoſe

Thoſe *Altars* ſet apart for the honour of the celeſtial Gods, and Gods of the higher Claſs, were placed on ſome pretty tall Pile of Building; and for that reaſon were called *Altaria*, from the Words *Alta* and *Ara*, a high elevated *Altar*.—Thoſe appointed for the terreſtrial Gods, were laid on the Surface of the Earth, and call'd *Aræ*.—And on the contrary, they dug into the Earth, and open'd a Hole for thoſe of the infernal Gods, which they called *Scrobiculi*. See GOD.

The *Greeks* alſo diſtinguiſh'd two ſorts of *Altars*; that whereon they ſacrific'd to the Gods, was called βωμὸς, and was a real *Altar*; different from the other, whereon they ſacrific'd to the Heroes, which was ſmaller, and called ἐσχάρα. *Pollux* makes this Diſtinction of *Altars* in his *Onomaſticon*: He adds, however, that ſome Poets uſed the Word ἐσχάρα, for the *Altar* whereon Sacrifice was offer'd to the Gods.—The Septuagint Verſion does ſometimes alſo uſe the Word σκάρα, for a form of little low *Altar*, which may be expreſſed in *Latin* by *Craticula*; being a Hearth, rather than an *Altar*.

The *Jews* alſo gave the Name *Altar* to a kind of Tables, occaſionally rais'd in the Country or Field, whereon to ſacrifice to God.——In ſuch a Place, *he built an* Altar *to the Lord.*

ALTAR, is ſometimes alſo uſed among Chriſtians, for a ſquare Table, placed on the Eaſtern ſide of a Church, rais'd a little above the Floor, and ſet apart for the Celebration of the Euchariſt. See EUCHARIST.

Its Form is not borrow'd, either from that of the Heathen *Altars*, or even from that of the *Jews* in the Temple; but in regard the Euchariſt was inſtituted by Jeſus Chriſt at Supper, and upon a Table, the modern *Altar* is made in form of a Table; whence it is more uſually, and even more ſignificantly denominated *Communion Table*. See COMMUNION.

In effect, the Denomination *Altar* is founded on this Suppoſition, that the Euchariſt is a proper Sacrifice; which, tho the ſtanding Doctrine of the Church of *Rome*, is utterly denied by moſt of the Reformed. See MASS.

In the primitive Church, the *Altars* were only of Wood; as being frequently to be removed from place to place.—The Council of *Paris*, in 509, decreed, That no *Altar* ſhould be built but of Stone.

At firſt there was but one *Altar* in each Church; but the Number ſoon increas'd; and from the Writings of *Gregory* the Great, who lived in the VIth Century, we learn, that there were ſometimes 12 or 13.

The *Altar* is ſometimes ſuſtained on a ſingle Column, as in the ſubterraneous Chapels of St. *Cæcilia* at *Rome*, &c. ſometimes, by four Columns, as the *Altar* of St. *Sebaſtian* of *Crypta Arenaria*; but the cuſtomary Form, is, to be a Maſſive of Stone-work, ſuſtaining the *Altar-Table*.

Theſe *Altars* bear a reſemblance to Tombs: In effect, we read in Church-Hiſtory, that the primitive Chriſtians chiefly held their Meetings at the Tombs of the Martyrs, and celebrated the Myſteries of Religion thereon. For which Reaſon, it is a ſtanding Rule to this Day in the Church of *Rome*, never to build an *Altar*, without incloſing the Relicks of ſome Saints therein. See RELICK, SAINT, CHURCH-*Yard*, &c.

ALTAR *of Propheſis*, is a Name given by the *Greeks* to a ſmaller, preparatory kind of *Altar*, whereon they bleſs the Bread, before it be carried to the large *Altar*, where the ſolemn Liturgy is perform'd. See PROTHESIS.

F. *Goar* maintains, that the *Table of Propheſis* was antiently in the Sacriſty, or Veſtry; which he makes appear from ſome *Greek* Copies, where Sacriſty is made uſe of in lieu of *Propheſis*.

ALTAR is alſo uſed, in Church Hiſtory, for the Oblations, or contingent Incomes of a Church. See OBLATION.

In antient Days, they diſtinguiſh'd between the Church and the *Altar*.—The Tithes, and other ſettled Revenues, were called the Church, *Eccleſia*; and the other incidental Incomes, the *Altar*. See TITHE, &c.

ALTAR, *Ara*, in Aſtronomy, one of the Conſtellations of the Southern Hemiſphere; not viſible in our Climate. See STAR, and CONSTELLATION.

ALTARAGE, a Word which includes not only the Offerings made upon the *Altar*, but alſo the Profit that ariſes to the Prieſt on account of the *Altar*. See ALTAR.

ALTERATION, ALTERATIO, in Phyſicks, the Act of changing the Circumſtances and Manner of a thing; its general Nature and Appearance remaining the ſame.—Or, *Alteration* is an accidental, and partial Change in a Body; without proceeding ſo far, as to make the Subject quite unknown, or to take a new Denomination thereupon.—Or, it may be called, the Acquiſition or Loſs of ſuch Qualities as are not eſſential to the Form of the Body. See BODY, QUALITY, ESSENCE, &c.

Thus, a piece of Iron, which before was cold, is ſaid to be *altered*, when it is made hot; ſince it may ſtill be perceiv'd to be Iron, is called by that Name, and has all the Properties thereof.

By this, *Alteration* is diſtinguiſh'd from *Generation*, and *Corruption*; thoſe Terms expreſſing an Acquiſition or Loſs of the eſſential Qualities of a thing. See GENERATION, and CORRUPTION.

The modern Philoſophers, after the antient Chymiſts and *Corpuſcularians*, hold all *Alteration* to be effected by means of local Motion: According to them, it always conſiſts either in the Emiſſion, Acceſſion, Union, Separation, or Tranſpoſition of the component Particles. See PARTICLE, &c.

Ariſtotle makes a peculiar kind of Motion, which he calls the *Motion of Alteration*. See MOTION, &c.

ALTERANT, or ALTERATIVE, in Medicine, a Property, or Power in certain Remedies, whereby they induce an *Alteration* in the Body, and diſpoſe it for Health or Recovery, by correcting ſome Indiſpoſition; without occaſioning any ſenſible Evacuation. See MEDICINE.

Under *Alterants*, therefore, come all Medicines which are not Evacuants. See EVACUANT, and EVACUATION.

'Tis a Point much queſtion'd by ſome, whether there really be any ſuch thing as an *Alterant* in this Senſe; *i. e.* any thing which tends to cure a Diſorder otherwiſe than by eliminating or expelling ſome peccant Matter. See DISEASE, SPECIFIC, &c.

Dr. *Quincy* has made it probable, that Remedies uſually reputed *Alterants*, act in the ſame manner on the remoter and more intimate Parts of the Habit, as Emeticks, Purgatives, &c. do on the Stomach and Inteſtines. See PURGATIVE.

Alteratives, therefore, are better defined, ſuch Medicines as have no immediate ſenſible Operation, but gradually gain upon the Conſtitution, by changing the Humours from a State of Diſtemperature to Health.

ALTERCATION, a Debate or Conteſt between two Friends, or Acquaintance.

They never come to an open Quarrel; but there is continually ſome little *Altercation* or other.

The Word comes from the Latin *Altercari*; which antiently ſignify'd to converſe or hold Diſcourſe together. See DIALOGUE.

ALTERN *Baſe*, a Term in Trigonometry, contradiſtinguiſh'd from *true Baſe*, thus — In an oblique Triangle, the true Baſe is either the Sum of the Sides; in which Caſe, the Difference of the Sides is called the *Altern* Baſe: or, the true Baſe is the Difference of the Sides; in which Caſe, the Sum of the Sides is called the *Altern Baſe*. See BASE.

ALTERNATE, or ALTERNATIVE, is underſtood of ſeveral Things which ſucceed, or are diſpoſed one after another, *i. e.* by turns.

In this Senſe, we ſay, an *Alternate* or *Alternative Office* or Truſt, which is diſcharged by turns: So, two general Officers, who command each his Day, are ſaid to have the Command *alternately*.

In Botany, the Leaves of a Plant are ſaid to be *alternate*, or placed *alternatively*, when there is a Correſpondence between the Sides of a Branch; the Leaves of the one, following thoſe of the other.

ALTERNATE *Angles*, in Geometry, are the internal Angles made by a Line cutting two Parallels, and lying on the oppoſite Sides of the cutting Line; the one below the firſt Parallel, and the other above the ſecond. See ANGLE.

Thus, x and u, and z and y, (Tab. *Geometry*, Fig. 46.) are *Alternate Angles*.

There are alſo two external Angles, *alternately* oppoſite to the internal ones. See OPPOSITE.

Alligation ALTERNATE. See ALLIGATION *Alternate*.

ALTERNATE *Ratio*, or *Proportion*, is where the Antecedent of one Ratio is to its Conſequent, as the Antecedent of another, to its Conſequent; the very ſame Ratio, in this Caſe, holding *alternately* in reſpect of the Antecedents to each other, and the Conſequents to each other. See RATIO.

Thus, if A : B :: C : D; then, *alternately*, A : C :: B : D. See PROPORTION.

ALTERNATE, in Heraldry, is uſed in reſpect of the Situation of the Quarters. See QUARTER.

Thus, in Quarterly, Ecartele, the firſt and fourth Quarters are *alternate*; and are uſually of the ſame Nature. The like holds of the ſecond and third. See QUARTERING, QUARTERLY, &c.

ALTERNATION, a Term ſometimes uſed for the divers Changes, or Alterations of Order, in any Number of Things propoſed. See CHANGE.

This is alſo called *Permutation*, &c. and is eaſily found, by a continual Multiplication of all the Numbers, beginning at Unity. See PERMUTATION.

Thus, if it be requir'd to know how many Changes or Alternations can be rung on ſix Bells; multiply the Numbers 1, 2, 3, 4, 5, 6, continually one into another; and the laſt Product gives the Number of Changes. See COMBINATION.

ALTERNATIVE, is particularly uſed for the Choice of two things propoſed.—In this Senſe, we ſay, To take the *Alternative* of two Propoſitions. See ALTERNATE.

ALTIMETRY, ALTIMETRIA, the Art of taking or meaſuring Altitudes, or Heights; whether acceſſible or inacceſſible. See ALTITUDE.

Altimetria makes the firſt Part of Geometry; including the Doctrine and Practice of meaſuring both perpendicular and oblique Lines; whether in reſpect of Height, or Depth. See GEOMETRY; ſee alſo HEIGHT, *&c.*

The Word is compounded of the Latin *Altus*, high, and μετρεω, *metior*, I meaſure.

ALTITUDE, ALTITUDO, in Geometry, the third Dimenſion of Body; called alſo *Height*, or *Depth*. See HEIGHT; ſee alſo BODY, DIMENSION, *&c.*

ALTITUE, in Opticks, is uſually conſider'd as the Angle ſubtended between a Line drawn thro' the Eye, parallel to the Horizon, and a Viſual Ray emitted from an Object to the Eye.

For the Laws of the Viſion of ALTITUDE, ſee VISION.

If thro' the two Extremes of an Object, S and T, (Tab. *Opticks*, Fig. 13.) two Parallels, T V and S Q be drawn; the Angle T V S, intercepted between a Ray paſſing thro' the Vertex S, and terminating the Shadow thereof in V, makes, with the right Line T V, what is called, by ſome Writers, the *Altitude of the Luminary*.

ALTITUDE, in Coſmography, is the perpendicular Height of a Body, or Object; or its Diſtance from the Horizon, upwards. See HEIGHT; ſee alſo HORIZON.

Altitudes are divided into *acceſſible* and *inacceſſible*. See ACCESSIBLE, and INACCESSIBLE.

There are three Ways of *Meaſuring Altitudes*, *viz.* Geometrically, Trigonometrically, and Optically.—The firſt is ſomewhat indirect and unartful; the ſecond, perform'd by means of Inſtruments for the Purpoſe; and the third by Shadows.

The Inſtruments chiefly uſed in meaſuring of *Altitudes*, are the *Quadrant*, *Theodolite*, Geometrick *Quadrat*, or Line of *Shadows*, &c. *the Deſcriptions*, *Applications*, &c. *whereof*, *ſee under their reſpective Articles*, QUADRANT, THEDOLITE, QUADRAT.

To take Acccceſſible ALTITUDES.

To meaſure an acceſſible Altitude, *geometrically*.——Suppoſe it required to find the *Altitude* A B, (Tab. *Geometry*, Fig. 88.) plant a Staff D E perpendicularly in the Ground, of ſuch height as may equal the height of the Eye. Then, laying proſtrate on the Ground, with your Feet to the Staff; if E and B prove in the ſame right Line with the Eye C; the length C A is equal to the *Altitude* A B. If ſome other lower Point, as F, prove in the Line with E and the Eye; you muſt remove the Staff, *&c.* nearer to the Object: On the contrary, if the Line continued from the Eye over E, mark out ſome Point above the *Altitude* requir'd; the Staff, *&c.* are to be remov'd farther off, till the Line C E raze the very Point requir'd.—Thus, meaſuring the Diſtance of the Eye C from the Foot of the Object A; the *Altitude* is had; ſince C A = A B.

Or thus:——At the Diſtance of 30, 40, or more Feet, plant a Staff D E, (Fig. 89.) and at a diſtance herefrom, in C, another ſhorter one, ſo as that the Eye being in F; E and B may be in the ſame right Line therewith. Meaſure the Diſtance between the two Staves, G F; and between the ſhorter Staff and the Object, H F; as alſo, the difference of the Heights of the Staves, G E.——To G F, G E and H F; find a fourth proportional B H.—To this add the *Altitude* of the ſhorter Staff, F C. The Sum is the *Altitude* required, A B.

To meaſure an acceſſible Altitude, *trigonometrically*.—Suppoſe it required to find the *Altitude* A B, (Tab. *Trigonom.* Fig. 23.) chuſe a Station in E; and with a Quadrant, Theodolite, or other graduated Inſtrument duly placed, find the Quantity of the Angle of *Altitude* A D C. See ANGLE.

Meaſure the ſhorteſt Diſtance of the Station from the Object, *viz.* D C, which of conſequence is perpendicular to A C. See DISTANCE.

Now, C being a right Angle, 'tis eaſy to find the Line A C; ſince, in the Triangle A C D, we have two Angles, *viz.* C and D, and a ſide oppoſite to one of them, C D, to find the Side oppoſite to the other: for which we have this Canon.—As the Sine of the Angle A, is to the given ſide oppoſite thereto, D C; ſo is the Sine of the other Angle D, to the Side required C A. See TRIANGLE.

To the ſide thus found, adding B C, the Sum is the perpendicular *Altitude* requir'd.

The Operation is beſt perform'd by Logarithms. See LOGARITHM.

If there happen an Error in taking the Quantity of the Angle A, (Fig. 24.) the true *Altitude* B D will be to the falſe one B C; as the Tangent of the true Angle D A B, to the Tangent of the erroneous Angle C A B.

Hence, ſuch Error will be greater in a greater *Altitude* than in a leſs: and hence alſo, the Error is greater if the Angle be leſſer, than if greater.—To avoid the Inconveniences of both which, the Station is to be pitch'd on at a moderate Diſtance; ſo as the Angle of *Altitude*, D E B, may be nearly half right.

Again, if the Inſtrument were not horizontally placed, but inclined, *e. g.* to the Horizon in any Angle: The true *Altitude* will be to the erroneous one, as the Tangent of the true Angle, to that of the erroneous one.

To meaſure an acceſſible Altitude *optically*, *by the Shadow of the Body*. See SHADOW.

To meaſure an acceſſible Altitude *by the geometrical Quadrat*.——Suppoſe it required to find the *Altitude* A B, (Tab. *Geom.* Fig. 90.) chuſing a Station at pleaſure in D, and meaſuring the Diſtance thereof from the Object, D B; turn the Quadrat this and that way, till the Top of the Tower A, appear thro' the Sights.

If, then, the Thread cut the right Shadows, ſay, As the Part of the right Shadow cut off, is to the ſide of the Quadrat; ſo is the Diſtance of the Station D B, to the Part of the *Altitude* A E.—If the Thread cut the verſed Shadows, ſay, As the Side of the Quadrat is to the Part of the verſed Shadow cut off; ſo is the Diſtance of the Station D B, to the Part of the *Altitude* A E.

A E, therefore, being found in either Caſe, by the Rule of Three; and the Part of the *Altitude* B E added thereto; the Sum is the *Altitude* required.

To take Inacceſſible ALTITUDES.

To meaſure an inacceſſible Altitude, *geometrically*.——Suppoſe A B, (Fig. 89.) an inacceſſible *Altitude*, ſo that you cannot meaſure to the Foot thereof. Find the Diſtance C A, or F H, as taught under the Article DISTANCE: proceed with the reſt as in the Article for acceſſible Diſtances.

To meaſure an inacceſſible Altitude, *trigonometrically*.—Chuſe two Stations, G and E, (Tab. *Trigonom.* Fig. 25.) in the ſame right Line with the required *Altitude* A B, and at ſuch diſtance from each other, D F, as that neither the Angle F A D, be too ſmall, nor the other Station G too near the Object, A B.—With a proper Inſtrument, take the Quantity of the Angles A D C, A F C, and C F B. See ANGLE.—And alſo meaſure the Interval F D.

Then, in the Triangle A F D, we have the Angle D, given by Obſervation; and the Angle A F D, by ſubtracting the obſerved *Altitude* A F C, from two right Angles; and conſequently the third Angle D A F, by ſubtracting the other two from two right ones: and alſo the Side F D: From whence the Side A F is found by the Canon above laid down, in the Problem of acceſſible *Altitudes*. And again, in the Triangle A C F, having a right Angle C, an obſerved Angle F, and a ſide A F; the Side A C, and the other C F, are found by the ſame Canon. Laſtly, in the Triangle F C B, having a right Angle C, obſerved Angle C F B, and a Side C F; the other ſide C B, is found by the ſame Canon.

Adding, therefore, A C and C B; the Sum is the *Altitude* required, A B.

To find an inacceſſible Altitude, *by the Shadow*, *or the geometrical Quadrat*.——Chuſe two Stations in D and H, (Tab. *Geom.* Fig. 90.) and find the Diſtance D H or C G: obſerve what part of either the right or verſed Shadow is cut by the Thread.

If the right Shadows be cut in both Stations, ſay, As the Difference of the right Shadows in the two Stations, is to the Side of the Square; ſo is the Diſtance of the Stations G C to the *Altitude* E A.——If the Thread cut the verſed Shadow at both Stations, ſay, As the Difference of the verſed Shadows mark'd at the two Stations, is to the leſſer verſed Shadow; ſo is the Diſtance of the Stations G C, to the Interval G E. Which being had; the *Altitude* E B is alſo found by means of the verſed Shadow in G; as in the Problem for acceſſible *Altitudes*.

Laſtly, if the Thread in the firſt Station G, cut the right Shadows; and in the latter, the verſed Shadows: ſay, As the Difference of the Product of the right Shadow into the verſed, ſubtracted from the Square of the Side of the Quadrat, is to the Product of the Side of the Quadrat into the verſed Shadow: ſo is the Diſtance of the Stations G C, to the *Altitude* requir'd, A E.

The utmoſt Diſtance at which an Object may be ſeen, *being given*; *to find its* Altitude.——Suppoſe the Diſtance D B, (Tab. *Geography*, Fig. 9.) turn this into Degrees; by which means, you will have the Quantity of the Angle C: From the Secant of this Angle ſubtract the whole Sine B C; the Remainder will be A B, in ſuch Parts, whereof B C is 10000000.—Then ſay, as 10000000 is to the Value of A B in ſuch Parts; ſo is the Semidiameter of the Earth B C 19695359, to the Value of the *Altitude* A B in *Paris* Feet.

The Sun's *Altitude* may alſo be found without a Quadrant, or any the like Inſtrument, by erecting a Pin or Wire perpendicularly, as in the Point C, (Tab. *Aſtronomy*, Fig. 62.)

62.) from which Point you had deſcrib'd the Quadrantal Arch A F. Make C E equal to the Height of the Pin or Wire, and thro' E draw E D parallel to C A, and make it equal to C G, the length of the Shadow; then will a Ruler, laid from C to D, interſect the Quadrant in B; and B A is the Arch of the Sun's *Altitude*, when meaſur'd on the Line of Chords. See CHORD.

Suppoſe, *e. g.* the *Altitude* be required of a Tower A B, whoſe Top is viſible at the Diſtance of five Miles: Then will D C B 20′, from whoſe Secant 10000168, ſubtracting the whole Sine 10000000; the Remainder A B is 168, which will be found 331 *Paris* Feet.

ALTITUDE *of the Eye*, in Perſpective, is a right Line let fall from the Eye, perpendicular to the geometrical Plane.

ALTITUDE, in Aſtronomy, is the Diſtance of a Star, or other Point in the Mundane Sphere, from the Horizon. See SPHERE, HORIZON, DISTANCE, &c.

This *Altitude* may either be *true* or *apparent*.—If regard be had to the rational, or real Horizon; the *Altitude* is ſaid to be *true* or *real*: If to the apparent, or ſenſible Horizon; the *Altitude* is *apparent*.—Or rather, the *apparent Altitude* is ſuch as it appears to our Obſervation; and the *true*, that from which the Refraction has been ſubtracted. See TRUE, APPARENT, &c.

The *Altitude* of a Star, or other Point, is properly an Arch of a Vertical Circle, intercepted between the aſſigned Point and the Horizon. See VERTICAL.—Hence,

Meridian ALTITUDE.—The Meridian being a vertical Circle; a *Meridian Altitude*, that is, the *Altitude* of a Point in the Meridian, is an Arch of the Meridian intercepted between it and the Horizon. See OBSERVATION.

To obſerve the Meridian Altitude *of the Sun, of a Star, or other Phænomenon, by means of the Quadrant*, ſee MERIDIAN *Altitude*.

To obſerve a Meridian Altitude *by means of a Gnomon*, ſee GNOMON.

ALTITUDE *of the Pole*.—Since the Meridian paſſes thro' the Poles of the World; the *Altitude of the Pole*, is an Arch of the Meridian, intercepted between the Pole and the Horizon.

To obſerve the Altitude *or Elevation of the Pole*, ſee ELEVATION, and POLE.

The *Altitude of the Pole* coincides with the Latitude of the Place. See LATITUDE.

ALTITUDE *of the Equator*, is the Complement of the Altitude of the Pole to a Quadrant of a Circle. See ELEVATION *of the Equator*.

To find the ALTITUDES *of the Sun, Stars*, &c. *by the Globe*. See GLOBE.

ALTITUDE *of the Nonageſimal*, is the *Altitude* of the 19th Degree of the Ecliptic, reckon'd from the Eaſt Point. See NONAGESIMAL.

Refraction of ALTITUDE, is an Arch of a Vertical Circle, as S *s*, (Tab. *Aſtronomy*, Fig. 28.) whereby the *Altitude* S E, of a Star or other Body, is increas'd by means of the Refraction. See REFRACTION.

Parallax of ALTITUDE, called alſo ſimply *Parallax*; is the difference C B, (Tab. *Aſtron.* Fig. 27.) between the true and apparent Place of a Star; or, the Difference B C, between the true Diſtance of a Star A B, and the obſerved Diſtance A C, from the Zenith A.

The Parallax diminiſhes the *Altitude* of a Star, or increaſes its Diſtance from the Zenith.

To find the Parallax of Altitude, &c. ſee PARALLAX.

ALTITUDE *of a Figure*, in Geometry, is the Diſtance of its Vertex, from its Baſe; or the length of a Perpendicular let fall from the Vertex to the Baſe. See FIGURE, BASE, and VERTEX.

Thus, K M, (Tab. *Geometry*, Fig. 19.) being taken for the Baſe of the Rectangle-Triangle, K L M: the Perpendicular K M, will be the *Altitude* of the Triangle.

Triangles of equal Baſes and *Altitudes*, are equal; and Parallelograms, whoſe Baſes and Altitudes are equal to thoſe of Triangles, are juſt double thereof. See TRIANGLE, PARALLELOGRAM, &c.

ALTITUDE *of Motion*, is a Term uſed by Dr. *Wallis*, for the Meaſure of any Motion, eſtimated according to the Line of Direction of the moving Force. See MOTION.

ALTO *& Baſſo*, or *in* ALTO *& in Baſſo*, in Law, ſignifies the abſolute Reference of all Differences, ſmall and great, high and low, to ſome Arbitrator or indifferent Perſon.——*Pateat univerſis per præſentes quod Willielmus Tylar de Yetton, & Thomas Gower de Almeſtre, poſuerunt ſe in* Alto *& in Baſſo, in arbitrio quatuor Hominum*, viz.—*de quadam querela pendente inter eos in curia. Nos & terram noſtram Alte & Baſſe ipſius domini Regis ſuppoſuimus voluntati.* Du Cange.

ALUDELS, in Chymiſtry, *Subliming-Pots*. See SUBLIMATION.

Aludels, are a Range of earthen Tubes, or Pots without bottoms; fitted, one over another, and diminiſhing as they advance towards the Top.—The loweſt is adapted to a Pot, placed in the Furnace, wherein the Matter to be ſublimed is lodg'd.—And at the Top is a Head, to retain the Flowers which aſcend. See FLOWER.

ALVEARIUM, in Anatomy, the bottom of the Concha, or hollow of the Auricle. See AURICLE, and CONCHA.

The *Alvearium Auriculæ* terminates at the *Meatus Auditorius*. See MEATUS.

The Word literally ſignifies *Bee-hive*, form'd of *Alveus*, Channel.

ALVEOLI, in Anatomy, little Sockets in the Jaws, wherein the Teeth are ſet. See TEETH, and JAW.

The *Alveoli* are lined with a Membrane of exquiſite Senſe, which ſeems to be nervous, and is wrapt about the Roots of each Tooth; from whence, and the Nerve, proceeds that Pain called *Odontalgy*, or Tooth-ach. See ODONTALGY, and TOOTH-ACH.

ALVIDUCA, a Term uſed by ſome Writers for *looſening Medicines*. See PURGATIVE, &c.

The Word is compounded of *Alvus*, and *duco*, I draw.

ALUM, ALUMEN. See ALLUM.

ALVUS, among Anatomiſts, is ſometimes uſed to expreſs the inteſtinal Tube, from the Stomach to the Anus. See INTESTINES.

ALVUS, in a Medicinal Senſe, is taken for the State, and Condition of the Fæces, or Excrements contain'd within that Cavity. See EXCREMENT, &c.

Thus, when a Perſon is laxative, it is called *Alvus liquida*; and when coſtive, *Alvus adſtricta*. See COSTIVE, LAXATIVE, &c.

AMABYR, or AMVABYR, in our antient Law-Books.—*Pretium virginitatis domino ſolvendum.—Puella dicitur eſſe deſertum Regis, & ob hoc Regis eſt de ea* Amvabyr *habere*.

The Cuſtom was in honour of *Clun*, and obtained till ſuch time as *Henry* Earl of *Arundel*, *Temp. Phil. & Mar.* in conſideration of 60*l.* releaſed it to all his Tenants there, by the Name of the *Cuſtom of* Amabyr *and Chevage*. See CHEVAGE.

AMAIN, a Sea Term, uſed by a Man of War, to his Enemy; and ſignifying, *yield*.—Hence, *To ſtrike Amain*, that is, to lower your Topſails.

AMALGAM, or AMALGAMA, in Chymiſtry, a Maſs of Mercury, united and incorporated with a Metal. See MERCURY, and METAL.

The *Amalgam* of Mercury with Lead, is a ſoft, friable Subſtance, of a Silver Colour. See LEAD.

By waſhing and grinding this *Amalgam* with fair warm Water in a glaſs Mortar, the Impurities of the Metal will mix with the Water; and by changing the Water, and repeating the Lotion again and again, the Metal will be further and further purified.—*Boerhaave* mentions it as one of the greateſt Secrets in Chymiſtry, to contrive to bring off the Liquor at laſt as clear and unſully'd as when firſt pour'd on the *Amalgam*; which might afford a Method of making the nobler Metals, or procuring them from the Baſer. See TRANSMUTATION, PHILOSOPHER'S *Stone*, &c.

This philoſophical way of purifying Metals, may be applied to all the Metals, except Iron and Copper. See AMALGAMATION.

The Word *Amalgama* is form'd of the *Greek* ἅμα, *ſimul*, together, and γαμέω, *jungere*, to join.

AMALGAMATION, in Chymiſtry, the Operation of making an *Amalgama*; *i. e.* of calcining, or rather diſſolving ſome Metal, eſpecially Gold, by means of Mercury. See AMALGAMA.

Amalgamation is performed by fuſing, or at leaſt igniting the Metal; and in this State adding a proportion of Mercury thereto; upon which they mutually attract, and incorporate with each other. See MERCURY.

All Metals, except Iron and Copper, unite and *amalgamate* with Mercury; but Gold with the greateſt facility; Silver the next; then Lead, and Tin. See METAL, &c.

The *Amalgamation* of Gold is uſually perform'd by heating the Laminæ or Plates of Metal red hot; after which, Quickſilver is to be pour'd upon 'em, and the Mixture ſtirr'd with a little Iron Rod, till it begins to riſe into Smoke.—It is then thrown into a Veſſel full of Water, where it coagulates and becomes manageable.

This Calcination is in great uſe among Goldſmiths, and Gilders, who by this means render Gold fluid and ductile for their Purpoſes.—Such Mixture or *Amalgama* being laid on any other Metal, for inſtance, Copper; and this afterwards placed on the Fire to evaporate; the Gold will be left alone on the Surface of the Copper: which makes what we call *Gilding*. See GILDING.

The Blackneſs adhering to the *Amalgama* may be waſhed away with Water; and a deal of the Mercury preſs'd out thro' a linen Cloth: The reſt being evaporated in a Crucible, the Gold remains behind in an impalpable Pouder. See GOLD.

Gold retains about thrice its own weight of Mercury.

This Operation is denoted among Chymiſts by the Letters AAA. See CHARACTER.

AMATORII *Muſculi*, in Anatomy, an Appellation ſometimes given to thoſe Muſcles of the Eyes which give them a Caſt ſideways, and aſſiſt in that particular Look by ſome called Ogling. See EYE.

When the *Abductor* and *Humilis* act together, they give this oblique Motion. See ABDUCTOR, and HUMILIS.

The Word is form'd of the Latin *Amare*, to love.

AMAUROSIS, in Medicine, a Deprivation of Sight; the Eyes remaining fair, and ſeemingly unaffected. See EYE, *&c.*

Amauroſis is the ſame with what the *Latins* more uſually call *Gutta Serena*. See GUTTA *Serena*.

The Word is *Greek*, ἀμαύρωσις, q. d. *Darkneſs*; form'd of ἀμαυρόω, *obſcuro*.

AMAXOBII, AMAXOBIANS, or HAMAXOBIANS, in antient Geography, a kind of People who had no Houſes, nor even Tents; but lived altogether in Chariots. See HAMAXOBIANS.

The Word is compounded of ἅμαξα, *a Chariot*, and βιος, *vita*, Life.

AMAZON, in Antiquity, a Term ſignifying a bold, courageous Woman; capable of daring, hardy Atchievements. See VIRAGO, HEROINE, *&c.*

The Word is borrow'd from the *Amazons*, a Nation of warlike Women, in *Scythia*, inhabiting near the *Tanais*; who liv'd without Men, and had only to do with Strangers; killing their Male Children, and cutting off the left Breaſts of their Females, to make them more fit for the Combat.

'Tis from this laſt Circumſtance that they take their Name, *viz.* from the Privative α, and μάζος, *Mamma*, Breaſt.

'Tis a Point controverted even among antient Writers, whether ever there really were ſuch a Nation of *Amazons*.—*Strabo*, *Palæphatus*, and others, abſolutely deny it: on the contrary, *Herodotus*, *Pauſanias*, *Diodorus Siculus*, *Trogus Pompeius*, *Juſtin*, *Pliny*, *Mela*, *Plutarch*, &c. expreſly aſſert it.

Hippocrates mentions a Law among 'em, whereby they were doom'd to remain Virgins, till ſuch time as they had ſlain three Men of their Enemies.—He adds, that the Reaſon of their cutting off the right Breaſt, was to make the right Arm the ſtronger; as ſuppoſing this would now receive the Nutriment, which wou'd otherwiſe have gone to that.

Some Authors relate, that inſtead of killing, they twiſted the Legs of their Male Children; to prevent their being able to contend with 'em for the Maſtery.

M. *Petit*, a *French* Phyſician, publiſh'd a *Latin* Diſſertation in 1685, to prove that there really was a Nation of *Amazons*: It contains abundance of curious Inquiries, relating to their Habit, their Arms, the Cities built by 'em, *&c.*—On Medals, the *Amazons* Buſt is uſually arm'd with a little Ax, bore on the Shoulder, and a Buckler, in form of a Half-Moon, by the *Latins* called *Pelta*.

Some modern Geographers and Travellers mention *Amazons* ſtill in being.—*John de los Sanctos*, a *Portugueſe* Capuchin, in his Deſcription of *Ethiopia*, ſpeaks of a Race of *Amazons* in *Africa*. And *Æneas Sylvius* gives us a very preciſe Account of a Republick of real *Amazons*, in *Bohemia*, which laſted nine Years; founded by the Courage of a Maid named *Valaſca*.

AMBAGES, a *Latin* Term for a *Circumlocution*; or, an indirect Diſcourſe or Diction, tending to expreſs or ſhew ſomething by a Compaſs of Words or Sentiments fetch'd from afar. See CIRCUMLOCUTION.

AMBARVALIA, in Antiquity, a Feaſt, or Ceremony among the *Romans*; celebrated annually, to procure of the Gods a happy Harveſt. See FEAST, *&c.*

At theſe Feaſts, they ſacrificed a Bull, a Sow, and a Sheep; which, before the Sacrifice, were led in Proceſſion around the Fields; whence the Feaſt took its Name: from the *Greek* αμφι, *about*; or the Latin *ambio*, I go round, and *arvum*, Field.—Tho, *Scaliger* writes it *Ambarbalia*; and deduces it from *ambire urbem*, to go round the City.

From the Beaſts offer'd in Sacrifice, the Ceremony was alſo called *Suovetaurilia*. See SUOVETAURILIA.

'Tis not certain whether this Feaſt was fix'd, or moveable; nor whether it was celebrated once, or twice a year; Authors being of different Opinions on both thoſe Heads.

The *Ambervale Carmen*, was a Prayer preferr'd on this Occaſion; whereof we have the Formula preſerved in *Cato*, C. 141. *de Re Ruſtica*.

The Prieſts who chiefly officiated at the Solemnity, were called *Fratres Arvales*. See ARVALES.

AMBASSADOR. See EMBASSADOR.

AMBE, in Anatomy, a ſuperficial Jutting out of a Bone. See BONE.

The Word is alſo uſed as the Name of a Chirurgical Inſtrument, with which they reduce diſlocated Bones.

AMBER, SUCCINUM, CARABE or KARABE, GLESSUM, ELECTRUM, CHRYSOLECTRUM, in Natural Hiſtory, *&c.* a yellow tranſparent Subſtance, of a gummous or bituminous Form and Conſiſtence, but a reſinous Taſte, and a ſmell like Oil of Turpentine; chiefly found in the *Baltick* Sea, along the Coaſts of *Pruſſia*, &c.

Naturaliſts are infinitely divided as to the Origin of *Amber*, and what Claſs of Bodies it belongs to: ſome referring it to the Vegetable, others to the Mineral, and ſome even to the Animal Kingdom.—Its Natural Hiſtory, and its Chymical Analyſis, afford ſomething in favour of each Opinion.

Pliny deſcribes it as "a reſinous Juice, oozing from aged "Pines, and Firs; (others ſay, from Poplars, whereof there "are whole Foreſts on the Coaſts of *Sweden*;) and diſ-"charged thence into the Sea; where undergoing ſome Al-"teration, it is thrown in this form upon the Shores of "*Pruſſia*; which lie very low: They add, that it was hence "the Antients gave it the Denomination *Succinum*; from "*Succus*, Juice." *Nat. Hiſt.* Lib. XXXVII.

This Opinion of the antient Naturaliſt, is confirmed by the Obſervations of many of the modern ones; particularly the learned Father *Camelli*. *Philoſoph. Tranſact.* N° 290.

Some have imagin'd it a Concretion of the Tears of Birds; others, the Urine of a Beaſt; others, the Scum of the Lake *Cephiſide*, near the *Atlantick*; others, a Congelation form'd in the *Baltick* Sea, and in ſome Fountains where it is found ſwimming like Pitch.

Others ſuppoſe it a Bitumen, trickling into the Sea from ſubterraneous Sources; there concreted into this form, and thrown aſhore by the Waves.

This laſt Opinion was a long time the moſt popular; and ſeem'd to have the beſt Ground: but this, too, is now diſcarded; as good *Amber* having been found in digging at a conſiderable diſtance from the Sea, as that gathered on the Coaſt.

Others ſuppoſe *Amber* a compound Subſtance.—*Pruſſia*, ſay they, and the other Countries which produce *Amber*, are moiſten'd with a bituminous Juice, which mixing with the vitriolick Salts abounding in thoſe Places, the Points of thoſe Salts fix its Fluidity, whence it congeals: and the Reſult of that Congelation makes what we call *Amber*; which is more or leſs pure, tranſparent, and firm, as thoſe Parts of Salt and Bitumen are more or leſs pure, and mix'd in this, or that Proportion.

The Chymiſts are as much divided as the Naturaliſts. *Amber* being found by Diſtillation to yield an acid Spirit, which precipitates into a Salt; is inferr'd, by ſome, to be of a mineral Nature; this being a Circumſtance peculiar to that Kingdom, and never found in the Diſtillation of Vegetables: To which may be added, that *Amber* diſſolves in Alcohol, not in Water; melts at the Fire, and is inflammable; which are Characters, that ſeem to refer it to the Claſs of Sulphurs, or Bitumens.

Others, on the contrary, argue it of the Vegetable Kind, from its reſolving into the ſame Principles with Vegetables; *viz.* Water, Spirit, Salt, and Oil.—*Boerhaave* reſembles it to Camphire, which is a concreted Oil of the aromatic Plants of that Country, elaborated by Heat into a cryſtalline Form.

There are ſeveral Indications which diſcover where *Amber* is to be found.—The Surface of the Earth is there cover'd with a ſoft ſcaly Stone; and Vitriol in particular abounds there, which is ſometimes found white, ſometimes reduced into a Matter like melted Glaſs, and ſometimes figur'd like petrify'd Wood.

Amber aſſumes all Figures in the Ground; that of a Pear, an Almond, a Pea, *&c.* Among others, there have been found Letters very well formed; and even *Hebrew*, and *Arabick* Characters.—Within ſome pieces of *Amber*, have likewiſe been found Leaves, Inſects, *&c.* included; which ſeems to indicate either that the *Amber* was originally in a fluid State; or that having been expoſed to the Sun, it was ſoften'd, and render'd ſuſceptible of the Leaves, Inſects, *&c.* which came in its way. The latter of theſe ſeems the more agreeable to the Phænomenon, in regard thoſe Inſects, *&c.* are never found in the Centre of the piece of *Amber*, but always near the Surface.

'Tis obſerv'd by the Inhabitants of the Places where *Amber* is produc'd, that all Animals, whether terreſtrial, aerial, or aquatick, are extremely fond of it; and that they frequently find Pieces of it in their Excrements, and in their Bodies when open'd.

The moſt remarkable Property of *Amber*, is, that, when rubbed, it draws or attracts other Bodies to it; and this, 'tis obſerv'd, it does, even in thoſe Bodies which the Antients thought it had an Antipathy to; as oily Bodies, Drops of Water, the Baſiliſk, Sweat of human Body, *&c.* See ELECTRICITY.

Add, that by Friction it is brought to yield Light pretty copiouſly in the dark; whence 'tis reckon'd among the native *Phoſphori*. See FRICTION, PHOSPHORUS, LIGHT, *&c.*

Amber is reputed of ſome medicinal Efficacy; being uſed in Suffumigations, to remove Defluxions; and in Pouder, as an Alterant, Abſorbent, Sweetner, and Aſtringent. See SUFFUMIGATION, ABSORBENT, ASTRINGENT, *&c.*

In

In times of Plague, thoſe who work in *Amber* at *Koningsberg* are ſaid to be never infected; whence it is held a Preſervative.—It is eſteem'd a Lithonthriptick Diuretick, and Promoter of the Menſes.

Some diſtinguiſh *Amber* with regard to its Colours, into *yellow*, *white*, *brown*, and *black*.—But the two latter are ſuppoſed of a different Nature and Denomination; the one call'd *Jet*, the other *Ambergreaſe*. See AMBERGREASE.

The white is moſt valued for Medicinal Uſes, as being beſt digeſted, of the moſt odoriferous Smell, and containing the greateſt Quantity of Volatile Salt.—The yellow is moſt prized by thoſe who work it into Beads, and other Toys, by reaſon of its tranſparency.

Kerkrig pretends to be Maſter of the Secret of making Coffins of *Amber*, without deſtroying its Tranſparency. 'Tis probable he took the Hint from the *Ethiopians*, who bury their Dead in Glaſſes. An *Ethiopian*, tho black, makes a fine Figure in a Venice Cryſtal; much more would he do in a Cover of yellow *Amber*.

The *Amber* gather'd on the *Pruſſian* Coaſts, yields that Prince a handſome Revenue.—Authors make mention of other Places where it is found, as on the Banks of the *Po*; the Coaſts of *Marſeilles*; and divers Parts of *Aſia*, *Africa*, and even *America*: But *Hartman*, who has wrote the Hiſtory of the *Pruſſian Amber*, *Succini Pruſſici Hiſtoria*, &c. treats all theſe Accounts as Fables, and denies *Amber* to be found any where but in the Northern Countries of *Europe*, *viz.* in *Poland*, *Sileſia*, and *Bohemia*, rarely; *Jutland*, *Holſtein*, *Denmark*, oftener; more frequently ſtill on the Coaſts of *Samogitia*, *Courland*, *Livonia*, and *Pomerania*; but moſt of all, in *Pruſſia*, in the Country called *Sambia*, from *Neve Tiff* to *Urantz Urug*.

The Word is originally *Arabick*, *Ambar*, or *Anbar*, which ſignifies the ſame thing.

Spirit of AMBER, is an acid Liquor, procur'd from *Amber*, by pulverizing and diſtilling it by a Sand-heat, with or without the Addition of Tobacco-pipes, Bricks, Sand, &c.

It is chiefly uſed externally in Rheumatick Pains and Aches; and internally, in inveterate Gleets, &c.

Oil of AMBER, is a fine, tranſparent, ponderous, yellow Oil; procured after the Spirit, by increaſing the degree of Fire.—This, by Rectification, becomes a good Antihyſteric, and Emmenagogue; being very ſubtile and penetrative.

Volatile Salt of AMBER.—The principal Chymical Production of this Subſtance, is a peculiar white, tranſparent, acid Salt; which riſes after the Oil, and fixes in the Neck of the Retort, &c.

It is a good Cephalic, and Detergent: Dr. *Quincy* ſays, it extremely attenuates, cuts, and penetrates the moſt remote and minute Receſſes; and thus ſcours, as it were, the whole nervous Syſtem. Its chief tendency, he adds, is to Secretion; and what it carries along with it, is by Urine. It alſo contributes, with Alexipharmicks, to promote a Diaphoreſis; and is ſcarce ever omitted in Preſcription for chronick Caſes, as Epilepſies, Palſies, &c.

The great Conſumption of this Medicine, and the ſmall Proportion that *Amber* yields of it, occaſions it to be frequently adulterated with Sal Ammoniac, Nitre, Cream of Tartar, Salt of Coral, &c.

Tincture of AMBER, is procured by Digeſtion in Spirit of Wine with a Sand-heat. See TINCTURE, and DIGESTION.

It is preſcribed with the ſame Intentions as the *Salt of Amber*.

Black AMBER. See JET.

Liquid AMBER, is a kind of native Balſam, or Reſin, like Turpentine; clear, reddiſh or yellowiſh; of a pleaſant Smell, almoſt like Ambergreaſe. See RESIN.

It flows liquid, from an Inciſion made in the Bark of a fine large Tree in *New Spain*; but hardens as it grows older into a ſolid form, and is brought to us in Barrels.

It is reputed an excellent Balſam; mollifies, conſolidates, and is good againſt the Sciatica, Weakneſs of the Nerves, &c. See BALM.

AMBER-GREASE, AMBERGRIS, AMBRA-GRISIA, AMBARUM, a fragrant Drug, that melts almoſt like Wax; commonly of a greyiſh or aſh-colour, uſed both as a Perfume and a Cordial.

It is found on the Sea-Coaſts, in ſeveral Countries; as, along the Southern and Eaſtern Parts of *Africa*, *Madagaſcar*, the *Maldives*, ſome Parts of the *Mediterranean*; and in the *Weſt Indies*, about the Iſlands of *Bermudas*, &c. It is of divers Colours, whitiſh, browniſh, ſtreak'd with yellow, blackiſh, &c.

There is a great Variety of Opinions among Naturaliſts with regard to its Origin and Production: To rehearſe 'em all, would make a Volume.—The principal may be reduced to theſe which follow.

1°, Some take it for the Excrement of a Bird, which being melted by the Heat of the Sun, and waſh'd off the Shore by the Waves; is ſwallow'd by Whales; who return it back in the Condition we find it. Or, as *Barboſa* relates, from the *Mooriſh* Inhabitants of the *Maldives*; the Excrements abovemention'd are alter'd and refin'd by lying on the Rocks, expoſed to the Sun, Moon, and Air; from whence they are afterwards waſh'd off by the riſing Sea. They add, that the Whales frequently ſwallow pieces hereof: that thoſe Pieces we meet withal of a black Colour, took that Hue in the Stomach of thoſe Animals; that the brown are ſuch as have floated long on the Water; and the white, ſuch as have only been a ſhort time there, which they value the moſt. *Ramuſio*, Tom. I. fol. 313.

2°, Others ſpeak of it as the Excrement of a Cetaceous Fiſh; becauſe ſometimes found in the Inteſtines, and ſometimes in the Fæces themſelves, of ſuch Animals.—*Juſtus Klobius*, in his Hiſtory of *Amber*, deſcribes the Animal; which he ſays is a Whale, and called the *Trunk*: Adding, that the Sperma Ceti is taken out of the Head of the ſame Creature.—Others, with the *Perſians*, ſuppoſe the Fiſh that yields the *Ambergreaſe*, a Sea-Calf; others, with the *Africans*, a peculiar Species of Fiſh, named *Ambracan*; others a Crocodile, by reaſon its Fleſh is perfumed, &c.

But, to both theſe Hypotheſes it is objected, That we have no Inſtance of any Excrement capable of melting like Wax. Add, that if it were the Excrement of a Whale, it ſhould rather be found in ſuch Places where thoſe Animals abound, as about *Greenland*, &c. than about the *Maldivy* Iſlands, *Soffala*, *Melinda*, *Cape Comorin*, &c. where no Whales are found.

3°, Others take it for a kind of Wax, or Gum, which diſtils from Trees, and drops into the Sea, where it congeals, and becomes *Ambergreaſe*.

4°, Others, and particularly many of the Orientals, imagine it ſprings out of the bottom of the Sea, as Naphtha does out of ſome Fountains.—They add, that the only Springs hereof are in the Sea of *Ormus*, between the *Arabian* and *Perſian* Gulphs. *Edriſſi*, who is of this Opinion, in the firſt Climate of his Geography, mentions pieces of *Ambergreaſe*, on thoſe Coaſts, weighing a full Quintal.—*Paludanus* and *Linſchoot* ſpeak of it as a ſort of Pitch, gradually working up from the bottom of the Sea, and hardening in the Sun.

5°, Others take it for a Sea-Muſhroom, tore up from the bottom by the Violence of Tempeſts; it being obſerv'd, that *Ambergreaſe* is never found but after Storms.

6°, Others aſſert it a Vegetable Production, iſſuing out of the Root of a Tree, whoſe Roots always ſhoot toward the Sea, and diſcharge themſelves into the ſame.—This Account we have in the *Philoſophical Tranſactions*, from one of the *Dutch* Factors at *Batavia*: And the ſame is confirmed by Mr. *Boyle*. *Of Taſtes and Odors*.

7°, Others ſuppoſe it a ſpongious kind of Earth, which the working of the Sea waſhes from off the Rocks, where, being lighter than Water, it floats.—Others are of Opinion that it is a bituminous Matter; that it is at firſt liquid, and runs into the Sea, and that it is there condenſed and reduced into a Maſs.

8°, Laſtly, others maintain, that *Ambergreaſe* is made from the Honey-Combs which fall into the Sea from the Rocks, where the Bees had formed their Neſts.—This Opinion has ſomething of Experience on its ſide, and begins now to be generally allow'd; ſeveral Perſons having ſeen Pieces that were half *Ambergreaſe*, and half plain Honey-Comb: and others, again, having found large Pieces of *Ambergreaſe*, which when broke, Honey-Comb, and Honey too, were found in the middle.

The Pieces frequently ſeem compoſed of divers Strata, laid one over another; with Stones and other Bodies incloſed therein; and the Strata are ſometimes full of little Shells, which ſeem a Species of Concha Anatifera: Whence it may be conjectur'd, that the *Ambergreaſe* has originally been in a fluid State; or at leaſt, that it has been melted; and in that State has form'd it ſelf afreſh, and invelop'd ſuch Bodies as happen'd to be in its way.

It is of conſiderable uſe among Perfumers, who melt it over a gentle Fire, and make Extracts, Eſſences, and Tinctures of it.—It would be of more uſe in Phyſick too, were not its Smell ſo rank and offenſive, and on that account apt to occaſion Vapours.

We have various Inſtances in Authors, of huge Pieces of this Matter: The largeſt that has been known in *Europe*, was brought by the *Dutch Eaſt-India* Company, toward the Cloſe of the laſt Century; and kept in their Houſe for ſome Years. It was almoſt round; meaſured two Foot in Diameter, and weigh'd an hundred eighty two Pounds. The great Duke of *Tuſcany* offer'd fifty thouſand Crowns for it.

AMBER-SEED, or *Musk-ſeed*, is a Seed ſomewhat like the Millet, of a bitteriſh Taſte, and brought dry to us from *Martinico* and *Egypt*.—The *Egyptians* uſe it internally, as a Cordial, to fortify the Heart, Stomach, and Head, and to provoke Luſt.—It gives a grateful Scent to the Breath, after eating; but is not proper for thoſe who are inclinable to Vapours.

AMBI-

AMBIDEXTER, one who uſes both Hands alike, the Left as well as the Right, and this in Caſes where only the Uſe of one is neceſſary.

The Word is form'd from the Latin *ambo*, both, and *dexter*, right hand.—*Hippocrates* obſerves, that this never happens to Women.

In a legal Senſe, *Ambidexter* ſignifies a Juror, *&c.* who receives Money of both Parties, for the giving his Verdict, *&c.* for which he is to forfeit *decies tantum*, ten times as much as he receives. See JUROR.

AMBIENT, a Term applied to ſuch things as incompaſs others round about.

Thus, the Bodies ſituate around any other Body, are called the *Ambient*, and often the *Circum-Ambient* Bodies.

And the whole Body of Air, becauſe it incompaſſes all things on the Face of the Earth, is often by Phyſical Writers called, by way of Eminence, the *Ambient*, or *Ambient Air*. See AIR.

The Word is form'd of the Latin *Ambire*, to incompaſs, go round.

AMBIGENAL *Hyperbola*, in Geometry is that which has one of its infinite Legs inſcribed, and the other circumſcribed. See HYPERBOLA, and CURVE.

AMBIGUOUS, ſomething dubious, obſcure, or which may be taken in different Senſes.—The Word is form'd of the Latin *ambo*, both, and *ago*, I drive; *q. d.* that which keeps the Mind wavering, or in Suſpence; not knowing which ſide to chuſe.

The Anſwers of the antient Oracles were always *ambiguous*. See ORACLE.

AMBIT, of a Figure, in Geometry, is the Perimeter, Circumference, or Sum of all the bounding or incompaſſing Lines, that conſtitute or include it. See PERIMETER, CIRCUMFERENCE, *&c.*

AMBITUS, among the antient *Romans*, ſignified the Act of ſuing, or making Intereſt for Offices.

The Candidates, in this Caſe, went about the City; and into all publick Places, and Aſſemblies, to beg Voices; which was call'd *Ambitus*; *am*, in the antient *Latin*, ſignifying *circum*, about, or around, and *ire*, to go. See CANDIDATE.

AMBLE, AMBLING, in Horſemanſhip, a peculiar kind of Pace, wherein a Horſe's two Legs of the ſame Side, move at the ſame time. See PACE.

The *ambling* Horſe changes Sides at each remove; two Legs of a ſide being in the Air, and two on the ground, at the ſame time: An *Amble* is uſually the firſt natural Pace of young Colts; which, as ſoon as they have Strength enough to trot, they quit.—There is no ſuch thing as an *Amble*, in the Manage; the Riding-Maſters allowing of no other Paces, beſide Walk, Trot, and Gallop: Their Reaſon is, That a Horſe may be put from a Trot to a Gallop, without ſtopping him; but not from an *Amble* to a Gallop, without ſuch Stop; which loſes time, and interrupts the Juſtneſs and Cadence of the Manage. See TROT, GALLOP, *&c.*

There are various Practices and Methods of Diſcipline, for bringing a young Horſe to *Amble*: Some chuſe to toil him in his Foot-pace thro' new-plough'd Lands; which naturally inures him to the Stroke requir'd in the *Amble*. Its Inconveniencies are, the Weakneſs and Lameneſs that ſuch diſorderly Toil may bring on a young Horſe.

Others attempt it by ſudden ſtopping, or checking him in the Cheeks, when in a Gallop; and thus putting him into an Amazedneſs, between Gallop and Trot; ſo that loſing both, he neceſſarily ſtumbles on an *Amble*.—But this is apt to ſpoil a good Mouth and Rein; and expoſes the Horſe to the Danger of an Hoof-reach, or Sinew-ſtrain, by over-reaching, *&c.*

Others prefer *ambling* by Weights, as the beſt way; and to this end, ſome overload their Horſe with exceſſively heavy Shoes; which is apt to make him interfere, or ſtrike ſhort with his hind Feet.——Others ſold leaden Weights about the Fetlock Paſterns; which are not only liable to the Miſchiefs of the former, but put the Horſe in danger of incurable Strains, cruſhing of the Coronet, and breeding of Ring-bones, *&c.*——Others load the Horſe's Back with Earth, Lead, or the like maſſy Subſtance; which may occaſion a Swaying of the Back, overſtraining of the Fillets, *&c.*

Some endeavour to make him *Amble in hand*, ere they mount his Back, by means of ſome Wall, ſmooth Pale or Rail, and by checking him in the Mouth with the Bridle-hand; and correcting him with a Rod on the hinder Hoofs, and under the Belly, when he treads falſe: But this is apt to drive a Horſe to a deſperate Frenzy, ere he can be made to underſtand what they would have of him; and to rear, ſpraul out his Legs, and make other antick Poſtures, which are not eaſily quitted again.

Others think to effect it by a pair of hind Shoes with long Spurns or Plates before the Toes; and of ſuch length, that if the Horſe offers to trot, the hind-foot beats the fore-foot. But this occaſions Wounds of the back Sinews, which often bring on an incurable Lameneſs.

Some attempt to procure an *Amble*, by folding fine, ſoft Liſts ſtrait about his Gambrels, in the Place where he is gartered for a Stiffle Strain; and turn him thus to Graſs for two or three Weeks, and afterwards take away the Liſt.—This is a *Spaniſh* Method, but diſapproved; for tho a Horſe cannot then trot but with Pain, yet the Members muſt be Sufferers; and tho the *Amble* be gain'd, it muſt be ſlow, and unſightly; becauſe attended with a cringing in the hind Parts.

In effect, *Ambling by the Tramel* appears the neareſt to Nature, the beſt and moſt aſſured way. See TRAMEL.

There are divers Errors uſually practis'd in this Method: as, That the Tramel is oft made too long, and ſo gives no Stroke; but makes a Horſe hackle and ſhuffle his Feet confuſedly; or too ſhort, which makes him volt and twitch up his hind Feet ſo ſuddenly, that by Cuſtom it brings him to a String-halt; from which it will ſcarce ever be recover'd. Sometimes the Tramel is miſplaced, and to prevent falling put above the Knee, and the hind Hoof.—In which Caſe, the Beaſt cannot give any true Stroke, nor can the fore-Leg compel the hind to follow it: or if, to evade this, the Tramel be made ſhort and ſtrait, it will preſs the main Sinew of the hind-Leg, and the fleſhy part of the fore Thighs; ſo that the Horſe cannot go without halting before, and cringing behind.

As to the Form of the *Tramel*; ſome make it all of Leather, which is inconvenient; in that it will either ſtretch or break, and thus confound the Certainty of the Operation. In a true Tramel, the ſide-Ropes are to be ſo firm, as not to yield a Hair's-breadth; the Hoſe ſoft, and to lie ſo cloſe, as not to move from its firſt Place; and the Back-band flat, no matter how light, and to deſcend from the Fillets ſo as not to gall.

When the Horſe by being *Trameled* on one ſide, has attain'd to *Amble* perfectly in the Hand; it is to be changed to the other ſide, and that to be likewiſe brought to Rule. When, by this changing from one ſide to another, with a half Tramel, the Horſe will run and *amble* in the Hand, readily and ſwiftly, without Snappering and Stumbling; which is ordinarily done by two or three Hours labour; the whole Tramel is to be put on, with the broad, flat, Back-band, and both ſides tramel'd alike.

AMBLYGONOUS *Angle*, in Geometry, is an obtuſe Angle; or an Angle conſiſting of more than 90 Degrees. See ANGLE, and OBTUSE.

A Triangle is ſaid to be *Amblygonous*, when it has one Angle greater than a right Angle. See TRIANGLE.

The Word is *Greek*; compos'd of ἀμβλὺς, *obtuſe*, and γωνια, *Angle*.

AMBLYOPY, AMBLYOPIA, in Medicine, a Diſeaſe of the Eyes; otherwiſe called *Gutta Serena* and *Amauroſis*. See GUTTA *Serena*, &c.

The Word comes from ἀμβλὺς, *obtuſus*, dull, and ὄπομαι, *video*, I ſee.

AMBO, a kind of Pulpit, or Deſk, antiently uſed in Churches, whereon the Prieſts and Deacons ſtood to read, or ſing part of the Service; and preach to the People. See PULPIT.

It was aſcended by Steps; which occaſioned that part of the Office perform'd there, to be called the *Gradual*. See GRADUAL.

The Term is derived from ἀμβαινω, I mount.—The *Latins* alſo called it *Analogium*; by reaſon they read there.—The *Ambo* was mounted upon two Sides; and hence ſome derive the Appellation, from *ambo*, both.

The Goſpel was read at the Top of the *Ambo*; the Epiſtle a Step lower.

AMBROSIA, in the Heathen Theology, *&c.* a delicious kind of Food, whereon the Gods were ſuppoſed to feed. See GOD.

Lucian, rallying theſe poetical Gods, tells us, that *Ambroſia* and *Nectar*, of which one is the Meat, and the other the Drink of the Gods, were not ſo excellent as the Poets deſcribe them; ſince they would leave them for Blood and Fat, which they come to ſuck from the Altars like Flies.

The Word is compounded of the Privative Particle α, and βρότος, *Mortal*; in regard it render'd thoſe who fed thereon immortal, or was the Food of the Immortals.

AMBROSIAN, in Church Hiſtory.—We frequently read of the *Ambroſian Rite*, the *Ambroſian Office*, &c. denoting a particular Office, or Formula of Worſhip, uſed in the Church of *Milan*; which is ſometimes alſo called the *Ambroſian* Church. See RITE, OFFICE, *&c.*

We alſo meet with the *Ambroſian* Chant, or *Song*; which was diſtinguiſh'd from the *Roman*, in that it was ſtronger and higher.

The Term takes its riſe from St. *Ambroſe*, Archbiſhop of *Milan* in the IVth Century, who is uſually ſuppoſed to have been the Author of this Office. Yet ſome are of Opinion, the Church of *Milan* had an Office different from that of

the *Roman*, and other Churches of *Italy*, before the Time of that Father. In effect, till the Time of *Charlemaign*, each Church had its ſeveral Office: And when in after-Days the Pope took on him to impoſe the *Roman* Office on all the other Churches of the Weſt; that of *Milan* ſhelter'd it ſelf from the Impoſition, under the Name and Authority of St. *Ambroſe*; from which Time, the Phraſe *Ambroſian Rite* has obtain'd, in contradiſtinction to the *Roman* Rite.

The publick Library of *Milan*, is alſo called the *Ambroſian Library*. See LIBRARY.

AMBRY, or ARMORY, the Place where the Arms, Plate, Veſſels, and every thing belonging to Houſe-keeping were kept.

Hence, probably the *Ambry* at *Weſtminſter*, was ſo called, becauſe formerly ſet apart for that uſe; or rather, from *Aumonery*, a Houſe adjoining to an Abbey, in which the Charities were laid up, and diſtributed to the Poor. See ALMS.

AMBULATION, or *Walking*. See EXERCISE.

AMBULATION, in Phyſick, is uſed by ſome for the ſpreading of a Gangrene, or Mortification. See GANGRENE, *&c.*

AMBULATORY, a Term antiently applied to ſuch Courts, *&c.* as were not fixed to any certain Place; but held ſometimes in one Place, and ſometimes in another.—In oppoſition to *Sedentary* Courts. See COURT, and SEDENTARY.

The Court of Parliament was antiently *Ambulatory*; ſo were the Courts of King's Bench, *&c.* See PARLIAMENT, KING'S-*Bench*, &c.

The Word is form'd of the Latin *ambulare*, to walk.

We ſometimes alſo ſay, in a Moral Senſe, a Man's Will is *Ambulatory*, to the Time of his Death; meaning, that he has it always in his Power to revoke it.

AMBURBIA, or AMBURBALE *Sacrum*, in Antiquity, a Religious Feaſt, or Ceremony, practiſed among the *Romans*, wherein they made Proceſſions around their City.

The Word is compoſed of *ambio*, I go round; or of *amb*, or *ambu*, an antient Prepoſition, ſignifying *around*, and *urbs*, City.

Hence, alſo, we have *Amburbiales Victimæ*, the Victims carried along in the Proceſſion; and afterwards ſacrific'd.

Scaliger, in his Notes on *Feſtus*, maintains the *Amburbia* to be the ſame with *Ambarvalia*. See AMBARVALIA.

AMBUSCADE, AMBUSH, AMBUSHMENT, a Body of Men, who lie hid in a Wood, *&c.* to ruſh out upon, or incloſe an Enemy unawares.—Or, the Place wherein ſuch a Corps hide themſelves.

AMBUSTIO, in Medicine, a *Burn*: See BURN, and BURNING.

AMEL, or *Enamel*. See ENAMEL.

AMEN, a Church Term, uſed as the Concluſion of all ſolemn Prayers, *&c.* and ſignifying, *ſo be it*, or *fiat*.

The *Hebrews* had four kinds of *Amen*.—That juſt mention'd they called *Amen paſt*; which was accompany'd with the greateſt Attention, and Devotion: In this Senſe, the Word has paſs'd into almoſt all Languages, without any Alteration.

Some Authors are of Opinion, that the Word *Amen* is formed of the initial Letters of theſe Words, *Adonai Melech Neeman*, *Dominus Rex Fidelis*; an uſual Expreſſion among the *Jews*, when they would give Weight or Sanction to any thing they ſaid. In effect, 'tis known, that to expreſs the Words אדוני מלך נאמן *Adonai Meelech Neeman*, in the ordinary way of Abbreviatures; the Rabbins only take the initial Letters, which joined together, are really the Letters of the Word אמן *Amen*. See ABBREVIATURE.

On the other hand, there are ſome of their Cabbaliſts, who, according to their uſual manner of finding hidden Meanings in Words, which they call *Notaricon*; out of the Letters of the Word *Amen*, form the whole Phraſe, *Adonai Melech Neemen*. See NOTARICON.

Yet, 'tis certain alſo, that the Word *Amen* was in the *Hebrew* Tongue, before ever there were any ſuch things as Cabbala or Cabbaliſts in the World: as appears from *Deuteronomy*, Chap. XXVII. ver. 15. See CABBALA, *&c.*

The Primitive of the Word *Amen*, is the Verb *aman*, which, in the paſſive Voice, ſignifies to be true, faithful, conſtant, *&c.*—Hence came the Noun אמן *Amen*, which ſignifies, *Truth*.

And, laſtly, of this Noun *Amen* they made a kind of affirmative Adverb, which, when placed at the End of any Phraſe or Propoſition, ſignifies, *So be it*, *Be it true*, *I acquieſce in it*, &c.

Thus, in the Paſſage above cited from *Deuteronomy*, *Moſes* ordered the Levites to cry aloud to the People, *Curſed is he that makes any graven or molten Image*, &c. and all the People ſhall ſay, *Amen*; i. e. *Yes*, *May he be curſed*, *We deſire*, *we agree to it*.—But at the beginning of a Phraſe, as in ſeveral Paſſages of the New Teſtament, it ſignifies *Truly*, *Verily*.—When it is redoubled, or repeated twice together, as is always done by St. *John*, it has the Effect of a Superlative, agreeably to the Genius of the *Hebrew* Tongue, and her two Daughters, the *Chaldee* and *Syriack*.—In this Senſe we are to underſtand *Amen*, *Amen*, *dico vobis*. The Evangeliſts uſually preſerve the *Hebrew* Word *Amen*, in their *Greek* αμην; tho St. *Luke* ſometimes renders it by ἀληθῶς, *truly*, or ναι, *certainly*.

AMEND, or AMENDE, in the *French* Cuſtoms, a *Mulct*, or pecuniary Puniſhment, impoſed by a Sentence of the Judge; for any Crime, falſe Proſecution, or groundleſs Appeal. See MULCT, PUNISHMENT, APPEAL, *&c.*

AMENDE *Honorable*, is an afflictive Pain, importing, or carrying with it a Note of Infamy.—As, when the Delinquent is condemned to go naked to the Shirt, a Torch in his Hand, and a Rope about his Neck, into a Church or Auditory; and beg pardon of God, the King, or the Court, for ſome ill deed.

The Phraſe *Amende honorable*, is more peculiarly uſed where a Perſon is condemn'd to come into Court, or into the Preſence of ſome Perſon injured; and make an open Recantation, *&c.*

AMENDABLE, or AMAINABLE, is applied in our Law-Books to a Woman, that is ſuppoſed to be governable by her Husband. See WOMAN, WIFE, *&c.*

AMENDMENT, in Law, the Correction of an Error committed in a Proceſs, and eſpied before Judgment. See ERROR.

If the Error be committed in giving Judgment, *viz.* a wrong Judgment be given, there, they cannot *amend* it; but the Party aggriev'd muſt bring his Writ of Error.—However, where the Fault appears to be in the Clerk who writ the Record, it may be amended.

AMERCEMENT, or AMERCIAMENT, in Law, a Penalty aſſeſſed by the Peers or Equals of the Party *amerced*, for an Offence done; or a pecuniary Puniſhment impoſed upon Offenders, at the Mercy of the Court; and therefore in our Law frequently called *Miſericordia*. See PUNISHMENT, and MISERICORDIA.

There is this ſtated Difference between Fines, and *Amercements*; that Fines are Puniſhments certain, and determined by ſome Statute; but *Amercements* are arbitrary Impoſitions, proportion'd to the Fault, at the Diſcretion of the Court.

Manwood, in his *Foreſt Law*, makes another Difference: as if an *Amerciament* were a more eaſy and merciful Penalty, and a Fine a more ſharp and grievous one.

In the *New Terms of the Law*, *Amerciament* is ſaid to be properly a Penalty aſſeſſed by the Peers or Equals of the Party *amerced* for an Offence done; for which he puts himſelf upon the Mercy of the Lord.—The ſame Author mentions an *Amerciament Royal*; and defines it, a pecuniary Puniſhment laid upon a Sheriff, Coroner, or ſuch-like Officer of the King, by Juſtices, for ſome Offence or Abuſe in his Office.

AMETHYST, in Natural Hiſtory, a Precious Stone, of a violet Colour, bordering on Purple. See PRECIOUS *Stone*.

There are three ſorts:—The *Oriental*, which is the hardeſt, the ſcarceſt, and moſt valuable, is of a dove Colour; the *German*, which is of a violet Colour; and that of *Carthagena*, which has the Colour of a Panſy.

There are ſome Orientals alſo of a purple Colour, and others white, and like the Diamond.—There are beautiful ones found in the *Pyreneans*, and in the Mountains of *Auvergne*.

The *Amethyſt* is not extremely hard; but may be cut with a leaden Wheel, ſmear'd with Emery moiſten'd in Water.—It is poliſh'd on a pewter Wheel with Tripoli.—It is eaſily engraven on, either *in Creux* or *Relievo*.

Plutarch ſays, the *Amethyſt* takes its Name from its Colour; which, according to him, reſembles that of Wine mix'd with Water; and not from its preventing Drunkenneſs: which, however, was a common Opinion, and gave occaſion to its being hung about the Necks of great Drinkers.—Thoſe who aſcribe this Virtue to the *Amethyſt*, derive its Name from the Privative α, and μεθύσκω, *to inebriate*. See GEM.

AMETHYST, in Heraldry, ſignifies the purple Colour, in the Coat of a Nobleman; which in Gentlemens Eſcutcheons below that degree, is called *Purpure*; and in thoſe of ſovereign Princes, *Mercury*. See PURPLE, and PURPURE.

AMIANTHUS *Lapis*, in Natural Hiſtory, the ſame with *Aſbeſtos*. See ASBESTOS.

AMICTUS, in our antient Writers, the uppermoſt of the ſix Garments worn by Prieſts.

It was tied round the Neck, *Ne inde ad linguam tranſeat mendacium*; and covered the Breaſt and Heart, *Ne vanitates cogitet*.—*Amictus*, *Alba*, *Cingulum*, *Stola*, *Manipulus*, *& Planeta*.

AMIABLE *Numbers*, denote Numbers which are mutually equal to the whole Sum of one another's Aliquot Parts.—Such are the Numbers 284 and 220. See NUMBER.

AMITTERE *Legem Terræ*, a Law-Phraſe, ſignifying, the Forfeiture of the Right of ſwearing in any Court or Cauſe; or to become infamous. See LAW.

This is the Puniſhment of a Champion overcome, or yielding in the Combat; of Jurors found guilty in a Writ of Attaint; and of Perſons outlaw'd. See CHAMPION, COMBAT, JUROR, OUTLAWRY, *&c.*

AMMA, a Girdle, or Truſs uſed in Ruptures; to hinder the Inteſtines from bearing down too much. See RUPTURE, *&c.*

AMMI, or *Semen* AMMEOS, a kind of aromatick Seed, of conſiderable uſe in Medicine; the Produce of a Plant of the ſame Name.

The Seed is brought from the *Levant*: It is found to contain a great deal of eſſential Oil, and volatile Salt; and to be attenuating, aperitive, hyſterick, carminative, cephalick, and alexipharmick being, is one of the four leſſer hot Seeds.—It expels Wind, provokes the Menſes, *&c.*

According to *Lemery*, the Plant takes its Name *Ammeos* from ἄμμος, *arena*; its Seed being very like Grains of Sand.—It is alſo called *Ammi Creticum*, or *Ethiopicum*, to diſtinguiſh it from the vulgar *Ammi*, or Biſhops-weed. It is ſometimes alſo called *Cuminum Ethiopicum*.

AMMON, or HAMMON, in Antiquity, an Epithet given to *Jupiter* in *Lybia*; where was the celebrated Temple of *Jupiter Ammon*.

There has been a great Diſpute about the Origin of this Name.—Some derive it from the *Greek* ἄμμος, *Sand*; in regard the Temple was ſituate in the burning Sands of *Lybia*: Others borrow it from the Egyptian *Anam*, a Ram; as having been firſt diſcover'd by that Animal.—Others will have *Ammon* to ſignify the Sun; and the Horns wherewith he is repreſented, the Sun-beams.

However this be, *Jupiter Ammon* was uſually repreſented under the Figure of a Ram; tho in ſome Medals he appears of a human Shape, having only two Rams Horns growing out beneath his Ears.

AMMONIACK.—*Gum* AMMONIAC; or, as it is ſometimes, tho improperly, called, ARMONIAC, is a kind of Gum, brought from the *Eaſt Indies*; ſuppoſed to ooze from an umbelliferous Plant. See GUM.

It ought to be in dry Drops, white within, yellowiſh without, eaſily fuſible, reſinous, ſomewhat bitter, and of a very ſharp Taſte and Smell, ſomewhat like Garlick.

Dioſcorides ſays, it is the Juice of a kind of Ferula growing in *Barbary*; and that the Plant that produces it, is called *Agaſyllis*.

The good *Ammoniac* is of a high Colour, and not mixed with any Scrapings of Wood, Stone, or Sand; it is called θραῦσμα, *Fracture*.—The other, which is full of Stones or Sand, is called φύραμα, that is, *Mixture*.

Pliny calls the Tree whence it flows, *Metopion*; and ſays, the Gum takes its Name from the Temple of *Jupiter Ammon*, nigh which the Tree grows.

Some ſay, this Gum ſerved the Antients for Incenſe in their Sacrifices. See INCENSE.

It enters ſeveral medicinal Compoſitions, as an Attenuant, and Detergent, againſt Diſorders ariſing from Viſcidities, and Grumes.—Outwardly applied, it is reſolutive and ſuppurative; and, as ſome ſay, will of it ſelf draw out Splinters, *&c.*

Some diſſolve the Gum in Vinegar, and other Liquors, and call it *Lac Ammoniacum*; much uſed in Aſthmas, and Obſtructions of the Lungs.—But the more uſual form of preſcribing it is in Pills.

AMMONIAC.——*Sal* AMMONIAC, is alſo a kind of Salt; more uſually wrote ARMONIAC. See ARMONIAC.

Cornu AMMONIS, in Natural Hiſtory. See CORNU *Ammonis*.

AMMUNITION, in general, ſignifies all ſorts of warlike Stores and Proviſions, more eſpecially Pouder and Ball. See MUNITION.

The Word is form'd of the Latin *Amonitio*, which, according to *Du Cange*, was uſed in the corrupt State of that Language for *Subſiſtence*.

AMMUNITION-*Bread*, is what is provided for, and diſtributed daily to, the Soldiers of an Army or Garriſon.

Such an Officer has ſo many Rations of *Ammunition-Bread*, &c. See RATION.

AMNESTY, or AMNISTY, a General Pardon, which a Prince grants to his Subjects, by a Treaty, or Edict; wherein he declares that he forgets and annuls all that is paſt, and promiſes not to make any farther Inquiry into the ſame. See PARDON.

Such *Amneſties* are uſually practiſed upon Reconciliations of the Sovereign towards his People, after Rebellions, general Defections, *&c.*

Such, *e. g.* was the Act of Oblivion granted at King *Charles*'s Reſtoration.

The Word is derived from the *Greek* ἀμνεσία, *Amneſtia*; which was the Name of a Law of this kind, paſs'd by *Thraſibulus* upon the Expulſion of the thirty Tyrants out of *Athens*.—*Andocides*, an *Athenian* Orator, whoſe Life is written by *Plutarch*, and of whom we have an Edition, of the Year 1575; gives us, in his Oration *upon Myſteries*, a Formula of the *Amniſty*, and the Oaths taken thereupon.

AMNIOS, or AMNION, in Anatomy, the innermoſt Membrane, wherewith the Fœtus in the Womb is immediately inveſted. See FOETUS.

The *Amnios* is a white, ſoft, thin, tranſparent Membrane; making part of the Secundines, and lying next under the Chorion. See SECUNDINE, and CHORION.

It contains a limpid Liquor, like a thin Gelly-broth; with which the Stomach of the Fœtus being always found full, it is ſuppoſed to be the Matter of its Nouriſhment. See NUTRITION.

On its outſide lies the Allantois, or Urinary Membrane. In ſome Subjects, the Urinary Membrane, and Chorion, ſtick ſo cloſe to one another, that they appear to be but one.—It hath all its Veſſels from the ſame Origin as the Chorion. See ALLANTOIS.

The Word is deriv'd from the Greek ἀμνὸς, *a Lamb*, q. d. *Pellis Agnina*.

AMOMUM, a Medicinal Fruit, called alſo *Amomum Racemoſum*, *Amomum Verum*, and *Elaterii Pomum*.

It reſembles the Muſcat Grape; and grows, like it, in Cluſters; is about the bigneſs of a Chich-Pea, round, membranous, and divided into three Cells, which contain ſeveral brown, angular Grains; of a very ſtrong aromatick Taſte, and Smell.

This Fruit is brought from the *Eaſt Indies*; and makes part of the Compoſition of Treacle; and is thought to be the *Siſon*, or *Sinon* of the Antients.

Beſides this, there is likewiſe another paler Seed, which bears the Name, *Amomium*; but neither of them are in much repute in Phyſick.

The Commentators on *Pliny*, and *Dioſcorides*, have never been able to agree upon the antient *Amomum*; the generality of 'em pitch on Fruits different from this.—Some will have the Roſe of *Jericho* paſs for it.——F. *Camelli* is poſitive he has diſcover'd the real *Amomum* of *Dioſcorides*, and that it is the *Tugus*, or *Birao*, or *Caropi*, growing in the *Philippine* Iſlands; the Grains or Berries whereof, are worn by the Natives about their Necks; both on account of their agreeable Odour, and of their ſuppoſed Virtue in preſerving from Infection, curing the Sting of the Scolopendria, *&c.* *Phil. Tranſ.* N° 248.

Scaliger is confident, that the *Amomum* of the Antients was not a Fruit; but the Wood it ſelf, which bore ſome reſemblance to a Bunch of Grapes, and was particularly uſed in embalming of Bodies: and hence, ſays he, the Term *Mummy* was given to the Bodies of *Egyptians* embalm'd with it. See MUMMY.

AMORTIZATION, or AMORTISEMENT, in Law, the Act of turning Lands into Mortmain, *i. e.* of alienating or transferring 'em to ſome Corporation, Guild, or Fraternity, and their Succeſſors. See MORTMAIN.

The Term is alſo uſed for the Licence or Privilege which the King or ſuperior Lord grants, to enable ſuch Corporation, *&c.* thus to receive Lands into Mortmain: which otherwiſe they cannot do.—There is ſuppoſed to be ſome Fine, or Acknowledgment paid the King, or the Lord, in Conſideration hereof; to make 'em Satisfaction for ſeveral incidental Dues and Profits, which would have fallen to them in the common way; which are hereby cut off.

This Practice was borrow'd from the *Lex Papiria*, whereby it was forbidden to conſecrate any Land to Religious Uſes, without the Conſent of the People.

The Word is form'd of the French *Amortir*, to extinguiſh, put out, *&c.* See EXTINGUISHMENT.

AMPELITIS, in Natural Hiſtory, a kind of Earth that diſſolves in Oil; uſed to blacken the Eyebrows, and the Hair withal. See EARTH.

AMPHIARTHROSIS, in Anatomy, a neutral or dubious kind of Articulation, diſtinguiſh'd from the *Diarthroſis*, in that it has no apparent Motion; and from the *Synarthroſis*, in its not being abſolutely devoid of Motion. See ARTICULATION, DIARTHROSIS, *&c.*

Such is the Articulation of the Ribs, with the Vertebræ; and that of the Carpus with the Tarſus, *&c.* See VERTEBRÆ, CARPUS, *&c.*

The Word, according to *Dionis*, is deriv'd from ἄμφω, *both*, and ἄρθρωσις, *Articulation*; the *Amphiarthroſis* being compounded of both the other ſorts.—Whence ſome alſo call it, *Diarthroſis-Synarthroidal*.

AMPHIBIOUS, in Natural Hiſtory, a Term applied to a ſort of Animals which live both on Land, and in the Water; that is, which breathe the Air, but paſs part of their Time in the Water, as affording 'em their chief Food. See ANIMAL.

Such are the Frog, Caſtor, Otter, Tortoiſe, Sea-Calf, Crocodile, *&c.*

The *Amphibious* Kind have peculiar Proviſions in their Structure, to fit 'em for ſo various a way of Living; particularly

cularly in the Heart, Lungs, Foramen Ovale, &c. See HEART, FORAMEN *Ovale*, &c.

The Term is ſometimes alſo extended to Men, who have the Faculty of living a long time under Water —We have divers Inſtances of ſuch *Amphibious* Men; the moſt remarkable is of a *Sicilian*, named the *Fiſh Colas*. *Kircher* relates, that by a long Habitude from his youth, he had ſo accuſtom'd himſelf to live in Water, that his Nature ſeem'd to be quite alter'd: So that he lived rather after the manner of a Fiſh, than a Man. See DIVING, PEARL-*Fiſhing*, &c.

The Word comes from the *Greek* ἀμφὶ, *utrinque*, both-ways, and βίος, *Vita*, Life; as living in either Place.

AMPHIBLESTROIDES, in Anatomy, a Tunic, or Coat of the Eye, more uſually called *Retina*. See RETINA.

The Word is *Greek*, ἀμφιβληστροειδὴς, of ἀμφίβληστρον, *Rete*, Net; compounded of ἀμφὶ, *circum*, about, βάλλω, *jacio*, I caſt; and εἶδος, Form; by reaſon of its Net-like Texture: whence the *Latins* alſo call it *Retiformis*.

AMPHIBOLOGY, or AMPHIBOLIA, in Grammar, a Fault in Language, whereby it is render'd obſcure, and liable to be underſtood in a double Senſe.

Amphibology is chiefly uſed in reſpect of a Phraſe; as Equivoque is in reſpect of a Word. See EQUIVOQUE, and EQUIVOCATION.

Of this kind was that Anſwer which *Pyrrhus* receiv'd from the Oracle; *Aio Te, Æacida, Romanos vincere poſſe*: Where the *Amphibology* conſiſts in this, that the Words *Te* and *Romanos*, may either of 'em precede, or either of them follow the Words *poſſe vincere*, indifferently. See ORACLE.

The *Engliſh* Language uſually ſpeaks in a more natural manner, and is not capable of any *Amphibologies* of this kind: nor is it ſo liable to *Amphibologies* in the Articles, as the *French* and moſt modern Tongues. See CONSTRUCTION, ENGLISH, ARTICLE, &c.

The Word comes from the *Greek*, ἀμφίβολος, *ambiguous*, and λογὸς, *Diſcourſe*.

AMPHIBRACHIUS, the Name of a Foot in the *Latin* and *Greek* Poetry; conſiſting of three Syllables, the firſt and laſt whereof are ſhort, and that in the middle long. See FOOT, and VERSE.

Such is the Word *Amare*.

The Word comes from ἀμφὶ, *circum*, and βραχὺς, *brevis*, *q. d.* a Foot ſhort at both Ends, and long in the middile.

AMPHICTYONS, AMPHYCTONES, in Antiquity, the Deputies of the Cities and People of *Greece*, who repreſented their reſpective Nations in a general Aſſembly; having a full Power to concert, reſolve, and appoint what they ſhould think fit, for the Service of the common Cauſe.

The *Amphyctones*, in good meaſure, were the ſame with the States General of *Holland*; or rather, with what in *Germany* they call the Diet of the Empire. See STATES, and DYET.

The firſt Aſſembly of this kind, was held by the Direction of *Amphictyon*, the third King of *Athens*, who propos'd by that means to bind the *Greeks* more firmly together; ſo as to render them a Terror to the barbarous Nations their Neighbours.—Theſe met twice a year at *Thermopylæ*, in the Temple of *Ceres*, which was built in a large Plain, near the River *Aſopus*; and were called *Amphictyons* from the Name of their Founder.

Pauſanias, in his Liſt of the ten Nations which compos'd that Aſſembly, ſays nothing of the *Achaians*, *Eleans*, *Argians*, *Meſſenians*, &c. *Æſchines* alſo gives an Account of the Cities admitted into it, in his Oration, *De falſa Legatione*.

Acriſius inſtituted a new Council of *Amphyctones*, on the Model of the antient ones; who met twice a Year in the Temple of *Delphos*.

Each were indifferently called Ἀμφικτύονες, Πυλαγόραι, Ἱερομνήμονες, and their Aſſembly Πυλαία.

The *Romans* never thought fit to ſuppreſs the Meeting of the *Amphictyons*. *Strabo* even aſſures us, that they met in his Time.

AMPHIDROMIA, in Antiquity, a Feaſt celebrated on the fifth Day after the Birth of a Child. See FEAST.

AMPHIMACER, a Foot in the antient Poetry, conſiſting of three Syllables; the firſt and laſt whereof are long, and that in the middle ſhort. See FOOT, &c.

Such are the Words *Omnium*, *Caſtitas*, &c.

The Word comes from the *Greek* ἀμφὶ, *circum*, and μακρὸς, *longus*, by reaſon both Extremes are long.

AMPHIPOLES, in Antiquity, Archons, or chief Magiſtrates of the City of *Syracuſe*. See ARCHON.

They were firſt eſtabliſh'd by *Timoleon*, after his Expulſion of *Dionyſius* the Tyrant.—They govern'd *Syracuſe* for the Space of 300 Years; and *Diodorus Siculus* aſſures us, they ſubſiſted even in his Time.

AMPHIPROSTYLE, in the antient Architecture, a kind of Temple, which had four Columns in Front, and as many behind. See TEMPLE.

The Word is derived from the *Greek* ἀμφὶ, *about*, πρὸ, *before*, and στύλος, *Column*.

AMPHISCII, in Geography and Aſtronomy, the People who inhabit the Torrid Zone. See ZONE.

They are thus denominated, as having their Shadow turn'd ſometimes one way, and ſometimes another, *i. e.* at one time of the Year to the North, and at another to the South. See SHADOW.

The Word comes from ἀμφὶ, *about*, and σκιὰ, *Shadow*.

The *Amphiſcii* are alſo *Aſcii*. See ASCII.

AMPHISMELA, an anatomical Knife, edg'd on both ſides; from ἀμφὶ, *utrinque*, on both ſides, and μελίζω, *incido*, I cut.

AMPHITHEATRE, a ſpacious Building, either round or oval, having its Area or Arena incompaſſed with Rows of Seats, riſing gradually one over another; with Portico's both within and without-ſide. See AREA and ARENA.

Among the Antients, the *Amphitheatre* was appointed for the exhibiting of Spectacles or Shews to the People: as, the Combats of Gladiators, and thoſe of wild Beaſts. See SPECTACLE, GLADIATOR, &c.

Their Theatre was built in form of a Semicircle, only exceeding a juſt Semicircle by one fourth part of the Diameter; and the *Amphitheatre* was nothing elſe but a double Theatre, or two Theatres join'd together: ſo that the longeſt Diameter of the *Amphitheatre*, was to the ſhorteſt, as 1½ to 1. See THEATRE.

There are *Amphitheatres* ſtill ſtanding at *Rome*, at *Niſmes*, &c.—The *Amphitheatre* of *Veſpaſian*, called the *Coliſeum*, and that at *Verona* in *Italy*, are the moſt celebrated now remaining of all Antiquity. See COLISÆUM.

Pliny mentions an *Amphitheatre* built by *Curio*, which turn'd on large Iron Pivots; ſo that of the ſame *Amphitheatre*, two ſeveral Theatres were occaſionally made, whereon different Entertainments were preſented at the ſame time.

The Word is deriv'd from the *Greek* ἀμφὶ, *about*, and θέατρον, *Theatre*; which comes from θεάομαι, *ſpecto*, *contemplor*; ſo that an *Amphitheatre*, ſtrictly ſpeaking, is a Place whence a Perſon may ſee all around him.

AMPHORA, in Antiquity, an earthen Veſſel, which ſerv'd as a kind of liquid Meaſure, among the *Romans*. See MEASURE.

The *Amphora* contained 48 Sextaries; amounting to about ſeven Gallons, *Engliſh* Wine Meaſure.

Amphora is alſo a modern Meaſure uſed by the *Venetians*. See MEASURE.

Suetonius tells us of a Man who ſtood for the Queſtorſhip, and who drank an *Amphora* of Wine at one Meal, with the Emperor *Tiberius*.

The *Amphora* was ſometimes alſo uſed as a Dry Meaſure, containing three Buſhels; the Standard whereof was kept at *Rome* in the Capitol, to prevent falſe Meaſures. See STANDARD.

AMPLIATION, properly ſignifies an *Enlargement*; but in Law, the Word is uſed to denote a deferring of Judgment till the Cauſe be further examin'd.

AMPLIFICATION, in Rhetorick, part of a Diſcourſe or Speech, wherein a Crime is aggravated, a Praiſe or Commendation heighten'd, or a Narration enlarged by an Enumeration of Circumſtances; ſo as to excite the proper Emotions in the Souls of the Auditors. See ORATION, &c.

Such is that Paſſage in *Virgil*, where, inſtead of ſaying merely that *Turnus* died, he *amplifies* his Death,

——Aſt illi ſolvuntur frigore membra,
Vitaque cum gemitu fugit indignata ſub umbras.

Amplification, according to *Cicero*, is a vehement Argumentation; a forcible Affirmation, that perſwades by moving the Paſſions.

Some Authors define *Amplification*, after *Iſocrates*, to be a Diſcourſe which makes great things of little; or which raiſes and exaggerates little things, ſo as to make 'em appear great.—But in this Senſe, *Amplification* ſhould rather become a Sophiſt or Juggler, than an Orator.

The Maſters of Eloquence make *Amplification* the Soul of Diſcourſe.—*Longinus* ſpeaks of it as one of the principal means which contribute to the Sublime; but cenſures thoſe who define it a Diſcourſe which magnifies Things; this equally agreeing to the Sublime, the Pathetick, &c.—The ſame Author diſtinguiſhes *Amplification* from the Sublime by this, that the latter conſiſts wholly in an Elevation of Words and Sentiments, whereas the former conſiſts alſo in their Multitude: The Sublime is ſometimes found in a ſingle Thought; but *Amplification* cannot ſubſiſt, excepting in Abundance. See SUBLIME.

There is likewiſe a difference between the *Amplification*, and the Proof; in that the one ſerves to clear the Point, and the other to heighten, and exaggerate it. See PROOF.

There are two general Kinds of *Amplification*; the one *of Things*, the other *of Words*.—The firſt is produced in divers manners; as, 1°, by a Multitude of Definitions: Thus it

it is *Cicero amplifies* on Hiſtory: *Hiſtoria eſt teſtis temporum, lux veritatis, vita memoriæ, magiſtra vitæ, nuntia vetuſtatis.* See DEFINITION.—— 2°, By a Multitude of Adjuncts; of which we have a fine Inſtance in *Virgil*'s Lamentation for *Cæſar*'s Death, by enumerating the many Prodigies and Monſters that either preceded or ſucceeded it. ——*Vox quoque per Lucos vulgo exaudita ſilentes, ingens & ſimulacra modis pallentia miris viſa ſub obſcurum noctis; pecudeſque locutæ, infandum, ſiſtunt amnes, terræque dehiſcunt, & mæſtum illachrymat templis ebur, Æraque ſudant.* —3°, By a Detail of Cauſes and Effects.—4°, By an Enumeration of Conſequences.—5°, By Compariſons, Similitudes, and Examples. See SIMILITUDE, *&c.*——6°, By the Contraſt of Antithets, *&c.*

Amplification by Words, is effected ſix Ways.——1°, By uſing Metaphors. See METAPHOR.——2°, By Hyperboles. See HYPERBOLE.——3°, By Synonymas. See SYNONYMOUS. ——4°, By ſplendid magnificent Terms; as that of *Horace, Scandit æratas vitioſa naves cura: nec turmas equitum relinquit, ocyor cervis, & agente nimbos, ocyor euro.*—5°, By Periphraſes, or Circumlocutions. See PERIPHRASIS, *&c.*—6°, By Repetition. See REPETITION.

AMPLITUDE *of the Range of a Projectile*, is the horizontal Line ſubtending the Path in which it moved. See PROJECTILE.

AMPLITUDE, in Aſtronomy, an Arch of the Horizon, intercepted between the true Eaſt or Weſt Point thereof, and the Centre of the Sun, or a Star at its riſing or ſetting. See HORIZON, RISING, SETTING, *&c.*

Amplitude is of two Kinds; *Eaſtern* or *Ortive*; and *Weſtern*, or *Occiduous*.

Eaſtern, or *Riſing* AMPLITUDE, *Amplitudo Ortiva*, is the Diſtance between the Point wherein the Star riſes, and the true Point of Eaſt, wherein the Equator and Horizon interſect. See EAST.

Some call it *Eaſtern*, or *Ortive Latitude*. See LATITUDE.

Weſtern, or *Setting* AMPLITUDE, *Amplitudo Occidua*, is the Diſtance between the Point wherein the Star ſets, and the true Point of Weſt in the Equinoctial. See WEST.

The Eaſtern and Weſtern *Amplitude*, are alſo called *Northern*, and *Southern*, when in the Northern and Southern Quarters of the Horizon.

The Complement of the Eaſtern or Weſtern *Amplitude* to a Quadrant, is called the *Azimuth*. See AZIMUTH.

To find the Sun's or a Star's Amplitude, *either riſing or ſetting, by the Globe.* See GLOBE.

To find the Sun's Amplitude, *trigonometrically; having the Latitude, and the Sun's Declination given.*—Say, As the Co-ſine of the Latitude is to Radius, ſo is the Sine of the preſent Declination to the Sine of the *Amplitude.*— Suppoſe, *e. g.* the Latitude 15° 30′, and the Declination 11° 50′;

Then to the Ar.co. of the Co-ſine of	50°	30′	0,2058503
Add the Sine of			9,3118926
Sum is the Sine of			9,5177429

which is the *Amplitude* requir'd.

Magnetical AMPLITUDE, is an Arch of the Horizon, contained between the Sun, at his riſing, and the Eaſt or Weſt Point of the Compaſs; or, it is the Difference of the Riſing or Setting of the Sun, from the Eaſt or Weſt Points of the Compaſs. See COMPASS, RISING, SETTING, *&c.*

It is found by obſerving the Sun at his riſing or ſetting, by an *Amplitude* Compaſs. If the Compaſs have no Variation, the *Magnetical Amplitude* will be the ſame as the true one.

AMPUTATION, in Chirurgery, the Operation of cutting off a Limb, or other Part of the Body, with an Inſtrument of Steel. See CHIRURGERY, OPERATION, *&c.*

In Caſes of Mortification, recourſe is frequently had to *Amputation.* See MORTIFICATION, GANGRENE, SPHACELUS, *&c.*

The Method of performing it, in the Inſtance of a Leg, is as follows.—The proper Part for the Operation being four or five Inches below the Knee; the Skin and Fleſh are firſt to be drawn very tight upwards, and ſecured from returning by a Ligature two or three Fingers broad: above this Ligature another looſe one is paſſed, for the Gripe, which being twiſted by means of a Stick, may be ſtraiten'd to any degree at pleaſure. Then, the Patient being conveniently ſituated, and the Operator placed to the inſide of the Limb; which is to be held by one Aſſiſtant above, and another below the Part deſigned for the Operation; and the Gripe ſufficiently twiſted, to prevent too large an Hemorrhage, the Fleſh is, with a Stroke or two, to be ſeparated from the Bone with the Diſmembring-Knife. Then the Perioſteum being alſo divided from the Bone with the Back of the Knife, ſaw the Bone aſunder with as few Strokes as poſſible.—When two parallel Bones are concerned, the Fleſh that grows between them muſt likewiſe be ſeparated, before the uſe of the Saw.

This being done, the Gripe may be ſlacken'd; to give an Opportunity for ſearching for the large Blood-Veſſels, and ſecuring the Hemorrhage at their Mouths, either by the actual Cautery, the Ligature, ſtitching them up, applying Vitriol Buttons, or the like. After this a dry Pledget of Lint, or one dipp'd in Spirit of Wine, and ſprinkled with Diapente, may be applied to the Stump. Then looſen the firſt Ligature, and pull both the Skin and Fleſh, as far as conveniently may be, over the Stump, to cover it; and ſecure them with the Croſs-ſtitch made at the depth of half, or three quarters of an Inch in the Skin.—It remains, to apply over the whole Stump two large Pledgets, dipp'd in Oxycrate and dried, and afterwards charged with Aſtringents; and on theſe to apply a Plaiſter of De-minium, or ſimple Diachylon; and over theſe, an Ox-bladder, wetted in Oxycrate; and over all, a Croſs-cloth pretty tight, ſecured with Rollers.

After all this, the Gripe may be ſlacken'd, ſo as to be made eaſy for the Patient; or even entirely taken away, after he is put to Bed; in which he muſt lie with the Stump ſomewhat raiſed; an Aſſiſtant for 12 or 14 Hours keeping faſt the Dreſſing with his hand, to prevent any violent Hemorrhage.—In three or four Days the Dreſſing may be removed; and proper Digeſtives, mixed with Aſtringents, applied: having an actual Cautery, or ſome powerful Styptick, in readineſs, in caſe of a violent Hemorrhage at the firſt opening.

M. *Sabourin*, Surgeon of *Geneva*, is recorded in the Hiſtory of the Royal Academy of Sciences, *An.* 1702, for an Improvement in the Method of *Amputation*, propoſed to that Academy.—The whole Secret conſiſts in ſaving a piece of Fleſh and Skin, a little lower than the Place where the Section is to be; wherewith the Stump is to be afterwards cover'd.—The Advantages hereof, are, that in leſs than two Days time, this Fleſh unites with the Extremes of the divided Veſſels, and ſo ſaves the Neceſſity either of binding the Ends of thoſe Veſſels with Thread, or of applying Cauſticks or Aſtringents; which are Methods very dangerous, or at leaſt very incommodious. Add, that the Bone thus cover'd up, does not exfoliate.

AMSDORFIANS, in Church-Hiſtory, a Sect of Proteſtants, in the XVIth Century; denominated from their Leader *Amſdorf.*

Sanderus, *Hær.* 186, repreſents them as maintaining, that good Works were not only unprofitable, but even oppoſite and pernicious to Salvation.—The *Amſdorfians* were rigid Confeſſioniſts.

AMULET, AMULETUM, a kind of Medicament, hung about the Neck, or other part of the Body; to prevent, or remove Diſeaſes.

The Word *Amulet* is form'd of the Latin *Amoletum, Amolimentum*; of *amoliri*, to remove, drive away. See PRESERVATIVE.

Such are Quills of Quick-ſilver or Arſenic, which ſome hang on the Neck, or wear under the Shirt againſt the Plague, and other contagious Diſeaſes; the Blood-ſtones worn by others againſt Hemorrhages; and that wore by the Women of the *Eaſt Indies* to bring down the Menſes.

Amulets are frequently no other than a ſort of Spells or Charms; conſiſting of quaint Words and Characters, ſuppoſed to have the Virtue of warding off ill.—*Pliny* makes frequent mention of 'em. See CHARM, *&c.*

The *Greeks* called theſe kind of Remedies φυλακτήρια, *Phylacteries*; περίαπτα, *Periapta*; ἀπόλεσματα, περιχρίσματα, περιάμματα, βρέβια.—The *Latins* call 'em *Amuleta, Appenſa*, &c. See PHYLACTERY, PERIAPTA, *&c.*——The Council of *Laodicea* forbids Eccleſiaſticks to wear ſuch *Amulets* and Phylacteries, on Pain of Degradation. St. *Chryſoſtom* and St. *Jerom* are likewiſe zealous againſt the ſame Practice. *Hoc apud nos*, ſays this laſt Father, *ſuperſtitioſæ mulierculæ, in parvulis Evangeliis & in crucis ligno & iſtiuſmodi rebus quæ habent quidem zelum Dei ſed non juxta ſcientiam, uſque hodie factitant.* See *Kirch.* Oedip. Ægypt.

Amulets are now fallen from the great Repute they were antiently in; yet the great Mr. *Boyle* alledges 'em as an Inſtance of the Ingreſs of external Effluvia into the Habit; in order to ſhew the great Poroſity of the human Body.— He adds, that he is perſwaded ſome of theſe external Medicines do anſwer; for that he himſelf having once been ſubject to bleed at the Noſe, and reduced to uſe ſeveral Remedies to check it; found that Moſs of a dead Man's Skull, tho only applied ſo as to touch the Skin till the Moſs was warm thereby, the moſt effectual of any.—A memorable thing of this kind was communicated to *Zwelfer* by the chief Phyſician to the States of *Moravia*, who having prepared ſome Troches of Toads after *Helmont*'s manner, not only found that being worn as *Amulets* they preſerv'd him and his Domeſticks and Friends from the Plague; but, being put on the Plague-Sores of others, they were greatly reliev'd, and even ſaved thereby.

The

The ſame Mr. *Boyle* ſhews how the Effluvia even of cold *Amulets*, may in tract of Time pervade the Pores of a living Animal; by ſuppoſing an Agreement between the Pores of the Skin, and the Figure of the Corpuſcles. *Bellini* has demonſtrated the Poſſibility of the Thing in his laſt Propoſitions, *De Febribus*: And the like is done by Dr. *Wainwright*, Dr. *Keil*, &c. See EFFLUVIA, PORE, SKIN, PLAGUE, *&c.*

AMULET, in Cookery. See OMELET.

AMURCA, in Pharmacy, a Medicine made of the Lees or Sediment of Olives.—It is an Aſtringent. See OLIVE.

AMY, in Law, the Perſon next of kin to an Orphan, or Infant; who is to be intruſted for him: properly called *Prochein Amy*. See PROCHEIN, *&c.*

The Word is *French*, and literally ſignifies *Friend*.

AMYGDALÆ. See ALMONDS.

AMYGDALATE, an Artificial Milk, or Emulſion, made of blanched Almonds, *&c.* See ALMOND.

AMYLUM. See STARCH.

AMYNTICA *Emplaſtra*, in Pharmacy, defenſative, or ſtrengthening Plaiſters.

ANA, or ää, in Medicine, denotes an equal *Quantity* of any Thing, whether in liquid or dry Meaſure. See A.

Hence *Anatica Proportio* is uſed by ſome Writers to ſignify the Ratio, or Proportion of Equality. See EQUALITY, RATIO, *&c.*

ANA, in Matters of Literature, a *Latin* Termination, adopted into the Titles of ſeveral Books in other Languages.——*Ana's*, or *Books in Ana*, are Collections of the memorable Sayings of Perſons of Learning, and Wit; much the ſame with what we otherwiſe call *Table Talk*.

Wolfius has given the Hiſtory of *Books in Ana*, in the Preface to the *Caſauboniana*: He there obſerves, that tho ſuch Titles be new, the Thing it ſelf is very old; that *Xenophon*'s Books of the Deeds and Sayings of *Socrates*, as well as the Dialogues of *Plato*, are *Socratiana*: That the Apothegms of the Philoſophers, collected by *Diogenes Laertius*; the Sentences of *Pythagoras*, and thoſe of *Epictetus*; the Works of *Atheneus*, *Stobeus*, and divers others, are ſo many *Ana's*. Even the *Gemara* of the *Jews*, with ſeveral other Oriental Writings, according to *Wolfius*, properly belong to the ſame Claſs. See GEMARA.

The *Scaligeriana* was the firſt Piece that appear'd with a Title *in Ana*. It was compoſed from the Writings of *Vaſſant* and *Verthunian*, who, as 'tis ſaid, took 'em from the Mouth of *Scaliger*, whom they had conſtantly attended a long time. The firſt Edition was in 1666.——Soon after came the *Perroniana*, *Thuana*, *Naudæana*, *Patiniana*, *Sorberiana*, *Menagiana*, *Anti-menagiana*, *Fureteriana*, *Chevræana*, *Leibnitziana*, &c. to *Arlequiniana*.

ANABAPTISTS, a Religious Sect, whoſe diſtinguiſhing Tenet is, That Children are not to be baptized, till they arrive at Years of Diſcretion; as holding it requiſite, that they give a Reaſon of their Faith, before they can receive a regular Baptiſm. See BAPTISM.

The Word is compounded of ἀνὰ, *denuo*, again; and βαπτίζω, *I baptize*; of βάπτω, *I waſh*; it being their Practice to re-baptize ſuch as had been baptized in their Infancy.

There were *Anabaptiſts* even in the Primitive Church; that is, Hereticks who baptized a ſecond time: Such were the *Novatians*, *Cataphrygians*, and *Donatiſts*. See NOVATIAN, CATAPHRYGIAN, and DONATIST.

There were alſo in the IIId Century ſeveral Catholick Biſhops in *Aſia* and *Africa*, who held the Baptiſm of Hereticks invalid; and therefore re-baptized ſuch as were converted to Orthodoxy.

But theſe antient Re-baptiſts were not called *Anabaptiſts*. See RE-BAPTIZER.

In the XIIth Century, the *Waldenſes*, *Albigenſes*, and *Petrobruſſians*, are alſo recorded as of the ſame Belief; but neither was the Denomination given them. See ALBIGENSES, WALDENSES, *&c.*

Thoſe properly called *Anabaptiſts*, are a Sect of Proteſtants, who firſt appeared in the XVIth Century, in ſome Provinces of *Germany*, particularly *Weſtphalia*, where they committed ſeveral Outrages.—They taught, that Baptiſm was not to be conferr'd on Children; that it is unlawful to ſwear, or to bear Arms; that a true Chriſtian cannot be a Magiſtrate, *&c.*

'Tis not known who was the Author of this Sect: Some charge it on *Carloſtad*; others on *Zuinglius*. *Cochlæus* ſays it was *Balthazar Pacimontanus*, who began to teach in 1527; and was burnt, at *Vienna*, ſome time afterwards.—*Mezorius* affirms it was firſt broach'd by *Pelargus*, in 1522; who was ſeconded by *Bodeſtein*, *Carloſtad*, *Weſtenberg*, *Quiccou*, *Didymus*, *More*, &c.

But the common Opinion fathers it on *Thomas Munſter*, or rather *Muncer*, of *Zwickau*, a City of *Miſnia*; and *Nich. Storck*, of *Stalberg* in *Saxony*; two Perſons originally Diſciples of *Luther*, from whom they took occaſion to ſeparate, on pretence that his Doctrine was not perfect enough; that he had only carried the Reformation half-way; and that to arrive at the true eſſential Religion of Chriſt, immediate Revelation muſt be added to the dead Letter of Scripture: *Ex revelationibus divinis judicandum eſſe dicebat, & ex bibliis, Muncerus.*—In effect, if theſe two Perſons were not the firſt Inventors of the Doctrine; they appear, at leaſt, to have been the firſt Teachers, and Propagators thereof. See LUTHERANISM.

Sleidan finiſhes the beſt Account of the Origin of the *Anabaptiſts*, in his *Hiſtorical Commentaries.—Luther*, he obſerves, had preach'd up ſo ſtrenuouſly for the Evangelical Liberty; that the Peaſants of *Suabia* flocking together, leagued themſelves againſt the Eccleſiaſtical Powers, on pretence of defending the Evangelical Doctrine, and ſhaking off the Yoke of Servitude: *Obducta cauſa quaſi & Evangelii doctrinam tueri, & ſervitutem ab ſe profligare vellent. Luther* wrote 'em ſeveral Exhortations to lay down their Arms, but in vain: They retorted his own Doctrine upon him; maintaining, that having been made free by the Blood of Jeſus Chriſt, it was injurious to the Name of Chriſtian, that they had hitherto been reputed Servants: *quod huc uſque ſint habiti velut conditione ſervi.* Accordingly, they proclaimed every where, that they only took up Arms, by reaſon they eſteem'd themſelves obliged thereto by Commandment of God.

Luther finding all his Exhortations ineffectual, publiſh'd a Book, wherein he invited all the World to take up Arms againſt thoſe Fanaticks, who thus abuſed the Word of God.—He was obliged to write a ſecond, ſoon after, to juſtify his Conduct; which to many appeared too ſevere, and even cruel.

The *Anabaptiſts*, to the Number of forty thouſand, ravaged all the Places wherever they came. *John* of *Leiden*, who headed 'em, declar'd himſelf their King; and never ſtirr'd out or appear'd in publick, without a large Retinue of principal Officers: Two young Men always rode immediately after him, the one bearing in his Hand a Crown, and the other a naked Sword.—Their Pretence was to eſtabliſh the new Reign of Jeſus Chriſt on Earth, by force of Arms; condemning all uſe of Arms for other Purpoſes.

Calvin wrote a Treatiſe againſt the *Anabaptiſts*, ſtill extant in his *Opuſcula*.—What they chiefly ſupported their great Doctrine on, was thoſe Words of our Saviour, *He that believes and is baptized, ſhall be ſaved*, Matt. C. XVI. v. 16. As none but Adults are capable of believing, they argued, that no others were capable of Baptiſm: Eſpecially as there is no Paſſage in all the New Teſtament, where the Baptiſm of Infants is clearly enjoined. *Calvin*, and other Writers againſt 'em, are pretty much embarraſs'd to anſwer this Argument; and are obliged to have recourſe to Tradition, and the Practice of the Primitive Church. In this Point they have apparently the Advantage over 'em; mention being made of Infant-Baptiſm by *Origen*; the Author of the Queſtions attributed to *Juſtin*; a Council held in *Africa*, ſpoke of by St. *Cyprian*, where the Baptiſm of Infants immediately after they were born, was expreſly enjoin'd; and ſeveral other Councils, of *Autun*, of *Maſon*, of *Giron*, of *London*, of *Vienna*, &c. beſide other Fathers, as *Ireneus*, *Jerom*, *Ambroſe*, *Auguſtin*, &c.

It muſt be added, that very conſiderable Arguments may be drawn againſt the *Anabaptiſts* even from Scripture: Children, we are told, are capable of the Kingdom of Heaven: *Mark* X. 14; *Luke* XVIII. 16; and our Saviour made ſuch be brought near him, and bleſs'd 'em. Yet, He aſſures us in St. *John* III. 5. that unleſs a Man be baptized he cannot enter the Kingdom of God. Whence it follows, that Children, inaſmuch as they are capable of entering into Heaven, are alſo capable of being baptized.—The *Anabaptiſts* anſwer, that thoſe here ſpoke of by our Saviour, were grown big, ſince they could come to him; and conſequently were capable of an Act of Faith: But this is contrary to the expreſs Terms of Scripture, which in St. *Matthew* and St. *Mark*, calls 'em παιδία; and in St. *Luke*, βρέφη, *little Children*: The ſame St. *Luke* writes, that they were *brought* to Jeſus; which is a Preſumption that they were not yet able to walk.

Another Argument much inſiſted on, is drawn from theſe Words of St. *Paul* to the *Romans*, C. V. "If by one Man's "Offence Death reign'd; much more they who re-"ceive abundance of Grace and of the Gift of Righteouſ-"neſs, ſhall reign in Life by one, Jeſus Chriſt." For, if all become criminal by one; then are Children criminal: Conſequently, if all are juſtified by one, then are Children juſtified: But this cannot be without Faith. And conſequently Children may have the Faith required for the receiving of Baptiſm, *i. e.* an Actual Faith, preceding the Sacrament, as a Diſpoſition requiſite thereto. This Faith they have, not of themſelves; but by others, *viz.* their Parents, or their Godfathers and Godmothers, who anſwer for 'em. Nor is there any thing in the whole Diſpenſation, but what is very equitable: It being but juſt, that as they had ſinned in the Will of another, they might alſo be juſtified by the Will of another.

The *Anabaptiſts* adopted ſeveral other Dogmata from the *Gnoſticks*, &c. touching the Incarnation, *&c.* But thoſe who now retain the Name, have abandoned the greateſt Part thereof; and in lieu of the Fanatick Zeal of the antient Founders of the Sect, have given into an Exemplary Simplicity in their Actions, Diſcipline, Dreſs, *&c.* not much unlike the modern Quakers. See QUAKERS.

As they multiplied, they divided into a great number of Sects; which took particular Denominations, either from the Leaders thereof, or the peculiar Opinions, which they ſuperadded to the general Syſtem of *Anabaptiſm.*—The principal were the *Muncerians*, *Catharists*, *Enthuſiaſts*, *Silentes*, *Adamites*, *Georgians*, *Independants*, *Hutites*, *Melchiorites*, *Nudipedalians*, *Mennonites*, *Bulcholdians*, *Auguſtinians*, *Servetians*, *Monaſterians*, *Libertins*, *Deoreliotians*, *Semperorantes*, *Polygamites*, *Ambroſians*, *Clancularians*, *Manifeſtarians*, *Bacularians*, *Pacificators*, *Paſtoricides*, *Sanguinarii*, &c.

ANABASII, in Antiquity, the Couriers who travel'd on Horſeback, or in Chariots. See COURIER, and POST.

The Word comes from the *Greek* ἀναβατις, *adſcenſus*, mounting.

ANABIBAZON, in Aſtronomy, the *Dragon's Head*; or the Northern Node of the Moon, where ſhe paſſes the Ecliptick from South to North Latitude. See DRAGON, and NODE.

ANABROSIS, in Medicine, the iſſuing of Blood at a Hole wore in a Vein by Corroſion.——The Word is *Greek*, ἀνάβρωσις, *eroſio.*

ANACALYTERIA, in Antiquity, Feaſts celebrated among the Heathens, on the Day that the Bride was permitted to lay aſide her Veil, and to be ſeen in publick. See FEAST, MARRIAGE, *&c.*

They were thus called from the *Greek* ἀνακαλύπτειν, *to diſcover, uncover.*

ANACAMPTICK, ſignifies as much as *Reflecting*; and is frequently uſed in reference to Echoes, which are ſaid to be Sounds produced *anacamptically*, or by Reflexion. See REFLECTION, SOUND, and ECHO.

Hence alſo *Anacampticks* is by ſome uſed for *Catoptricks*, See CATOPTRICKS, PHONICKS, *&c.*

ANACATHARTIC, is underſtood of a purging Medicine, that works upwards. See PURGATIVE.

The Word comes from ἀνα, *ſupra*, upwards; and καθαιρω, *purgo*, I purge.

ANACEPHALEOSIS, in Rhetorick, a Recapitulation; or a ſhort and ſummary Repetition of what has been ſaid. See RECAPITULATION.

The Word comes from the *Greek* ἀνα, which in Compoſition ſignifies *Repetition*, and κεφαλὴ, *Head.*

ANACHORET, or ANCHORET. See ANCHORET.

ANACHRONISM, in Matters of Chronology, an Error in Computation of Time; whereby an Event is placed earlier than it really happen'd. See TIME, and CHRONOLOGY.

Such is that of *Virgil*, who places *Dido* in *Africa* at the Time of *Æneas*; tho, in reality, ſhe did not come there till 300 Years after the taking of *Troy.*—An Error on the other ſide, whereby a Fact is placed later, and lower than it ſhould be, is call'd a *Parachroniſm.* See PARACHRONISM.

The Word is compounded of the *Greek* ἀνα, *ſurſum*, *ſupra*, *retrorſum*, higher, backwards; and χρόνος, *tempus*, Time.

ANACLATICKS, that Part of Opticks which conſiders refracted Light. See REFRACTION.

Anaclaticks are the ſame with what we more uſually call *Dioptricks.* See DIOPTRICKS.

ANACLETERIA, in Antiquity, Feaſts celebrated in honour of Kings and Princes, when they took upon them the Adminiſtration of their State, and made a Solemn Declaration thereof to the People.

The Word is form'd of ανα, and καλέω, *voco*, I call.

ANACREONTIC, in the *Greek* and *Latin* Poetry, ſomething invented by *Anacreon*; or in the Manner and Taſte of *Anacreon.*

Anacreon, a Poet of *Teios*, who lived upwards of 400 Years before Chriſt, was famous for the Delicacy of his Wit; and the exquiſite, yet eaſy and natural, turn of his Poeſy.—We have ſeveral of his Odes ſtill extant; and few of the modern Poets, but have *Anacreonticks* in Imitation hereof.

They are moſt of 'em compoſed in Verſes of ſeven Syllables; or rather, of three Feet and an half, Spondees and Iambus's, tho ſometimes Anapeſts.—Hence, Verſes in that Meaſure are uſually called *Anacreonticks*, or *Anacreontic Verſes.* See VERSE.

ANADIPLOSIS, in Rhetorick, a Figure, in which one Verſe begins with the ſame Word wherewith the former ended. See FIGURE.

The Word is ſometimes alſo uſed in Phyſick, for a Reduplication of the Fits, or Paroxyſms of Fevers: in which Senſe, ſome Writers alſo call it *Epanadiploſis.*

ANAGLYPHICE, or the ANAGLYPHIC *Art*, ſignifies *Sculpture*; or the Art of Carving, Engraving, Chaſing, and Emboſſing. See SCULPTOR, CARVING, ENGRAVING, ENCHASING, *&c.*

The Word comes from the *Greek* ἀναγλυφω, *exſculpo.*

ANAGOGICAL, *Myſterious*, ſomething that raiſes the Mind to Things eternal and divine; the Matters of the next Life. See ANAGOGY.

This Term is principally uſed with regard to the different Senſes of the Scripture.—The literal Senſe is the firſt, and the natural Senſe: The myſtical Senſe is founded on the natural Senſe, from whence it is taken by Analogy or Compariſon, by Similitude or Reſemblance of one thing to another; and is divided into ſeveral kinds. See MYSTICAL.

Where it regards the Church, and Matters of Religion, it is called the *Allegorical* Senſe. See ALLEGORICAL.

Where it regards our Morals, it is called the *Tropological* Senſe. See TROPOLOGICAL.

And where it regards Eternity, or the Life to come, it is called the *Anagogical* Senſe. See SENSE.

The Word is derived from the *Greek* ἀναγωγὴ, *carrying away, overturning*; which is form'd of the Prepoſition ανα, *ſurſum*, upwards, and αγωγὴ, *leading*; of αγω, *duco.*

ANAGOGY, ANAGOGE, a Rapture, or Elevation of the Soul, to things Celeſtial, and Eternal. See EXTASY, *&c.*

This is not the natural Senſe of ſuch a Paſſage of Scripture, it is an *Anagogy.* See MYSTIC.

We have Comments on the Scripture, which are *Anagogies* throughout. See ANAGOGICAL.

ANAGRAM, ANAGRAMMA, a Tranſpoſal of the Letters of a Name; or a Combination thereof in ſome new manner, ſo as to exhibit one or more Words, either to the Advantage or Diſadvantage of the Perſon to whom it belongs. See NAME.

The Word is form'd from the *Greek* ἀναγεγραφω, *I write backwards.*

Thus, the *Anagram* of *Galenus* is *Angelus*; that of Logica, *Caligo*; that of *Loraine*, is *Alerion*; on which account it was, that the Family of *Lorrain* took *Alerions* for their Armoury.—*Calvin*, in the Title of his Inſtitutions, printed at *Strasburg* in 1539, calls himſelf *Alcuinus*, which is the *Anagram* of *Calvinus*, and the Name of an eminently learned Perſon in the Time of *Charlemaign*, who contributed greatly to the Reſtauration of Learning in that Age. *Barclay*, in his *Argenis*, anagrammatizes *Calvinus* by a leſs creditable Name, *Uſinulca:* and *Rabelais*, to be revenged of the ſame *Calvin*, who had made an *Anagram* of his Name, found in that of *Calvin*, *Jan Cul.*

Such as keep cloſe to the Definition of *Anagram*, take the Liberty to omit or retain the Letter *H*, and that Letter only; but ſuch as ſtand up for the poetical Licence, make bold ſometimes to uſe *E* for *Æ*, *V* for *W*, *S* for *Z*, and *C* for *K*; and *vice verſa.* See ALPHABET.

This way of writing was ſcarce known among the Antients: *Daurat*, a *French* Poet in the Reign of *Charles* IX. is uſually ſaid to be the firſt that broach'd it: Yet *Lycophron*, who wrote under *Ptolemy Philadelphus*, about 280 Years before Chriſt, appears to have been no Stranger to the Art of making *Anagrams.* *Canterus*, in his *Prologomena* to *Lycophron*, gives us two of his Pieces in this Kind; the firſt on the Name of King *Ptolemy*, Πτολέμαιος, in which he found απὸ μέλιτος, *of Honey*; to inſinuate the Sweetneſs and Mildneſs of that Prince: The ſecond was on Queen *Arſinoe*, Ἀρσινόη, of whom he made Ιον Ηρας, *Juno's Violet.*

The Cabbaliſts among the *Jews* are profeſs'd *Anagrammiſts*; the third Part of their Art, which they call *Mura*, *i. e.* changing, being nothing but the Art of making *Anagrams*, or of finding hidden and myſtical Meanings in Names: which they do by changing, tranſpoſing, and differently combining the Letters of thoſe Names.—Thus, of נח the Letters of *Noah*'s Name, they make חן *Grace:* of משיה *the Meſſiah*, they make ישמה *he ſhall rejoice.*

There are two manners of making *Anagrams*; for, 1°, ſome only conſiſt in dividing a ſingle Word into ſeveral: Thus the Ænigma of the God *Terminus*, mention'd by *Aulus Gellius*, Lib. XII. c. 6. is founded on the *Anagram* TER MINUS: and thus *Suſtineamus* yields *ſus tinea mus.*—This Kind alone ſeems to have been uſed among the *Romans.*

The ſecond, is where the Order and Situation of the Letters is changed: Such are thoſe abovemention'd; and alſo theſe, *Roma*, *Maro*, *Amor*; *Julius*, *Livius*; *Corpus*, *Porcus*, *Procus*, *Spurco.*

To find all the ANAGRAMS *any Name will admit of, algebraically*, ſee the Article COMBINATION.

The fineſt and happieſt of all the *Anagrams* extant, is that on the Queſtion put by *Pilate* to Jeſus Chriſt; *Quid eſt veritas?* which *anagrammatically* make, *Eſt vir qui adeſt:* The *Anagram*, here, is the beſt, and juſteſt Anſwer that could poſſibly be given.

Beſides,

Beſides the antient kind of *Anagram*, there have been new ones invented; as, the *Mathematical Anagram*, invented in 1680; by which the Abbot *Catelan* found, that the eight Letters of the Name of *Lewis* XIV. made *Vrai Heros*, i. e. *true Hero*.

We are now likewiſe furniſh'd with the *Numerical Anagram*; where the numeral Letters (*i. e.* ſuch as in the *Roman* cyphering ſtood for Numbers) taken together, according to their numerical Values, expreſs ſome Epocha: Of which kind is that Diſtich of *Godart* on the Birth of the late *French* King, in the Year 1638, on a Day wherein there was a Conjunction of the Eagle with the Lion's Heart:

eXorIens DeLphIn aqVILæ CorDIſqVe LeonIs
CongreſſV gaLLos ſpe LætItIaqVe refeCIt.

ANALECTA, a *Greek* Term, ſignifying *Collection*; form'd of ἀναλέγω, *I gather*.

ANALEMMA, a *Planiſphere*; or Projection of the Sphere, on the Plane of the Meridian, orthographically made, by ſtrait Lines and Ellipſes; the Eye being ſuppoſed to be at an infinite Diſtance, and in the Eaſt or Weſt Points of the Horizon. See PLANISPHERE, PROJECTION, and SPHERE.

ANALEMMA, is alſo uſed for an Aſtrolabe; or kind of Inſtrument, conſiſting of the Furniture of the ſame Projection, drawn on a Plate of Braſs or Wood; with an Horizon or Curſor fitted to it. See ASTROLABE.

Its uſe is for finding the Time of the Sun's riſing and ſetting, the Length of the longeſt Day in any Latitude, and the Hour of the Day.

The *Analemma* is alſo of conſiderable uſe among Dialliſts, for laying down the Signs of the Zodiack, with the Length of Days, and other Matters of Furniture, upon Dials. See DIAL, and FURNITURE.

The Word is derived from the *Greek* ἀνάλημα, of ἀναλαμβάνω, *reſumo*.

ANALEPTICKS, in Medicine, *Reſtoratives*; or Remedies proper to reſtore the Body, when waſted or emaciated, either by the Continuance of a Diſeaſe, or the Want of Food. See RESTORATIVE.

The Word is *Greek*, Ἀναληπτικὸς, derived of Ἀναλαμβάνω, *I re-eſtabliſh, reſtore*.

ANALOGY, a certain Relation, Proportion, or Agreement, which ſeveral Things, in other reſpects different, bear to each other.—Such is that between the Bull in the Heavens, and the Animal ſo called on Earth.

The Word is *Greek*, Ἀναλογία; which the *Latins* uſually render by *Comparatio*, and *Proportionalitas*: And hence, among Geometricians, *Analogy* is frequently uſed for a Similitude of Ratio's; called alſo *Proportion*. See PROPORTION.

Reaſonings by *Analogy* may ſerve to explain and illuſtrate, but not to prove any thing; yet is a great deal of our philoſophizing no better founded. See SIMILITUDE, PHILOSOPHIZING, &c.

In Matters of Language, we ſay, New Words are form'd by *Analogy*, *i. e.* new Names are given to new Things, conformably to the eſtabliſh'd Names of other Things of the like Nature and Kind. See LANGUAGE, and WORD.—— The Difficulties and Obſcurities in a Language, are chiefly to be clear'd up by *Analogy*. See ETYMOLOGY.

The Schoolmen define *Analogy* to be a Reſemblance, join'd with ſome Diverſity: Its Foundation, according to them, is laid in the Proportion of ſeveral Things, conſider'd as that Proportion proceeds upon different Conſiderations. See PROPORTION.

Thus, a *ſound* Animal, a *ſound* Food, and a *ſound* Propoſition, agreeing in this, that they have a common Denomination, but the Reaſon or Quality whereon the Denomination is founded, different; are ſaid to have an *Analogy*, or to be *analogous*.

Accordingly, *Analogous* Things are defined to be ſuch as have a common Name, but the Thing immediately ſignified by that common Name, different; yet with ſome Correſpondence or Relation diſcernible therein. See GENERAL *Term*.

Philoſophers uſually diſtinguiſh three Kinds of *Analogy*, *viz.*—of *Inequality*, where the Reaſon of the common Denomination is the ſame in Nature, but not in Degree or Order: In which Senſe, *Animal* is *analogous* to Man, and Brute.——Of *Attribution*; where, tho the Reaſon of the common Name be the ſame, there is a difference in its habitude or reſpect thereto: In which Senſe, *Healthy* is *analogous* both to a Man, and an Exerciſe.——Of *Proportionality*; where, tho the Reaſons of the common Name do really differ, yet they bear ſome proportion to each other: In this Senſe, the Gills of Fiſhes are ſaid to be *analogous* to the Lungs in terreſtrial Animals: and thus, the *Eye* and the *Underſtanding* are ſaid to bear an *Analogy* to each other.

ANALOGISM, ANALOGISMUS, in Logick, an Argument from the Cauſe to the Effect. See CAUSE, &c.

ANALYSIS, in Logick, a Method of applying the Rules of Reaſoning, to reſolve a Diſcourſe into its Principles; in order to a Diſcovery of its Truth, or Falſhood. See PRINCIPLE.

Or, *Analyſis* is an Examination of ſome Diſcourſe, Propoſition, or other Matter, by ſearching into its Principles, and ſeparating and opening its Parts; in order to conſider them more diſtinctly, and arrive at a more preciſe Knowledge of the Whole. See DISCOURSE, PROPOSITION, REDUCTION, &c.

The Word is *Greek*, ἀνάλυσις, which literally ſignifies, *Reſolution*; form'd of ἀνὰ, and λυω, *ſolvo, reſolvo*, I looſen, I reſolve.

Analyſis makes one great Branch or Species of Method; called alſo *Reſolution*. See METHOD, and RESOLUTION.

ANALYSIS, in Mathematicks, a Method of ſolving, or reſolving Mathematical Problems. See PROBLEM.

There are two general Methods of finding Truth in Mathematicks; Syntheſis, and *Analyſis*.—*Analyſis* is the Demonſtration, or Conſideration of the Conſequences drawn from any Propoſition; in which a Man proceeds, till he comes to ſome known Truth, by means whereof, he may be able to give a Solution of the Problem. See RESOLUTION.

The Method of *Analyſis* conſiſts more in the Judgment and readineſs of Apprehenſion, than in any particular Rules, where pure Geometry is made uſe of, as it was among the Antients; but at preſent Algebra is principally uſed on this Occaſion, which furniſhes certain Rules to perform or arrive at the End propoſed. See ANALYTIC.

This Method, under its preſent Improvements, muſt be allowed the Apex or Height of all human Learning; being the great Inſtrument or means whereby ſo many ſurprizing Diſcoveries have been of late Years made, both in Mathematicks, and Philoſophy. It furniſhes the moſt perfect Inſtances, and Examples of the Art of Reaſoning; gives the Mind a ſurprizing Readineſs at deducing and diſcovering Things unknown, from a few *Data*; and by uſing Signs for Ideas, preſents Things to the Imagination, which otherwiſe ſeem'd out of its Sphere. By this, Geometrical Demonſtrations may be wonderfully abridg'd; and a long Series of Argumentations, wherein the Mind cannot without the utmoſt Effort and Attention diſcover the Connection of Ideas, are hereby converted into ſenſible Signs, and the ſeveral Operations requir'd therein, effected by the Combination of thoſe Signs. But what is yet more extraordinary, by means of this Art, a Number of Truths are frequently expreſs'd by a ſingle Line, which in the common way of explaining and demonſtrating Things, would fill whole Volumes: Thus, by mere Contemplation of one ſingle Line, whole Sciences may ſometimes be learnt in a few Minutes time; which otherwiſe could ſcarce be attain'd in many Years. See MATHEMATICKS, KNOWLEDGE, THEOREM, &c.

Analyſis, is divided, with regard to its Object, into that of *Finites*, and that of *Infinites*.

ANALYSIS *of finite Quantities*, is what we otherwiſe call *Specious Arithmetick*, or *Algebra*. See ALGEBRA, and *Specious* ARITHMETICK.

ANALYSIS *of Infinites*, called alſo the *New* ANALYSIS, is particularly uſed for the *Method of Fluxions*, or *Differential Calculus*. See FLUXIONS, and CALCULUS.—See alſo INFINITE.

ANALYSIS, is alſo uſed in Chymiſtry, for the decompounding of a mixt Body; or the Reduction thereof into its Principles. See PRINCIPLE, REDUCTION, DECOMPOSITION, BODY, &c.

To *analyze* Bodies, or reſolve 'em into their component Parts, is the chief Object of the Art of Chymiſtry. See CHYMISTRY.

The *Analyſis* of Bodies is chiefly effected by means of Fire. See FIRE.

All Bodies, by a Chymical *Analyſis*, reſolve into Water, Earth, Salt, Sulphur, and Mercury; tho every Body does not afford all theſe Parts, but ſome more, ſome leſs, according to the Kingdom they belong to. See ELEMENT.—See alſo WATER, EARTH, SALT, &c.

The *Analyſis* of Vegetables is eaſy; that of Foſſils, particularly Metals and Semi-metals, difficult. See VEGETABLE, FOSSIL, METAL, &c.

Some Bodies of the Foſſil Tribe conſiſt of Particles ſo very minute, and ſo firmly united, that the Corpuſcles thereof need leſs heat to carry them off, than to ſeparate 'em into their Principles: So that the *Analyſis* is impracticable in ſuch Bodies.—Hence the difficulty of *analyſing* Sulphur. See SULPHUR.

The Anatomical Diſſection of an Animal, is a kind of *Analyſis*. See ANATOMY, and DISSECTION.

ANALYSIS is alſo uſed for a kind of Syllabus, or Table of the principal Heads, or Articles of a continued Diſcourſe; diſpoſed in their natural Order, and Dependency.—*Analyſes* are more ſcientifical than Alphabetical Indexes; but are leſs uſed, as being more intricate.

ANALYTIC, ANALYTICAL, ſomething that belongs to, or partakes of the Nature of *Analyſis*. See ANALYSIS.

Thus, we ſay, an *Analytical* Demonſtration; *Analytical* Enquiry; *Analytical* Table, or Scheme; *Analytic* Method, *&c.* See METHOD.

The *Analytic* Method ſtands oppoſed to the *Synthetic*.—'As in Mathematicks, *ſays Sir* I. Newton, ſo in Natural 'Philoſophy, the Inveſtigation of difficult Things by the '*Analytic* Method, ought to precede the Method of Com-'poſition. This *Analyſis* conſiſts in making Experiments, 'and Obſervations, and in drawing general Concluſions 'therefrom by Induction, and admitting of no Objections 'againſt the Concluſions, but ſuch as are drawn from Expe-'riments and other certain Truths. And tho the arguing 'from Experiments and Obſervations by Induction, be no 'Demonſtration of general Concluſions; yet it is the beſt 'way of arguing which the Nature of the Things admits of; 'and may be eſteem'd ſo much the ſtronger, as the Induc-'tion is more general. And if no Exception occur from 'Phænomena, the Concluſion may be pronounced generally. 'By this way of *Analyſis*, we may proceed from Compounds 'to Ingredients; and from Motions to the Forces producing 'them; and in general, from Effects to their Cauſes, and 'from particular Cauſes to more general ones, till the Argu-'ment end in the moſt general.——This is the *Analytic* 'Method.

'The Synthetic conſiſts in aſſuming the Cauſes diſcovered, 'and eſtabliſhed as Principles; and by them explaining the 'Phænomena proceeding from them, and proving the Ex-'planations.' See SYNTHESIS.

ANALYTICS, ANALYTICA, the Doctrine, and Uſe of *Analyſes*. See ANALYSIS.

The great Advantage of the preſent Mathematicks above the antient, is chiefly in Point of *Analyticks*.

The Authors on the antient *Analyticks*, are enumerated by *Pappus*, in the Preface to his 7th Book of Mathematical Collections; being, *Euclid*, in his *Data*, and *Poriſmata*; *Apollonius*, *de Sectione Rationis*; *Apollonius*, in his *Conicks*, *Inclinations*, and *Tactions*; *Ariſtæus*, *de Locis Solidis*, and *Eratoſthenes*, *de mediis proportionalibus*. But the antient *Analyticks* were very different from the modern.

To the modern *Analyticks*, principally, belong Algebra; the Hiſtory of which, with the ſeveral Authors thereon, ſee under the Article ALGEBRA.

The chief Writers upon the *Analyſis* of Infinites, are its Inventors, Sir *Iſaac Newton*, in his *Analyſis per Quantitatum Series, Fluxiones & Differentias, cum enumeratione Linearum* 3^ii^ *ordinis*; and *de Quadratura Curvarum*: and M. *Leibnitz*, in *Act. Eruditor.* An. 1684: The Marquis *de l'Hopital*, in his *Analyſe des Infiniment petites*, 1696: *Carre*, in his *Methode pour la meſure des Surfaces, la dimenſion des Solides*, &c. *par l' application du calcul integral*, 1700: *G. Manfredius*, in a poſthumous Piece, *de Conſtructione Equationum differentialium primi gradus*, 1707: *Nich. Mercator*, in *Logarithmotechnia*, 1668; *Cheyne*, in *Methodo Fluxionum inverſa*, 1703; *Craig*, in *Methodo figurarum lineis rectis & curvis comprehenſarum Quadraturas determinandi*, 1685; and *de Quadraturis figurarum curvilinearum & locis*, &c. 1693: *Dav. Gregory*, in *Exercitatione Geometrica de dimenſione figurarum*, 1684; and *Niuentiit*, in *Conſiderationibus circa Analyſeos ad quantitates infinitè parvas applicatæ, principia*, 1695.——The Sum of what is found in *l'Hopital*, *Carre*, *Cheyne*, *Gregory*, and *Craig*; is collected into one Volume, and very well explain'd by *C. Hayes*, under the Title of, *A Treatiſe of Fluxions*, &c. 1704.

ANALYTICK, in Logick, is a Part of that Science, teaching to decline and conſtrue Reaſon, as Grammar doth Words.

ANAMORPHOSIS, in Perſpective and Painting, *a monſtrous Projection*; or a Repreſentation of ſome Image, either on a plane or curve Surface, deformed; which at a certain diſtance ſhall appear regular, and in proportion. See PROJECTION.

The Word is *Greek*; compounded of *ανα*, and *μορφωσις*, *formatio*, of *μορφη*, *form*.

To make an *Anamorphoſis*, or monſtrous Projection on a Plane.——Draw the Square A B C D, (Tab. *Perſpective*, Fig. 18.) of a bigneſs at pleaſure, and ſubdivide it into a Number of Areolas, or leſſer Squares.—In this Square, or Reticle, called the *Craticular Prototype*, let the Image to be diſtorted be drawn.—Then draw the Line *a b* = A B; and divide it into the ſame Number of equal Parts, as the Side of the Prototype A B; and in E, the middle thereof, erect the Perpendicular E V, ſo much the longer; and draw V S perpendicular to E V, ſo much the ſhorter, as the Image is deſir'd to be diſtorted. From each Point of Diviſion draw right Lines to V, and join the Points *a* and S; as alſo the right Line *a* S. Thro' the Points *d e f g*, draw Lines parallel to *a b*; then will *a b c d* be the Space that the Monſtrous Projection is to be delineated in; called the *Craticular Ectype*.

Laſtly, in every Areola, or ſmall Trapezium of the Space *a b c d*, draw what appears delineated in the correſpondent Areola of the Square A B C D: by this means you will obtain a deformed Image, which yet will appear in juſt Proportion to an Eye diſtant from it the length F V, and raiſed above its height, V S. See DESIGNING.

It will be diverting to manage it ſo, that the deformed Image do not repreſent a mere Chaos; but ſome other Image: Thus, we have ſeen a River with Soldiers, Waggons, *&c.* marching along the ſide of it; ſo drawn, that when viewed by an Eye in the Point S, it appears to be the ſatyrical Face of a Man.

An Image alſo may be diſtorted mechanically, by perforating it here and there with a Needle, and placing it againſt a Candle, or Lamp; and obſerving where the Rays which paſs thro' theſe little Holes fall on a plane, or curve Superficies; for they will give the correſpondent Points of the Image deformed: by means whereof, the Deformation may be compleated.

To draw the Anamorphoſis, *or Deformation of an Image upon the convex Surface of a Cone.*

It is manifeſt from the former Caſe, that all here required, is to make a Craticular Ectype on the Superficies of the Cone, which ſhall appear to an Eye duly placed over its Vertex, equal to the Craticular Prototype.

Let the Baſe A B C D, therefore, of the Cone, (Fig. 19.) be divided by Diameters into any Number of equal Parts, that is, the Periphery thereof: And let ſome one Radius be likewiſe divided into equal Parts, and thro' each Point of Diviſion draw concentrick Circles: thus will the Craticular Prototype be made.——With double the Diameter A B, as a Radius, deſcribe the Quadrant E F G, (Fig. 20.) ſo as the Arch E G be equal to the whole Periphery: then this Quadrant folded duly up, will form the Superficies of a Cone, whoſe Baſe is the Circle A B C D.—Divide the Arch A B into the ſame Number of equal Parts as the Craticular Prototype is divided into, and draw Radii from each of the Points of Diviſion. Produce G F to I, ſo that F I = F G, and from the Centre I, with the Radius I F, draw the Quadrant F K H, and from I to E draw the right Line I E. Divide the Arch K F into the ſame Number of equal Parts, as the Radius of the Craticular Prototype is divided into; and draw Radii thro' each of the Points of Diviſion, from the Centre I meeting E F, in 1, 2, 3, *&c.* Laſtly, from the Centre F, with the Radii, F 1, F 2, F 3, *&c.* deſcribe the concentrick Arches.—Thus will the Craticular Ectype be form'd, each Areola whereof will appear equal to other.

Hence, what is delineated in every Areola of the Craticular Prototype; being transferred into the Areolas of the Craticular Ectype: the Image will be diſtorted or deformed: yet an Eye being duly raiſed over the Vertex of the Cone, will perceive it in juſt proportion.

If the Chords of the Quadrants be drawn in the Craticular Prototype, and Chords of their fourth Part in the Craticular Ectype, all things elſe remaining the ſame; you will have the Craticular Ectype on a quadrangular Pyramid.

And hence it will be eaſy to deform any Image, in any other Pyramid, whoſe Baſe is any regular Polygon.

Becauſe the Eye will be more deceived, if from contiguous Objects it cannot judge of the diſtance of the Parts of the deformed Image; therefore, theſe kinds of deformed Images are to be view'd thro' a ſmall Hole.

ANANAS, in Natural Hiſtory, by ſome called *Nanas*, by others *Jayama*, and by us popularly the *Pine-Apple* on account of the reſemblance it bears to the Cones of Pines or Firs; is a fine *Indian* Fruit, which grows on a Plant like the Fig-tree, and of the Size of an Artichoke.

The Fruit is adorned on the Top with a little Crown, and a bunch of red Leaves reſembling Fire. The Fleſh is fibrous, but diſſolves in the Mouth; having the delicious Taſte of the Peach, the Quince, and the Muſcadine Grape, all together.—M. *du Tertre* deſcribes three Kinds of *Ananas*. They make a Wine from the Juice, which is almoſt equal to *Malmſey* Sack, and will intoxicate as ſoon.

It is good to ſtrengthen the Heart and Nerves, againſt nauſeating, to refreſh the Spirits, and excites Urine powerfully; but is apt to occaſion Abortion in Women.—They make a Confection of the *Ananas* on the Spot, which they bring hither whole; and is found of good ſervice to reſtore a decay'd, or aged Conſtitution.

The *Anana*, or *Weſt-India* Pine-Apple, is generally allow'd, both for its rich and delicious Flavour, and its beautiful Colour, for the King of Fruits.——Great Endeavours have of late been uſed to cultivate the Plant in *Europe*; in which they have ſucceeded, and there are now produced delicious Fruits of this kind, in ſome of the fine Gardens in *England*.—They are uſually about the Size of a Tennis-Ball.

ANAPEST, ANAPESTUS, a Foot in the *Greek* and *Latin* Poetry, conſiſting of two ſhort, and one long Syllable. See FOOT.

Such

OSTEOLOGY, or the Bones.

The Cranium, a Fore View.
a. Os Frontis
b. Orbits of Eyes
c. Nasal Hole
d. Maxilla Superior
e. Maxilla Inferior
f. Sagittal Suture
g. Coronal Suture

The Cranium a Side View.
a. Os Sincipitis or Coronale
b. Os Temporis
c. Os Petrosum or Cochleare
d. Dentes Incisores.
e. Canini
f. Molares
g. Os Occipitis
h. Coronal Suture
i. Sagittal
k. Squamous Suture
m. Processus called Coronoides
n. Processus called Condyloides

Skeleton of a Man, a Fore View.
The Brain, bared of ye Cranium & Dura Mater.
AA. The Spine, Composed of 7 Vertebræ
1. 1. Vertebræ of ye Neck
2. 2. Transverse processes
3. 3. Clavicles
4. 4. Spine of ye Scapula
5. 5. Processus Coracoides
6. 6. Humeri
The Spinal Marrow taken out of the Vertebræ.
a. a. The right Side of the Brain, parted over the Middle
b. b. Lateral Sinus's
c. c. Small arteries from the Dura & Pericranium
d. d. Veins & Emulgents
e. e. Spinal Marrow
f. f. Nerves
g. g. Muscles
h. h. Cerebellum
i. i. Medulla Oblongata
k. k. Spinal Medullum
l. l. Pons Varoli
m. m. Fifth pair of Nerves
n. n. Sixth pair
o. o. Seventh pair
p. p. Auditory Nerves
q. q. Par Vagum
r. r. Par Accessorium
s. s. ninth pair
t. t. Trunks of Vertebral Arteries
u. u. Trunks of Carotids
x. x. Trunks of ye Subclavians
y. y. Carotids cut off
z. z. Branches thereof passing between ye Lobes of the Fore most Brain
a. a. Fore most Brain
b. b. Hindmost Branches, joyning to Vertebrals
c. c. Communicating Branches
d. d. Vertebrals
e. e. The Spinal Artery
f. f. The Spinal Nerve
g. g. The Dura Mater
h. h. Cervical Nerves
i. i. Brachial Nerves
k. k. Dorsal Nerves
l. l. Lumbal Nerves
m. Processus Pectoralis
n. n. Sinus ye Cordis
o. o. Ribs
p. p. Cartilages of the Ribs
q. q. Sternum
r. r. Vertebræ of the Back
s. s. Vertebræ of the Loins
t. t. Os Sacrum
u. u. Ossa Innominata
x. x. Processus Ensiformis
y. y. Vertebræ of the Tail
z. z. Os Coccygis
7. 7. Radius
8. 8. Ulna
9. 9. Carpus
10. 10. Metacarpus
11. Sternum or Os pectoris
12. Cartilago ensiformis
13. 13. Vertebræ of the Back or Thorax
14. 14. Vertebræ of ye Loins
a. a. a. Processus Obliqui
c. c. c. Processus Obliqui
d. d. d. Transverse processes of Vertebræ of the Loins
15. 15. Os Sacrum
16. 16. Os Innominatum or Coxendix
17. 17. That part of it called Ilium
18. 18. Os pubis
19. Os Ischium
20. 20. Bones of ye Thumb
21. 21. Bones of ye Fingers
Ischium & pubis
22. 22. Os Femoris
23. 23. Os Femoris
24. 24. Tibiæ
25. 25. Os Fibulæ
26. 26. Os Cuneiforme
27. 27. Os Naviculare
28. 28. Ossa Metatarsi
29. 29. Bones of ye Toes
Appendices of ye Radius, Ulna, Carpus, Ilium, Femur &c.

The Brain, bared of ye Cranium & Dura Mater.
a. a. The right Side of the Brain, parted over the Middle
b. b. Lateral Sinus's
c. c. Small arteries from the Dura & Pericranium
d. d. Veins & Emulgents
e. e. Spinal Marrow
f. f. Nerves
g. g. Muscles
h. h. Cerebellum
i. i. Medulla Oblongata
k. k. Spinal Medullum
l. l. Pons Varoli
m. m. Fifth pair of Nerves
n. n. Sixth pair
o. o. Seventh pair
p. p. Auditory Nerves
q. q. Par Vagum
r. r. Par Accessorium
s. s. ninth pair
t. t. Trunks of Vertebral Arteries
u. u. Trunks of Carotids
x. x. Trunks of ye Subclavians
y. y. Carotids cut off
z. z. Branches thereof passing between ye Lobes of the Fore most Brain
a. a. Fore most Brain
b. b. Hindmost Branches, joyning to Vertebrals
c. c. Communicating Branches
d. d. Vertebrals
e. e. The Spinal Artery
f. f. The Spinal Nerve
g. g. The Dura Mater
h. h. Cervical Nerves
i. i. Brachial Nerves
k. k. Dorsal Nerves
l. l. Lumbal Nerves
m. Processus Pectoralis
n. n. Sinus ye Cordis
o. o. Ribs
p. p. Cartilages of the Ribs
q. q. Sternum
r. r. Vertebræ of the Back
s. s. Vertebræ of the Loins
t. t. Os Sacrum
u. u. Ossa Innominata
x. x. Processus Ensiformis
y. y. Vertebræ of the Tail
z. z. Os Coccygis
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26. 26. Os Cuneiforme
27. 27. Os Naviculare
28. 28. Ossa Metatarsi
29. 29. Bones of ye Toes
Appendices of ye Radius, Ulna, Carpus, Ilium, Femur &c.

The Os Brain, turns on its Hemispheres to shew its Basis.
a. a. Fore Lobes
b. b. Hind Lobes
c. c. Cerebellum
d. Medulla Oblongata
e. e. Spinal Medullum
f. Os Basilare
g. g. Processus Mamillares
h. h. Processus Ensiformis
i. i. Appendices
k. k. Processus Xiphoides
l. l. Ossa Innominata
m. m. Ossa Pectoris
n. n. Ossa Spuria
o. o. Ossa Costarum
p. p. Cartilages of the Ribs
q. q. Sternum
r. r. Vertebræ of the Back
s. s. Vertebræ of the Loins
t. t. Os Sacrum
u. u. Ossa Innominata
x. x. Os Coccygis
y. y. Vertebræ of the Tail
z. z. Processus Obliqui
7. 7. Radius
8. 8. Ulna
9. 9. Carpus
10. 10. Metacarpus
11. Sternum or Os pectoris
12. Cartilago ensiformis
13. 13. Vertebræ of the Back or Thorax
14. 14. Vertebræ of ye Loins
15. 15. Os Sacrum
16. 16. Os Innominatum or Coxendix
17. 17. That part of it called Ilium
18. 18. Os pubis
19. Os Ischium
20. 20. Bones of ye Thumb
21. 21. Bones of ye Fingers
Ischium & pubis
22. 22. Os Femoris
23. 23. Os Femoris
24. 24. Tibiæ
25. 25. Os Fibulæ
26. 26. Os Cuneiforme
27. 27. Os Naviculare
28. 28. Ossa Metatarsi
29. 29. Bones of ye Toes
Appendices of ye Radius, Ulna, Carpus, Ilium, Femur &c.

The Os Brain, turns on its Hemispheres to shew its Basis.
a. a. Fore Lobes
b. b. Hind Lobes
c. c. Cerebellum
d. Medulla Oblongata
e. e. Spinal Medullum
f. Os Basilare
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t. t. Os Sacrum
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20. 20. Bones of ye Thumb
21. 21. Bones of ye Fingers
Ischium & pubis
22. 22. Os Femoris
23. 23. Os Femoris
24. 24. Tibiæ
25. 25. Os Fibulæ
26. 26. Os Cuneiforme
27. 27. Os Naviculare
28. 28. Ossa Metatarsi
29. 29. Bones of ye Toes
Appendices of ye Radius, Ulna, Carpus, Ilium, Femur &c.

Skeleton of a Lion a Back & Side View.
1. Os Sincipitis
2. Os Occipitis
3. Processus Mamillaris.
4. Os Squammosum
5. Os Sphenoides
6. 6. Scapula
7. 7. Spine of the Scapula
8. Os Humeri
9. Radius
10. Ulna
11. Olecranum
12. Carpus
13. Metacarpus
AAA. Spina Dorsi.
14. 14. Vertebræ of the Neck
a. a. a. Transverse processes thereof
15. 15. Vertebræ of the Thorax
n. n. n. Spines thereof
o. o. o. Transverse Processes thereof
16. 16. &c. the Ribs
16. 16. &c. Vertebræ of the Loins
17. 17. Spines thereof
18. 18. Os Ilium
19. 19. Spine of Ilium
20. Os Pubis
21. Os Sacrum
22. Os Coccygis
23. 23. The Os Femoris
24. 24. Great Trochanter
25. Little Trochanter
26. 26. Os Tibiæ
27. 27. The Fibula.
28. 28. Os Calcis
a. a. Astragalus
b. b. Os Cuboides
c. c. Ossa Cuneiformea
d. Os Cymbiforme
e. e. Metatarsus
* * * Appendices of the Os Humeri Radius, Ulna, Carpus. Ilium, Femur &c.

Second Vertebra of the Neck.
a. a. Transverse processes
b. b. Spine or three processes

Kind View of the Vertebræ of the Back.

Kind View of the Vertebræ of the Loins

One of Vertebræ of the Loins in a hind View.
a. The Hole for ye Spinal Marrow
bb. The Transverse processes
cc. The Oblique processes

Kind View of the Vertebræ of the Neck

Inside of ye Os Ileum.
a. Acetabulum
b. Os Ischii
c. Os pubis

The Os Temporis laid bare.
a. The Squammous part
b. b. Os Jugale
c. The Membrana Tympani.
d. Mamillary Process
e. Styleid Process
f. f. Foramina or Meatus leading from the Ear to ye Palate.

ANGEIOLOGY, or the Vessels

Arteries of the Body.
a. a. The Glandulous Membranes
b. b. The Tegumens
c. The Internal Tunic.
a. a. The Internal or Nervous Tunic
b. b. The Muscular Coat
c. c. The Tegumentous or External Tunic.

Veins of the Body.
a. a. Orifice of the Cava from the right Auricle
b. b. Descending Trunk of the Cava
c. c. Ascending Trunk of the Cava
d. d. Subclavian Veins
e. e. Jugulars cut off
f. f. Internal Jugulars
g. Mammary Veins
h. Internal Jugulars
i. i. Axillar Veins
k. k. Crural Veins
l. l. Saphenæ
m. m. Emulgents
n. Trunk of ye Veins of ye Liver
o. o. o. Vasa Hepatica
p. Internal Sinuses
1. Vena Sacra
2. 2. Spermatic Veins
3. Epigastric
4. 4. Saphena

Trunk of a Large Vein Dissected.

Ramifications of the Porta within the Liver
a. The Place where the Porta Enters ye Liver
b. The Umbilical or Navel Vein
c. The Canalis Venosus
d. d. The External Sinuses
e. e. The Internal Sinuses
f. f. The Vena Portæ

Ramifications of the Cava within the Liver
a. The Trunk of the Cava
b. b. b. part of the Diaphragm

Pulmonary Artery, in ye time of Expiration.
a. a. The Trunk cut off close to the Basis of the Heart
b. b. The Division of the Right & Left Lobes of the Lungs
c. c. The Canalis Arteriosus
d. d. d. The Extremities of the Arteries Freed from the Muscles of the Lungs & Heart
e. e. e. The Branches into the Substance of the Lungs

Pulmonary Veins.
f. f. f. Trunks of the Pulmonary Veins
g. g. The Left Auricle of the Heart
h. h. Extremities of the Veins

Placenta & Funiculus Umbilicalis.
a. a. The Placenta
b. b. The Membranes
c. c. The Umbilical Cord
d. d. d. Vessels of the Navel String
e. e. e. Branches of the Vessels dispersed in the Substance of the Placenta
f. f. The Vessels of the Membranes
g. g. Membranes & Vessels
h. Urachus

Fœtus in Utero.
a. a. The Placenta
b. b. The Membranes
c. c. The Umbilical Cord
d. d. The Navel String
e. e. The Vessels of the Navel String
f. f. The Urachus
g. g. The Bladder
h. h. The Intestinum Rectum
i. i. The Os Coccygis
k. k. The Os Sacrum
l. l. The Vertebræ of the Loins
m. m. The Vertebræ of the Back
n. n. The Vertebræ of the Neck
o. o. The Occiput
p. p. The Os Frontis
q. q. The Eyes
r. r. The Nose
s. s. The Mouth
t. t. The Chin
u. u. The Ears
x. x. The Hands
y. y. The Fingers
z. z. The Thighs
1. 1. The Legs
2. 2. The Feet
3. 3. The Toes

ANATOMY of the SPLANCNOLOGY, or the Viscera.

Cavity of ye Abdomen; ye Omentum, Intestines and Mesentery being taken out, to shew the right Side, and Upper Fore Surface of the Loins.
a. a. The Upper or Fore Surface of the Loins
b. The Right Kidney
c. c. The Ureters
d. The Vena Cava
e. e. The Emulgent Veins
f. f. The Aorta Descendens
g. g. The Spermatic Arteries
h. h. The Iliack Arteries
i. The Urinary Bladder blown up.
k. k. Glandulous Inguinales.
l. l. Glandulous Conglomerati
m. m. Inguina.
n. n. Glandulæ Inguinales.
o. o. Portiones ligamentosæ
p. p. Portiones ligamentosæ

The Kidney dissected in the Middle.
a. a. Ureters
b. b. Glandulous Coat
c. c. Membranous Coat
d. d. Membranous Coat
e. e. The Pelvis
f. f. Cavity of the Ureter

Coats of the Intestines dissected.
a. External Surface of the Peritonæum
b. b. Internal Surface of the Peritonæum
c. c. Muscular Coat
d. d. Nervous Coat
e. e. Villous Coat
f. f. Internal Surface of the Villous Coat

Fore Part of the Cavernous Bodies
a. a. The Cavernous Bodies
b. b. The Urethra
c. c. Muscles of the Urethra
d. d. Muscles of the Urethra
e. e. Muscles of the Urethra
f. f. Muscles of the Urethra
m. m. Urethra
n. n. Spungeous part
o. o. Corpora Cavernosa penis
p. Glans

Figure of the Uterus open'd
a. a. The Fundus of the Uterus
b. b. Round Ligaments of the Uterus
c. c. The Tubæ Fallopianæ
d. d. The Ovaria
e. e. The Ligamenta Rotunda
f. f. Orifice of the Uterus
g. g. Vessels of the Uterus
h. h. Vagina Uteri
i. i. Caruncles
k. k. Rugæ
l. l. Sinus
m. m. Cervix Uteri
n. n. Orifice of the Uterus

Back Part of ye Penis, Prostates &c.
a. a. The Prostates
b. b. The Urethra
c. c. Muscles of the Urethra
d. d. Muscles of the Urethra
e. e. Muscles of the Urethra
f. f. Muscles of the Urethra
m. m. Urethra
n. n. Spungeous part
o. o. Corpora Cavernosa penis
p. Glans

Cavity of ye Abdomen; ye Omentum, Intestines and Mesentery being taken out, to shew the right Side, and Upper Fore Surface of the Loins.
a. a. The Upper or Fore Surface of the Loins
b. The Right Kidney
c. c. The Ureters
d. The Vena Cava
e. e. The Emulgent Veins
f. f. The Aorta Descendens
g. g. The Spermatic Arteries
h. h. The Iliack Arteries
i. The Urinary Bladder blown up.
k. k. Glandulous Conglomerati
l. l. Glandulæ Inguinales.
m. m. Inguina.
n. n. Glandulæ Inguinales.
o. o. Portiones ligamentosæ
p. p. Portiones ligamentosæ

The Kidney dissected in the Middle.
a. a. Ureters
b. b. Glandulous Coat
c. c. Membranous Coat
d. d. Membranous Coat
e. e. The Pelvis
f. f. Cavity of the Ureter

Coats of the Intestines dissected.
a. External Surface of the Peritonæum
b. b. Internal Surface of the Peritonæum
c. c. Muscular Coat
d. d. Nervous Coat
e. e. Villous Coat
f. f. Internal Surface of the Villous Coat

Fore Part of the Cavernous Bodies
a. a. The Cavernous Bodies
b. b. The Urethra
c. c. Muscles of the Urethra
d. d. Muscles of the Urethra
e. e. Muscles of the Urethra
f. f. Muscles of the Urethra
m. m. Urethra
n. n. Spungeous part
o. o. Corpora Cavernosa penis
p. Glans

Figure of the Uterus open'd
a. a. The Fundus of the Uterus
b. b. Round Ligaments of the Uterus
c. c. The Tubæ Fallopianæ
d. d. The Ovaria
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f. f. Orifice of the Uterus
g. g. Vessels of the Uterus
h. h. Vagina Uteri
i. i. Caruncles
k. k. Rugæ
l. l. Sinus
m. m. Cervix Uteri
n. n. Orifice of the Uterus

Back Part of ye Penis, Prostates &c.
a. a. The Prostates
b. b. The Urethra
c. c. Muscles of the Urethra
d. d. Muscles of the Urethra
e. e. Muscles of the Urethra
f. f. Muscles of the Urethra
m. m. Urethra
n. n. Spungeous part
o. o. Corpora Cavernosa penis
p. Glans

ANATOMY of the Viscera.

The Stomach
a. a. The Œsophagus
b. b. The Mouth or left Orifice
c. The Pylorus or Sphincter
d. d. Intestinum Duodenum
e. e. The Gastric Vessels
f. f. The Vessels of the Omentum
g. g. The Omentum
h. The Ureters of the Kidneys
i. The Vessels of the Spleen
k. The Nervous coat

The Abdomen opened to shew its Viscera.
a. a. Internal Surface of ye Skin
b. b. Internal Surface of the Peritonæum
c. The Navel cut out
d. The Navel cut out to shew a, a, Muscles
e. Muscles of the Abdomen
f. The Gastric Vessels
g. The Cartilago Ensiformis
h. part of ye Fore Surface of the Liver
i. part of ye Omentum, or Caul
k. part of ye Stomach
l. The Spleen
m. m. Intestines
n. n. Intestines
o. The Urinary Bladder
p. The Cartilago Ensiformis
q. The Vessels of the Navel not covered by the Peritonæum

Fore part of the Genitals of a Woman.
a. The Tendons of ye Uterus
b. b. Round Ligaments of the Uterus
c. The Urinary Bladder
d. Sphincter of the Vagina
e. The Urethra
f. Clitoris
g. g. Nymphæ
h. Prepuce of ye Clitoris
i. Muscles of the Clitoris
k. k. Caruncules Myriformes
l. Ossa Navicularis
a. Anus

Fore Part of the Uterus.
a. Clitoris
bb. Urinæ thereof
c. The Vagina
d. The Prepuce
e. e. Nymphæ
f. f. Nymphæ of the Clitoris
g. Hymen
h. Caruncles
i. i. Rugæ
k. Sinus
l. Orifice of the Uterus
m. Cervix Uteri
n. n. Vessels of the Uterus
o. o. Vessels of the Uterus

A Lobe of the Lungs divided into Lobules.
a. a. Trunk of the Trachea or Wind Pipe
b. b. Terminations of Branches of the Wind Pipe
c. c. Upper Lobes of the Lungs
d. d. Middle Lobes of the Lungs
e. e. Lower Lobes of the Lungs
f. f. Fissures of the Lungs
g. g. Vessels of the Lungs
h. h. Vessels of the Lungs
i. i. Vessels of the Lungs
k. k. Vessels of the Lungs
l. l. Vessels of the Lungs
m. m. Vessels of the Lungs
n. n. Vessels of the Lungs
o. o. Vessels of the Lungs
p. p. Vessels of the Lungs
q. q. Vessels of the Lungs
r. r. Vessels of the Lungs
s. s. Vessels of the Lungs
t. t. Vessels of the Lungs
u. u. Vessels of the Lungs
x. x. Vessels of the Lungs
y. y. Vessels of the Lungs
z. z. Vessels of the Lungs

MYOLOGY, or the Muscles.

Exterior Muscles of the Fore Parts of the Body.

1. Frontalis.
2. Orbicularis Palpebrarum.
3. Elevator Alæ Nasi.
4. Elevator Labii Superioris, & Dilatator Alæ Nasi.
5. Elevator Labiorum communis.
6. Elevat. Labii Superioris proprius.
7. Depressor Labii inferioris proprius.
8. Depressor Labiorum communis.
9. Sphincter Labiorum.
10. Zygomaticus.
11. Buccinator.
12. Masseter.
13. Temporalis.
14. Elevator Auriculæ.
15. Mastoideus.
16. Elevator Scapulæ.
17. Rotundus and Subscapularis, part thereof.
18. Cucullaris, part thereof.
19. Deltoides.
20. Coracoideus.
21. Deltoides.
22. Pectoralis.
23. Coracobrachialis partly, Teen.
24. Biceps Cubiti.
25. Brachiæus internus.
26. Gemellus, part thereof in both Arms.
27. Pronator Radiceres, in the Left Arm
28. Supinator Radii longus.
29. Extensor Carpi Radialis.
30. Extensores Pollicis.
31. Adductor Pollicis.
32. Abductor indicis.
33. Flexor Secundi Ossis Pollicis, part thereof.
34. Radialis Flexor.
35. Flexor Digitorum Perforatus, part thereof.
36. Abductor pollicis in the Left Hand.
37. Extensor Digitorum communis in the Right hand
38. Minimi Digiti extensor
39. Ulnaris Extensor Carpi.
40. Ulnaris Flexor Carpi.
41. Teres major, part thereof
42. Latissimus Dorsi, pt thereof
43. Serratus major Anticus, part thereof
44. Obliquus Descendens
45. Obliquus Defendens.
46. Pyramidalis
47. Rectus Abdominis.
48. Musculus Membranosus.
49. Sartorius, part thereof on both Thighs.
50. Glutæus Medius, part thereof under the Tendinous Production of the Glutæus Magnus
51. Glutæus Magnus, part thereof.
52. Rectus Femoris in both Thighs
53. Triceps, part
54. Gracilis, part thereof
55. Vastus Internus, part thereof in the Left Thigh.
56. Vastus externus
57. Vastus externus
58. Tibialis Anticus in the Left Leg
59. Gastrocnemius internus in both Legs.
60. Extensor Digitorum pedis Longus
61. Peroneus Longus.
62. Gastrocnemius Externus
63. Tibialis Anticus in the Left Leg
64. Gastrocnemius internus in both Legs.
65. Extensor Digitorum pedis Longus
66. Peroneus Longus.
67. Soleus in both Legs, parts thereof
68. Musculus Plantaris
69. Long Tendon
70. Tibialis posticus
71. Extensor pollicis pedis longus, near its Termination in the Left Foot.
72. Abductor pollicis pedis
73. Extensor Digitorum pedis brevis
74. Abductor minimi digiti pedis
75. Extensor pollicis brevis.
76. Peronæus brevis, part thereof.

Exterior Muscles of the Back Parts of the Body.

1. Musculus Occipitalis
2. Trapezius, pt thereof
3. Elevator Auriculæ
4. Zygomaticus
5. Glutæus, part thereof
6. Masseter, part thereof
7. Maloideus, part thereof.
8. Elevator Scapulæ. Small part thereof.
9. Cucullaris
10. Deltoides
11. Infraspinatus
12. Rotundus minor.
13. Rotundus major.
14. Anconæus, or Triceps Externus.
15. Biceps, part thereof.
16. Supinator Radii Longus, Part thereof.
17. Extensor minimi Digiti.
18. Extensor Carpi Ulnaris.
19. Radialis Extensor Carpi.
20. Extensor Digitorum Communis
21. The Muscles extending ye Thumb
22. Abductor minimi Digiti.
23. Interossei
24. Abductor Indicis.
25. Abductor Pollicis ad Dorsum Manus
26. Ulnaris Flexor Carpi in both Arms
27. Flexor Digitorum Perforatus in the Left Arm, part thereof.
28. Latissimus Dorsi
29. 29. Rhomboides, part thereof.
30. 30. Sacrolumbales and Dorsi longissimi, parts thereof seen in the Triangular Interstice
31. 31. Oblique descending Muscles of the Abdomen, parts thereof.
32. Glutæus medius, parts thereof.
33. Glutæus maximus
34. Membranosus, small part thereof.
35. Vastus externus.
36. Triceps, parts thereof.
37. Gracilis, in the Right Thigh.
38. Semimembranosus.
39. Semitendinosus.
40. Biceps
41. 41. Gastrocnemius externus, and internus.
42. Soleus.
43. Peroneus primus.
44. Peroneus Secundus.
45. Abductor minimi Digiti.

Interior Muscles of the Body, appearing after ye Former are taken off.

1. Musculus Masseter.
2. Biventer, or Digastricus.
3. Elevator Scapulæ, pt thereof.
4. Splenius, part thereof.
5. Cucullaris, part thereof.
6. Scalæ, part thereof.
7. Corresponding part of ye Sternothoideus
8. Sternothoideus
9. Subclavius.
10. Serratus minor Anticus
11. Levator Costarum.
12. Latissimus Dorsi, part thereof in both sides
13. Rotundus major, part thereof in both sides
14. Obliquus ascendens Externus
15. Pronator Radii teres in the Right Hand
16. Pectoralis, in both Arms
17. Triceps, in both Arms
18. Sternum
19. Sphincter Radii longus in the left Arm, part thereof
20. Extensor Digitorum communis in the Left Hand
21. Extensor minimi Digiti
22. Extensor Carpi Ulnaris
23. Abductor minimi Digiti
24. Flexor Secundi Ossis Pollicis
25. Abductor minimi Digiti
26. Ulnaris Flexor Carpi in both Arms
27. Flexor Digitorum Perforatus in the Left Arm, part thereof
28. Latissimus Dorsi
29. 29. Rhomboides, part thereof
30. 30. Sacrolumbales and Dorsi longissimi, parts thereof seen in the Triangular Interstice
31. 31. Oblique descending Muscles of the Abdomen, parts thereof
32. Glutæus medius, parts thereof
33. Glutæus maximus
34. Membranosus, small part thereof
35. Vastus externus
36. Triceps, parts thereof
37. Gracilis, in the Right Thigh
38. Semimembranosus
39. Semitendinosus
40. Biceps
41. 41. Gastrocnemius externus, and internus.
42. Soleus.
43. Peroneus primus.
44. Peroneus Secundus.
45. Abductor minimi Digiti.

Interior Muscles after ye Former of the Body Appearing are taken off.

1. Temporalis.
2. Zygomaticus
3. Masseter
4. Elevator Scapulæ
5. Complexus major & thereof
6. Splenius
7. Adductor Pollicis.
8. Abductor Indicis
9. Interossei
10. Trilateral
11. 11. Supinator Radii brevis
12. 12. Brachiæus internus
13. 13. 13. Brachiæus externus
14. Rotundus major
15. 15. Serr. Post. Anticus pars.
16. 16. Sacrolumbalis
17. 17. Dorsi Longissimus
18. Semispinalis
19. Obliquus Descendens, thereof
20. Semispinales Part thereof
21. Glutæus minor
22. 22. Pyriformes
23. Glutæus medius
24. 24. Marsupiales
25. Quadratus Femoris.
26. Obturator externus
27. Triceps
28. 28. 28. Popliteus
29. Peroneus primus
30. Peroneus Secundus
31. Flexor Pollicis longus
32. Flexor Digitorum Perforans.
33. Serratus Sup. Posticus
34. Supra Spinalis
35. Infraspinatus
36. Rotundus minor
37. Rotundus major
38. Teres vel Gibbus
39. Anconæus
40. Biceps
41. Pectinalis, part there of
42. Deltoides
43. Deltoides
44. Supinator Radii Longus
45. Supinator Radii brevis
46. Anconæus
47. Flexores Digitorum
48. Extensores Pollicis.
49. Indicator
50. Interossei

A Simple Muscle, & Inner Series of Fleshy Fibres.

A Regular Compound Muscle divided in ye Middle & Opened to shew ye Inside of both Bellies.

The Cuticula, there a. Microscope

The Cutis or Skin, there a. Microscope

a. a. &c. Sweat Pores
bb. &c. Sides of Pores

Such is the Word *Legerent*.

The Word is derived from ἀναπαίω, *contra ferire*; this Verſe being the Reverſe of the Dactyl. See DACTYL.

Anapeſtick Verſes, *i. e.* Verſes wholly compoſed of ſuch Feet, were much in vogue among the Antients.

ANAPHORA, in Rhetorick, a Figure whereby the ſame Sound is repeated in the Beginning of ſeveral Sentences, or Verſes. See FIGURE.

The Word is *Greek*, ἀναφορὰ, ſignifying *Relation*, or *Repetition*.

ANAPLEROTICKS, in Medicine, ſuch Remedies as incarnate, and fill up Ulcers and Wounds with new Fleſh. See WOUND, and ULCER.

*Anaplerotick*s are the ſame with what we otherwiſe call *Incarnatives*. See INCARNATIVE.

The Word comes from the *Greek* ἀναπληρῶν, *to fill up*.

ANARCHY, the want of Government in a Nation, where no ſupreme Authority is lodged, either in the Prince or other Rulers; but the People live at large, and all things are in confuſion. See GOVERNMENT.

The Word is derived from the *Greek* Privative α, and ἀρχὴ, *Command*, *Principality*.

ANASARCA, in Medicine, a ſort of univerſal Dropſy, wherein the whole Subſtance of the Body is ſtuffed, or bloated with pituitous Humours. See DROPSY.

The *Anaſarca* is otherwiſe called *Leucophlegmatia*. See LEUCOPHLEGMATIA.

The Word is form'd of the *Greek* ἀνασαρκα.—The *Anaſarca* is a further degree of a *Cachexia*. See CACHEXY.

In an *Anaſarca*, the Legs ſwell at the beginning, eſpecially towards Night, and then pit remarkably: The Urine is pale, the Appetite decays; at length the Swelling riſes higher, and appears in the Thighs, Belly, Breaſt, Arms. The Face becomes pale and cadaverous; the Fleſh ſoft and lax; a difficulty in Reſpiration comes on, attended with a ſlow Fever, *&c.*

ANASTOMASIS, or ANASTOMOSIS, in Anatomy, is ſometimes uſed to expreſs ſuch an Aperture of the Mouths of the Veſſels, as lets out their Contents. See VESSEL, *&c.*

The Word is form'd of the *Greek* ἀνα, *per*, thro', and στομα, *Os*, Mouth.

ANASTOMASIS is more frequently uſed to denote the opening of two Veſſels into one another; or the Union and Junćture of the Mouths of two Veſſels, whereby they come to communicate with one another.

There are various *Anaſtomaſes* of this kind, *e. g.* of an Artery with an Artery, a Vein with a Vein, or a Vein with an Artery. See ARTERY, and VEIN.

The Circulation of the Blood in the Fœtus is effected by means of the *Anaſtomaſes*, or Inoſculations of the Vena Cava with the Pulmonary Vein; and of the Pulmonary Artery with the Aorta. See FOETUS.

The ſame Circulation is alſo perform'd in Adults, by the *Anaſtomaſes* or Continuations of the Capillary Arteries with the Veins. See CIRCULATION *of the Blood*.

After the Circulation of the Blood thro' the Heart, Lungs, and large Blood-Veſſels, was demonſtrated by *Harvey*; it was only gueſs'd how the Extremities of the Arteries tranſmitted the Blood to the Veins: till *Leewenhoeck*'s Microſcopes had diſcover'd the Continuations of the Extremities of thoſe Veſſels, in Fiſh, Frogs, *&c.*—However, there were not wanting thoſe who doubted of the like Continuations of the Extremities of the Arteries and Veins in human Bodies and Quadrupeds; ſince thoſe Animals it had hitherto been chiefly ſeen in ſatisfactorily, were either ſuch Fiſh, or amphibious Kinds, as have but one Ventricle in their Hearts, and their Blood actually cold; beſide that their Blood does not circulate with ſuch Rapidity, as in Animals whoſe Hearts have two Ventricles. This difference in the principal Organs of Circulation, moved Mr. *Cowper* to make Experiments on Animals, whoſe Organs differ only from the Human in their groſs Figure, and not in their intimate Structure.—The Reſult was a plain Diſcovery of the like Inoſculations of the Arteries and Veins, in the Omentum of a Cat.

George Frederick Francus, of *Frankenau*, a Phyſician of *Copenhagen*, publiſhed, in the Year 1705, a learned and copious Work, intitled, *Anaſtomaſis Retecta*.

ANASTOMATICS, or ANASTOMATIC *Medicines*, are ſuch as have the Faculty of opening, and dilating the Orifices of the Veſſels; and by that means of making the Blood circulate the more freely.

The Word comes from the *Greek* Ἀνασομόω, *I open, unſtop*.

ANATHEMA, an Excommunication, attended with Execrations and Curſes. See EXCOMMUNICATION.

There are two Kinds of *Anathema's*; the one *Judiciary*, the other *Abjuratory*.

The former can only be pronounced by a Council, a Pope, Biſhop, or other qualified Perſon; and differs from a ſimple Excommunication in this, that an Excommunication only prohibits the Criminal from entering within the Church, or from holding Communion with the Faithful; whereas an *Anathema* cuts him off from the Body, the Society, and even the Commerce of the Faithful, and delivers him over to the Devil.

The latter kind of *Anathema* uſually makes a Part of the Ceremony of Abjuration; the Convert being obliged to *anathematize* the Hereſy he abjures. See ABJURATION.

Moſt *Greek* Writers diſtinguiſh *Anathema*, written with a long *e*, Ἀναθήμα; from *Anathema* with a ſhort *e*, Ἀνάθεμα: Yet *Beza* rejects the Difference.—*Pollux*, in his Lexicon, obſerves that the Word properly ſignifies, *Gifts dedicated to the Gods*: This Interpretation is confirm'd by *Heſychius*, who explains *Anathema* by *Ornaments*; theſe Gifts being hung up as Ornaments in the Temples.

The Criticks and Commentators are divided about the manner wherein St. *Paul* wiſhes to be *Anathema* for his Brethren, *Romans*, Cap. IX. 3. Some render it by *accurſed for*, others by *ſeparated from*, &c.

ANATOCISM, ANATOCISMUS, an Uſurious Contract, wherein the Intereſts ariſing from the principal Sum, are added to the Principal it ſelf, and Intereſt exacted upon the Whole.

Anatociſm is what we popularly call *Intereſt upon Intereſt*, or *Compound Intereſt*. See INTEREST.

This is the worſt Kind of Uſury, and has been ſeverely condemn'd by the *Roman* Law, as well as the Common Laws of moſt other Countries. See USURY.

The Word is originally *Greek*, but is uſed by *Cicero* in *Latin*; whence it has deſcended into moſt other Languages. It comes from the Prepoſition ἀνα, which in Compoſition ſignifies *Repetition* or *Duplication*, and τοκος, *Uſury*.

ANATOMY, the Art of diſſecting, or artificially taking to pieces, the ſolid Parts of Animal Bodies; in order to an exact Diſcovery of their Structure and Oeconomy. See ANIMAL, BODY, DISSECTION, and OECONOMY.

Anatomy makes a great Branch of that Diviſion of Medicine called *Phyſiology*. See MEDICINE, and PHYSIOLOGY.

It is ſometimes divided, with regard to its End, into *Speculative* and *Practical*; a Diviſion of very little uſe and moment.—It is alſo divided, with regard to its Subject, into *Human* and *Comparative*.

Human, which is abſolutely and properly denominated *Anatomy*, is that employ'd on the human Body; called alſo *Anthropology*. See ANTHROPOLOGY.

Comparative Anatomy, is that which conſiders Brutes, and other Animals, and even Vegetables; chiefly with a View to illuſtrate the human Structure. See COMPARATIVE *Anatomy*.

The Subject of *Anatomy*, *viz.* the Body, is variouſly divided into Parts, *Organical*, and *Inorganical*; *Similar*, and *Diſſimilar*; *Spermatick*, &c. See PART.—See alſo SIMILAR, ORGANICAL, *&c.*

Its more obvious Diviſion, is into *Solids* and *Fluids*, or Containing and Contained Parts. See SOLID, and FLUID.

Under the Solids come the *Bones*, *Muſcles*, *Nerves*, *Arteries*, *Veins*, *Cartilages*, *Ligaments*, *Membranes*, &c.——Under the Fluids, come *Chyle*, *Blood*, *Milk*, *Fat*, *Lymph*, &c. ſee each under its proper Article, BONE, MUSCLE, NERVE, ARTERY, VEIN, CARTILAGE, MEMBRANE, *&c.* See alſo CHYLE, BLOOD, MILK, FAT, *&c.*

The antient Writers of *Anatomy*, *Hippocrates*, *Democritus*, *Ariſtotle*, *Galen*, and others, look'd upon this as the moſt important Part of Phyſick, and that, without which the Uſes of the Parts of an human Fabrick, and conſequently the Cauſes of Diſeaſes incident thereto, could no way be diſcovered. And yet this Art, uſeful as it is, was entirely diſcontinued for ſeveral Ages; till in the XVIth Century it began to flouriſh afreſh.—The Diſſection of an human Body was look'd upon as Sacrilege before that time; and we have ſeen a Conſultation which the Emperor *Charles* V. appointed to be held by the Divines of *Salamanca*, in order to be ſatisfied, whether or no it were lawful, in point of Conſcience, to diſſect a dead Carcaſe.——We may add, that to this Day the uſe of Anatomy and Skeletons, is forbid in *Muſcovy*; the firſt as inhuman, the latter as ſubſervient to Witchcraft: And *Olearius* aſſures us, that one *Quirin*, a *German* Chirurgeon, being found with a Skeleton, hardly eſcap'd with Life; and the Skeleton, after being ſolemnly dragg'd about the Streets, was burnt. *Boyle's Uſefulneſs of Philoſ.*

Veſalius, a *Flemiſh* Phyſician, who died in 1564, was the firſt who ſet *Anatomy* on any tolerable footing. He was ſeconded by *Carpus*, *Sylvius*, *Fernelius*, *Fallopius*, *Euſtathius*, *Fabricius*, *Pareus*, *Bauhinus*, *Hoffman*, *Riolanus*, &c.

Theſe were ſucceeded by others, to whom ſome of the fineſt Diſcoveries in *Anatomy* are owing.—*Aſellius*, in the Year 1622, diſcovered the Lacteal Veins; and in 1628, the immortal *Harvey* publiſh'd his admirable Diſcovery of the Circulation of the Blood. See LACTEAL, and CIRCULATION.——*Pecquet* diſcovered the Reſervoir of the Chyle, and the Thoracick Duct, in 1651. See RECEPTACULUM *Chyli*, and THORACICK *Duct*.——*Rudbecks*, a *Swede*, and *Bartholine*, a *Dane*, found out the Lymphatick Veſſels, in 1650, and 1651. See LYMPHATICK.——*Wharton*, in 1655, diſco-

diſcovered the lower Salival Ducts; and *Steno* the upper Salival Ducts, thoſe of the Palate, the Noſtrils, and Eyes, in 1661. See SALIVAL.——*Wirtſungus*, in 1642, diſcover'd the Pancreatic Ducts. See PANCREATIC.——*Willis*, who came after him, publiſh'd an *Anatomy* of the Brain, and Nerves, in a manner much more exact than had been done before him; yet he had omitted ſome conſiderable Things, which were afterwards obſerv'd by *Vieuſſens*. See NERVE.——In effect, *Gliſſon* treated particularly of the Liver; *Wharton* of the Glands; *Havers* of the Bones; *Graaf* of the Pancreatick Juice, and the Parts of Generation; *Lower* of the Motion of the Heart; *Thurſton*, of Reſpiration; *Peyer*, of the Glands of the Inteſtines; *Brown*, of the Muſcles; *Drelincourt*, of the Conception of the Ova in Women, the Placenta, and the Membranes of the Fœtus. See LIVER, GLAND, BONE, GENERATION, RESPIRATION, FOETUS, *&c.*

Malpighi, who died in 1694, is one of thoſe to whom *Anatomy* owes the moſt: He made a great Number of Diſcoveries in the Lungs, Brain, Liver, Spleen, Glands, and Lymphaticks, by help of the Microſcope, *&c.* Nor muſt it be omitted that *Ruyſch*, ſtill living, has let great Light into many of the finer and more intricate Parts of the human Frame, particularly the Glands; by means of his Injections. See MICROSCOPE, and INJECTION.

Mauget, and *Le Clerc*, two Phyſicians of *Geneva*, have given us a *Bibliotheca Anatomica*; containing all the new Diſcoveries that have been made in this Art.

The beſt Syſtems of the Art, as it now ſtands, are thoſe of *Verheyen*, *Drake*, *Keill*, &c.

ANATOMY *of Plants*. See PLANT.—See alſo ROOT, BRANCH, BARK, PITH, WOOD, LEAF, FLOWER, SEED, *&c.*—See alſo VEGETATION, *&c.*

The Word comes from the *Greek* ἀνατομὴ, *Section*, or *Cutting*; of ἀνατέμνω, *diſſeco*.

ANATRON, or NATRON, a kind of native Salt-petre, or Nitre, found in *Egypt*. See NATRON, and NITRE.

ANATRON, is alſo a volatile Salt, ſkimm'd from the Compoſition of Glaſs, when in fuſion. See GLASS.

When pounded, it yields a kind of Pouder; which being diſſolv'd in the Air, or in a proper Liquor, becomes common Salt, after Coagulation.

Anatron is likewiſe the Name of a nitrous Juice, which condenſes in Vaults, Arches, and other ſubterraneous Places. See STALACTITES.

ANATRON is alſo uſed by ſome Writers for a compound Salt, made of Quicklime, Alum, Vitriol, common Salt, and Nitre. See SALT.

ANBURY, a kind of Wen, or ſpongy Wart, growing upon any part of a Horſe, or Cow, full of Blood.

ANCESTORS, Progenitors; or thoſe from whom a Perſon is deſcended. See PROGENITOR.

The Word is deriv'd from the Latin *Anceſſor*, wrote, by Contraction, for *Anteceſſor*, goer before.

The Law diſtinguiſhes between *Anceſtor* and Predeceſſor; the former being applied to a Natural Perſon, as ſuch an one, and his *Anceſtor*; and the latter to a Body Politick or Corporate, as a Biſhop, and his Predeceſſors.

ANCESTREL, in Law.—*Homage* ANCESTREL, ſignifies Homage that hath been done or performed by one's *Anceſtors*. See HOMAGE.

Action ANCESTREL. See ACTION.

ANCHOR, an Inſtrument uſed at Sea, and in Rivers; to retain and faſten a Veſſel by. See SHIP.

An *Anchor* is a large ſtrong piece of Iron, crooked at one End, and form'd into two Barbs, reſembling a Hook; faſten'd at the other end by a Cable. See CABLE, *&c.*

The Goodneſs of the *Anchor* is a Point of great Importance; the Safety and Conſervation of the Veſſel depending principally thereon.—Great Care is to be taken, that the Metal it is made of, be neither too ſoft, nor too brittle; the latter rendering it liable to break, and the former to ſtraiten. See IRON.

Travellers tell us of People in the *Indies* who make uſe of wooden *Anchors* in their Navigation.—The Inhabitants of the Iſland of *Ceylon*, in lieu of *Anchors*, uſe huge round Stones; and in ſome Places, the *Anchors* are a kind of Machines of Wood, loaden with Stones.

The Word comes from the Latin *Ancora*, of the *Greek* ἄγκυρα, which comes from ἄγκυλος, *incurvus*, crooked.

The Parts of an *Anchor*, are, 1°, The *Ring*, into which the Cable is faſten'd: 2°, The *Beam*, or *Shank*, which is the longeſt Part of the *Anchor*: 3°, The *Arm*, which is that which runs down into the Ground: at the End of which is, 4°, The *Flouke*, or *Fluke*, by ſome called the *Palm*; being that broad and picked Part with its Barbs like an Arrow-head, which faſtens into the Ground: 5°, The *Stock*, a piece of Wood faſten'd unto the Beam, near the Ring, ſerving to guide the Fluke, ſo that it may fall right, and fix in the Ground.

There are three Kinds of *Anchors* commonly uſed: the *Kedger*, the *Grapnel*, and the *Stream-Anchor*: *which ſee under their reſpective Articles.*

Aubin, in his Dictionary of Sea-Affairs, printed at *Amſterdam* in 1702, obſerves, that the *Anchor* of a large heavy Veſſel is ſmaller, in proportion, than that of a leſſer and lighter one. The Reaſon he gives, is, that tho the Sea employs an equal Force againſt a ſmall Veſſel as againſt a great one, ſuppoſing the Extent of Wood upon which the Water acts, to be equal, in both; yet the little Veſſel, by reaſon of its ſuperior Lightneſs, does not make ſo much reſiſtance as the greater; the Defect whereof muſt be ſupplied by the Weight of the *Anchor*.

ANCHOR, in Architecture and Sculpture, an Ornament in form of an *Anchor*, or Arrow's-head; frequently carved on the Echinus, or Quarter-round, in the *Dorick*, *Ionic*, *Corinthian*, &c. Capitals. See CAPITAL, *&c.*

The *Anchors* are uſually intermix'd with Repreſentations of Eggs; whence the Echinus it ſelf is popularly called *Eggs and Anchors*. See ECHINUS, QUARTER-*Round*, &c.

ANCHORAGE, or ANCHORING, Ground fit to hold a Ship's *Anchor*, ſo that ſhe may ride ſafely. See ANCHOR.

The beſt Ground for a Ship to anchor in, is ſtiff Clay or hard Sand; and the beſt riding at Anchor, is when a Ship is Land-lock'd, and out of the Tide.

ANCHORAGE, in Law, a Duty taken of Ships for the Pool of the Haven, where they caſt *Anchor*. See DUTY.

No Man can let an Anchor fall on the King's Ground in any Port, without paying for it to the King's Officer appointed by Patent.

ANCHORED, in Heraldry.——A *Croſs*-ANCHORED, or ANCREE, is a form of Croſs ſo called, becauſe the four Extremities reſemble the Flouke of an Anchor. See CROSS.

This Croſs is ſo like the Croſs *Moline*, that the Reſemblance has occaſioned many Miſtakes in Heraldry. See MOLINE.

ANCHORET, ANCHORITE, or ANACHORITE, a Hermit, or devout Perſon, living alone in ſome Deſart; to be further out of the reach of the Temptations of the World, and more at leiſure for Meditation. See HERMIT.

Such were St. *Anthony*, St. *Hilarion*, &c. *Paul* the Hermit was the firſt of the Tribe of *Anchorites*.——The Word comes from the *Greek* ἀναχωρέω, *I retire into a By-place*.

Theſe People are very numerous among the *Greeks*; conſiſting principally of Monks, who not caring for the Fatigues and Offices of the Monaſtery, purchaſe a little Spot of Ground, with a Cell, whither they retreat, and never appear in the Monaſtery again, excepting on ſolemn Days. See MONK.

Theſe are alſo called *Aſcetæ* and Solitaries. See ASCETA, and SOLITARY.

The *Anchorites* of *Syria* and *Paleſtine* retire into the moſt obſcure, and unfrequented Places; hiding themſelves under Rocks, and Mountains, and living on the ſpontaneous Productions of the Earth.—The *Anchorites* in *America*, are look'd upon there, as by far the moſt perfect ſort of Monks; and are held in much higher Opinion and Veneration than the Cœnobites, or Monks reſiding in Monaſteries. See COENOBITE.

Many of theſe retire, with the leave of their Abbots, and have an Allowance from the Monaſtery.—The People, in regard of their Piety, preſent them with good Sums of Money, which they carefully hoard up, and at their Death, bequeath it to the Monaſtery they had belong'd to.

ANCHOVY, in Matters of Commerce, *&c.* a little Sea Fiſh, much uſed by way of Sauce, or Seaſoning.

Scaliger deſcribes it as of the Herring-kind, about the Length of a Finger, having a pointed Snout, a wide Mouth, no Teeth, but Gums as rough as a Saw.—Others make it a ſort of Pilchard: But others, with better Reaſon, hold it a peculiar Species, very different from either. See FISH.

The *Anchovy* is caught in the Months of *May*, *June*, and *July*, on the Coaſts of *Catalonia*, *Provence*, &c. at which Seaſon, it conſtantly repairs up the Straits of *Gibraltar*, into the *Mediterranean*.

The Fiſhing is chiefly in the Night-time; when, a Light being put out on the Stern of their little Fiſhing-Veſſels, the *Anchovies* flock round, and are caught in the Nets. See FISHING.

When the Fiſhery is over, they cut off the Heads, take out the Guts; then lay 'em in Barrels and ſalt 'em.—The common way of eating *Anchovies*, is as Salad, with Oil, Vinegar, *&c.* in order to which, they are firſt boned, and the Tails, Fins, *&c.* ſlipp'd off. They are made into Sauce by mincing, adding to 'em a Cutlet of Veal or Ham, with Pepper, *&c.* over the Fire.

The Word is derived from the Spaniſh *Anchora*, or rather from the Italian, *Anchoia*.

ANCHYLOPS, in Medicine, a Species, or rather Degree of Fiſtula Lachrymalis; frequently confounded with *Ægilops*, &c. See FISTULA, and ÆGILOPS.

ANCIENT. See ANTIENT.

ANCO, or ANCON, the Tip of the Elbow; or the backward and larger Proceſs of the Cubitus. See CUBITUS.

The

The *Ancon* is the ſame with what the *Greeks* call *Olecranum*. See OLECRANUM. And hence,

ANCONÆUS *Muſculus*, in Anatomy, the ſixth Muſcle of the Elbow; ſo called, as being ſituate behind the Folds of the Ancon or Elbow.

It ariſes from the back part of the Extremities of the Humerus, paſſes over the Elbow, and is inſerted into the lateral and internal Part of the Cubitus; about three or four Fingers Breadth above the Olecranum.—Its uſe is to aſſiſt in extending the Arm.

ANCONES, in Architecture, are the Corners or Coins of Walls, Croſs Beams, or Rafters. See COIN, *&c.*

ANCONY, in the Iron Mines, a Bloom wrought into the Figure of a flat Iron Bar, about three Foot long, with two ſquare rough Knobs, one at each End. See IRON, and BLOOM.

ANCREE, in Heraldry, the ſame with *anchored*. See ANCHORED.

ANCYLE, or ANCILE, in Antiquity, a little Buckler, which fell, as 'tis ſaid, from Heaven, upon *Numa Pompilius*; at the ſame time that a Voice was heard, which declared that *Rome* ſhould be Miſtreſs of the World, while ſhe preſerv'd that Buckler. See BUCKLER.

The *Ancyle* was, as it were, the *Palladium* of *Rome*. See PALLADIUM.

Different Authors give different Etymologies of this Word.—Some derive it from the *Greek* ἀγκύλος, *crooked*: *Varro* derives it *ab Anciſu*; as being cut or arch'd on the two Sides, like the Bucklers of the *Thracians*, called *Peltæ*. *Plutarch* thinks the Word may be derived from the *Greek* ἀγκὼν, *Elbow*, this Weapon being wore on the Elbow: But the Opinion of *Varro* is the moſt probable.

Tho there was but one *Ancyle* that fell from Heaven; yet were there twelve preſerv'd: *Numa*, by the Advice, as 'tis ſaid, of the Nymph *Egeria*, having ordered eleven others, perfectly like the firſt, to be made; that if any ſhould attempt to ſteal it, as *Ulyſſes* did the Palladium, they might not be able to diſtinguiſh the true *Ancyle* from the falſe ones.

Theſe *Ancylia* were preſerved in the Temple of *Mars*; and were committed to the Care of twelve Prieſts or *Salii*, inſtituted for that purpoſe. See SALII.

They were carried every Year, in the Month of *March*, in proceſſion around *Rome*; and the 30th Day of that Month, were again depoſited in their Place.

ANCYLE, is alſo uſed in Anatomy, for the Contraction of the Ham.

ANCYLOGLOSSUS, ἀγκυλογλοσσος, one that is Tongue-ty'd, or has an Impediment in his Speech, ariſing from a Contraction of the Frænum of the Tongue. See TONGUE.

ANCYROIDES, is uſed by ſome Writers in Anatomy, for the Proceſs or ſhooting forth of the Shoulder-bone, in form of a Beak. See OMOPLATA.

ANDABATÆ, in Antiquity, a kind of Gladiators, who fought hood-wink'd. See GLADIATOR.

They were called *Andabatæ*, *quaſi* ἀναβαται, *aſcenſores*, becauſe they fought on Horſeback, or out of Chariots.

ANDREW.——*Knights of St.* ANDREW, or the *Thiſtle*. See THISTLE.

ANDREW's *Croſs*, is a Badge wore in the Hat, by the People of *Scotland*, on the Day of the Feaſt of that Saint.

It conſiſts of blue and white Ribbands, diſpoſed into a Croſs, or Saltier; and is intended as a Commemoration of the Crucifixion of St. *Andrew*, the tutelary Saint of *Scotland*. See CROSS, and SALTIER.

ANDROGYNE, or ANDROGYNUS, an *Hermaphrodite*; ſomething born with two Sexes, being Male and Female in the ſame Perſon. See HERMAPHRODITE.

Many of the Rabbins are of opinion, that *Adam* was created *Androgynus*; that he was Male on one Side, and Female on the other; and that he had even two Bodies, the one of a Man, and the other of a Woman: ſo that God, to create *Eve*, only ſeparated thoſe two from each other. See SEX.

Plato tells us, that in the Beginning People were born double, and with both Sexes; but that this Duplicity of Members, giving them too much Strength and Vigour, they became inſolent, and even declared War againſt the Gods.—Upon which, *Jupiter*, to tame their Pride, ſplit each of them into two; but ſo as that each Moiety ſtill retain'd a ſtrong Paſſion to be re-united: and hence that Philoſopher derives the natural Love between the two Sexes.

The Aſtrologers alſo give the Appellation *Androgynus* to ſuch of the Planets as are ſometimes hot, and ſometimes cold; as Mercury, which is reputed hot and dry when near the Sun, and cold and moiſt when near the Moon.

The Word comes from the *Greek* ἀνδρόγυνος, *Male and Female*.

ANDROIDES, an Automaton, in figure of a Man; which by virtue of certain Springs, *&c.* duly contrived, Walks, Speaks, *&c.* See AUTOMATON.

Albertus Magnus, is recorded as having made an *Androides*.—The Word is compounded of the *Greek* ἀνὴρ, ἀνδρὸς, *Man*, and εἶδος, *form*.

ANDROLEPSY, ANDROLEPSIA, in Antiquity.—If an *Athenian* were kill'd by a Citizen of ſome other Place; and ſuch City refuſed to deliver up the Criminal to Puniſhment; it was held lawful to take three Inhabitants of ſuch City, and puniſh the Homicide in them.—This the *Greeks* called *Androlepſia*, and the Romans *Clarigatio*. See CLARIGATIO.

Some Authors alſo uſe *Androlepſia* for *Reprizals*. See REPRIZAL.

The Word is form'd of ἀνὴρ, *Man*, and λαμβάνω, *capio*, I take.

ANDROMACHI *Theriaca*, or *Treacle of* ANDROMACHUS, in Pharmacy, is a capital Alexipharmic Compoſition; called alſo *Venice Treacle*. See THERIACA, and ALEXIPHARMIC.

ANDROTOMY, ANDRATOMY, the Anatomy or Diſſection of human Bodies. See DISSECTION.

It is thus called in oppoſition to *Zootomy*, which denotes that of Brutes. See ZOOTOMY.

Anatomy is the Genus, and comprehends all Diſſections in general, whether of Men, Beaſts, or Plants; and *Androtomy* and Zootomy are the Species. See ANATOMY.

ANECDOTES, ANECDOTA, a Term uſed by ſome Authors, for the Titles of *Secret Hiſtories*; that is of ſuch as relate the ſecret Affairs and Tranſactions of Princes; ſpeaking with too much Freedom, or too much Sincerity, of the Manner and Conduct of Perſons in Authority, to allow of being made publick.

Herein they imitate *Procopius*, who gives this Title to a Book which he publiſh'd againſt *Juſtinian* and his Wife *Theodora*; and ſeems to be the only Perſon among the Antients, who has repreſented Princes, ſuch as they are in their domeſtick Relation.—*Varillas* has publiſhed *Anecdotes* of the Houſe of *Medici*.

The Title *Anecdotes* is alſo given to ſuch Works of the Antients as have not yet been publiſhed.—In this Senſe, M. *Muratori* gives the Name *Anecdota Græca*, to ſeveral Writings of the *Greek* Fathers, found in the Libraries, and firſt publiſh'd by him.—F. *Martene* has given a *Theſaurus Anecdotarum Novus*, in Folio, 5 Vol.

The Word is *Greek* ἀνεκδότα, q. d. *Things not yet known, or hitherto kept ſecret*.

ANEMIUS *Furnus*, among Chymiſts, a *Wind-Furnace*; uſed to make fierce Fires for melting, *&c.* See FURNACE.

The Word is form'd of the *Greek* ἄνεμος, *Wind*.

ANEMONE, ANEMON, or *Wind-Flower*; a general Name, under which *Heſychius* comprizes all Flowers that are of a ſhort Duration, and that are eaſily beaten down, ruffled, and deſtroy'd by the Wind. See FLOWER.

The Word is derived from ἄνεμος, *Ventus*; in regard of the Effects which the Wind has on ſuch Flowers.——*Pliny* rather derives it hence, that the *Anemone* never opens but when the Wind blows. Others ſay, it was thus called from a Nymph of that Name.

ANEMOSCOPE, a Machine invented to foretel the Changes of the Wind. See WIND.

It has been obſerv'd, that Hygroſcopes made of Cats-gut, *&c.* prove very good *Anemoſcopes*; ſeldom failing, by the turning of the Index about, to foretel the ſhifting of the Wind. See HYGROSCOPE.

The *Anemoſcope* uſed by the Antients, ſeems, by *Vitruvius*'s Deſcription of it, to have been intended rather to ſhew which way the Wind actually blew, than to foretel into which Quarter it would change.

The Word is deriv'd from the *Greek* ἄνεμος, *Wind*, and σκέπτομαι, *to look*. See ANEMOMETER.

Otto de Gueric alſo gave the Title *Anemoſcope*, to a Machine invented by him, to foretel the Change of the Weather, as to fair and rain. See WEATHER.

It conſiſted of a little wooden Man, who roſe and fell in a Glaſs Tube, as the Atmoſphere was more or leſs heavy.—Accordingly, M. *Comiers* has ſhewn, that this *Anemoſcope* was only an Application of the common Barometer. See BAROMETER.

ANEMOMETER, a Machine wherewith to meaſure the Strength of the Wind. See WIND.

The *Anemometer* is variouſly contrived. In the *Philoſophical Tranſactions*, we have one deſcribed, wherein the Wind being ſuppoſed to blow directly againſt a flat Side, or Board which moves along the graduated Limb of a Quadrant; the Number of Degrees it advances, ſhews the comparative Force of the Wind.—*Wolfius* gives the Structure of another, which is moved by means of Sails, like thoſe of a Wind-Mill; which raiſe a Weight, that, ſtill the higher it goes, receding further from the Centre of Motion, by ſliding along an hollow Arm fitted on to the Axis of the Sails, becomes heavier and heavier, and preſſes more and more on the Arm, till being a Counterpoiſe to the Force of the Wind on the Sails, it ſtops the Motion thereof. An Index, then, fitted upon the ſame Axis at right Angles with the Arm, by its riſing or falling points out the Strength of the Wind, on a Plane divided, like a Dial-plate, into Degrees. *See its Figure*, Plate PNEUMATICS.

The Word is compounded of the *Greek* ἄνεμος, *Wind*, and μέτρον, *Meaſure*.

ANEURISM, ANEURISMA, in Medicine, a ſoft yielding Tumor, form'd of Blood extravaſated and ſpread under the Fleſh, by the Rupture or Dilatation of an Artery. See ARTERY, and TUMOR.

Aneuriſms uſually proceed from an Artery being accidentally cut, or prick'd in bleeding; or from ſome preternatural Diſtention, or a Corroſion of its Coats, *&c.* See PHLEBOTOMY.

If an Artery happen to be cut, the Blood guſhes out impetuouſly, by ſtarts; and is not eaſily ſtop'd: an Inflammation and Diſcolouration of the Part ſucceeds, with a Tumor, and Inability to move the Part. The Symptoms are nearly the ſame in caſe of a Corroſion of the Coats of the Artery, only leſs violent. See WOUND.

If the Blood ceaſe to flow from the wounded Artery, and pour it ſelf between the Interſtices of the Muſcles; recourſe is had to manual Operation; which being neglected, the Extirpation of the Limb frequently becomes unavoidable.—An *Aneuriſm* from a Diſtention of the Canal, is ſeldom fatal; tho reckon'd, when large, incurable: The chief Inconveniencies are the Magnitude of the Tumor, and the Pulſation. See HEMORRHAGE.

M. *Littre* gives us the Hiſtory of an *Aneuriſma* of this kind, in the Aorta; the Cauſe whereof he attributes to an extraordinary Diminution of the Cavity of the Axillary and Subclavian Arteries. *Hiſt. de l'Acad. R.* An. 1712.—— Another Hiſtory of an *Aneuriſma* of the ſame Part, we have in the *Philoſophical Tranſactions*. It was occaſioned by ſome violent Shocks the Patient receiv'd on the Breaſt, which threw him into ſpitting of Blood, and ſoon after form'd the Tumor, whereof he dy'd. Upon Diſſection, the *Aneuriſma* was found ſo big, that it filled the whole Cavity of the Thorax on the right Side. N° 265.

The Word comes from the *Greek* ἀνευρύνω, *dilato*, I dilate.

ANGARIA, a Term in Law, ſignifying any troubleſom, or vexatious Duty or Service, paid by the Tenant to the Lord.—The Word is form'd of the French *Angarie*, Perſonal Service; that which a Man is bound to perform in his own Perſon.—*Præſtationes Angariarum & Periangariarum plauſtrorum & navium*, impreſſing of Ships. See SERVICE, *&c.*

ANGEIOGRAPHY, a Deſcription of the Weights, Meaſures, Veſſels, *&c.* uſed by the ſeveral Nations. See MEASURE, WEIGHT, VESSEL, *&c.*

The Word is compounded of ἀγγεῖον, *Vas*, Veſſel, and γράφω, *ſcribo*, I deſcribe.

ANGEIOLOGY, ANGEIOLOGIA, in Anatomy, the Hiſtory, or Deſcription of the Veſſels in a human Body; *e. g.* the Nerves, Arteries, Veins, and Lymphaticks. See VESSELS.

Angeiology is a Branch of Sarcology. See SARCOLOGY.

The Word ſeems to be derived from ἀγγεῖον, *a Veſſel*, and λόγος, *Speech*, or *Diſcourſe*.

ANGEL, a ſpiritual, intelligent Subſtance; the firſt in Rank and Dignity among created Beings. See SPIRIT.

The Word *Angel*, is not properly a Denomination of Nature, but of Office; denoting as much as *Nuntius*, Meſſenger, a Perſon employ'd to carry one's Orders, or declare his Will.—Thus it is St. *Paul* repreſents *Angels*, *Heb.* I. 14. where he calls them Miniſtring Spirits: And for the ſame Reaſon the Name is given, in the Prophet *Malachy*, C. II. 7, to Prieſts; and by St. *Matthew*, C. XI. 10, to St. *John Baptiſt*. Jeſus Chriſt himſelf, according to the Septuagint, is call'd in *Iſaiah*, C. IX. 6, the *Angel* of the mighty Council; a Name, ſays *Tertullian*, *de Carne Chriſti*. C. IV. which ſpeaks his Office, not his Nature.—So the *Hebrew* Word uſed in Scripture for *Angel*, is alſo a Name of Office, and not of Nature מלאך *Legatus*, q. d. Legate, Envoy, Miniſter: and yet Cuſtom has prevailed; inſomuch that *Angel* is now commonly taken for a Denomination of Nature.

The Exiſtence of *Angels* is ſuppoſed in all Religions.—Indeed, the antient Sadducees are repreſented as denying all Spirits; and yet the *Samaritans* and Caraites, who are reputed Sadducees, openly avow it: witneſs *Abuſaid*, the Author of an *Arabick* Verſion of the Pentateuch; and *Aaron*, a Caraite *Jew*, in his Comment on the Pentateuch; both extant in Manuſcript, in the King of *France*'s Library. See SADDUCEE, CARAITE, *&c.*

In the Alcoran, we find frequent mention of *Angels*.—The Muſſulmen believe 'em of different Orders or Degrees, and deſtin'd for different Employments, both in Heaven, and on Earth. They attribute exceeding great Power to the *Angel Gabriel*; as, to be able to deſcend in the Space of an Hour from Heaven to Earth; to overturn a Mountain with a ſingle Feather of his Wing, *&c.* The *Angel Aſrael*, they ſuppoſe, appointed to take the Souls of ſuch as die; and another *Angel*, named *Eſraphil*, ſtands with the Trumpet ready in his Mouth to proclaim the Day of Judgment. See ALCORAN, MAHOMETANISM, *&c.*

The Heathen Philoſophers and Poets, were alſo agreed as to the Exiſtence of intelligent Beings, ſuperior to Man; as is ſhewn by St. *Cyprian*, in his Treatiſe of the Vanity of Idols, from the Teſtimonies of *Plato*, *Socrates*, *Triſmegiſtus*, &c. See PLATONISM, *&c.*—See alſo DÆMON, GENIUS, *&c.*

Some Chriſtian Writers, after *Lactantius*, Inſtitut. Lib. I. c. xv. alledge the *Energumeni*, and the Operations of Magick, as convincing Proofs thereof. St. *Thomas* produces other Conſiderations, in behalf of the Opinion, Lib. II. *contra gentes*, c. xlvi.

Authors are not ſo unanimous about the Nature as the Exiſtence of *Angels*.—*Clemens Alexandrinus* believ'd they had Bodies; which was alſo the Opinion of *Origen*, *Cæſarius*, *Tertullian*, and ſeveral others. *Athanaſius*, St. *Baſil*, St. *Gregory Nicen.* St. *Cyril*, St. *Chryſoſtom*, &c. hold 'em mere Spirits.

Eccleſiaſtical Writers make an Hierarchy of nine Orders of *Angels*. See HIERARCHY.

ANGEL is more particularly underſtood of a Spirit of the ninth and loweſt Claſs, or Order of the Hierarchy, or Heavenly Choir. See HIERARCHY.

The Scripture makes mention of the Devil and his *Angels*.—We alſo ſay, the Fallen *Angels*, Guardian *Angels*, &c. See GUARDIAN, DÆMON, GENIUS, *&c.*

In the Apocalypſe, the Denomination *Angel* is alſo given to the Paſtors of ſeveral Churches.—The *Angel* of the Church of *Epheſus*; the *Angel* of the Church of *Smyrna*, &c.

Du Cange adds, that the ſame Name was antiently given to certain Popes and Biſhops; by reaſon of their ſingular Sanctity, *&c.*

ANGEL is alſo uſed in Commerce, for an antient Gold Coin ſtruck in *England*; ſo called from the Figure of an *Angel* impreſs'd upon it. See COIN.

Its Value in 1 *Hen.* VI. was 6*s.* 8*d.* in 1 *Hen.* VIII. 7*s.* 6*d.* in 34 *Hen.* VIII. 8*s.* and in 6 *Edw.* VI. it was 10*s.*—And the *half Angel*, or, as it was ſometimes called, the *Angelot*, was the Moiety of this.

The *Angel* now ſubſiſts no otherwiſe than as a Money of Account. See MONEY.

The *French* have alſo had their *Angels*, *Demi-Angels*, and *Angelots*; now diſuſed.

ANGELIC, or ANGELICAL, ſomething belonging to, or that partakes of, the Nature of *Angels*. See ANGEL.

Thus, we ſay, an *Angelical* Life, *&c.*—St. *Thomas* is ſtyled the *Angelical Doctor*.—The *Angelical* Salutation is called by the *Romaniſts Ave Maria*. See AVE.

The *Greeks* diſtinguiſh two Kinds of Monks: Thoſe who profeſs the moſt perfect Rule of Life, are called Monks of the Great or *Angelical Habit*.

ANGELICA, called alſo ARCHANGELICA, and *Radix Siriaca*, a medicinal Plant, thus named, on account of its great Virtue as an Alexipharmic or Counterpoiſon. See ALEXIPHARMIC.

It is of a ſweet Smell, and aromatick Taſte; and is loaded with a highly exalted Oil, and volatile Salt.—It is reputed cordial, ſtomachick, cephalick, aperitive, ſudorifick, vulnerary, reſiſts Poiſon, *&c.* tho the chief Intention wherein it is now preſcribed among us, is, as a Carminative.

Its Root is in the moſt eſteem; tho the Leaves are alſo uſed.

ANGELICA-*Water*, is one of the compound Waters of the Shops; thus called from the *Angelica* Roots, which are the Baſis thereof. See *Angelica*-WATER.

ANGELICA, Ἀγγελικὴ, was alſo a celebrated Dance, among the antient *Greeks*, perform'd at their Feaſts. See DANCE.

It was thus called, from the *Greek* ἄγγελος, *Nuntius*, Meſſenger; by reaſon, as *Pollux* aſſures us, the Dancers were dreſs'd in the Habit of Meſſengers.

ANGELICA *Veſtis*, among our Anceſtors, was a Monkiſh Garment, which Laymen put on a little before their Death, that they might have the Benefit of the Prayers of the Monks.

It was from them called *Angelical*, becauſe they were called *Angeli*, who by theſe Prayers *animæ ſaluti ſuccurrebant.*—Hence, where we read the Phraſe *ad ſuecurrendum* in our old Books, it muſt be underſtood of one who had put on the Habit, and was at the Point of Death.

ANGELICI, were an antient Order of Knights, inſtituted in 1191, by *Iſacius Angelus Flavius Commenius*, Emperor of *Conſtantinople*. See KNIGHT, and ORDER.

They were divided into three Claſſes; but were all under the Direction of one Grand Maſter.—The firſt, were called *Torquati*, from a Collar which they wore, and were 50 in number.—The ſecond were called the *Knights of Juſtice*, and were Eccleſiaſticks.—And the third were called *Knights Servitors*.

Juſtiniani will have this Order to have been inſtituted in the Year 313, by *Conſtantine*; and ſuppoſes the Occaſion thereof to have been the Appearance of an *Angel* to that Emperor, with the Sign of a Croſs and theſe Words, *In hoc ſigno vinces*: But, that there was ſuch a thing as any Military Order in thoſe Days, is a mere Fable. See MILITARY *Order*.

ANGELICI were alſo a Sect of antient Hereticks.—St. *Auguſtin* ſuppoſes 'em thus call'd from their yielding an extravagant Worſhip to *Angels*, and ſuch as tended to Idolatry: Tho *Epiphanius* derives the Name from their holding that the World was created by *Angels*.

ANGERONALIA, in Antiquity, ſolemn Feaſts, held by the *Romans*, on the 21ſt of *December*, in honour of *Angerona*, or *Angeronia*, the Goddeſs of Patience and Silence. See FEAST.

Feſtus and *Julius Modeſtus*, quoted by *Macrobius*, *Saturn.* l. 1. c. 10. derive the Name from *Angina*, *Squinancy*; and ſuppoſe the Goddeſs to have been thus denominated, by reaſon ſhe preſided over that Diſeaſe.——Others ſuppoſe it form'd from *Angor*, Grief, Pain; to intimate that ſhe gave Relief to thoſe afflicted therewith. Others deduce it from *Ango* I preſs, I cloſe; as being reputed the Goddeſs of Silence, *&c.* See GOD and GODDESS.

ANGINA, in Medicine, a Diſeaſe, popularly call'd the *Quincy*, *Squinancy*, or *Eſquinancy*. See SQUINANCY.

Angina is a Difficulty of Reſpiration and Deglutition, from a Diſeaſe in the Muſcles and Glands about the Throat and Larynx. See LARYNX, *&c.*

The Word is formed from the *Greek* ἄγχειν, *ſtrangulare* to ſtrangle, ſuffocate.

If any Symptoms appear on the outſide of the Throat, the *Angina* is ſaid to be *external*; if none appear, *internal*.——It is ſometimes ſuppoſed to be *epidemical*.

In the *external Angina*, before any Suppuration appears, recourſe is had to repeated Venæſection in the Jugulars.—Veſicatories, and Cupping are alſo uſed; with Purgatives, emollient Gargles, *&c.*

ANGLE, ANGULUS, in Geometry, the Aperture or mutual Inclination of two Lines, which meet, and form an *Angle* in their Point of Interſection. See LINE.

Such is the *Angle* ABC, (Tab. GEOMETRY, Fig. 91.) form'd by the Lines AB, and AC, meeting in the Point A—The Lines A B and A C, are called the *Legs* of the *Angles*; and the Point of Interſection, the *Vertex*. See LEG and VERTEX.

Angles are ſometimes denoted by a ſingle Letter affix'd to the Vertex, or angular Point, as A; and ſometimes by three Letters, that of the Vertex being in the middle, as B A C.

The *Meaſure* of an *Angle*, whereby its Quantity is expreſſed, is an Arch, D E, deſcribed from its Vertex A, with any Radius at pleaſure, between its Legs, A C and B C. See ARCH.

Hence *Angles* are diſtinguiſhed by the Ratio of the Arches which they thus ſubtend, to the Circumference of the whole Circle. See CIRCLE and CIRCUMFERENCE.—And thus, an *Angle* is ſaid to be of ſo many Degrees, as are the Degrees of the Arch D E. See DEGREE.

Hence alſo, ſince ſimilar Arches, AB and DE, fig. 87. have the ſame Ratio to their reſpective Circumferences; and the Circumferences contain each the ſame Number of Degrees; the Arches A B, and D E, which are the Meaſures of the two *Angles* A C B, and A D E, are equal; and therefore the *Angles* themſelves are ſo too.——Hence, again, as the Quantity of an *Angle* is eſtimated by the Ratio of the Arch, ſubtended by it, to the Periphery; it does not matter what Radius that Arch is deſcribed withal: But the Meaſures of equal *Angles* are always either equal Arches or ſimilar ones; and contrarily.

It follows, therefore, that the Quantity of the *Angle* remains ſtill the ſame, tho' the Legs be either produced or diminiſhed——And thus ſimilar *Angles*, and in ſimilar Figures, the Homologous or Correſponding *Angles* are alſo equal. See SIMILAR, FIGURE, *&c.*

To meaſure, or find the Quantity of an ANGLE.

1°. On Paper—Apply the Centre of a Protractor on the Vertex of the *Angle* O; (Tab. SURVEYING, fig. 29.) ſo as the Radius O*p* lie on one of the Legs: The Degree ſhewn in the Arch, by the other Leg of the *Angle*, will give the *Angle* required. See PROTRACTOR.——To do the ſame with a Line of Chords, ſee CHORD.

2°. On the Ground—Place a ſurveying Inſtrument, *E. gr.* a Semi-circle, fig. 16. in ſuch manner as that a Radius thereof CG may lie over one Leg of the *Angle*, and the Center C over the Vertex.——The firſt is obtain'd by looking thro' the Sights F and G, towards a Mark fixed at the End of the Leg; and the latter, by letting fall a Plummet from the Centre of the Inſtrument——Then, the moveable Index HI being turn'd this way and that, till thro' its Sights, you diſcover a Mark placed at the extreme of the other Leg of the *Angle*: The Degree it cuts in the Limb of the Inſtrument, ſhews the Quantity of the *Angle*. See SEMICIRCLE.

To take an *Angle* with a *Quadrant*, *Theodolite*, *plain Table*, *Circumferentor*, *Compaſs*, &c. ſee QUADRANT, THEODOLITE, PLAIN TABLE, CIRCUMFERENTOR, COMPASS, *&c.*

To plot or lay down any given Angle; i. e. the Quantity of the *Angle* being given, to deſcribe it on Paper, ſee PLOTTING and PROTRACTING.

To biſſect a given Angle, as HIK, fig. 92. from the Centre L, with any Radius at pleaſure, deſcribe an Arch LM. From L and M, with an Aperture greater than LM, ſtrike two Arches, mutually interſecting each other in N. Then, drawing the right Line I N, we have H I N = N I K.

To triſſect an Angle, ſee TRISSECTION.

ANGLES are of various Kinds, and Denominations.——With regard to the Form of their Legs, they are divided into *Rectilinear*, *Curvilinear*, and *Mix'd*.

Rectilinear, or *right-lined* ANGLE, is that whoſe Legs are both right Lines; as ABC (Tab. GEOMETRY, fig. 91.) See RECTILINEAR.

Curvilinear ANGLE, is that whoſe Legs are both of 'em Curves. See CURVE and CURVILINEAR.

Mix'd, or *Mixtilinear* ANGLE, is that, one of whoſe Sides is a right Line, and the other a Curve. See MIX'D.

With regard to their Quantity, *Angles* are again divided into *Right*, *Acute*, *Obtuſe*, and *Oblique*.

Right ANGLE, is that form'd by a Line falling perpendicularly on another; or that which ſubtends an Arch of 90 Degrees——Such is the *Angle* K L M, Fig. 93. See PERPENDICULAR, *&c.*

The Meaſure of a right ANGLE, therefore, is a Quadrant of a Circle; and conſequently all right Angles are equal to each other. See QUADRANT.

Acute ANGLE is that which is leſs than a right *Angle*, or than 90°——as A E C, fig. 86. See ACUTE.

Obtuſe ANGLE, is that greater than a right *Angle*, or whoſe Meaſure exceeds 90°——as A E D. See OBTUSE.

Oblique ANGLE, is a common Name both for Acute and Obtuſe *Angles*. See OBLIQUE.

With regard to their Situation in reſpect of each other, ANGLES are divided into *Contiguous*, *Adjacent*, *Vertical*, *Alternate*, and *Oppoſite*.

Contiguous ANGLES, are ſuch as have the ſame Vertex, and one Leg common to both——Such are F G H, and H G I, fig. 94. See CONTIGUOUS.

Adjacent ANGLE, is that made by producing one of the Legs of another *Angle*——Such is the *Angle* A E C, fig. 86. made by producing a Leg E D, of the *Angle* A E D, to C. See ADJACENT.

Two *adjacent Angles*, *x* and *y*; or any other Number of *Angles* made on the ſame Point E, over the ſame right Line C D, are together equal to two right ones; and conſequently, to 180°——And hence, one of two contiguous *Angles* being given, the other is likewiſe given: as being the Complement of the former to 180°. See COMPLEMENT.

Hence, alſo, to meaſure an inacceſſible *Angle* in the Field; taking an adjacent acceſſible *Angle*, and ſubſtracting the Quantity thereof from 180°, the Remainder is the *Angle* required.

Again, all the *Angles* *x*, *y*, *o*, E, *&c.* made a-round a given Point E, are equal to four right ones; and therefore all make 360°.

Vertical ANGLES, are thoſe whoſe Legs are Continuations of each other——Such are the *Angles* *o* and *x*, fig. 86. See VERTICAL.

If a right Line A B, cut another, C D, in E, the vertical *Angles* *x* and *o*, as alſo *y*, and E, are equal.——And hence, if it be required to meaſure in a Field, or any other Place, an inacceſſible *Angle*, *x*; and the other vertical *Angle*, *o*, be acceſſible: This latter may be taken in lieu of the former. See SURVEYING.

Alternate ANGLES. See ALTERNATE.——Such are the *Angles* *x* and *y*; fig. 36.

The alternate *Angles* *y* and *x*, are equal. See OPPOSITE *Angles*.

Oppoſite ANGLES. See OPPOSITE.——Such are *u* and *y*, and alſo *z* and *y*.

External ANGLES, are the *Angles* of any right-lined Figure made without it, by producing all the Sides ſeverally.

All the external *Angles* of any Figure taken together, are equal to four right *Angles*: And the external *Angle* of a *Triangle* is equal to both the internal and oppoſite ones, as is demonſtrated by *Euclid*, Lib. 1. Prop. 32.

Internal ANGLES, are the *Angles* made by the Sides of any right-lined Figure within.

The Sum of all the internal *Angles* of any right-lined Figure, is equal to twice as many right *Angles* as the Figure hath Sides, excepting four. This is eaſily demonſtrated from *Euclid*, Prop. 32. Lib. 1.

The external *Angle* is demonſtrated to be equal to the internal oppoſite one; and the two internal oppoſite ones, are equal to two right ones.

Homologous ANGLES, are ſuch *Angles* in two Figures, as retain the ſame Order from the firſt, in both Figures. See FIGURE.

ANGLE *at the Periphery*, is an *Angle* whoſe Vertex and Legs do all terminate in the Periphery of a Circle——Such is the *Angle* E F G, fig. 95. See PERIPHERY.

Angle in the SEGMENT, is the ſame with that at the Periphery. See SEGMENT.

It is demonſtrated by *Euclid*, that all the *Angles* in the ſame Segment are equal to one another; that is, any *Angle* EHG, is equal to any *Angle* EFG in the ſame Segment EFG.

The *Angle* at the Periphery, or in the Segment, is comprehended between two Chords AB and BD, and ſtands on the Arch AB. See CHORD, *&c.*

The Meaſure of an *Angle* without the Periphery G, (fig. 96.) is the Difference between half the Concave Arch LM, whereon it ſtands, and half the Convex Arch, NO, intercepted between its Legs.

ANGLE *in a Semi-circle*, is an *Angle* in a Segment of a Circle, whoſe Baſe is a Diameter thereof. See SEGMENT.

It is demonſtrated by *Euclid*, that the *Angle* in a Semi-circle is a right one; in a Segment greater than a Semi-circle, is leſs than a right one; and in a Segment leſs than a Semi-circle, greater than a right one.

Since an *Angle* in a Semi-circle ſtands on a Semi-circle, its Meaſure is a Quadrant of a Circle; and therefore is a right *Angle*.

ANGLE *at the Centre*, is an *Angle* whoſe Vertex is in the Centre of a Circle, and its Legs terminated in the Periphery thereof.——Such is the *Angle* CAB. See CENTRE.

The *Angle* at the Centre is comprehended between two Radii, and its Meaſure is the Arch BC. See RADIUS, *&c.*

Euclid demonſtrates that the *Angle* at the Centre, BAC, is double of the *Angle* BDC, ſtanding on the ſame Arch BC.——And hence, half of the Arch AD, is the Meaſure of the *Angle* at the Periphery.

Hence alſo, two or more *Angles* HLI, and HMI (fig. 97.) ſtanding on the ſame Arch HI, or on equal Arches, are equal.

ANGLE *without the Centre*, HIK, is that whoſe Vertex K is not in the Centre, but its Legs HK and IK are terminated in the Periphery.

The Meaſure of an *Angle* without the Centre, is half of the Arches HI and LM, whereon it and its Vertical K do ſtand.

ANGLE *of Contact*, is that made by the Arch of a Circle and a Tangent in the Point of Contact.——Such is the *Angle* HLM, (fig. 43.) See CONTACT.

The *Angle* of Contact, in a Circle, is proved by *Euclid* to be leſs than any right-lined *Angle*: But from hence it does not follow, that the *Angle* of Contact is of no Quantity, as ſome have imagined.—Sir *Iſaac Newton* ſhews, that if the Curve HAE, fig. 97. be a cubick Parabola, the *Angle* of Contact, where the Ordinate DF is in the ſubtriple Ratio of the Abſciſſe AD, the *Angle* BAF contained under the Tangent AB in its Vertex, and the Curve, is infinitely greater than the circular Angle of Contact BAC; and that if other Parabola's of highter kinds be deſcribed to the ſame Axis and Vertex, whoſe Abſciſſes AD are as the Ordinates DF^4, DF^5, DF^6, *&c.* you will have a Series of *Angles* of Contact going on infinitely, of which any one is infinitely greater than that next before it.

ANGLE *of a Segment*, is that made by a Chord with a Tangent, in the Point of Contact.—Such is the *Angle* MLH. See SEGMENT.

It is demonſtrated by *Euclid*, that the *Angle* MLC, is equal to any *Angle* MaL in the alternate Segment MaL.

For the Effects, Properties, Relations, &c. *of Angles, when combined into Triangles, Quadrangles, and polygonous Figures,* ſee TRIANGLE, QUADRANGLE, SQUARE, PARALLELOGRAM, POLYGON, FIGURE, *&c.*

ANGLES are again divided into *Plane*, *Spherical*, and *Solid*.

Plane ANGLES are thoſe we have hitherto been ſpeaking of; which are defined by the Inclination of two Lines in a Plane, meeting in a Point. See PLANE.

Spherical ANGLE is the Inclination of the Planes of two great Circles of the Sphere. See CIRCLE and SPHERE.

The Meaſure of a Spherical *Angle*, is the Arch of a great Circle at right *Angles* to the Planes of the great Circles forming the *Angle*, intercepted between them.

For the Properties of Spherical Angles, ſee SPHERICAL *Angle*.

Solid ANGLE is the mutual Inclination of more than two Planes, or plane *Angles*, meeting in a Point, and not contain'd in the ſame Plane.

For the Meaſure, Properties, &c. *of ſolid Angles*, ſee SOLID *Angle*.

We alſo meet with other leſs uſual ſorts of *Angles* among ſome Geometricians; as,

Horned ANGLE, *Angulus Cornutus*, that made by a right Line, whether a Tangent or Secant, with the Periphery of a Circle.——

Lunular ANGLE, *Angulus Lunularis*, is that form'd by the Interſection of two Curve Lines; the one Concave, and the other Convex. See LUNE.

Ciſſoid ANGLE, *Angulus Ciſſoides*, is the inner *Angle*, made by two Spherical Convex Lines interſecting each other. See CISSOIDES.

Siſtroid ANGLE, *Angulus Siſtroides*, is that in Figure of a Siſtrum. See SISTRUM.

Pelecoid ANGLE, *Angulus Pelecoides*, is that in figure of a Hatchet. See PELECOIDES.

ANGLE, in Trigonometry. See TRIANGLE and TRIGONOMETRY.

For the Sines, Tangents, and Secants of ANGLES, ſee SINE, TANGENT, and SECANT.

ANGLE, in Mechanicks——ANGLE *of Direction*, is that comprehended between the Lines of Direction of two conſpiring Forces. See DIRECTION.

ANGLE *of Elevation*, is that comprehended between the Line of Direction of a Projectile, and a horizontal Line—— Such is the *Angle* ARB, (Tab. MECHANICS, fig. 47.) comprehended between the Line of Direction of the Projectile AR, and the horizontal Line AB. See ELEVATION and PROJECTILE.

ANGLE *of Incidence*, it that made by the Line of Direction of an impinging Body, in the Point of Contact—— Such is the *Angle* DCA, (fig. 63.) See INCIDENCE.

ANGLE *of Reflexion*, is that made by the Line of Direction of the reflected Body, in the Point of Contact from which it rebounds,——Such is the *Angle* ECF. See REFLEXION.

ANGLE, in Optics——*Viſual* or *Optic* ANGLE, is the *Angle* included between two Rays drawn from the two extreme points of an Object, to the Centre of the Pupil—— Such is the Angle ABC, (Tab. OPTICS, fig. 69.) comprehended between the Rays AB, and BC. See VISUAL *Angle*.

Objects ſeen under the ſame, or an equal *Angle*, appear equal. See MAGNITUDE and VISION.

ANGLE *of the Interval*, of two places, is the *Angle* ſubtended by two Lines directed from the Eye to thoſe places.

ANGLE *of Incidence*, in Catoptrics, is the leſſer *Angle* made by an incident Ray of Light, with the Plane of a Speculum; or, if the Speculum be concave or convex, with a Tangent in the point of Incidence——Such is the *Angle* ABD (fig. 26.) See RAY and MIRROUR.

Every incident Ray, AB, makes two *Angles*, the one acute, ABD, the other obtuſe, ABE; tho ſometimes both right——The leſſer of ſuch *Angles* is the *Angle* of Incidence. See INCIDENCE.

ANGLE *of Incidence*, in Dioptrics, is the *Angle* ABI, (fig. 56.) made by an incident Ray, AB, with a Lens or other refracting Surface, HI. See LENS, *&c.*

ANGLE *of Inclination*, is the *Angle* ABD, contained between an incident Ray, AB, and the Axis of Incidence, DB. See AXIS, *&c.*

ANGLE *of Reflection*, } in Catoptrics. See REFLEC-
Reflected ANGLE, } TION.

ANGLE *of Refraction*, } in Dioptrics. See REFRAC-
Refracted ANGLE, } TION.

ANGLE, in Aſtronomy——ANGLE *of Commutation*. See COMMUTATION.

ANGLE *of Elongation*, or, ANGLE *at the Earth*. See ELONGATION.

Parallactic ANGLE. See PARALLACTIC *Angle*.

ANGLE *at the Sun*, or *the Inclination*, is the *Angle* RSP, (Tab. ASTRONOMY, fig. 25.) under which the Diſtance of a Planet P, from the Ecliptic PR, is ſeen from the Sun. See INCLINATION.

ANGLE *of the Eaſt*. See NONAGESIMAL.

ANGLE *of Obliquity*, of the Ecliptic. See OBLIQUITY and ECLIPTIC.

The Angle of Inclination of the Axis of the Earth, to the Axis of the Ecliptic, is 23°, 30′; and remains inviolalably the ſame in all points of the Earth's annual Orbit. By means of this Inclination, ſuch Inhabitants of the Earth as live beyond 45° of Latitude, have more of the Sun's Heat, taking all the Year round; and thoſe who live within 45°, have leſs of his Heat, than if the Earth always moved in the Equinoctial. See HEAT, *&c.*

ANGLE *of Longitude*, is the *Angle* which the Circle of a Star's Longitude makes with the Meridian, at the Pole of the Ecliptic. See LONGITUDE.

ANGLE *of right Aſcenſion*, is the *Angle* which the Circle of a Star's right Aſcenſion makes with the Meridian at the Pole of the World. See RIGHT *Aſcenſion*.

ANGLE, in Navigation——ANGLE *of the Rhumb*, or *Loxodromic* ANGLE. See RHUMB and LOXODROMY.

ANGLES, in Fortification, are underſtood of thoſe formed by the ſeveral Lines uſed in Fortifying. See FORTIFICATION, FORTIFYING, *&c.*

ANGLE *of*, or *at the Center*, is the *Angle* formed at the Center of the Polygon, by two Semi-diameters drawn thither from the two neareſt Extremities of the Polygon. See POLYGON——Such is the *Angle* CKF (Tab. FORTIFICAT. fig. 1.)

ANGLE *of the Circumference*, is the mixed *Angle* made by the Arch drawn from one Gorge to the other. See GORGE.

ANGLE *of the Counterſcarp*, is that made by the two Sides of the Counterſcarp, meeting before the middle of the Curtain. See COUNTERSCARP.

ANGLE *of the Curtain*, or *of the Flank*, is that made by, or contain'd between, the Curtain and the Flank; ſuch is the *Angle* BAE. See CURTAIN.

ANGLE *of the Complement of the Line of Defence*, is the *Angle* ariſing from the Interſection of the two Complements one with another. See COMPLEMENT.

Diminiſhed ANGLE, is the *Angle* which is made by the meeting of the exterior Side of the Polygon, with the Face of the Baſtion——Such is the *Angle* BCF.

ANGLE *of the Polygon*, or *of the exterior Figure*, is the *Angle* FCN, formed at the Point of the Baſtion C, by the meeting of the two outermoſt Sides or Baſes of the Polygon, FC and CN.

ANGLE *of the Epaule*, or *Shoulder*, is that form'd by the Flank and the Face of the Baſtion——Such is the *Angle* ABC. See EPAULE.

ANGLE *of the Interior Figure*, is the *Angle* GHM, made in H, the Center of the Baſtion, by the meeting of the innermoſt Sides of the Figure GH and HM.

Flanking ANGLE *outward*, or ANGLE *of the Tenaille*, is that made by the two raſant Lines of Defence, *i. e.* the two Faces of the Baſtion when prolonged. See TENAILLE.

ANGLE *flanking inward*, is the *Angle* CIH, made by the flanking Line with the Curtain.

ANGLE *flanked*, by ſome call'd the ANGLE *of the Baſtion*, is the *Angle* BCS, made by the two Faces of the Baſtion, BC, CS; being the outermoſt part of the Baſtion, and that moſt expoſed to the Enemy's Batteries, and therefore by ſome call'd the *Point of the Baſtion*. See BASTION.

ANGLE *of the Triangle*, in Fortification, is half the *Angle* of the Polygon.

ANGLE *forming the Flank*, is that conſiſting of one Flank, and one Demi-gorge.

ANGLE *forming the Face*, is that compoſed of one Flank and one Face.

ANGLE *of the Moat*, is that made before the Curtain, where it is interſected. See MOAT.

Re-entring, or *Re-entrant* ANGLE, is that whoſe Vertex is turned inwards, towards the Place. See RENTRANT.

Saillant ANGLE, is that which advances its Point towards the Field. See SAILLANT.

ANGLE *of the Tenaille*, or *the outward flanking Angle*, called alſo *the Angle of the Moat*, or *the dead Angle*, is made by the two Lines ſichant in the Faces of the two Baſtions, extended till they meet in an *Angle* towards the Curtain——This always carries its Point in towards the Work.

ANGLE *of a Wall*, in Architecture, is the Point, or Corner, where the two Sides or Faces of a Wall meet. See WALL, COIN, &c.

ANGLES *of a Battalion*, in the Military Art, are the Soldiers where the Ranks and Files terminate. See BATTALION.

The *Angles* of a Battalion are ſaid to be *blunted*, when the Soldiers at the four Corners are removed, ſo that the ſquare Battalion becomes octagonal: which was an Evolution very common among the Antients, tho now diſuſed. See EVOLUTION.

ANGLES, in Anatomy, are underſtood of the *Canthi*, or Corners of the Eye, where the upper Eye-lid meets with the under. See EYE and EYE-LID.

That next the Noſe is call'd the *great* or *internal*, and that towards the Temples, the *leſs* or *external Angle* or *Canthus*. See CANTHUS.

ANGLES, in Aſtrology, are certain Houſes of a Figure or Scheme of the Heavens——Thus the Horoſcope of the firſt Houſe is termed the *Angle of the Eaſt*. See HOUSE, HOROSCOPE, &c.

ANGLICISM, a Diction in the *Engliſh* Idiom; or a Manner of Speech peculiar to the *Engliſh* Tongue. See IDIOM and ENGLISH.

ANGLING, the Art of catching Fiſh by means of a Rod, with Line, Hook and Bait fitted thereto. See FISH and FISHING.

There are ſeveral prudential Rules obſerved by thorough Anglers; as, not to wear any white or ſhining Apparel, but be cloathed in a dark sky-Colour: To invite the Fiſh to the place intended for *Angling*, by caſting in from time to time proper Foods, as boil'd Corn, Worms, and Garbage: To keep them together in the time of *Angling*, by throwing in Grains of ground Malt; or ſinking a Box of Worms, with ſmall holes for them to creep ſlowly out at, &c. To draw Salmon or Trout together, they uſe a Compoſition of fine Clay incorporated with Blood, and Malt ground.

To learn what Bait is beſt for any Fiſh at any time; after having caught one, they ſlit his Gills, and take out the Stomach; and thus find what he laſt fed on.

The ſeveral Methods of ANGLING *for Salmon, Trout, Carp, Tench, Perch, Pike, Dace, Gudgeon, Roach, Flounder*, &c. See the Articles *Salmon*-FISHING, *Trout*-FISHING, &c.

For the Rules of ANGLING *with the Fly*, ſee *Fly*-FISHING.

ANGLING-*Rod*. See FISHING-*Rod*.

In *Angling*, they obſerve, after having ſtruck a large Fiſh, to keep the Rod bent; which will hinder him from running to the utmoſt Length of the Rod-Line, by which he would be enabled to break his Hold or Hook.

ANGLING *Line* is either made of Hair, twiſted; or Silk; or the *Indian* Graſs——The beſt Colours are the Sorrel, White and Grey; the two laſt for clear Waters, the firſt for muddy ones. Nor is the pale watery Green deſpiſable: this Colour is given artificially, by ſteeping the Hair in a Liquor made of Allum, Soot, and the Juice of Walnut-Leaves boil'd together.

ANGLING *Hook*. See FISHING *Hook*.

ANGLING *Fly*. See FISHING *Fly*.

ANGLO *Saxon*. See ENGLISH.

ANGUINEAL *Hyperbola*. See HYPERBOLA and CURVE.

ANGULAR, ſomething that relates to, or hath, *Angles*. See ANGLE.

Angular Objects at a diſtance appear round; the little Inequalities diſappearing at a much leſs diſtance than the Bulk of the Body. See VISION.

ANGULAR *Motion*, is a compound kind of Motion, wherein the Moveable both ſlides and revolves at the ſame time. See MOTION, SLIDING, &c.

Such is the Motion of the Wheel of a Coach, or other Vehicle. See WHEEL.

The Phænomena, &c. of ſuch Motion, ſee accounted for under the Article ROTA *Ariſtotelica*.

ANGULAR *Motion*, in Aſtronomy, is the Increaſe of the Diſtance between any two Planets, revolving round any Body as the common Center of their Motion. See PLANET, CENTER, &c.

The Quantity of this Motion is expreſſed by two right Lines drawn from the ſaid Center, to the revolving Bodies; which will open wider, and conſequently grow greater, as the revolving Bodies part farther and farther from one another.

ANGUSTICLAVIA, or ANGUSTICLAVUS, in Antiquity, a *Roman Tunica*, embroider'd with little purple Studs. See TUNICA.

The *Anguſticlavia* was wore by the Knight. See KNIGHT.

The Word is compounded of *Anguſtus*, narrow, ſmall; and *Clavus*, Nail or Stud: in regard thoſe Ornaments were ſmaller in this Garment than in the *Laticlavus* wore by the Senators. See LATICLAVUS. See alſo SENATOR, &c.

ANHELITUS ſignifies a ſhortneſs and thickneſs of Breath; as in an Aſthma. See RESPIRATION and ASTHMA.

The Word is *Latin*, form'd of the Verb *anhelo*, I puff and blow.

ANIL, in Natural Hiſtory, the Plant from which Indigo is procured. See INDIGO.

ANIMA, a *Soul*; whether Rational, Senſitive, or Vegetative. See SOUL, RATIONAL, SENSITIVE, and VEGETATIVE.

The Word is pure *Latin*, form'd of the *Greek* ανεμος, *Ventus*, Wind, Breath. See SPIRIT.

ANIMA *Mundi*, q. d. *Soul of the World*, or *of the Univerſe*, is a certain pure, ethereal Subſtance or Spirit, diffuſed, according to many of the antient Philoſophers, thro the Maſs of the World, informing, actuating, and uniting the divers parts thereof into one great, perfect, organical, vital Body or Animal. See WORLD, UNIVERSE, ANIMAL, &c.

Plato treats at large of the ψυχη τε κοσμε, in his *Timæus*; and is even ſuppoſed to be the Author of the Dogma: Yet are Interpreters much at a loſs about his Meaning. *Ariſtotle*, however, taking it in the common and obvious ſenſe, ſtrenuouſly oppoſes it. See PLATONISM, &c.

Serranus, on *Plato*'s *Timæus*, explains this Doctrine thus: 'Our Philoſopher will have the Univerſe ζωον εμ-'ψυχον ἐννεν, conſiſting of Body and Spirit; the Spirit he 'makes to be that Analogy, or Symmetry, whereby things of 'different Nature, are amicably aſſociated in the grand Com-'pages of all things. In which ſenſe the *Anima Mundi* ſig-'nifies as much as the Form of the Univerſe.' See HARMONY.

Others will have the *Anima Mundi* to ſignify I know not what ignific Vertue, or vivific Heat, infuſed into the Chaos, and diſſeminated thro its whole Frame; for the Conſervation, Nutrition, and Vivification thereof. See HEAT, &c.

Hence

Hence that of the Poet,

Igneus eſt Ollis Vigor & Cœleſtis Origo——

Others ſuppoſe *Plato*, by his *Anima Mundi*, to have meant God, or the Spirit of God; and to have taken the Hint from *Moſes*, who in his Account of the firſt Day's Creation, ſays, *The Spirit of God moved on the Face of the Deep.* See GOD, ABYSS, *&c.*

The modern *Platoniſts* explain their Maſter's *Anima Mundi* by a certain univerſal, ethereal Spirit, which in the Heavens exiſts perfectly pure, as retaining its proper Nature; but on Earth, pervading elementary Bodies, and intimately mixing with all the minute Atoms thereof, aſſumes ſomewhat of their Nature; and becomes of a peculiar Kind——So the Poet:

Spiritus intus alit, totumq; infuſa per orbem
Mens agitat molem, & magno ſe corpore miſcet.

They add, that this *Anima Mundi*, which more immediately reſides in the Celeſtial Regions as its proper Seat, moves and governs the Heavens in ſuch manner, as that the Heavens themſelves firſt received their Exiſtence from the Fœcundity of the ſame Spirit: For that this *Anima*, being the primary Source of Life, every where breathed a Spirit like itſelf, by virtue whereof various kinds of things were framed conformable to the Divine Ideas. See IDEA, PLATONIST, *&c.*

The Notion of an *Anima Mundi* is rejected by moſt of the modern Philoſophers; tho M. *du Hamel* thinks, without any great reaſon; for the generality of them admit ſomething very much like it——The *Peripatetics* have recourſe to celeſtial Influxes, in order to account for the Origin of Forms, and the ſecret Powers of Bodies. See FORM, PERIPATETIC, *&c.*

The *Carteſians* have their ſubtile Matter, which anſwers to moſt of the Uſes, and Intentions of *Plato*'s *Anima Mundi*; being ſuppoſed to flow from the Sun and the other heavenly Bodies, and to be diffuſed thro all the Parts of the World, to be the Source or Principle of all Motions, *&c.* See SUBTILE *Matter*, CARTESIAN, *&c.*

Some later Philoſophers ſubſtitute Fire; and others a ſubtile elaſtic Spirit or Medium diffuſed thro all the Parts of Space. See FIRE, *Subtile* MEDIUM, *&c.* NEWTONIAN, *&c.*

The principal thing objected, on the Chriſtian Scheme, againſt *Plato*'s Doctrine of the *Anima Mundi*, is, that it mingles the Deity too much with the Creatures; confounds, in ſome meaſure, the Workman with his Work, making this, as it were, a part of that, the ſeveral Portions of the Univerſe ſo many parts of the Godhead——Yet is the ſame Principle aſſerted by *Seneca*, Epiſt. 92. *Totum hoc quo continemur, & unum eſt, & Deus. Et ſocii ejus ſumus & membra*——

ANIMA *Hepatis*, q. d. the *Soul of the Liver*; a Term applied by the Chymiſts, to the *Sal Martis*, Salt of Iron or Steel; on account of its Uſe in Diſtempers of that Part. See IRON, MARS, STEEL, SALT, LIVER, *&c.*

It is ſometimes alſo preſcribed under the Name of *Vitriolum Martis.* See VITRIOL.

ANIMA *Articulorum* is a Denomination ſometimes given to *Hermodactyls*; on account of their Efficacy in Diſorders of the Joints. See HERMODACTYL.

ANIMA *Pulmonum*, is uſed for Crocus, or Saffron; by reaſon of its great Uſe in Diſeaſes of the Lungs. See SAFFRON and LUNGS.

ANIMA, or *Gum* ANIMÆ, in Pharmacy, a kind of Gum or Reſin; whereof there are two kinds, *Weſtern* and *Eaſtern*——The firſt flows from an Inciſion of a Tree in *New Spain*, called *Courbati*; it is tranſparent, and of a Colour like that of Frankincenſe: its Smell is very agreeable, and it eaſily conſumes in the Fire. See GUM, *&c.*

The Eaſtern Gum *Anima* is diſtinguiſhed into three Kinds; the firſt white; the ſecond blackiſh, in ſome reſpects like Myrrh; the third pale, reſinous, and dry.

All the ſeveral Kinds of *Anima* are uſed in Perfumes, by reaſon of their charming Smell; they are alſo applied externally in cold Diſorders of the Head and Nerves, in Palſies and Catarrhs; but are little known among us; inſomuch that our Apothecaries uſually ſell Bdellium for Gum *Animæ.* See BDELLIUM.

ANIMADVERSION, ſometimes ſignifies *Correction*; ſometimes Remarks, or Obſervations made on a Book, *&c.* and ſometimes, a ſerious Conſideration and Reflection on any Subject, by way of Criticiſm.

The Word is formed of the *Latin animadvertere*, to animadvert: of *animus*, the Mind; and *adverto*, I turn to, or toward.

ANIMAL, a Being, which, beſides the Power of growing, increaſing, and producing its like, which Vegetables likewiſe have, is further endowed with Senſation, and ſpontaneous Motion. See BEING, SENSATION, and MOTION.

The Word *Animal* is derived from the *Latin Anima*, Soul; and literally denotes ſomething endued with a Soul. See ANIMA and SOUL.

An *Animal*, reſpect being only had to the Body, not the Soul, may be defin'd with *Boerhaave* to be an organical Body, conſiſting of Veſſels and Juices; and taking in the Matter of its Nutriment, by a Part called a Mouth; whence it is conveyed into another called the Inteſtines, into which it has Roots implanted, whereby it draws in its Nouriſhment, after the manner of Plants. See MOUTH.

According to this Definition, an *Animal* is diſtinguiſhed from a Foſſil, in that it is an organical Body; and from a Vegetable by this, that it has its Roots within itſelf, and a Plant without itſelf. See FOSSIL and VEGETABLE.

In effect, the Inteſtines of an *Animal* are, in reality, no more than its Earth, or the Body it adheres to; into which it ſends forth its Roots; that is, the lacteal Veſſels, which thence draw the Matter of its Life and Increaſe. See INTESTINES.

An *Animal* is better defin'd from its Mouth than its Heart; ſince we don't know whether the whole Tribe have ſuch a Part; for as ſeveral have 16 Hearts, particularly the Silk-Worm, and ſome even 60; ſo 'tis poſſible others may have none at all. See HEART.

Nor can any general Character of an *Animal* be taken from the Brain, the Lungs, or the like; ſince we know of many quite deſtitute thereof. See BRAIN, LUNGS, *&c.*

The genuine Characteriſtic, then, of an *Animal*, is to be free and at large with reſpect to the Subject it derives its Nouriſhment from: for every thing is taken in by the Mouth; and the Mouth does not adhere to any thing: Whereas all Plants are connected, in ſome manner or other, to the Body which furniſhes them Food.

Hence it follows, that a Fœtus, while it remains in the Mother's Womb, is a real Plant; as being connected by the Funiculus umbilicalis to the Placenta, and by the Placenta to the Uterus, from whence it receives its Nutriment—— If it did not derive its Food by the ſaid Funiculus, but by its Mouth, it were an *Animal*; and if it drew it by both, a Neophyte, or Plant-Animal. See FOETUS, NEOPHYTE, *&c.*

Some have defined *Animals* from their Loco-Motion, as being capable of Shifting from place to place, and Plants from their ſticking faſt to the ſame Subject: but on this Principle, Oyſters, Muſſels, Cockles, *&c.* are excluded from the Claſs of *Animals*, in as much, as they adhere, or grow to Rocks, *&c.* yet 'tis certain, that thoſe Creatures are real *Animals*, as they have Mouths and Stomachs to take in their Food, and Lacteals and Meſenteric Veins to receive it——Indeed, Muſſels ſeem an Exception from the former Definition. That Anomalous Creature breathes, and receives its Nouriſhment, not at the Mouth, but by the *Anus*: The Part which we account its Head, tho' without either Eyes, Ears, or Tongue, or any other Apparatus, ſave a Hole, which we may call its Mouth, is an immoveable Part; being faſtned to one of the Shells, ſo, that it cannot ſeek for Food, but the Food muſt come to ſeek it. This Food is Water, which, as the Shells open, enters in at the Anus of the Muſſel, which opens at the ſame time; and paſſing thence into certain Canals between the inner Surface of the Shell, and the outer Surface of the *Animal*, is conveyed thence into its Mouth, by a certain Motion, which the *Animal* can produce at pleaſure.

We chuſe therefore with Dr. *Tyſon*, to fix the Criterion of an *Animal* in a *Ductus Alimentalis*, *i. e.* a Gula, Stomach, and Inteſtines; all which make but one continued Canal. See DUCTUS *Alimentalis.*

All *Animals*, according to the moſt probable and receiv'd Opinion, come from Eggs, and are there incloſed, as it were in Epitome, till the Seed of the Male penetrate their Covering, and ſtretch them, ſo as they become ready for hatching. See EGG, GENERATION, *&c.*

There enters into their Veſſels a chylous Juice; which being puſh'd forwards by the Spirits, circulates thro the whole Habit of the little Body, nouriſhes and dilates it by little and little, and thus produces what we call *Growth.* See CHYLE, CHYLIFICATION, and NUTRITION.

This Circulation repeated ſeveral times, refines and attenuates the Juices, till at length they became of a red Colour, and are converted into what we call Blood—— This natural Operation bears a great reſemblance to ſeveral chymical Operations, by which, in attenuating and diſſolving oily or ſulphureous Subſtances, they aſſume a red Colour. See CIRCULATION, BLOOD, and SANGUIFICATION.

The Philoſophers comprehend Man under the Species of *Animals*; and define him, a reaſonable *Animal*: tho among Naturaliſts, *&c. Animals* are uſually reſtrain'd to Irrationals.

St.

St. *Auguſtin* relates, that a great many ſcrupulous perſons in his Time, extended that Prohibition of the Law, *Thou ſhalt not kill*, to all *Animals*: They grounded their Opinion on ſome Paſſages of Scripture wherein God ſpeaks of *Animals* as if they had ſome Principle of Reaſon; declaring that he will require the Blood of Man at the hand of Beaſts, *Gen.* c. 9. Adding, in the ſame place, that he makes a Covenant not only with Man, but with every living Creature.——See CARNIVOROUS.

ANIMALS are ordinarily divided into *terreſtrial*, *aquatic*, *volatile*, *amphibious*, *Inſects*, &c.

Terreſtrial *Animals*, are either Quadrupeds or Reptiles.——Quadrupeds have either the Feet cloven, as the Bullock; or entire, as the Horſe; or divided into ſeveral Toes or Claws, as the Dog, Lion, *&c.* See QUADRUPED, INSECT.

The other Diviſions will be found under the words FISH, BIRD, REPTILE, *&c.*

But, for a compleat and general Account of the various kinds of *Animals*, we ſhall here ſubjoin Mr. *Ray*'s General Scheme.

Animals are either,

- Sanguineous, that is, ſuch as have Blood, which breathe either by
  - Lungs, having either
    - Two Ventricles in their Heart, and thoſe either
      - Viviparous.
      - Aquatick, as the Whale-kind,
      - Terreſtrial, as Quadrupeds.
    - Oviparous, as Birds.
    - But one Ventricle in the Heart, as Frogs, Tortoiſes, and Serpents.
  - Gills, as all ſanguineous Fiſhes, except the Whale-kind.
- Exanguineous, or without Blood, which may be divided into
  - Greater; and thoſe either
    - Naked.
      - Terreſtrial, as naked Snails,
      - Aquatick, as the Poulp, Cuttle-fiſh, *&c.*
    - Covered with a Tegument, either
      - Cruſtaceous, as Lobſters and Crab-fiſh.
      - Teſtaceous, either
        - Univalve, as Limpets,
        - Bivalve, as Oiſters, Muſcles, Cockles, *&c.*
        - Turbinate, as Periwinkles, Snails, *&c.*
  - Leſſer, as Inſects of all Sorts.

Viviparous hairy Animals, or Quadrupeds, are either

- Hoof'd, which are either
  - Whole-footed or hoof'd, as the Horſe and Aſs:
  - Cloven-footed, having the Hoof divided into
    - Two principal Parts call'd Biſcula, either
      - Such as chew not the Cud, as Swine.
      - Ruminant, or ſuch as chew the Cud, divided into
        - Such as have perpetual and hollow Horns:
          - Beef-kind,
          - Sheep-kind,
          - Goat-kind.
        - Such as have ſolid, branched, and deciduous Horns, as the Deer kind.
    - Four Parts, or Quadriſcula, as the Rhinoceros and Hippopotamus.
- Claw'd, or digitate, having the Foot divided into
  - Two Parts or Toes, having two Nails, as the Camel-kind.
  - Many Toes or Claws, either
    - Undivided, as the Elephant
    - Divided, which have either
      - Broad Nails and an humane Shape, as Apes.
      - Narrower and more pointed Nails, which in reſpect of their Teeth, are divided into ſuch as have
        - Many Fore-teeth or Cutters in each Jaw:
          - The greater, which have
            - A ſhorter Snout and rounder Head, as the Cat-kind.
            - A longer Snout and Head, as the Dog-kind.
          - The leſſer, the Vermin or Weazel kind.
        - Only two large and remarkable Fore-teeth, all which are Phytivorous and are call'd the Hare-kind.

For particulars relating to Animals, their Number, Analogous Structure, Sagacity, Inſtinct, &c. See ARK, HEAD, NECK, TAIL, FEET, STORGE, INSTINCT, *&c.*

ANIMALS conſiſt of *Solids*, or firm parts, as Fleſh, Bones, Membranes, *&c.* and *Fluids*, as Blood, *&c.*

The Solids are mere Earth, bound together by ſome Oily Humour; and accordingly are reducible by Fire into ſuch Earth again. See EARTH, FIRE, SOLID, *&c.*

Thus a Bone being perfectly purg'd of all its Moiſture, by Calcination, is found a mere Earth, which the leaſt force will crumble into Duſt, for want of the natural Gluten: Yet the ſame Bone by immerging it in Water or Oil becomes firm and ſtrong again; and more ſo in Oil than Water. And thus Cupels are made of Animal Earth, which will ſuſtain the utmoſt Effect of Fire. See CUPEL.

The Fluid Parts of *Animals* are the cruder as they are leſs diſtant from the Lacteals, and abſorbent Veſſels——Thus Chyle is little elſe but a vegetable Juice; but in its farther progreſs, gradually lays aſide its vegetable Characters, till after a number of Circulations it becomes a perfect Animal Juice, under the denomination of *Blood*, from whence the other Humours are all derived. See CHYLE, BLOOD, HUMOUR, SECRETION, *&c.*

The parts of *Animals* are diſtinguiſhed from thoſe of Vegetables by two Circumſtances: The firſt, that when burnt they are found perfectly inſipid; all Animal Salts being volatile and flying off with heat: the contrary of which is found in Vegetables, which conſtantly retain ſome fixed Salt in all their Aſhes. See SALT, VOLATILE and FIXED.

The ſecond, that no ſincere Acid is contained in any Animal Juice; nor can any Acid Salt be extracted from the ſame: The contrary of which is found in all Vegetables. See ACID.

Yet are *Animals* reconverted into their Vegetable Nature, by Putrefaction. See PUTREFACTION.

ANIMALS make the Subject of that Branch of Natural Hiſtory call'd *Zoology*; ſee ZOOLOGY.

The Structure of *Animals*, with their Diſorders, Remedies, *&c.* make the Subject of Anatomy, Medicine, *&c.* See ANATOMY, MEDICINE, *&c.*

ANIMALS make the principal matter of Heraldry; both as Bearings and as Supporters, *&c.* See BEARING, SUPPORTER, *&c.*

'Tis an eſtabliſh'd Rule among the Heralds, that in Blazoning, *Animals* are always to be interpreted in the beſt Senſe; that is, according to their moſt noble and generous Qualities, and ſo as may redound moſt to the Honour of the Bearers.

Thus the Fox, being reputed witty, and withal given to filching for his Prey; if this be the charge of an Eſcutcheon, we are to conceive the Quality repreſented to be his Wit and Cunning, not his Theft.

Guillim adds, that all Savage Beaſts are to be figured in their fierceſt Action; as, a Lion erected, his Mouth wide open, his Claws extended, *&c.* Thus formed, he is ſaid to be *Rampant*.—— A Leopard, or Wolf is to be pourtray'd going, as it were, Pedetentim: which form of Action, ſaith *Chaſſanæus*, fits their natural Diſpoſition, and is termed *Paſſant*.——The gentler kinds are to be ſet forth in their nobleſt and moſt advantageous Action; as, a Horſe running or vaulting, a Grey-hound courſing, a Deer tripping, a Lamb going with ſmooth and eaſy pace, *&c.*

Every *Animal* is to be moving, or looking, to the right ſide of the Shield; and it is a general Rule, that the right Foot be placed foremoſt, becauſe the right ſide is reckoned the beginning of Motion: add, that the upper part is nobler than the lower; ſo that things conſtrained either to look up or down, ought rather to be deſign'd looking upwards.—It muſt be noted, that notwithſtanding theſe ſolemn Precepts of *Guillim*, and the other Maſters of Armory; we find by experience, that there are Lions Paſſant, Couchant, and Dormant, as well as Rampant, and that moſt *Animals* look down, and not up.

ANIMAL is alſo uſed Adjectively, to denote ſomething that belongs or partakes of the Nature of an Animal Body, ſee BODY.——Thus we ſay *Animal Food*, *Animal Oeconomy*, *&c.* See FOOD, OECONOMY.

ANIMAL *Actions* are thoſe peculiar to *Animals*; or which belong to *Animals*, as ſuch. See ANIMAL and ACTION.

Such are *Senſation* and *Muſcular Motion*. See SENSATION, *&c.*

ANIMAL *Motion* is the ſame with what we call *Muſcular Motion*. See MUSCULAR *Motion*.

It is divided into two Branches; Natural or Involuntary, and Spontaneous. See NATURAL and SPONTANEOUS.

ANIMAL *Functions*, among Phyſicians. See FUNCTION.

Moraliſts frequently oppoſe the *Animal* part, which is the ſenſible, fleſhy part of Man; to the Rational part, which is the Underſtanding.

ANIMAL *Secretion* is the Act whereby the divers Juices of the Body are ſecreted or ſeparated from the common Maſs of Blood, by means of the Glands. See SECRETION, BLOOD and GLAND.

The Theory of Animal Secretion is one of the Improvements in Phyſic, for which we are indebted to Geometrical Reaſoning——The ſum of what our late Writers on the Head have ſhewn, may be reduced to the following Heads.

(1.) Different Juices may be ſeparated from the common Maſs of Blood by means of the different Diameters of the

Orifices of the ſecretory Ducts. For all Particles, whoſe Diameters are leſs than thoſe of the Ducts, will paſs thro' them; ſo that any Matter may be evacuated by any of the Glands, provided the Diameters of its Particles be made leſſer than thoſe of the ſecretory Duct, either by a Comminution of the Matter to be ſeparated, or by an Enlargement of the ſeparating Paſſage.

(2.) By the different Angle which the ſecretory Duct makes with the Trunk of the Artery. For all Fluids preſs the Sides of the containing Veſſels in a Direction perpendicular to its Sides; which is evident in the Pulſation of the Arteries, it being to that Preſſure that the Pulſation is owing. It is likewiſe evident, that the Blood is urged forward by the Force of the Heart; ſo that the Motion of Secretion is compounded of both theſe Motions. Now the lateral Preſſure is greater when the direct Velocity is ſo; but yet not in proportion to ſuch Velocity: for the lateral Preſſure is conſiderable, even when the Fluid is at reſt; being then in proportion to the Specifick Gravity of the Fluid: And in a Fluid like the Blood in the Arteries which is thrown in a right Direction, or a Direction parallel to the Axis of the Veſſel, the lateral Preſſure will be in a Proportion compounded of both: From whence it will follow, that if two Particles of equal Diameters, but of unequal Specifick Gravities, arrive, with the ſame Velocity, at an Orifice capable of admitting them, yet they will not both enter it and paſs, becauſe their Motion of Direction will be different: So that the Diverſity of the Angles which the Ducts make with the Trunk of the Artery, is altogether neceſſary to account for all the poſſible Diverſities of ſecerned Fluids, even ſuppoſing their Diameters and Figures to be the ſame.

(3.) By the different Velocities with which the Blood arrives at the Orifices of the ſecretory Ducts.——For ſince the Secretions are made in a fluid form; no poſſible Reaſon can be aſſign'd, why ſome *Animals* have a ſoft looſe Texture of the ſolid Parts, and why one Part of the Body is of an eaſily ſeparated Texture, and others of a firmer, but this different Velocity of the Blood at the Orifices of the ſecretory Ducts, whereby the Particles ſecerned for Nouriſhment, and Accretion, are drove or impacted into the Vacuola, that receive them with a greater or leſs Force; it being difficult to imagine that ſuch a Diverſity in Texture can altogether proceed from the different Solidities and Contacts of the conſtituent Parts. *See further under the Article* SECRETION.

ANIMAL *Spirits*, are a fine ſubtile Juice, or Humour in Animal Bodies; ſuppoſed to be the great Inſtrument of muſcular Motion, Senſation, *&c.* See MUSCULAR MOTION, SENSATION, *&c.*

The Antients diſtinguiſhed Spirits into three Kinds, *viz.* *Animal*, Vital, and Vegetative: but the Moderns have reduced them to one ſort, *viz.* *Animal*; about the Nature of which, and the Matter whence they are formed, great diſputes have ariſen among the Anatomiſts, tho' their very Exiſtence has never been fairly proved.

As it is hard to define what cou'd never yet be brought under the Judgment of our Senſes, all that we ſhall here offer concerning them, is, that they muſt needs be extremely ſubtile Bodies, which eſcape all manner of Examination by the Senſes, tho ever ſo well aſſiſted; and pervade the Tracts of the Nerves, which yet have no diſcoverable Cavity or Perforation; nor could ever by any Experiment be collected; yet are conſtantly moving in vaſt Quantities, as they muſt of neceſſity be, to perform all thoſe mighty Operations which are aſcribed to them——However, the Antiquity of the Opinion claims ſome Reverence.

By the Help of theſe we are furniſhed with a vaſt Number of precarious Solutions of great Phænomena; and without them we muſt leave a great Chaſm in the philoſophical Hiſtory of *Animal* Bodies.

They are ſuppoſed to be ſeparated in the Brain, from the ſubtileſt Parts of the Blood; and thence carried, by the Nerves, to all Parts of the Body, for the Performance of all *animal* and vital Functions. See BRAIN and NERVE. See alſo further *under the Article* SPIRIT.

ANIMALCULE, ANIMALCULUM, is a Diminutive of *Animal*; and expreſſes ſuch a minute Creature as is ſcarce diſcernible by the naked Eye.

Such are thoſe numerous Inſects which croud the Water in the Summer Months; changing it ſometimes of a deep, or pale red, ſometimes a yellow, *&c.* They ſeem to be of the Shrimp kind, call'd by *Swammerdam*, *Pulex Aquaticus arboreſcens.* The cauſe of their Concourſe at this time, Mr. *Derham* obſerves is to perform their Coit. He adds, that they afford a comfortable Food to many Water Animals——The green Scum on the top of ſtagnant Waters is nothing elſe but prodigious Numbers of another ſmaller Order of *Animalcules*; which in all probability ſerve for Food to the *Pulices Aquatici.*

The Microſcope diſcovers Legions of Animalcules in moſt Liquors, as Water, Wine, Brandy, Vinegar, Beer, Spittle, Urine, Dew, *&c.* In the Philoſoph. Tranſact. we have Obſervations of the *Animalcules* in Rain-Water, in ſeveral Chalybeat Waters, Infuſions of Pepper, Bay-berries, Oats, Barly, Wheat, *&c.* See MICROSCOPE.

The human Seed has been obſerved by divers Authors to contain huge Numbers of *Animalcules*; which gave occaſion to the Syſtem of Generation *ab Animalculo.* See SEED and GENERATION.

ANIMATE, ANIMATED, ſomething endued with Life, or a living Soul. See LIFE and SOUL.

Thus, in Mechanicks, *Animate Power* is uſed to denote a Man or Brute; in contradiſtinction to inanimate ones, as Springs, Weights, *&c.* See POWER, *&c.*

ANIMATED *Mercury*, among Chymiſts, ſignifies Quick-ſilver impregnated with ſome ſubtile and ſpirituous Particles, ſo as to render it capable of growing hot when mingled with Gold. See MERCURY, AMALGAMA, *&c.*

ANIMATED *Needle*, a Needle touch'd with a Load ſtone. See NEEDLE, MAGNET, *&c.*

ANIMATION, ſignifies the informing of an animal Body with a Soul.

Thus the Fœtus in the Womb is ſaid to come to its *Animation*, when it begins to act as a true Animal; or after the Female that bears it is quick, as the common way of Expreſſion is. See FOETUS.

The common Opinion is, that this happens about 40 days after Conception. But *Jer. Florentinus*, in a Latin Treatiſe entitled, *Homo Dubius, ſive de Baptiſmo Abortivorum*, ſhows this to be very precarious. See CONCEPTION, ABORTION, *&c.*

ANISCALPTOR, in Anatomy, a Muſcle, otherwiſe called LATISSIMUS *Dorſi.*

ANKER, a liquid Meaſure, chiefly uſed at *Amſterdam*, &c. See MEASURE.

The *Anker* is the 4th part of the Aem, and contains two Stekans: each Stekan conſiſts of ſixteen Mingles; the Mingle being equal to two *Paris* Pints. See PINT, *&c.*

ANKYLOSIS, a Diſeaſe in the Junctures of an human Body; where the nervous Liquor that ſhou'd lubricate the Bones, and make their Motions more eaſy, growing too thick, clog up, and as it were, cement the Bones within one another. See BONE, ARTICULATION, *&c.*

The Word is derived from the *Greek* ἀγκύλωσις, which comes from ἀγκύλη, a Hardneſs, or Callus in a Juncture.

ANNALS, ANNALES, an hiſtorical Account of the Affairs of a State, digeſted in order of Years; ſee YEAR.

The difference between *Annals* and Hiſtory is variouſly aſſigned by various Authors—Some ſay that Hiſtory is properly a Recital of Things which the Author has ſeen, or been a by-ſtander to. What they build upon, is, the Etymology of the Word; Hiſtory in the *Greek*, ſignifying the Knowledge of *Things* preſent, and in effect, ἱστορεῖν, properly ſignifies *to ſee.* On the contrary, *Annals*, ſay they, relate to the Tranſactions of others, and ſuch as the Writer never ſaw. See HISTORY.

Of this Opinion, the great *Annaliſt*, *Tacitus* himſelf, ſeems to have been; in regard, the firſt Part of his Work, which treats of former Times, he calls *Annals*; whereas when he comes down to his own Times, he changes his Title, and calls it *Hiſtory.*

Aulus Gellius is of a different Sentiment, and pretends that Hiſtory and *Annals* only differ from one another as the Genus does from the Species; that Hiſtory is the Genus, and implies a Narration or Recital of Things paſs'd; and that *Annals* are the Species, and are alſo a Recital of Things paſs'd, but with this difference, that theſe laſt are digeſted into certain Periods, or Years.

The ſame Author gives us another Opinion, which he ſays he borrows from *Sempronius Aſellio*: According to that Writer, *Annals* are a bare Relation of what paſſes each Year; whereas Hiſtory relates not only the Tranſactions themſelves, but alſo the Cauſes, Motives, and Springs thereof. The *Annaliſt* has nothing to do but to lay down his Facts, but the Hiſtorian reaſons and deſcants on them.

Of this laſt Opinion ſeems *Cicero* to be, when ſpeaking of *Annaliſts*, he ſays, *Unam dicendi laudem putant eſſe brevitatem, non Exornatores rerum, ſed tantum Narratores.* He adds, that Hiſtory, in its Original, was a Compoſition of *Annals.*

The ſame *Cicero* relates the Origin of *Annals*: To preſerve the Memory of Tranſactions, the *Pontifex Maximus*, ſays he, wrote what paſs'd each Year; and expoſed it on a Table, in his own Houſe, where every one was at liberty to read them——Theſe they call'd *Annales Maximi*; and the Cuſtom was kept up till the Year of *Rome* 620. See FASTI.

Several other Writers, in imitation hereof, took to this ſimple, and naked Way of relating Facts; and were hence denominated *Annaliſts*——Such were *Cato*, *Pictor*, *Piſo*, *Antipater*, &c.

ANNA-

ANNATES, Annats, *Annata*, the ſame with *Primitiæ* or Firſt-fruits; ſo call'd from the *Latin Annus* Year, becauſe the Rate of Firſt-fruits, paid for ſpiritual Livings, is after the Value of one Year's Purchaſe. See Primitiæ and First-Fruits.

Annates were antiently a Right paid to the Pope, upon his granting a Bull for a vacant Benefice, Abby, or Biſhoprick; but ſince the Reformation they are paid in *England* to the King.———The firſt Pope that impoſed them in *England*, ſeems to have been *Clement* V. who, according to *Matthew* of *Weſtminſter*, exacted *Annates* of all the vacant Benefices in the Kingdom, for the ſpace of two Years, or according to *Walſingham* for three Years. His Succeſſor *John* XXII. introduced the like in *France*.

Yet *Polydore Virgil*, and ſome others, take *Annates* to be of a much elder ſtanding; and to have obtained long before they were paid to the Pope.———'Tis certain at leaſt, that from the Twelfth Century, there were Biſhops and Abbots, who by ſome peculiar Cuſtom or Privilege, took *Annates* of the Benefices depending on their Dioceſe or Abbey.

Matthew Paris, in his Hiſtory of *England*, for the Year 746, relates that the Archbiſhop of *Canterbury* in virtue of a Grant or Conceſſion of the Pope, received *Annates* of all the Benefices that became vacant in *England*. But in after-times the Holy See thought fit to take 'em away from the Biſhops and Archbiſhops, and appropriate 'em to themſelves.

ANNEALING, or as it is popularly call'd *Nealing*. See Nealing.

One fine uſe of Silver, ſays Mr. *Boyle*, was only diſcovered ſince the Art of *Annealing* upon Glaſs came to be practiſed———For prepared Silver, or even the crude Metal being burnt on a Glaſs Plate, will tinge it of a fine yellow, or golden Colour. And there are ſeveral mineral Earths, and other coarſe Matters, of uſe in this Art, which by means of Fire impart tranſparent Colours to Glaſs, and ſometimes very different ones from thoſe of the Bodies themſelves. See *Painting on* Glass.

ANNEXATION, in Law, the uniting of Lands or Rents to the Crown. See Annexed.

ANNEXED, ſomething join'd to, or dependant of, another———Thus we ſay ſuch a Farm, ſuch an Advowſon is *annex'd* to ſuch a Fee, ſuch a Manor, &c. *Charles* VIII in the Year 1486, *annex'd Provence* to the Crown of *France*.

ANNIENTED, a Term ſometimes uſed in Law Books, in the Senſe of fruſtrated, or annull'd.

It is of *French* original; being form'd of the Verb *Annientir* to bring to nothing, annihilate.

ANNIHILATION, the Act of reducing a Subſtance into Nothing; or of totally deſtroying and taking away its Exiſtence. See Substance and Existence.

Annihilation ſtands oppoſed to *Creation*: The one ſuppoſes ſomething made out of nothing, the other nothing made out of ſomething. See Creation.

All Annihilation muſt be Metaphyſical or Supernatural. See Body, Alteration, Corruption, &c.

Bodies naturally admit of Changes and Alterations in their form; but not of *Annihilation*.

Philoſophers object againſt this Notion of *Annihilation*; in that it ſuppoſes an Act required thereto: Whereas, according to them, *Annihilation* muſt enſue upon God's merely ceaſing to act, or to create a thing. For, if the Conſervation of a thing be a continued Creation thereof; as is almoſt univerſally allowed: 'Tis evident a thing can no longer endure, than while God continues to create.

The Word is compounded of *ad* to, and *nihil* nothing.

ANNI *Nubiles*, among Law-Writers, the legal Age, at which a Maid becomes fit for Marriage; which is at 12 Years. See Age.

ANNIS SEED, or Aniseed, a medicinal Seed or Grain; produced by an Umbiliferous Plant of the ſame Name, common in our Gardens. See Seed.

It has a ſweetiſh Taſte, intermix'd with ſomething pungent and bitter: Is reputed an Aromatic, and preſcribed not barely as a Carminative againſt Wind; but alſo as a Pectoral, Stomachic and Digeſtive. See Carminative, &c.

It alſo yields by Diſtillation, a white cordial Oil call'd *Eſſence of Annis-ſeed*; of a very ſtrong penetrating Smell, and efficacious in its medicinal Operation: It being alſo uſed by the Confectioners to ſcent their Pomatums, &c.

In diſtilling the *Annis-ſeed* for the Oil; there is procured a limpid Water call'd *Annis-ſeed* Water; which has much the ſame Virtues with the Oil.

ANNIVERSARY, is properly the yearly Return of any remarkable Day; and was antiently called a *Year-day* or *Mind-day*, that is, a Memorial-day. See Annual Day, &c. On ſome extraordinary Occaſions ſuch Days have been regiſter'd, and annually obſerved, in gratitude to Founders and Benefactors.———

The Word is form'd from *annus* and *verto*, in regard of its returning every Year.———In this Senſe we ſay *Anniverſary* Days, *Anniverſary* Feaſts, *Anniverſary* Prayers, &c.

Anniversary *Days*, *Dies Anniverſarii*, among our Anceſtors were thoſe Days wherein the Martyrdoms of the Saints were yearly celebrated in the Church; as alſo Days whereon, at every Year's end, Men were wont to pray for the Souls of their deceas'd Friends.—*Anniverſaria dies ideo repetitur defunctis, quoniam neſcimus qualiter eorum cauſa habeatur in alia vita.*—This was the Reaſon given by *Alcuinus* in his Divine Offices.

ANNOISANCE, or *Nuſance*, in Law, a Hurt or Offence, either to a publick place, as a High-way, Bridge, or common River; or to a private one, by laying any thing that may breed Infection; by incroaching, or the like means. See Nusance.

Annoisance is alſo uſed for a Writ brought upon this Tranſgreſſion. See Nusance.

ANNOTATION, a ſuccinct Commentary, or Remark on any Book, or Writing; in order to clear up ſome Paſſage, or to draw ſome Induction or Conſequence from it. See Comment, &c.

The Criticks of the laſt Age have made learned *Annotations* on the Scriptures, the Claſſics, &c.

The Word is form'd of the Latin *adnotatio*; of *ad* and *Nota*, Note.

ANNUAL, ſomething which returns every Year, or cloſes at the end of the Year. See Year.

Thus we ſay an *Annual* or yearly Feaſt, Office, Commiſſion, Rent, &c. See Anniversary.

The Annual *Motion of the Earth ſee proved under the Article* Earth.

Annual, is ſometimes uſed for the yearly Rent, or Income of a Prebendary, &c. See Prebend, &c.

Annual *Plants*, call'd alſo ſimply *Annuals*, are ſuch as only live their Year, *i. e.* come up in the Spring, and die again in Autumn: And accordingly are to be recruited every Year. See Plant.

Annuals ſtand contradiſtinguiſhed from Biſannuals, Triennials, &c.

Annual *Leaves*, are ſuch Leaves as come up afreſh in Spring, and periſh in Winter. See Leaf.——Theſe ſtand oppoſed to *Perennials*. See Perennial.

Anno *Domini*, *q. d.* in the *Year of our Lord*; the Computation of Time from the Epocha of the Incarnation of Jeſus Chriſt. See Epocha, Computation, &c.

Annual *Equation*, of the mean Motion of the Sun and Moon, and of the Moon's Apogee and Nodes. See Equation, Moon, &c.

The *annual* Equation of the mean Motion of the Sun depends on the Eccentricity of the Earth's Orbit; and is $16\frac{1}{2}$ of thoſe Parts, whereof the mean Diſtance between the Sun and the Earth is 1000: whence by ſome, it is called the *Equation of the Center*, and when greateſt, is 1 Degree 56′, 20″.

The greateſt *annual* Equation of the Moon's mean Motion is 11′, 40″. of its Apogee 20′, and of its Node 9′, 30″. See Node, &c.

Theſe four *annual* Equations are always proportionable; ſo that when any of them is at the greateſt, the three others are alſo greateſt; and *vice verſa*.——Hence the *annual* Equation of the Center (of the Sun) being given, the other three correſponding Equations will be given; ſo that one Table (that is, of the central Equation) may ſerve for all.

ANNUALIA, yearly Oblations antiently made by the Relations of deceaſed Perſons, on the Day of their Death. See Oblation.

This Day they call'd *Year-day*, &c. and on it, Maſs was celebrated with great Solemnity. See Anniversary.

ANNUENTES *Muſculi*, in Anatomy, a Pair of tranſverſe Muſcles, at the Root of the *Vertebræ* of the Back; call'd alſo by Mr. *Cowper*, *Recti interni minores*, becauſe they lie under the *Recti majores*. See Recti.

They are called *Annuentes*, becauſe they help to nod the Head directly forward. See Head, Muscles, &c.

ANNUITY, a yearly Rent or Revenue, paid for Term of Life or of Years, or in Fee and for ever. See Revenue, Fee, &c.

In Common Law, the Difference between a Rent, and an *Annuity* conſiſts in this, that Rent is payable out of Land; whereas an *Annuity* charges only the Perſon of the Grantor: and that for the Recovery of a Rent, an Action lies; whereas for that of an *Annuity*, there only lies a Writ of *Annuity* againſt the Grantor, his Heirs and Succeſſors. See Rent, Writ, Action, &c.

Add, that *Annuities* are never taken for Aſſets; as being no Freeholds in Law. See Assets.

The Computation of the Value of *Annuities* belongs to Political Arithmetic. See Political *Arithmetic*.

Dr. *Halley*, in his Obſervations on the *Breſlaw* Bills of Mortality, ſhews, That it is 80 to 1, a Perſon of 25 Years of Age does not die in a Year———That it is $5\frac{1}{2}$ to one, a Man of 40 lives 7 Years; and that one of 30 may reaſonably

nably expect to live 27 or 28 Years. So great a difference is there between the Life of Man at different Ages; that it is 100 to 1. one of 20 lives out a Year; and but 38 to 1 that one of 50 doth so.

Whence, and from some other Observations, he constructed the following Table; shewing the Value of *Annuities* for every fifth Year of Life to the 70th.

Age.	Years Purchase.	Age.	Years Purchase.
1	10,28	40	10,57
5	13,40	45	9,91
10	13,44	50	9,21
15	13,33	55	8,51
20	12,78	60	7,60
25	12,27	65	6,54
30	11,72	70	5,32
35	11,12		

ANNULAR, ANNULARIS, something that relates to, or resembles, a Ring, by the *Latins* called *Annulus*. See RING.

ANNULAR *Protuberance*, is a Process of the *Medulla Oblongata*; thus called by Dr. *Willis*, in regard it surrounds the same, much like a Ring. See MEDULLA *Oblongata*.

ANNULAR *Cartilage*, or ANNULARIS, is the second Cartilage of the Larynx; being round, and investing the whole Larynx; called also *Cricoides*. See LARYNX and CRICOIDES.

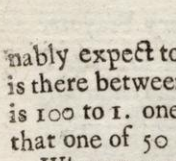
ANNULAR *Ligament*, *Ligamentum Annulare*, is a strong Ligament, encompassing the Carpus or Wrist; after the manner of a Bracelet. See LIGAMENT.

Its use is to connect or bind the two Bones of the Arm together; and also to restrain the Tendons of the several Muscles of the Hand and Fingers, and prevent their flying out of their places, when in Action. See CARPUS, HAND, FINGER, *&c.*

The Ligament of the Tarsus is also denominated *Annular* Ligament. See TARSUS.

Add, that the Sphincter Muscle of the Anus is also called *Annularis*, or *Annular* Muscle; from its Figure. See SPHINCTER.

ANNULAR is also an Epithet given the fourth Finger; popularly calld the *Ring Finger*. See FINGER.



ANNULET, *q. d. little Ring*; in Heraldry, is a Difference or Mark of Distinction, which the fifth Brother of any Family ought to bear in his Coat of Arms. See DIFFERENCE.

Annulets are also part of the Coat-Armour of several Families: They were antiently reputed a Mark of Nobility, and Jurisdiction; it being the Custom of Prelates to receive their Investiture *per Baculum & Annulum*. See BISHOP, INVESTITURE, *&c.*

ANNULETS, in Architecture, are small square Members, in the Doric Capital; under the Quarter-round. See DORIC and CAPITAL.

They are also called *Fillets*, *Listels*, &c. See FILLETS, *&c.*

Annulet is also a narrow flat Moulding, common to other Parts of a Column, *viz.* the Bases, *&c.* as well as the Capital; so called, because it encompasses the Column round.—In this Sense *Annulet* is frequently used for a *Baguette* or little Astragal. See BAGUETTE, and ASTRAGAL.

ANNULLING, the abolishing of an Act, Proceedure, Sentence, or the like. See ABOLITION.

The Word is compounded of *ad* and *nullus*, none; *q. d. un-doing*.

ANNUNCIATE, ANNUNTIADA, or ANNUNTIATE, a Denomination common to several Orders, both Religious and Military; instituted with a View to the Annunciation. See ORDER and ANNUNCIATION.

The first Religious Order of this kind, was instituted in 1232, by seven *Florentine* Merchants.——These are also call'd *Servites*, *q. d. Servants*. See SERVITES.

The second was a Nunnery at *Bourges*, founded by *Joan* Queen of *France*, after her Divorce from *Lewis* XII.

The third, was also a Nunnery, founded by a *Genoese* Lady in 1600.——The fourth, a Friary, founded by Cardinal *Torrecremata*, at *Rome*; which last are grown so very rich, that they give Fortunes of sixty *Roman* Crowns to above 400 Girls, on the Anniversary of the Annunciation.

Knights of the ANNUNCIATE, was a military Order, instituted in 1350, by *Amadeus*, Duke of *Savoy*. See KNIGHT.

It was at first call'd the Order of the True Lovers Knots; in memory of a Bracelet of Hair presented to the Founder by a Lady: but upon the Election of *Amadeus* VIII. to the Pontificate, it changed its Name for that of the *Annunciate*.

ANNUNCIATION, the Tidings which the Angel *Gabriel* brought to the Holy Virgin, of the Mystery of the Incarnation. See INCARNATION.

ANNUNCIATION is also the Name of a Feast, celebrated annually on the 25th of *March*, popularly call'd *Lady-day*, in Commemoration of that wonderful Event. See FEAST.

This Feast appears to be of great Antiquity in the *Latin* Church. Among the Sermons of St. *Augustin*, who died in 430, we have two on the *Annunciation*, *viz.* the 17th and 18th *de Sanctis*: And yet there are much earlier Testimonies of its use in the *Greek* Church. *Proclus*, who died in 446; *Chrysostom*, in 407; and even *Gregory Thaumaturgus*, in 295; have all of them Discourses on the *Annunciation*. *Rivet*, *Perkins*, and some other Protestant Writers after 'em, have indeed question'd the Authentickness of the two Homilies of *Gregory Thaumaturgus*, on the *Annunciation*; but *Vossius* acknowledges 'em the genuine Productions of that Father.

Add, that some Authors are of opinion, that the Feast was originally solemnized in Honour of our Saviour; and that the holding it in the Name and Honour of the Virgin, is of a much later standing.

Several of the Eastern Churches celebrate the *Annunciation* at a different Season from those of the West.——The *Syrians* call it *Bascarach*, *q. d.* Search, Inquiry; and mark it in their Calendar for the first Day of *December*. The *Armenians* hold it on the 5th of *January*; thus anticipating the Time, to prevent its falling in *Lent*: But the *Greeks* make no scruple of celebrating the Festival even in Lent. See LENT.

The Word is compounded of the Latin *ad* and *nuntio*, I tell, I declare; of *Nuntius*, Messenger.——The *Greeks* call it Εὐαγγελισμο, Good tidings; and χαιρεσισμὸς, Salutation.

The *Jews* also give the Title *Annunciation* to part of the Ceremony of their Passover, *viz.* that, wherein they explain the Origin, and Occasion of the Solemnity——This Explanation they call הגדה, Haggada, *q. d. Annunciation*.

ANNULUS, a *Ring*. See RING.

ANODYNE, in Physick, is understood of such Remedies, as by their gentle Heat and temperate Moisture, calm and assuage Pain. See PAIN.

These are also called *Paregoricks*. See PAREGORICKS.

There are others, which bear the same Name, but improperly, *viz.* such as occasion a Stupor, Drousiness, and Sleep, properly called *Narcoticks*, *Hypnoticks*, or *Opiates*. See NARCOTICK, OPIATE, *&c.*

The true *Anodynes* are applied externally, to the part affected——Such among the Class of Simples are the Onion, Lilly, Root of Mallows, Leaves of Violet, Elder, *&c.*

The Word is derived from the privative Particle α and ὠδύνα, *doleo*, to be in pain.

We have also certain compound Medicines in the Shops, prepared with this Intention; and called by this Name—Such is the *Anodyne Balsam*, made of Castile Soap, Camphir, Saffron, and Spirit of Wine; digested in a Sand-heat. It is recommended not only for procuring Ease in the most racking extremities of pain, but for assisting in discharging the peccant matter that occasion'd it.

ANOMALOUS, *q. d. Irregular*; something that deviates from the ordinary Rule and Method of other things of the same kind. See RULE, *&c.*

The Word is not compounded of the privative α, and νομος, Law, as is usually imagined: for whence, on such supposition, should the last Syllable *al*, arise? But it comes from the Greek ἀνώμαλος, *uneven*, *rough*, *irregular*, form'd of the Privative α, and ὁμαλὸς, *plain*, *even*.

ANOMALOUS *Verbs*, in Grammar, are such as are irregular in their Conjugations; deviating from the Rules or Formula's obsery'd by others. See VERB and CONJUGATION.

There are *Anomalous* Verbs, irregular Inflexions of Words, in all Languages——In the *English* all the Irregularity in our *Anomalous* Verbs, lies in the formation of the Preter Tense, and passive Participle; tho' this only holds of the Native *Teutonic* or *Saxon* Words, and not of the foreign Words, borrow'd from the *Latin*, *Welsh*, *French*, *&c.*

The principal Irregularity arises from the quickness of our Pronunciation, whereby we change the Consonant *d* into *t*, cutting off the regular ending *ed*.

Thus for *mixed*, we write *mixt* or *mix'd*; for *dwelled* *dwelt* or *dwell'd*; for *snatched*, *snatcht*, &c.——But this is rather of the nature of a Contraction than an Irregularity; and

and is complained of by ſome of our Politer Writers as an Abuſe much to the diſadvantage of our Language, tending to diſfigure it, and turn a tenth part of our ſmootheſt Words into Cluſters of Conſonants: which is the more inexcuſable, in that the want of Vowels has been the general Complaint of the beſt Writers.

Another Irregularity relates to the preter Tenſe, and paſſive Participle——Thus *give*, if it were regular, or formed according to the Rule, would make *gived* in the preter Tenſe, and the paſſive Participle: whereas it makes *gave* in the preter Tenſe, and *given* in the paſſive Participle.

ANOMALISTICAL *Year*, in Aſtronomy, called alſo *Periodical Year*, is the ſpace of time wherein the Earth paſſes thro' her Orbit. See YEAR.

The *Anomaliſtical*, or common Year, is ſomewhat greater than the Tropical Year; by reaſon of the præceſſion of the Equinox. See TROPICAL.

ANOMALY, in Grammar, the Irregularity of Formation or Conjugation, obſerved in ſeveral Verbs. See ANAMALOUS.

ANOMALY, in Aſtronomy, is the Diſtance of a Planet from the Aphelion or Apogee; or an irregularity in the Motion of a Planet, whereby it deviates from the Aphelion or Apogee. See PLANET, APHELION and APOGEE.

Kepler diſtinguiſhes three kinds of Anomalies; Mean, Eccentric and True.

Mean or *Simple* ANOMALY in the antient Aſtronomy, is the Diſtance of a Planet's mean place from the Apogee. See PLACE.

In the modern Aſtronomy, it is the Time wherein the Planet moves from its Aphelion A, to the mean Place or Point of its Orbit I. (Tab. ASTRONOMY, fig. 1.)

Hence, as the Arch, or the Angle, or the Elliptic Area A S I, is proportional to the Time wherein the Planet deſcribes the Arch A I; that Area may repreſent the mean *Anomaly*.——Or thus: The Area S K A found by drawing a Line L K, thro' the Planet's place, perpendicular to the Line of the Apſides P A, till it cuts the Circle D A, and drawing the Line S K; may repreſent the mean *Anomaly*; for this Area is every where proportional to the former Area S I A, as is demonſtrated by Dr. *Gregory*, *lib.* 3. *Elem. Aſtron. Phyſic. Math.*

ANOMALY *of the Eccentric*, or *of the Centre*, in the new Aſtronomy, is an Arch of the Eccentric Circle A K, fig. 1. included between the Aphelium A, and a right Line K L, drawn thro' the Centre of the Planet K, perpendicularly to the Line of the Apſides A P. See ECCENTRIC.

In the antient Aſtronomy, it is an Arch of the Zodiac, terminated by the Line of the Apſides, and the Line of the mean Motion of the Centre.

True or *Equated* ANOMALY, is the Angle at the Sun, A S I, which a Planet's diſtance from the Aphelium, A I, appears under; or it is the Angle or Area, taken proportional to the time in which the Planet moves from the mean Place I, to its Aphelion A.

And hence, in the Sun's Motion, it will be the diſtance of his true place, from the Apogee——

The true *Anomaly* being given, the mean one is eaſily found: but it is difficult to find the true Anomaly from the mean one given——

The Geometrical Method of *Wallis* and *Newton*, by the protracted Cycloid, are not fit for Calculation; nor yet the Methods of *Series*, as being too laborious. Hence Aſtronomers are forced to have recourſe to Approximation. *Ward*, in his *Aſtronomia Geometrica* takes the Angle A S I, at the Focus where the Sun is not, for the mean *Anomaly*; which will nearly repreſent it, if the Orbit of the Planet be not very Eccentric; and thus eaſily ſolves the Problem. But this Method does not hold of the Orbit of *Mars*, as being more Eccentric than thoſe of the other Planets.

Sir *Iſaac Newton* ſhews how to effect even this; and when his Correction is made, and the Problem ſolved, according to *Ward*'s Hypotheſis, Sir *Iſaac* affirms, that even in the Orbit of *Mars*, there will ſcarce ever be an Error of above a Second.

ANOMEANS, ANOMOEANS, or ANOMIANS, ANOMOEI, or ANOMIANI, a *Greek* Word, compoſed of the privative ἀ and ὁμοῖος, *ſimilar*, *reſembling*; q. d. different, diſſimilar.

In the fourth Century, this was the Name by which the pure *Arians* were diſtinguiſh'd; in regard they not only denied the Conſubſtantiality of the Word, but even aſſerted, that he was of a Nature different from that of the Father: In Contradiſtinction to the Semi-*Arians*, who indeed denied the Conſubſtantiality of the Word, but own'd at the ſame time, that he was like the Father. See ARIAN, and SEMI ARIAN.

The Semi-*Arians* condemned the *Anomeans* in the Council of *Seleucia*, and the *Anomeans* condemned the Semi-*Arians* in their Turn, in the Councils of *Conſtantinople* and *Antioch*; eraſing the Word ὁμοῖος out of the Formula of *Rimini*, and that of *Conſtantinople*, and proteſting that the *Word* had not only a different Subſtance, but alſo a Will different from that of the Father. Whence they were to be call'd Ἀνομοῖοι. See HOMOOUSIA, &c.

ANONYMOUS, ſomething that is nameleſs; or to which no Name is affixed. See NAME.

The Term is chiefly applied to Books which do not expreſs their Author's Name. It is derived from the *Greek* ἀνώνυμος, without Name, of the privative ἀ and ὄνομα, *nomen*, Name.

Decker, Advocate of the Imperial Chamber of *Spires*; and *Placcius* of *Hambourg*, have given a Treatiſe of *Anonymous* Books——*Burcard Gotthelfius Struvius*, treats of learned Men who have endeavoured to divine the Authors of *Anonymous* Books.

ANOREXY, ANOREXIA, in Medicine, an Inappetency, or Loſs of Appetite. See APPETITE.

Anorexia is properly a longer continuance than is natural, without a deſire to eat. See FOOD, FASTING, DISTASTE, &c.

If the Thought, or the Sight of proper Food, create a Sickneſs in the Stomach, or a Tendency to vomit; it is called a *Nauſea*. See NAUSEA.

Anorexia, is chiefly conſidered as a Symptom of ſome other Diſorder, from which the curative Indications are to be taken, and afterwards Stomachics uſed. See STOMACHIC.

The Word is compounded of the privative Particle ἀ and ὄρεγχω, *Cupio*, I deſire——

ANSES, or ANSÆ, in Aſtronomy, thoſe apparently prominent Parts of the Planet *Saturn*'s Ring, diſcovered in its opening, and appearing like Handles to the Body of that Plant. See SATURN and RING.

The Word is *Latin*; and literally ſignifies Handles or Arms of divers Utenſils.——

ANSCOTE, in our antient Law Books, the ſame with *Angild*. See SCOT and LOT.

ANSEL *Weight*. See AUNSEL *Weight*.

ANSPESSADES, a kind of Inferior Officers in the *French* Foot, below the Corporals, and yet above the common Centinels. See CORPORAL, &c.

There are uſually four or five in each Company——The Word is formed of the Italian *lanſa ſpezzada*, *q. d.* broken Lance; which was occaſioned hence, that they were originally disbanded Gendarmes, who for want of other Subſiſtence ſued for a Place of ſome diſtinction in the Infantry.

ANSWER. See RESPONSE, RESPONSAL, BILL, PLEADING, REPLICATION, &c.

ANTA, or ANTE, in the ancient Architecture, a ſquare Column, or Pilaſter, placed at the Corners of the Walls of their Temples and other Edifices. See PILASTER, TEMPLE, &c.

The *Antæ* ſtood out of the Wall, with a Projecture equal to one eighth of their Face, provided there were no Ornament that had a greater Projecture; but it was a Rule that the Projecture of the *Antæ* ſhould always equal that of the Ornaments.

They took their Name, according to Mr. *Perrault*, from the Prepoſition *Ante* before; becauſe placed before the Walls and Coins of Buildings to ſecure 'em.

ANTAGONIST, an *Adverſary*; or a Party oppoſite to another in any Combat or Diſpute. See ADVERSARY, &c.

The Word is formed from the *Greek* ἀντι, *contra*, againſt, and ἀγωνίζω, *oppono*, I oppoſe.

ANTAGONIST *Muſcles*, in Anatomy, are thoſe which have oppoſite Functions. See MUSCLE.

Such are the *Flexor* and *Extenſor* of any Limb, the one whereof contracts it, and the other ſtretches it out. See FLEXOR and EXTENSOR.

We have ſome ſolitary Muſcles, without any *Antagoniſts*; as the Heart, &c. See HEART, &c.

ANTANACLASIS, a Figure in Rhetorick; being a repetition of the ſame Word, but in a different Signification. See REPETITION.

The Word comes from the *Greek* ἀντι, and ἀνακλάω, *repercutio*, I ſtrike again.

ANTANAGOGE, ἀντανάγωγὴ, a Figure in Rhetoric, when not being able to anſwer the Accuſation of the Adverſary, we return the Charge, by loading him with the ſame Crimes. See RECRIMINATION.

ANTARES, in Aſtronomy, the *Scorpion's Heart*; a fix'd Star of the firſt Magnitude, in the Conſtellation *Scorpio*—— Its Longitude, Latitude, &c. ſee among the reſt of the Conſtellation *Scorpio*.

ANTARCTIC, or ANTARTIC, *Pole*, the Southern Pole, or End of the Earth's Axis; ſo called becauſe it is oppoſite to the Arctic or North Pole. See POLE, SOUTH, ARCTIC, &c.

The Stars near the *Antarctic* Pole never appear above our Horizon. See STAR, HORIZON, &c.

The Word is compoſed of ἀντι *contra*, and ἄρκτος, *Urſa*, bear.

ANTARCTIC, or ANTARTIC *Circle*, is one of the leſſer Circles of the Sphere, parallel to the Equator, at

the diſtance of 29 deg. 30. min. from the South Pole. See CIRCLE.

It takes its Name from its being oppoſite to another Circle, parallel likewiſe to the Equator, and at the ſame diſtance from the North Pole; called the *Arctic* Circle. See ARCTIC *Circle*.

ANTECEDENT, in the Schools, ſomething that precedes, or goes before another, in reſpect of time; from the *Latin* Prepoſition *ante*, before, and *cedens* of *cedere*, to go—In this Senſe the Word ſtands oppoſed to *Subſequent*.

An *Antecedent Decree*, is a Decree preceding ſome other Decree, or ſome Action of the Creature, or the Previſion of that Action. See DECREE.

'Tis a Point much controverted, whether Predeſtination be a Decree *antecedent* to Faith, or ſubſequent thereto. See PREDESTINATION.

So, an *Antecedent Will*, or *Deſire*, is that which precedes ſome other Will or Deſire, or ſome Knowledge or Previſion—Thus we ſay, God by a ſincere, but *Antecedent* Deſire, wills all Men to be ſaved: That is, this ſincere Deſire of God precedes, and does not ſuppoſe, the Knowledge of their Faith and Repentance.

By the way it muſt be noted that the Term *Antecedent* is only applied to God in reſpect of the Order of Nature, not of an Order of Succeſſion; for that God, by reaſon of his infinite Perfections, ſees and foreſees both at the ſame Time: after the ſame manner he alſo wills, and not ſucceſſively, one thing after another——Yet does not this hinder, but that God may will one thing on occaſion of another, or have ſuch a deſire on occaſion of ſuch a Previſion; which Divines call the Order of Nature, in contradiſtinction to that of Time.

ANTECEDENT, *Antecedens*, in Logick, is the firſt Propoſition of an Enthymeme, or of an Argument which only conſiſts of two Members. See ENTHYMEME, PROPOSITION, *&c.*

In Oppoſition hereto, the latter is called the Conſequent. See CONSEQUENT.

Thus in the Syllogiſm *cogito, ergo ſum*, I think, and therefore exiſt; *cogito* is the *Antecedent*; being thus called becauſe it precedes the *ergo*, or the *copula* of the Argument.

ANTECEDENT, in Mathematicks, is the former of the two Terms of a Ratio; or that which is compared with the other. See RATIO and TERM.

Thus, if the Ratio be of *a* to *b*; *a* is ſaid to be the *Antecedent*.

ANTECEDENT *Signs*, are ſuch Symptoms of Diſorder as appear before a Diſtemper is ſo formed, as to be reducible to any particular Claſs, or proper Denomination. See SIGN and SYMPTOM.

ANTECEDENT in Grammar, the Word which a Relative refers to. See RELATIVE.

ANTECEDENCE, ANTECEDENCY. See ANTECEDENT and ANTECEDENTIA.

ANTECEDENTIA among Aſtronomers——When a Planet appears to move Weſtward, contrary to the Order or Courſe of the Signs; as, from *Taurus* towards *Aries*: it is ſaid to move, *in Antecedentia*. See PLANET, ORDER, SIGN, *&c.*

On the contrary, when it goes Eaſtward or forwards, from *Aries* towards *Taurus*; it is ſaid to move *in Conſequentia*. See CONSEQUENTIA, *&c.*

ANTECESSOR, one that goes before, or leads another. See PRECURSOR, PREDECESSOR, *&c.*

The Term is particularly uſed in ſome Univerſities for a Profeſſor, who teaches, or lectures the Civil Law.

ANTECHAMBER, or ANTICHAMBER, an outer Chamber, before the principal Chamber of an Apartment; where the Servants wait, and Strangers ſtay, till the Perſon to be ſpoken withal is at leiſure, *&c.* See APARTMENT.

The Word is formed of the Latin *Ante Camera*. See CHAMBER.

ANTECHRIST, or ANTICHRIST, *Antichriſtus*, among Divines, *&c.* a Tyrant who is to reign on Earth, toward the end of the World; for the ultimate Proof of the Elect; and to give a ſhining Inſtance of the Divine Vengeance, before the laſt Judgment.

The Word is compounded of the Greek *αντι*, *contra*, againſt, and *χριστος*, Chriſt—In Scripture he is alſo called *Man of Sin, Son of Perdition*, &c. 'Tis added that he ſhall ſet up his Throne at *Babylon*.

The Bible and the Fathers all ſpeak of *Antichriſt* as a ſingle Man; tho' they aſſure withal, that he is to have divers Precurſors or Fore-runners——Yet many Proteſtant Writers apply to the Romiſh Church, and the Pope who is at the Head of it, the ſeveral Marks and Signatures of *Antichriſt*, enumerated in the Apocalypſe; which would rather imply *Antichriſt* to be a corrupt Society, or a long Series of perſecuting Pontiffs, than a ſingle Perſon.

However, the Point having been maturely debated at the Council of *Gap*, held in 1603, a Reſolution was taken thereupon, to inſert an Article in the Confeſſion of Faith, whereby the Pope is formally declared to be *Antichriſt*—Pope *Clement* VIII, we read, was ſtung to the Life with this deciſion; and even King *Henry* IV. of *France* was not a little mortified, to be thus declared, as he term'd it, an Imp of *Antichriſt*.

The learned *Grotius* maintains that *Caligula* was *Antichriſt*; but neither does this quadrate with his Appearance at the end of the World.

Father *Malvenda*, a Spaniſh Jeſuit, has publiſhed a large and learned Work, *de Antichriſto*, in XIII Books——In the firſt he relates all the Opinions of the Fathers with regard to *Antichriſt*. In the ſecond he ſpeaks of the Time when he ſhall appear; and ſhews that all the Fathers who ſuppoſed *Antichriſt* to be near at hand, judged the World was near its Period. In the third he diſcourſes of his Origin and Nation; and ſhews that he is to be a *Jew*, of the Tribe of *Dan*: This he founds on the Authority of the Fathers; on the Paſſage in *Geneſis* XLIX. *Dan is a Serpent in the Way*, &c. On that of *Jeremy*, VIII. 16. where it is ſaid *the Armies of Dan ſhall devour the Earth*; and on the *Apocalypſe*, cap. VII. where St. *John* enumerating all the Tribes of *Iſrael*, makes no mention of that of *Dan*. In the fourth and fifth Books, he treats of the Signs of *Antichriſt*. In the ſixth of his Reign and Wars. In the ſeventh of his Vices. In the eighth of his Doctrine and Miracles. In the ninth of his Perſecutions: And in the reſt, of the coming of *Enoch* and *Elias*, the Converſion of the *Jews*, the Reign of Jeſus Chriſt, and the Death of *Antichriſt*, after having reigned three Years and a half.

ANTECURSOR. See PRECURSOR.

ANTEDILUVIUN. See ANTIDILUVIAN.

ANTEJURAMENTUM, and PRÆJURAMENTUM, by our Anceſtors alſo called *Juramentum Calumniæ*; an Oath which both the Accuſer and Accuſed were obliged to make *before* any Trial or Purgation. See OATH and PURGATION——The Accuſer was to ſwear that he would proſecute the Criminal; and the Accuſed was to make Oath on the very Day that he was to undergo the Ordeal, *&c.* that he was innocent of the Fact of which he was charged. See ORDEAL.

If the Accuſer failed, the Criminal was diſcharged; if the Accuſed, he was intended to be guilty, and was not to be admitted to purge himſelf by the Ordeal. See COMBAT, DUEL, *&c.*

ANTEPAGMENTA, or ANTIPAGMENTA, in the antient Architecture, the Jaumbs of a Door, or Lintels of a Window. See DOOR and WINDOW.

The Word is alſo uſed for the entire *Chambranle*, *i. e.* the Door-Caſe, or Window-Frame. See CHAMBRANLE.

ANTEPENULTIMA, or ANTEPENULTIMATE, in Grammar, the third Syllable of a Word, reckoning from the latter End; or the laſt Syllable but two. See WORD and SYLLABLE.

'Twas upon this Syllable, that the *Greeks* placed their acute Accents. See ACCENT——The *Antepenultimate* of a Dactyl is long. See DACTYL.

The Word is compounded of the Prepoſition *Ante*, before; and *Penultimate*, laſt but one. See PENULTIMATE.

ANTEPREDICAMENTS, ANTEPRÆDICAMENTA, in Logick, certain previous Matters, requiſite to a more eaſy and clear apprehenſion of the Doctrine of Predicaments or Categories. See PREDICAMENT.

Such are Definitions of Common Terms; as Equivocals, Univocals, *&c.* with Diviſions of Things, their Differences, *&c.* See DEFINITION, DIVISION, *&c.*

They are thus called becauſe treated by *Ariſtotle before the Predicaments*; that the Thread of the Diſcourſe might not afterwards be interrupted.

ANTERIOR, or ANTERIOUR, ſomething before another, chiefly in reſpect of Place—In this Senſe the Term ſtands oppoſed to *Poſterior*. See POSTERIOR.

The Word is *Latin*; formed of the Prepoſition, *Ante*, before.

ANTESTATURE, in Fortification, a ſmall Retrenchment, made of Palliſadoes, or Sacks of Earth, ſet up in haſte, to diſpute with the Enemy the Remainder of a Piece of Ground, part whereof hath been already gain'd. See RETRENCHMENT.

ANTHELIX, in Anatomy, the inner Circuit of the Auricle; thus call'd from its oppoſition to the outer Circuit, call'd the Helix. See AURICLE and HELIX.

ANTHELMINTICKS, Medicines good to deſtroy Worms. See WORM and VERMIFUGOUS.

The Word is compounded of *αντι*, *contra*, againſt, and *ελμινς*, *Vermis*, Worm.

ANTHEM, *Antiphona*, a Church-Song, performed in Cathedral, and other Service, by the Choriſters, divided for that purpoſe into two Chorus's, who ſing alternately. See SONG, CHOIR, CHORISTER, *&c.*

The Word was originally uſed both for Pſalms, and Hymns, when thus perform'd. See PSALM and HYMN.

Socrates repreſents St. *Ignatius* as the Author of this way of ſinging among the *Greeks*; and St. *Ambroſe* among the *Latins*——*Theodoret* attributes it to *Diodorus* and *Flavian*. *Amalarius Fortunatus* has wrote expreſly of the Order of *Anthems*, *de Antiphonarum Ordine*.

At preſent the Term is uſed in a ſomewhat narrower Senſe; being applied to certain Paſſages taken out of the Pſalms, &c. and accommodated to the particular Solemnity in hand.

ANTHERA, in Pharmacy, a Term uſed by ſome Writers for the Yellow part in the Middle of a Roſe. See Rose——It is reputed more aſtringent than the reſt.

ANTHERÆ, among Botaniſts, thoſe little Tufts, or Knobs which grow on the Tops of the Stamina of Flowers; more uſually called *Apices*. See Apices.

ANTHESPHORIA, in Antiquity, a Feaſt celebrated in *Sicily*, in Honour of *Proſerpine*. See Feast.

The Word is deriv'd from the Greek ἄνθος, Flower, and φέρω, I carry, in regard that Goddeſs was forc'd away by *Pluto*, when ſhe was gathering Flowers in the Fields. Yet *Feſtus* does not aſcribe the Feaſt to *Proſerpine*; but ſays it was thus call'd, by reaſon Ears of Corn were carried on this Day to the Temples.

Antheſporia ſeem to be the ſame thing with the *Floriſertum* of the *Latins*.

ANTHESTERIA, in Antiquity, was a Feaſt celebrated by the *Athenians*, in Honour of *Bacchus*. See Feast.

Some are of opinion it took its Name from the Month *Antheſterion*, wherein it was celebrated——Others pretend, that it was not the Name of any particular Feaſt, but that all the Feaſts of *Bacchus* were call'd *Antheſteria*.

The moſt natural Derivation of the Word is from ἄνθος, *Flos*, a Flower; it being the Cuſtom at this Feaſt to offer Garlands of Flowers to *Bacchus*.

The *Antheſteria* laſted three Days, the eleventh, twelfth, and thirteenth of the Month; each of which Days had a Name ſuited to the proper Office of the Day——The firſt Day of the Feaſt was called πιθοιία, *i. e.* Opening of the Veſſels, in regard on this Day they open'd the Veſſels, and taſted the Wine——The ſecond they called χόες, *Congii*, the Name of a Meaſure, containing the Weight of about ten Pounds: on this Day they drank the Wine prepar'd the Day before——The third Day they called χύτροι, Kettles: on this Day they boil'd all ſorts of Pulſe in Kettles; which however they were not allow'd to taſte, as being offer'd to *Mercury*.

ANTHOLOGION, Anthologue, a Church Book in uſe among the *Greeks*. See Greek.

The *Anthologion* is a ſort of Breviary or Maſs-Book, containing the daily Offices addreſs'd to our Saviour, the Virgin, and the principal Saints; with other Common Offices of Prophets, Apoſtles, Martyrs, Pontiffs, and Confeſſors, according to the *Greek* Rite. See Breviary, Mass, Office, &c.

It is called ἀνθολογιον, *q. d. florilegium*, or a Collection of Flowers.

ANTHOLOGY, Anthologia, a diſcourſe or Treatiſe of Flowers; thus call'd from ἄνθος, *Flos*, a Flower, and λογὸς, *Sermo*, Diſcourſe. Others chuſe rather to derive *Anthology* from ἄνθος, *Flos*, a Flower, and λέγω I gather; and uſe it to ſignify a Collection of Flowers. See Flower.

Anthology is particularly uſed for a Collection of Epigrams of divers *Greek* Poets. See Epigram.

St. ANTHONY, gives the Name to an Order of Knighthood, eſtabliſh'd in 1382. by *Albert* of *Bavaria*, &c. who had then taken a Reſolution to make War againſt the *Turks*. See Order and Knight.

The Knights of this Order wore a Collar of Gold, with a Hermit's Girdle, to which hung a Crutch and a little Bell.

Some Authors mention another Order of St. *Anthony* in *Ethiopia*, inſtituted in 370.

St. ANTHONY's *Fire*. See Erysipelas.

ANTHORA, or *Healing Wolfs-bane*, a Species of *Aconite*, whoſe Root is uſeful in Phyſick; being reputed a good Antidote, and a certain Counterpoiſon to the *Thora*, whence its Denomination *Anthora*. See Aconite.

The Root contains a great deal of volatile Salt and eſſential Oil——It is alexipharmick, cardiack, ſtomachick, and good againſt the Wind-Cholick——

ANTHOS, Ἄνθος, in its original *Greek*, ſignifies *Flower*; but by way of Excellency is appropriated to *Roſemary*, ſo as to expreſs only Flowers of Roſemary. See Rosemary.

ANTHRACOSIS, a Diſeaſe of the Eyes, occaſion'd by a corroſive Ulcer, cover'd with Skin, and attended with a general Swelling; eſpecially of the Parts about the Eye. See Eye and Ulcer.

The Word is Greek ανθρακωσις, and *denotes* an Inflammation reſembling a Coal; ἄνθραξ ſignifying a Coal. See Anthrax.

ANTHRAX, ανθραξ, ſtrictly ſignifies a *live Coal*; and figuratively, a Scab or Blotch, made by a corroſive Humour, which, as it were, burns the Skin, and occaſions ſharp pricking Pains.

The *Anthrax* is alſo called *Carbo* and *Carbunculus*. See Carbuncle.

The Cure is attempted with Cataplaſms of *Theriac*. *Lond*. *Allium*, *Cepæ coct*. *Sapo Nig*. &c.

ANTHROPOLOGY, Anthropologia, a Diſcourſe or Treatiſe upon Man, or Human Nature.

Anthropology includes the Conſideration both of the Human Body and Soul, with the Laws of their Union, and the Effects thereof, as Senſation, Motion, &c. See Body, Soul, Sensation, Motion, &c.

Yet Dr. *Drake* entitles his Anatomy of the Human Body, *Anthropologia*. See Anatomy.

The Word is compounded of Ἄνθρωπος, Man, and λόγος, Diſcourſe.

Anthropology, is particularly uſed in Theology, for a way of ſpeaking of God, after the manner of Men; by attributing Human Parts to him; as Eyes, Hands, Ears, Anger, Joy, &c.——

We have frequent Inſtances of *Anthropology* in Holy Scripture; by which we are only to underſtand the Effect, or the Thing which God does, as if he had Hands, &c. See Anthropopathy.

ANTHROPOMANCY, or Anthropomantia, a Method of Divination, performed by inſpecting the Viſcera of a Perſon deceaſed. See Divination.

The Word is compounded of ανθρωπος Man, and μαντεια, Divination.

ANTHROPOMORPHITE, one who attributes to God, the Figure of a Man. See God, &c.

Anthropomorphites were a Sect of antient Hereticks, who, out of a too great Simplicity, taking every thing ſpoken of God in the Scriptures in a literal Senſe; imagin'd he had real Hands, Feet, &c.——The Paſſage they chiefly inſiſted on, was that in *Geneſis*, where it is ſaid that God made Man after his own Image.

The Word comes from the *Greek* ἄνθρωπος, Man, and μόρφη, Shape.

ANTHROPOPATHY, a Figure, Expreſſion or Diſcourſe, whereby ſomething is attributed to God, which properly belongs only to Man.

Anthropopathy is frequently uſed promiſcuouſly with *Anthropology*; yet in ſtrictneſs they ought to be diſtinguiſhed as the Genus from the Species——*Anthropology* may be underſtood of any thing Human attributed to God; but *Anthropopathy*, only of Human Affections, Paſſions, Senſations, &c. See Anthropology.

The Word is compounded of ἄνθρωπος, Man, and πάθος Paſſion.

ANTHROPOPHAGI, *Cannibals*; or ſuch as feed on Human Fleſh. See Cannibal.

The Word is compounded of the Greek ανθρωπος, Man, and φαγω, *Edo*, I eat——The primitive Chriſtians were accuſed by the Heathens of being *Anthropophagi*; as appears from *Tatian*, *Tertullian* in his Apologeticks, Cap. VII. and *Salvian* de Provid. Lib. IV. They affirmed that the Chriſtians, in the Myſteries of their Religion, killed a Child, and feaſted on its Fleſh. This Calumny was grounded on what they had heard of the Euchariſt, and the Communion. See Eucharist, Communion, Altar, &c.

ANTHROPOPHAGY, the Act of eating human Fleſh. See Anthropophagi.

Some Authors trace the Original of this barbarous Cuſtom, as high as the Deluge; and attribute it to the Giants——*Pliny* mentions *Scythians* and *Sauromatans*; and *Juvenal*, *Egyptians*, who accuſtom'd themſelves to this horrible Repaſt——*Livy* tells us, that *Hannibal* made his Souldiers eat human Fleſh, to render them more fierce and daring in Battel.

In the ſouthern Parts of *Africa*, and in ſome Parts of *America*; this horrid Practice ſtill obtains. See Cannibal.

The Phyſicians think they have diſcover'd the Principle of *Anthropophagy*, and that it conſiſts in a black acrimonious Humour, which being lodg'd in the Coats of the Ventricle, produces this Voracity. And they give ſeveral Inſtances of this inhuman Hunger, even among their own Patients——M. *Petit* has diſputed the Queſtion, whether or no *Anthropophagy* be contrary to Nature?

ANTI, a Greek Prepoſition, added to ſeveral *Engliſh* Words, in two different Senſes——Sometimes it ſignifies *before*; as in *Anti*-Chamber, a place before the Chamber; in which caſe it has the ſame Meaning with the *Latin*, *ante*, before: ſometimes again it ſignifies *contrary*, or oppoſite, and is then derived from the Greek αντὶ, *contra*, againſt; as in *Antipodes*, thoſe who have their Feet oppoſite to ours.

In this latter Senſe, the Word makes part of the Names of various Medicines: as *Antivenereals*, thoſe uſed againſt the Pox; *Antiarthriticks*, thoſe againſt the Gout; *Antiaſthmaticks*, againſt the Aſthma; *Antielminticks*, againſt Worms;

Worms; *Antaphroditicks*, againſt Luſt; *Anti-epilepticks*, againſt the Falling Sickneſs, &c.

ANTI, in matters of Literature, are Pieces written by way of Anſwer, to others, whoſe Names are uſually annex'd to the *Anti*.

See the *Anti* of *M. Baillet*; and the *Anti-Baillet* of *M. Menage*. There are alſo *Anti-Menagiana*, &c.

Cæſar the Dictator wrote two Books by way of Anſwer to what had been objected to him by *Cato*; which he call'd *Anti-Catones*; mentioned by *Juvenal*, *Cicero*, &c. —*Vives* aſſures us, he had ſeen *Cæſar*'s *Anti-catones* in an antient Library.

ANTIADES, a Term uſed by ſome Writers for the Glandules, and Kernels, more commonly called *Tonſils* and *Almonds of the Ears*. See TONSIL, ALMOND, and AMYGDALA, &c.

ANTIADIAPHORISTS, ANTIADIAPHORISTÆ, thoſe oppoſite to the *Adiaphoriſts*. See ADIAPHORIST.

This Name was given, in the XVIth Century, to the rigid *Lutherans*, who diſavow'd the Eſpiſcopal Juriſdiction, and many of the Church Ceremonies, retain'd by the Moderate *Lutherans*. See LUTHERAN.

The Word is compounded of the Greek ἀντι *contra*, againſt, and ἀδιάφορος, indifferent.

ANTIBACCHIC, ANTIBACCHIUS, in the antient Poetry, a Foot, conſiſting of three Syllables; the two firſt whereof are long, and the third ſhort. See FOOT. Such are the Words *cantare*, *virtute*.

It is ſo called as being contrary to the *Bacchic*, the firſt Syllable whereof is ſhort, and the two laſt long; as *egeſtas*. See BACCHIC.

ANTICARDIUM, in Anatomy, &c. that Part of the Breaſt juſt againſt the Heart, commonly called the Pit of the Stomach.

The Word is compounded of ἀντι, *contra* againſt, and καρδία, *Cor*, Heart.

ANTICHRESIS in the Civil Law, a Covenant or Convention, whereby a Perſon borrowing Money of another, engages, or makes over his Lands to the Creditor, with the Uſe and Occupation thereof, for the Intereſt of the Money lent.

This Covenant was allowed of by the *Romans*; among whom Uſury was prohibited: It was afterwards call'd *Mortgage*, to diſtinguiſh it from a ſimple Engagement, where the Fruits of the Ground were not alienated, which was call'd *Vif gage*. See MORTGAGE.

ANTICHTHONES, in Geography, are thoſe People who inhabit Countries oppoſite to each other.

The Word is Compounded of ἀντὶ, *contra*, and χθὼν, *Terra*.

The Term *Antichthones* is now uſed in the ſame Senſe with *Antipodes*; but the Antients uſed it in a different one.—They conſider'd the Earth as divided by the Equator into two Hemiſpheres, the Northern and Southern; and all thoſe who inhabited one of theſe Hemiſpheres were reputed *Antichthones* to thoſe of the other. In this Senſe the Word is uſed by *Mela* and other antient Authors. See ANTIPODES.

ANTICKS, ANTICK-WORK. See ANTIQUE.

ANTICIPATION, the Act of doing a Thing before the time.—Such a Debt was not yet become due; He *Anticipated* the time of Payment.

ANTICIPATION, in Philoſophy. See PRÆNOTION.

ANTICOR, ANTICOEUR or ANTOCOEUR, or *Avant Cœur*, among Farriers, is uſually deſcribed as a preternatural Swelling, of the Size and Figure of an Apple, occaſioned by a ſanguine and bilious Humour; and appearing in the Horſe's Breaſt oppoſite to his Heart.

A late Author affirms, that the generality of Writers on that Subject have been miſtaken as to this Diſeaſe; attributing it to the Heart, whence it is by *Solleyſell*, called the *Swelling of the Pericardium*; whereas it is really an Inflammation in the Gullet, and Throat; and the ſame that in human Bodies, is called the *Angina*, or *Squinancy*.

ANTIDACTYLUS in Poetry, a Foot in Verſe, contrary to a *Dactyl*; conſiſting of three Syllables, whereof the firſt two are ſhort, and the laſt long. See DACTYL.

ANTIDATE, a ſpurious Date, prior to the true Date of a Writing Inſtrument, Act, Deed, or the like. See DATE.

ANTIDICOMARIANITES, or ANTIDIACOMARIANISTES, antient Hereticks, who pretended that the Holy Virgin had not preſerved her Virginity, but that ſhe had ſeveral Children by *Joſeph*. See VIRGIN.

Their Opinion was grounded on ſome Expreſſions of our Saviour, wherein he mentioned his Brothers, and his Siſters. —The *Antidicomarianites*, were the Diſciples of *Helvidius* and *Jovinian*, who appeared in *Rome* toward the cloſe of the IVth Century.

ANTIDILUVIAN, ſomething before the Deluge. See DELUGE.

In this Senſe, thoſe Generations from *Adam*, till *Noah*'s Flood, are called *Antidiluvians*; and thoſe ſince deſcended from *Noah*, to the preſent time, are called *Poſtdiluvians*. See AGE, PATRIARCH, &c.

Dr. *Burnet*, and Dr. *Woodward* differ very widely about the *Antidiluvian* World; the former imagines its Face and Appearance to have been ſmooth, equable, and in all reſpects different from what we now find them to be.

The latter on the contrary endeavours to prove, that the Face of the terraqueous Globe before the Deluge was the ſame as it is now, *viz.* unequal, diſtinguiſhed into Mountains, and Dales, and having likewiſe a Sea, Lakes, and Rivers; that this Sea was ſalt as ours is; was ſubject to Tides, and poſſeſs'd nearly the ſame Space and Extent that it now does; and that the *Antidiluvian* World was ſtock'd with Animals, Vegetables, Metals, Minerals, &c. that it had the ſame Poſition in reſpect of the Sun which ours now hath, its Axis not being parallel, but inclined, as at preſent, to the Plane of the Ecliptic; conſequently that there were then the ſame Succeſſion of Weather, and the ſame Viciſſitudes of Seaſons, as now. See TERRAQUEOUS, MOUNTAIN, &c. See alſo FOSSIL, &c.

ANTIDOTE, a Remedy taken either to prevent, or cure, Contagion. See PLAGUE, CONTAGION, PRESERVATIVE, &c.

The Word *Antidote* is alſo uſed to ſignify a Medicine taken to prevent the ill Effects of ſome other, for inſtance, Poiſon. See POISON.

In this Senſe the Word has the ſame Signification with Alexipharmic, Alexiterial or Counterpoiſon. See ALEXIPHARMIC, COUNTER-POISON, &c.

The Word is borrow'd from the Greek ἀντὶ, againſt, and δίδωμι, I give; as being ſomething given againſt Poiſon, either by way of Medicine, or Preſervative.

ANTIENT, or ANCIENT, uſually ſtands oppoſed to *Modern*. See MODERN.

The Word comes from the French *Ancien*, of the *Latin Antiquus*. Thus we ſay the *Antient* Architecture, *Antient* Monuments, *Antient* Church. See ARCHITECTURE, &c.

When we ſay abſolutely, the *Antients*, we mean the *Greeks* and *Romans*——Thus, the *Antients* uſed to burn their Dead——The Learned have been greatly divided of late days, with regard to the Preference between the *Antients* and Moderns.

ANTIENT is ſometimes oppoſed to young or new——We ſay the *antient* Biſhop of ſuch a City, when he has reſign'd his See, and a new one is put in his Place. The *antient* Biſhop of *Frejus*, now Cardinal de *Fleury*.

ANTIENTS in Church-Diſcipline. See ELDERS.

The Society of *Grays-Inn*, conſiſts of Benchers, *Antients*, Barriſters, and Students under the Bar: the *Antients* are the Elder Barriſters. See INN, BARRISTER, &c.

In the Inns of Chancery there are only, *Antients* and *Students*, or Clerks; and among the *Ancients*, one is yearly the Principal, or Treaſurer——In the Middle Temple, *Antients* are ſuch as are paſt their Reading, and never read. See TEMPLE.

ANTIENT is ſometimes alſo uſed in a Military Senſe for an *Enſign*. See ENSIGN.

ANTIENTY, in ſome antient Statutes is uſed for *Elderſhip* or Seniority——Thus the eldeſt Siſter can demand no more than her other Siſters beſide the Chief Meſne, by reaſon of her Antienty.

ANTIENT, is alſo the Flag, or Streamer born in the Stern of a Ship. See FLAG, SIGNAL, &c.

ANTIENT *Demeſne*, or *Demain*, is a Tenure, whereby all Manors belonging to the Crown in *William* the Conqueror's, and St. *Edward*'s time, were held. See TENURE and DEMAIN.

The Numbers, Names, &c. hereof were enter'd by the Conqueror, in a Book call'd *Doomſday-Book*, yet remaining in the Exchequer; ſo that ſuch Lands as by that Book appear'd to have belonged to the Crown at that time, are called *Antient Demeſne*. See DOOMS-*Day*.

The Tenants in *Antient Demeſne* are of two ſorts; one who hold their Lands frankly by Charter; the other by Copy of Court-Roll, or by the Verge at the Will of the Lord, according to the Cuſtom of the Manor. See FREE-HOLD, COPY-HOLD, &c.

The Advantages of this Tenure, are, 1. That Tenants holding by Charter cannot be rightfully impleaded out of their Manor; and when they are, may abate the Writ by pleading the Tenure. 2. They are free from Toll for all things relating to their Livelihood and Husbandry; nor can be impanell'd on any Inqueſt.

Theſe Tenants held originally by plowing the King's Land, plaſhing his Hedges, and the like Services, for the maintenance of his Houſhold; and it was on this account ſuch Liberties were given 'em, for which they may have

Writs

Writs to ſuch as take the Duties of Toll, &c. See SERVICE, &c.

No Lands are to be accompted *ancient* Demeſne, but ſuch as are held in Soccage. See MONSTRAVERUNT.

ANTIHECTICKS, ANTIHECTICA, Remedies againſt *Hectical* Diſorders. See HECTIC.

ANTIHECTICUM *Poterii*, in Pharmacy, a celebrated Chymical Preparation, made of equal quantities of Tin, and chalybeated Regulus of Antimony, by melting 'em in a large Crucible, and putting to them, by little and little, three times the quantity of Nitre: the Detonation being over, the whole is waſh'd with warm Water till no ſaltneſs remains.

It is a very penetrating Medicine, making way into the minuteſt Paſſages, and ſearching even the nervous Cells; whence its uſe in *Hectic* Diſorders, from which it derives the Name. See HECTIC.

It is applied to good purpoſe in Heavineſſes of the Head, Giddineſs, and Dimneſs of Sight, whence proceed Apoplexies and Epilepſies; And in all Affections and Foulneſſes of the Viſcera of the lower Belly is reckoned inferior to nothing. Thus it obtains in the Jaundice, Dropſies, and all kind of Cachexies. Dr. *Quincy* adds, that there is ſcarce a Preparation in the Chymical Pharmacy of greater efficacy in moſt obſtinate chronick Diſtempers.

ANTILOGARITHM, is the Complement of the Logarithm of a Sine, Tangent or Secant; or the Difference of that Logarithm, from the Logarithm of ninety Degrees. See LOGARITHM and COMPLEMENT.

ANTILOGY, ANTILOGIA, a Contradiction between two Expreſſions or Paſſages in an Author. See CONTRADICTION.

Tirinus has publiſhed a large Index of the ſeeming *Antilogies* in the Bible; *i. e.* of Texts which apparently contradict each other, but which are explained and reconciled by him, in his Comments on the Bible——A *Malteſe* of the Oratory in *Italy*, has attempted the like; but has done little more than rehearſe what occurs of that kind in the principal Commentators.

The Word is *Greek*, αντιλογια, *q. d.* Contrary Saying.

ANTIMENSIA, a kind of Conſecrated Table-Cloth, occaſionally uſed in the *Greek* Church, in lieu of a proper Altar. See ALTAR.

F. Goar obſerves, that in regard the *Greeks* have but few conſecrated Churches; and that conſecrated Altars are not things eaſy to be removed: That Church has for many Ages made uſe of certain conſecrated Stuffs, or Linnens call'd *Antimenſia*, to ſerve the purpoſes thereof.

ANTIMONARCHICAL, ſomething that oppoſes or ſtands againſt Monarchy, or Kingly Government. See MONARCHY.

Antimonarchical is frequently uſed in the Senſe of *Republican*. See REPUBLIC.

ANTIMONIALS, in Medicine, Preparations of Antimony; or Remedies whereof Antimony is the Baſis, or principal Ingredient. See ANTIMONY.

Antimonials are chiefly of an emetic tendency; tho' they may be ſo qualified as to become either Cathartic, or Diaphoretic, or even only Alterative. See EMETIC, CATHARTIC, &c.

Dr. *Quincy* aſſures, that there are no Medicines in Pharmacy to be compared with theſe in Maniacal Affections: for that there are no Emetics or Cathartics of any other Tribe that are ſtrong enough for ſuch Patients, unleſs in an Overdoſe, which might be dangerous. See MANIA.

An *Antimonial Cup*, made either of Glaſs of *Antimony*, or of *Antimony* prepared with Salt-petre, tho' a Subſtance indiſſoluble by the Stomach, will give a ſtrong Cathartic, or Emetic Quality to any Liquor poured into it; without any diminution of its own weight.

ANTIMONY, ANTIMONIUM, in Natural Hiſtory, a Mineral Subſtance, of a Metalline Nature; having all the ſeeming Characters of a real Metal, excepting Malleability. See MINERAL and METAL.

Antimony is what we properly call a *Semi-Metal*; being a Foſſil Glebe, compoſed of ſome undetermined Metal, combined with a ſulphurous and ſtony Subſtance. See SEMI-METAL.

It is found in Mines of all Metals; but chiefly thoſe of Silver and Lead: That in Gold Mines is uſually held the beſt——It has alſo his own Mines; particularly in *Hungary*, *Tranſylvania*, and *Germany*, and ſeveral Provinces of *France*.

Antimony is found in Clods or Stones of ſeveral ſizes, bearing a near reſemblance to black Lead; only that it is lighter and harder: whence alſo it is called *Marcaſite of Lead*; and its metalline part ſuppoſed to be of that Species. See LEAD.

Its Texture is ſomewhat particular, being full of little ſhining Veins or Threads, like Needles; brittle as Glaſs—— ſometimes there are Veins of a red or golden Colour intermixed, which is called *Male Antimony*; that without 'em being denominated *Female*——It fuſes in the Fire, tho' with ſome difficulty; and diſſolves more eaſily in Water.

When dug out of the Earth, it is put into large Crucibles, fuſed by a violent Fire, and then poured into Cones, or *Antimonial* Horns; which makes the common or crude *Antimony* of the Shops, the Apex whereof is always the beſt and pureſt part, as the Baſis or broadeſt part is the foulеſt.

Antimony is ſuppoſed by many of the Chymiſts to contain the ſeminal Principles of all kind of Bodies; and accordingly the Character whereby it is denoted in their Writings, is the ſame with the Character of the Earth; to denote that *Antimony* is a kind of Microcoſm. See CHARACTER and EARTH.

The Uſes of *Antimony* are very Numerous, and Important——It is a common Ingredient in Specula, or burning Concaves, ſerving to give them a finer Poliſh——It makes a Part in Bell-Metal; and renders the Sound more clear—— It is mingled with Tin to make it more hard, white, and ſounding; and with Lead, in the caſting of Printer's Letters, to render them more ſmooth and firm. It is a general Help in the melting of Metals, and eſpecially in caſting of Cannon Balls. See SPECULUM, FOUNDERY, &c.

Antimony is the *Stibium* of the Antients; by the *Greeks* called στιμι——The reaſon of its modern Denomination is uſually referr'd to *Baſil Valentine*, a *German* Monk, who having thrown ſome of it to the Hogs, obſerv'd, that after purging them violently, they immediately grew fat upon it. This made him think that by giving his Fellow-Monks a like Doſe, they would be the better for it. The Experiment however ſucceeded ſo ill, that they all died of it; and the Medicine thenceforward was called *Antimony*, *q. d. Anti-Monk*.

Its ſingular Properties and Effects have occaſion'd it various other Denominations; as *Proteus*, by reaſon of its various forms and appearances, *Lupus*, *Devorator*, *Saturn of the Philoſophers*, *Balneum Solis*, *Lavacrum Leprorum*, &c. all chiefly reſpecting its Faculty of deſtroying, and diſſipating whatever Metals are fuſed along with it, all except Gold; whence its great Uſe in refining and purifying. See REFINING, PURIFYING, GOLD, &c.

Antimony, is particularly uſed in Pharmacy, under various Forms, and with various Intentions——Its medicinal Virtue is ſuppoſed to ariſe from the ſulphurous part in its Compoſition, which being diſſolved by any proper Menſtruum, ſets at liberty an active volatile Salt, or other unknown Principle, to which the Operation is chiefly owing. See ANTIMONIALS. See alſo SULPHUR.

Before the XIVth Century, *Antimony* had no place in Medicine; otherwiſe than as an Ingredient in ſome Coſmeticks: but about that time, *Baſil Valentine* having found a method of preparing, and correcting the dangerous Qualities of its Sulphur, publiſhed a Book, entitled *Currus Triumphalis Antimonii*, wherein he maintained it a ſure Remedy for all Diſeaſes——But, in ſpight of all he could ſay in its behalf, tho' confirmed by Experience, *Antimony* remained in a general Neglect, upwards of 100 Years; till about the beginning of the XVIth Century, when it was brought into Vogue by *Paracelſus*——The Parliament of *Paris*, immediately upon this Reſtoration, condemned the uſe of it in form; and a Phyſician named *Beſnier*, having been found delinquent herein, was excluded the Faculty. It ſeems, a deal of Miſchief had been done by it, for want of knowing the proper ways of Application; ſo that the Arret of Parliament repreſents it as a mere Poiſon——

Several learned Men complained of ſo ſevere and unjuſt a Prohibition; and by a Courſe of happy Experiments brought it into Eſteem again: whence in ſpight of all the Invectives made againſt *Antimony*, by divers Authors, it was at length replaced, in the Year 1657, by Public Authority, among the Number of Purgative Drugs; and was inſerted accordingly in the Pharmacopœia, publiſhed by the Faculty the ſame Year.

Patin did all he could to decry *Antimony*: in his Letters we find an unuſual Vehemence expreſs'd againſt it—— He had even compiled a large Regiſter of Perſons whom the Phyſicians had kill'd by it; which he called *the Martyrology of Antimony*.

Crude ANTIMONY, or *Antimony in Subſtance*, is the Native Mineral *Antimony*, melted down and caſt in Cones, as abovementioned——It is much uſed in Diet-drinks and Decoctions of the Woods, and Compoſitions againſt the Scurvy, as a Diaphoretic, and Deobſtruent. See DIAPHORETIC.

Prepared ANTIMONY is that which has undergone ſome Chymical Proceſs, whereby its Nature and Powers are altered or abated; and this differently, according to the Circumſtances of the Preparation. See ANTIMONIALS.

Antimony, ſays Mr. *Boyle*, alone, or aſſociated with one or two other Ingredients, by a variety of Operations and Compoſitions, might be brought to furniſh a whole Apo-

thecary's Shop: It will anſwer the Phyſician's Intention whether he wants to employ a Cathartic, or an Emetic, a Diuretic, Diaphoretic, Deobſtruent, Bezoardic, Cordial, &c.

Regulus of ANTIMONY, or *Purification of* ANTIMONY. See REGULUS *of Antimony*.

Of this are made the *Pillulæ Perpetuæ*, *Vinum Emeticum*, &c. See PILLULÆ *Perpetuæ*, EMETIC *Wine*, &c.

Glaſs of ANTIMONY, *Vitrum Antimonii*, is crude *Antimony* ground and calcined by a vehement Fire, in an earthen Crucible; till it ceaſe to fume, which is a Proof that its Sulphur is evaporated.——The Calx is then vitrified in a Wind Furnace; upon which it becomes tranſparent, ruddy, and ſhining. See GLASS.

This is the ſtrongeſt Emetic of any Preparation of *Antimony*. See EMETIC.——Yet, if diſſolved in Spirit of Urine, it ceaſes to be either Emetic, or Cathartic; even tho' the Menſtruum be drawn from it.

Flowers of ANTIMONY, is *Antimony* pulverized, and ſublimed in an Aludel; the volatile Parts whereof ſtick to the ſubliming Pot. See FLOWER and SUBLIMATION.

This is alſo a powerful Vomitive; of ſingular Efficacy in maniac Caſes; being the *Herculean* Remedy by which ſome have gain'd ſo much Reputation.

Another ſort of Flowers are made of the Regulus of *Antimony* with Sal-Ammoniac ſublimed as before; which make a Remedy ſomewhat gentler than the former.——*Helmont* alſo gives us a Preparation of *purging Flowers* of *Antimony*. See DIAPHORETIC *Antimony*.

Butter of ANTIMONY, is a white, gummous Liquor; otherwiſe call'd *Icy Oil of Antimony*. It is uſually prepared of crude (tho' ſometimes of Regulus of) *Antimony*, and corroſive Sublimate, by pulverizing, mixing, and diſtilling 'em by a gentle Heat: upon which the Butter riſes into the Neck of the Retort; from which, when full, it is to be melted down into the Receiver, by the Application of live Coals.

It is of a very fiery, corroſive Nature, ſo as to be a Poiſon when uſed internally. Externally it is applied as a Cauſtic, to ſtop Gangrenes, cure Caries's, Cancers, &c. See CAUSTIC.

This Butter may be converted into an Oil, called alſo *rectified Butter of Antimony*; by gently diſtilling it a ſecond time; which renders it more fluid, ſubtile, volatile, and efficacious.——This digeſted with thrice its Weight of Alcohol, makes the purple *Tincture of Antimony*, a Secret highly valued by Mr. *Boyle*, as an excellent Vomit.

The ſame Butter precipitates, by warm Water, into a white, ponderous Powder, or Calx, call'd *Mercurius Vitæ*, and Powder of *Algarot*; reputed a violent Emetic.

Of Butter of *Antimony* is alſo prepared the Bezoar Mineral; by diſſolving the rectified Butter with Spirit of Nitre; then drying the Solution, and applying more Spirit of Nitre; and repeating this a third time. The white Powder remaining at laſt, kept nearly red-hot for half an Hour, is the Bezoardicum Mineral. See BEZOAR.

Cinnabar of ANTIMONY, is prepared of Mercury, Sulphur, and *Antimony* mixed and ſublimed in a luted Bolthead, and a naked Fire.——It is a good Diaphoretic and Alterative. See CINNABAR.

There is alſo a Cinnabar of *Antimony* procured after the Butter of *Antimony* has done riſing, by increaſing the Degree of Fire.——This ſublimed a ſecond time, makes a yet better Cinnabar.

Crocus, or *Liver of* ANTIMONY, is the ſame with what we otherwiſe call *Crocus Metallorum*; excepting that this latter is more mild and leſs emetic; being made by repeated Lotions of the former, in warm Water, and then drying it again to a Powder. See CROCUS *Metallorum*.

It is alſo call'd *Terra Sancta Rulandi*, *Terra Aurea*, *Terra Rubra*, &c.

Diaphoretic ANTIMONY, is prepared of *Antimony* powder'd and mixed with three times the Quantity of Nitre; and the Mixture thrown at ſeveral times into an ignited Crucible: upon which, a Detonation enſues. What remains being kept in Fuſion a quarter of an Hour, turns into a white Maſs call'd *Antimonium Diaphoreticum Nitratum*, or Diaphoretic *Antimony* with Nitre; being hereby bereaved of its emetic and purgative Virtue, and rendred only Diaphoretic. See DIAPHORETIC.

If the Air can have Acceſs to it, it will again become emetic. See AIR.

There is alſo a kind of ſweet Diaphoretic *Antimony*; made of the former, by pulverizing, boiling it in Water, and filtrating the Decoction: Upon which, a white Powder will be left in the Filtre; which being waſhed by repeated Effuſions of warm Water, and dried, is the *dulcified* or *common Diaphoretic Antimony*.——This is given as an Alexipharmic in malignant Fevers, Small-Pox, &c. particularly in caſe of Deliriums. It is alſo applied in ſcorbutic and venereal Diſorders: Though the learned *Boerhaave* abſolutely decries it, as a mere metalline Calx, deſtitute of all medicinal Virtue, and only fit to load and choak up the Body, by its Inactivity and Weight.

Diaphoretic Nitre of ANTIMONY, is made by exhaling the Solution of the preceding Preparation over a gentle Fire to a dryneſs; upon which, there remains a Salt compoſed of Nitre, and the Sulphur of the *Antimony*, call'd *Nitrum Antimoniatum*.——It is no other than a ſort of *Sal Prunellæ*, or *Sal Polychreſtum*; and accordingly is found aperitive, cooling, diuretic; good in inflammatory Fevers, &c. See PRUNELLÆ and POLYCHREST.

Golden Sulphur of ANTIMONY, is made of the Scoria which ariſes in preparing the Regulus; by boiling it, filtrating the hot Decoction, and adding diſtill'd Vinegar: Upon which the whole coagulates, changes into a brown Colour, emits a ſtercoraceous Odor, and precipitates a red Powder. The whole Maſs being waſh'd by repeated Affuſions of Water, till the Liquor come away ſcentleſs and inſipid, and then dried, it becomes a red Powder, called the *Golden Sulphur*, or *Precipitate of Antimony*; either on account of its own Colour, or the yellow one it gives to Glaſs, Metals, &c.——It either proves emetic, cathartic, diuretic, or ſudorific, as its Force happens to be determined. See PURGATIVE.

Ceruſs, or *Calx of* ANTIMONY, is the Regulus diſtilled with Spirit of Nitre, in a Sand-Furnace; what remains after the Fumes are all ſpent, is a white Powder; which being waſh'd ſweet, is the Ceruſs required.——It is diaphoretic; and by many ſet on a footing with the Mineral *Bezoard*.

Magiſtery of ANTIMONY, is crude *Antimony* digeſted with *Aqua Regia* eight or ten Days; to which, Water is then put, but pour'd off again e'er it ſettle: This to be repeated till there remain nothing behind but a yellowiſh Powder; which, being ſuffer'd to ſettle, and the Water decanted off, becomes by repeated Ablutions, an inſipid Magiſtery. See MAGISTERY.

Its Operation is rather cathartic than emetic, tho' ſometimes ſudorific.

ANTIMONY *revivified*, *Antimonium reſuſcitatum*, is prepared of Flowers of *Antimony* and Sal-Ammoniac, digeſted in diſtill'd Vinegar; then exhaled, and the remainder ſweetned by Ablution.——It is emetic, and ſometimes alſo ſudorific; good in Maniacal Caſes, &c.

All theſe Preparations of *Antimony*, how ſevere ſoever alone, may yet be ſo managed, as to operate little or nothing at all in the *Primæ Viæ*, nor be perceived till they are got into the ſmalleſt Veſſels——And then it is they are qualified to combat the Gout, Pox, Evil, &c. See PURGATIVES.

ANTINOMASY, or rather ANTONOMASY, a Figure in Rhetoric, whereby a Noun Appellative is uſed inſtead of a proper Name. See FIGURE and NAME.

Thus we ſay, the *Philoſopher*, inſtead of *Ariſtotle*; the *Orator*, for *Cicero*; the *Apoſtle*, for St. *Paul*, &c.—— Thus alſo we call a voluptuous Perſon, a *Sardanapalus*, &c. And thus we ſay *Henry* the Great, meaning *Henry* IV. of *France*.

The Word is compounded of the *Greek* ἀντι for, and ὄνομα, Name.

ANTINOMY, *Antinomia*, a Contradiction between two Laws, or two Articles of the ſame Law. See LAW.

The Word ſometimes alſo ſignifies an Oppoſition to all Law; whence a Sect of Enthuſiaſts, who are for carrying Goſpel-Liberty above all moral Regards, and ſlight the Motives of Virtue as inſufficient to Salvation, are called *Antinomians*.

The Word is derived from the *Greek* ἀντι, *contra*, and νόμος, *Lex*, Law.

ANTINOUS, in Aſtronomy, a Part of the Conſtellation *Aquila*, or the Eagle. See EAGLE.

ANTIPAGMENTS, *Antipagmenta*. See ANTEPAGMENTA.

ANTIPATHY, ANTIPATHIA, a natural Enmity, or Averſion of one Body to another.——In this Senſe, the Word ſtands oppoſed to *Sympathy*. See SYMPATHY.

Such is commonly ſaid to be between the Salamander and the Tortoiſe, the Vine and the Elm, the Toad and the Weezel, the Sheep and the Wolf, the Olive and the Oak, &c.

Merſenne, in his *Quæſt. Comment. in Geneſ.* gives other more extraordinary Inſtances; as, that a Drum made of a Wolf-Skin, will break another made of a Sheep-Skin: That Hens will fly at the Sound of a Harp ſtrung with Fox-Gut Strings, &c. *See other Matters relating to this Head, under the Articles* SOUND, MUSICK, TUNE, TARANTULA, &c.

Mr. *Boyle* mentions "a Lady, who having a ſtrange *Antipathy* to Honey; and her Phyſician conceiving it in "great meaſure imaginary, mixed a little Honey in a Medicine applied to her Foot: But he ſoon repented his "Curi-

" Curiosity; for it caused a strange Disorder in her, which " ceas'd upon removing of the Medicine. *Useful. of Philos.*" ——Dr. *Mather* relates that " a Gentlewoman in *New-* " *England* swoons upon seeing any one cut their Nails with " a Knife; but is not the least affected, if the same be " done with a Pair of Scissars." *Phil. Transact.* N° 339.

The *Peripateticks* account for *Antipathies* from certain occult Qualities inherent in the Bodies. See OCCULT, PERIPATETIC, *&c.* See also WITCHCRAFT, CONSENT *of Parts*, &c.

Some think that the Term *Antipathy*, can only be applied to any certain purpose, when used with the Restriction of modern Philosophers; among whom it signifies no more than a *Vis Centrifuga*, or repelling Power. See REPELLING and CENTRIFUGAL.

The Word is compounded of the *Greek* αντι, *contra*, against, and παθος, Passion.

ANTIPERISTASIS, in Philosophy, the Action of two opposite Qualities, one whereof, by its Opposition excites and heightens the Force of the other. See QUALITY.

This Word is *Greek*, Αντιπερισταϛις; form'd of αντι, *contra* against, and περιϛαμαι, to stand round: *q. d.* Resistence or Renitency against any thing that surrounds or besets another.——It is usually defined, " the Opposition of a con- " trary Quality, whereby the Quality it opposes becomes " heighten'd, or intended; or the Action whereby a Body " attack'd by another, collects itself, and becomes stronger " by such Opposition; or an Intension of the Activity of " one Quality, by the Opposition of another."

Thus Cold, say the School-Philosophers, on many Occasions exalts the Degree of Heat; and Dryness that of Moisture. See COLD, *&c.*

Thus it is that Quick-Lime is set on fire by the Affusion of cold Water: So Water becomes warmer in Winter than in Summer, by *Antiperistasis*: And to the same Cause it is owing that Thunder and Lightning are excited in the middle Region of the Air, which is continually cold.

This *Antiperistasis* is a Principle of great Use and Extent in the Peripatetic Philosophy.——" 'Tis necessary," according to the Authors of that Class, " that Cold and " Heat be both of them endued with a self-invigorating " Power, which each may exert when surrounded by its " contrary; and thereby prevent their mutual Destruction. " Thus it is supposed that in Summer, the Cold expelled " from the Earth and Water by the Sun's scorching Beams, " retires to the middle Region of the Air, and there " defends itself against the Heat of the superior and in- " ferior. And thus, also, in Summer, when the Air a- " bout us is sultry hot, we find that Cellars and Vaults " have the opposite Quality: so in Winter, when the ex- " ternal Air freezes the Lakes and Rivers, the internal Air, " in the same Vaults and Cellars, becomes the Sanctuary " of Heat; and Water, fresh drawn out of deeper Wells " and Springs, in a cold Season, not only feels warm, but " manifestly smokes."

Mr. *Boyle* has canvass'd this Doctrine thoroughly, in his History of Cold.——'Tis certain that, *à priori*, or considering the reason of the thing abstracted from the Experiments alledg'd to prove an *Antiperistasis*, it appears highly absurd: Since, according to the Course of Nature, one Contrary ought to destroy, not to strengthen another: Beside, that it is an Axiom that natural Causes act as much as they can; which, as to inanimate Creatures, must be allowed physically demonstrative; in regard these act not by choice, but by a necessary Impulse.

'Tis commonly, indeed, alledg'd, as a Proof of a Power Nature has given Bodies of flying their Contraries, that Drops of Water, falling on a Table, collect into little Globules, to avoid the contrary Quality in the Table, and keep themselves from being swallowed up by the dry Wood: but this we can account for on more intelligible Principles, *viz.* the Power of Attraction, and Repulsion. See ATTRACTION and REPULSION.

As to the *Antiperistasis* of Cold and Heat, the Peripatetics talk of those Qualities being surrounded by their Opposites, as if each of 'em had an Understanding and Foresight, that in case it did not gather up its Spirits, and guard against its Antagonist, it must infallibly perish; which is to transform physical Agents into moral ones.

In effect, not only Reason, but Experiment also, concludes against the Notion of an *Antiperistasis*: The leading Argument urged in behalf of it, is, the heating of quick Lime in cold Water: Now, who can sufficiently admire at the Laziness and Credulity of Mankind, who have so long, and generally acquiesced in what they might so easily have found to be false? For if, instead of cold Water, the Lime be quenched with hot, the Ebullition will oftentimes be far greater than if the Liquor were cold. See HEAT.

Again; in freezing a Bason to a Joint-Stool with a Mixture of Snow and Salt, by the Fire-side, 'tis pretended, that the Fire so intends the Cold, as to enable it to congeal the Water that stagnated upon the Surface of the Stool, betwixt that and the bottom of the Vessel. But how little need there is of an *Antiperistasis* in this Experiment, appears hence, that Mr. *Boyle* has purposely made it with good success, in a place where there neither was, nor ever probably had been, a Fire. See FIRE and FREEZING.

The Patrons of an *Antiperistasis* usually plead that Aphoristical Saying of *Hippocrates*, " The Viscera are hottest " in Winter," in behalf of their Opinion: But the only Proof usually brought of such greater Heat, is, that Men then have a greater Appetite; so that the Aphorism supposes Digestion to be made in the Stomach by Heat, which is easily refell'd. See DIGESTION.

Another Argument, urged in favour of an *Antiperistasis*, is borrowed from the Production of Hail, which is presumed to be generated in Summer only, not in Winter; and, according to the Schools, is made in the lowest Region of the Air, by the Cold of the falling Drops of Rain being so highly intended by the Warmth they meet with in the Air near the Earth, as to congeal into a solid form. See the Article HAIL.

As to the refreshing Coldness which subterraneous Places afford in Summer, it may be deny'd that they are then really colder than in Winter; tho' if the contrary were allow'd, it would not necessarily infer an *Antiperistasis*.——'Tis certain, the smoaking of Waters drawn from deep places in frosty Weather, does not necessarily infer such Water to be warmer than at other times when it does not smoke; since that Effect may proceed, not from the greater Warmth of the Water, but from the greater Coldness of the Air. For a Man's Breath in Summer, or in mild Winter Weather, becomes very visible; the cold ambient Air suddenly condensing the suliginous Steams discharged by the Lungs; which, in warmer Weather, are readily diffused in imperceptible Particles through the Air. *See the Articles* WATER, COLD, *&c.*

ANTIPERISTALTIC, in Anatomy, a Motion of the Intestines contrary to the *Peristaltic* Motion. See PERISTALTIC.

The *Peristaltic* Motion is a Contraction of the Fibres of the Intestines from above, downwards; and the *Antiperistaltic* Motion is their Contraction from below, upwards. See INTESTINES.

The Word is derived from the *Greek* αντι, against, περι, about, and παλλω, that which hath the Power of compressing. See VERMICULAR.

ANTIPHONE, ANTIPHONUM, the Answer made by one Choir to another, when the Psalm or Anthem is sung between two. See ANTHEM, CHOIR, *&c.*

ANTIPHRASIS, a sort of figurative Speech which has a contrary meaning to what it carries in appearance.——Or, a kind of Irony, wherein we say one thing and mean the contrary. See FIGURE and IRONY.

The Word is derived from the *Greek* αντι and φρασις, of φραζω, *I speak.*

'Tis a common Error, to make *Antiphrases* consist in a single Word; as when we say that the *Parcæ* are thus call'd by *Antiphrasis*, because they spare no body, *Parcæ quia nemini parcunt.*——St. *Jerom*, in his Epistle to *Riparius* against *Vigilantius*, says he ought rather to be called *Dormitantius per Antiphrasin*, than *Vigilantius*, because he opposed the Christians holding Wakes at the Tombs of the Martyrs.

Sanctius, in his *Minerva*, p. 451. condemns such *Antiphrases*; by reason *Phrasis* is not applicable to a single Word, but signifies *Orationem*, *aut loquendi Modum.* See PHRASE.

That excellent Grammarian defines *Antiphrasis* to be a Form of Irony, whereby we say a thing, by denying what we ought rather to affirm it to be: *Antiphrasis est Ironiæ quædam forma cum dicimus negando id quod debuit affirmari.*——As when we say, *It did not displease me*, or, *He is no Fool*; meaning, *I was pleased with it*, or, *He is a Man of Sense.*——On this Principle, the *Antiphrasis* ought to be ranked among the Figures of Sentences, and not those of Words. See FIGURE.

ANTIPODES, or ANTICHTHONES, in Geography, a relative Term, understood of such Inhabitants of the Earth as live diametrically opposite to one another. See EARTH.

The *Antipodes* are those who live in Parallels of Latitude equally distant from the Equator, the one toward the North, the other to the South; and under the same Meridian, tho 180°, or just half of that Meridian, distant from one another. See PARALLEL and MERIDIAN.

The *Antipodes* have the same degree of Heat and Cold; the same length of Night, and Day; but at contrary times? It being Midnight with one when it is Noon with the other; and the longest Day with one, when shortest with the other. See HEAT, DAY, NIGHT, *&c.*

Again,

Again, as the Horizon of any place is 90° distant from the Zenith thereof; *Antipodes* have the same Horizon. See HORIZON.——And hence, when the Sun rises to one, he sets to the other. See RISING and SETTING.

The Word comes from the *Greek* ἀντὶ, *against*, and πὺς, ποδὸς, *a Foot*.

Plato is said to have first started the Notion of *Antipodes*; and likewise to have given them the Name: As he conceiv'd the Earth to be of a spherical Figure, it was easy for him to infer that there must be *Antipodes*. See EARTH.

Many of the Antients, and particularly *Lactantius* and *Augustin*, laugh'd at the Notion.

The latter of those Fathers is out of his wits to think how Men and Trees should hang pendulous in the Air, their Feet uppermost; as they must do in the other Hemisphere.

And if we may believe *Aventine*, *Boniface* Archbishop of *Mentz* and Legate of Pope *Zachary*, in the eighth Century, declared a Bishop of that Time, called *Virgilius*, a Heretick, for maintaining that there was such a thing as *Antipodes*.

But this Piece of History is controverted by the Authors of the *Mem. de Trevoux*; having been made use of, it seems, by some Persons, to shew that the Church has been mistaken in its Decisions——The only Account extant of the matter, upon which the Tradition is founded, is a Letter of Pope *Zachary* to *Boniface*; wherein he says, "If it "be proved that he maintain that there is another World, "and other Men under the Earth; another Sun, and an- "other Moon; expel him the Church, in a Council; after "first divesting him of the Priesthood, *&c.*" The Authors above-cited endeavour to prove that this Threatening was never executed; and that *Boniface* and *Virgilius* afterwards lived together in good Understanding; and that *Virgilius* was even canonized by the same Pope. *Mem. de Trev. an.* 1708.

They further assert, that were the Story true; the Pope had done nothing contrary to Truth and Equity: in regard the Notion of *Antipodes* was very different in those days, from what it is now——"For besides the Demonstra- "tions of the Mathematicians, say they, the Philosophers "too added their Conjectures; and asserted that the Sea "made two great Circles around the Earth, which divided "it into four parts; that the vast Extent of this Ocean, "and the burning Heats of the torrid Zone, prevented any "Communication between those four parts of the Earth, "so that Men could not be of the same Kind, nor proceed "from the same Original: and this," say our Authors, "was what was meant by the Word *Antipodes* in those "Times."

As to the Sentiments of the Primitive Christians with regard to *Antipodes*; some, rather than admit the Conclusions of the Philosophers, absolutely denied the whole, even the Demonstrations of the Geometricians relating to the Sphericity of the Earth: which is *Lactantius*'s way, *Instit. lib.* iii. *c.* 24. Others only call'd in question the Conjectures of the Philosophers: which is St. *Augustin*'s Method, *de Civit. Dei*, *lib.* xvi. *c.* 9.——After putting the Question, whether there ever were Nations of *Cyclopes*, or Pigmies, or of People whose Feet stood outward, *&c.* he comes to the point of *Antipodes*, and asks, "whether the "lower part of our Earth be inhabited by *Antipodes*"—— He made no doubt of the Earth's being round, nor of there being a part diametrically opposite to ours; but only disputes its being really inhabited. And the Considerations he suggests for that purpose are just enough: As, That they who asserted *Antipodes*, had no History for it; That the lower part of the Earth may be cover'd with Water; and that to place *Antipodes* there, of a different Origin from us, (as must have been the Opinion of the Antients, since they thought it impossible to go from our World to theirs;) is to contradict Scripture, which teaches that the whole Race descended from one Man——Such is the Sentiment of that Critic.

It may be added, that the Christian Fathers were not the only Persons who disputed the Truth of *Antipodes*. *Lucretius* had done it before them at the end of his first Book, *v.* 10, 63, *&c.* See also *Plutarch*, *lib. de Facie in Orbe Lunæ*; and *Pliny*, who refutes the Opinion, *lib.* ii. *c.* 65.

ANTIPRÆDICAMENTS, in Logic. See ANTEPREDICAMENT.

ANTIPTOSIS, a Figure in Grammar, whereby one Case is put for another. See CASE.

The Word comes from the *Greek* ἀντὶ, *pro*, and πτῶσις, *Casus*.

ANTIQUARY, ANTIQUARIUS, a Person who studies and searches after Monuments and Remains of the *Antients*; as, old Medals, old Books, old Statues, Sculptures, and Inscriptions, and, in general, all curious Pieces that may afford any light into Antiquity. See ANTIQUITY. See also MONUMENT, MEDAL, INSCRIPTION, SCULPTURE, STATUE, *&c.*

Formerly there were several other kinds of *Antiquaries*. The *Librarii*, or Copists, *i.e.* those who transcribed in fair legible Characters what had been before written in Notes, were called by this Name. See LIBRARII——They were also denominated *Calligraphi*.

In the chief Cities of *Greece* and *Italy*, there were other Persons of Distinction, called *Antiquaries*, whose business it was to shew Strangers the Antiquities of the Place, to explain the antient Inscriptions, and to give them all the assistance they could in this way of Learning.

This was doubtless a very curious and useful Institution; and might well deserve to be re-established——*Pausanias* calls these *Antiquaries* Ἐξηγητὰς; the *Sicilians* call'd 'em *Mystagogos*.

ANTIQUATED, ANTIQUATUS, something obsolete, or grown out of date, or use. See OBSOLETE.

ANTIQUE, ANTIQUUS, something that is *antient*. See ANTIENT.

The Term is chiefly used by Architects, Sculptors, and Painters; who apply it to such pieces of Architecture, Sculpture, Painting, *&c.* as were made at the time when the Arts were in their greatest perfection, among the antient *Greeks* and *Romans*, *viz.* from the Age of *Alexander the Great* to the time of the Emperor *Phocas*, when *Italy* became over-run by the *Goths* and *Vandals*.

In this sense the Word stands opposed to *Modern*. See MODERN.

Thus we say, an *antique* Building, or a Building *after the Antique*; an *antique* Bust, or Bas Relievo; the *antique* Manner, Taste, *&c.*

ANTIQUE is sometimes even contradistinguish'd from *antient*, which denotes a lesser degree of Antiquity, when the Art was not in its utmost Purity: Thus, *antique* Architecture is frequently distinguish'd from *antient* Architecture. See ARCHITECTURE.

Some Writers use the Compound *Antiquo-modern*, in respect of old *Gothic* Churches and other Buildings; to distinguish them from those of the *Greeks* and *Romans*.

ANTIQUE *Work*. See ANTIC *Work*.

ANTIQUITY, ANTIQUITAS, antient Days; or the Times past long ago. See AGE, TIME, ANTIQUE, ANTIENT, *&c.*

Thus we say, the Heroes of *Antiquity*, the Marks of *Antiquity*, *&c.*

ANTIQUITY is also used in respect of the Remains, or Monuments of the Antients. See MONUMENT, REMAINS, RUINS, *&c.*

Thus we say, the *Antiquities* of *Greece*, the *Jewish Antiquities*, *Roman Antiquities*, *&c.*——The *Chinese* are infinite Admirers of *Antiquity*.

ANTISCII, or ANTOECI, in Geography, the People who inhabit on different sides of the Equator; and who, of consequence, at Noon, have their Shadows projected opposite ways. See SHADOW.

The People of the North are *Antiscii* to those of the South; the one projecting their Shadows, at Noon, towards the North Pole, and the others towards the South Pole.

Antiscii are frequently confounded with *Antœci*, who inhabiting opposite sides of the Equator, have the same Elevation of Pole. See ANTOECI.

The *Antiscii* stand contradistinguish'd from *Periscii*, *&c.* See PERISCII.

ANTISCII are sometimes also used among Astrologers, for two Points of the Heavens equally distant from the Tropics——Thus the Signs *Leo* and *Taurus* are held *Antiscii* to each other.

The Word comes from the *Greek* ἀντὶ, *against*, and σκιὰ, *Shadow*.

ANTISCORBUTICKS, Remedies against the *Scorbutus* or *Scurvy*. See SCORBUTUS. See also DETERGENT.

ANTI-SPODIUM. See SPODIUM.

ANTI-SIGMA, a Mark in the antient Writings, when the Order of the Verses is to be changed.

ANTISPASTUS, in the antient Poetry, a Foot in Verse, having the first Syllable short, the second and third long, and the fourth short. See FOOT and VERSE.

ANTISTITIUM, a Term used in antient Histories, for a *Monastery*. See MONASTERY.

ANTISTROPHE, a Figure in Grammar, whereby two Terms or Things mutually dependent one on another, are reciprocally converted. See FIGURE and CONVERSION.

As, if one should say, the *Master* of the *Servant*, and the *Servant* of the *Master*.

ANTISTROPHE was also a kind of Dance in use among the Antients; wherein they stepped sometimes to the Right, and sometimes to the Left, still doubling their Turns or Conversions. See DANCE.

The Motion towards the Left, they called *Antistrophe*; from ἀντὶ, *against*, and στροφὴ, of στρέφω, *I turn*. See STROPHE ——Hence

ANTI-

ANTISTROPHE, is also used in Lyric Poetry, in respect of an Ode, which is usually divided into the *Strophe*, *Antistrophe* and *Epode*. See ODE.

The *Antistrophe* is a kind of Eccho, or Replication to the *Strophe*; and the *Epode* a launching out from them both. See STROPHE and EPODE.

ANTITACTÆ, or ANTITACTICI, in Antiquity, a kind of Gnosticks, who own'd that God, the Creator of the Universe was good and just; but asserted withal, that one of his Creatures had created Evil, and had engaged us to follow it, in order to set us in opposition to God the Creator; and that it becomes our Duty to oppose this Author of Evil, in order to avenge God of his Enemy. See GNOSTICKS.

Hence comes their Name; which is derived from the *Greek* ἀντιτάττω, I oppose, I am contrary.

ANTITENAR, in Anatomy, a Muscle of the Thumb; whose Office is to draw it to the Fingers——It rises from the Bone of the *Metacarpus* that sustains the Fore-finger, and is inserted into the first Bone of the Thumb. See FINGER.

ANTITENAR is also the Name of a Muscle of the great Toe; which arising from the inferior part of the third *Os Cuneiforme*, and passing obliquely, is inserted into the inside of the *Ossa Sesamoidea*. See TOE.

The Word is compounded of the *Greek* ἀντι, against; and τένας; as being Antagonist to the *Tenars*. See TENAR.

ANTITHESIS, in Rhetorick, a setting two things by way of Opposition to each other, that the Excellency of the one, and the Folly of the other may appear the more strongly. See OPPOSITE and OPPOSITION.

Such is that of *Cicero*, in the second *Catilinarian*: "On "the one side stands Modesty, on the other Impudence; on "the one Fidelity, on the other Deceit; here Piety, there "Sacrilege; here Continency, there Lust, &c."——Such also is that of *Augustus* to some seditious young Men, *Audite, Juvenes, Senem, quem Juvenem senes Audivere*——Such again is that of *Seneca*, *Curæ Leves loquuntur, Ingentes stupent.*

St. Austin, *Seneca*, *Salvian*, and many other antient Writers, seem greatly to affect *Antitheses*; but among the Moderns they are generally decried. *Desmarets* represents 'em as the Favourites of young Writers.

Persius long ago declaimed against the impertinent use of *Antithets.*

——*Crimina Rasis*
Librat in Antithetis, *doctus posuisse Figuras.*

ANTITHESIS is also a Figure in Grammar, whereby one Letter is substituted in the room of another; as *olli* for *illi*.

The Word is deriv'd from the *Greek* ἀντίθεσις, Opposition.

ANTITHETARIUS, a Term occurring in the Title of a Chapter in the Laws of *Canutus*, *viz.* Capit. 47. but not in the Chapter it self. The meaning of the Word, is where a Man endeavours to discharge himself of the Fact of which he is accused, by recriminating, *i. e.* by charging the Accuser with the same Fact. See RECRIMINATION.

ANTITHET, ANTITHETON, an Opposite, or Contrary; something disposed by way of Antithesis. See ANTITHESIS.

ANTITRAGUS, in Anatomy, part of the Auricle opposite to the *Tragus*. See TRAGUS, AURICLE and EAR.

ANTITRINITARIANS, Hereticks who deny the holy Trinity, and teach that there are not three Persons in the God-head. See TRINITY and GOD.

Thus the *Photinians*, who do not believe the Distinction of Persons in God; the *Arians*, who deny the Divinity of the Word; and the *Macedonians*, who deny that of the Holy Spirit, were all properly *Antitrinitarians*. See PHOTINIAN, ARIAN, and MACEDONIAN.

Among the Moderns, *Antitrinitarians* are particularly understood of *Socinians*, call'd also *Unitarians*. See SOCINIAN and UNITARIAN.

The *Biliotheca Antitrinitariorum*, or Antitrinitarian Library, is a Posthumous Work of *Christopher Sandius*, an eminent *Antitrinitarian*; wherein he gives a List digested in Order of Time, of all the Socinian or modern *Antitrinitarian* Authors, with a brief Account of their Lives, and a Catalogue of their Works.

ANTITYPE, a *Greek* Word, properly signifying a Type or Figure corresponding to some other Type. See TYPE.

The Word *Antitype*, Αντιτυπος, occurs twice in the New Testament, *viz.* in the Epistle to the *Hebrews*, IX. 24. and in St. *Peter*, 1 *Ep.* III. 21. where its genuine Import has been much controverted——The former says, that "Christ "is not entered into the Holy Places made with Hands, "which are ἀντίτυπα, the Figures or *Antitypes* of the true; "now to appear in the Presence of God for us."—Now Τυπος, as is elsewhere observed, signifies the Pattern by which another Thing is made: and as *Moses* was obliged to make the Tabernacle, and all Things in it, according to the Pattern shew'd him in the Mount; the Tabernacle so formed was the *Antitype* of what was shewn to *Moses*: Any Thing therefore formed according to a Model or Pattern, is an *Antitype*.

In the latter Passage, the Apostle speaking of *Noah*'s Flood, and the deliverance of only eight Persons in the Ark from it, says ὃ καὶ ὑμᾶς ἀντίτυπον νῦν σώζει βάπτισμα, *Baptism being an Antitype to that, now saves us; not putting away the Filth of the Flesh, but the Answer of a good Conscience toward God, &c.* The meaning is, that Righteousness, or the Answer of a good Conscience towards God, now saves us by means of the Resurrection of Christ, as formerly Righteousness saved those eight Persons by means of the Ark, during the Flood——The Word, *Antitype*, therefore here signifies a general Similitude of Circumstances; and the Particle ὃ, *whereunto*, refers, not to the immedient Antecedent, ὕδατος, Water, but to all that precedes.

ANTITYPE, among the antient *Greek* Fathers, and in the *Greek* Liturgy, is also applied to the Symbols of Bread and Wine in the Sacrament. See SYMBOL, EUCHARIST, &c.

Hence it has been argued by many Protestants, that the *Greeks* do not really believe the Doctrine of Transubstantiation; in regard they call the Bread and Wine *Antitypes*, αντιτυπα, *q. d.* Figures, Similitudes, even after the Consecration. See GREEK, TRANSUBSTANTIATION, &c.

Clement, in his Constitutions, S. *Cyril*, and *Gregory Nazianzen*, and several other antient Writers, make no scruple of using the Term on the same Occasion; as is allowed by *Leo Allatius*, *Suicer*, &c. *Thesaur. Ecc lesiast.*

M. *Simon* replies to Dr. *Smyth*, who had made this Observation of the *Greeks* calling the Species, *Antitypes*, after Consecration; that the *Greek* Church does not hold the Consecration compleated till after the Prayer call'd *Invocation of the Holy Spirit*, which comes after the Passage of the Liturgy, where the Bread and Wine are call'd *Antitypes.*

Add, that *Marcus Ephesius*, the Leader of the Party against the *Latins*, at the Council of *Florence*; makes use of this very Passage in the *Greek* Liturgy, to prove that the Consecration does not consist wholly in the Words, *This is my Body*; but also in the Prayer or Benediction which the Priest rehearses afterwards, invoking the Holy Spirit. See GREEK.

ANTLER, among Hunters, the first of the Pearls that grow about the Bur of a Deer's Horn. See HEAD.

There are also Sur-*Antlers*, Brow-*Antlers*, &c. See HUNTING.

ANTONOMASIA, in Rhetoric. See ANTINOMASY.

ANTRUM, in Anatomy, the beginning of the Pylorus, or lower Orifice of the Stomach. See PYLORUS and STOMACH.

ANTOECI, in Geography, those Inhabitants of the Earth who live under the same Meridian, and at the same Distance from the Equator; the one towards the North, and the other to the South. See EARTH.

Hence, the *Antœci* have the same Longitude and the same Latitude, only of a different Denomination. See LATITUDE, &c.

The Inhabitants of *Peloponnesus* are *Antœci* to the *Hottentots* of the Cape of *Good Hope*——*Antœci* are frequently confounded with *Antiscii*. See ANTISCII.

The *Antœci* have precisely the same Hours of the Day and Night; but opposite Seasons: when 'tis 12 a-Clock in the longest Summer Day with one; 'tis 12 a Clock of the shortest Winter's Day with the other; and hence the Night of the one is always equal with the Day of the other. See DAY, HOUR, SEASON, &c.

Hence also those Stars which never rise to any given Place, to the *Antœci* and Antipodes thereof never set: and *vice versa*——And if the *Antœci* turn their Faces toward each other, or the Antipodes look both toward the Equator, the Stars will rise to the one on the right Hand, and to the other on the Left. See ANTIPODES, &c.

The Word is form'd of the *Greek* ἀντι, *contra*, and οἰκέω, I dwell, inhabit——The *Antœci* are contradistinguish'd from the *Perioeci*. See PERIOECI.

ANUS, in Medicine, the Extremity of the Intestine *Rectum*; or the Orifice of the Fundament. See RECTUM and FUNDAMENT.

Fistula's in Ano are very difficult of Cure. See FISTULA.

The *Gabionites* sent golden *Anus*'s back with the Ark, to be cured of a Disease which afflicted them in the *Anus*. See ARK.

Sphincter of the Anus, or Sphincter ANI. See SPHINCTER *Ani.*

Levator ANI. See LEVATOR *Ani.*

Scalptor ANI. See ANI-SCALPTOR.

Procidentia, or *Prolapsus* ANI. See PROCIDENTIA *Ani.*

ANUS is also used for a small Hole in the third Ventricle of the Brain, which leads into the fourth Ventricle of the *Cerebellum*. See BRAIN and VENTRICLE.

AORISTUS, Aorist, a Tenſe in the *Greek* Grammar, anſwering to the Præter-perfect of the *Latin* and *Engliſh*. See Tense and Greek.

As, for inſtance, *I lov'd you*——The *Greeks* have two *Aoriſtus's*; the *Latins*, none. See Preter and Preterit.

AORTA, in Anatomy, an Artery, which ariſes immediately out of the left Ventricle of the Heart; and is diſtributed thence thro' all Parts of the Body. See Artery and Heart.

The *Aorta* is otherwiſe called the *great Artery*; as being the Trunk, out of which the other Arteries all ſpring; and the great Conduit or Canal whereby the Blood is convey'd throughout the Body. See Blood and Circulation.

The Word is form'd of the *Greek* ἀορτὴ, which ſignifies a *Veſſel*, *Cheſt*, &c.——The *Aorta* is divided into two grand Trunks, call'd the *Aſcending* and *Deſcending*; *Aorta, aſcendens* and *deſcendens*. See Ascending and Descending.

Oſſifications, or Petrifactions of the Coats of the *Aorta* at its riſe from the Heart, are ſo frequent, that ſome think it a conſtant Caſe.——Mr. *Cooper*, however, has an expreſs Diſcourſe to ſhew that whenever ſuch Oſſification happens in Man, it is a Diſeaſe, and incommodes the Part in the due Execution of its Office. Of this he gives us ſeveral Inſtances; one, in which an Intermiſſion of Pulſe was produced; in another, a Coldneſs of the Extremes with a Gangrene, &c. *Phil. Tranſact.* N° 299.

AONIDES, in Mythology. See Muse.

APAGMA, a Term uſed by ſome Writers in Chirurgery, for the thruſting of a Bone or other Part out of its proper place. See Dislocation.

APAGOGICAL *Demonſtration*, is ſuch as does not prove the thing directly, but ſhews the Impoſſibility and Abſurdity which ariſes from denying it. See Demonstration.

Hence it is alſo call'd, *Reductio ad impoſſibile*, or *ad abſurdum*. See Reduction and Absurdum.

APANNAGE, Apennage, or Appannage. See Appanage.

APELLITÆ, Hereticks in the Primitive Church, who taught that Chriſt left his Body diſſolved in the Air; and ſo aſcended into Heaven without it.

APARTMENT, a Portion of a large Houſe, wherein a Perſon may lodge ſeparately; having all the Conveniencies requiſite to make a compleat Habitation. See House, &c.

A compleat *Apartment* muſt conſiſt at leaſt of a Chamber, an Antichamber, and a Cabinet or Wardrobe. See Chamber, Antichamber, &c.

The Word comes from the *Latin Apartimentum*, of the Verb *partiri*, to divide.

APATHY, a moral Inſenſibility; or a Privation of all Paſſion, all Motion, or Perturbation of Mind. See Passion.

The *Stoicks* affected an entire *Apathy*: their wiſe Man was to enjoy a perfect Calmneſs or Tranquillity of Mind, incapable of being ruffled, and above the reach of any Senſe either of Pleaſure or Pain. See Stoicks, Pleasure and Pain.

The Word is form'd of the privative Particle α, and παθος, Paſſion.

In the firſt Ages of the Church the Chriſtians adopted the Term *Apathy*, to expreſs a Contempt of all earthly Concerns; a State of Mortification, ſuch as the Goſpel preſcribes. And hence we find the Word often uſed among the devouter Writers: *Clemens Alexandrinus*, in particular, brought it exceedingly in vogue; thinking hereby to draw the Philoſophers to Chriſtianity, who aſpired after ſuch a ſublime pitch of Virtue.

Quietiſm, is only *Apathy* diſguiſed under the appearance of Devotion. See Quietism.

APATURIA, in Antiquity, Feaſts celebrated by the *Athenians* in honour of *Bacchus*. See Feast.

The Word is derived from the *Greek* ἀπάτη, Fraud.—— It is ſaid to have been inſtituted in memory of a fraudulent Victory, obtain'd by *Melanthus* King of *Athens*, over *Xanthus*, King of *Beotia*, in a ſingle Combat, which they agreed upon, to put an end to a Debate between 'em relating to the Frontiers of their Countries.——Hence *Budæus* calls it *Feſtum Deceptionis*, the Feaſt of Deceit.

This Feaſt laſted four Days: The firſt Day, thoſe of the ſame Tribe made merry together; and this they call'd Δόρπια. The ſecond Day, which they call'd Ἀνάδρομος, they ſacrificed to *Jupiter* and *Minerva*. The third Day, which they call'd Κουρεῶτις, ſuch of their young Men and Maids as were of Age, were admitted into their Tribes. The fourth Day they call'd Ἐπίδεια.

Other Authors give a different Etymology of this Feaſt, from what we have now related: They tell us, that the young *Athenians* were not admitted into the Tribes on the third Day, till their Fathers had firſt ſwore that they were their own Children; and that till that time they were ſuppoſed, in ſome meaſure, to be without Fathers, ἀπάτορες, whence the Feaſt, ſay they, took its Name.

Xenophon, on the other hand, informs us, that the Relations and Friends met on this occaſion, and join'd with the Fathers of the young People who were to be received into the Tribes; and that from this Aſſembly the Feaſt took its Name: that in Ἀπάτουρια, the α far from being a Privative, is a Conjunctive, and ſignifies the ſame thing with ὁμοῦ, together.

APEPSY, Apepsia, in Medicine, a want of Digeſtion. See Digestion.

Apepſia, is a Defect in the Stomach, which prevents the Aliment taken in from affording a proper Chyle for ſupplying the Blood and nouriſhing the Body. See Food, Stomach, Chyle, Blood, Nutrition, &c.

The Word is form'd from the privative Particle α, and πέπτω, *coquo*, I boil, or concoct.

APERIENS, or *Aperient*, or *Aperitive*, in Medicine. See Aperient.

The Word is *Latin*; being the Participle of the Verb *Aperire*, to open; *q. d. opening*.

Crocus Martis Aperiens, *opening Saffron of Iron*, is a Preparation of Iron-Plates or Filings, made by expoſing them to the Rain or Dew, till they contract a Ruſt; which is the Medicine required. See Crocus and Mars. See alſo Air, &c.——it is a good *Aperient*.

Aperiens *Palpebram Rectus*, in Anatomy, is a Muſcle, which riſing in the Orbit of the Eye, near the entrance of the Optic Nerve; paſſes over the attollent Muſcle of the Eye, and is at laſt inſerted into the whole ſuperior Part of the upper Eye-lid, which it ſerves to open. See Eye and Palpebra.

APERIENTS, or Aperitive *Medicines*, are ſuch as open the obſtructed Paſſages of the ſmall Veſſels, Glands, and Pores; and by that means promote a due Circulation of the contained Juices. See Obstruction, Capillary, Gland, Circulation, &c.

Aperients, then, coincide with Deobſtruents. See Deobstruent.

The five leſſer *Aperient*, or opening Seeds, are Graſs, Madder, Eryngo, Capers and Cammock.——The greater opening Seeds are Smallage, Fennel, Aſparagus, Parſly, and Butcher's Broom.

APERTIONS, in Architecture, are the Openings in a Building; as Doors, Windows, Stair-caſes, Chimneys, Outlets and Inlets for Light, Smoke, &c. See Building. See alſo Door, Window, &c.

The *Apertions* ſhould be as few as may be; it being a Rule that all Openings are Weakenings.

APERTURE, Apertura, the *Opening* of any thing; or a Hole, Cleft, or vacant Place in ſome otherwiſe ſolid, or continuous Subject. See Opening.

The Word comes from the *Latin Apertura*, of *Aperire*, to open.

In Geometry, *Aperture* is uſed for the Space left between two Lines which mutually incline towards each other to form an Angle. See Angle.

In Optics, *Aperture* is the Hole next the Object-Glaſs of a Teleſcope, or Microſcope; thro' which the Light and Image of the Object come into the Tube, and are thence carried to the Eye. See Object-Glass.

Aperture is alſo underſtood of the Part of the Object-Glaſs itſelf, which covers the former, and which is left pervious to the Rays. See Telescope.

A great deal depends on having a juſt *Aperture*.—— To find it experimentally; apply ſeveral Circles of black ſmutted Paper, each bigger than other, upon the Face of the Glaſs, from the Magnitude of a Pea to the whole Extent of the Glaſs; and with each of theſe, ſeparately, view ſeveral diſtant Objects; as the Moon, Stars, &c. That thro' which they appear the moſt diſtinctly, is to be pitch'd upon.

M. *Auzout* affirms, that he found that the *Apertures* of Teleſcopes ought to be nearly in the ſubduplicate Ratio of their Lengths: But *Huygens*, who firſt introduced the Uſe of *Apertures*, aſſures us he found by experience, that the *Aperture* of an Object-Glaſs, *E. gr.* of 30 Foot, is to be determined by this Proportion: as 30 to 3, that is, as 10 to 1, ſo is the Root of the Diſtance of the Focus of any Glaſs multiply'd by 30, to its *Aperture*: and the focal Diſtances of the Eye-Glaſſes are to be proportional to the *Apertures*.

A *Table of Apertures for Teleſcopes of various Lengths*, &c. See under the Article Telescope.

The greater or leſs *Aperture* of an Object-Glaſs, it is to be noted, does not increaſe or diminiſh the viſible Area of the Object; all that is effected by this, is the admittance of more or leſs Rays, and conſequently the more bright or obſcure Appearance of the Object.

Hence,

Hence, in viewing *Venus* thro' a Teleſcope, a much leſs *Aperture* is to be uſed than for the *Moon*, *Jupiter*, or *Saturn*, becauſe her Light is ſo vivid and glaring——Which Conſideration does a little invalidate and diſturb M. *Auzout*'s Proportion, as is ſhewn by Dr. *Hook*, *Phil. Tranſact.* N° 4.

Apertura Tabularum, in antient Law-Books, ſignifies the breaking open a Laſt Will and Teſtament. See WILL and TESTAMENT.

Apertura Feudi, denotes the loſs of a feudal Tenure, by default of Iſſue to him, to whom the Feud or Fee was firſt granted. See FEE, FEUD, TENURE, &c.

APETALOUS, in Botany, ſomething without Petala or Leaves. See PETALA and LEAF.

The Word comes from the privative Particle α, and πέταλον, *Folium*, a Leaf. See FLOWER, PLANT, &c.

APEX, the Vertex or Summet of any thing. See VERTEX, APICES, &c.

APHÆRESIS, or APHERESIS, in Grammar, a Figure, whereby ſomething is taken away from the beginning of a Word. See FIGURE and WORD.

Thus *Ciconia*, by *Apharesis* is wrote *Conia*.

A like Retrenchment at the end of a Word is call'd *Syncope* or *Apocope*. See SYNCOPE and APOCOPE.

APHELION, or APHELIUM, in Aſtronomy, that Point of the Earth's or a Planet's Orbit, in which it is the fartheſt diſtant from the Sun that it can be. See ORBIT.

Thus a Planet being in A, (Tab. ASTRONOMY, fig. 1.) its utmoſt Diſtance from the Sun S; is ſaid to be in its *Aphelion*. See PLANET, SUN, &c.

In the Syſtem or Suppoſition of the Sun's moving round the Earth; the ſame Point is called the *Apogee*. See APOGEE.

The *Aphelion* ſtands oppoſed to the *Perihelion*. See PERIHELION.

The *Apheliums* of all the primary Planets are at reſt; excepting that thoſe Planets neareſt the Sun, *viz. Mercury*, *Venus*, the *Earth*, and *Mars*, being acted upon by *Jupiter* and *Saturn*, their *Apheliums* move a ſmall matter *in Conſequentia* with reſpect to the fixed Stars, and this in the ſeſquiplicate Ratio of the Diſtance of thoſe Planets from the Sun.

Hence, if the *Aphelium* of *Mars* move 35 Minutes *in Conſequentia*, in reſpect of the fixed Stars in 100 Years; the *Apheliums* of the *Earth*, *Venus*, and *Mercury*, will move in 100 Years, 18 Min. 36 Sec. 11 Min. 27 Sec. and 4 Min. 29 Sec.

The Method of finding the place of the *Aphelion*, is by obſerving ſeveral of the great Digreſſions of the Planet from the Sun; till by two or three repeated Obſervations it be found to remain at a ſtand——In the *Philoſophical Tranſactions*, N° 128. we have a Geometrical Method of finding the *Aphelia* of the Planets, by Dr. *Halley*.

Kepler places the *Aphelium* of *Saturn* for the Year 1700, in 28°. 3′. 44″. of *Sagitarius*: *De la Hire*, in 29°. 14′. 41″.——The *Aphelium* of *Jupiter* in 8°. 10′. 40″. of *Libra*: *De la Hire* in 10°. 17′. 14″.——The *Aphelium* of *Mars* in 0°. 51′. 29″. of *Virgo*; *De la Hire* in 0°. 35′. 25″.——The *Aphelium* of the *Earth* in 8°. 25′. 30″. of *Cancer*——The *Aphelium* of *Venus* in 3°. 24′. 27″. of *Aquarius*; *De la Hire* in 6°. 56′. 10″.——And the *Aphelium* of *Mercury* in 15°. 44′. 29″. of *Sagitarius*; *De la Hire* in 13°. 3′. 14″.

The annual Motion, according to *Kepler*, of the *Aphelium* of *Saturn* is 1′. 11″. of *Jupiter*, 47″. of *Mars*, 1′. 7″. of the *Earth*——of *Venus*, 1′. 18″. and of *Mercury* 1′. 45″. According to *De la Hire*, that of *Saturn* is 1′. 22″. of *Jupiter* 1′. 34″. of *Mars* 1′. 7″. of the *Earth*——of *Venus* 1′. 26″. and of *Mercury* 1′. 39″.

The Word comes from the *Greek* ἀπὸ, from, and ἥλιος, Sun.

APHONY, from the privative Particle α, and φωνὴ, *Vox*, Voice; implies a loſs of Speech, or Voice. See VOICE, &c.

APHORISM, a Maxim, general Rule, or Principle of a Science; or a brief Sentence, comprehending a great deal of Matter in a few Words. See MAXIM, &c.

The Term is chiefly uſed in Medicine and Law.——Thus we ſay the *Aphoriſms* of *Hippocrates*, of *Sanctorius*, of *Boerhaave*, &c. *Aphoriſms* of the Civil Law, &c.

The Word comes from the *Greek* ἀφορισμὸς, of ἀφορίζω, *ſeparo*, *ſeligo*, I ſeparate, I chuſe, *q. d.* choice, or ſelect Sentences. See SENTENCE, AXIOM, &c.

APHRONITRE, APHRONITRUM, a kind of Nitre, mention'd by the Antients; ſuppoſed to be the Spume, or the lighteſt and ſubtileſt Part thereof, emerging to the top. See NITRE.

Some modern Naturaliſts rather take the antient *Aphronitre* to have been a Native Salt-Petre; now call'd *Salt-Petre of the Rock*. See SALT-PETRE.

The Word is compounded of the *Greek* ἀφρὸς, Froth, and νίτρον, Nitre.

APHTHÆ, in Medicine, little Ulcers or Pimples riſing in the Mouth, the Palate, Gums, at the Root of the Tongue, &c. See ULCER, &c.

Sucking Children are particularly ſubject to theſe *Aphthæ*, when either the Nurſe's Milk is corrupted or the Child's Stomach becomes unfit for Digeſtion: for in theſe caſes, the ſharp acrimonious parts of the Milk riſing up, eaſily exulcerate thoſe tender and delicate parts.

There are ſome of theſe *Aphthæ* white, others red, others livid and blackiſh: The white and red are the leaſt dangerous, and the moſt eaſily cured; the livid and black often prove mortal.

When they happen in grown Perſons, they are owing to thin, ſerous, and ſharp Humours returned from the ſeveral parts of the Body to the Mouth.

A Liniment of *Mel Roſatum* and Oil of Vitriol, is eſteem'd a good Remedy for the *Aphthæ*.

The Word ſeems derived from the *Greek* φθίω, to corrupt; or from ἅπτω, *accendo*, I kindle.

APHTHARDOCITES, APHTHARDOCITÆ, a Sect of Heretics, ſworn Enemies of the Council of *Chalcedon*.

They aroſe among the *Eutychians*, and made their firſt appearance in the Year 535. See EUTYCHIAN.

The Word is derived from the *Greek* ἄφθαρτος, incorruptible, and ἄρχω, I judge; and was given them, becauſe they imagined the Body of Jeſus Chriſt was incorruptible and impaſſible, and not capable of Death.

APIARY, a *Bee-Houſe*; a Place or Court where Bees are kept.

The Word comes from the *Latin*, *Apis*, a Bee.

The *Apiary* ſhould be ſcreen'd from high Winds on every ſide, either naturally or artificially; and well defended from Poultry, &c. whoſe Dung is offenſive to Bees.

APICES, in Botany, little Knobs growing on the Tops of the *Stamina*, in the middle of Flowers. See STAMINA and FLOWER.

They are commonly of a dark, purpliſh Colour.——By the Microſcope they have been diſcover'd to be, as it were, a ſort of *Capſulæ ſeminales*, or Seed-Veſſels, containing in them ſmall globular, and often oval Particles of various Colours, and exquiſitely formed; called the *Farina Fœcundans*. See FARINA FOECUNDANS.

What the Uſes of theſe are, is not entirely agreed: Some have gueſſed them to be a kind of male Sperm which falling down into the Flower, fœcundates and ripens the Seed. See further under the Article *Generation of* PLANTS.

The Word is *Latin*; being the Nominative plural of *Apex*, the Top or Summet of any thing.

APOBATERION, among the Ancients, ſignified a farewell Speech, or Poem; occaſion'd by a Perſon's departure out of his own Country, or ſome other place where he had been kindly received, and entertained.

Such is that of *Æneas* to *Helenus* and *Andromache*, Æn. Lib. III.——The *Apobaterion* ſtands oppoſed to the Epibaterion. See EPIBATERION.

APOCALYPSE, *Apocalypſis*, q. d. *Revelation*; the Name of the laſt Book in the Canon of Scripture. See CANON and BIBLE.

The *Apocalypſe* contains Diſcoveries, or Revelations relating to many important Myſteries of Chriſtian Faith; made to the Apoſtle St. *John*, in the Iſle of *Pathmos*, during his Baniſhment there under the Perſecution of *Domitian*. See REVELATION.

The Word is form'd of the *Greek* ἀποκαλύπτω, I reveal, I diſcover.

This, of all the Books of the New Teſtament, is that, about which the antient Fathers, and the Practice of the Church, were the moſt and the longeſt divided——St. *Jerom* relates, that the *Greek* Church doubted of its Authentickneſs even in his Days: St. *Baſil* and *Gregory Nazianzen* abſolutely reject it; and the Council of *Laodicea* never mention it in their Canon of the Sacred Writings.

Some attributed it to the Heretic *Cerinthus*; and others, to another *John*, Diſciple of St. *John*——*Dionyſius Alexandrinus* cenſures it as written in bad *Greek*, and even finds Soleciſms and Barbariſms in it, abundance: tho he allows it to contain a myſtic ſenſe, which he ſays he admires even where he does not underſtand.

On the other hand, St. *Juſtin*, *Irenæus*, and St. *Auguſtin*, make no doubt of its being Canonical. The third Council of *Carthage*, held in 397, placed it in the Canon of the New Teſtament; and the Churches both of the *Eaſt* and *Weſt* have acknowledged it ever ſince.

The *Alogians* are repreſented by Eccleſiaſtical Writers, as great Declaimers againſt the *Apocalypſe*, many of the Flights whereof they turn'd into Ridicule; particularly the Viſions of the ſeven Trumpets; the four Angels bound on the River *Euphrates*, &c——St. *Epiphanius* defends it againſt them: The Book, he obſerves, is not a mere Hiſtory, but a Prophecy; ſo that it is no wonder the Author

ſhould

ſhould expreſs himſelf after the manner of the Prophets, whoſe Style is uſually figurative.

Of all their Objections againſt the Authority of this Book, that ſeems the beſt grounded which is drawn from thoſe Words in Cap. ii. ver. 15. *Write to the Angel of the Church of* Thyatira: There was not, ſay they, any Chriſtian Church at *Thyatira* at that time——St. *Epiphanius*, who grants 'em this Point, is forced to have recourſe to the Prophetic Spirit; as if St. *John* had foreſeen there would be a Church there in courſe of time.

Some late Authors have made a good amendment to St. *Epiphanius*'s Anſwer: 'Tis probable, in the time of that Father, the Catalogue of the Biſhops, with other Acts, which ſhew that there had been a Church eſtabliſh'd there from the time of the Apoſtles; might not be known. *Grotius* adds, that tho there was not, indeed, any Church of *Gentile* Converts at *Thyatira* when St. *John* wrote; yet there was one of *Jews*, as there had been another at *Theſſalonica* before St. *Paul* preached there.

Several Orthodox Writers have rejected the *Apocalypſe* as a Book which countenanced the Reveries of *Cerinthus* touching the carnal Reign of Chriſt on Earth. See CERINTHIANS, and MILLENARIES.

Tho *Dionyſius Alexandrinus* allow'd the *Apocalypſe* for an inſpired Writing; yet he took it for the Work of another *John*, beſide St. *John the Evangeliſt*; which he endeavours to make appear from the Diverſity of Style. But we all know how precarious the Arguments are, which are drawn from the mere Conſideration of Style——'Tis true, in moſt of the antient *Greek* Copies, both printed and manuſcript, we find the Name *John the Divine* at the Head thereof; but they who put this Title, meant no more thereby than to denote the Apoſtle St. *John*, whom the *Greek* Fathers call *the Divine*, by way of Eminence, to diſtinguiſh him from the other Evangeliſts. See EVANGELIST.

There have been ſeveral other Works publiſhed under the Title of *Apocalypſes*——*Sozomen* mentions a Book uſed in the Churches of *Paleſtine*, call'd *the Apocalypſe*, or *Revelation* of St. *Peter*. He alſo mentions an *Apocalypſe* of St. *Paul*; which the *Cophtæ* retain to this day. *Euſebius* alſo ſpeaks of both theſe *Apocalypſes*——St. *Epiphanius* mentions an *Apocalypſe* of *Adam*: *Nicephorus*, of an *Apocalypſe* of *Eſdras*: *Gratian* and *Cedrenus*, of an *Apocalypſe* of *Moſes*, another of St. *Thomas*, and another of St. *Stephen*.

Porphyry, in his Life of *Plotin*, makes mention of the *Apocalypſes* or *Revelations* of *Zoroaſter*, *Zoſtrian*, *Nicotheæus*, *Allogenes*, &c.

APOCHYLISMA, among Phyſicians, *Inſpiſſation*; the boiling and thickening of any Juice with Sugar and Honey, into a kind of hard Conſiſtence. See INSPISSATION, &c.

APOCOPE, a Figure in Grammar, wherein the laſt Letter or Syllable of a Word is cut off. See FIGURE and WORD.

The Word is derived from the *Greek* ἀποκόπτω, *to cut off*; which is form'd from the Prepoſition ἀπὸ, and the Verb κόπτω, *I cut*.

A like Retrenchment at the beginning of a Word is call'd *Aphæreſis*. See APHÆRESIS.

APOCRISIARIUS, or APOCRISARIUS, in Antiquity, an Officer appointed to carry or deliver the Meſſages, Orders, and Anſwers of a Prince——He afterwards became his Chancellor, and kept the Seal. In the baſer *Latin* we ſometimes meet with *Aſecreta*, Secretary, for *Apocriſary*.

Zozimus defines the *Apocriſarius*, Secretary for foreign Affairs; being the ſame with what *Vopiſcus* in the Life of *Aurelian* calls *Notarius Secretorum*.

The Title and Quality of *Apocriſary* became at length appropriated, as it were, to the Pope's Deputy or Agent, who reſided at *Conſtantinople* to receive the Pope's Orders, and the Emperor's Anſwer——St. *Gregory* was *Apocriſary* of Pope *Pelagius*, at the time when he compoſed his Morals on *Job*.

The *Apocriſary* did the Office of the modern Nuntio's. See NUNTIO.

Sometimes, however, he had the Rank and Quality of the Pope's Legate. See LEGATE.

The Hereſy of the *Monothelites*, and afterwards that of the *Iconoclaſtes*, broke off the Cuſtom of having a Papal *Apocriſary* at *Conſtantinople*.

The Word is form'd from the *Greek* ἀπόκειμαι, *Reſpondſum*, Anſwer——Hence he is uſually call'd in *Latin*, *Reſponſalis*.

APOCROUSTICS, Medicines intended to ſtop the Flux of malignant Humours, to a part diſeaſed. See REPELLENT.

They are uſually cold, aſtringent, and conſiſting of large Particles; wherein they differ from drawing Medicines, which are hot, and conſiſt of more ſubtile parts. See RIPENERS.

The Word is derived from ἀπόκρυπτω, *pulſo*, *pello*, I drive.

APOCRYPHAL, ſomething *dubious*; or that comes from an uncertain Author, whereon much credit cannot be repoſed.

Thus we ſay, an *Apocryphal* Book, Paſſage, Hiſtory, &c. meaning, ſuch as are of ſuſpected Authority——In Matters of Doctrine, the Writings of Hereticks, Schiſmaticks, &c. are held *Apocryphal*.

Voſſius obſerves, that with regard to the ſacred Books, none are to be accounted *Apocryphal*, except ſuch as have neither been admitted into the Synagogue, nor the Church, ſo as to be added to the Canon and read in public. See CANON, BIBLE, &c.

The Word is derived from the *Greek* ἀποκρύπτειν, to *hide*; becauſe the Origin of ſuch Books was *unknown*, or becauſe they contain'd ſome Myſteries not fit to be known——For this reaſon, the Books of the *Sybils* were antiently call'd *Apocryphal*, as being committed to the Truſt of the *Decemviri* alone: and for the like reaſon the Annals of the *Egyptians* and *Tyrians* were call'd by the ſame Name. See SYBIL, DECEMVIR.

Before the *Septuagint* Verſion, the Books of the Old Teſtament were all *Apocryphal* in this ſenſe——But in proceſs of time, the ſenſe of the Word was changed, and thoſe Books alone were call'd *Apocryphal*, which were of doubtful or ſuſpected Authority.

In the original meaning of the Word, all the Writings depoſited in the Temple were call'd *Apocryphal*; by reaſon they were kept ſecret from the People.

When the *Jews* publiſh'd their ſacred Books, they only gave the Appellations of *Canonical* and *Divine* to ſuch as they thus made public; and ſuch as were ſtill retain'd in their Archives, they call'd *Apocryphal*, for no other reaſon, but becauſe they were not public; ſo that they might be really Sacred and Divine, tho not promulged as ſuch.

Thus, in reſpect of the Bible, all Books were call'd *Apocryphal*, which were not inſerted in the *Jewiſh* Canon of Scripture; and 'tis in this ſenſe St. *Epiphanius* is to be underſtood, when he ſays, That the *Apocryphal* Books are not put in the *Ark* among the other inſpired Writings. See ARK.

There has been a great Diſpute between the Romaniſts and the Reformed, about the Authority of thoſe Books, now call'd, by the latter, *Apocryphal*; as, *Judith*, *Tobit*, *Eſdras*, *Maccabees*, &c. the one having the Opinions of many of the Primitive Fathers for their Vouchers, and the others, the Tradition of their Church.

M. *Simon* contends, that they muſt have been read, in *Greek*, even by the Apoſtles themſelves; which he infers from divers Paſſages in their Writings——He adds, that the Church receiv'd them with the other Books of Scripture, from the *Helleniſt Jews*; and that if the Churches of *Paleſtine* never admitted them, 'twas not for their accounting them *Apocryphal* in the ſenſe the Word is now uſed, but becauſe they read none but what were writ in *Hebrew*.

To this we oppoſe the Authority of a great number of Eccleſiaſtical Writers, particularly among the *Greeks*; who make a preciſe Diſtinction between the Books now call'd *Apocryphal*, and thoſe contain'd in the *Jewiſh* Canon——St. *Jerom*, in particular, is very full upon the Head; and even ſpeaks of his Opinion as the common Opinion of the Church at that time.

APODICTICAL *Argument*, or *Syllogiſm*, ſignifies a clear, convincing Proof, or Demonſtration of a Thing. See DEMONSTRATION, ARGUMENT, &c.

The Word is form'd of the *Greek* ἀποδείκνυμαι, *I demonſtrate*, *I ſhew clearly*.

APOGEE, APOGÆUM, in Aſtronomy, that Point in the Orbit of the Sun, or a Planet, which is furtheſt diſtant from the Earth. See ORBIT and EARTH.

The *Apogee* is a Point in the Heavens, at the Extreme of the Line of the Apſides; in which the Sun, or a Planet, is at the greateſt Diſtance that it can be at, from the Earth, in its whole Revolution. See APSIS, EARTH, PLANET, &c.

The oppoſite Point hereto, is call'd the *Perigee*. See PERIGEE.

The antient Aſtronomers regarding the Earth as the Centre of the Syſtem; chiefly conſider'd the *Apogee* and Perigee: The Moderns, making the Sun the Centre, change the *Apogee* and Perigee for Aphelion and Perihelion. See APHELION and PERIHELION. See alſo SYSTEM.

The *Apogee* has a Motion; the Quantity of which is found by comparing two Obſervations thereof made at a great diſtance of time; converting the difference into Minutes, and dividing it by the number of Years elapſed between the two Obſervations. The Quotient gives the annual Motion of the *Apogee*——Thus, from an Obſervation made by *Hipparchus* in the Year before Chriſt 140, whereby the Sun's *Apogee* was found 5°, 30′ of ♊; and another

another made by *Ricciolus*, in the Year of Christ 1646, wherein it was found 7°, 26′, of ♋; the annual Motion of the *Apogee* is found to be 1′, 2″.

Apogee *of the Moon.* See Moon.

Apogee *of the Equant*, is its farthest Distance from the Earth; or that Point where the Circumference of the Equant is intersected by the Line of the *Apsides*, in the remotest part of the Diameter.

So the *Perigee of the Equant* is the opposite Point, or the nearest part of the Diameter.

The *mean Apogee* of the Epicycle, is a Point where the Epicycle is cut above, by a right Line drawn from its Centre, to the Centre of the Equant, or the Point of the Epicycle most remote from the Earth. See Epicycle.

The Word is form'd of the *Greek* απο, *ab*, from; and γη or γαια, Earth——In the corrupt *Latin*, *Apogee* sometimes signifies a Grotto, or subterraneous Vault.

APOGRAPH, Apographum, a Copy or Transcript of some Book or Writing. See Copy.

In this sense the Word stands opposed to *Autograph*; as a Copy to an Original. See Autograph.

It is form'd of απο, *ab*, from, and γραφω, *scribo*, I write.

APOLLINARISTS, Apollinarians, antient Heretics, who denied that Jesus Christ assumed true Flesh.

Apollinaris of *Laodicea*, their Leader, fancied I know not what strange kind of Flesh, which he supposed to have existed from all Eternity.——He distinguish'd between the Soul of Christ, and what the *Greeks* call νους, *Understanding*; and from this Distinction took occasion to assert, that Christ assumed a Soul without its Understanding, and that this Defect was supplied by the Word: tho' some of his Followers held that Christ had no Soul at all.

Apollinaris further taught, that the Souls of Men were propagated by other Souls, as well as their Bodies——*Theodoret* charges him with confounding the Persons of the Godhead; and with giving into the Errors of *Sabellius*: and *Basil* accuses him of abandoning the literal sense of Scripture, and taking up wholly with the allegorical sense.

This Heresy was very subtile; it was condemn'd in a Synod at *Alexandria*, under St. *Athanasius*, in the Year 362. It was subdivided into several different Heresies, the chief whereof were the *Polemians* and the *Antidicomarianites*. See Antidicomarianite.

Apollinarian *Games*, in Antiquity, *Ludi Apollinares*, were solemn Games held yearly by the *Romans* in honour of the God *Apollo*. See Game.

The Tradition goes, that at the first Celebration hereof, they were suddenly invaded by the Enemy; and obliged to take to their Arms: upon which occasion a Cloud of Darts and Arrows falling upon their Enemies, the *Romans* soon return'd Victors to their Sports.

APOLOGETICAL, Apologetic, something said, or written by way of Excuse, or *Apology* for any Action, or Person. See Apology.

The *Apologetic* of *Tertullian* is a Work full of Strength and Spirit; such as in all respects became the Character of that Father————He there vindicates the Christians from all that had been objected to them, particularly the abominable Crimes said to be perpetrated at their Meetings, and their want of Love and Fidelity to their Country. The Grounds of this last Accusation, was their refusing to take the accustom'd Oaths, and swear by the tutelary Gods of the Empire————*Tertullian* addresses his *Apologetic* to the Magistrates of *Rome*; the Emperor *Severus* being then absent.

APOLOGUE, Apologus, a moral Fable; or a feign'd Relation, intended to inform, and amend the Manners. See Fable.

Such are the Fables of *Æsop*; whence, moral Fables are usually denominated *Æsopic Fables*.

Jul. Scaliger derives the Name απο λογε, λογον, inasmuch as the *Apologue* means something more than what at first sight it expresses.

Father *de Colonia* makes it essential to the *Apologue*, that it contain what passes among Brutes; and distinguishes it from the *Parable*, by this, that the latter, tho' feign'd, might possibly be true, which the former cannot; since Beasts cannot speak. See Parable.

APOLOGY, Apologia, *Defence*; a Discourse or Writing in vindication of a Person. See Defence, Vindication, &c.

The Word is form'd of the *Greek* απολογεομαι, *I refute, I repel with Words.*

APONEUROSIS, among Anatomists, the spreading or Expansion of a Nerve, or Tendon, breadth-wise; in manner of a Membrane. See Nerve and Tendon.

It sometimes also signifies the cutting off a Nerve or Tendon————And in some Writers we find it used for a Tendon itself. See Tendon.

The Word is compounded of the *Greek* απο, *ab*, from; and νευρον, a Nerve.

APOPHLEGMATISMS, are Medicaments, chew'd, in order to draw away Phlegm, and Humours from the Head and Brain. See Masticatory.

Of this kind is Tobacco; which is as excellent as any, abating that it spoils the Teeth; and Sage has almost the same Virtues without the same Defects.

The Word comes from the *Greek* απο and φλεγμα.

APOPHYGE, Apophyges, in Architecture, that part of a Column where it begins to spring out of its Base, and shoot upwards. See Column and Base.

The *Apophyge*, in its Original, was no more, than the Ring or Ferril heretofore fasten'd at the Extremities of wooden Pillars, to keep them from splitting; which afterwards was imitated in Stone-work. See Order.

The Word in its original *Greek* signifies *Flight*; whence the *French* also call it *Escape*, *Conge*, &c. See Conge.

APOPHYSIS, in Anatomy, a Process or Protuberance of a Bone; being a part eminent or jutting out beyond the rest. See Bone, Process, &c.

Such are the Eminences of the *Vertebræ*, the Omoplate, Thigh-bone, &c. See Vertebræ, Omoplate, &c.

Apophyses *Mammillares*, are the Beginnings of the olfactory Nerves; as far as the *Os Cribrosum*, where they divide into little Fibres, which pass thro those Bones, and spread themselves throughout the upper part of the Nose. See Olfactory *Nerve*, Nose, &c.

Apophysis *Mammillaris*, or *Mastoideus*, is also one of the external Eminences of the *Os Petrosum*. See Petrosum.

The Word is *Greek*, and literally denotes a *Production outwards.*

APOPLEXY, in Medicine, a sudden Privation of all the Senses, and all the sensible Motions of the Body, excepting that of the Heart and Lungs; attended with a great Depravation of the principal Faculties of the Soul. See Sensation, Motion, &c.

It differs from a *Carus*, a *Lethargy*, and a *Coma*, in regard that in those three Distempers, the Stupor is not so profound, nor all Sensation quite destroy'd. See Carus, Lethargy, and Coma.

It differs from a *Syncope*, in that there is no sensible Pulse in this last; whereas in an *Apoplexy*, the Pulse is perceptible almost till Death. See Syncope.

It differs from an *Epilepsy*, in regard all Motion is not abolish'd in that as in this: and it differs from the *Palsy*, inasmuch as the Palsy is not attended with any Stupor, nor does it deprive the Patient of Sense and Perception. See Epilepsy and Palsy.

The *Apoplexy* may be occasion'd by an Interruption of the Passage of the Blood towards the Brain; or by any thing that hinders the Influx of the animal Spirits into the Organs of Sense, and the Parts of voluntary Motion: Sometimes it is owing to an abundance of Phlegm, and sometimes to a viscid *Pituita*, wherewith the Brain is oppress'd; as is observable in Winter *Apoplexies*, and in those of old People. It sometimes also comes from too gross a Lympha, which stops up the Nerves; or a Plethora, which oppresses them; or Excrescencies within-side the Cranium, pressing the Vessels; or a Polypus, blocking up the Carotids, &c. See Brain.

In dissecting Persons dead hereof, clotted extravasated Blood is usually found in one or both Ventricles of the Brain. See *Philos. Transact.* N° 173, 313, &c.

Hippocrates distinguishes two kinds of *Apoplexies*, the one *strong*, the other *weak*; only differing in the greater, or less Difficulty of Respiration.

The more modern Authors distinguish *Apoplexies*, from their Cause, into *Sanguineous* and *Pituitous*; to which may be added *Lymphatic*, *Polypous*, &c.

The Fit is usually preceded by a violent Pain in the Head, Dimness and Loss of Sight or Memory: Sometimes by an universal Indolence; and sometimes by a Flux of pituitous Matter by the Nose and Mouth————It is attended with a snoaring and difficulty of breathing; sometimes with a Fever, rarely with a foaming at the Mouth, frequently with a Sweat, Hemorrhoids, or Diarrhæa; and so goes off.

To prevent an *Apoplexy*, Wine and hard Labour are to be avoided; no eating to excess; nor no sleeping after Dinner: Exercise to be kept up, and Care and Chagrin to be kept under.

To cure an *Apoplexy*, Medicines must be used that occasion large Evacuations; and nothing of opiate or astringent meddled withal————During the Fit, copious bleeding in the Jugulars to be used, and the Patient laid on his back; applying strong Volatiles to the Nose; blow up strong Sternutatories, and rub the Temples with Cephalic Mixtures————A hot Iron may also be apply'd near the Vertex or Occiput; an Epispastic to the Neck; to which

are to be added powerful Purgatives, Clysters, &c.—— Cupping and Scarrification on the Head, are commended by some in lieu of Venæsection.

The Disease sometimes degenerates into a Paralysis.—— Sometimes only half the Head is affected; in which Case the Disease is called Hemiplegia. See HEMIPLEGIA, &c.

The Word *Apoplexy*, comes from the *Greek*, ἀποπλήτ]ειν, to strike or astonish; this Distemper striking suddenly, and, as it were, like a Thunder-bolt.

APOPLECTIC *Water*, *Aqua Apoplectica*. See WATER.

APORE, APORON, or APORIME, a Problem difficult to resolve, and which has never been resolved, tho' it be not, in itself, impossible. See PROBLEM.

Such we conceive the Quadrature of the Circle; the Duplicature of the Cube; the Trisection of an Angle, &c. See QUADRATURE, DUPLICATURE, TRISECTION, &c.

The Word is derived from the *Greek* ἄπορον, which signifies something very difficult and impracticable; being formed from the Privative α, and πόρος, Passage.

Hence also the Word *Pore*, which is understood of those imperceptible Passages in Bodies, which make room for the Transpiration of Humours. See PORE.

When a Question was proposed to any of the *Greek* Philosophers, especially of the Sect of Academists; if he could not give a Solution, his Answer was ἀπορῶ, *q. d.* I do not conceive it, I cannot see thro' it, I am not able to clear it up.

APORRHOE, APORRHOES, in Philosophy, sulphureous Effluvia or Exhalations, emitted from the Earth, and subterraneous Bodies. See VAPOUR and Exhalation.

The Word is form'd from the *Greek* ἀπορρέω, *defluo*, I flow from. See MEPHITES, &c.

APOSIOPESIS, in Rhetoric, otherwise called *Reticency*; a Figure, by which a Person really speaks of a thing, at the same time, that he makes a shew as if he would say nothing of it. See RETICENCY.

The Word comes from the *Greek* ἀποσιωπάω, *taceo, reticeo.*

APOSTASY, a deserting or abandoning of the true Religion. See RENEGADO.

Among the *Romanists*, it also signifies the forsaking of a religious Order, whereof a Man had made Profession; without a lawful Dispensation. See ORDER, &c.

The Antients distinguish'd three kinds of *Apostacy*; the first, *a Supererogatione*, is committed by a Priest or Religious, who abandons his Profession, and returns to his Lay State; the second, *a Mandatis Dei*, by a Person of any Condition, who abandons the Commands of God, tho' he retain his Faith; the third, *a Fide*, by him who not only abandons good Works, but also the Faith.

There is this difference betwixt an *Apostate*, and an Heretic; that the latter only abandons a part of the Faith, whereas the former renounces the whole. See HERETIC.

The Word is borrow'd from the *Latin Apostatare*, to despise or violate any thing. Hence

Apostatare Leges, anciently signified to transgress the Laws.——*Qui leges Apostabit terræ suæ, reus sit apud Regem.* L. L. Edw. Confess.

The *Latin Apostatare*, again, comes from the *Greek* ἀπό, and ἵστημι, *sto*, I stand.

APOSTATA *Capiendo*, a Writ which antiently lay against one, who having enter'd and profess'd some Order of Religion; broke out again, and wandred the Country, contrary to the Rules of his Order. See APOSTACY.

APOSTEME, APOSTEMA, APOSTUME, in Medicine, a preternatural Tumor; call'd also *Abscess* and *Imposthume*. See ABSCESS and IMPOSTHUME.

The Word is form'd of the *Greek* ἀπόστημα; which comes from the Verb ἀφίστασθαι, *abscedere*, to depart from one place and fix in another; alluding to the manner wherein the Tumor is usually form'd of a translated Humor. See DERIVATION, FLUXION, REVULSION, &c.

APOSTLE, APOSTOLUS, q. d. *Envoy* or *Messenger*; a Disciple of Jesus Christ, commission'd by him to preach his Gospel, and propagate it to all the Parts of the Earth. See GOSPEL.

St. *Paul* is frequently call'd *the Apostle*, by way of Eminence; and the *Apostle of the Gentiles*, by reason his Ministry was chiefly made use of for the Conversion of the Gentile World, as that of St. *Peter* was for the *Jews*.—— The several *Apostles* are usually represented with their respective Badges or Attributes: St. *Peter*, with the Keys; St. *Paul*, with a Sword; St. *Andrew*, with a Cross or Salteer; St. *James minor*, with a Fuller's Pole; St. *John*, with a Cup and a winged Serpent flying from it; St. *Bartholomew*, with a Knife; St. *Philip*, with a long Staff, whose upper End is form'd into a Cross, ; St. *Thomas*, with a Lance; St. *Matthew*, with a Hatchet; St. *Matthias*, with a Battle-Ax; St. *James major*, with a Pilgrim's Staff and a Gourd-Bottle; St. *Simon*, with a Saw; and St. *Thaddæus*, with a Club.

The Word *Apostle*, ἀποστολ⊕, originally signifies a Person *delegated* or *sent*; from the Verb ἀποστέλλω, *mitto*: In which Sense it occurs in *Herodotus*, and other prophane Authors. ——Hence, in the New Testament, the Term is applied to divers sorts of Delegates; and to the twelve Disciples by way of Eminence.

In this Sense, certain false Preachers of the Gospel antiently disputed *Paul* his Quality of *Apostle*; by reason none but those who had seen Jesus, and been Witnesses of his Actions, could be said to be sent by him——In answer to these sophistical Doctors, who had seduced the Churches of *Galatia*; he begins his Epistle to 'em with these Words, *Paul an Apostle, not of Men nor by Man, but by Jesus Christ and God the Father:* By which he signified that he had his Mission immediately from God; and of consequence was a true *Apostle*.

The name *Apostle* was also attributed to the ordinary travelling Ministers of the Church——Thus St. *Paul*, in the Epistle to the *Romans*, XVI. 7. says, *Salute Andronicus and Junia, my Kinsmen and Fellow-Prisoners, who are of note among the Apostles.*

The Name *Apostle* was also given to those sent by the Churches to carry their Alms to the Poor of other Churches. ——This Usage they borrowed from the Synagogues, who called those whom they sent on this Message, by the same Name; and the Function or Office itself ἀποστολή, *Apostole*, *q. d.* Mission.——Thus St. *Paul* writing to the *Philippians*, tells 'em, that *Epaphroditus* their *Apostle* had ministred to his Wants, Chap. II. 25.

APOSTLE is also used for a Person who first planted the Christian Faith in any place.

Thus St. *Dionysius* of *Corinth* is called the *Apostle* of *France*; St. *Xavier* the *Apostle* of the *Indies*, &c.—— In the *East-Indies*, the Jesuit Missionaries are also call'd *Apostles*. See MISSIONARY, &c.

In some Ages of the Church, the Pope was also denominated *Apostle*. See *Sidon. Apollin.* Lib. VI. Ep. 4. See also POPE and APOSTOLICAL.

In the *Greek* Liturgy, APOSTLE is particularly used for the Epistles of St. *Paul*, printed in the Order wherein they are to be read in Churches, thro' the Course of the Year.—— Another Book of the like kind, containing the Gospels, is call'd Εὐαγγέλιον, Gospel——The *Apostle*, of late Days, has also contained the other canonical Epistles; the Acts of the *Apostles*, and the Revelations. Hence it is also call'd, *Acts of the Apostles*, Πραξαπόστολ⊕; that being the first Book in it. See ACTS *of the Apostles*.

APOSTLE is also used among the *Jews*, for a kind of Officer anciently sent into the several Parts and Provinces in their Jurisdiction, by way of Visitor, or Commissary; to see that the Laws were duly observed, and to receive the Monies collected for the Reparation of the Temple, and the Tribute payable to the *Romans*——The *Theodosian* Code, Lib. XIV. *De Judæis*, calls *Apostoli*, *qui ad exigendum aurum atque argentum a Patriarcha certo Tempore diriguntur.* The *Jews* call'd 'em שליחון, *Schelihhin*, *q. d.* Envoys, Messengers.

Julian the Apostate remitted the *Jews* the *Apostole*, Αποστολή; that is, as he himself explains it, the Tribute they had been accustom'd to send him.

These *Apostles* were a degree below the Officers of the Synagogues call'd Patriarchs, and received their Commissions from 'em.——Some Authors observe, that St. *Paul* had bore this Office; and that 'tis this he alludes to in the beginning of the Epistle to the *Galatians:* as if he had said, *Paul*, no longer an *Apostle* of the Synagogue, nor sent thereby to maintain the Law of *Moses*, but now an *Apostle* and Envoy of Jesus Christ, &c.—St. *Jerom*, tho' he does not believe that St. *Paul* had been an *Apostle* of this kind; yet imagines that he alludes thereto, in the Passage just cited.

In the Arsenal of *Bremen* there are twelve large Pieces of Cannon call'd the twelve *Apostles*; on a Supposition that the whole World must be convinced, and acquiesce in the Preachings of such *Apostles*.

APOSTOLIC, APOSTOLICAL, APOSTOLICUS, something that belongs to the *Apostles*, or descends from them. See APOSTLE.

Thus we say the *Apostolical* Age, *Apostolical* Doctrine, *Apostolical* Character, &c.——The *Romanists* call their Church, the Catholic and *Apostolic* Church; and thus appropriate a Title to *Rome*, which anciently was held in common with it by several other Churches.

In the Primitive Church, the Appellation *Apostolic* was attributed to all such Churches as were founded by the *Apostles*; and even to the Bishops of those Churches, as being the reputed Successors of the *Apostles*.——These were confined to four; *viz. Rome*, *Alexandria*, *Antioch*, and *Jerusalem*.

In After-times other Churches assumed the same Quality, on account, principally, of the Conformity of their Doctrine with

with that of the Churches which were *Apoſtolical* by Foundation, and becauſe all Biſhops held themſelves Succeſſors of the Apoſtles. See BISHOP.

The firſt time the Term *Apoſtolical* is attributed to Biſhops, as ſuch, is in a Letter of *Clovis*, to the Council of *Orleans*, held in 511; tho' that King does not there expreſsly denominate 'em *Apoſtolical*, but *Apoſtolica ſede Digniſſimi*, Highly worthy of the *Apoſtolical* See. In 581 *Guntram* calls the Biſhops met at the Council of *Maſon*, *Apoſtolical* Pontiffs, *Apoſtolici Pontifices*.

In progreſs of Time, the Biſhop of *Rome* growing in Power above the reſt; and the three Patriarchates of *Alexandria*, *Antioch* and *Jeruſalem* falling into the hands of the *Sarazens*; the Title *Apoſtolical* became reſtrained to the Pope and his Church alone——Tho' ſome of the Popes, as St. *Gregory* the Great, not contented to hold the Title by this Tenure, began, at length, to inſiſt, that it belong'd to 'em by another and peculiar Right, as being the Succeſſors of St. *Peter*.

And hence a Legion of *Apoſtolicals*; *Apoſtolical* See, *Apoſtolical* Nuntio, *Apoſtolical* Notary, *Apoſtolical* Brief, *Apoſtolical* Chamber, &c.

APOSTOLOCI, call'd alſo APOSTOLI, and APOSTLES, a Name aſſum'd by two different Sects of Hereticks, on account of their pretending to imitate the Manners and Practice of the Apoſtles. See APOSTLES.

The firſt *Apoſtolici*, otherwiſe call'd *Apotactitæ* and *Apotactici*, roſe out of the *Encratitæ*, and *Cathari* in the IIId Century. They made profeſſion of abſtaining from Marriage, and the uſe of Wine, Fleſh, Money, &c. See APOTACTITÆ, ENCRATITÆ, &c.

The other Branch of *Apoſtolici* were of the the XIIth Century: Theſe alſo condemned Marriage, but allow'd of Concubinage; ſet aſide the uſe of Baptiſm; and in many things imitated the *Manichees*. St. *Bernard* wrote againſt 'em.

APOSTOLORUM *Unguentum*, the *Apoſtles Ointments*, in Pharmacy, is a kind of detergent, or cleanſing Unguent, compoſed of twelve Drugs; the Number of the *Apoſtles*, whence its Name. See UNGUENT. It was invented by *Avicenna*, and is otherwiſe called *Unguentum Veneris*.——

The principal Ingredients are Turpentine, Reſin, Wax, Gum Ammoniac, Birth-wort Roots, Olibanum, Bdellium, Myrrh, and Galbanum, Opopanax, Verdigreaſe, Litharge, Oil of Olives and Vinegar. See DETERGENT, &c.

APOSTROPHE, in Rhetoric, a Figure, whereby the Orator, in an extraordinary Commotion, turns his Diſcourſe from the Audience, and directs it to ſome other Perſon, or thing. See FIGURE.

Thus *Cicero*, in his Oration for *Milo*, addreſſes himſelf to the Great Patriots who had ſhed their Blood for the Public; and calls 'em to the defence of his Client. So the ſame Orator in his firſt *Catilinarian* directs himſelf to *Jupiter* the Protector of the City and Empire, and beſeeches him to repel the Parricide, &c.

The *Apoſtrophe* is frequently alſo addreſs'd to Inanimates, as Tombs, Monuments, Defuncts, &c.——*Cicero*'s *Apoſtrophe* to *Tubero*, in his Oration for *Ligarius*, is judg'd one of the fineſt Paſſages in his Works.

That *Apoſtrophe* of *Demoſthenes*, wherein he addreſſes himſelf to the *Greeks* ſlain at the Battle of *Marathon*, is famous. Cardinal *Perron* ſays, it has procured the Orator as much Glory as if he had rais'd 'em from the Dead.

The Word is *Greek* αποστροφη, *averſio*; form'd of απο, *ab*, from, and στρεφω, *verto*, I turn.

APOSTROPHE, in Grammar, is an Accent or Character, placed over a Letter, in lieu of a Vowel, to denote that the Vowel is cut off, and not to be pronounced. See ACCENT and CHARACTER. As in *Ev'n* for *Even*; *Th'Angelic Hoſt*, for *The Angelic*, &c.—The affectation of frequent *Apoſtrophes*, ſo uſual among ſome late *Engliſh* Writers, is a great Abuſe. See ANOMALOUS.

APOTACTITÆ, or APOTACTICI, an antient Sect, who affecting to follow the Evangelical Counſels of Poverty, and the Examples of the Apoſtles, and primitive Chriſtians, renounc'd all their Effects and Poſſeſſions. See APOSTOLICI.

It does not appear that they gave into any Errors during their firſt State: Some Eccleſiaſtical Writers aſſure us, they had divers Holy Virgins, and Martyrs, under the Perſecution of *Dioclefian*, in the IVth Century: but they afterwards fell into the Hereſy of the Encratitæ, and taught that the renouncing of all Riches, was not only a Matter of Council and Advice, but of Precept and Neceſſity——And hence the 6th Law in the *Theodoſian* Code joyns the *Apotactitæ* with the *Eunomians* and *Arians*. See EUNOMIAN and ARIAN.

The Word is form'd of the *Greek* αποτασσω, or αποτατ∫ω, I renounce——

APOTHECARY, a Perſon who practiſes Pharmacy, or that part of Phyſick which conſiſts in the Preparation and Compoſition of Medicines, See PHARMACY and MEDICINE.

Nich. Langius has wrote a large Volume expreſsly againſt the *Apothecaries*, their *quid pro quo's*, Ignorance in the *Materia Medica*, and ſuffering themſelves to be ſo eaſily impoſed on by foreign Merchants, Druggiſts, &c. who ſupply 'em with adulterated Drugs, one ſort for another, old Effœte exhauſted ones, for new ones juſt imported from the *Levant*, &c. See DRUGS, QUID *pro Quo*, &c.

The Apothecaries in *England* are obliged to make up their Medicines, according to the Formula's preſcribed in the College Diſpenſatory. See DISPENSATORY, OFFICINAL, &c.——Their Shops are ſubject to the Viſitation of the Cenſors of the College; who are empowered to deſtroy ſuch Medicines as they think good. See COLLEGE.

Bartholin complains of the too great number of Apothecaries in *Denmark*; tho' there were but three in *Copenhagen*, and four in all the Kingdom beſide: What would he have ſaid of *London*, where there are upwards of 1300?

The Word is derived from the *Greek* αποθηκη, Shop, by way of Eminence.

APOTHEGM. See APOPHTHEGM.

APOTHEOSIS, in Antiquity, a Heathen Ceremony, whereby their Emperors and great Men were placed among the Gods. See GOD.

After the *Apotheoſis*, which they alſo called *Deification* and *Conſecration*; Temples and Altars were erected to the new Deity, and Sacrifices, &c. offer'd to him. See DEIFICATION, CONSECRATION, ALTAR, SACRIFICE, &c.

It was one of the Doctrines of *Pythagoras*, which he had borrow'd from the *Chaldees*; that virtuous Perſons, after their Death, were rais'd into the Order of the Gods. See PYTHAGORIANS.

And hence the Antients deified all the Inventors of things uſeful to Mankind; and thoſe who had done any important Service to the Commonwealth——*Tiberius* propoſed to the *Roman* Senate the Apotheoſis of Jeſus Chriſt, as is related by *Euſebius*, *Tertullian*, and St. *Chryſoſtom*. *Juvenal* rallying on the frequent *Apotheoſes*, introduces poor *Atlas*, complaining that he was ready to ſink under the Burthen of ſo many Gods as were every day added to the Heavens. See HEAVEN.

Seneca ridicules the *Apotheoſis* of *Claudius* with admirable Humour——*Herodian*, in ſpeaking of the *Apoth oſis* of *Severus*, gives us a very curious Deſcription of the Ceremonies uſed in the *Apotheoſis* of the *Roman* Emperors——After the Body of the deceaſed Emperor, ſays he, had been burnt with the uſual Solemnities, they placed an Image of Wax, perfectly like him, but of a ſickly Aſpect, on a large Bed of Ivory, covered with Cloth of Gold, in the Veſtibule of the Palace. The greateſt part of the Day, the Senate ſat ranged on the left Side of the Bed, dreſs'd in Robes of Mourning; the Ladies of the firſt Rank ſitting on the right Side, in plain white Robes, without any Ornament——This laſted for ſeven Days ſucceſſively, during which, the Phyſicians came from time to time to viſit the Sick, always making their Report that he grew worſe; till at length they publiſh'd it, that he was dead.

This done, the young Senators and *Roman* Knights take the Bed of State upon their Shoulders, carrying it thro' the *Via Sacra*, to the old *Forum*, where the Magiſtrates were uſed to diveſt themſelves of their Offices. There, they ſet it down between two kind of Amphitheatres, in the one whereof are the Youth, and in the other the Maidens of the firſt Families in *Rome*, ſinging Hymns ſet to ſolemn Airs, in praiſe of the deceaſed. Theſe Hymns ended, the Bed is carried out of the City into the *Campus Martius*, in the middle of which Place is erected a kind of ſquare Pavilion, the Inſide whereof is full of combuſtible Matters, and the Outſide hung with Cloth of Gold, and adorned with Figures of Ivory, and various Paintings.

Over this Edifice are ſeveral others, like the firſt in Form and Decoration, but leſs; always diminiſhing and growing ſlenderer towards the Top.——On the ſecond of theſe is placed the Bed of State, and a great Quantity of Aromaticks, Perfumes, and odoriferous Fruits and Herbs are thrown all around; after which, the Knights make a Proceſſion or Cavalcade in ſolemn Meaſures around the Pile; ſeveral Chariots alſo run round it, thoſe who conduct them being clad in purple Robes, and bearing the Images of the greateſt *Roman* Emperors and Generals.

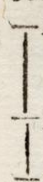
This Ceremony ended, the new Emperor comes to the *Catafalcha* or Pile, with a Torch in his Hand; and at the ſame time, fire is ſet to it, on all Sides; the Spices and other Combuſtibles kindling all at once.

While this is doing, they let fly from the Top of the Building, an Eagle, which mounting into the Air with a Fire-brand, carries the Soul of the dead Emperor along with it into Heaven, as the *Romans* believe; and thenceforward he is rank'd among the Gods——'Tis for this Reaſon, that the Medals, wherein *Apotheoſes* are repreſented, have uſually an Altar with Fire upon it; or however, an Eagle taking its Flight into the Air, and ſometimes two Eagles.

The

The Word *Apotheosis* is derived from the Prepoſition ἀπὸ and θεὸς, Deus, God——

APOTOME, in Mathematicks, the remainder or difference of two incommenſurable Quantities. See Incommenſurable.



An *Apotome* is an irrational Reſidue, as C B, ariſing, when from a rational Line A C, call'd *a*, you cut off a rational part A B, call'd *b*, only commenſurable in power to the whole Line A C——It may be expreſſed thus, $a - \sqrt{b}$

Apotome, in Muſick, is the Part remaining of an entire Tone, after a greater Semi-tone has been taken from it. See Tone and Semi-tone.

The Proportion, in numbers, of the *Apotome* is, of 2048 to 2187. See Degree.

The *Greeks* thought that the greater Tone could not be divided into two equal Parts; for which reaſon they called the firſt part ἀποτομὴ, and the other λεῖμμα; in this, imitating *Pythagoras* and *Plato*.

The Word is deriv'd from the *Greek* Verb ἀποτέμνω, *abſcindo*, I cut off.

APOZEM, in Medicine, a Form of Remedy, otherwiſe call'd a *Decoction*. See Decoction.

Apozems are a Claſs of liquid Medicines, compos'd of Decoctions of divers Plants, Roots, Flowers, Leaves, Fruits, and Seeds, ſweetned and clarified.

It differs from *Syrup*, in Thickneſs and Conſiſtence; the Syrup being more denſe and viſcous than the *Apozem*. See Syrup.

It differs from a *Julep*, in that it is thicker and more viſcous; and is not made with diſtill'd Waters, as Juleps are, but only with Decoctions. See Julep.

There are purging *Apozems*, Cephalic *Apozems*, Hepatic *Apozems*, &c.

The Word is derived from the *Greek* ἀποζέω, *deferveſco*, I grow hot, I boil.

APPANNAGE, Appenage, Appanage, or Apennage, the Fortune of a King's younger Son: or a ſettled Portion of Lands, &c. aſſigned for the Subſiſtence of the Cadets, or younger Sons of a Sovereign Prince. See King, &c.

The younger Sons of *England* have no certain *Appanages*, as in *France*; but only what the good-pleaſure of the King beſtows upon 'em. See Prince, &c.

Even in *France*, during the firſt and ſecond Races of Kings, the Right of Primogeniture and *Appanages* were unknown; but the Domains were divided pretty equally among all the Children. See Primogeniture.

Great Inconveniences ariſing hence; it was at length found proper to put off the younger born with Counties, Dutchies, or other-Diſtricts; on condition of their paying Homage and Fealty for the ſame, and of their reverting in defect of Heirs Male, to the Crown.

This has happened accordingly to the firſt and ſecond Branch of the Dukes of *Burgundy*——The Dutchy of *Orleans* is the *Appannage* of the ſecond Son of *France*.

Nicod and *Menage* derive the Word from the *Latin Panis*, Bread, which frequently includes all other ſorts of Proviſion neceſſary for Subſiſtence. *Du Cange* takes it to have been form'd of the baſe *Latin*, *Apanare*, *Apanamentum*, and *Apanagium*, which amounts to the ſame thing; thoſe Words, being apparently formed of *panis*.

APPARATOR. See Apparitor.

APPARATUS, properly ſignifies a formal Preparation for ſome publick and ſolemn Action. See Preparation.

Thus we ſay, the *Apparatus* of a Feaſt, Coronation, &c. The Prince made his Entry with great *Apparatus* and Magnificence.

Apparatus is alſo uſed for the Utenſils, and Appendages belonging to ſome more conſiderable Machine—— As the Furniture or *Apparatus* of an Air-pump, Microſcope, &c. See Air-*Pump*, Microscope, &c.

Apparatus is ſometimes alſo uſed, in Chirurgery, for the Bandages, Medicaments, and Dreſſings of a Part; or the ſeveral Matters apply'd for the Cure of a Wound, Ulcer, or the like. See Wound, Ulcer, &c.

There is no judging of the Quality of a Hurt, till after taking off the firſt *Apparatus*, or Apparel.

Apparatus is particularly uſed for the Operation of cutting for the Stone. See Stone and Cutting.

There are three ſorts of *Apparatus*; *viz.* the *Small*, *Great*, and *High Apparatus*: *Which ſee deſcribed under the Article* Lithotomy.

The *high Apparatus*, ſaid to have been invented by *De Franco*, is reputed the moſt antient; tho little uſed among us till of late——In this Method an Inciſion is made above the Groin, along the *Linea Alba*, into the Fund of the Bladder; thro which the Stone is extracted.

The *great Apparatus*, invented by *John de Romanis*, a Phyſician of *Cremona*, in the Year 1520; is perform'd by making an Inciſion in the *Perinæum*. See Perinæum.

It is denominated *great* from the number of Inſtruments uſed in it.

The *ſmall Apparatus*, thus call'd from the few Inſtruments it requires, was invented by *Celſus*——Here, the two Fore-Fingers are thruſt up the Fundament till they come againſt the Stone, and drive it to the Neck of the Bladder; from which it is extracted thro an Inciſion *in perinæo*.

Apparatus is alſo uſed as the Title of ſeveral Books compoſed in form of Catalogues, or Dictionaries; for the Eaſe and Conveniency of Study.

The *Apparatus* upon *Cicero*, is a kind of Concordance, or Collection of *Ciceronian* Phraſes, &c.——The *Apparatus Sacer* of *Poſſevinus*, is a Collection of all kinds of Eccleſiaſtical Authors printed in 1611, in three Volumes——Gloſſaries, Comments, &c. are alſo frequently call'd *Apparatus's*.

APPAREL, or Appareil. See Apparatus.

APPARENT, that which is viſible, evident to the Eye, or the Underſtanding. See Appearance.

Heir Apparent. See Heir *Apparent*.

Apparent *Magnitude* of an Object, is the Magnitude thereof ſuch as it appears to the Eye. See Magnitude.

The *apparent* or *ſeeming* Magnitude is meaſured by the Optick Angle. See Optick *Angle*.

Thus the *apparent* Magnitude of an Object is ſaid to be ſo many Degrees as the Optick or Viſual Angle ſubtends. See Angle and Degree.

The *apparent* Magnitudes of diſtant Objects are uſually ſaid to be as their Diſtances, reciprocally. See the Articles Visible and Vision.

In ſtrictneſs, however, it may be demonſtrated, that the *apparent* Magnitudes of the ſame Object A C, (Tab. Optics, fig. 61.) ſeen at different Diſtances, *viz.* at the Places D and B; that is, the Angles A D C and A B C are in a Ratio leſs than the reciprocal Ratio of the Diſtances D G and B G: but when the Object is very remote, *viz.* when the Optick Angles A D C and A B C, are not above one or two Degrees, they are nearly in that Ratio reciprocally.

Apparent *Magnitude* or *Diameter* of the Sun, Moon, or any Planet, is the Quantity of the Angle that their Diameters appear under, to an Obſerver on the Surface of the Earth.

The *apparent* Diameters of the Celeſtial Luminaries are ſubject to ſome Diverſity——That of the Sun is obſerv'd to be leaſt when he is in *Cancer*, and greateſt when in *Capricorn*. See Sun.

In the Moon there is a twofold Increaſe and Decreaſe of her *apparent* Diameter; the one, when ſhe is in the Conjunction, and Oppoſition with the Sun; and the other in her Quadratures.

The greateſt *apparent* Diameter of the Sun, according to *Caſſini*, is 32′, 10″, and the leaſt 31′, 38″.—According to *de la Hire*, the greateſt is 32′, 43″; and the leaſt 31′, 38″——The greateſt *apparent* Diameter of the Moon, according to *Kepler*, is 32′, 44″; and the leaſt 30′, 00″—— And according to *de la Hire*, the one is 33′, 50″; and the other 29′, 30″. See Sun and Moon.

The apparent Diameter of *Saturn*'s Ring, according to *Huygens*, is 1′, 18″, when leaſt. See Saturn.

The apparent *Diameters of the other Planets, ſee under the Article* Diameter.

If the Diſtances of any two remote very Objects, for example, two Planets, be equal, their true Diameters are proportional to the *apparent* ones; and if the *apparent* Diameters be equal, the true Diameters will be as the Diſtances from the Eye——Hence, when neither the Diſtances nor the *apparent* Diameters are equal, the true Diameters will be in a Ratio compounded of the direct Ratio of the Diſtances, and of the direct Ratio of the *apparent* Diameters.

There is a further very obſervable Difference between the *apparent* Magnitudes or Diameters of the Sun and Moon when in the Horizon, from what they are in the Meridian; the reaſon whereof has long perplexed the Philoſophers. See Moon.

Apparent *Place* of any Object, in Opticks, is that wherein it appears, when ſeen thro' one or more Glaſſes. See Place, Optick *Glaſs*, &c.

The *Apparent Place* is different from the real one; for when, by Refraction thro Glaſſes, that parcel of Rays which fall on the Pupil of the Eye, from each Point of any near Object, is made to flow as cloſe together as that which comes from a diſtant one; or when, by the ſame means, the Rays coming from diſtant Objects are made to diverge as much as if they flow'd from near ones; then the Eye muſt neceſſarily ſee the Place of the Object changed: which Change is its *Apparent Place*. See Vision.

If an Object be placed nearer to a convex Glaſs than is the Diſtance of its Focus; its *Apparent Place* may be determined: But if the Object be in the Focus of the Glaſs, the *Locus Apparens* of the Object cannot be determined; only that it will appear vaſtly remote.

Nor

Nor can the *Locus Apparens* be determined, if the Object be beyond the Focus of a convex Glaſs: But if the Object be further diſtant from a convex Glaſs, than its Focus, and the Eye lie beyond the diſtinct Baſe; its *Apparent Place* will be in the diſtinct Baſe. See *the Article* LENS.

Apparent Place of a Star, &c. is a Point in the Surface of the Sphere determined by a Line drawn from the Eye, thro the Centre of the Star, &c. See PLACE.

The true, or real Place, is determined by a Line drawn from the Centre of the Earth, through the Star or Planet.

APPARENT, or *ſenſible Horizon*, is that great Circle which limits our Sight; or the Place where the Heavens and the Earth ſeem to meet. See HORIZON.

It may be conceiv'd as a Cone, whoſe Vertex is the Eye, and its Baſe the circular Plain which terminates our Proſpect——It determines the Riſing and the Setting of the Sun, Moon, or Stars. See RISING, SETTING, &c.

APPARENT *Conjunction*, is when the right Line ſuppoſed to be drawn thro the Centres of two Planets, does not paſs thro the Centre of the Earth, but thro the Eye of the Spectator. See CONJUNCTION.

APPARENT *Motion*, *Time*, &c. See MOTION, TIME, &c.

APPARITION, in Aſtronomy, a Star or other Luminary's becoming viſible, which before was hid——In this ſenſe the Word ſtands oppoſed to *Occultation*. See OCCULTATION.

The *Heliacal* Riſing is rather an *Apparition* than a proper Riſing. See HELIACAL.

Circle of perpetual APPARITION. See CIRCLE *of perpetual Apparition*.

APPARITOR, or APPARITOUR, or APPARATOR, a Beadle in an Univerſity, who carries the Mace before the Maſters and the Faculties. See BEADLE and UNIVERSITY.

APPARITORS are alſo Meſſengers, who cite Men to appear in the Eccleſiaſtical Courts. See SUMMONS, SUMMONER, CITATION, &c.

Among the *Romans*, *Apparitors* were the ſame with Serjeants or Tip-ſtaffs among us; or rather *Apparitor* was a general Term, and comprized under it all the Miniſters and Attendants of the Judges and Magiſtrates, appointed to receive and execute their Orders——And hence, they ſay, the Name was derived, *viz.* from *apparere*, to be preſent, to be in waiting.

Under the Name *Apparitores* were comprehended the *Scribæ*, *Accenſi*, *Interpretes*, *Præcones*, *Viatores*, *Lictores*, *Servi Publici*, and even the *Carnifices* or Hangmen. See SCRIBA, ACCENSI, &c.

They were uſually choſen out of the Freed-Men of the Magiſtrates; and their Condition was held in ſo much Contempt, that as a Mark of Ignominy, the Senate appointed a City that had revolted from them, to furniſh them with *Apparitors*.

There were alſo a kind of *Apparitors of Cohorts*, call'd *Cohortales*, or *Conditionales*, as being attach'd to a Cohort, and doom'd to that Condition—The *Apparitors* of the Prætors, *Prætoriani*, were thoſe who attended the Prætors, or Governors of Provinces; and who, on their Maſter's Birthday, were always chang'd and preferr'd to better Poſts——Add, that the *Pontifices* had alſo their *Apparitors*, as appears from an Inſcription of an antient Marble in the *Via Appia*:

APPARITORI
PONTIFICUM
PARMULARIO.

APPEAL is uſed in Common and Civil Law, to ſignify the removing of a Cauſe from an inferior Judge to a ſuperior; or the having recourſe to a ſuperior Judge to rectify what is amiſs in a Sentence paſs'd by an inferior. See JUDGE and COURT.

Appeals lie from any of the ordinary Courts of Juſtice to the Houſe of Lords, who judge *en dernier Reſſort*; *i. e.* no *Appeal* lies from 'em. See RESSORT, PARLIAMENT, &c.

There are *Appeals* from Eccleſiaſtical Juſtice to Secular.——The firſt Inſtance is that of *Paulus Samoſatenus*, who being condemn'd and depoſed by the ſecond Council of *Antioch*, refuſed to ſurrender the Epiſcopal Houſe to *Domnus*, who had been elected his Succeſſor; and *appealed* to the Emperor.

APPEAL is alſo uſed in Common Law in the ſame ſenſe as *Accuſatio* among the *Civilians*. See ACCUSATION——For, as in the Civil Law, Cognizance of criminal Caſes is taken either upon Inquiſition, Accuſation, or Denunciation; ſo in ours it is taken either upon Indictment or *Appeal*.

Indictment comprehends both Inquiſition and Denunciation——*Appeal* or Accuſation is a lawful Declaration of another Man's Crime (which, by *Bracton*, muſt be Felony at the leaſt) before a competent Judge, by one that ſetteth his Name to the Declaration, and undertakes to make it good on the Penalty that may otherwiſe enſue.

An *Appeal* is commenced two ways; either by Writ, or Bill——*Appeal by Writ*, is when a Writ is purchaſed out of Chancery by one to another; to this end, that he *appeal* a third of ſome Felony committed by him, finding Pledges that he ſhall do it, and deliver this Writ to the Sheriff to be recorded.

Appeal by Bill is, when a Man of himſelf gives up his Accuſation in Writing to the Sheriff or Coroner; offering to undergo the Burden of *appealing* the Perſon therein named.

This Practice is drawn from the *Normans*, as appears from the grand Cuſtomary, wherein is a ſolemn Diſcourſe both of the Effects of this *Appeal*, *viz.* the Order of the Combat, and of the Trial by Inqueſt; which, by our Law, is in the choice of the Defendant. See TRIAL, COMBAT, INQUEST, &c.

APPEAL *of Mayhem*, is an accuſing of one that hath maimed another——But this being no Felony, the *Appeal* thereof is but in manner of an Action of Treſpaſs; ſo that there is nothing recover'd but the Damages.

Bracton calls this *Appellum de Plagiis & Mahemio*, and has a whole Chapter of it.

In King *John*'s time, there is recorded an *Appeal* againſt a *Jew*, *qui fecit ementulari quondam Nepotem ſuum*.

Appeal of wrong Impriſonment, is uſed by *Bracton* for an Action of wrong or falſe Impriſonment. See ACTION, &c.

APPEAL is particularly uſed for a private Accuſation of a Murderer, by one who had Intereſt in the Murder'd Party; or of any Felon by one of his Accomplices in the Fact. See MURDER, FELONY, &c.

If an *Appeal* of Murder or Felony be ſued by any common Perſon againſt a Peer; he ſhall be tried by Commoners, and not by his Peers. See PEER.

The Perſon who brings an *Appeal*, is call'd the *Appellant*; and the Perſon appeal'd, the *Appellee*.

APPEARANCE, the exterior Surface of a Thing; or that which firſt ſtrikes the Senſe, or the Imagination. See EXTERIOR and SURFACE.

The Academicks maintain, that the ſenſible Qualities of Bodies are only *Appearances*; and the like Doctrine is held by ſome later Philoſophers. See ACADEMICK and QUALITY. See alſo BODY, EXTERNAL *World*, &c.

Our Errors ariſe chiefly from a too haſty and precipitate Aſſent of the Will, which acquieſces too eaſily in the *Appearances* of Truth. See WILL, LIBERTY, ASSENT, ERROR, &c.

APPEARANCE, in Perſpective, is the Repreſentation or Projection of a Figure, Body, or the like Object, upon the Perſpective Plane. See REPRESENTATION and PROJECTION.

The *Appearance* of an objective right Line, is always a right Line. See PERSPECTIVE.

The *Appearance* of an opake Body and a Luminary being given, to find the *Appearance* of the Shadow; ſee SHADOW.

APPEARANCE *of a Star*, or *Planet*. See APPARITION.

APPEARANCES, in Aſtronomy, &c. are more uſually call'd *Phænomena*. See PHÆNOMENA.

In Opticks, we uſe the Term *Direct Appearance*, for the View or Sight of an Object by direct Rays; without either Refraction or Reflection. See DIRECT and RAY. See alſo OPTICKS, VISION, &c.

To ſave APPEARANCES, is to diſcharge one's Duty ſeemingly, or acquit himſelf of the Formalities and Externals thereof; ſo as to ſave his Character, and avoid the giving of Scandal or Offence.

APPEARANCE, in Law, is the Defendant's engaging to anſwer a Cauſe or Action entred againſt him in ſome Court of Judicature. See ACTION, PROCESS, &c.

Appearance, in the King's-Bench, is the Defendant's filing either of Common or Special Bail, if the Action be by Bill——If it be by Original, the *Appearance* muſt be with the Philazer of the County where the Arreſt was. See BAIL, BILL, PHILAZER, &c.

Appearance, in the Common-Pleas, muſt be entred with the Philazer there; but if it be by Bill, with the Prothonotary. See PROTHONOTARY, &c.

APPELLATIVE, or *Noun* APPELLATIVE, in Grammar, a common Name; or a Name which belongs, or is applicable to all things of that kind. See NAME and NOUN.

Such are the Names, *Man*, *Angel*, *Horſe*, *Plant*, *Tree*, &c.

Appellatives ſtand oppoſed to proper Names, which belong only to Individuals; as *Peter*, *Gabriel*, *Bucephalus*, &c. See PROPER *Name*.

The Word is form'd of the *Latin*, *appellare*, to call, name a thing.

APPENDANT, or APPURTENANT, in Law, is underſtood of ſuch things as by time of Preſcription have be-

longed, appertained, and been joined to ſome other principal thing.

Thus an Hoſpital may be *appendant* to a Manor, a Common of Fiſhing to a Freehold, &c.

Appended *Remedies*, Appensa, ſuch as are outwardly applied, by hanging about the Neck.

Such are divers Amulets, Necklaces, Phylacteries, &c. See Amulet.

The Word comes from the *Latin ad*, and *pendo*, I hang to.

APPENDIX, or Appendage, a thing acceſſory to, or dependant of, another. See Accessory, &c.

The Term is chiefly uſed in matters of Literature, for an additional Diſcourſe, placed at the end of any Piece, or Writing; to explain or proſecute ſomething there left deficient, or draw Concluſions therefrom——In this ſenſe the Word coincides with *Supplement*. See Supplement.

Appendix, in Anatomy, is a part, in ſome meaſure, detach'd from another part to which it adheres.

There are membranous *Appendices* of various Figures, in moſt of the inner parts of the Body.

The *Cœcum* is by ſome Writers call'd *Appendix*, or *Appendicula Vermiformis*. See Coecum and Intestine.

Appendix is particularly uſed in the ſame ſenſe with *Epiphyſis*. See Epiphysis.

APPERTINANCES, or Appurtenancies. See Appurtenancies.

APPETITE, Appetitus, Appetency, in Philoſophy, a Deſire of enjoying ſomething wanted; or a Complacency in the Enjoyment of a thing preſent.

Some Philoſophers define it more generally, a Paſſion of the Soul whereby we deſire ſomething; or a Propenſity or Impulſe towards any thing apprehended as good. See Passion, &c.

The Schoolmen diſtinguiſh *Appetite* into *Voluntary* and *Natural*——The firſt is the Will itſelf, acting under a competent Knowledge or Information of the thing in hand: Such is the *Appetite* or Deſire of being happy——The ſecond is a kind of Inſtinct whereby we are mechanically driven to conſult our own Preſervation. See Instinct, Will, Natural *Inclination*, &c.

Natural *Appetite* is ſubdivided into *Concupiſcible* and *Iraſcible*. See Concupiscence and Irascible.

The Word comes from the *Latin* Verb *appetere*, to deſire, to covet; form'd of *ad*, to, and *peto*, I draw.

Appetite, in Medicine, coincides with what we more uſually call *Hunger*, or *Thirſt*. See Hunger and Thirst.

A Loſs or Proſtration of *Appetite*, is call'd *Anorexia*. See Anorexia.

An immoderate *Appetite* is call'd *Bulimia*, or *Fames Canina*. See Bulimia.

Some, however, diſtinguiſh between the βελιμια, and Canine *Appetite*; making it the diſtinguiſhing Character of the latter, that it is attended with a *Lientery*, or other Cœliacal Flux. See Canine.

A prepoſterous *Appetency* of things not proper for Food, is call'd *Pica*. See Pica.

APPIAN *Way*, in Antiquity, *Via* Appia, a celebrated Road, leading from the *Porta Capena* in *Rome*, to *Brunduſium*, at the fartheſt Eaſtern Extremity of *Italy*. See Road and Via.

It took its Name from *Appius Claudius*, by whom it was made, during his Cenſorſhip, in the Year of *Rome* 441.—It ſtill ſubſiſts in many places; being paved, not with little Stones or Pebbles, like our Streets, but with large Flag-Stones, like the Pavements of our Churches.

APPLAUSE, properly ſignifies an Approbation of ſome thing witneſs'd by clapping the hands.

The Word is form'd of the *Latin Applauſus*, or *Plauſus*, of the Verb *plaudere*, to clap.

The antient way of applauding by clapping the hands, is ſcarce retain'd any where but in the Colleges and Theatres——Such a Tragedy was acted with great *Applauſe*: Such a Student maintain'd a Theſis with *Applauſe*, &c. See Acclamation.

APPLE. See Fruit, Orchard, &c.

APPLICATE, Appicata, *Ordinate* Applicate, in Geometry, is a right Line drawn a-croſs a Curve, ſo as to biſſect the Diameter thereof. See Curve, Diameter, &c.

Applicate is the ſame with what we otherwiſe call *Ordinate*. See Ordinate.

APPLICATION, the Act of *applying* one thing to another, by approaching or bringing them nearer together.

Motion is defined by a ſucceſſive *Application* of any thing to different parts of Space. See Motion.

The *Application* of a Veſicatory to the Neck or other part, produces an Irritation of the Bladder.

The true and only Secret in Phyſick, is how to *apply* a Medicine, not how to make it.

Application is alſo uſed for the adjuſting, accommodating, or making a thing quadrate to another. See Accommodation.

Thus we ſay, the *Application* of a Fable, &c. See Fable.

Application, in Theology, is particularly uſed for the Act whereby our Saviour transfers, or makes over to us, what he had earned or purchaſed by his holy Life, and Death.

'Tis by this *Application* of the Merits of Chriſt, that we are to be juſtified; and entitled to Grace, and Glory. See Merit, &c.

The Sacraments are the ordinary Means, or Inſtruments whereby this *Application* is effected. See Sacrament.

Application is ſometimes alſo uſed in Geometry, for what in Arithmetick we call *Diviſion*. See Division.

Application alſo ſignifies the fitting or applying of one Quantity to another, whoſe Areas, but not Figures, are the ſame.

Thus *Euclid* ſhews how to *apply* a Parallelogram to a right Line given, that ſhall be equal to a right-lined Figure given. See Apply.

APPLY is uſed among Mathematicians three ways.

1. It ſignifies to transfer a Line given into a Circle, moſt commonly, or into any other Figure; ſo as its Ends be in the Perimeter of the Figure.

2. To *apply* denotes as much as to *divide*, eſpecially among the *Latin* Writers; who, as they ſay, *duc* AB *in* CB, draw AB into CB, when they would have AB multiplied by CB; or rather, when they would have a right-angled Parallelogram made of thoſe Lines: So they ſay, *applica* AB *ad* CB, *apply* AB to CB, when they would have CB divided by AB; which is thus expreſſed, $\frac{CB}{AB}$.

3. It alſo ſignifies to fit Quantities, whoſe Areas are equal, but Figures different. See Application.

APPOINTEE, a Foot-Soldier, in the *French* Army, &c. who for his long Service, and Bravery, receives Pay above private Sentinels. See Anspessade.

APPOINTMENT, a Penſion or Salary given by great Lords and Princes, to Perſons of Worth and Parts; in order to retain them in their Service. See Salary.

The Term is chiefly uſed among the *French*——The King of *France* gives large *Appointments* to ſeveral of the Officers in his Service.

Appointments differ from Wages, in that the latter are fixed and ordinary, being paid by the ordinary Treaſurers; whereas *Appointments* are annual Gratifications granted by Brevet for a time uncertain, and are paid out of the Privy Purſe.

APPORTIONMENT, Apportionamentum, in Law, a dividing of a Rent into two Parts or Portions, according as the Land whence it iſſues, is divided among two, or more. See Rent, Division, Partition, &c.

Thus if a Man, having a Rent-Service iſſuing out of Land, purchaſe a part of the Land; the Rent ſhall be *apportioned*, according to the Value of the Land——So if a Man let Lands for Years, reſerving Rent; the Rent ſhall be *apportioned*.

But a Rent Charge cannot be *apportioned*, nor Things that are entire; as if one hold Land by Service, to pay to his Lord yearly at ſuch a Feaſt a Horſe or a Roſe; there, if the Lord purchaſe a part of the Land, this Service is totally extinct; becauſe ſuch things cannot be divided without hurt to the whole.

Yet, in ſome caſes, a Rent Charge ſhall be *apportioned*: As, if a Man hath a Rent-Charge iſſuing out of Land, and his Father purchaſeth a part of the Land charged in fee, and dies; and this Parcel deſcend to his Son, who hath the Rent-Charge: there the Charge ſhall be *apportioned* according to the Value of the Land; becauſe ſuch Portion of the Land, purchaſed by the Father, comes not to the Son by his own Act, but by Deſcent, and Courſe of Law.

Common appendant is of common Right, and ſeverable: And tho the Commoner, in ſuch caſe, purchaſe a Parcel of Land wherein the Common is appendant; yet the Common ſhall be *apportioned*. But in this caſe, Common appurtenant, not appendant, becomes extinct by ſuch Purchaſe. *Coke*.

APPOSAL *of Sheriffs*, is the charging them with Money received on their account in the Exchequer, 22 & 23 *Car.* 2. *Act for better Recovery of Fines due to his Majeſty*.

APPOSER, in Law. See Foreign *Appoſer*.

APPOSITION, the Act of putting or applying one thing to another. See Application.

Apposition is uſed in Phyſicks, with reſpect to Bodies, which derive their Growth from the Adjunction or Union of neighbouring Bodies. See Adjunction.

Moſt Bodies of the foſſil or mineral Kingdom, are form'd by Juxta-poſition, or the *Appoſition* of Parts, brought to join and adhere to each other. See Accretion.

Apposition, in Grammar, is the putting two or more Subſtantives together in the ſame Caſe, and without any copular

copular Conjunction between them. See SUBSTANTIVE, CONJUNCTION, COPULATIVE, &c.

Thus, *Flanders*, bloody Theatre, horrible Scene of War, &c.

APPRAISE, to rate, value, or ſet a Price on Goods, by a Perſon who is a competent Judge, and is authorized thereto.

The Word is derived from the French *apprecier*, which ſignifies the ſame thing——Hence we alſo ſay an *Appraiſer*, a ſworn *Appraiſer*, an *Appraiſement*, &c.

APPRENDRE, in our antient Law-Books, a Fee or Profit to be taken or receiv'd. See FEE.

APPREHENSION, in Logick, the firſt Idea which the Mind forms of any thing, abſtractly of its particular Qualities. See IDEA.

Apprehenſion coincides with what we otherwiſe call *Perception*. See PERCEPTION.

The Word literally denotes the Action of the Hand, whereby it takes hold of, and graſps any thing; being form'd of the *Latin ad*, to, and *prehendo*, I hold. See COMPREHENSION.

APPREHENSION, in Law, ſignifies the ſeizing a Criminal, in order to bring him to Juſtice.

APPRENTICE, one who is bound by Covenant to ſerve a Tradeſman, or Artificer a certain Time; uſually ſeven Years; upon Condition of the Maſter's inſtructing him in his Art or Myſtery. See TRADE, COMMERCE, ART, &c.

Sir *Thomas Smith* ſays, that Apprentices are a kind of Bondmen, or Slaves, differing only in this that they are Servants by Covenant, and for a time. *de Rep. Anglor. Lib.* 3. See SERVANT, SLAVE, &c.

Antiently, Benchers in the Inns of Court were called *Apprentices of the Law*, in *Latin Apprenticii Juris Nobiliores*; as appears by Mr. *Selden*'s Notes on *Forteſcu*: and ſo the learned *Plowden* ſtiles himſelf.

Sir *Henry Finch* in his *Nomotechnia* writes himſelf *Apprentice de Ley*: Sir *Edward Coke* in his Inſtit. ſays, *Apprenticii Legis* in pleading are called *Homines conſiliarii, & in Lege periti*; and in another place, Apprentices and other Counſellors of Law.

APPROACHES, in Fortification, the ſeveral Works made by the Beſiegers for advancing or getting nearer to a Fortreſs, or Place beſieged. See WORK, FORTIFICATION.

Such are *Trenches*, *Mines*, *Sapps*, *Lodgments*, *Batteries*, &c. See TRENCH, MINE, SAPP, BATTERY, &c.

APPROACHES, or *Lines of* APPROACH, are particularly uſed for Trenches dug in the Ground, and their Earth thrown up on the Side towards the Place beſieged; under Shelter or Defence whereof the Beſiegers may approach, without Loſs, to the Parapet of the cover'd Way; and plant Guns, &c. wherewith to canonnade the Place. See TRENCH.

The *Lines of Approach* are to be connected by Lines of Communication. See COMMUNICATION.

The Beſieged frequently make *Counter-Approaches*, to interrupt and defeat the Enemies *Approaches*.

APPROPRIATE, APPROPRIATED, in Philoſophy, is underſtood of ſomething which is indeed common to ſeveral; yet, in ſome reſpects, is peculiarly attributed to one. See PROPER and COMMON.

Thus, Creation is common to the Father, Son, and Holy Ghoſt; and yet is *appropriated* to the Father.

APPROPRIATE, in Law, is undeſtrood of a Church or Benefice, the Patronage whereof is annex'd to ſome Church-Dignity; ſo that the Parſon receives the Tithes. See CHURCH, BENEFICE, PATRONAGE, PARSON, and TITHE.

There are computed in *England* 3845 Churches *Appropriate* and *Impropriate*. See APPROPRIATION, IMPROPRIATION, &c.

APPROPRIARE *ad Honorem*, in Law, ſignifies to bring a Manor within the Extent and Liberty of ſuch an Honour. See HONOUR, MANOR, &c.

APPROPRIARE *Commune*, in Law, ſignifies to diſcommon, *i. e.* to ſeparate, and incloſe any Parcel of Land, which before was open Common. See COMMON.

APPROPRIATION, the Act of *Appropriating*, or applying a Church-Benefice, which of its own Nature is *juris divini*, and no Perſon's Patrimony, to the proper and perpetual Uſe of ſome Religious Community. See APPROPRIATE.

Appropriation, is where the Advowſon of a Parſonage is given or belongs to any Biſhoprick, religious Houſe, College, &c. and to their Succeſſors; ſo that the Houſe or Body, is both Patron and Parſon, and ſome one of the Members officiates as Vicar. See PARSON, ADVOWSON, &c.

It is called *Appropriation*, becauſe the Profits of the Living are appropriated to the uſe of the Patrons; ſo that Parſons, tho' they are not ordinarily accounted *Domini Uſufructuarii*, having no right of Fee-ſimple; yet, by reaſon of the Perpetuity of their Succeſſion, are reputed Owners of the Fee-ſimple, and are therefore called *Proprietarii*. See PATRON and PATRONAGE.

To make an *Appropriation*, after Licence obtain'd of the King in Chancery, the Conſent of the Dioceſan, Patron, and Incumbent, is neceſſary, if the Church be full; if it be void, the Dioceſan and the Patron, upon the King's Licence, may conclude it.

To *diſſolve an Appropriation*, it is enough to preſent a Clerk to the Biſhop, and he to inſtitute and induct him: for that once done, the Benefice returns to its former Nature.

APPROVEMENTUM, APPROVEAMENTUM, or APPROVEMENT, is ſometimes uſed in antient Writers for *Improvement*. See IMPROVEMENT.

Thus, to APPROVE, *Approbare*, is to make the beſt benefit of a thing by increaſing the Rent, &c.

In ſome antient Statutes, Bailiffs of Lords in their Franchiſes are call'd their *Approvers*. See BAILIFF.

Cum omnibus Approviamentis & aliis pertinentiis ſuis, &c. Mon. Angl.

APPROVEMENT, is more particularly uſed where a Man hath common in the Lord's Waſtes, and the Lord incloſeth part of his Waſte for himſelf; leaving ſufficient Common, with Egreſs and Regreſs, for the Commoner.

APPROVER, one who confeſſing Felony in himſelf, appealeth or impeacheth another or more of his Accomplices. See APPEAL.

He is ſo call'd becauſe he muſt *prove* what he hath alledg'd in his Appeal——This Proof ſhould either be by Battel, or by the Country, at the choice of the Appellee. See PROOF, BATTEL, PAIS, &c.

APPROVERS of the King, are thoſe who have the letting of the King's Demeſnes in ſmall Manors, &c. See DEMESNE.

APPROXIMATION, in Arithmetick, a continual approach nearer ſtill and nearer to a Root or Quantity ſought, without a poſſibility of ever arriving at it exactly. See ROOT.

We have divers methods of *Approximation* delivered by *Wallis*, *Raphſon*, *Halley*, *Howard*, &c. all of 'em being no other than Series's infinitely converging, or approaching ſtill nearer to the Quantity requir'd, according to the Nature of the Series. See CONVERGING and SERIES.

'Tis evident, that if a number propos'd be not a true Square, it is in vain to hope for a juſt quadratick Root thereof, explicable by rational Numbers, integers or fracted; whence, in ſuch Caſes, we muſt content ourſelves with *Approximations*, ſomewhat near the Truth, without pretending to Accuracy: and ſo for the Cubick Root, of what is not a perfect Cube; and the like for ſuperior Powers. See SQUARE, CUBE, POWER, QUADRATURE, EXTRACTION, &c.

This the Antients were aware of, and accordingly had their Methods of *Approximation*; which, tho' ſcarce applied by them beyond the quadratick or perhaps the cubick Root, are yet equally practicable, by due Adjuſtments, to the ſuperior Powers alſo: as is ſhewn in the *Philoſoph. Tranſact.* N° 215.

If there be a Non-quadratick or Non-cubick Number; the former being expreſſed by $aa+b$, and the latter by $aaa+b$, where aa and aaa are the greateſt Square and Cube in the propoſed Numbers; then $\sqrt{aa+b} = a + \frac{ab}{2aa+\frac{1}{2}b}$; and $\sqrt[3]{a^3+b} = a + \frac{ab}{3aaa+b} = {}^{1}a + \sqrt{\frac{1}{4}aa+\frac{b}{3a}}$ will be eaſy and expeditious *Approximations* to the Square and Cube Root.

To extract the Root of an Equation by Approximation.

1°. For a quadratic Equation——ſuppoſe the Equation $x^2 - 5x - 31 = 0$ —; let the Root be $8+y$, ſo that y may denote the Fraction, whereby the aſſumed Number either exceeds or comes ſhort of the Root: Then

$$\begin{array}{l} x^2 = 64 + 16y + y^2 \\ -5x = -40 - 5y \\ -31 = -31 \\ \hline -7 + 11y + y^2 = 0 \end{array}$$

Since the Powers of Fractions are continually decreaſing; and we only here want a Root nearly true; y^2 is caſt away. Upon which,

$$\begin{array}{l} -7 + 11y = 0 \\ \hline y = \frac{7}{11} = \frac{6}{10} \text{ nearly} = 0.6 \end{array}$$

Wherefore $x = 8 + 0.6 = 8.6$

Suppoſe $x = 8.6 + y$. Then

$$\begin{array}{l} x^2 = \frac{7396}{100} + \frac{172}{10}y + y^2 \\ -5x = -\frac{430}{10} - 5y \\ -31 = -31 \\ \hline \frac{7396}{100} - \frac{430}{10} - 31 + \frac{172}{10}y - 5 = 0 \end{array}$$

Which,

Which, being reduced to the ſame denomination, as here follows

$$73.96 - 4300 - 3100 + (1720 - 500)y = 0$$
$$-0.04 + 122.0y = 0$$
$$12.20y = 0.04$$
$$y = 004 : 12.20 = 0.0032$$

Therefore $x = 8.6000 + 0.0032 = 8.6032$

Suppoſe $x = 8 - 60{,}2 + y$; Then will

$$x^2 = 7401505024 + 17.\overline{20640000}\ y + y^2$$
$$-5x = -43.01600000 - 500000000$$
$$-31 = -31.00000000$$
$$-0.000094976 : 12.20640000\ y = 0$$
$$y = 0.000094976 : 12.20640000$$
$$= 0.00000077808.$$

Therefore $x = 8.6032000000 + 0.00000077808 = 8.6032777808$.

Suppoſe, again, the Root of a Cubic Equation $x^3 + 2x^2 - 23x - 70 = 0$ be required by *Approximation*; here let the Root be $5 + y$, ſince the Terms are omitted wherein y^2 and y^3 are found; there is no neceſſity for expreſſing 'em in the Transformation of the Equation. Wherefore, we find

$$x^3 = 125 + 75y \ldots$$
$$+ 2x^2 = 50 + 20y \ldots$$
$$- 23x = 115 - 23y$$
$$- 70 = - 70$$
$$-10 + 72y = 0$$
$$y = -\tfrac{10}{72} = 0.1$$

Therefore $x = 5 + 0.1 = 5.1$

Suppoſe $x = 5.1 + y$: Then will

$$x^3 = 132.651 + 78.030y \ldots.$$
$$+2x^2 = 52.020 + 20.400y$$
$$-23x = -117.300 - 23.000y$$
$$-70 = -70.000$$
$$-2.629 + 75.430y = 0$$
$$75.430y = 2.629$$
$$y = 3.649 : 75.430 = 0.0348$$

Wherefore $x = 5.1 + 0.048 = 5.1348$.

And after the ſame manner might one proceed to Infinity.

APPUI, in the Manage, *q. d. reſt* or *ſtay upon the Hand*; is the reciprocal Effort between the Horſe's Mouth and the Bridle-Hand; or the Senſe of the Action of the Bridle in the Hand of the Horſeman. See HEAD, BRIDLE, &c.

A *juſt Appui of the Hand*, is the nice bearing up or ſtay of the Bridle; ſo that the Horſe being awed by the Senſibility and Tenderneſs of his Mouth, dares not reſt too much upon the Bit-Mouth, nor check or beat upon the Hand to withſtand it.

A *dull, obtuſe Appui*, is when a Horſe has a good Mouth, but his Tongue ſo thick, that the Bit cannot work, or bear upon the Bars; the Tongue not being ſo ſenſible as the Bars: tho' the like Effect is ſometimes owing to the groſſneſs of his Lips———A Horſe is ſaid to have *no Appui*, when he dreads the Bit-mouth; is too apprehenſive of the Hand, and can't bear the Bit.———He is ſaid to have *too much Appui*, when he reſts or throws himſelf too much, too hardily upon the Bit.———Horſes deſigned for the Army ought to have a *full Appui* upon the Hand.

APPULSE, in Aſtronomy, the approach of any Planet to a Conjunction with the Sun, or a Star. See CONJUNCTION.

APPURTENANCES, or APPERTINENCES, in Common Law, ſignify things both corporeal, *i. e.* belonging to another thing, as their principal; *E. gr.* Hamlets, to a chief Manor, and the like: and incorporeal, as Liberties and Services of Tenants, &c. See APPENDANT.

The Word is form'd of the *Latin*, *ad*, to, and *pertinere*, to belong.

APRIL, the fourth Month of the Year, according to the common Computation, but the ſecond according to that of the Aſtronomers. See MONTH.

In this Month the Sun travels thro' the Sign *Taurus*. See SUN and TAURUS.

The Word is derived from the *Latin aperilis*, of *aperio*, I open; becauſe the Earth, in this Month, begins to open her Boſom for the Production of Vegetables. See SPRING.

APRON, in Gunnery, a piece of Lead which caps, or covers the Vent, or Touch-Hole of a great Gun. See GUN, ORDNANCE, &c.

APSIDES, ABSIDES, or APSIDÆ, in Aſtronomy, two Points in the Orbit of a Planet, the higheſt whereof is called the *Aphelion*, or *Apogee*; and the loweſt the *Perihelion*, or *Perigee*. See APHELION, APOGEE, PERIHELION, and PERIGEE.

The *Apſides* are alſo called *Auges*. See AUGES.

The Diameter which joins theſe two Points is call'd the *Line of the Apſides*, and paſſes thro' the Center of the Orbit of the Planet, and the Center of the Earth.——Such is the Line AP, (Tab. ASTRONOMY, fig. 1.) drawn from the Aphelion A to the Perihelion P. See ORBIT and PLANET.

The Eccentricity is reckoned in the Line of the *Apſides*; being the Diſtance between the Center of the Orbit of the Planet C, and the Center of the Sun or Earth S, according as the *Copernican* or the *Ptolemaic* Syſtem is followed. See ECCENTRICITY.

For the Motion of the Line of the *Apſides*, ſee APOGEE, &c.

The Word comes from the *Greek* ἁψὶς, an Arch, or Vault.

APSIDES were alſo antiently uſed for a kind of private Oratories, or Chapels in great Churches; otherwiſe called *Doxologia*, or *Doxalia*. See ORATORY.

They were thus call'd, becauſe arched or vaulted over.

The Word ſtill obtains in the Low Countries, where it denotes a kind of Choir, or Place beyond the Altar; where the Religious ſit, and ſing the Office, ſeparate from the People, and without being ſeen by 'em.

AP-THANES, an ancient Term for the higher Nobility in *Scotland*. See THANE.

APTITUDE, the natural Diſpoſition any thing hath to ſerve for ſuch or ſuch a purpoſe.

Thus, Oil hath an *Aptitude* to burn, and Water to extinguiſh Fire.

APTOTE, in Grammar, a Noun indeclinable, or which is without any Variation of Caſe. See NOUN and CASE.

The Word is derived from the *Greek* Privative α, and πτῶσις, *Caſus*.

APUS, in Aſtronomy, the *Bird of Paradiſe*; one of the Conſtellations of the Southern Hemiſphere, not viſible in our Latitude. See CONSTELLATION.

APYREXY, in Medicine, the Intermiſſion of a Fever or Ague. See FEVER and AGUE.

The Word is form'd of the privative Particle α, and πῦρ, *Ignis*, Fire or Heat, or πυρέσσω, *febricito*, to be feveriſh.

AQUA, in natural Hiſtory, Phyſicks, Chymiſtry, Medicine, &c. See WATER.

The Word is pure *Latin*, and ſuppoſed to be compounded of *a* and *qua*, q. d. from which; alluding to the Opinion that Water is the Baſis or Matter of all Bodies.

AQUA *fortis*, is a corroſive Liquor, ſerving as a Menſtruum wherewith to diſſolve Silver, and all other Metals except Gold. See MENSTRUUM, DISSOLUTION, METAL, &c.

Aqua fortis is made of Salt-Petre, which is the only Salt that will act on Silver. See NITRE, SALT-PETRE, and SILVER.

To prepare *Aqua fortis*, they mix either Sand or Alum, or Vitriol, or the two laſt together, with the Salt-Petre; then diſtill it by a violent Fire; and catch the Fumes; which condenſing in the Receiver, are the *Aqua fortis*.

If ſome of thoſe Matters be not added to the Nitre, it runs too readily, and thus prevents the Evaporation; but when the Fuſion is prevented, the parts of the Salt receiving more violent Impreſſions from the Fire, are converted into a volatile Spirit.

If to the Spirit of Nitre thus diſtill'd, Sea-Salt or Sal-Ammoniac be added; it commences *Aqua Regia*, and will no longer diſſolve Silver, but Gold. See *Aqua* REGIA.

Hence, to try whether or no *Aqua fortis* be pure; put a Grain of a Solution of Silver in *Aqua fortis*, into a like Quantity of the Water in queſtion: and if the Solution remains without either the Water's turning milky, or the Silver precipitating, the *Aqua fortis* is pure.

Aqua fortis is commonly held to have been invented about the Year 1300; tho' others will have it to been known in the Time of *Moſes*.

Aqua fortis is a Liquor of various and extenſive Uſe.—It is very uſeful to Refiners for parting or ſeparating Silver from Gold and Copper. See PARTING, REFINING, &c.

To the Workers in Moſaic, for ſtaining and colouring their Woods. See MOSAIC.

To Dyers in their Colours, and particularly Scarlet. See DYING, COLOUR, SCARLET, &c.

To other Artiſts, for the colouring of Bone and Ivory; which is done by ſteeping the Matters therein, after firſt tinging it with Copper, or Verdigreaſe, &c.—Some alſo turn it into *Aqua Regia*, by diſſolving in it a fourth of its weight of Sal-Ammoniac, and then ſtain therewith Ivory Haſts and Bones, of a fine purple Colour. There are, alſo, Book-Binders, who throw it on Leather, and thereby make fine marble

marble Covers for Books. See MARBLING, BOOK-BINDING, &c.

And there are Diamond-Cutters, who uſe it to ſeperate Diamonds from metalline Powders. See DIAMOND.

'Tis, farther, of ſervice in etching Copper, or Braſs-Plates. See ETCHING.

Laſtly, Mr. *Boyle* aſſures us he has cauſed Canes to be ſtained like Tortoiſe-Shell, by a mixture hereof with Oil of Vitriol, laid on them at ſeveral times, over live Coals, to cauſe it to penetrate the deeper; and, afterwards, giving them a Gloſs with a little ſoft Wax and a dry Cloth.

AQUA *Regalis*, or REGIA. See *Aqua* REGIA.

It is thus call'd, becauſe it diſſolves Gold, which is vulgarly eſteem'd the King of Metals.——It is ſometimes alſo call'd *Aqua Chryſulea* and *Stygia*.

AQUA *Vitæ*, is commonly underſtood of what we otherwiſe call *Brandy*. See BRANDY.

Some, however, diſtinguiſh between 'em; appropriating the Term Brandy to what is procured from Wine, or the Grape; and *Aqua Vitæ* to that drawn after the ſame manner from Malt, &c. See WINE, MALT, DISTILLATION, &c.

AQUA *Marina*, in natural Hiſtory, a Gem, or precious Stone, of a Sea-Green Colour: whence its Name, ſee PRECIOUS *Stone* and GEM.

It is found along the Sea-Coaſts; and is ſaid to vie with the Amethyſt in hardneſs. See AMETHYST.

Some of the Criticks contend for its being the ſixth Stone in the Rationale of the *Jewiſh* High Prieſt; call'd, in the *Hebrew*, *Tharſis*; and render'd in *Latin*, by *Berillus*, *Thalaſſius*, &c. *Jonathan* and *Onkelos* call it, in the *Chaldee*, כרום ימא, *Cherum Jamma*: Tho' the Seventy, S. *Jerom*, *Aquila*, *Pagninus*, the Tranſlators of *Geneva*, and *Schindler* render it *Chryſolithus*.——Others will have it a *Turqueiſe*. *Leo de Juda* and *Hutterus* tranſlate it *Hyacinthus*.

Several of the Lapidaries take it for the Beryl; which coincides with the firſt Opinion. See BERYL.

AQUA *omnium florum*, in Pharmacy, ſignifies the diſtill'd Water of Cows-Dung, when they are at Graſs. See WATER.

AQUÆDUCT, AQUÆDUCTUS, q. d. *Ductus Aquæ*, a Conduit of Water; is a Conſtruction of Stone, or Timber, made on an uneven Ground, to preſerve the Level of the Water, and convey it, by a Canal, from one place to another. See WATER.

There are *Aquæducts* under ground, and others rais'd above it, ſupported by Arches.

The *Romans* were very magnificent in their *Aquæducts*; they had ſome that extended an hundred Miles. *Frontinus*, who had the Direction of them, tells us of nine that emptied themſelves thro' 13514 Pipes, of an Inch Diameter. *Blaſius* has obſerv'd, that in the ſpace of twenty-four Hours, *Rome* received, from theſe *Aquæducts*, no leſs than five hundred thouſand Hogſheads of Water.——The *Aquæduct* built near *Maintenon* for carrying the River *Bure* to *Verſailles*, is the greateſt in the World. It is 7000 Fathoms long; and its Elevation 2560 Fathom; containing 242 Arcades.

AQUÆDUCT, in Anatomy, is a Paſſage or Perforation, partly membranous, and partly cartilaginous; leading out of the Bony Paſſage of the internal Ear into the Palate. See EAR and PALATE.

It makes the beginning of the *Canalis particularis*, and is divided into two Parts; the ſhorteſt of which opens into the Cavity of the Skull, &c.

It is thus call'd, not only on account of its Form, which is that of a Canal; but from its ſerving to diſcharge any foreign Matters collected in the inner Cavities of the Ear.—— It is ſometimes call'd *Aquæductus Fallopii*, from the Name of its firſt Diſcoverer.

AQUARIANS, AQUARII, a kind of Hereticks in the third Century, ſo called from the *Latin*, *Aqua*, Water; becauſe they uſed nothing but Water in the Sacrament. See EUCHARIST.

'Tis ſaid the Occaſion of the Abuſe was owing to the Perſecution which prevail'd in thoſe Times: For the Chriſtians being then obliged to celebrate the Sacrament in the Night; found it neceſſary to make uſe of Water, leſt the ſmell of the Wine ſhould betray them to the Heathens. But they afterwards went further, and actually forbid the uſe of Wine in the Euchariſt, even when it might be uſed with ſafety.

Epiphanius tells us, the *Aquarians* were the Followers of *Tatian*; and were ſo call'd, becauſe they abſtain'd wholly from Wine, and did not uſe it even in the Euchariſt. See ABSTEMIOUS.

AQUARIUS, in Aſtronomy, the eleventh Sign in the Zodiac, reckoning from *Aries*. See SIGN and CONSTELLATION.

The Sun moves thro' it in the Month of *January*; 'tis mark'd thus ♒. See CHARACTER.

The Poets feign, that it was *Ganymede*, whom *Jupiter* raviſh'd under the Shape of an Eagle, and carried away into Heaven, to ſerve as Cup-bearer in the room of *Hebe* and *Vulcan*; whence the Name——Others hold, that the Sign was thus call'd, becauſe, when it appears in the Horizon, the Weather uſually proves rainy.——The Stars in the Conſtellation *Aquarius*, in *Ptolemy*'s Catalogue, are 45; in *Tycho*'s 40; in the *Britannic* Catalogue 99: The Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow:

Stars in the Conſtellation AQUARIUS.

Names and Situations of the Stars.	Signs.	Longitude.			Latitude			Magn.
		°	′	″	°	′	″	
Preced. in the Handkerchief againſt the Hand.	♒	7	24	06	8	06	41 N.	5
		8	38	46	12	24	42	5
		9	22	28	11	34	51	7
		9	35	02	11	38	47	6
Subſeq. in the Handkerchief.		8	44	13	8	16	10	4 5
5.								
		9	32	57	7	17	53	6
		9	19	25	3	51	49	6 7
		9	28	11	3	19	30	6
		11	37	44	11	05	06	6
		11	51	38	11	49	00	6
10.								
		16	00	11	23	02	34	6
		12	23	54	10	30	14	6
In the preced. Hand.		12	04	13	4	47	48	5
		14	18	30	6	21	43	6
		16	12	10	10	41	41	6
15.								
		16	53	23	10	25	12	6
		15	50	35	5	45	41	7
		15	01	16	2	17	03	6
		16	14	35	5	11	33	6
		18	10	20	11	14	10	6
20.								
		18	13	15	11	03	19	6
In the preced. Shoulder.		19	04	23	8	38	43	3
Under the Shoulder, as in the Arm-Pit.		19	47	16	5	59	14	5
		22	50	57	13	12	28	6
In the Head.		23	38	27	15	21	47	6
25.								
		23	56	30	14	13	55	6
		25	39	39	15	07	14	6
		28	15	21	11	58	21	6
		22	24	57	4	37	29 S.	6
		26	16	22	5	04	48 N.	6
30.								
Lower in the hind. Shoulder.		27	47	19	9	10	58	5
		28	35	40	10	13	14	6
South. in the Fore-Hip.		24	24	01	2	03	15 S.	4
Bright one in the hind. Shoulder.		29	02	16	10	40	38 N.	3
		23	19	59	6	37	49 S.	6 5
35.								
		25	07	12	1	43	12	8
		27	04	33	2	59	48 N.	6
North. in the preced. Hip.		26	09	58	0	15	37 S.	6
		25	38	49	2	52	39	6
		23	34	18	9	27	48	6
40.								
		27	07	35	1	59	02	7
Preced. of two in the poſter. Side.		28	55	44	2	43	47 N.	4
		29	51	55	4	56	30	6
Subſeq. of the ſame.		29	42	07	2	23	30	5 6
		24	59	38	10	33	45 S.	5 6
45.								
That in the hind. Arm.	♓	2	23	11	8	14	49 N.	3
	♒	24	11	54	13	39	11 S.	5
		28	36	33	3	18	38	6
	♓	1	41	48	4	49	11 N.	6
North of ♑ in the hind. Hand.		4	16	51	10	29	08	5
50.								
That upon the Hips.	♒	27	53	23	6	28	36 S.	6
Preced. of the reſt in the Hand.	♓	4	34	31	8	51	36 N.	4
	♒	29	32	41	4	48	31 S.	6
That in the hind. Buttock.	♓	1	03	54	1	12	33	5
		1	13	00	1	30	40	6
55.								
South of two in the fore Leg.	♒	28	12	22	10	51	40 S.	5
	♓	5	13	36	6	55	47 N.	6
	♒	29	43	32	7	58	37 S.	6
Subſeq. of three in the Hand.	♓	6	04	53	8	09	42 N.	4
Preced. in the pouring out of the Water.		5	06	13	4	07	47	5
60.								
North in the Fore-Leg.	♓	0	54	55	9	56	24 S.	6
		5	19	55	1	04	29 N.	6
Following that to the Southward.		1	29	54	11	00	40 S.	6
Lower of the Northern ones in the hind. Leg.		3	39	28	5	54	42	5
		5	10	52	2	44	36	7
65.								

Names and Situations of the Stars.	Signs.	Longitude. ° ′ ″	Latitude ° ′ ″	Magn.
Upper of North in the hind Leg.	♓	4 16 52	5 38 42 S	6
South and Subseq. in the pouring out of the Water.		7 14 41	0 23 00	4
		5 54 23	4 11 08	6
South in the hind Leg.——*Scheat.*		4 33 49	8 11 17	3
		4 25 11	8 36 04	6
70.				
		7 50 34	0 12 44	6
Last in the Water.	♒	29 28 59	21 04 54	1
First of the Contig. in the Flexure of the Water.	♓	10 04 10	1 40 14	6
Second.		10 04 59	1 44 15	7
3d, and South of the Contig.		10 08 41	1 57 45	6
75.				
Preced. in the last Flexure.		3 59 44	16 34 34	5
North.		5 40 53	14 29 07	4
Subseq. and South of three.		5 14 53	15 41 55	5 6
In the 2d Flexure of the Water.		12 48 57	1 01 25	5
North of three Contig. in the Water.		11 57 28	3 58 03	5
80.				
First behind the 2d Flexure.		12 43 56	2 49 51	6
Middle of three.		12 24 17	4 15 45	5
Single one more South than those.		10 57 45	8 18 02	5
South of the Contig.		12 28 16	4 45 39	5
		11 08 02	10 07 57	6
85.				
North / Middle of the three following the last Flexure.		9 08 43	14 46 26	5
		9 35 12	15 34 16	5
		10 30 55	16 45 48	6
South of those three.		11 04 19	16 30 21	5
Over the last Flexure but one.		15 20 12	11 02 03	5
90.				
		14 09 42	14 40 56	6
Preced. That.		14 17 06	14 31 10	5
Follow. It.		15 52 17	11 36 22	5
Middle, in the same Flexure.		14 38 18	15 10 26	5
Contiguous to that.		14 51 24	15 43 02	6
95.				
Subseq. in the last Flexure but one.		15 58 18	16 26 59	5
Middle / North / South of Informes behind the last Flexure.		19 26 16	16 14 06	5
		21 57 12	15 16 03	5
	♓	21 12 12	18 45 54S	5

AQUATIC, something which lives, breeds, or grows in, or about the Water. See WATER.

We have *Aquatic* Plants, *Aquatic* Animals, &c. See PLANT, ANIMAL, &c.

Trees which grow on the Banks of Rivers, or in Marshes, &c. are also call'd *Aquatics*.

AQUEOUS, AQUOSUS, something that partakes of the Nature of Water, or abounds therein. See WATER.

Thus Milk is said to consist of an *Aqueous* or serous, and a butyrous Part. See MILK.

The Chymists separate the *Aqueous* Part or Phlegm from all Bodies by Distillation. See PHLEGM.

AQUEOUS *Humour*, is the first or outermost of the three Humours of the Eye. See HUMOUR and EYE.

It lies immediately under the Cornea, which it causes to protuberate a little; and is supposed to be furnished by certain Ducts provided for the purpose. See CORNEA.

Anatomists are divided about the Origin and Conveyance of this Humour.———'Tis certain, the Source must be pretty plentiful, inasmuch as, if by any Accident the Coats it is contain'd in be wounded, so that the Humour runs out, and the Cornea falls or collapses; the Wound readily heals, by only closing of the Eye, and the Humour recruits: of which we have numerous Instances among Physicians.

Dr. *Nuck* thinks he has discover'd the Ducts whereby the Humour is furnish'd. See AQUEOUS *Ducts*.

Others denying the reality of those Ducts, suppose it immediately derived from the Arteries. Dr. *Drake* admits the Ducts, and takes 'em to be only Branches of the excretory Ducts of the *Glandula Innominata*, and *Lachrymalis*; which piercing the Tunicks of the Eye, deliver their Liquor by ways hitherto unknown.

AQUEOUS *Ducts*, or *Ductus Aquosi Nuckii*, are certain *Ducts*, discover'd by Dr. *Nuck*, whereby the *Aqueous* Humour is supposed to be convey'd into the inside of the Membranes which inclose that Liquor.—But the Discovery is not universally allow'd. See AQUEOUS *Humour*.

AQUILA, in natural History, &c. See EAGLE.

AQUILA, in Astronomy, a Constellation of the northern Hemisphere; usually join'd with *Antinous*. See CONSTELLATION.

The Stars in the Constellation *Aquila* and *Antinous*, in *Ptolomy*'s Catalogue, are 15; in *Tycho*'s, 17; in the *Britannic* Catalogue, 70: The Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow.

Stars in the Constellation AQUILA *cum* ANTINOO.

Names and Situations of the Stars.	Signs.	Longitude. ° ′ ″	Latitude North. ° ′ ″	Magn.
Preced. / South. / Subseq. of three Inform. towards *Sagittary*.	♑	4 40 57	14 59 07	4
		6 26 14	14 02 30	5
		6 48 32	14 46 57	5
		8 03 00	25 03 26	5
		8 14 05	22 00 29	6
5.				
Preced. of three Inform. before *Antinous*'s Foot.		8 04 40	18 13 27	4
North / South of two Inform. over the Eagle's Tail.		10 26 31	43 27 53	4
		10 31 39	41 02 20	4
		9 14 07	19 37 16	6
		9 17 24	19 33 22	6
10.				
Mid. of 3 before *Antinous*'s Foot.		10 30 35	16 54 11	5 4
		13 30 29	36 28 51	6
		13 33 55	36 11 45	6 5
Subseq. of the same.		11 44 42	16 53 53	4
Preced. in the Eagle's Tail.		13 56 58	37 36 43	3 4
15.				
Preced. in *Antinous*'s Heel.		12 17 25	18 52 40	6
Subseq.		12 46 59	18 29 26	6
Bright one in *Antinous*'s Foot.		13 02 15	17 37 36	3
Subseq. in the Eagle's Tail.		15 28 34	36 13 48	3
		15 27 48	33 24 32	6
20.				
		15 14 46	28 23 48	6
		14 16 37	14 22 17	5 6
		15 58 34	24 28 45	5
		17 08 30	26 54 11	6
		17 05 48	23 06 48	7
25.				
		17 03 34	22 21 55	7
Preced. of 3 in the Root of the Tail.		18 42 18	33 31 53	6
In *Antinous*'s Thigh.		16 36 51	16 36 09	6
South in *Antinous*'s leading Side.		17 20 05	21 04 44	6
Mid. & North in the Root of the Tail.		19 23 33	34 13 27	6
30.				
North in the preced. Wing.		19 17 21	24 50 54	3 4
Last of 3 in the Root of the Tail.		20 45 44	33 32 22	6
North in *Antinous*'s leading Side.		19 06 40	22 04 17	5
South in the preced Wing.		20 03 35	23 34 00	6
In *Antinous*'s Belly.		19 39 55	18 49 10	6
35.				
That below *Antinous*'s Knee.		19 29 24	10 58 21	6
North in the preced. Shoulder.		22 27 58	28 42 30	4
Against *Antinous*'s hind Knee.		20 31 47	14 23 03	3 4
		21 10 48	18 25 21	6
In the hind Side of *Antinous*.		21 30 47	20 02 59	3 4
40.				
		21 09 46	16 42 00	6
South in the preced. Shoulder.		23 28 56	26 30 44	5
		22 41 20	20 31 04	6
		25 52 03	33 02 08	6
South in the beginning of the hind Wing.		25 52 20	32 39 24	6
45.				
North.		26 48 33	34 00 06	6
That immediately prec. the Lucida.		25 44 15	28 22 04	6
Preced. of two in the hind Shoulder.		26 37 08	31 16 52	3
		23 18 26	10 05 20	5
Subseq. of the same.		27 36 29	32 19 49	6
50.				
Between the Shoulders; call'd *Lucida Aquilæ*.		27 23 24	29 19 11	1 2
That over the *Lucida*.		27 53 01	30 51 20	6 5
In *Antinous*'s hind Shoulder.		26 06 54	21 33 23	3 4
		24 33 02	12 05 11	5
		24 44 54	12 24 10	6
55.				
		26 32 00	20 43 43	6
Subseq. below the *Lucida*.		28 17 56	28 46 12	5
In the Eagle's Neck.		28 06 44	26 44 20	3
In the Verge of the Wing behind the Shoulder.		29 36 57	31 32 17	6
		28 50 17	19 16 01	7
60.				
In the middle of the Head.	♒	0 42 27	27 03 16	6
	♑	29 46 36	19 05 30	7
In *Antinous* hind Hand.	♒	0 35 30	18 45 35	3
		1 02 33	18 28 07	5 6
Last of the hind Wing.		5 47 33	34 06 12	5
65.				
		4 17 48	15 16 50	7
		4 43 44	15 39 39	5
		6 35 14	15 31 49	5
		7 24 03	16 48 56	4
	♒	8 06 58	18 16 36	6
70.				

AQUILINE, Aquilinus, ſomething belonging to an Eagle——Hence, *Aquiline* Noſe, denotes a hooked Noſe, like the Beak of an Eagle; a Hawk's Noſe.

AQUILO, the *North-Eaſt Wind*; or that which blows from the North-Eaſtern Point of the Horizon. See Wind, North and Point.

The Seamen call it, *North-North Eaſt*. See Rhumb.

The Poets give the Name to all ſtormy Winds dreaded by the Mariners.

ARA, the *Altar*, in Aſtronomy, a Southern Conſtellation; conſiſting of eight Stars. See Star and Constellation.

ARAB, Arabian, Arabic, ſomething that belongs to the People of *Arabia*. See Arabia.

The Arabian *Horſe* is ſaid to be nurſed with Camel's Milk: There are many ſtrange Reports of this Beaſt. The Duke of *Newcaſtle* aſſures us, that the ordinary Price of one is 1000, 2000, or 3000 Pounds; and that the *Arabs* are as diligent in keeping the Genealogies of their Horſes, as Princes of their Families. They ſtrike Medals on every occaſion to keep up the Pedigree. The Fortune the *Arabians* give their Sons, when arrived at Manhood, is, two Suits of Arms, with two Scimeters, and a Horſe; who always lies in the next Room to him——Yet ſuch of the Breed as havebeen brought into *England*, never proved very extraordinary. See Horse.

Arabian *Year*. See *Arabian* Year.

ARABESQUE, or Arabesck, ſomething done after the manner of the *Arabians*.

Arabeſque, *Groteſque*, and *Moreſque*, are Terms applied to ſuch Paintings, Ornaments of Freezes, &c. wherein there are no human, or animal Figures, but which conſiſt wholly of imaginary Foliages, Plants, Stalks, &c. See Grotesque and Moresque.

The Words take their Riſe from hence, that the *Moors*, *Arabs*, and other *Mahometans*, uſe theſe kinds of Ornaments; their Religion forbidding them to make any Images or Figures of Men, or other Animals. See Image.

ARABIC, Arabick, Arabicus, ſomething that relates to *Arabia*, or the *Arabs*——

Arabic, or Arabic *Tongue*, is a Branch or Dialect of the *Hebrew*. See Language and Hebrew.

Father *Angelo de St. Joſeph* ſpeaks much of the Beauty and Copiouſneſs of the *Arabic*. He aſſures us it has no leſs than a thouſand Names for a Sword; five hundred for a Lion; two hundred for a Serpent; and eighty for Honey. See Word, Alphabet, &c.

Arabic *Figures*, or *Characters*, are the Numeral Characters commonly made uſe of in large Computations. See Figure, Numeral, &c.

The *Arabic* Characters ſtand contradiſtinguiſhed to the *Roman*. See Character, &c.

The Learned are generally of opinion, that the *Arabic* Figures were firſt taught us by the *Saracens*, who borrow'd them from the *Arabs*, and they from the *Indians*—— *Scaliger* was ſo ſatisfied of their Novelty, that he immediately pronounced a Silver Medallion he was conſulted about, Modern; upon his being told of the Numeral Figures 234, 235, being on it. The common Opinion is, that *Planudes*, who lived towards the Cloſe of the thirteenth Century, was the firſt Chriſtian who made uſe of them. Father *Mabillon* even aſſures us, in his Work *de Re Diplomatica*, that he has not found them any where earlier than the fourteenth Century.

Yet Dr. *Wallis* inſiſts on their being of a much older Standing; and concludes they muſt have been uſed in *England* at leaſt as long ago as the time of *Hermannus Contractus*, who lived about the Year 1050; if not in ordinary Affairs, yet at leaſt in Mathematical ones, and particularly Aſtronomical Tables.

The ſame Author gives us an Inſtance of their Antiquity in *England*, from a Mantle-Tree of a Chimney, in the Parſonage Houſe of *Helmdon* in *Northamptonſhire*, wherein is the following Inſcription in *Baſſo Relievo*, M° 133, being the Date of the Year 1133. *Philoſ. Tranſact.* N° 154.

Mr. *Luffkin* furniſhes a yet earlier Inſtance of their Uſe, in the Window of a Houſe, part of which is a *Roman* Wall, near the Market-place in *Colcheſter*; where between two carved Lions ſtands an Eſcutcheon, containing the Figures 1090. *Philoſ. Tranſact.* N° 255.

M. *Huet* is even of opinion, that theſe Characters were not borrowed from the *Arabs*, but from the *Greeks*; and that they were originally no other than the *Greek* Letters, which we all know that People made uſe of to expreſs their Numbers by. See Number, Numeral, &c.

Gum Arabick, is the Name of a Gum which diſtils from a Species of *Acacia*, growing in *Egypt* and *Arabia*. See Gum.

It is very common among us, but little is to be met with which is genuine; it is ſuſpected to be adulterated with our common Plumb-tree Gums——That is accounted beſt, which is in ſmalleſt Pieces, and almoſt of a white Colour. It diſſolves eaſily in any aqueous Liquor, and is good in all kinds of Fluxes.

Arabick, Arabicus, was alſo a Title or Denomination of Honour, given to the Emperor *Severus*; on account of his conquering *Arabia*, and reducing it into the form of a *Roman* Province. See Title, and Quality.

On the Reverſe of ſome Medals of that Emperor, we read PARTHIC. ARABIC. ADIAB. COS. II. PP. And ſometimes PARTH. ARAB. PARTH. ADIAB. That is, *Parthicus*, *Arabicus*, *Adiabenicus*, &c. Doubtleſs becauſe he overcame the *Parthians* in *Arabia* and *Adiabena*; and took from them thoſe two Provinces.

Arabici were alſo a kind of Hereticks, who ſprung up in *Arabia*, about the Year 207; whoſe diſtinguiſhing Tenet was, That the Soul died with the Body, and alſo roſe again with it. See Resurrection.

Euſebius, *lib.* vi. *c.* 38. relates, that a Council was call'd to ſtop the Progreſs of the riſing Sect; that *Origen* aſſiſted at it; and convinced them ſo thoroughly of their Error, that they abjured it.

ARABISM, Arabismus, an Idiom or Manner of ſpeaking peculiar to the *Arabs*, or the *Arabick* Language. See Idiom and Arabick.

R. *Martin* maintains, that the ו ſometimes expreſſes an Oath, in the *Hebrew*, as well as the *Arabick*: *Abenezra*, a perfect Maſter of the *Arabick*, and who makes great uſe thereof to explain the *Hebrew*; does not reject the Sentiment, nor yet much approve it: he contents himſelf barely to rehearſe it, which, for ſo zealous a Partiſan of *Arabiſms*, is enough to ſhew that he had no great opinion of it——Father *Scuciet*.

ARABLE-*Land*, antiently call'd Aralia, is ſuch as is fit for Tillage. See Land and Tillage.

It is thus call'd from the *Latin arare*, of *aratrum*, a Plough. See Plough and Ploughing.

ARACHNOIDES, in Anatomy, a fine, thin, tranſparent Membrane, which lying between the *Dura* and *Pia Mater*, is ſuppoſed to inveſt the whole Subſtance of the Brain. See Meninx and Brain.

Many Anatomiſts deny the Exiſtence of ſuch third Membrane; and contend that it ought rather to be looked on as the external *Lamina* of the *Pia Mater*, which ſends its internal *Lamella* between the Folds of the cortical part of the Brain. See Pia *Mater*.

Arachnoides, or Aranea *Tunica*, is likewiſe uſed for a fine, ſlender Tunick, wherewith ſome Anatomiſts ſuppoſe the cryſtalline Humour incompaſs'd. See Cryſtalline.

This, others call *Cryſtalloides*, and *Cryſtallina*; but others, and with good reaſon, deny the reality thereof, with its vulgarly ſuppoſed uſe. See Ciliary and Tunick.

The Word is borrowed from the *Greek* ἀραχνὴ, a Spider, Spider's Web; and εἶδος, Form: in regard of the Fineneſs of theſe Parts, which are ſuppoſed to reſemble that of a Spider's Web.

ARACK, or Arrack, a ſpirituous Liquor, imported from the *Eaſt Indies*; chiefly uſed by way of Dram, and in Punch. See Drink, Punch, &c.

The Nature and Compoſition of this celebrated Liquor has been much controverted——The Name *Arack*, Mr. *Lockyer* aſſures us, is an *Indian* Word for ſtrong Waters of all kinds; for that they call our Spirits and Brandy, *Engliſh Arack*——But, what we underſtand by the Name *Arack*, is really no other than a Spirit procured by Diſtillation, from a vegetable Juice call'd *Toddy*, which flows by Inciſion out of the Cocoa-nut Tree, like the Birch Juice procured among us. See Vegetable and Tapping.

The *Toddy*, Mr. *Lockyer* adds, is a pleaſant Drink of itſelf when new, and purges thoſe not uſed to it; and when ſtale, is heady, and makes good Vinegar. The *Engliſh* at *Madraſs* uſe it as Leven to raiſe their Bread with.

Goa and *Batavia* are the chief Places for *Arack*—— At *Goa* there are divers kinds; *ſingle*, *double*, and *treble diſtilled*. The double diſtilled, which is that commonly ſent abroad, is but a weak Spirit in compariſon with *Batavia Arack*; yet on account of its peculiar and agreeable Flavour, is preferred to all the other *Aracks* of *India*. This is attributed to the earthen Veſſels, which alone they uſe at *Goa* to draw the Spirit; whereas at *Batavia* they uſe Copper Stills.

The *Parier Arack*, made at *Madraſs*; and the *Columbo*, and *Quilone Arack* at other places, being fiery hot Spirits, are little valued by the *Europeans*, and therefore rarely imported; tho highly prized among the Natives.

ARÆOMETER, Aræometrum, an Inſtrument wherewith to meaſure the Denſity or Gravity of Fluids. See Fluid, Gravity, and Density.

The Word is form'd of the *Greek* ἀραιὸς, *rarus*, *tenuis*, thin; and μέτρον, Meaſure.

The *Araeometer*, or Water-poiſe, is uſually made of Glaſs; conſiſting of a round hollow Ball, which terminates in a long ſlender Neck, hermetically ſeal'd a-top: there being firſt, as much running Mercury put into it, as will ſerve to ballance or keep it ſwimming in an erect Poſition.

The Stem is divided into Degrees; (as repreſented Tab. MISCELLANY, fig. 18.) and by the Depth of its Deſcent into any Liquor, its Lightneſs is concluded; for that Fluid in which it ſinks leaſt, muſt be heavieſt; and that in which it ſinks loweſt, lighteſt. See WATER-*poiſe*, &c.

M. *Homberg* has invented a new *Araeometer*, deſcribed in *Philoſ. Tranſact.* N° 262. thus: *A* (fig. 19.) is a Glaſs-bottle or Matraſs, with ſo ſlender a Neck, that a Drop of Water takes up in it about five or ſix Lines, or $\frac{5}{12}$ of an Inch. Near that Neck is a ſmall capillary Tube *D*, about ſix Inches long, and parallel to the Neck——To fill the Veſſel, the Liquor is poured in at the Mouth *B*, (which is widen'd to receive a Tunnel) till it run out at *D*; that is, till it riſe in the Neck to the Mark *C*, by which means you have always the ſame Bulk or Quantity of Liquor; and conſequently, by means of the Balance, can eaſily tell, when different Liquors fill it, which weighs moſt, or is moſt intenſely heavy.

Some regard, however, is to be had to the Seaſon of the Year, and Degree of Heat and Cold in the Weather: by reaſon ſome Liquors rareſy with Heat, and condenſe with Cold, more than others; and accordingly take up more or leſs room. See SPECIFICK *Gravity*, RAREFACTION, &c.

By means of this Inſtrument, the ingenious Author has made a Table, to ſhew the different Weights of the ſame Bulk of the moſt conſiderable chemical Liquors, both in Summer and Winter; as follows:

The Araeometer *full of*	*weigh'd in Summer.*			*in Winter.*		
	oz.	*dr.*	*gr.*	*oz.*	*dr.*	*gr.*
Quick-ſilver	11	00	07	11	00	32
Oil of Tartar	01	03	08	01	03	31
Spirit of Urine	01	00	32	01	00	43
Oil of Vitriol	01	03	58	01	04	03
Spirit of Nitre	01	01	40	01	01	70
—— Salt	01	00	39	01	00	47
Aqua Fortis	01	01	38	01	01	55
Diſtilled Vinegar	00	07	55	00	07	60
Spirit of Wine	00	06	47	00	06	61
River Water	00	07	53	00	07	57
Diſtilled Water	00	07	50	00	07	54

The Inſtrument itſelf weighed, when empty, one Dram twenty-eight Grains.

ARÆOSTYLE, ARÆOSTYLOS, in the antient Architecture, a ſort of Intercolumination; wherein the Columns were placed at the Diſtance of eight, or, as ſome ſay, ten Modules from one another. See INTERCOLUMNIATION.

In the *Araeoſtyle* the Columns were the wideſt and openeſt they were ever planted at; whence the Name: from the *Greek* αραιος, *rarus*, and στυλος, Column.

The *Araeoſtyle* is chiefly uſed in the *Tuſcan* Order; at the Gates of great Cities and Fortreſſes.

ARÆOTICKS, or AREOTICKS, in Medicine, ſuch Remedies as tend to open the Pores of the Skin, and render them large enough for the morbifick Matter's being carried off by Sweat or inſenſible Perſpiration. See PORE, SWEAT, PERSPIRATION, &c.

To the Claſs of *Araeoticks* belong Diaphoreticks, Sudorificks, &c. See DIAPHORETICK, SUDORIFICK, &c.

ARAIGNEE, in Fortification, a Branch, Return, or Gallery of a Mine. See MINE, &c.

ARANEA *Tunica*. See ARACHNOIDES.

ARATRUM *Terræ*, in our antient Law-books, as much Land as can be tilled with one Plough——*Hoc manerium eſt* 30 *Aratrorum*. See CARRUCATA *Terræ*.

ARATURA *Terræ*, an antient Service which the Tenant was to do his Lord, by ploughing his Land. See SERVICE, &c.

ARBALET, or BALISTA, a kind of Weapon, vulgarly called a *Croſs-bow*. See HARQUEBUSS.

It conſiſts of a Steel-bow, ſet in a Shaft of Wood, furniſh'd with a String and a Tricker; and is bent with a piece of Iron fitted for that purpoſe——It ſerves to throw Bullets, large Arrows, Darts, &c.

The Antients had large Machines to throw Arrows withal, called *Arbalets* or *Baliſtæ*. See BALISTA.

The Word is derived from *Arbaliſta*, i. e. *Arcubaliſta*, a Bow with a Sling.

ARBITER, in the Civil Law, a Judge nominated by the Magiſtrate, or choſen voluntarily by two contending Parties, on whom they conſer a Power, by Compromiſe, of deciding their Difference according to Law. See JUDGE and COMPROMISE.

The *Romans* ſometimes ſubmitted to a ſingle *Arbiter*; but ordinarily they choſe ſeveral; and thoſe in an uneven Number. See ARBITRATION.

In Matters wherein the Publick was concerned, as Crimes, Marriages, Affairs of State, &c. it was not allowed to have recourſe to *Arbiters*——Nor was it permitted to appeal from an arbitral Sentence; the Effect of an Appeal being to ſuſpend the Authority of a Juriſdiction, not of a Compact. See APPEAL.

Among the Moderns there are uſually divers kinds of *Arbiters*; ſome, obliged to go by the Rigour of the Law; and others, authorized by the contending Parties to relax, or give way to natural Equity; properly call'd *Arbitrators*. See ARBITRATION.

Juſtinian abſolutely forbids a Woman from being elected *Arbiter*, or rather *Arbitreſs*; as judging ſuch an Office unbecoming the Sex. And yet Pope *Alexander* III. confirm'd an Arbitral Sentence given by a Queen of *France*.

ARBITRAGE, or ARBITREMENT. See ARBITRATION.

ARBITRARY, ſomething left to the Choice and Determination of Men; or not fixed, and ſettled by any poſitive Law or Injunction. See LAW, LIBERTY, &c.

The Puniſhment of ſuch a Crime is *Arbitrary*——*Arbitrary* Fines or Mulcts are uſually called *Amercements*. See AMERCEMENT.

The Laws or Meaſures whereby the Creator acts, are *Arbitrary*; at leaſt all the Phyſical Laws. See *Law of* NATURE.

ARBITRARY *Power*. See DESPOTICK, POWER, MONARCHY, GOVERNMENT.

The Word is form'd from the *Latin Arbitrium*, Will; whence alſo *Arbiter*, *Arbitrator*, &c.

ARBITRATION, or ARBITREMENT, the referring of a Cauſe or Quarrel to the Deciſion of one, or more indifferent Perſons under the Quality and Denomination of Arbiters, or *Arbitrators*. See ARBITER and ARBITRATION.

Among us, two Arbitrators are uſually choſe by the contending Parties; and in caſe theſe cannot agree, a third is added, called an *Umpire*; in whoſe Deciſion both Sides bind themſelves to acquieſce.

ARBITRATOR, an extraordinary Judge, or Commiſſioner, in one or more Cauſes between Party and Party, choſen by their mutual Conſents. See ARBITRATION.

An Arbitriment is either general, that is, including all Actions, Quarrels, and Demands; or ſpecial, which includes one or more Matters, or Facts ſpecified.

The Civilians make a difference between *Arbiter* and *Arbitrator*, tho they both ground their Power on the Compromiſe of the Parties; yet their Liberty is diverſe: for an *Arbiter* is tied to proceed and judge according to Law, with Equity intermingled; whereas an *Arbitrator* is permitted wholly to his own Diſcretion, without Solemnity of Proceſs, or Courſe of Judgment, to hear or determine the Controverſy committed to him; ſo it be *juxta Arbitrium boni Viri*. See ALTO & *Baſſo*.

ARBOR, in natural Hiſtory, Botany, &c. See TREE.

ARBOR in Chymiſtry——ARBOR *Philoſophica*, is a Name common to ſeveral Metalline Cryſtallizations; thus call'd from their Ramifications reſembling a Tree. See CRYSTALLIZATION——Such are the

ARBOR *Dianæ*, *Diana's Tree*. See DIANA's *Tree*.

ARBOR *Martis*, *Tree of Mars*. See TREE *of Mars*.

ARBOR *Porphyriana*, among the Schoolmen, is a Scale of beings; or a Figure, conſiſting of three Rows or Columns of Words; the middlemoſt whereof contains the Series of Genera and Species; and bears ſome Analogy to the Trunk: and the Extremes, containing the Differences, to the Branches of a Tree. See GENUS, SPECIES, and DIFFERENCE——Such is

SUBSTANCE
Thinking Extended
BODY
Inanimate Animate
ANIMAL
Irrational Rational
MAN
This That
PLATO.

The *Arbor Porphyriana* is otherwiſe called *Scala Prædicamentalis*. See PRÆDICAMENT, &c.

ARBOR *Genealogica*, or Tree of Conſanguinity; ſignifies a Lineage drawn out, under the Figure or Reſemblance of Root, Stock, Branches, &c. See CONSANGUINITY, GENEALOGY, STOCK, &c.

ARBOR is alſo figuratively uſed in Mechanicks, for the principal part of a Machine, which ſerves to ſuſtain the reſt——It is alſo uſed for a Spindle or Axis whereon a Machine turns.

Such

TAB. ARCHITECTURE

TUSCAN

Mouldings or Members

Fillet, List, Listel, Reglet, Annulet, or Bandelette

Baguette, or Astragal

Tore, or Baton

Scotia, Canal, Trochilus

Ovolo. Quarter round Echinus, Boultin & Lesbian Astragal inverted erect

Cabretto, Semi canal, Congee, and Doric Cymatium

Gorge

Ogee, or Talon inverted & erect

Cymatium, Cyma, Gula, Doucine, & Gorge inverted erect

Corona, Larmier, Drip, & Mouchette

Plinth & Soffite

Baguette, with Ribbands Roses

Chaplet, with Flowers Patterets Beads

Forms of Masonry

Net Masonry

Greek Masonry

Masonry by equal courses

Masonry by unequal courses

Masonry filld up in the middle

a Ovolo
b Astragal
c Fillet
d Larmier
e Fillet
f Ogee

Cornich

NB The Numbers affixd to ye Members, express their Proportions; those on ye right side of each Order, the Projectures; & those on the left the Heights. Vignola's Measures & manner of Composition are observd thro'

Frieze

Listel

Architrave

ORDER Intire

Entablature 3 Mod ¼

Column 14 Modules or 7 Diameters

Pedestal 4 Mod 8 min

Listel of the Abacus
m Ovolo
n Annulet
o Gorgerin

Capital

Astragal
q Conge, or Tincture

Shaft

r Naked or Vivo
s Listel or Tincture
t Tore, or Great Baton

Plinth

Reglet
Ogee

Cornich
Base

z Reglet
Zocle or Base of the Pedestal

Dye, or Trunk

Base

DORIC

1 Reglet
i Cavetto
h Fillet
S Talon
f Corona or Larmier
e Gutte or Drops
dd Denticles
C Talon
b Capitals of the Triglyphs
a Bandelette

Cornich

R Metops, filld with
S Bullocks head
T Demi Metops
VV Shanks parting
xx Glyphes or Canals of
Y Triglyph, from
zz Demi Canals

Frieze

ORDER Intire

Q Cymatium, or Bandelette
P Fillet of the
O Gutte or Drops
N Facia, or Plutband

Architrave

Capital

m Reglet
n Talon
O Abacus
P Ovolo or Echinus
q Annulets
Gorgerin

Astragal, Tincture, or Conge

u u Flutings

Shaft

Orle

Cornich
Base

Dye

Base

Entablature 4 Mod

Column 16 Modules or 8 Diameters

Pedestal 5 Mod 2 min

IONIC

Mouchette

ORDER Intire

Frieze, with Griffons, & Antique candlesticks in Basso Relievo, taken from the Temple of Antoninus, and Faustina.

Frieze

n Talon
3d or Grand Face
2d or Middle Face
1st or Little Face
m Reglet

Architrave

1 Talon of
K Abacus
ii Volutes
hh Canal of Volute
g Ovolo
f Astragal
e Fillet, or Orle
dd Flutings

Capital

Shaft

c 2d Scotia
b 1st Scotia
Nasselle, or Cavetto

Cornich
Base

Dye

Base

Pedestal

CORINTHIAN

Compound Masonry

a Lions heads for Spouts
b Roses
c Modillions

Cornich

c c Metopes
b b Denticles

Modillion of Vignola

Modillion of Scamozzi

Basso Relievo of Sacrifices

Frieze

ORDER Intire

Entablature 5 Mod

a a Foliages

Conge joyning ye Frieze to ye Listel of the Architrave

Architrave

Original of the Corinthian Capital

a Abacus
b b Acanthus
c c Vase

d Flower of ye Capital
D Helices or Volutes
e Olive Leaves of ye 2d Order
f Olive Leaves of ye 2d Order
FF Caulicoles
g Olive Leaves of ye 1st Order

Capital

Column 20 Modules or 10 Diameters

BB Angular Volutes
c c Leaves of Acanthus

Shaft

Composite Capitula side view

a Tambour

Plan of the Composite capital inverted

h Upr Tore
i Upr Scotia
k Lowr Scotia
l Fillet
m Lowr Tore
n Plinth

Base

o Fillet
p Talon
q Corona
r Cymatium
s Astragal
t Fillet
u Frieze
Astragal
Reglet & Conge
Y Reglet
Astragal
Gula inversa
Reglet
Tore
Plinth

Cornich

Dye

Base

Pedestal 7 Mod

COMPOSITE

Pediment

Attic Order

ARCH

Persian Order

Caryatic Order

a Tympan, or Triangular Panel
b b Archivault
c Key
d Impost
e Tympanum of the Pediment
f f Cornich of ye Same

10 Modules

Archivault & Impost of the Corinthian

a First or little Face of Archivault Crowned with an Astragal
b Second or Middle Face Covered with Ogee & Astragal
c Third or Great Face Covered with a Talon
d, Talon of the Impost
e Ovolo
f Astragal

Diminution of a Column

Volute

a Cathetus
b Eye
c Listel
d Canal

Eye of ye Volute

Intercolumnations

Eustyle or 4 Modules

Systyle 4 Mod

Picnostyle 3 Mod

Diastyle 6 Mod

Areostyle 8 Mod

Rustic Door

c c Stretching Rusticks
e e Heading Rusticks
f Key Stone
ii Sku or Side Stone

Window

a Architrave
b Knell
e Frieze
f Cornich
S Tympanum of ye Pediment
h Taping of the Base
i Body
k Plinth

a Cartouch
b Pilaster
c Stool

Console

Cartouze

Festoon

Rose

Frett

N° III

H. Fletcher. Sculp.

Arbor of a Crane, a Mill, Windmill, &c. See CRANE, MILL, WINDMILL, &c.

ARBOREUS, ARBOREOUS, is applied by ſome Naturaliſts to ſuch Excreſcencies, Fungus's, Moſſes, and other Paraſites as grow on Trees. See FUNGUS, MUSHROOM, GALLS, MOSS, PARASITE, ACORUS, &c.

ARBORIST, ARBORISTA, a Perſon skill'd in Trees; their Kinds, Forms, Natures, &c. See TREE.

Arboriſt is an appellation of leſs extent than *Botaniſt*. See BOTANY, &c.

ARBOUR, among Gardeners, &c. a kind of ſhady Bower or Cabinet, contrived to take the Air in. See GARDEN.

Arbours are now gone much into diſuſe, by reaſon their Seats, apt to be moiſt, are unwholeſome——They are diſtinguiſh'd into *natural* and *artificial*.

Natural *Arbours*, are formed only of the Branches of Trees, interwoven artfully, and born up by ſtrong Latticework, Poles, Hoops, &c. which make Galleries, Halls, Porticoes, and green Viſto's naturally covered.

The Trees wherewith theſe *Arbours* are formed, are uſually the Female Elms, or *Dutch* Lime-Trees; in regard they eaſily yield, and by their great quantity of ſmall Boughs, form a thick Bruſh-wood: the lower parts are filled up with Horn-beam.

Artificial Arbours, and Cabinets are made of Latticework, born up by Standards, Croſs-rails, Circles and Arches of Iron. For which purpoſe they make uſe of ſmall Fillets of Oak, which being planed and made ſtrait, are wrought in Checkers, and faſtened with Wire.

ARC, or ARK. See ARCH.

The Words are formed from the *Latin*, *Arcus*, a *Bow*.

ARCANUM literally ſignifies a *Secret*; and is therefore very pertinently applied by Quacks and Impoſtors in Medicine, who conceal their Ignorance and Fraud under a pretence of Secrecy——Hence Legions of *Arcana*.

There are alſo ſtanding officinal Compoſitions, under the Denomination of *Arcana*: ſuch are

The *Arcanum Corallinum*, a Preparation of red Precipitate; made by diſtilling it with Spirit of Nitre, and repeating the Diſtillation again and again, till a red Powder be procured. This Powder boiled in Water, and the Water poured off, and tartariz'd Spirit of Wine put to the Powder; two or three Cohobations are made: which leave a Powder, much like the Prince's Powder; of good uſe in the Gout, Dropſy, Scurvy, &c. It operates chiefly by Stool.

Arcanum Joviale, is made of an Amalgama of Mercury and Tin, digeſted in Spirit of Nitre: the Nitre being drawn off, the remaining matter is wetted with Spirit of Wine, and the Spirit burnt away; and this for ſeveral times till the pungent Taſte is gone: what remains is uſed much with the ſame Intentions as the *Antihecticum Poterii*, and is recommended by ſome as a Sudorific. See ANTIHECTICUM.

Arcanum duplicatum is prepar'd of Caput Mortuum of Aqua fortis, by diſſolving it in hot Water, filtrating, and evaporating it to a Cuticle; then leaving it to ſhoot.

The *Arcanum duplicatum*, or *Panacea duplicata* is extolled as a Diuretic, and Sudorific——The Recipe was purchaſed at the expence of 500 Dollars, by that great Virtuoſo the Duke of *Holſtein*. *Schroder*, that Prince's Phyſician, writes wonders of its great uſes in Hypocondriacal Caſes, continued and intermitting Fevers, Stone, Scurvy, &c.

ARC-BOUTANT, in Building, a flat Arch or part of an Arch abutting againſt the Reins of a Vault, to ſupport, and prevent its giving Way. See VAULT.

Arc-boutants are only arch'd Buttreſſes. See BUTTRESSE.

The name is *French*; form'd of *arc* and *bouter*, to a-but.

ARCH, ARK, ARCUS, a part of any curve Line; *e.gr.* of a Circle, Ellipſis, or the like. See CURVE.

ARCH *of a Circle* is a part of the Circumference thereof, leſs than a half, or Semicircle——Such is AB (Tab. GEOMETRY, fig. 27) See CIRCLE and CIRCUMFERENCE.

The Baſe or Line that joins the two Extremes of the Arch is called the *Chord*; and the Perpendicular rais'd in the middle of that Line, the *Sine* of the Arch. See CHORD and SINE.

All Angles are meaſured by *Arches*——to know their Quantity, an Arch is deſcribed, having its Centre in the Point of the Angle. See ANGLE.

Every Circle is ſuppoſed to be divided into 360 Degrees; and an *Arch* is eſtimated according to the Number of thoſe Degrees it takes up——Thus an *Arch* is ſaid to be of 30, of 80, of 100 Degrees. See DEGREE. Hence

Equal ARCHES are ſuch Arches of the ſame or equal Circles, as contain the ſame Number of Degrees. See EQUAL——Hence

In the ſame or equal Circles, equal Chords ſubtend equal *Arches*——And hence, again, *Arches* intercepted between parallel Chords are equal.

A Radius, CE, fig. 98. which biſſects the Chord in D, does alſo biſſect the *Arch*, in E; and is perpendicular to the Chord, and on the contrary——And hence the Problem, to *biſſect an Arch* is ſolved by drawing a Line AB perpendicular to the Chord in F.

Similar ARCHES are thoſe which contain the ſame Number of Degrees of unequal Circles. See SIMILAR——Such are the *Arches* AB and DE, fig. 87.

Two Radii being drawn from the Centre of two concentric Circles; the two *Arches* intercepted between 'em, bear the ſame Ratio to their reſpective Peripheries; and alſo the two Sectors to the Areas of their reſpective Circles. See ANGLE.

The Diſtance of the Centre of Gravity of an *Arch* of a Circle, from the Centre of the Circle, is a third Proportional to a third part of the Periphery and the Radius. See CENTRE *of Gravity*.

For the Sines, Tangents, &c. of *Arches*. See SINE, TANGENT, &c.

ARCH in Aſtronomy——*Diurnal* ARCH of the Sun, is part of a Circle parallel to the Equator, deſcribed by the Sun in his Courſe betwixt riſing and ſetting. See DIURNAL, DAY, &c.

His *nocturnal Arch* is of the ſame kind; excepting that it is deſcribed betwixt his ſetting and riſing. See NIGHT, RISING, &c.

The Latitude and Elevation of the Pole are meaſured by an *Arch* of the Meridian: The Longitude, by an *Arch* of a parallel Circle. See ELEVATION, LATITUDE, LONGITUDE, &c.

ARCH *of Progreſſion*, or *Direction*, is an *Arch* of the Zodiac which a Planet ſeems to paſs over, when its Motion is according to the Order of the Signs. See DIRECTION.

The ARCH *of Retrogradation* is an *Arch* of the Zodiac, deſcribed while a Planet is retrograde, and moves contrary to the Order of the Signs. See RETROGRADATION.

ARCH *of Station*. See STATION and STATIONARY.

ARCH *between the Centres* is an *Arch*, as AI (Tab. ASTRONOMY, fig. 35.) paſſing from the Centre of the Moon's Shadow, A, perpendicular to her Orbit GH. See ECLIPSE.

If the Aggregate of the *Arch* between the Centres AI, and the apparent Semi-diameter of the Moon, be equal to the Semi-diameter of the Shadow; the Eclipſe will be total without any duration: if leſs, total with ſome duration; and if greater, yet leſs than the Sum of the Semi-diameters of the Moon and the Shadow, partial——

ARCH *of Viſion* is the Sun's depth below the Horizon, at which a Star, before hid in his Rays, begins to appear again. See Poetical RISING.

ARCH, in Architecture, is a Concave Building, rais'd with a Mould bent in form of the *Arch* of a Curve, and ſerving as the inward Support of any Superſtructure. See BUILDING.

An *Arch*, ſays Sir *Henry Wotton*, is nothing but a narrow or contracted Vault; and a Vault, a dilated Arch. See VAULT.

Arches are uſed in large Intercolumnations of ſpacious Buildings; in *Porticos*, both within and without Temples; in publick Halls, as Ceilings, the Courts of Palaces, Cloiſters, Theatres and Amphitheatres. See PORTICO, THEATRE, CEILING, &c.

They are alſo uſed as Buttreſſes and Counter-forts to ſupport large Walls laid deep in the Earth, for Foundations of Bridges and Aquæducts, for triumphal Arches, Gates, Windows, &c. See BUTTRESS, ARC-*boutant*, &c.

Arches are either *circular*, *elliptical*, or *ſtrait*——

Circular ARCHES are of three kinds, *viz.*——1ſt, *Semicircular*, which make an exact Semicircle, and have their Centre in the middle of the Chord of the Arch.

2dly, *Scheme*, which are leſs than a Semicircle, and conſequently are flatter *Arches*; containing ſome, 90 Degrees, others 70, and others only 60.

3dly, *Arches of the third and fourth Point*, as ſome of our Workmen call them; tho' the *Italians* call them *di terzo* and *quarto acuto*, becauſe they always meet in an acute Angle at top——Theſe conſiſt of two *Arches* of a Circle ending in an Angle at the Top, and are drawn from the Diviſion of a Chord into three or four Parts, at pleaſure——Of this kind are many of the *Arches* in old *Gothick* Buildings; but on account, both of their Weakneſs and Unſightlineſs, they ought, according to Sir *Henry Wotton*, to be for ever excluded out of all Buildings.

Elliptical ARCHES conſiſt of a Semi-Ellipſis; and were formerly much uſed inſtead of Mantle-trees in Chimneys——Theſe have commonly a Keyſtone and Chaptrels or Impoſts.

Strait ARCHES, are thoſe whoſe upper and under Edges are ſtrait; as in the others they are curved; and thoſe two Edges alſo parallel, and the Ends and Joints all pointing towards a Center——Theſe are principally uſed over Windows, Doors, &c.

The Doctrine and Use of *Arches* is well delivered by Sir *Henry Wotton*, in the following *Theorems*.—1ſt, All Matter, unleſs impeded, tends to the Center of the Earth in a perpendicular Line. See DESCENT, GRAVITY, CENTRE, &c.

2dly, All ſolid Materials, as Bricks, Stones, &c. in their ordinary rectangular Form, if laid in Numbers, one by the Side of another, in a level Row, and their Extreme ones ſuſtained between two Supporters; thoſe in the middle will neceſſarily ſink, even by their own Gravity, much more if preſs'd down by any ſuperincumbent Weight—To make them ſtand, therefore, either their Figure or their Poſition muſt be altered.

3dly, Stones, or other Materials being figured *Cuneatim*, *i. e.* Wedge-wiſe, broader above than below, and laid in a level Row, with their two Extremes ſupported as in the preceding Theorem; and pointing all to the ſame Center; none of them can ſink, till the Supporters or Butments give way, becauſe they want room in that Situation to deſcend perpendicularly. But this is but a weak Structure; in regard the Supporters are ſubject to too much Impulſion, eſpecially where the Line is long; for which reaſon, the Form of ſtrait *Arches* is ſeldom uſed, excepting over Doors and Windows, where the Line is ſhort——In order to fortify the Work, therefore, we muſt not only change the Figure of the Materials, but alſo their Poſition.

4thly, If the Materials be ſhaped wedge-wiſe, and be diſpoſed in form of a circular *Arch*, and pointing to ſome Center; in this Caſe, neither the pieces of the ſaid *Arch* can ſink downwards, for want of room to deſcend perpendicularly; nor can the Supporters or Butments ſuffer ſo much Violence as in the precedent flat Form: for the Convexity will always make the incumbent Weight rather reſt upon the Supporters, than heave them outwards: whence this Corollary may be fairly deduced, that the ſecureſt of all the *Arches* abovemention'd is the Semi-circular; and of all Vaults, the Hemiſpherical.

5thly, As Semi-circular Vaults, rais'd on the whole Diameter, are the ſtrongeſt; ſo thoſe are the moſt beautiful, which keeping to the ſame height, are yet diſtended, one fourteenth part longer than the ſaid Diameter: which addition of width will contribute greatly to their Beauty, without diminiſhing any thing conſiderable of their Strength.

It is, however, to be obſerv'd, that according to Geometrical Strictneſs, to have the ſtrongeſt *Arches*, they muſt not be Portions of Circles, but of another Curve, call'd the *Catenaria*, whoſe Nature is ſuch, that a number of Spheres diſpos'd in this form, will ſuſtain each other, and form an *Arch*. See CATENARIA.

Dr. *Gregory* even ſhews, that *Arches* conſtructed in other Curves, only ſtand or ſuſtain themſelves by virtue of the Catenaria contain'd in their thickneſs; ſo that were they made infinitely ſlender or thin, they muſt tumble of courſe; whereas the Catenaria, tho' infinitely ſlender, muſt ſtand, in regard no one point thereof tends downward more than any other. *Philoſoph. Tranſact.* N°. 231.

See further of the Theory under the Article VAULT.

Arches are ſuſtain'd by Impoſts. See IMPOSTS.

ARCH is particularly uſed for the Space between the two Peers of a Bridge. See PEER and BRIDGE.

The chief or *Maſter-Arch* is that in the middle; which is wideſt, and uſually higheſt, and the Water under it deepeſt: being intended for the paſſage of Boats or other Veſſels——We read of Bridges in the Eaſt, which conſiſt of 300 Arches.

ARCH-*Stone*. See KEY-*Stone*.

Triumphal ARCH, is a Gate, or Paſſage into a City, magnificently adorned with Architecture, Sculpture, Inſcriptions, &c. which being built of Stone or Marble, ſerves not only to adorn a Triumph, at the Return from a victorious Expedition, but alſo to preſerve the Memory of the Conqueror to poſterity. See TRIUMPH.

The moſt celebrated Triumphal *Arches*, now remaining of Antiquity, are that of *Titus*, of *Septimus Severus*, and of *Conſtantine*, at *Rome*.

ARCH, in the Scripture Senſe. See ARK.

ARCH, or ARCHI, is alſo a Term without any meaning of itſelf, but which becomes very ſignificant in compoſition with other Words: It heightens and exaggerates them; and has the Force of a Superlative, to ſhew the greateſt Degree or Eminence of any thing.

Thus we ſay *Arch*-fool, *Arch* rogue, &c. to expreſs Folly and Knavery in the utmoſt Degree——So alſo *Arch*-Treaſurer, *Arch*-Angel, *Arch*-Biſhop, *Arch*-Heretick, &c. to denote ſuch as have a Pre-eminence over others.

The Word is form'd of the *Greek* ἀρχὴ, beginning; whence ἄρχος, *princeps, ſummus*.

In *Engliſh* we uſually cut off the final *i*, from *Archi*, tho' to very ill purpoſe; the Words wherewith it is join'd, ſounding much harſher on that ſcore than they wou'd do were it preſerv'd entire, as it is in moſt other Languages. See ANOMALOUS, CONTRACTION, &c.

ARCHÆUS, an obſcure Term, uſed chiefly among the Antient Chymiſts, to expreſs I know not what principle of Life and Motion; the Cauſe of all the Effects which we obſerve in Nature. See LIFE.

Hence, as they differ in their Ideas of a vital Cauſe; the Term *Archæus* becomes applied to very different Things: Tho moſt of 'em conceive it of the Nature of Fire. See FIRE.

Some uſe *Archæus* to denote the Fire lodg'd in the Centre of the Earth; to which they aſcribe the Generation of Metals and Minerals, and which they believe to be the Principle of Life in Vegetables. See CENTRAL, &c.

Others by the Word *Archæus* mean a certain univerſal Spirit, diffuſed throughout the whole Creation, the active Cauſe of all the Phænomena in Nature. See SPIRIT, ÆTHER, MEDIUM, &c.

Others, inſtead of *Archæus*, chuſe to call it the *Anima Mundi*; and others the *Vulcan* or *Heat* of the Earth. See ANIMA *Mundi*, &c.

They add, that all Bodies have their Share of this *Archæus*; and when this is corrupted, it produces Diſeaſes, which they call *Archæal-Diſeaſes*.

They likewiſe attribute Ideas to it; which for this Reaſon they call *Archæal Ideas*. See IDEA.

The Word is derived from ἀρχὴ, Principle; this Fire being the Principle and Source of all the Effects in Nature. See PRINCIPLE.

Helmont is a great Aſſerter of the Dogma of an *Archæus*—"No Poiſon, ſays he, can act on a Carcaſs: if, therefore, it "have any Effect, 'tis by means of the *Archæus*. He adds, "that if any heterogeneous Body happen to be preſent "to the *Archæus*; it riſes into a fervour, endeavours to "expel the hoſtile matter; and, in order to that, exerts "all the force of the Body——To cure any Diſeaſe, there"fore, is to pacify, and compoſe this *Archæus*. This *Ar*"*chæus*, he holds, is irritated at the leaſt appearance of any "thing heterogeneous; and as its Office is to watch over the "Health, and Safety of the whole Body; it is excited at "the very Shadow of the Enemy, calls its Forces to the "Charge, raiſes Fevers, &c. All, therefore, required to "an univerſal Medicine, is ſomething that may readily pa"cify, and lay this Unnatural Fever upon all occaſions." This Doctrine of *Helmont*, *Boerhaave* obſerves, would not be ſo abſurd, did he not aſcribe Underſtanding to this *Archæus:* ſetting this aſide, the Principle which renders Poiſons deadly, and Remedies beneficial, is the Circulation of the Blood. See CIRCULATION and BLOOD.

ARCH-ANGEL, an intellectual Subſtance or Angel in the eighth Rank among the bleſſed Spirits which compoſe the Celeſtial Hierarchy. See ANGEL, and HIERARCHY.

The Word is compounded of the *Greek* ἀρχὸς, Prince and ἄγγελος Angel.

ARCHBISHOP, ARCHIEPISCOPUS, a metropolitan Prelate, having ſeveral ſuffragan Biſhops under him. See BISHOP, SUFFRAGAN, &c.

Archbiſhops were not known in the Eaſt, till about the Year 320; and tho' there were ſome ſoon after this who had the Title, yet that was only a perſonal Honour by which the Biſhops of conſiderable Cities were diſtinguiſhed——It was not till of late that *Archbiſhops* became Metropolitans, and had Suffragans under them. See METROPOLITAN.

Athanaſius appears to be the firſt that uſed the Title *Archbiſhop*, which he gave occaſionally to his Predeceſſor; *Gregory Nazianzen*, in like manner, gave it to *Athanaſius:* not that either of them were entitled to any Juriſdiction, or even Precedence, in virtue thereof.

Among the *Latins*, *Iſidore Hiſpalenſis* is the firſt that ſpeaks of *Archbiſhops*. He diſtinguiſhes four Orders or Degrees in the Eccleſiaſtical Hierarchy, *viz. Patriarchs*, *Archbiſhops*, *Metropolitans*, and *Biſhops*. See PATRIARCH, &c.

England is divided into two *Archbiſhopricks*, or Provinces. See ARCHBISHOPRICK.

ARCHBISHOPRICK, ARCHIEPISCOPATUS, the Dignity of Archbiſhop; or the Province under his Juriſdiction. See ARCHBISHOP.

There are two *Archbiſhopricks* in *England*, *viz.* of *Canterbury* and *York*; the Prelates whereof are call'd *Primates* and *Metropolitans*. See PRIMATE and METROPOLITAN.

The

The Archbiſhop of *Canterbury* had antiently Juriſdiction over *Ireland* as well as *England*, and was ſtyled a *Patriarch*, and ſometimes *Alterius orbis Papa*, and *Orbis Britannici Pontifex*. Matters done and recorded in his Name ran thus, *Anno Pontificatus noſtri primo*, &c. See PATRIARCH, POPE, *&c.*

He was alſo *Legatus Natus*. See LEGATE.

He even enjoyed ſome ſpecial Marks of Royalty; as, to be Patron of a Biſhoprick, which he was of *Rocheſter*; to make Knights, coin Monies, *&c.*——He is ſtill the firſt Peer of *England*, and next to the Royal Family; having precedence of all Dukes, and all Great Officers of the Crown. See NOBILITY, PEER, PRECEDENCE, *&c.*

He has, by Common Law, the Power of Probate of Wills and Teſtaments, and granting Letters of Adminiſtration, *&c.* See PROBATE, ADMINISTRATION, *&c.*

He has alſo a Power to grant Licences and Diſpenſations in all Caſes formerly ſued for in the Court of *Rome*, and not repugnant to the Law of God. See DISPENSATION, PLURALITY, NON-RESIDENCE, COMMENDAM, *&c.*

He alſo holds ſeveral Courts of Judicature; as, Court of Arches, Court of Audience, Prerogative Court, and Court of Peculiars. See ARCHES, AUDIENCE, *&c.*

The Archbiſhop of *York* has the like Rights in his Province, as the Archbiſhop of *Canterbury*; has precedence of all Dukes not of the Royal Blood; and all Officers of State except the Lord High Chancellor. He has the Rights of a Count *Palatine* over *Hexamſhire*. See CONVOCATION, *&c.*

ARCHDEACON, ARCHIDIACONUS, a Church Officer, whoſe Buſineſs is to viſit the Pariſhes within a certain Diſtrict, or part of a Dioceſe committed to him. See VISITATION, PARISH, *&c.*

The *Archdeacon*, ſometimes alſo call'd *Arch-Levite*, was originally the firſt and eldeſt of the Deacons who attended on the Biſhop; whence his Name. See DEACON.

He was not known before the Council of *Nice:* his Function is ſince become a Dignity; and even ſet above that of Prieſt: tho' antiently it was quite otherwiſe. The *Archdeacon* was the Biſhop's chief Miniſter for all external Concerns, and particularly the Adminiſtration of the Temporalties. He took care that Order and Decency were obſerv'd in Divine Service, look'd to the Ornaments and Utenſils of the Church; had the Direction of the Poor, and the Inſpection of the Manners and Behaviour of the People: for which reaſon he was call'd the *Biſhop's Hand and Eye.*

Theſe Advantages ſoon got him the upperhand over Prieſts, who had only Spiritual Functions. But he had no Juriſdiction over 'em till the VIth Century; tho' by this time he was become ſuperior to the Archimandrite, or Rural Dean himſelf. See RURAL *Dean.*

In the Xth Century *Archdeacons* were conſidered as having Juriſdiction in their own Right or attach'd to their Office; with a Power of Delegating it to others. But from that time Meaſures were taken to leſſen their Power, by increaſing their Number——He whoſe Diſtrict lay in the Capital City, took the Quality of *Great-Archdeacon.*

We have ſixty *Archdeacons* in *England:* their Office is to viſit every other Year, to enquire into Reparations and Moveables belonging to the Church, reform Abuſes in Eccleſiaſtical Matters, and bring the more weighty Affairs before the Biſhop; beſides which, they have alſo a Power to ſuſpend, excommunicate, and in many Places to prove Wills, and in ſome to inſtitute to Benefices.

It is one part of the *Archdeacon*'s Office to induct all Clerks into their Benefices within his Juriſdiction; and by the Act of Uniformity, he is now oblig'd to be in Prieſts Orders. See INDUCTION.

Many *Archdeacons* in old Foundations, have, by preſcription, their Courts and Officials as Biſhops have. See COURT, OFFICIAL, *&c.*

ARCH-CHAMBERLAIN, ARCHI-CAMERARIUS, an Officer of the Empire; much the ſame with what in *England* we call *Great Chamberlain.* See CHAMBERLAIN.

The Elector of *Brandenbourg* is *Arch Chamberlain* of the Empire, being ſo appointed by the Golden Bull; and in that Quality, he bears the Scepter before the Emperor, walking on the left hand of the Elector of *Saxony.* At ſome Solemnities he ſerves on horſeback like other Electors; carrying a Baſon with a Towel in his Hands: from which alighting he ſets it for the Emperor to waſh—He has his Vicar, or *Sub Arch-Chamberlain*, who is Prince of *Hoheuzollern*, of the Houſe of *Brandenbourg.* See ELECTOR, EMPIRE, *&c.*

ARCH-CHANCELLOR, ARCHI-CANCELLARIUS, a Great Chancellor, who antiently preſided over the Notaries, that is, the Secretaries of a Court. See CHANCELLOR.

This Office chiefly obtained in *France*, under the two firſt Races of their Kings; and afterwards under the Empire: as they had three ſeveral Territories, *Germany*, *Italy*, and *Arles*; they had three *Arch-Chancellors*; and hence the three *Arch-Chancellors* ſtill ſubſiſting in *Germany*, the Archbiſhop of *Mentz* being *Arch-Chancellor* of *Germany*, the Archbiſhop of *Cologn* of *Italy*, and the Archbiſhop of *Treves* of *Arles.*

Bern. de Malliackroth, in an expreſs Treatiſe *de Archicancellariis Imperii Romani*, ſhews that theſe three Archbiſhops were *Arch-Chancellors* before they were Electors—We alſo read of *Arch-Chancellors* of *Burgundy*, &c.

ARCH-CHANTER, ARCHICANTER, the Chief or Preſident of the Chanters of a Church. See CHANTER.

ARCH-DRUID, ARCHIDRUIDA, the Chief or Pontiff of the antient *Druids* in a Nation. See DRUID.

ARCH-BUTLER, ARCHIPINCERNA, the Great Butler of the Empire. See BUTTLER.

The King of *Bohemia* is *Arch-butler*: his Buſineſs is to preſent the firſt Cup at an Imperial Entertainment; but he is not obliged to officiate with his Crown on. He has for Vicar or Deputy the Hereditary Prince of *Limbourg.* See ELECTOR.

ARCH-DAPIFER, or *Chief-Sewer*, is another Officer of the Empire. See EMPIRE.

The Elector of *Bavaria* is *Archdapifer*—The Palatine of the *Rhine* pretended this Office was annexed to his Palatinate; but has ſince deſiſted. See PALATINE.

ARCHDUKE, ARCHIDUX, a Duke veſted with ſome Quality, Pre-eminence, and Authority above other Dukes. See DUKE.

The *Archduke* of *Auſtria* is a very antient Title. There have alſo been *Archdukes* of *Lorrain*, and *Brabant.*

Auſtria was erected into a Marquiſate by *Otho*, or *Henry* I. and into a Dutchy by *Frideric* I. in 1156: But we don't well know when, nor why the Title *Arch-dutchy* was given it——'Tis commonly held, that Duke *Frideric* IV. firſt aſſumed the Quality: Others, that it was given by the Emperor *Maximilian* I. in 1459; and ample Privileges annexed to it. The principal hereof are, That the *Archduke* ſhall diſtribute Juſtice in his own Dominions, without Appeal; that he ſhall be judg'd to have received the Inveſtiture of his States, after having demanded it three times; and cannot be deprived of his Countries, even by the Emperor and the States of the Empire: that no Affair of the Empire can be concluded without his Participation; and that he have a power of creating Counts, Barons, and Gentlemen, throughout the whole Empire: which are Privileges to which the other Dukes of the Empire are ſtrangers.

ARCHE, among Phyſicians, the beginning of a Diſeaſe. See DISEASE.

ARCHED *Legs*, is an Imperfection in a Horſe, when being in his natural Poſition, he has his Legs bent forwards; and his whole Leg makes a kind of Arch or Bow. See HORSE.

It uſually ariſes from exceſſive Labour, whereby the back Sinews are made to ſhrink up ſo that the Legs remain *arch'd*, and tremble after a little Riding. Tho the Diſorder is ſometimes natural to them.

ARCHERS, a kind of Militia or Soldiery, armed with Bows and Arrows. See ARM, MILITIA, *&c.*

They were much in uſe in former Times; but are now laid aſide, excepting in *Turky*, and ſome of the Eaſtern Countries; where there are Companies of *Archers* ſtill on foot in their Armies.

The Name *Archer*, however, is ſtill retained even where the Thing is loſt: Thus, in *France*, the Officers who attend the Prevoſts, to make Captures, Seizures, Arreſts, *&c.* are called *Archers*; tho their Arms be only Halberds or Carabines——In this ſenſe they ſay, the *Archers* of the *Grand Prevot de l'Hotel*; of the *Prevot des Marchands*; the City *Archers*; the *Archers du Guet*, or of the Watch, *&c.*

They have alſo their *Archers des Pauvres*, *Archers* of the Poor; whoſe Office is to ſeize ſuch Beggars as they find in the Streets, and carry them to the Hoſpitals.

The Word is form'd of the *Latin Arcus*, a Bow; whence *Arcuarius*, *Arquites*, and even *Arquis*, as we ſometimes read it in the corrupt State of that Tongue——*Varro* obſerves, that *Archer* originally ſignified a Brigand, or Highwayman.

ARCHERY, in our antient Cuſtoms, a Service of keeping a Bow for the Uſe of the Lord, to defend his Caſtle. See SERVICE.

ARCHES, or *Court of* ARCHES, is one of the Archbiſhop's Courts; to which Appeals lie in Eccleſiaſtical Matters from all parts of the Province of *Canterbury.* See COURT, APPEAL, and ARCHBISHOP.

This Court is thus call'd, from the *arch'd* Church and Tower of St. *Mary le Bow*, where it was wont to be held.

The

The Judge of the Court of the *Arches*, is called the *Dean of the Arches*, or the *Official* of the *Arches* Court, &c. with which Officialty, is commonly joined a peculiar Juriſdiction over thirteen Pariſhes in *London*, termed a *Deanery*, exempt from the Authority of the Biſhop of *London*, and belonging to the Archbiſhop of *Canterbury*; of which the Pariſh of *Bow* is one, and the principal.

Others ſuppoſe the Denomination and Functions of *Dean of the Arches* to have aroſe hence, that the Archbiſhop's Official or Dean being oft employ'd abroad in foreign Embaſſies, the Dean of the *Arches* was his Subſtitute in this Court.

This Judge on any Appeal made, forthwith, and without any farther Examination of the Cauſe, ſends out his Citation to the Appellee, and his Inhibition to the Judge from whom the Appeal was made.

The Advocates who are allowed to plead in the *Arches* Court, are to be Doctors of the Civil Law, in one of our Univerſities. See ADVOCATE.

ARCHETYPE, ARCHETYPUS, a Pattern or Model, by which any Work is form'd, or which is copied after, to make another like it. See MODEL.

In this ſenſe the Word coincides with *Original*; and ſtands oppoſed to *Copy*. See ORIGINAL and COPY.

Among Minters, &c. *Archetype* is peculiarly uſed for the Standard or original Weight, by which the other Weights are to be adjuſted and examined. See STANDARD.

The Philoſophers, particularly the *Platoniſts*, talk of an *Archetypal* World; meaning, the World, ſuch as it exiſted in the Divine Mind, or in the Idea of God, before the Creation. See IDEA, PLATONISM, &c.

The Word is compounded of αρχη, Beginning; and τυπος, Type. See TYPE.

ARCHIACOLYTHUS, *q. d. Chief Acolythus*; was an antient Dignity, in Cathedral Churches: the Miniſters whereof were divided into four Orders, or Degrees, *viz.* Prieſts, Deacons, Subdeacons, and *Acolythi*; each of which had their Chiefs: The Chief of the *Acolythi* was called *Archiacolythus*. See ACOLYTHUS, &c.

ARCHIATER, ARCHIATRUS, ARCHIATOR, the chief Phyſician of a Prince who retains ſeveral. See PHYSICIAN.

The Word is form'd of the *Greek* αρχη, *Principium*, Chief; and ιατρος, *Medicus*, a Phyſician.

ARCHIEUNUCH, ARCHIEUNUCHUS, the Chief of the Eunuchs. See EUNUCH.

The *Archieunuch* was one of the principal Officers in *Conſtantinople*, under the *Greek* Emperors.

ARCHIGALLUS, in Antiquity, the Chief of *Cybele*'s Prieſts, call'd *Galli*. See GALLI.

ARCHILOQUIAN, a Term in Poetry, applied to a ſort of Verſes, whereof *Archilochus* was the Inventor. See VERSE.

Theſe conſiſt of ſeven Feet; the four firſt whereof are ordinarily Dactyls, tho' ſometimes Spondees; the three laſt Trochees: for inſtance;

Solvitur acris Hyems grata vice Veris & Favoni. Hor.

'Tis uſual to mix Iambic Verſes of ſix Feet, abating a Syllable, with *Archiloquian* Verſes; as *Horace* himſelf has done in the Ode now cited.

Theſe Verſes are alſo call'd *Dactylic*, on account of the Dactyls at the beginning. See DACTYL and DACTYLIC.

ARCHIMANDRITE, the Superior of a Monaſtery; amounting to what we now call *Abbot*. See ABBOT, SUPERIOR, &c.

Covarruvias obſerves, that the Word literally denotes the Chief or Leader of a Flock; in which ſenſe it may be applied to any Eccleſiaſtical Superior: Accordingly, we find the Name ſometimes attributed to Archbiſhops. But among the *Greeks*, where it is chiefly uſed, it is reſtrained to the Chief of an Abbey.

M. *Simon* maintains the Word originally derived from the *Syriac*; at leaſt the part *Mandrite*, which by a Circuition, he makes to ſignify a Solitary or Monk.

ARCHIMIME, ARCHIMIMUS, is the ſame thing, in effect, with Arch-Buffoon.

The *Archimimes*, among the *Romans*, were Perſons who imitated the Manners, Geſtures, and Speech both of the Living and the Dead. See MIME.

At firſt they were only employ'd on the Theatre; but were afterwards admitted to their Feaſts, and at laſt to their Funerals; where they walked after the Corps, counterfeiting the Geſtures and Behaviour of the Perſon who was carrying to the Funeral Pile; as if he were ſtill alive. See FUNERAL.

ARCHIPELAGO, in Geography, a Sea interrupted by a great Number of Iſlands. Sea SEA.

The moſt celebrated, and that to which the Name is in ſome meaſure appropriated, is that between *Greece*, *Macedonia*, and *Aſia*; wherein are the Iſlands of the *Ægean* Sea: which is call'd the *White Sea*, in contradiſtinction to the *Euxine*, which they call the *Black Sea*.

The modern Geographers mention other *Archipelago's*; as, that of *Lazarus*, near the Coaſt of *Malabar* and *Malacca*; the *Archipelago* of *Mexico*; that of the *Caribbees*, wherein are above 12000 Iſlands; that of the *Philippines*, containing 11000 Iſlands; thoſe of the *Molucco's*, of *Celebes*, &c.

The Word is form'd, by Corruption, of *Ægeopelagus*, q. d. *Ægean* Sea; which, again, is form'd of Αγιοπελαγος, or Holy Sea; a Name originally given it by the *Greeks*, on account of the *Cyclades*, for which they had a very high Veneration.

ARCHIPERACITA, or ARCHIPHERACITA, an Officer in the *Jewiſh* Academies. See ACADEMY.

The *Archiperacita* was not the ſame with the *Archiſynagogus*, as *Grotius* and others have miſtakenly imagined; but rather the Chief or Principal of theſe appointed to read, explain, and profeſs the Law, in their Schools—— And hence the Name; which is form'd of the *Greek* αρχη, Chief; and the *Hebrew* or *Chaldee* פרק, *Pherak*, Diviſion, Chapter.

ARCH-LEVITE, ARCHILEVITA. See ARCHDEACON.

ARCHMARSHAL, ARCHIMARISCHALLUS, the Grand Marſhal of the Empire. See MARSHAL.

The Elector of *Saxony* is *Archmarſhal* of the Empire; and in that Quality goes immediately before the Emperor, bearing a naked Sword.

ARCH-MINISTER, ARCHIMINISTER, the Prime Miniſter of a Prince or State. See MINISTER.

Charles the Bald having declared *Boſon* his Viceroy in *Italy*, under the Title of Duke; made him alſo his firſt Miniſter under that of *Archiminiſter*: from the *Greek* αρχη, and the *Latin Miniſter*——*Chorier*.

ARCH-PRIEST, ARCHIPRESBYTER, a Prieſt, eſtabliſhed in ſome Dioceſes, with a Pre-eminence over the reſt. See PRIEST.

Antiently, the *Arch-Prieſt* was the firſt Perſon after the Biſhop, and even acted as his Vicar, in his abſence, as to all ſpiritual Concerns. In the ſixth Century, there were found ſeveral *Arch-Prieſts* in the ſame Dioceſe; from which time they were call'd *Deans*. See DEAN.

In the ninth Century, they diſtinguiſhed two kinds of Cures or Pariſhes; the ſmaller, govern'd by ſimple Prieſts; and the Baptiſmal Churches, by *Archipresbyters*, who, beſide the immediate Concern of the Cure, had the Inſpection of the other inferior Prieſts, and gave an account thereof to the Biſhop, who governed the Chief or Cathedral Church in Perſon. See BISHOP, PARISH, CATHEDRAL, &c.

There are *Arch-Presbyters* ſtill ſubſiſting in the *Greek* Church; veſted with moſt of the Functions and Privileges of *Chorepiſcopi*, or Rural Deans. See CHOREPISCOPUS and RURAL *Dean*.

ARCH-PRINTER, ARCHITYPOGRAPHUS. See PRINTER.

ARCH-PRIOR, was a Name ſometimes given to the Maſter of the Order of Templars. See MASTER and TEMPLAR.

ARCHISTRATEGUS, Αρχιστρατηγος, the Generaliſſimo, or Captain General of an Army.

ARCHITECT, ARCHITECTUS, a Perſon ſkill'd in Architecture, or the Art of Buildings; who makes Plans and Deſigns of Edifices, conducts the Work, and directs the Maſons and other Artificers employ'd therein. See ARCHITECTURE, PLAN, DESIGN, &c.

The Word is derived from the *Greek* αρχη, *Princeps*, and τεκτων, Workman, *q. d.* the *principal Workman*.

The moſt celebrated *Architects* are, *Vitruvius*, *Palladio*, *Scamozzi*, *Serlio*, *Vignola*, *Barbaro*, *Cataneo*, *Alberti*, *Viola*, *Bullant*, and *De Lorme*.

Vitruvius enumerates twelve Qualities requiſite to an *Architect*; That he be Docil and Ingenious; Literate; ſkill'd in Deſigning; in Geometry; Opticks; Arithmetick; Hiſtory; Philoſophy; Muſick; Medicine; Law, and Aſtrology. See BUILDING, &c.

ARCHITECTONICK, that which builds a thing up regularly, according to the Nature and Intentions thereof.

Thus, that plaſtick Power, Spirit, or whatever elſe it be which hatches the Ova of Females into living Creatures of the ſame Species, is by ſome called the *Architectonick* Spirit. See PLASTICK.

ARCHITECTURE, Architectura, the Art of *Building*; *i. e.* of erecting Edifices proper for Habitation, or Defence. See Building, Edifice, &c.

Architecture is uſually divided, with reſpect to its Objects, into three Branches, *Civil*, *Military*, and *Naval*.

Civil Architecture, called alſo abſolutely and by way of Eminence Architecture, is the Art of contriving and executing commodious Buildings for the Uſes of Civil Life; as *Houſes*, *Temples*, *Theatres*, *Halls*, *Bridges*, *Colleges*, *Portico's*, &c. See House, Temple, Theatre, &c.

Architecture is ſcarce inferior to any of the Arts in Point of Antiquity.—Nature and Neceſſity taught the firſt Inhabitants of the Earth to built themſelves Hutts, Tents, and Cottages; from which, in courſe of Time, they gradually advanced to more regular and ſtately Habitations, with Variety of Ornaments, Proportions, &c. See *Vitruvius*'s *Account of the Origin of* Architecture *under the Article* Order.

The antient Writers repreſent the *Tyrians* as the firſt among whom *Architecture* was carried to any tolerable Pitch; and hence it was that *Solomon* had Recourſe thither for Workmen to build his Temple. *Villalpandus*, indeed, contends, that only Under-workmen were ſent for from *Tyre*, Artificers in Gold, Silver, Braſs, &c. and that the Rules of *Architecture* were delivered by God himſelf to *Solomon*. Hence, he adds, the *Tyrians* rather learnt their *Architecture* from *Solomon*; which they afterwards communicated to the *Egyptians*; theſe to the *Grecians*, and theſe again to the *Romans*—In effect, the Author laſt cited, undertakes to prove, that all the Beauty and Advantages of the *Greek* and *Roman* Buildings, were borrow'd from this Fabrick. *Tom.* ii. *Part* ii. *Lib. Iſagog.* iii. *C.* ix. x.

To confirm this, *Sturmius* produces ſeveral Paſſages in *Vitruvius*, where the Rules given by that Architect, *Lib.* vi. *C.* ii. and *Lib.* v. *C.* i. quadrate exactly with what *Joſephus* relates of the *Jewiſh* Temple, *Antiq. Jud.* Lib. vi. & viii. &c. See Temple.

To what a Pitch of Magnificence the *Tyrians* and *Egyptians* carried *Architecture*, ere it came to the *Greeks*, may be learnt from *Iſaiah* xxiii. 8. and *Vitruvius*'s Account of the *Egyptian* Oecus; their Pyramids, Obeliſks, &c. See Obelisk, Pyramid, &c.

Yet, in the common Account, *Architecture* ſhould be almoſt wholly of *Grecian* Original: Three of the regular Orders or Manners of Building, are denominated from them, *viz. Corinthian*, *Ionic*, and *Doric*: And ſcarce a Part, a ſingle Member, or Moulding, but comes to us with a Greek Name. See Corinthian, Doric, Ionic; ſee alſo Moulding, &c.

Be this as it will, 'tis certain the *Romans*, from whom we derive it, borrow'd what they had entirely from the *Greeks*; nor ſeem, till then, to have had any other Notion of the Grandeur and Beauty of Buildings, beſide what ariſes from their Magnitude, Strength, &c.—Thus far they were unacquainted with any Order beſide the *Tuſcan*. See Tuscan.

Under *Auguſtus*, *Architecture* arrived at its Glory: *Tiberius* neglected it, as well as the other polite Arts. *Nero*, amongſt a Heap of horrible Vices, ſtill retain'd an uncommon Paſſion for Building, but Luxury and Diſſoluteneſs had a greater Share in it, than true Magnificence.—*Apollodorus*, excelled in *Architecture*, under the Emperor *Trajan*, by which he merited the Favour of that Prince; and it was he who raiſed the famous *Trajan* Column, ſubſiſting to this Day. See Trajan.

After this, *Architecture* began to dwindle; and tho the Care and Magnificence of *Alexander Severus* ſupported it for ſome Time, yet it fell with the weſtern Empire, and ſunk into a Corruption, from whence it was not recovered for the Space of twelve Centuries.

The Ravages of the *Viſigoths*, in the 5th Century, deſtroy'd all the moſt beautiful Monuments of Antiquity; and *Architecture* thence forwards, became ſo coarſe and artleſs, that their profeſs'd Architects underſtood nothing at all of juſt Deſigning, wherein its whole Beauty conſiſts: Hence a new Manner of Building took its Riſe, called the *Gothic*. See Gothic.

Charlemagne did his utmoſt to reſtore *Architecture*, and the *French* applied themſelves to it with Succeſs, under the Encouragement of *H. Capet*: His Son *Robert* ſucceeded him in this Deſign; till by Degrees the modern *Architecture* was run into as great an Exceſs of Delicacy, as the *Gothick* had before done into Maſſiveneſs. To theſe may be added, the *Arabeſk* and *Moriſk*, or *Mooriſh Architecture*; which were much of a-piece with the *Gothic*, only brought in from the South by the *Moors* and *Saracens*, as the former was from the North by the *Goths* and *Vandals*. See Arabesk, Morisco, Grotesk, &c.

The Architects of the 13th, 14th, and 15th Century, who had ſome Knowledge of Sculpture, ſeem'd to make Perfection conſiſt altogether in the Delicacy and Multitude of Ornaments, which they beſtowed on their Buildings, with a World of Care and Sollicitude; tho' frequently without any Conduct or Taſte.

In the two laſt Centuries, the Architects of *Italy* and *France* were wholly bent upon retrieving the primitive Simplicity and Beauty of antient *Architecture*, in which they did not fail of Succeſs: Inſomuch, that our Churches, Palaces, &c. are now wholly built after the Antique.—

Civil Architecture may be diſtinguiſh'd, with regard to the ſeveral Periods or States thereof, into *Antique*, *Antient*, *Gothic*, *Modern*, &c. See Antique, Antient, Gothic, and Modern, &c.

Another Diviſion of *Civil Architecture*, ariſes from the different Proportions which the different Kinds of Buildings render'd neceſſary, that we might have ſome proper for every Purpoſe, according to the Bulk, Strength, Delicacy, Richneſs, or Simplicity required.—

Hence aroſe five Orders or Manners of Building, all invented by the Antients at different Times, and on different Occaſions, *viz. Tuſcan*, *Doric*, *Ionic*, *Corinthian*, and *Compoſite*; the Hiſtory, Characters, &c. of each whereof ſee under their reſpective Articles, Tuscan, Doric, Ionic, Corinthian, and Composite.

What forms an Order, is the *Column* with its *Baſe* and *Capital*; ſurmounted by an Entablature, conſiſting of Architrave, Frieze, and Cornice; and ſuſtain'd by a *Pedeſtal*. See Order; ſee alſo Column, Entablature, Pedestal, &c. ſee alſo Capital, &c.

For a general View of the Elements of Architecture, with the Rules which obtain with reſpect to the Matter, Form, Proportion, Situation, Foundation, Diſtribution, Covering, Apertures, &c. See the Article Building.

For Particulars; ſee Foundation, Wall, Roof, Window, Door, Ceiling, &c. ſee alſo Beauty, &c.

There are ſeveral Arts ſubſervient to *Architecture*, as Carpentry, Maſonry, Paving, Joynery, Smithery, Glazery, Plumbery, Plaſtering, Gilding, &c. See Carpentry, Masonry, Paving, Joynery, Smithery, Glazery, Plumbery, Plastering, Gilding, &c.—See alſo Timber, Stone, Brick, Tyle, Mortar, Lead, Glass, &c.

We have no Greek Authors extant on *Architecture*—The firſt who wrote of it was *Agatharens* the *Athenian*, who was ſeconded by *Democritus* and *Theophraſtus*—— Among the *Latins*, the younger *Pliny* ſeems to ſpeak the beſt; and indeed ſhews himſelf very knowing therein.

Of all the Antients, *Vitruvius* is the only entire Author; tho' *Vegetius* relates that there were 700 Architects at *Rome* in his Time—He lived under *Auguſtus*, and compoſed a compleat Syſtem of *Architecture*, in ten Books, which he dedicated to that Prince. There are two Things cenſured by the Moderns in this excellent Work, *viz.* Want of Method, and Obſcurity. The Mixture of Latin, Greek, in *Vitruvius*, is ſuch, that *Leon Baptiſt Alberti*, has obſerved, he wrote Latin to the *Greeks*, and Greek to the *Latins*: He adds, that the Work contains abundance of Things ſuperfluous and foreign to the Purpoſe.—For this Reaſon M. *Perrault* has extracted all the Rules out of *Vitruvius*'s prolix Work, methodized and publiſhed them in a little Abridgment:—Several Authors have alſo endeavoured to explain the Text of *Vitruvius*, particularly *Philander*, *Barbaro*, and *Salmaſius*, in Notes added to their ſeveral Latin Editions; *Rivius* and *Perrault* in the Notes to their *German* and *French* Verſions; and *Baldus* in his *Lexicon Vitruvianum*:—The ſame M. *Perrault* has alſo compoſed an excellent Treatiſe *Of the five Orders*, which may be eſteemed a Supplement to *Vitruvius*, who left the Doctrine of the Orders defective.

The Authors upon *Architecture* ſince *Vitruvius*, are—*Leon. Baptiſt Alberti*, who in 1512, publiſhed ten Books of the Art of Building, in Latin, deſigned to outvie *Vitruvius*; in which, however, he has not ſucceeded: His Work has abundance of good Things, but is deficient in the Doctrine of the Orders—*Seb. Serlio*, who wrote ſeven Books of *Architecture*, five of which concerning the five Orders, were made publick in 1602; throughout all which, he religiouſly keeps to *Vitruvius*'s Rules: The ſeventh was ſince publiſh'd in 1575; but the ſixth, concerning private Buildings, has not yet appear'd.—*And. Palladio*, who wrote four Books of *Architecture*, containing the fundamental Rules of the Art, with various Inſtances of all the Kinds of Works; publiſh'd in Italian in 1575: The two firſt Books are render'd into High-Dutch, and enlarg'd with Annotations by *Boeckler*—*Phil. de Lorme*, who publiſh'd nine Books of *Architecture*, in *French*, in 1567—*J. Barozzio de Vignola*, who in 1631, made publick his Rules of the five Orders, in Italian; ſince tranſlated, with large Additions, by *Daveler*, under the Title of *Cours d'Architecture*, &c. and ſince alſo into High-Dutch, with Notes.—

To theſe are to be added *Vincent. Scamozzi*, his *Idea of Univerſal Architecture*, publiſh'd in 1615, in *Italian*; *Car. Phil. Dieuſſart*, in his *Theatre of Civil Architecture*, publiſh'd in High-Dutch in 1697; wherein he not only delivers the Rules of *Architecture*, but explains and compares the

five Orders as laid down by *Palladio*, *Vignola*, *Scamozzi*, &c. which ſame Deſign was alſo executed in French by *R. Freart de Cambray*, in a *Parallel of the antient Architecture with the Modern*, publiſh'd in *French* in 1650, and ſince tranſlated into *Engliſh* with Additions, by Mr. *Evelyn*. *Fr. Blondel* Director of the Royal Academy of Painting, &c. in 1698, gave a *Courſe of Architecture*, in *French*; being a Collection from all the celebrated Writers upon the Subject of the Orders, &c.—*Nich. Goldman*, in a Treatiſe *de Stylometris*, publiſh'd in Latin and High-Dutch, in the Year 1661, has done good Service, in reducing the Rules and Orders of *Architecture* to a further Degree of Perfection, and ſhewing how they may be eaſily delineated by means of certain Inſtruments invented by him.

Laſtly, the *Elements of Architecture* are laid down by Sir *H. Wotton*—The ſame are reduced by *Sturmius*, and *Wolfius*, to certain Rules and Demonſtrations; and thus is *Architecture* brought into the Form of a Mathematical Art; by the firſt, in his *Matheſis Juvenil.* and the ſecond, in his *Elementa Matheſeos*, Tom. II. *An.* 1715.

Military ARCHITECTURE, is the Art of ſtrengthening and fortifying Places, to ſcreen them from the Inſults of Enemies, and the Violence of Arms. See FORTIFIED *Place*.

This we more uſually call *Fortification*. See FORTIFICATION.

The Buſineſs of *Military Architecture*, is to erect *Forts*, *Caſtles*, and other *Fortreſſes*, with *Ramparts*, *Baſtions*, &c. See FORTRESS, RAMPART, BASTION, &c.

Naval ARCHITECTURE, or *Ship-Building*; is that which teaches the Conſtruction of *Ships*, *Galleys*, and other floating Veſſels for the Water; with Ports, Moles, Docks, &c. on the Shore. See VESSEL, SHIP, GALLEY, BOAT, &c. ſee alſo MOLE, DOCK, &c.

ARCHITECTURE *in Perſpective*, is a ſort of Building, wherein the Members are of different Meaſures and Modules, and diminiſh in proportion to their Diſtance; to make the Work appear longer and larger to the View than really it is. See PERSPECTIVE.

Such is the celebrated Pontifical Stair-caſe of the *Vatican*, built under Pope *Alexander* VII. by the Cavalier *Bernino*.

Counterfeit ARCHITECTURE, is that which has its Projectures painted, either in Black or White, or coloured after the Manner of Marble; as is ſeen practiſed in the Facades and Palaces in *Italy*, and in the Pavilions of *Marly*.

This Painting is made in Freſco, upon plaiſter'd Walls; and in Oil, on Walls of Stone. See PAINTING and FRESCO.

Under the Name of *Counterfeit Architecture*, which we otherwiſe call *Scene-Work*, is likewiſe comprehended, that painted on ſlight Boards or Planks of Wood, whereon the Columns, Pilaſters, and other Parts of Building, ſeem to ſtand out, with a *Relievo*; the whole being coloured in imitation of various Marbles, Metal, &c. and ſerving in the Decorations of Theaters, triumphal Arches, Publick Entries, Funeral Pomps, &c.

ARCHITRAVE, in Building, that part of a Column, or Order of Column, which lies immediately upon the Capital. See ORDER and CAPITAL.

The *Architrave* is the loweſt Member of the Frieze, and even of the whole Entablature. See FRIEZE and ENTABLATURE.

The *Architrave* is ſuppoſed to repreſent the principal Beam in Timber Buildings; whence the Name, which is form'd of the Greek ἀρχὴ, chief; and the Latin *Trabs*, Beam. See BEAM, &c.

The *Architrave* is different in the different Orders—— In the *Tuſcan* it only conſiſts of a plain Face, crown'd with a Fillet; and is half a Module in Height. See FACE, TUSCAN, &c.

In the *Dorick* and *Compoſite*, it has two Faces, or Faſciæ; and three in the *Ionick* and *Compoſite*; in which laſt Order it is $\frac{10}{12}$ of a Module high, tho' but half a Module in the reſt. See FASCIA, DORIC, CORINTHIAN, &c.

Architects, however, take a deal of Latitude in this Part; ſome uſing more Members than others; and many of them having two or three Forms of *Architraves*. What we give is after *Vignola*.

Architrave is ſometimes alſo called the *Reaſon-piece*, or *Maſter-beam* in Timber-Buildings, as Porticos, Cloiſters, &c. In Chimneys it is called the *Mantle-piece*; and over the Jambs of Doors, or Lintels of Windows, *Hyperthyron*. See MANTLE, &c.

The *Greek*, call it the *Epiſtyle*. See EPISTYLE.

ARCHITRAVE-*Doors*, are thoſe which have an *Architrave* on the Jambs and over the Door; upon the Cappiece, if ſtrait, or on the Arch, if the Top be curved. See DOOR, JAMB, &c.

ARCHITRAVE-*Windows*, of Timber, are commonly an *Ogee* rais'd out of the ſolid Timber, with a Liſt over it; tho' ſometimes the Mouldings are ſtruck and laid on; and ſometimes are cut in Brick. See WINDOW.

The upper Faſcia is called the *Header*, or *heading Architrave*; and the lower the *Jac*.

ARCHITYPE. See ARCHETYPE.

ARCHIVAULT, in Architecture, the inner Contour of an Arch; or a Band or Frame adorned with Mouldings, running over the Faces of the Arch-Stones, and bearing upon the Impoſts. See ARCH, VAULT, IMPOST, &c.

It is different in the different Orders—In the *Tuſcan*, it has only a ſingle Face; two Faces crown'd, in the *Dorick* and *Ionick*; and the ſame Mouldings with the Architrave in the *Corinthian* and *Compoſite*.

The Word is *French*, *Archivolte*, where it ſignifies the ſame thing.

ARCHIVE, or ARCHIVES, a Chamber wherein the Records, Charters, and other Papers and Evidences of a Houſe, or Community, are preſerved. See RECORD, PAPER, &c.

Thus we ſay the *Archives* of a College, of a Monaſtery, &c.

The *Archives* of antient *Rome*, were in the Temple of *Saturn*; and the *Archives* of *Chancery* are in the *Rolls-Office*. See CHANCERY, ROLLS, &c.

The Code calls *Archivum publicum*, *vel Armarium publicum ubi acta & Libri exponebantur*. *Code de fid. Inſtrum. Auth.* & xxx. q. 1.

The Word comes from the Latin *Arca*, (*quod arceat Viſum*) a Cheſt or Coffer; or the Greek ἀρχεῖον, which *Suidas* uſes in the ſame Senſe. In ſome Latin Writers we read *Archarium*.

ARCHNOIDES, ARACHNOIDES, or ARANEA *Tunica*. See ARACHNOIDES.

ARCHON, in Antiquity, a chief Magiſtrate of *Athens*.

After the *Athenians* had aboliſhed Monarchy, they created *Archons*, who were obliged to render an Account of their Adminiſtration.

Some of theſe were annual, and others perpetual; *Medon*, the Son of *Codrus*, was the firſt of thoſe; and *Creon* of theſe.

The Occaſion of their Inſtitution was this: *Codrus*, King of *Athens*, having devoted himſelf, for the good of his People, in the War with the *Heraclidæ*; his Sons, *Medon* and *Nileus*, diſputed the Crown betwixt them: The *Athenians* took this Occaſion of diſſolving their Monarchy, and in lieu of Kings, created perpetual Governors, under the Name of *Archons*.—*Medon*, Son of *Codrus*, was he who firſt had this Charge, and his Deſcendants enjoy'd it for a long Succeſſion of Years. But a perpetual Magiſtracy, ſeem'd to this free People, too lively an Image of Royalty, the very Shadow whereof they were reſolved to aboliſh.—Accordingly, the Adminiſtration of an *Archon*, which had before been perpetual, they now reduced to ten Years; and ſome time after, to one; with a View of recovering, as oft as poſſible, the Authority into their own Hands, which they never tranſferr'd to the Magiſtrates, but with Regret.

There were thirteen perpetual *Archons*, and ſeven decennial; the firſt whereof was eſtabliſhed in the 24th Olympiad.

Under the *Roman* Emperors, ſeveral *Greek* Cities had two *Archons*, for chief Magiſtrates, which were the ſame with the *Duumviri* in the Colonies and *Municipia*. See DUUMVIR.

The Name *Archon* is alſo applied by ſome Authors to divers Officers both civil and religious, under the Eaſtern or *Greek* Empire.—Thus Biſhops are ſometimes call'd *Archontes*; and the ſame may be ſaid of the Lords of the Emperor's Court.

We alſo read of the *Archon of the Antimenſes*, *Archon of Archons*, *Grand Archon*, *Archon of Churches*, *Archon of the Goſpel*, *Archon of the Walls*, &c.

The Word comes from the Greek ἄρχων, which ſignifies a Commander, or one that governs.

ARCHONTICKS, ARCHONTICI, in Church-Hiſtory, a Sect of Hereticks, who aroſe towards the Cloſe of the ſecond Century. See HERETICK.

They were thus called from the Greek Word ἀρχοντες, *Principalities*, or *Hierarchies of Angels*; by reaſon they held the World to have been created by the Angels. See ANGEL, HIERARCHY.

The *Archontici* were a Branch of *Valentinians*. See VALENTINIAN.

ARCH-TREASURER, *Archithеſaurarius*, the Great Treaſurer of the *German* Empire. See TREASURER.

This Office was erected with the 8th Electorate, in favour of the Elector Palatine, who had loſt his former Electorate, which was given to the Duke of *Bavaria*, by the Emperor *Ferdinand* II. who took it away from *Frederic* V. Elector *Palatine*, after the Battle of *Prague*, where he was defeated in maintaining his Election to the Crown of *Bohemia*. See ELECTOR.

The Dignity of *Arch-Treaſurer* is conteſted between the Elector of *Brunſwic*, now King of *Great-Britain*, who claims it in Virtue of his Succeſſion to the Elector *Frederic*; and the preſent Elector *Palatine*. See PALATINE.

ARCTIC,

ARCTIC, Arctick, in Aſtronomy, an Epithet given to the North-Pole, or the Pole rais'd above our Horizon. See North, and Pole.

'Tis call'd the *Arctic* Pole, on occaſion of the Conſtellation of the little Bear, in Greek call'd ἄρκτος; the laſt Star in the Tale whereof, nearly points out the North Pole. See Ursa *Minor*.

Arctick *Circle*, is a leſſer Circle of the Sphere, parallel to the Equator, and 23° 30′ diſtant from the North-Pole; from whence its Name. See Circle and Sphere.

This, and its Oppoſite, the *Antarctick*, are call'd the two *polar Circles*; and may be conceived to be deſcribed by the Motion of the Poles of the Ecliptick, round the Poles of the Equator, or of the World. See Pole and Polar.

A-RE, or A-LA-MIRE, one of the eight Notes in the Scale of Muſick. See Note and Scale.

ARCTOPHYLAX, in Aſtronomy, a Conſtellation, otherwiſe call'd *Bootes*. See Bootes.

ARCTURUS, in Aſtronomy, a Star, of the Conſtellation *Arctophylax*, or *Bootes*. See Bootes.

The Word is form'd of ἄρκτος, Bear, and οὐρά, Tail, *q. d. Bear's Tail*; as being very near it.—

It riſes on the firſt Day of *September*, and ſets on the 13th Day of *May*; and has been ſuppoſed rarely to appear without bringing ſome Storm. See Star.

ARCTOS, Arctus, in Aſtronomy, a Name given by the *Greeks* to two Conſtellations of the northern Hemiſphere; by the *Latins* called *Urſa* major and minor; and by us the greater and little *Bear*. See Ursa *major* and *minor*.

Arcuation, is uſed by ſome Writers in Surgery, for the large Cap of the Bones; as in the Caſe of Rickets, &c. See Bone, Rickets, &c.

Arcuation, in Gardening, is the raiſing of Trees by Layers. See Tree, Nursery, &c.

This, *Switzer* obſerves, is now the general Method of raiſing ſuch Trees as can't be raiſed from Seed, or that bear no Seed; as Elm, Abele, Lime, Alder, Sallows, &c. See Seed, Planting, &c.

The firſt Thing here done, is to procure large ſtrong Mother-Plants, which the Author calls *Stools*. Theſe being planted in a Trench, will throw out twenty, thirty, forty, or fifty Plants a-piece; which may be begun to lay about *Michaelmas* following; at which Time, if the Stools have been carefully managed, they will have ſhot five, ſix, or more main Branches out of the Root, and on every one of theſe, as many ſide or collateral Branches.

Theſe main Branches are to be bent down to the Ground, and when thus laid quite round the Stool, and pegged faſt down, the ſmall ones may be ſerv'd in the ſame manner. Thus the main Branches are to be cover'd over, all except the Top; and the ſmall, or Side-Branches, to be cover'd over two or three Inches thick upon the Joints. This done, they may be treaded to make them take Root the better.

About the Middle of *September* they may be opened; when it is probable they will have taken Root: Otherwiſe, they may lie till next Spring; then taking them up, plant them in the Nurſery. See Nursery.

ARDENT, Ardens, ſomething hot, and, as it were, burning. See Heat and Burning.

The Word is form'd of the Latin *Ardere*, to burn.

Ardent *Fever*, is a violent burning Fever. See Fever.

AREA, properly denotes any plain Surface whereon we walk. See Surface.

The Word is *Latin*, and originally ſignifies a *Thraſhing-Floor*; form'd of the Verb *Areo*. See Thrashing.

Area, in Matters of Building, ſignifies the Extent of the Floor. See Floor.

Area, in Geometry, denotes the Compaſs or ſuperficial Content of any Figure. See Figure and Content; ſee alſo Superficies.

Thus if a Figure, *e. gr.* a Field, be in Form of a Square, and its Side be 40 Foot long, its *Area* is ſaid to be 1600 ſquare Feet, or contains 1600 little Squares, each a Foot every Way. See Square and Measure.

Hence, to find the *Area* of a *Triangle*, *Square*, *Parallelogram*, *Rectangle*, *Trapezium*, *Rhombus*, *Polygon*, *Circle*, or other Figure, is to find the Magnitude or Capacity thereof in ſquare Meaſures—To do which, *ſee under the Articles* Triangle, Square, Parallelogram, Rectangle, Trapezium, Rhombus, Polygon, Circle, &c.

To find the *Area* of Fields, and other Incloſures; they firſt ſurvey or take the Angles thereof, then plot them on Paper, and thus caſt up their Contents in Acres, Roods, &c. after the uſual manner of other plain Figures. See Surveying, Plotting, &c.

The Law by which the Planets move round the Sun, is this, that a Line or Radius drawn from the Centre of the Sun to the Centre of the Planet, always ſweeps or deſcribes Elliptic *Areas* proportional to the Times. Thus, the Sun being ſuppoſed in S, and a Planet in A, (*Tab. Aſtronomy*, *Fig.* 65.) and letting it proceed in any given Time, to B. In ſuch Progreſs, its Radius A S, will have deſcribed the *Area* A S B. Suppoſe again, the Planet to be arrived to P; then the Elliptic Space P S D being drawn equal to the other A S B, the Planet will move thro' the Arch P D in the ſame Time as thro' the Arch A B. See Planet and Ellipsis.

Sir *I. Newton* demonſtrates, that whatever Bodies do obſerve ſuch Law in their Motions about any other Body, do gravitate towards ſuch Body. See Gravitation, and Newtonian *Philoſophy*.

Area, is alſo uſed in Medicine, for a Diſeaſe which makes the Hair fall. See Hair.

The *Area* is a general kind of Depilation, and is diſtinguiſhed into two Kinds, *Alopecia* and *Ophiaſis*. See Alopecia, &c.

ARENATION, among Phyſicians, a kind of dry Bath, when the Patient ſits with his Feet upon hot Sand. See Bath, Balneum.

AREOLA, or Areola Mamillaris, in Anatomy, the Circle which ſurrounds the Nipple. See Breast.

ARETOLOGY, Aretologia, that part of moral Philoſopher which treats of Virtue; its Nature, and the Means of arriving at it. See Virtue.

ARDENT *Spirits*, are thoſe diſtill'd from fermented Vegetables; thus call'd becauſe they will take Fire and burn. See Spirit, Distillation, and Fermentation.

Such are Brandy, Spirits of Wine, &c. See Brandy, &c.

ARDERS, are Fallowings or Plowings of Grounds.

ARDOR *Ventriculi*, a Heat in the Stomach, uſually expreſſed by the Word Heart-burn, or Cardialgy. See Cardialgy, &c.

ARENA, among the *Romans*, ſometimes ſignified the ſame with *Circus*, or *Amphitheatre*, viz. a Place where the Gladiators had their Combats. See Circus, Amphitheatre, &c.

But, properly ſpeaking, *Arena* was only the Pit or Space in the Middle of thoſe Places.—The *Arena* was the ſame thing with regard to the Gladiators, that the *Campus*, or Field, was to Soldiers and Armies, *viz.* the Place where they fought.—And he who fought in the *Arena* was called *Arenarius*. See Gladiator.

The Word is originally *Latin*, and ſignifies *Sand*, in regard the Place was always ſtrew'd with Sand, to conceal from the View of the People, the Blood ſpilt in the Combat.

AREOPAGUS, in Antiquity, a celebrated Tribunal of the *Athenians*.

Some imagine the *Areopagus* the proper Name of a Court of Juſtice, ſituate on a Hill, in *Athens*; and that in this Court the Senate of that illuſtrious City aſſembled.—Others ſay that *Areopagus* was the Name of the whole Suburbs of *Athens*, wherein ſtood the Hill on which the Court was built: And the Name *Areopagus* ſeems to countenance this laſt Opinion; for it ſignifies literally, the *Hill* or *Rock* of *Mars*, from πάγος, Hill, and Ἄρης, belonging to *Mars*. In effect, the Denomination might either ariſe hence, that the *Areopagus* was built in a Place where had been a Temple of *Mars*; or becauſe the firſt Cauſe pleaded there, was that of this God, who was accuſed of killing *Neptune*; or elſe becauſe *Mars* was there condemn'd for Adultery.

This Tribunal was in great Reputation among the *Greeks*; and the *Romans* themſelves had ſo high an Opinion of it, that they truſted many of their difficult Cauſes to its Deciſion.

Authors are not agreed about the Number of the Judges who compos'd this auguſt Court.—Some reckon thirty-one, others fifty-one, and others five hundred: In effect their Number ſeems not to have been fix'd, but was more or leſs every Year.—By an Inſcription quoted by *Volateranus*, it appears they were then 300.

At firſt this Tribunal only conſiſted of nine Perſons, who had all diſcharged the Office of Archons.—Their Salary was equal, and paid out of the Treaſury of the Republick: They had three *Oboli* for each Cauſe.

The *Areopagites* were Judges for Life.—They never ſat in Judgment but in the Night-time, to the Intent that their Minds might be more preſent and attentive, and that no Object, either of Pity or Averſion, might make any Impreſſion upon them.—All Pleadings before them, were to be in the ſimpleſt and moſt naked Terms; without Exordium, Epilogue, Paſſions, &c. See Exordium, Epilogue, &c.

At firſt they only took Cognizance of criminal Cauſes, but in courſe of Time their Juriſdiction became of greater Extent. — Mr. *Spon*, who examined the Antiquities of that illuſtrious City, found ſome Remains of the *Areopagus* ſtill exiſting, in the middle of the Temple of *Theſeus*, which was heretofore in the middle of the City, but is now without the Walls.—The Foundation of the *Areopagus* is a Semicircle, with an Eſplanade of 140 Paces around it, which properly made the Hall of the *Areopagus*. There is a Tribunal cut in the middle of a Rock, with Seats on each Side of it, where the *Areopagites* ſat, expos'd to the open Air.

This Court is ſaid by ſome to have been inſtituted by *Solon*; but others carry it much higher, and aſſert it to have been

been eſtabliſh'd by *Cecrops*, about the Time that *Aaron* died, *viz.* in the Year of the World 2553, maintaining withal, that *Solon* only made ſome new Regulations in it.—In effect, *Demoſthenes* himſelf, in his Oration againſt *Cteſipho*, owns himſelf at a Loſs on the Point: *The Inſtitutors of this Tribunal*, ſays he, *whatever they were, whether Gods or Heroes.*

AREOMETER, AREOSTYLE, AREOTIKS, } ſee { ARÆOMETER, ARÆOSTYLE, ARÆOTICKS.

ARGAL, or ARGEL, hard Lees ſticking to the Sides of Wine-Veſſels; otherwiſe called *Tartar*. See TARTAR.

ARGENTUM *Album*, mentioned in Domeſday, ſignifies *Bullion*, or Silver uncoined. See BULLION.

In thoſe antient Days, ſuch paſſed as Money from one to another in Payment—*Sumitur pro ipſo hoc Metallo penſili non Signato.* Spelm. See SILVER and MONEY.

ARGENTUM *Dei*, *God's Penny*; antiently ſignified *earneſt Money*, or Money given to bind a Bargain; in ſome Places called *Erles*, or *rles*. See EARNEST.

Et cepit de prædicto Henrico tres denarios de Argento *Dei præ manibus.* See CONVENTION.

ARGEA, ARGÆA, or ARGEI, in Antiquity, human Figures made of Ruſhes, thrown annually by the Veſtals into the River *Tyber*, on the Day of the Ides of *May*. See VESTAL.

This Ceremony we learn from *Feſtus* and *Varro*; the latter of whom, however, ſays they were caſt by the Prieſts: Unleſs, by *Sacerdotibus*, we ſuppoſe he meant Prieſteſſes. He adds that the Number of Figures was thirty—

Plutarch, in his *Roman* Queſtions, enquires, Why they were called *Argea*? There are two Reaſons aſſigned: The firſt, that the barbarous Nation who firſt inhabited theſe Parts, caſt all the *Greeks* they could meet withal, into the *Tyber*; for *Argians* was a common Name for all *Grecians*: But that *Hercules* perſuaded them to quit ſo inhuman a Practice, and to purge themſelves of the Crime, by inſtituting this Solemnity—The ſecond, that *Evander*, an *Arcadian*, and a ſworn Enemy of the *Argians*, to perpetuate that Enmity to his Poſterity, order'd the Figures of *Argians* to be thus caſt into the River.—

ARGENT, in Heraldry, ſignifies the Colour White, uſed in the Coats of Gentlemen, Knights, and Baronets. See COLOUR and WHITE.

Barons and all Nobles have the white Colour call'd *Pearl*; and ſovereign Princes have theirs called *Luna*.

Without either this or *Or*, the Heralds ſay there can be no good Armory. See OR.

Argent is expreſſed in Engraving, by the Parts being left plain, without any Strokes from the Graver. The Word is French, derived from the Latin *Argentum*, Silver; this Colour being ſuppoſed the Repreſentation of that Metal: Whence the *Spaniards* call this Field *Campo de Plata*, a Silver Field.

In the doubling of Mantles, where the White is ſuppoſed to repreſent a Fur, and not a Metal, it may be blazon'd *White*.

ARGILLA, or ARGIL, a white Earth, like Chalk, but more brittle; of ſome Uſe in Phyſick. See EARTH, CHALK, *&c.*

The Word is ſometimes alſo uſed for Potters Earth, or Clay. See POTTERY, CLAY, *&c.*

ARGO, in Antiquity, a Ship or Veſſel celebrated among the Poets; being that wherein the *Argonauts* made their Expedition. See ARGONAUT.

The Criticks are divided about the Origin of the Name: Some will have it thus called from the Perſon who built it, *Argus*; others, from the Greek Word *Argos*, ſwift, as being a light Sailer; others, from the City *Argos*, where they ſuppoſe it built: Others, from the *Argives*, who went on board it, according to the Diſtich quoted from an antient Latin Poet by *Cicero*, in his firſt Tuſculan;

Argo, quia Argivi in ea Delecti Viri
Vecti, petebant pellem inauratam Arietis.

Ovid calls *Argo* a ſacred Ship, *ſacrani conſcendis in Argum*; by reaſon, ſay ſome, that *Minerva* contrived the Plan, and even aſſiſted in the building thereof: Or rather, on account of a piece of Timber in its Prow, which ſpoke, and render'd Oracles—Several Authors make mention of the Piece of Timber, which is ſaid to have been hewn in the ſacred Foreſt of *Dodona*. See ORACLE and DODONEAN.

Jaſon having happily accompliſhed his Enterprize, conſecrated the Ship *Argo* to *Neptune*, in the *Iſthmus* of *Corinth*; where it did not remain long before it was tranſlated into Heaven, and made a Conſtellation. See CONSTELLATION.

The Generality of Authors repreſent the Ship *Argo* as of a long Make, reſembling the modern Gallies—The Scholiaſt of *Apollonius* obſerves, that it was the firſt long Veſſel ever made: And *Pliny* relates the ſame, after *Philoſtephanus*, who had affirmed, that *Jaſon* was the firſt that truſted out to Sea in a long Veſſel: *Longa Navè Jaſonem primum Navigaſſe, Philoſtephanus Auctor eſt. Hiſt. Nat.* l. c. 56. By a long Ship, it is to be obſerv'd, the *Greeks* underſtood a Ship of War, in oppoſition to Ships of Burthen, which were built round.—See SHIP.

ARGO, or *Navis*, in Aſtronomy, is a Conſtellation of fixed Stars, in the Southern Hemiſphere. See STAR and CONSTELLATION.

The Stars in the Conſtellation *Argo*, in *Ptolomy*'s Catalogue, are 8; in *Tycho*'s 11; in the *Britannic* Catalogue 25; the Longitudes, Latitudes, Magnitudes, *&c.* whereof, are as follow:

Stars in the Conſtellation Argo *or* Navis.

Names and Situations of the Stars.	Longit.	Latitude	Mag.
Præced. under the Shield in the Stern	♋ 29 10 21	47 26 26	3
Between the Sail and Lactea	24 57 46	30 30 11	3 4
	♌ 0 38 10	46 46 34	6
Subſeq. under the Shield of the Stern	♋ 27 26 26	35 18 03	6
5.	♌ 1 34 22	49 14 58	4 5
South. in the Middle of the Stern	♋ 27 32 40	35 09 13	6
	♌ 1 45 40	46 05 27	5 6
North. in the Middle of the Stern	29 22 16	37 32 25	5
10.	♌ 1 44 14	44 58 49	3 4
	♋ 28 43 17	33 08 53	5 6
Præced. in the Top of the Stern	29 02 00	34 09 45	4
	♌ 3 20 43	42 36 40	4
Præced. of two in the Yard	4 10 24	42 53 10	6
Subſeq. in the Top of the Stern	0 49 33	22 37 35	4
15.	7 05 31	41 18 24	3
Inform. under the Sail, *Tycho*	5 39 06	38 20 40	5
In the Sail, *Tycho*	4 46 09	35 26 03	6
	4 15 53	32 06 47	4 5
	5 44 40	34 44 10	5 6
20.	5 13 29	22 24 32	6
Subſeq. in the Yard	5 32 30	22 28 27	4 3
In the Maſt, the loweſt of three, *Tycho*	5 46 09	22 30 10	6
In the Maſt, upper	13 39 49	32 55 23	6
Middle in the Maſt	11 13 00	24 28 45	5
25.	♌ 14 02 39	30 18 40	6

ARGONAUTS, in Antiquity, a Company of fifty-two or fifty-four Heroes, who embark'd along with *Jaſon*, in the Ship *Argo*, for *Colchos*; with a Deſign to obtain the golden Fleece. See ARGO and FLEECE.

Hercules, *Theſeus*, *Caſtor*, *Orpheus*, &c. were of the Number of the *Argonauts*.

ARGONAUTS *of St. Nicholas*, was the Name of a military Order inſtituted by *Charles* III. King of *Naples*, towards the End of the 14th Century. See ORDER and KNIGHT.

They wore a Collar of Shells, encloſed in a Silver Creſcent, whence hung a Ship with this Deviſe, *Non credo Tempori*, I don't truſt Time. Hence theſe *Argonaut*-Knights came to be called *Knights of the Shell*. They received the Order of St. *Baſil* Archbiſhop of *Naples*, and held their Aſſemblies in the Church of St. *Nicholas*, their Patron.—

ARGUMENT, ARGUMENTUM, in Philoſophy, as defined by *Cicero*, is ſome probable Matter alledg'd to gain Belief. See PROBABILITY, BELIEF, &c.

Others, ſomewhat more ſcientifically, define *Argument*, a Medium, from whoſe Connection with two Extremes, the Connection of the two Extremes themſelves is inferr'd. See MEDIUM and EXTREME.

Arguments are divided, with regard to their Source, into thoſe fetch'd from Reaſon, and thoſe from Authority. See REASON and AUTHORITY.

The Logicians alſo divide their *Arguments*, with regard to their Form, into *Syllogiſms*, *Enthymemes*, *Inductions*, &c. See SYLLOGISM, ENTHYMEME, &c.

An *Argument* in Form, is a Syllogiſm made according to the ſtrict Rules of Logick.—According to *Ariſtotle*, the Enthymeme is the *Argument* of Rhetoric, as the Syllogiſm is that of Logick.—Rhetoric is defined the Art of finding *Arguments* adapted to perſuade, or gain Belief. See RHETORIC, INVENTION, PERSUASION, &c.

The Rhetoricians divide *Arguments* with reſpect to the Places they are drawn from, into *intrinſic* or *artificial*; and *extrinſic* or *inartificial*, or remote. See PLACE, AMPLIFICATION, &c.

The *firſt*, are the proper Invention of him who ſpeaks; of which there are ſeveral Kinds, *viz. Definition*, *Diſtribution*, *Genus*, and *Species*, *Form*, *Similitude*, *Diſſimilitude*, *Compariſon*, *Repugnancy*, *Adjuncts*, *Antecedents*, *Conſequents*, *Cauſes*, and *Effects*. See each in its Place, DEFINITION, DISTRIBUTION, GENUS, &c.

To theſe ſome add two other Places of *Argument*, viz. the *Manners*, and the *Paſſions*. See MANNERS and PASSIONS.

The *ſecond*, are borrowed from abroad, and only applied by the Orator to the Point in hand; ſuch are *Laws*, *common Report*, *Books*, *Oaths*, *Torture*, and *Witneſſes*. See LAW, OATH, TORTURE, &c.

A late Author divides the Places or general Heads of *Arguments*, with regard to their End, into thoſe intended to perſuade or diſſuade, which are chiefly drawn from the Conſiderations of *Profit*, *Honour*, and *Equity*: See PERSUASION.—Thoſe intended to praiſe, or diſpraiſe; ſee PANEGYRIC.—And thoſe intended to accuſe or defend; ſee ACCUSATION, DEFENCE, CONFUTATION, CONFIRMATION, VINDICATION, &c.

ARGUMENT is alſo a kind of Syllabus, or Abridgement of the Subject of a Book, Hiſtory, Comedy, or the like.—We have almoſt loſt the original Uſe of Prologues, which was to give the *Argument* of the Play. See PROLOGUE.

ARGUMENT, in Aſtronomy, is an Arch whereby we ſeek another unknown Arch proportional to the firſt. See ARCH.

ARGUMENT *of Inclination*, is an Arch of the Orbit, intercepted between the aſcending Node, and the Place of the Planet from the Sun, number'd according to the Succeſſion of the Signs. See INCLINATION.

ARGUMENT *of the Moon's Latitude*, is her Diſtance from the Node. See NODE.

The ſame Term is ſometimes alſo uſed for the Diſtance of the Moon's true Place, from the Sun's true Place. See PLACE.

By this we find the Quantity of the real Obſcuration in Eclipſes, or how many Digits are darken'd. See ECLIPSE.

ARGUMENT *of the Moon's Menſtrual Longitude*, is an Arch of her Eccentric, L. P. (*Tab. Aſtronomy*, Fig. 32.) intercepted between her true Place once equated L; and a right Line P Q. drawn thro' the Centre of the Eccentric B, parallel to the Menſtrual Line of the Apſides.

The *annual Argument* of Longitude, is the Angle DAH.

ARGUMENTATION, the Act of inventing or framing *Arguments*; of making Inductions, and drawing Concluſions. See ARGUMENT, INDUCTION, CONCLUSION, &c. See alſo DISCOURSE, RATIOCINATION, &c.

Argumentation, according to *Cicero*, is the delivering, or unfolding of an *Argument*.—The Matter of *Argumentations*, is Propoſitions; the Form, their due Diſpoſition with regard to one another. See PROPOSITION, SYLLOGISM, ENTHYMEME, and SORITES.

ARGYRASPIDES, in Antiquity, Perſons arm'd with Silver Bucklers, or Bucklers ſilvered. See BUCKLER.

The *Argyraſpides*, according to *Quintus Curtius*, Lib. iv. *c.* 13. made the ſecond Corps of *Alexander*'s Army; the firſt were the Phalanx. See PHALANX.

According to *Juſtin*'s Account, *Lib.* xii. *c.* 7. *Alexander* having penetrated into *India*, and extended his Empire as far as the Ocean; for a Monument of his Glory, order'd the Armour of his Soldiers, and the Houſings of his Horſes, to be adorn'd with Silver: and hence commanded them to be called *Argyraſpides*; from the Greek ἀργυρος, Silver, and ἀσπις, Buckler.

By this Author it ſhould ſeem that *Alexander*'s whole Army was called *Argyraſpides*—After that Princes Death, the *Argyraſpides* deſpiſed all other Chief of the Army, diſdaining to obey any other after having born Arms under *Alexander*.

ARGYROPÆA, in Alchymy, the Art of making Silver. See ALCHYMY and SILVER.

The Scope or Deſign of *Argyropæa* and *Chryſopæia*, is to make Gold and Silver. See CHRYSOPÆA, TRANSMUTATION, PHILOSOPHERS-*Stone*, &c.

The Word is formed of ἀργυρος, Silver, and ποιεω, I make. See POESY.

ARIANS, or ARRIANS, a Sect of Hereticks, the Retainers to *Arius*, and *Arianiſm*. See ARIANISM.

The *Arians* divided into a great Number of Parties and Factions, under different Denominations, who mutually condemn'd each other.—Such were the *Semi-Arians*, *Anomians*, *Exacontians*, *Euſebians*, *Photinians*, *Eudoxians*, *Aodcians*, *Eunomians*, *Macedonians*, *Ælians*, *Pſatyrians*, &c. See SEMI-ARIAN, ANOMIAN, EUSEBIAN, PHOTINIAN, EUDOXIAN, &c.

ARIANISM, or ARRIANISM, an antient Hereſy in the Church, broach'd by *Arius*, in the beginning of the fourth Century. See ARIAN.

He denied that the Son was God conſubſtantial and coequal with the Father. He own'd that the Son was the Word, but denied that Word to have been eternal; aſſerting that it had only been created before all other Beings—See TRINITY, SON, FATHER, &c.

This Hereſy was condemn'd in the firſt Council of *Nice* in 321; but notwithſtanding that, was not extinguiſhed: On the contrary, it became the reigning Religion, eſpecially in the Eaſt, where it obtain'd much more than in the Weſt. —At the Time of St. *Gregory Nazianzen*, the *Arians* were Maſters of the Capital City of the Empire, and frequently upbraided the Orthodox with the Smallneſs of their Numbers. Accordingly that Father begins his 25th Oration againſt the *Arians*, thus: *Where are thoſe who reproach us with our Poverty, and define the Church by the Multitude of People; deſpiſing the little Flock*, &c.

Arianiſm was carried into *Africa* under the *Vandals*; and into *Aſia* under the *Goths*: *Italy*, the *Gauls*, and *Spain*, were alſo deeply infected with it. But having reigned 30 Years with great Splendor, it ſunk almoſt all at once.

Eraſmus ſeem'd to have aim'd, in ſome meaſure, to reſtore *Arianiſm*, at the beginning of the 16th Century; in his Commentaries on the New Teſtament: Accordingly, he was reproached by his Adverſaries, with *Arian* Interpretations and Gloſſes, *Arian* Tenets, &c. To which he made little Anſwer, ſave that there was no Hereſy more throughly extinct than that of the *Arians*: *Nulla Hæreſis magis extincta quam Arianorum.*

But the Face of Things was ſoon changed: *Servetus*, a *Spaniard* by Nation, publiſh'd in 1531, a little Treatiſe againſt the Myſtery of the Trinity; which once more ſet the Hereſy of the *Arians* on foot in the Weſt.—Indeed he rather ſhew'd himſelf a *Photinian*, than an *Arian*; only that he made uſe of the ſame Paſſages of Scripture, and the ſame Arguments againſt the Divinity of our Saviour, with the proper *Arians*. See SERVETIST.

'Tis true, *Servetus* had not, properly ſpeaking, any Diſciples; but he give occaſion, after his Death, to the forming of a new Syſtem of *Arianiſm* in *Geneva*, much ſubtiler and more artful than his, and which did not a little perplex *Calvin*.—From *Geneva* the new *Arians* removed to *Poland*, where they gain'd conſiderable Ground; but at length degenerated, in great meaſure, into *Socinians*. See SOCINIAN.

The learned *Grotius* himſelf, ſeems to have bordered a little on *Arianiſm*, in his Notes on the New Teſtament; where he mounts the Father too high above the Son; as if the Father alone were ſupreme God, and the Son inferior to him even in reſpect of his Divinity. And yet 'tis rather the Doctrine of the *Semi-Arians*, than of the *Arians*, that he ſeems to give into.—In *England*, the Progreſs of *Arianiſm*, or rather *Euſebianiſm*, is too recent, to need a Detail.

ARIETATION. See EARTHQUAKE.

ARIETUM *Levatio*, an antient kind of ſportive Exerciſe; by Tilting, or running at the Quintain. See QUINTAIN.

ARIES, in Aſtronomy, the *Ram*; a Conſtellation, or Sign of the Zodiac. See SIGN, CONSTELLATION, and ZODIAC.

The Stars in the Conſtellation *Aries*, in *Ptolomy*'s Catalogue, are 18; in *Tycho*'s, 21; in the *Britannic* Catalogue 65; the Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow:

Stars in the Conſtellation Aries.

	Longit.	Latit.	Mag.
Names and Situations of the Stars.	♈ 26 58 25	11 04 58	7 6
	26 48 15	9 01 26	7 6
	26 49 04	5 23 59	7 6
Preced. Star in the Horn	28 51 00	7 08 58	4
Subſeq. and more northern (Star in the Horn	29 37 59	8 28 16	3
	♉ 0 54 20	10 57 12	
In the Neck	♈ 29 10 57	5 26 12	6
In the Crown of the Head	♉ 1 22 15	10 47 47	5
	3 26 14	12 31 52	6 7
10.	4 02 12	12 04 02	6
That under the Lucida	♉ 2 55 08	9 13 29	6
Informis over the Head	3 19 18	9 57 12	2
	4 40 46	12 05 32	6
	2 43 49	5 56 58	6
15.	5 03 50	11 57 02	8
In the Noſe, the more North	3 46 50	7 22 45	6
(of two	3 25 14	6 08 45	7
	1 49 58	1 46 25	6 7
	5 59 35	11 27 44	6
20.	5 43 38	10 46 20	7
In the Noſe the more South	4 32 25	5 43 39	6
In the Extremity of the fore-	4 41 59	5 27 23	7
(moſt Foot	3 00 19	3 33 31	5
	3 30 53	4 09 43	7
25.	7 19 13	4 44 07	6 7
	6 41 33	2 40 42	6 7
	6 18 40	0 01 15	6 7
Informis, *alias* 16th of the Tri-	10 14 15	8 49 48	7
angle	6 20 07	2 44 12	5 6
The North. in the Loins	9 48 35	6 07 56	6
30			
Informis, *ali.* 17th of the Triang.	11 48 01	10 51 52	5
The South. in the Loins	9 59 55	4 01 56	6
Informis, *ali.* 18th of the Triang.	12 35 47	11 17 13	4
	9 45 08	1 44 43	7
In the preced. hind Knee	9 03 43	0 36 24	6
35			
	8 17 35	3 21 50	7
In Extrem. of the hind Foot, *alias* Ceti	7 37 07	5 34 50	4
Moſt northern of the Informes	14 00 55	12 28 08	4
	10 52 39	1 56 14	6
Brighteſt of the Informes	13 51 45	10 25 37	3
40.			
In the Leg	10 47 52	1 06 13	6
In the hindmoſt Knee	10 35 46	1 19 37	6
In the Thigh or Hip, the North	12 09 32	0 58 57	6
	12 32 11	1 28 58	6 7
The South	12 34 24	1 10 03	6
45.			
	13 42 08	3 34 37	6
In the Root of the Tail	14 10 09	4 08 01	5
al. 20th of the Triangle	16 13 53	8 51 55	7
	13 44 34	0 46 38	7
al. 21ſt of the Triangle	16 22 25	8 59 42	7
50.			
al. 22d of the Triangle	16 39 24	7 29 04	6
	15 03 56	0 16 22	7
	15 30 48	1 05 39	6 7
al. 23d of the Triangle	18 37 56	10 54 26	7
al. 24th of the Triangle	18 41 07	8 58 26	7 6
55.			
Foremoſt of the three in the Tail	16 30 18	1 47 34	4
The Middle	17 36 34	2 51 19	5
	20 19 17	8 32 08	7
	20 03 5	6 59 28	7
Laſt of the Tail	19 03 42	2 34 05	5
60.			
	20 56 50	8 45 05	6
The Middle	19 18 49	2 04 57	6
	20 39 45	5 51 39	6
The Third	19 41 15	2 02 52	7
65.	♉ 21 06 22	3 46 01	7

ARIES alſo denotes a *battering Ram*; being a military Engine much in uſe among the antient *Romans*, to batter and beat down the Walls of Places beſieged. See MACHINE.

Of this there were two kinds; the one rude and plain, the other artificial and compound.—The former ſeems to have been no more than a great Beam, which the Soldiers bore in their Arms, and with one End of it, by main Force, aſſail'd the Walls.

The compound Ram is deſcrib'd by *Joſephus* thus: 'The 'Ram is a vaſt long Beam, like the Maſt of a Ship, ſtrength-'ned at one End with a Head of Iron, ſomething reſem-'bling that of a Ram, whence it took its Name. This is 'hung by the middle, with Ropes, to another Beam, which 'lies a-croſs a couple of Poſts; and hanging thus equally 'ballanced, is, by a great Number of Men, violently thruſt 'forward, and recoil'd backwards; and ſo ſhakes the Wall 'with its Iron Head. Nor is there any Tower or Wall ſo 'thick or ſtrong, as to reſiſt the repeated Aſſaults of this 'forcible Machine.

M. *Felibien* deſcribes a third ſort of battering Ram, which run on Wheels; and was the moſt perfect and effectual of them all.

Vitruvius affirms, that the Ram was firſt invented by the *Carthaginians*, while they laid Siege to *Cadiz*: Theirs was the ſimple kind above-mentioned: *Pephaſmenos* a *Tyrian*, contrived to ſuſpend it with Ropes; and *Polydus*, the *Theſſalian*, to mount it on Wheels, at the Siege of *Byzantium*, under *Philip* of *Macedon*.

The Engine oppoſed to the Ram, was called *Lupus*, the Wolf.—*Plutarch* tells us, that *Mark Anthony*, in the *Parthian* War, uſed a Ram of 80 Foot long; and *Vitruvius* aſſures us they were ſometimes made 106, and ſometimes 120 Foot long, to which, perhaps, the Force of the Engine was in great Meaſure owing.

The Ram was managed at once by a whole Century of Soldiers; ſo that it play'd continually, and without Intermiſſion, being uſually cover'd with a *Vinea*, to protect it from the Attempts of the Enemy. See VINEA.

ARISTA, in Botany, a long needle-like Beard, that grows out from the Huſk of Corn, or Graſs; called alſo the *Awn*. See CORN, &c.

ARISTARCHUS, in its original Greek, ſignifies, *good Prince*; but in its ordinary Uſe among the Learned, is underſtood of a very ſevere Critick; there having been a Grammarian of that Name, who criticiz'd on the Verſes of the very beſt Poets. See CRITIC and CRITICISM.

Hence we derive the Titles of ſeveral Books; *Ariſtarchus Sacer*, *Heinſius*'s Notes on the New Teſtament; *Ariſtarchus Anti Bentleianus*, &c.

ARISTOCRACY, ARISTOCRATIA, a Form of political Government, where the ſupreme Power is lodg'd in the Hands of the *Optimates*, i. e. a Council or Senate compoſed of the principal Perſons of a State, either in reſpect of Nobility, Capacity, or Probity. See GOVERNMENT and OPTIMATES.

The antient Writers of Politicks prefer this Form of Government to all others.—

The Republick of *Venice* is an *Ariſtocracy*. See REPUBLIC.

Ariſtocracy coincides with *Olygarchy*; which however, is more ordinarily uſed to ſignify a Corruption of an ariſtocratical State, where the Adminiſtration is in the Hands of too few. See OLYGARCHY.

The Word is derived from ἄριστος, *optimus*, and κρατέω, *impero*, I command, govern.

ARISTOLOCHIA, popularly call'd *Birthwort*; a medicinal Plant, uſed as an Ingredient in Treacle, &c. See THERIACA.

Cicero derives its Name from its Inventor *Ariſtolochus*; others, from its Virtues.—Theſe laſt ſuppoſe it form'd from ἄριστος, *optimus*, and λοχεία, bringing forth young; in regard it is found of excellent Uſe in bringing down the Lochia, or Menſes of Women newly deliver'd. See LOCHIA, &c.

There are four Kinds of *Ariſtolochia*, viz. the *round*, *long*, *rampant* or creeping, and the *ſlender*; but only the two former are uſed among us.—The *round* is of a ſub-acrid aromatic Taſte, found very common in *Languedoc*, *Spain*, and *Italy*: Its Root is of particular Uſe in facilitating Delivery, provoking the Menſes, and bringing down the After-Birth; and is externally applied in vulnerary Tinctures, and in Waters for Gangrenes.

The *long Ariſtolochia* likewiſe grows in *Languedoc*; its Root is uſed in Opiates, and in Tinctures for the Aſthma, and to excite the Menſes; its Decoction, in Lotions, to facilitate the Delivery of the After-birth, &c.

Beſides theſe, there are ſeveral other Kinds of *Ariſtolochia* in *America*; one particularly in *Virginia*, whoſe Roots are uſed againſt the Bites of venemous Beaſts, in malignant Fevers, and the Small-Pox.—Its alexipharmachick Virtue has occaſion'd it to be called *Viperinum Virginiæ*.

ARISTOTELIAN, ſomething that relates to *Ariſtotle*.—Thus we ſay the *Ariſtotelian* Philoſophy, an *Ariſtotelian* Dogma, &c.

The Philoſopher from whom the Denomination ariſes, was the Son of *Nicomachus*, born in the Year of the World 3670,

at

at *Stagyra*, a Town of *Macedonia*; whence he is alſo called the *Stagyrite*.

At 17 Years of Age he entred himſelf a Diſciple of *Plato*, and attended in the Academy 20 Years. See ACADEMY.

Being then ſent on an Embaſſy from the *Athenians* to King *Philip*, he found, at his Return, that *Xenocrates*, during his Abſence, had put himſelf at the Head of the Academic Sect; upon which he choſe the *Lyceum* for the future Scene of his Diſputations. See LYCEUM.

It being his Practice to philoſophize Walking, he got the Appellation *Peripateticus*; whence his Followers were alſo called *Peripateticks*.—Tho' others will have him to have been thus named from his attending on *Alexander* at his Recovery from an Illneſs, and diſcourſing with him as he walked about. See PERIPATETIC.

He was a Perſon of admirable Genius, and of great and various Learning: *Averroes* makes no Scruple to call him 'the Genius of Nature, the Limit of human Underſtanding; and declares him 'ſent by Providence to teach us all that 'may be known'—He is accuſed of a too immoderate Deſire of Fame, which led him to deſtroy the Writings of all the Philoſophers before him, that he might ſtand ſingly and without Competitors. And hence, in the Schools, *Ariſtotle* is called *The Philoſopher*.

Laertius, in his Life of *Ariſtotle*, enumerates his Books, to the Number of 4000; of which ſcarce above 20 have ſurvived to our Age: They may be reduced to five Heads; the firſt, relating to Poetry and Rhetoric; the ſecond, to Logicks; the third, to Ethicks and Politicks; the fourth, to Phyſicks; and the fifth, to Metaphyſicks. In all which, as there are many Things excellent and invaluable, particularly what relates to Poetry, Rhetoric, and the Paſſions; ſo there are others, in the other Parts, which the Improvements of later Ages have taught us to explode and deſpiſe. —See ARISTOTELIAN *Philoſophy*.

ARISTOTELIAN *Philoſophy*, the Philoſophy taught by *Ariſtotle*, and maintained by his Followers. See PHILOSOPHY.

The *Ariſtotelian* is otherwiſe called the *Peripatetick Philoſophy*; the Riſe and Fate whereof, ſee under the Article PERIPATETIC *Philoſophy*.

ARISTOTELIANS, a Sect of Philoſophers, otherwiſe called *Peripateticks*. See ARISTOTELIAN and PERIPATETICK.

The *Ariſtotelians* and their Dogma's prevail to this Day, in the Schools; malgre all the Efforts of the *Carteſians*, *Newtonians*, and other *Corpuſcularians*. See SCHOOL, NEWTONIAN, CARTESIAN, CORPUSCULAR, &c.

The Principles of *Ariſtotle*'s Philoſophy, the Learned agree, are chiefly laid down in his four Books *de Cælo*; his 8 *Books of Phyſicks*, belonging rather to Logicks, or Metaphyſicks, than to Phyſicks.—To give an Idea, then, of *Ariſtotelianiſm*, the reigning Syſtem of many Ages; and ſhew *Ariſtotle*'s Method of Philoſophizing; we cannot do better than produce a Specimen of the Work.

Thoſe four Books he entitles, *de Cælo*, becauſe the Heavens are the chief of the ſimple Bodies he treats of. He begins with proving that the World is perfect, which he does thus—All Bodies, ſays he, have three Dimenſions; they can't have more, for the Number three, according to *Pythagoras*, comprehends all: Now the World is the Aſſemblage of all Bodies, therefore the World is perfect.

In the ſecond Chapter, he lays down certain Peripatetic Axioms; as—that all natural Bodies have of themſelves a Power of moving; that all local Motion is either Rectilinear, Circular, or compoſed of the two; that all ſimple Motions are reducible to three, the Motion of the Centre, the Motion towards the Centre, and the Motion about the Centre: That all Bodies are either ſimple or compounded; ſimple are thoſe which have ſome Power within themſelves, whereby they move, as Fire, Earth, &c. Compound are ſuch as receive their Motion from thoſe others whereof they are compounded.

From theſe Principles he draws ſeveral Conſequences:

A circular Motion, ſays he, is a ſimple Motion: But the Heavens move in a Circle; therefore the Motion of the Heavens is ſimple: But a ſimple Motion can only belong to a ſimple Body; *i. e.* to a Body which moves by its own Force. Therefore the Heaven is a ſimple Body, diſtinct from the four Elements, which move in right Lines. This Propoſition he likewiſe proves by another Argument, thus—There are two kinds of Motions, the one natural, the other violent; the circular Motion of the Heavens, therefore, is either the one or the other: If it be natural, the Heaven is a ſimple Body diſtinct from the four Elements, ſince the Elements don't move circularly in their natural Motion: If the circular Motion be contrary to the Nature of Heaven, either that Heaven muſt be ſome of the Elements, as Fire, or ſomething elſe: But Heaven cannot be any of the Elements; *e. gr.* it cannot be Fire; for, if it were, the Motion of Fire being from below upwards, the Heaven would have two contrary Motions, the one circular, the other from below, upwards, which is impoſſible. Again; If the Heaven be any other thing which does not move circularly of its own Nature, it will have ſome other natural Motion, which likewiſe is impoſſible; for if it move naturally from below upwards, it will be either Fire or Air; if from above downwards, it will be Water or Earth; *ergo*, &c.—A third Argument is this— The firſt and moſt perfect of all ſimple Motions, muſt be that of a ſimple Body, eſpecially that of the firſt and moſt perfect of all ſimple Bodies: But the circular Motion is the firſt and moſt perfect of all ſimple Motions, becauſe every circular Line is perfect, and no right Line is ſo: For if it be finite, ſomething may be added to it; if infinite, it is not perfect, becauſe it wants an End, τέλος, and Things are only perfect when they are ended, τέλειος. Therefore, the circular Motion is the firſt and moſt perfect of all Motions; and therefore a Body which moves circularly is ſimple, and the firſt and moſt divine of ſimple Bodies. His fourth Argument is—That all Motion is either natural or not; and every Motion which is not natural to ſome Bodies, is natural to others: Now the circular Motion is not natural to the four Elements; there muſt, therefore, be ſome ſimple Body to which it is natural: Therefore the Heaven, which moves circularly, is a ſimple Body, diſtinct from the four Elements.—Laſtly, the circular Motion is either natural or violent to any Body; if it be natural, it is evident this Body is one of the moſt ſimple and perfect; if it be not, 'tis ſtrange this Motion ſhould laſt for ever.—From all theſe Arguments, therefore, it follows, that there is ſome Body diſtinct from the circumambient ones, and which is of a Nature as much more perfect than they, as it is more remote. Such is the Subſtance of his ſecond Chapter.

In the third Chapter, he aſſerts that the Heavens are incorruptible, and immutable; and the Reaſons he gives for it, are—That they are the Abode of the Gods, that no Perſon has ever obſerv'd any Alterations in them, &c.—

In the fourth Chapter, he attempts to prove, that the circular Motion has no Contrary: In the 5th, that Bodies are not infinite: In the 6th, that the Elements are not infinite: In the 8th, he ſhews that there are not ſeveral Worlds of the ſame Kind, by this very good Argument; that as Earth is heavy by Nature, if there were any other Earth beſide ours, it would fall upon our Heads, our Earth being the Centre, to which all heavy Bodies tend. In the 9th, he proves it impoſſible that there ſhould be ſeveral Worlds, becauſe if there were any Body above the Heavens, it muſt be either ſimple or compound, in a natural or a violent State; none of which is poſſible, for Reaſons which he draws from the three Kinds of Motion above mentioned. In the 10th, he maintains that the World is eternal, becauſe it is impoſſible it ſhould have had any Beginning, and becauſe it endures for ever. He employs the 11th in explaining the Notion of Incorruptibility; and in the 12th endeavours to ſhew that the World is incorruptible, becauſe it could not have any Beginning, and becauſe it endures for ever: All Things, ſays he, ſubſiſt either during a finite, or an infinite Space: But what is only infinite one Way, is neither finite nor infinite; therefore nothing can ſubſiſt in this Manner.

The Reader, we are of Opinion, will find this Taſte of Peripateticiſm ſufficient; otherwiſe, it had been eaſy to have given him his Fill. If he requires more, let him have Recourſe to the Articles PRINCIPLE, ELEMENT, FORM, QUALITY, ACCIDENT, SYMPATHY, FUGA VACUI, ANTIPERISTASIS, &c.

It were needleſs to point out the particular Defects in the Specimen here laid down; 'tis eaſy to obſerve that the Principles are moſt of them falſe and impertinent, and the Reaſonings abſurd and inconcluſive; but that the greateſt part has no diſtinct Meaning at all.

Such is the Philoſophy, and ſuch the Method of philoſophizing, of the *Genius of Nature*, the *Prince of Philoſophers*, *Ariſtotle*.

ARITHMANCY, ARITHMANTIA, or ARITHMOMANCY, a kind of Divination, or Method of foretelling future Events, by means of Numbers. See DIVINATION and NUMBER.

The Word is compounded of ἀριθμος, Number, and μαντεια, Divination.

The Gematria, which makes the firſt Species of the Jewiſh Cabbala, is a ſort of *Arithmancy*. See GEMATRIA and CABBALA.

ARITHMETIC, ARITHMETICA, the Art of Numbering; or, that Part of Mathematicks which conſiders the Powers and Properties of Numbers, and teaches how to compute or calculate truely, and with Expedition and Eaſe. See NUMBER, MATHEMATICKS, COMPUTATION, &c.

Some Authors chuſe to define *Arithmetic*, the Science of diſcrete Quantity. See DISCRETE and QUANTITY.

Arithmetic conſiſts chiefly in the four great Rules or Operations of *Addition*, *Subſtraction*, *Multiplication*, and *Diviſion*. See each in its Place, ADDITION, SUBSTRACTION, MULTIPLICATION, and DIVISION.

'Tis true, for the facilitating and expediting of Computations, both Mercantile and Aſtronomical, divers other uſeful Rules have been contrived; as, the Rule of Proportion, of Alligation,

Alligation, of False Position, Extraction of Square and Cube Roots, Progression, &c.—— But these are only Applications of the first four Rules. See RULE; see also PROPORTION, ALLIGATION, POSITION, EXTRACTION, &c.

We have very little Intelligence about the Origin and Invention of *Arithmetic*; History neither fixes the Author, nor the Time.—In all Probability, however, it must have taken its Rise from the Introduction of Commerce; and consequently, be of *Tyrian* Invention. See COMMERCE.

From *Asia* it passed into *Ægypt*, (*Josephus* says by means of *Abraham.*) Here it was greatly cultivated and improved; insomuch, that a great part of their Philosophy and Theology, seem to have turned altogether upon Numbers. Hence those Wonders related by them about *Unity*, *Trinity*; the Numbers *Seven*, *Ten*, *Four*, &c. See UNITY, TRINITY, TETRACTYS, &c.

In effect, *Kircher*, in his *Oedip. Ægypt.* Tom. II. p. 2. shews, that the *Egyptians* explained every thing by Numbers; *Pythagoras* himself affirming, that the Nature of Numbers goes through the whole Universe; and that the Knowledge of Numbers is the Knowledge of the Deity. See PYTHAGORIAN.

From *Egypt Arithmetic* was transmitted to the *Greeks*, who handed it forward, with great Improvements, which it had received by the Computations of their Astronomers, to the *Romans*; from whom it came to us.

The antient *Arithmetic*, however, fell far short of that of the Moderns: All they did was to consider the various Divisions of Numbers; as appears from the Treatises of *Nicomachus*, wrote in the third Century of *Rome*, and that of *Boethius*, still extant. A Compendium of the antient *Arithmetic*, wrote in Greek, by *Psellus*, in the ninth Century from our Saviour, was given us in Latin by *Xylander*, in 1556.—A more ample Work of the same Kind, was wrote by *Jordanus*, in the Year 1200; publish'd with a Comment by *Faber Stapulensis* in 1480.

Arithmetic, under its present State, is variously divided, into various Kinds; *Theoretical*, *Practical*, *Instrumental*, *Logarithmical*, *Numerous*, *Specious*, *Decadal*, *Dynamical*, *Tetractycal*, *Duodecimal*, *Sexagesimal*, *Vulgar*, *Decimal*, *Finite*, *Infinite*, &c.

Theoretical ARITHMETIC, is the Science of the Properties, Relations, &c. of Numbers consider'd abstractedly; with the Reasons and Demonstrations of the several Rules. See NUMBER.

Euclid furnishes a *Theoretical Arithmetic*, in the seventh, eighth, and ninth Books of his Elements.—*Bazlaamus Monachus* has also given a Theory for demonstrating the common Operations, both in Integers and broken Numbers, in his *Logistica*, publish'd in Latin by *Chambers*, in 1600.—To which may be added *Lucas de Burgo*, who, in an Italian Treatise publish'd in 1523, gives the several Divisions of Numbers from *Nicomachus*, and their Properties from *Euclid*; with the Algorithm, both in Integers, Fractions, Extractions of Roots, &c.

Practical ARITHMETIC, is the Art of Computing; that is, from certain Numbers given, of finding certain others whose Relation to the former is known—As, if a Number be required equal to two given Numbers 6 and 8.

The first entire Body of *Practical Arithmetic*, was given by *Nich. Tartaglia* a *Venetian*, in 1556, consisting of two Books; the former, the Application of *Arithmetic* to civil Uses; the latter, the Grounds of *Algebra*. Something had been done before by *Stifelius*, in 1544; where we have several Particulars concerning the Application of Irrationals, Cossicks, &c. no where else to be met withall.—

We omit other merely practical Authors which have come since, the Number whereof is almost infinite; as *Gemma Frisius*, *Metius*, *Wingate*, &c.

The Theory of *Arithmetic* is joined with the Practice, and even improved in several Parts, by *Maurolycus* in his *Opuscula Mathematica*, 1575; *Heneschius* in his *Arithmetica Perfecta*, 1609, where the Demonstrations are all reduced into the Form of Syllogisms; and *Tacquet* in his *Theoria & Praxis Arithmetices*, 1704.—

Instrumental ARITHMETIC, is that where the common Rules are performed by means of Instruments contrived for Ease and Dispatch; such are *Nepair's Bones*, described under their proper Article; Sir *Sam. Morland's* Instrument, the Description whereof was published by himself in 1666; that of *M. Leibnitz*, described in the *Miscellan. Berolin.* and that of *Polenus*, publish'd in the *Venetian* Miscellany, 1709.—To these may be added,

Logarithmical ARITHMETIC, perform'd by Tables of Logarithms. See LOGARITHM.

The best Piece on this Subject, is *Hen. Briggs's Arithmetica Logarithmica*, 1624.

To this Head may also be added, the universal *Arithmetical Tables of Prostaphæreses*, published in 1610, by *Herwart ab Hohenburg*; whereby Multiplication is easily and accurately perform'd by Addition, and Division by Subtraction.—

The *Chinese* have little Regard to any Rules in their Calculations; instead of which, they use an Instrument made of a little Plate, a Foot and half long, a-cross which are fitted ten or twelve Iron Wires, on which are strung little round Balls. By drawing these together, and dispersing them again one after another, they count, somewhat after the Manner in which we do by Counters; but with so much Ease and Readiness, that they will keep pace with a Man reading a Book of Accounts, let him make what Expedition he can: And at the End the Operation is found compleatly done; and they have their Way of proving it. See COMTE.

Numerous ARITHMETIC, is that which gives the Calculus of Numbers or indeterminate Quantities; and is performed by the common Numeral, or Arabic Characters. See ARABIC and CHARACTER.

Specious ARITHMETIC, is that which gives the Calculus of Quantities; using Letters of the Alphabet instead of Figures, to denote the Quantities. See SPECIOUS *Arithmetic.*

Specious *Arithmetic* coincides with what we usually call *Algebra.* See ALGEBRA.

Dr. *Wallis* has joined the Numeral with the literal Calculus; and by means hereof, demonstrated the Rules of Fractions, Proportions, Extractions of Roots, &c. A Compendium of which is given by Dr. *Wells*, under the Title of *Elements of Arithmetic*, An. 1698.

Decadal ARITHMETIC, is that performed by a Series of ten Characters, so that the Progression is from 10 to 10—Such is the common *Arithmetic* among us, which makes Use of the ten Arabic Figures, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9; after which we begin 10, 11, 12, &c.

This Method of Computation is not very antient, being utterly unknown to the *Greeks* and *Romans.*—It was introduced into Europe by *Gerbert*, afterwards Pope, under the Name of *Sylvester* II. who borrowed it from the Moors of *Spain.*—No doubt it took its Origin from the ten Fingers of the Hands, which were made use of in Computations before *Arithmetic* was brought into an Art.

The Eastern Missionaries assure us, that to this Day the *Indians* are very expert at computing on their Fingers, without any Use of Pen and Ink, *Lat. Edif. & Cur.*—Add, that the Natives of *Peru*, who do all by the different Arrangement of Grains of Maise, out-do any European, both for Sureness and Dispatch, with all his Rules; *Savary Dict. de Com.*

Binary, or Dyadic ARITHMETIC, is that wherein only two Figures, Unity, or 1, and 0, are used. See BINARY *Arithmetic.*

M. *Dangicourt*, in the *Berlin* Miscell. gives us a Specimen of the Use hereof in Arithmetical Progressions; where he shews, that the Laws of Progression may be easier discovered hereby, than in any other Method where more Characters are used.

Tetractyc ARITHMETIC, is that wherein only the Figures 1, 2, 3, and 0, are used.

We have a Treatise of this *Arithmetic*, by *Erhard Weigel:* But both Binary and this are little better than Curiosities, especially with regard to Practice; inasmuch, as the Numbers may be much more compendiously expressed by Decadal *Arithmetic*, than by either of them.

Vulgar ARITHMETIC, is that conversant about Integers and Vulgar Fractions. See INTEGER and FRACTION.

Sexagesimal ARITHMETIC, is that which proceeds by Sixties; or, the Doctrine of Sexagesimal Fractions. See SEXAGESIMAL.

Sam. Reyher has invented a Kind of Sexagenal Rods, in Imitation of *Nepair's* Bones; by means whereof the Sexagenary *Arithmetic* is easily performed.

Decimal ARITHMETIC, is the Doctrine of Decimal Fractions. See DECIMAL FRACTION.

Political ARITHMETIC, is the Application of *Arithmetic* to Political Subjects; as, the Strength and Revenues of Princes, Number of Inhabitants, Births, Burials, &c. See POLITICAL *Arithmetic.*

ARITHMETIC *of Infinites*, is the Method of summing up a Series of Numbers consisting of infinite Terms; or of finding the Ratio's thereof. See INFINITE, SERIES, &c.

This Method was first invented by Dr. *Wallis*; as appears from his *Opera Mathematica*, where he shews its Use in Geometry, in finding the Areas of Superficies, and the Contents of Solids, and their Proportions.—But the Method of Fluxions, which is an universal *Arithmetic* of Infinites, performs all this much easier; and Multitude of other Things which the former will not reach. See FLUXIONS, CALCULUS, &c.

ARITHMETIC *of Rationals* and *Irrationals.* See RATIONAL, &c.

ARITHMETICAL *Complement*, of a Logarithm, is what the Logarithm wants of 10.0000000. See COMPLEMENT.

Thus

Thus the *Arithmetical* Complement of 7.1079054, is 2.8920946; where each Figure, but the laſt, is ſubſtracted from 9; and that from 10. See LOGARITHM.

ARITHMETICAL *Progreſſion*, ARITHMETICAL *Proportion*, ARITHMETICAL *Medium* or *Mean*, } ſee { PROGRESSION. PROPORTION. MEDIUM.

ARK, or ARC, or *Arch*, *Arcus*, in Geometry, Aſtronomy, &c. See ARCH.

ARK, ARCA, in the Scripture-Language, a kind of floating Veſſel built by *Noah*, for the Preſervation of the ſeveral Species of Animals, from the Deluge. See DELUGE.

The *Ark* has afforded ſeveral Points of curious Enquiry among the Criticks and Naturaliſts, relating to its Form, Capacity, Materials, Time of Building, &c.

Noah is computed to have been an hundred Years in building the *Ark*, viz. from the Year of the World 1557, to the Flood, which happen'd in the Year 1656: At leaſt, this is the common Opinion of the Learned. *Origen*, lib. iv. *Contra Celſ.* *S. Auguſt. de Civit Dei*, lib. xv. c. 27. and *Contra Fauſtin.* lib. xii. c. 18. And in his *Queſt.* on *Gen.* v. and xxiii. *Rupert.* lib. iv. in *Gen.* xx. aſſert as much; and are followed by *Salian*, *Torniel*, and *Spondeus*.—*Pelletier* of *Rouen* declares himſelf of the ſame Opinion, in an expreſs Diſſertation, *De Arca Noæ*, printed in 1700.

Yet *Beroſus* affirms, that *Noah* only began to build the *Ark* 78 Years before the Flood: *Salomon Jarchi*, on the other hand, will have it 120 Years in building; and *Tanchuma* only 52. See the Texts, *Gen.* v. 35. *Gen.* vi. &c.

Fa. *Fournier*, in his *Hydrography*, gives into the Opinion of the Fathers; noting, that the only Hands employed in it were *Noah* and his three Sons. To this Purpoſe he alledges the Inſtance of *Archias* of *Corinth*, who, with the Help of 300 Workmen, built *Hiero*'s Great Ship in one Year. Add, that *Noah*'s eldeſt Son was not born till about the Time when the *Ark* was begun, and the younger, after; ſo that it was a long Time ere they could do their Father any Service.—However, for ſo large a Building, a prodigious Number of Trees muſt have been required, which would employ a great Number of Workmen to fell and hew; Were it poſſible for three Men to have lain them?

The Wood whereof the *Ark* was built, is called in Scripture עצי גפר, *etſe gopher*, *Gopher Wood*: And in the LXX. ξυλα τετραγωνα, ſquare Timbers. *Onkelos* and *Jonathan* render *Gopher* by קרום, *Kedros*, Cedar: St. *Jerom*, in the Vulgate, by *Ligna Lævigata*, Planed Wood; and elſewhere, *Ligna Bituminata*, q. d. Pitch'd Woods. *Kimhi* tranſlates it, *Wood proper to float*; Vatable, *Light Wood*, which ſwims in the Water without corrupting: *Junius*, *Tremellius*, and *Buxtorf*, a kind of Cedar, by the *Greeks* called Κεδρελατη; *Avenarius* and *Munſter*, Pine; *Fuller* and *Bochart*, Cypreſs; others, *Box*; others, *Fir*; *Caſtalio*, Turpentine, &c.—*Pelletier* prefers the Opinion of thoſe who hold the *Ark* made of Cedar: His Reaſons are, the Incorruptability of that Wood; the great Plenty thereof in *Aſia*, whence *Herodotus* and *Theophraſtus* relate, that the Kings of *Egypt* and *Syria* built whole Fleets thereof, in lieu of Deal; and the common Tradition throughout the Eaſt, imports, that the *Ark* is preſerved entire to this Day on Mount *Ararat*.

The Dimenſions of the *Ark*, as delivered by *Moſes*, are 300 Cubits in Length, 50 in Breadth, and 30 in Height; which, compared with the great Number of Things it was to contain, ſeems to many too ſcanty. And hence an Argument has been drawn againſt the Authority of the Relation.

To ſolve this Difficulty, many both of the antient Fathers and later Criticks, have been put to miſerable Shifts.—*Origen*, St. *Auguſtin*, and others, maintain, that by the Cubits here ſpoke of, we are to underſtand the *Egyptian* Geometrical Cubit, equal, according to them, to 6 vulgar Cubits, or 9 Foot. But the Truth is, it does not appear there ever was any ſuch Meaſure as a Geometrical Cubit either among *Egyptians* or *Jews*.—Others account for it, by aſſerting the Stature of Mankind, in the firſt Ages, to have been much greater than in our Days; and conſequently the Cubit, which is taken from a Part of the human Body, proportionably larger. But this does not avail, ſince the ſame Reaſon will infer an equal Augmentation of other Animals.—Others ſuppoſe the ſacred Cubit here ſpoke of, which was a Hand's-breadth longer than the civil one: But this only affords a ſmall Supply; beſide, that the ſacred Cubit does not appear to have been ever uſed, except in ſacred Edifices, as the Temple and Tabernacle.

This Difficulty is much better ſolved by *Buteo* and *Kircher*, in Treatiſes expreſs, *de Arca Noæ*, wherein, ſuppoſing the common Cubit of a Foot and an half, they prove geometrically, that the *Ark* was abundantly ſufficient for all the Animals ſuppoſed to be lodged therein.—*Snellius* computes the *Ark* to have been above half an Acre in Area: *Cuneus*, *Buteo*, and others, have alſo calculated the Capacity of the *Ark*. Father *Lamy* ſhews that it was 110 Foot longer than the Church of St. *Mary* of *Paris*, and 64 Foot narrower; to which his *Engliſh* Tranſlator adds, that it muſt have been longer than St. *Paul*'s Church in *London*, from Weſt to Eaſt, broader than that Church is high in the Inſide, and about 54 Foot in Height, our Meaſure.

The Things contained in it were, one Pair of every Species of unclean Animals, and ſeven Pair of every Species of clean Animals, with Proviſions for them all, during the whole Year.—The former appears at firſt View almoſt infinite, but if we come to a Calculus, the Number of Species of Animals will be found much ſmaller than was imagined, not amounting to 100 Species of Quadrupeds, nor 200 of Birds; out of which, in this Caſe, are to be excepted ſuch Animals as can live in the Water.—Zoologiſts uſually reckon but 170 Species in all; and Biſhop *Wilkins* ſhews, that only 72 of the quadruped Kind needed a Place in the *Ark*.

By the Deſcription *Moſes* gives of the *Ark*, it appears to have been divided into three Stories, each 10 Cubits, or 15 Foot high: And it is agreed on, as moſt probable, that the loweſt Story was deſtined for the Beaſts, the middle for the Food, and the upper for the Birds, with *Noah* and his Family; each Story being ſubdivided into different Apartments, Stalls, &c.—Tho' *Joſephus*, *Philo*, and other Commentators, add a kind of fourth Story, under all the reſt; being as it were, the Hold of the Veſſel, to contain the Ballaſt, and receive the Filth and Fæces of ſo many Animals.

Drexelius makes 300 Apartments, Father *Fournier* 333, the anonimous Author of the Queſtions on *Geneſis*, 400: *Buteo*, *Temporarius*, *Arias Montanus*, *Hoſtus*, *Wilkins*, *Lamy*, and others, ſuppoſe as many Partitions as there were different Sorts of Animals.—*Pelletier* only makes 72, *viz.* 36 for the Birds, and as many for the Beaſts: His Reaſon is, that if we ſuppoſe a greater Number, as 333 or 400; each of the eight Perſons in the *Ark* muſt have had 37, 41, or 50 Stalls to attend and cleanſe daily, which he thinks impoſſible. But there is not much in this; to diminiſh the Number of Stalls, without a Diminution of the Animals, is vain; it being, perhaps, more difficult to take care of 300 Animals in 72 Stalls, than in 300.

Buteo computes, that all the Animals contained in the *Ark*, could not be equal to 500 Horſes; he even reduces the whole to the Dimenſions of 56 Pair of Oxen. Father *Lamy* enlarges it to 64 Pair, or 128 Oxen; ſo that ſuppoſing one Ox equal to two Horſes, if the *Ark* had Room for 256 Horſes, there muſt have been Room for all the Animals. But the ſame Author demonſtrates, that one Floor would ſuffice for 500 Horſes, allowing 9 ſquare Feet to an Horſe.

As to the Food in the ſecond Story, it is obſerved by *Buteo* from *Columella*, that 30 or 40 Pounds of Hay ordinarily ſuffices an Ox for a Day; and that a ſolid Cubit of Hay, as uſually preſſed down in our Hay-racks, weighs about 40 Pound; ſo that a ſquare Cubit of Hay is more than enough for one Ox one Day.—Now it appears that the ſecond Story contains 150000 ſolid Cubits, which divided between 206 Oxen, will afford each more Hay by two thirds, than he can eat in a Year.—

Biſhop *Wilkins* computes all the carnivorous Animals equivalent, as to the Bulk of their Bodies and their Food, to 27 Wolves; and all the reſt to 280 Beeves. For the former he allows 1825 Sheep, and for the latter 109500 Cubits of Hay: All which will be eaſily contained in the two firſt Stories, and a deal of Room to ſpare.—As to the third Story, no Body doubts of its being ſufficient for the Fowls, with *Noah* his Sons and Daughters.—

Upon the whole, the learned Biſhop remarks, that of the two, it appears much more difficult to aſſign a Number and Bulk of neceſſary Things to anſwer the Capacity of the *Ark*, than to find ſufficient Room for the ſeveral Species of Animals already known.—This he attributes to the Imperfection of our Liſts of Animals, eſpecially thoſe of the unknown Parts of the Earth; adding, that the moſt expert Mathematician at this Day, could not aſſign the Proportions of a Veſſel better accommodated to the Purpoſe, than is here done; and hence concludes, that 'the Capacity of the 'Ark which had been made an Objection againſt Scripture, 'ought to be eſteemed a Confirmation of its divine Au'thority; ſince, in thoſe ruder Ages, Men being leſs verſed 'in Arts and Philoſophy, were more obnoxious to vulgar 'Prejudices than now; ſo that had it been an human Inven'tion, it would have been contrived according to thoſe wild 'Apprehenſions which ariſe from a confuſed and general 'View of Things; as much too big, as it has been repre'ſented too little.—

ARK *of the Covenant*, in Scripture, is uſed for a kind of Cheſt, wherein where kept the two Tables of Stone, whereon God had ingraven the ten Commandments given to *Moſes* on the Mount, and held in high Veneration among the *Hebrews*. See COVENANT.

The *Ark* was taken by the *Philiſtines*, and returned with divers Preſents.—It was at firſt placed in the Tabernacle, afterwards in the Sanctuary of the Temple. See TABERNACLE, TEMPLE, and SANCTUARY.

Joſephus deſcribes it at 5 Palms long, 3 broad, and as many high; the Wood, both within Side and without, lined with Plates of Gold, and fitted with golden Hinges.—The Lid or Covering of the *Ark* was called the *Propitiatary*, over which were two Figures placed called *Cherubim*, a kind of Spirits with Wings of a peculiar Form never ſeen but by *Moſes* before the Throne of God. It may be added that ſome Criticks take the Word *Cherub*, כרוב, to be only a Tranſpoſition of the Hebrew Letters of the Word רכוב, *Rechub*, *Chariot*; and that by the *Cherubim being placed over the Ark*, we are only to underſtand that the *Ark* was a ſort of Chariot, on which God ſate. See PROPITIATORY, CHERUB, *&c.*

The *Jews* to this Day, have a kind of *Ark* in their Synagogues, wherein their ſacred Books are repoſited, in imitation of the antient *Ark* of the Covenant.—This they call *Aron*. *Leo* of *Modena* gives a Deſcription thereof, in his Account of the *Cuſtoms and Ceremonies of thoſe of his Nation*: 'The *Jews*, ſays he, in the eaſtern Side of all their 'Synagogues, have an *Ark*, or Armory, called *Aron*; in 'Memory of the *Ark* of the Covenant. In this are preſer-'ved the five Books of *Moſes*, wrote on Vellum, with Ink 'made on Purpoſe, *&c.*

Tertullian calls this Ark, *Armarium Judaicum*; whence the Phraſe, *to be in the Armory of the Synagogue*, q. d. to be in the Number of canonical Writings. See APOCRYPHA.

ARM, *Brachium*, a part of the human Body, terminating at one End in the Shoulder, and at the other in the Hand. See BODY, SHOULDER, *&c.*

Among Phyſicians, the *Arm* only includes that part between the Shoulder and the Elbow; the reſt, from the Elbow to the Wriſt, being taken into the greater Hand. See HAND.

The *Arm*, in this latter Acceptation, has only one large Bone, called the *Humerus*, or Shoulder-Bone. See HUMERUS.

It has five ſorts of Motions, which are effected by five Pair of Muſcles; upwards, by the *Deltoides*, *Supraſpinatus*, and *Coracobrachialis*; downwards, by the *Teres*, *Rotundus major*, and *Latiſſimus Dorſi*; forwards, by the *Pectoralis*; backwards, by the *Infraſpinatus*; and circular, by the *Tranſverſalis*, *Subſcapularis*, and *Infraſpinatus*. See each Muſcle deſcribed under its proper Article.

The other Part conſiſts of two Bones, called *Focils*; viz. the *Radius* and *Cubitus*, or *Ulna*. See FOCIL, RADIUS, and ULNA.

The Muſcles whereby this Part are moved, are the *Biceps*, *Brachiæus Internus*, *Gemellus*, *Brachiæus Externus*, *Anconæus*, *Pronator Radi teres*, and *Quadratus*; *Supinator Longus*, & *Brevis*. See each in its Place.

The uſual Venæſections are in the *Arm*. See PHLEBOTOMY, *&c.*

ARM, in the Manage, is applied to a Horſe, when he endeavours to defend himſelf againſt the Bit; to prevent obeying, or being check'd thereby.

A Horſe is ſaid to *arm* himſelf, when he preſſes down his Head, and bends his Neck, ſo as to reſt the Branches of the Bridle upon his Briſket; in order to withſtand the Effort of the Bit, and guard his Bars and his Mouth.

A Horſe is ſaid to *arm* himſelf *with the Lips*, when he covers the Bars with his Lips, and deadens the Preſſure of the Bit.—This frequently happens in thick-lipp'd Horſes.—The Remedy is by uſing a Bit-mouth, forged with a Canon or Scatch-mouth, broader near the Bankers than at the Place of its Preſſure, or reſt upon the Bars.

For arming againſt the Bit, the Remedy is to have a wooden Ball cover'd with Velvet, or other Matter, put on his Chaul; which will ſo preſs him between the Jaw-bones, as to prevent his bringing his Head ſo near his Breaſt.

ARM, is alſo uſed in Geography, for a Branch of a Sea, or River. See SEA, OCEAN, RIVER, *&c.*

Italy and *Sicily* are only parted by an *Arm* of the Sea.—St. *George's Arm*, in the *Mediterranean*, is the *Thracian Boſphorus*.

Among Gardeners, *Arm* is ſometimes uſed in reſpect of Cucumbers and Melons, in the ſame Senſe as Branch, of other Plants. See BRANCH, CLASPER, *&c.*

ARM is uſed figuratively for *Power*.—The *Secular Arm*, is the Lay or Temporal Authority of a ſecular Judge; to which Recourſe is had for the Execution of the Sentences paſs'd by Eccleſiaſtical Judges. See SECULAR.

The Church ſheds no Blood: Even the Inquiſition, after they have found the Perſon guilty, ſurrenders him to the ſecular *Arm*. See INQUISITION.

The Council of *Antioch*, held in 341, decrees, that Recourſe be had to the *Secular Arm* to repreſs thoſe who refuſe Obedience to the Church: For ſecular *Arm*, they here uſe *exterior Power*.

ARM, in the military Art, Heraldry, *&c.* See ARMS and ARMOUR.

ARM, in the Sea-Language.—A Ship is ſaid to be *armed*, when fitted out and provided in all reſpects for War. See SHIP.

Alſo, a Croſs-Bar-ſhot is ſaid to be *armed*, when ſome Rope-yarn, or the like, is rolled round about one End of the Iron-Bar which runs thro the Shot, both that the Shot may be the better rammed down into the Gun, and leſt the ſharp End of the Bar ſhou'd catch into any Honey-Combs within the Cylinder of the Piece.

ARM, in reſpect of the Magnet.—A Loadſtone is ſaid to be *armed*, when it is capped, caſed, or ſet in Iron or Steel; in order to make it take up the greater Weight; and alſo to diſtinguiſh readily its Poles. See MAGNET, POLE, *&c.*

The uſual Armour of a Loadſtone in form of a right-angled Parallelopepidon, conſiſts of two thin Pieces of Steel or Iron, in a ſquare Figure, and of a Thickneſs proportionable to the Goodneſs of the Stone: If a weak Stone have a ſtrong Armour, it will produce no Effect; and if the Armour of a ſtrong Loadſtone be too thin, its Effect will not be ſo conſiderable as when thicker.—The proper Thickneſs is found by filing it thinner and thinner, till its Effect is found the greateſt poſſible.

The Armour of a Spherical Loadſtone, conſiſts of two Steel Shells faſtened to one another by a Joint, and covering a good Part of the Convexity of the Stone. This alſo is to be filed away, till the Effect is found the greateſt.—'Tis ſurprizing to what Degree the Armour of a Loadſtone will augment its Effect: A good Stone thus *armed*, will lift above 150 times more than before. See MAGNETISM.

Kircher, in his Book *de Magnete*, tells us, that the beſt way to *arm* a Loadſtone, is to drill a Hole thro' the Stone from Pole to Pole, and in that, to place a Steel Rod of a moderate Length; which Rod, adds he, will take up more Weight at the End, than the Stone itſelf *armed* the common Way, can do.

ARMA *dare*, q. d. *to give Arms*, in ſome antient Charters, ſignifies to dub, or make a Knight. See KNIGHT.

ARMA *deponere*, *to lay down Arms*, was a Puniſhment antiently enjoin'd when a Man had committed an Offence. *Leg. Hen.* I.

ARMA *Molita*, were ſharp Weapons: *Fleta* calls them *Arma Emolita*.

ARMA *Mutare*, q. d. to *change Arms*, was a Ceremony uſed to confirm a League or Friendſhip.

ARMA *Reverſata*, *Inverted Arms*; was when a Man was convicted of Treaſon or Felony. See DEGRADATION, *&c.*

ARMAN, among Farriers, a Confection of great Efficacy to prevent a total Loſs of Appetite in Horſes. See APPETITE.

ARMATURE. See ARMOR.

ARMARIUM *Unguentum*, in antient Writers, a ſympathetick Ointment, or Weapon Salve, whereby Wounds are ſaid to have been cured at a Diſtance, by only dreſſing the Weapon. See SYMPATHETIC.

ARMED. See ARM and ARMS.

ARMED, in Heraldry, is uſed in reſpect of Beaſts and Birds of Prey, when their Teeth, Horns, Feet, Beak, Talons, or Tusks, are of a different Colour from the reſt.—He bears a Cock, or a Falcon, *armed*, Or, *&c.*

ARMIGER, q. d. *Armour Bearer*; a Title of Dignity, render'd in *Engliſh*, by *Eſquire*. See ESQUIRE.

ARMILLARY, ARMILLARIS, in Aſtronomy, an Epithet given to an artificial Sphere, compoſed of a Number of Metalline Circles, repreſentative of the ſeveral Circles of the Mundane Sphere, put together in their natural Order. See SPHERE and CIRCLE.

Armillary Spheres eaſe and aſſiſt the Imagination to conceive the Conſtitution of the Heavens, and the Motions of the heavenly Bodies. See HEAVEN, SUN, PLANET, *&c.*

Such is repreſented, *Tab. Aſtron.* Fig. 21.—where P and Q repreſent the Poles of the World, A D the Equator, E L the Ecliptic and Zodiac, P A G D the Meridian, or the Solſticial Colure, T the Earth, F G the Tropic of Cancer, H T the Tropic of Capricorn, M N the Arctic Circle, O V the Antarctic, N and O the Poles of the Ecliptic, and R S the Horizon.

The Word is form'd of the Latin *Armilla*, a Bracelet.

ARMILLA *Membranoſa*, is a Name given by ſome Anatomiſts, to the annular Ligament. See ANNULAR *Ligament*.

ARMAMENT, a large Body of Forces, rais'd and provided with the Furniture of War, either for Land or Sea Service. See ARMY.

ARMENIANS, in reſpect of Religion, a Sect, or Diviſion among the Eaſtern Chriſtians; thus called from *Armenia*, the Country antiently inhabited by them. See SECT.

The *Armenians*, ſince the Conqueſt of their Country by *Scha Abas* King of *Perſia*, have had no fixed Place of Habitation, but are diſperſed in divers Parts of *Perſia*, *Turky*, and even ſome Parts of Europe.—Their chief Employment is

is Merchandiſe, in which they excel.—The Cardinal de *Richlieu*, we are told, had a Deſign to make an Eſtabliſhment of them in *France*, for promoting the Commerce of that Country.

With regard to Religion, there are two Kinds of *Armenians*; the one Catholicks, and ſubject to the Pope, having an Archbiſhop in *Perſia*, and another in *Poland*.—The other make a peculiar Sect, having two Patriarchs in *Natolia*. They have their Printing-houſe at *Marſeilles*.

The *Armenians* are of the Sect of *Monophyſites*, and only allow of one Nature in Jeſus Chriſt. See MONOPHYSITE.

As to the Euchariſt, they agree with the *Greeks*, except in this, that they mix no Water with their Wine, and uſe unleavened Bread after the manner of the *Latins*. See GREEK, AZYMUS, &c.

They abſtain very rigourouſly from eating of Blood and Meats ſtrangled, and are much addicted to Faſting, inſomuch, that to here them talk, one would conclude that their whole Religion conſiſted in Faſting.

The Monaſtic Order is in great Repute among them, ſince one of their Patriarchs introduced that of St. *Baſil*; but part of them which have united with the Church of *Rome*, have changed their antient Rule, for that of the *Dominicans*. See BASILIAN and DOMINICAN.

ARMENIAN-*Stone*, *Lapus Armenus*, in natural Hiſtory, called alſo *Lapis Stellatus*; is a kind of precious Stone, nearly reſembling the *Lapis Lazuli*, except that it is ſofter, and inſtead of Veins of Gold, is intermixed with Green. See STONE and LAZULI.

Boerhaave rather ranks it among Semi-Metals; and ſuppoſes it compoſed of a Metal and Earth.—See METAL.—He adds, that it only differs from the *Lazuli* in degree of Maturity; and that both of them ſeem to contain Arſenic. See ARSENIC.

It it found in *Tirol*, *Hungary*, and *Tranſilvania*; and is uſed both in Moſaic Work, and to make that beautiful Blue Colour called *Azure*. See AZURE and MOSAIC.

ARMENIAN *Bole*, *Bolus Armenus*, or *Bole Armoniac*, is a native Bole or Earth, brought from *Armenia*. See BOLE and EARTH.

Some conjecture it to have a Mixture of Iron in its Compoſition.—That which is paliſh, red, ſoft, fattiſh upon the Pallate, and adheſive on the Tongue, is the beſt. It is a good Aſtringent, and Vulnerary; and in thoſe Intentions frequently preſcribed againſt Diarrhæas, Dyſſenteries, Hæmmorrhages, and other Defluxions.—Externally it is uſed in ſtrengthening Plaiſters, againſt Luxations of the Joints.

ARMILUSTRIUM, in Antiquity, a Feaſt held among the *Romans*; wherein they ſacrific'd, armed at all Points, and with the Sound of Trumpets. See FEAST.

Some define *Armiluſtrium* to have been a Feaſt, wherein a general Review was made of all the Forces in the *Campus Martius*.—But this does not come up to the Point; for *Varro* does not derive the Word from the Latin *Arma* and *luſtrare*, to make a Review; but from the Cuſtom of holding this Feaſt in the Place where the Reviews were uſed to be made, or rather from their going round the Place armed with Bucklers. And he prefers this laſt Opinion, being perſuaded that it was from this Ceremony, that the Place where this Sacrifice was offer'd to the Gods, was called *Armiluſtrium*, or *Armiluſtrum*, *ab luendo aut luſtro*, i. e. *quod circumibant ludentes, ancilibus armati.*

This Sacrifice was intended as an ὁπλαθύσιον, an Expiation of Arms, for the Proſperity of the Arms of the People of *Rome*; and was celebrated on the 14th of the Calends of *November*.

ARMINGS, in a Ship, are the ſame with *Waſt-Clothes*, being Red Clothes, hung about the Outſides of the Ship's Upper-works, fore and aft; and before the Cubbridge Heads.—There are ſome alſo hung round the Tops, called *Top-Armings*.

ARMINIANISM, the Doctrine of *Arminius*, a celebrated Profeſſor in the Univerſity of *Leyden*; and of the *Arminians*, a Sect which follow him.

The principal Article wherein the *Arminians* differ from the other Reformed, conſiſts in this, that thinking the Doctrines of *Calvin*, with regard to Free-will Predeſtination and Grace, too ſevere, they have return'd to thoſe of the Romiſh Church, and maintain, that there is an univerſal Grace given to all Men; that Man is always free, and at Liberty to reject or embrace Grace, &c. See GRACE, FREE-WILL, &c.

Gomar, *Arminius*'s Collegue, ſtood ſtrenuouſly up for a particular or ſpecial Grace, given only to thoſe who were predeſtinated or elect; and for a poſitive Decree both of Election in ſome, and of Reprobation in others. See PREDESTINATION, ELECTION, REPROBATION, &c.

At length, the Matter came to an Hearing, before the Synod of *Dort*, where *Arminianiſm* was condemn'd in Form.—Theſe Diſputes began in the Year 1609. From the School they paſs'd into the Government, and the Republick of *Holland* was once in a fair way to be over-turned by them.

ARMINIANS, a religious Sect or Party, which aroſe in *Holland*, by a Separation from the *Calviniſts*. See ARMINIANISM.

The *Arminians* are ſometimes alſo called *Remonſtrants*, by reaſon of a Remonſtrance which they perſer'd to the States General in 1611, wherein the chief Articles of their Faith were laid down. See REMONSTRANT.

The latter *Arminians* carried Things much further than *Arminius* himſelf, and even came very near to *Socinianiſm*. —Eſpecially under *Simon Epiſcopius*.—When the *Calviniſts* upbraided them with renewing an antient Hereſy already condemned in the *Pelagians*, and *Semi-Pelagians*; they replied, that the mere Authority of Men cou'd not be allow'd a legitimate Proof any where but in the Church of *Rome*; that it was not enough to ſhew any Opinion had been condemned, without ſhewing it had been condemned juſtly: *Nec ſatis eſt damnatam Olim Sententiam eſſe, niſi damnandam, aut jure aut rite damnatam eſſe, conſtet.*

On this Principle, which the *Calviniſts* cannot well gainſay, the *Arminians* retrench abundance of thoſe called fundamental Articles of Religion. Not finding them all clearly expreſſed in Scripture, they laughed at all the Catechiſms and Formula's of Faith which they would have reſtrained them to; and accordingly were condemn'd at the famous Synod of *Dort*, held in 1618, whereat Divines from all the Reformed Churches were preſent.

Many among them have quitted the Doctrine of their Maſter relating to the Points of eternal Election and Predeſtination.—*Arminius* taught, that God elected the Faithful out of a Foreknowledge of their Faith: But *Epiſcopius*, and others, think he elects no Perſon from all Eternity, and only elects the Faithful, at the Time when they actually believe. They ſpeak very ambiguouſly of the Preſcience of God, which was the principal Strong-Hold of *Arminius*. They look on the Doctrine of the Trinity as a Point not neceſſary to Salvation; and many of them hold there is no Precept in Scripture, by which we are enjoin'd to adore the Holy Ghoſt; and that Jeſus Chriſt is not equal to God the Father. And they generally avoid the Word *Satisfaction of Chriſt*. Tho' *Epiſcopius* declares, that Jeſus Chriſt has made Satisfaction to God, ſo far as to render him propitious to Mankind.

They preſs with a great deal of Earneſtneſs, a general Toleration of all thoſe who profeſs the Chriſtian Religion; maintaining that all Chriſtians are agreed in the eſſential Points: As it has never been decided by any infallible Authority, which of the many Ways is the true one, and the moſt agreeable to the Word of God; they ought all to combine on the ſame Footing, to compoſe one Church, without obliging any to quit their own Sentiments, or embrace thoſe of others.

Their principal Writers are *Arminius*, *Epiſcopius*, and *Grotius*; to which may be added *Curcellæus*, who has collected a Syſtem of Theology out of the large diffuſive Writings of *Epiſcopius*, with the Addition of many Things of his own. —Tho' *Curcellæus*, it muſt be own'd, is rank'd by the *Socinians* among the Number of their Writers.

ARMISTICE, *Armiſtitium*, a ſhort Truce, or Ceſſation of Arms for a ſmall Time. See TRUCE, CESSATION, &c.

ARMONIACK, or rather AMMONIAC, in natural Hiſtory, a ſort of volatile Salt; whereof there are two Kinds, antient and modern. See SALT.

The antient *Sal Ammoniac*, called alſo *Sal Cyrenaic*, deſcribed by *Pliny* and *Dioſcorides*, was a native Salt, generated in the Earth, or rather the Sands, in thoſe large Inns or Caravanſeras, where the Crouds of Pilgrims coming from all Parts to the Temple of *Jupiter Ammon*, uſed to lodge.—The Method of Conveyance in thoſe Parts being on Camels; and thoſe Creatures when in *Cyrene* a Province of *Egypt* wherein that celebrated Temple ſtood, urining in the Stables, or ſay ſome in the parched Sands: Of this Urine, which is remarkably ſtrong, ſublimed by the Heat of the Sun, aroſe a kind of Salt, denominated ſometimes from the Temple *Ammoniac*, and ſometimes from the Region *Cyrenaic*.

This Salt being no longer found in thoſe Places, ſome Authors ſuſpect there was never any ſuch thing; and that the antient as well as the modern *Sal-Armoniac* was factitious.—What pleads for the contrary, is, that the Salt frequently belched out in large Quantities from Mount *Ætna*, appears much of the ſame Nature, and anſwers to moſt of the Characters of the antient *Sal-Armoniac*. The Reaſon no more is produced in *Egypt*, is the Ceſſation of Pilgrimages to that ancient Idol.

Its Characters are, that it cools Water, turns *Aqua Fortis* into *Aqua Regia*, and conſequently diſſolves Gold; that it ſublimes by a large Fire, and affords a pungent urinous Savor. See AQUA-REGIA, URINOUS, &c.

The modern *Sal-Armoniac*, called alſo *Aqua Cœleſtis*, is held by ſome to be native, and to trickle out of the Ground about Mount *Veſuvius*, *Ætna*, &c. in Form of a Liquor; which,

which, when filtered and inſpiſſated, becomes *Sal-Armoniac*.—But 'tis certain, all the modern *Sal-Armoniac* is compound and factitious; conſiſting of a Mineral, a Vegetable, and an animal Salt combined together.

Indeed, though there ſcarce be any Drug more common than *Sal-Armoniac*, the Public has been entirely at a Loſs, both as to the Place whence it comes, and how it was made; all we knew for certain, was that it came from the *Levant*, and was a volatile urinous Salt, penetrated by an Acid.—Father *Sicard*, the Jeſuite, has at length removed the Veil, in the Memoirs of the *Journal de Trevoux*, for *9ber*, 1717.—This Salt, ſays that Father, in a Letter to the Count de *Tholouſe*, is made in *Egypt*, in a ſort of Ovens contrived for the Purpoſe, the Tops whereof are perforated with ſeveral longitudinal Clefts; and on theſe Clefts are laid ſeveral long-necked Glaſs-Bottles, filled with Soot, a little Sea-Salt, and the Urine of Cattle; well ſtopped.

This done, they cover them up with a Body of Clay and Brick, all but the Necks, which lie open to the Air; and put the Fire in the Oven, which they keep up for 3 Days and Nights.—The Phlegm of the Materials contained in the Bottles, being thus exhaled by the Heat of the Fire; and the acid and alkaline Salts abounding therein, being thus brought together near the Necks of the Bottles, they coaleſce, harden, and form a whitiſh Maſs, which is the *Sal-Armoniac*—It muſt be added, that all Soot is not fit for the Purpoſe, but only that exhaling from a ſort of Fuel made of Dung.

Our Chymiſts have divers Ways of preparing a *Sal-Armoniac*, in Imitation of this.—The common Way is by putting one part of common Salt, to five of Urine; to which ſome add half that Quantity of Soot: The whole being put in a Veſſel, they raiſe from it by Sublimation a white friable farinacious Subſtance, which they call *Sal-Armoniac*.—*M. Lemery* ſuſpected, that what is imported to us from Abroad, muſt be made after a different Manner; he even concluded that it was made as our common Salt is, by Lotion, and Evaporation: In which Suſpicion, it appears from the foregoing Account, he is far from the Truth.—They purify it by Diſſolution in hot Water; which being filtered, and evaporated to a Cuticle, ſhoots into a fine white Salt, uſed in Medicine both as a Sudorific and a Diuretic; and proving a good Aperient in all Obſtructions.

There are various Preparations of this Salt, in the modern Pharmacy; as,

Sublimate of *Sal-Armoniac*, of like Virtue as the purified. See SUBLIMATION.—

Volatile Sal Armoniac, made by ſubliming the *Sal-Armoniac* with Salt of Tartar; uſed againſt malignant Fevers as a Sudorific; as alſo in Pocket Smelling-Bottles.—

Flowers of Sal-Armoniac; made of *Sal-Armoniac*, with Sea-Salt decrepitated.—Its Vertues are much the ſame as of the ſublimated *Sal-Armoniac*. See FLOWERS.—

Sometimes, inſtead of the Sea-Salt, Iron or Steel are uſed; which makes what they call *Martial Flowers of Sal-Armoniac*, of a very penetrating and deobſtruent Nature, and recommended in all Kinds of Obſtructions, Cachexies, Jaundice, Dropſies, &c.

Spirit of Sal-Armoniac—Of this we have various Kinds, which derive different Denominations and Properties from the different additional Ingredients the Salt is diſtilled with: As—*Spirit of Sal-Ammoniac with Tartar*, with *Quicklime*; with *Amber*; with *Steel* or *Iron*: *Sweet* Spirit of *Sal-Ammoniac*; *Acid* Spirit of *Sal-Armoniac*; *Diuretic* Spirit of *Sal-Armoniac*, &c.

ARMOR, or ARMOUR, a defenſive Habit, wherewith to cover and ſecure the Body from the Attacks of an Enemy. See ARMS.

Such are the *Buckler*, *Cuiraſſe*, *Helmet*, Coat of Mail, Gantlet, &c. See BUCKLER, CUIRASSE, HELMET, &c.

A compleat *Armor* antiently conſiſted of a Cask or Helm, a Gorget, Cuiraſſe, Gantelets, Taſſes, Braſſets, Cuiſſes, and Covers for the Legs, to which the Spurs were faſtened.—This they called *Armour Cap-a-pe*; and was the Wear of the Cavaliers, and Men at Arms.

The Infantry had only part of it, *viz.* a Pot or Head-Piece, a Cuiraſſe, and Taſſes; but all light.—Laſtly, the Horſes themſelves had their *Armour*, wherewith to cover the Head and Neck.

Of all this Furniture of War, ſcarce any thing is now retained.

The Gallantry of going to the Battle naked, without any defenſive *Armour*, prevailed ſo far, that the *French*, during the Reign of *Louis* XIV. were obliged to be continually iſſuing Ordonnances to reſtrain it; in conſequence of which, the General Officers, and thoſe of the Cavalry, were obliged to reſume the Cuiraſſe.—

Coat-ARMOUR, is the Eſcutcheon of any Perſon, or Family, with its ſeveral Charges, and other Furniture, as Mantling, Creſt, Supporters, Motto, &c. See ESCUTCHEON, CHARGE, CREST, MANTLING, SUPPORTER, MOTTO, &c.

Thus we ſay, a Gentleman of Coat-Armour; meaning one who bears *Arms*. See COAT, ARMS, GENTLEMAN, &c.

ARMORY, or ARMOURY, a Store-houſe of Arms, or a Place wherein military Habiliments are kept, to be ready for Uſe. See ARMS.

There are *Armories* in the Tower, and all Arſenals, &c. See TOWER and ARSENAL.

ARMORY is alſo uſed for a Branch of Heraldry; being the Knowledge of Coat-Armours, as to their Blazons, and various Intendments. See HERALDRY; ſee alſo COAT-*Armour*, BLAZON, &c.

ARMS, ARMA, all Kinds of Weapons, whether for Defence, or Offence. See WEAPON, DEFENCE, &c.

The *Arms* of Offence, are the Sword, Piſtol, Muſquet, Bayonet, Pike, &c. See SWORD, GUN, &c.

ARMS of Defence. See under ARMOR.

Fire-ARMS. See FIRE-*Arms*.

The principal *Arms* of the antient *Britons*, were Hatchets, Scythes, Lances, Swords, and Bucklers: The *Saxons*, &c. brought in the Halbard, Bow, Arrows, Arbalets, &c.

The Word is formed from the French *Armes*; which *Nicod* derives from a Latin Phraſe, *Quod operiant armos*, by reaſon they cover the Shoulders, or Sides: But ought rather to be brought from *Arma*; which *Varro* derives *ab Arcendo, eo quod Arceant hoſtes*.

'Tis ſuppoſed that the firſt *Arms* were of Wood, and were only employ'd againſt Beaſts.—That *Nimrod*, the firſt Tyrant, turn'd them againſt Men; and that his Son *Belus* was the firſt that waged War; whence, according to ſome, came the Appellation *Bellum*.—*Diodorus Siculus* takes *Belus* to be the ſame with *Mars*, who firſt train'd Soldiers up to Battle.—

Arms of Stone, &c. even of Braſs, appear to have been uſed before they came to Iron and Steel.

Joſephus aſſures us, that the Patriarch *Joſeph* firſt taught the Uſe of Iron Arms in *Egypt*, arming the Troops of *Pharoah* with a Cask and Buckler.

In the Eye of the Law, *Arms*, *Arma*, are extended to any Thing which a Man takes in his Hand in his Wrath, to caſt at, or ſtrike another.—So *Crompton*—*Armorum appellatio non ubique Scuta & Gladios & Galeas ſignificat, ſed & Fuſtes & Lapides*.

ARMS of *Courteſy*, or *Parade*, were thoſe uſed in the antient Juſts, and Tournaments. See JUST and TOURNAMENT.

Theſe uſually were Lances not ſhod; Swords without Edge or Point; and frequently wooden Swords, or even Canes.

Paſs of ARMS, was a Kind of Combat in uſe among the antient Cavaliers. See PASS *of Arms*.

Place of ARMS, in Fortification, &c. See PLACE *of Arms*.

ARMS, are alſo the natural Weapons, or Parts of Defence of Beaſts; as Claws, Teeth, Tusks of Elephants, Beaks of Birds, &c. See BILL, TALON, TUSK, &c.

Some Animals are ſufficiently guarded againſt all common Dangers by their natural Cloathing, their Armature of Shells, as the Tortoiſe, &c. See SHELL, TORTOISE, &c.—Others, deſtitute of this Guard, are *armed* with Horns; others with ſharp Quills, or Prickles, as the Porcupine and the Hedgehog; others with Stings, &c. See HORN, STING, &c.

ARMS are alſo uſed figuratively for the Profeſſion of a Soldier.—Thus we ſay, he was bred to *Arms*. See SOLDIER.

ARMS, or ARMORIES, are alſo uſed in Heraldry, for Marks of Dignity and Honour, regularly compos'd of certain Figures and Colours, given or authorized by Sovereigns, and bore in Banners, Shields, Coats, &c. for the Diſtinction of Perſons, Families, and States. See FIGURE, COLOUR, SYMBOL, HONOUR, NOBILITY, &c. ſee alſo SHIELD, &c.

They are called *Arms*, in regard they are bore principally on the Buckler, Cuiraſſe, Banners, and other Apparatus of War.—They are alſo called *Coats of Arms*, *Coat Armour*, &c. becauſe antiently embroider'd on Surcoats, &c. See COAT *of Arms*, &c.

Some will have the Name to have been firſt occaſioned by the antient Knights, who in their Juſts and Tournaments bore certain Marks (which were frequently their Miſtreſs's Favours) in their *Armour*, i. e. their Helms or Shield; to diſtinguiſh them from each other. See JUST, TOURNAMENT, &c.

Arms make the Subject of the Art of *Heraldry*. See HERALDRY and BLAZON.

Three *Flowers de lys*, in a Field Azure, are the *Arms* of *France*.—The *Arms* of *England* are three Lyons.—In the *Arms* of *Great-Britain* are Quartered the *Arms* of *France*, *England*, *Scotland*, and *Ireland*. See QUARTER and QUARTERING.

There has been a great Diſpute among the Learned about the Origin of *Arms*.—*Favin* will have them to have been from the Beginning of the World; *Segoin* from the Time of *Noah*; others, from that of *Oſiris*, which is ſupported by ſome Paſſages in *Diodorus Siculus*; others, from the Times of the *Hebrews*, in regard *Arms* were given to *Moſes*, *Joſhua*, the twelve Tribes, *David*, &c. Others

Others will have them to have taken their Riſe in the heroical Age, and under the Empires of the *Aſſyrians*, *Medes*, and *Perſians*; building upon *Philoſtratus*, *Xenophon*, and *Quintus Curtius*.

Some pretend that the Uſe of *Arms*, and the Rules of Blazon, were regulated by *Alexander*.—Some will have them to have had their Original under the Empire of *Auguſtus*; others, during the Inundations of the *Goths*; and others, under the Empire of *Charlemagne*.

Chorier obſerves, that among the antient *Gauls*, each Man bore a Mark on his Buckler, by the Sight whereof he might be known to his Fellows; and hence he refers the Original of the *Arms* of noble Families.—*Camden* has obſerv'd ſomething like this of the antient *Picts*, and *Britons*, who going naked to the Wars, painted their Bodies with Blazons, and Figures of divers Colours, which he ſuppoſes to have been different in different Families, as they fought divided by Kindreds. Yet *Spelman* ſays, that the *Saxons*, *Danes*, and *Normans*, firſt brought *Arms* from the North into *England*; and thence into *France*.

Upon the whole it is certain, that from Time immemorial, there have been ſymbolical Marks in uſe among Men, to diſtinguiſh them in Armies, and to ſerve as Ornaments of Shields and Enſigns; but theſe Marks were uſed arbitrarily as Devices, Emblems, Hieroglyphicks, &c. and were not regular *Armories*, like ours, which are hereditary Marks of the Nobility of a Houſe, regulated according to the Rules of Heraldry, and authoriz'd by Princes. See DEVICE, EMBLEM, HIEROGLYPHIC, &c.

Before *Marius*, even the Eagle was not the conſtant Enſign of the *Roman* Army; but they bore in their Standards a Wolf, Leopard, or Eagle indifferently, according to the Fancy of the Generals. See EAGLE, ENSIGN, &c.

The ſame Diverſity has been obſerved with regard to the *French* and *Engliſh*; on which account, Authors are divided when they ſpeak of the antient *Arms* of thoſe Countries.—In effect, it appears from all the beſt Authors, that the Armories of Houſes, as well as the double Names of Families, were not known before the Year 1000. And ſeveral have even endeavour'd to prove, that the Uſe of *Arms* did not begin till the Time of the firſt Croiſades of the Chriſtians in the Eaſt. See CROISADE.

The Truth is, it was the antient Tournaments that occaſioned the fixing of Armories. See TOURNAMENT.

Henry the Fowler, who regulated the Tournaments in *Germany*, was the firſt who introduc'd theſe Marks of Honour, which appear to be of an older ſtanding in *Germany*, than any other Part of Europe.—It was then that Coats of *Arms* were firſt inſtituted; which were a kind of Livery compos'd of ſeveral Bars, Fillets, and Colours; whence came the *Feſs*, *Bend*, *Pale*, *Chevron*, and *Lozenge*; which were ſome of the firſt Elements of *Armories*. See COAT, FESS, BEND, &c.

Thoſe who had never been concerned in any Tournament, had no *Arms*, tho' they were Gentlemen. See GENTLEMAN.

Such of the Nobility and Gentry as croſs'd the Sea in the Expeditions to the Holy Land, alſo aſſum'd theſe Tokens of Honour to diſtinguiſh themſelves.

Before theſe Times, we find nothing upon antient Tombs but Croſſes, with *Gothick* Inſcriptions and Repreſentations of the Perſons deceas'd. The Tomb of Pope *Clement* IV. who died in 1268. is the firſt whereon we find any *Arms*; nor do they appear on any Coins ſtruck before the Year 1336. We meet with Figures, it is true, much more antient, both in Standards and in Medals; but neither Cities nor Princes ever had *Arms* in Form; nor does any Author make mention of Blazoning before that Time.

Originally, none but the Nobility had a Right of bearing *Arms*; but King *Charles* V. having ennobled the *Pariſians*, by his Charter in 1371. he permitted them to bear *Arms*: From whoſe Example, the more eminent Citizens of other Places did the like.

Camden refers the Original of hereditary *Arms* in *England* to the Time of the firſt *Norman* Kings. He ſays their Uſe was not eſtabliſh'd till the Reign of K. *Henry* III. and inſtances in ſeveral of the moſt conſiderable Families in *England*, wherein, till that Time, the Son always bore different *Arms* from the Father.—About the ſame Time it became the Cuſtom here in *England*, for private Gentlemen to bear *Arms*; borrowing them from the Lords of whom they held in Fee, or to whom they were the moſt devoted.

ARMS, at preſent, follow the Nature of Titles, which being made hereditary, theſe are alſo become ſo; being the ſeveral Marks for diſtinguiſhing of Families and Kindreds, as Names are of Perſons and Individuals. See NAME, &c.

ARMS are variouſly diſtinguiſh'd by the Heralds.—

Full or *Entire* ARMS, are ſuch as retain their primitive Purity, Integrity, and Value; without any Alterations, Diminutions, Abatements, or the like. See DIMINUTION, ABATEMENT, &c.

'Tis a Rule, that the ſimpler and leſs diverſified the *Arms*, the more noble and antient they are.—For this Reaſon, *Garcias Ximenes*, firſt King of *Navarre*, and his Succeſſors for ſeveral Ages, bore only Gules, without any Figure at all.

The *Arms* of Princes of the Blood, of all younger Sons and junior Families, are not pure, and full; but diſtinguiſhed and diminiſhed by proper Differences, &c. See DIFFERENCE.

Charged ARMS, are ſuch as retain their antient Integrity and Value; with the Addition of ſome new honourable Charge or Bearing, in Conſideration of ſome noble Action. See CHARGE.

Speaking, or *Vocal* ARMS, are thoſe wherein the Figures bear an Alluſion to the Name of the Family.—Such are thoſe of the Family of *la Tour* in *Auvergne*, who bear a Tower; that of the Family of *Prado* in *Spain*, whoſe Field is a Meadow. See DEVICE, MOTTO, &c.

Moſt Authors hold theſe the moſt noble and regular, as is ſhewn by an Infinity of Inſtances produced by Fa. *Varenne* and *Menetrier*.—They are much debaſed, when they come to partake of the Rebus. See REBUS.

ARMS are alſo ſaid to be *Party*, or divided; *Couped*, *Quartered*, &c. See PARTI, COUPE, QUARTERING, &c.

ARMS are ſaid to be *falſe* and irregular, when there is ſomething in them contrary to the eſtabliſhed Rules of Heraldry.—As, when Metal is put on Metal, or Colour on Colour, &c. See METAL and COLOUR.

The Laws, and other Affairs of *Arms*, with the Cognizance of Offences committed therein, belong, among us, to the *Earl-Marſhal*, and *College of Arms*. See MARSHAL and COLLEGE *of Arms*.

ARMS, in Faulconry, are the Legs of an Hawk, from the Thigh to the Foot. See HAWK and HAWKING.

King at ARMS,
Herald at ARMS,
Pourſuivant at ARMS,
College of ARMS,
} fee {
KING *at Arms*,
HERALD,
POURSUIVANT
COLLEGE *of Arms*.

ARMY, a Body of Soldiers, Horſe and Foot, divided into Regiments, under the Command of a General, with ſeveral Ranks of ſubordinate Officers under him. See SOLDIER, GENERAL, OFFICER, REGIMENT, &c. ſee alſo CAVALRY, INFANTRY, &c.

This is to be underſtood of a *Land Army*.—A *Naval* or *Sea Army*, is a Number of Ships of War, equipp'd and mann'd with Marines, under the Command of an Admiral, with other inferior Officers under him. See NAVY, ADMIRAL, SHIP, &c.

We ſay, an *Army* ranged in Form of Battle—The March of an *Army*—The Retreat of an *Army*—The Review of an *Army*, &c. See MILITIA, BATTLE, MARCH, RETREAT, REVIEW, CAMP, &c.

An *Army* is uſually divided into three Corps; the Vanguard, Rear-guard, and Main-Body. See VAN-GUARD, REAR-GUARD, and BODY.

ARMIES are alſo rang'd in Lines, Columns, &c. with Wings. See LINE, COLUMN, WING, &c.

Our *Armies* antiently were a ſort of Militia, compoſed chiefly of the Vaſſals and Tenants of the Lords. See VASSAL, TENANT, LORD, SERVICE, MILITIA, &c.

When each Company had ſerved the Number of Days or Months enjoined by their Tenure, or the Cuſtoms of the Fees they held; they returned Home. See TENURE, FEE, &c.

The *Armies* of the Empire conſiſt of divers Bodies of Troops, furniſhed by the ſeveral Circles. See EMPIRE and CIRCLE.

The Groſs of the French *Armies* under the *Merovingian* Race, conſiſted of Infantry. Under *Pepin* and *Charlemaign*, the *Armies* conſiſted almoſt equally of Cavalry and Foot: But ſince the Declenſion of the *Carlovingian* Line, the Fees being become hereditary, the national *Armies*, ſays *le Gendre*, are chiefly Cavalry.

The *Armies* of the Grand-Signior conſiſt moſt of Janizaries, Spahi's, and Timariots. See JANIZARY, SPAHI, and TIMARIOT.

ARNODI, in Antiquity, the ſame with *Rhapſodi*. See RHAPSODI.

The Word is compounded of the Greek ἀρνος, a Lamb, which was their uſual Reward; and ᾠδη, Song, Singing.

ARNOLDISTS, ARNALDISTS, a kind of Sectaries in the XIIth Century; thus called from their Chief, *Arnold of Breſſe*.—He declaimed much againſt the great Wealth and Poſſeſſions of the Church, and preached againſt Baptiſm and the Euchariſt.

After raiſing great Diſturbances at *Breſſe* and *Rome*, he was hang'd at this latter Place in 1155, and his Aſhes caſt into the *Tyber*.—His Diſciples were alſo call'd *Publicans*, or *Poplecans*.

AROMATIC, Aromaticus, is underſtood of a Drug, Plant, or the like, which yields a brisk, agreeable Smell, and a warm, ſpicy Taſte.

Such are Frankincenſe, Storax, Benjoin, Cinnamon, Mace, Cloves, Nutmeg, Pepper, &c.—Such alſo are Lavender, Marjoram, Sage, Thyme, Roſemary, &c. See Spice, &c.

The Word is form'd of the Greek αρωμα, of αρω, to make fit, accomodate; in regard Spices, which are all *Aromatic*, are uſed for the ſeaſoning and preparing of Meats.

Aromaticks, or *Aromatic* Medicines, are either ſimple or compound.—To this Claſs belong moſt Cardiac, Cephalic, and Carminative Remedies, with many ſtomachic ones. See Cardiac, Carminative, Cephalic, Stomachic, &c.

The *Aromaticum Roſatum*, is a compound officinal Powder, made of Red Roſes, Liquorice, Aloes Wood, Yellow Sanders, Cinnamon, Cloves, Mace, Gum, Tragacanth, Nutmegs, Cardamums, Galangals, Spikenard, Ambergreaſe and Muſk mix'd together.—It is chiefly preſcribed in Cordial and Cephalic Boles and Electuaries, to ſtrengthen the Stomach and Head, which all *Aromaticks* have a Tendency to.

Some Writers give the Title *Aroma Germanicum* to Elecampane, as preferring it, in that Intention, to Ginger itſelf. See Elecampane, &c.

Aromaticks are of particular Service in cold cachectic Habits, where the Load of Humours has been forced away by ſtrong Detergents and Catharticks; as they tend to ſtrengthen the Fibres, and prevent a Relapſe.—Hence they become of abſolute Uſe after Purging, and carrying off the Waters of a Dropſy; or in the Intervals thereof, to fortify the Springs, and prevent a filling again. See Dropsy.

ARONDE, in Fortification. See Queue *d'Aronde*.

ARPAGUS, in antient Inſcriptions, ſignifies a Child who died in the Cradle.

The *Romans* made no Funerals for their *Arpagi*.—They neither burnt their Bodies, nor made Tombs, Monuments, or Epitaphs for them; which occaſioned *Juvenal* to ſay,

—Terra clauditur Infans
Vel minor igne rogi.

In after-times it became the Cuſtom to burn ſuch as had lived to the Age of 40 Days, and had cut any Teeth; and theſe they called *Rapti*.

The Word *Arpagus* ſignifies the ſame thing in *Greek*. *Euſtathius* aſſures us, it was the Cuſtom among the *Greeks* never to bury their Children either by Night or full Day, but at the firſt Appearance of the Morning, which they called, Ἡμέρας ἁρπαγίω.

ARQUEBUSS, or Harquebuss, a large Hand-gun, ſomething bigger than our Muſquet; and called by ſome a *Caliever*. See Harquebuss.

Arquebuss *a Croc*, is a ſort of ſmall Fort-Arm, which carries a Ball of about three half Ounces; now only uſed in old *Caſtile*, and ſome Gariſons of the *French*.

The Word is deriv'd from the *Italian Arcobuſio*, or *Arcoabuſo*, form'd of *Arco*, a Bow, and *Buſio*, a Hole; becauſe of the Touch-Hole of an *Arquebuſs*, which ſucceeds to the Uſe of the Bow among the Antients.

ARRAIGN, or Arrain, in Law, ſignifies to ſet a Thing in Order, or in its Place. See Arrangement.

Thus, he is ſaid to *Arraign* a Writ of Novel Diſſeiſin, who prepares and fits it for Trial before the Juſtices of the Circuit. In this Senſe *Littleton* ſays, the Leſſee *arraigneth* an Aſſize of Novel Diſſeiſin.—To *arraign* the Aſſize, is to cauſe the Tenant to be called to make the Plaint, and to ſet the Cauſe in ſuch Order, as the Tenant may be forced to anſwer thereto.

A Priſoner is alſo ſaid to be *arraigned*, when he is indicted and brought forth to his Trial. See Indictment.—

Spelman is of Opinion the Word ſhould be written *Arrame*, from *Arramare*, and that from the old French *Arramir*, i. e. *Jurare, promittere, Solemniter profiteri*. Yet in the Regiſter we find no ſuch Word as *Arramare*; but in all the Writs of Aſſize, the Year-Books, &c. it is *Arrainavit*: The more natural Derivation is from the French *Arraiſonner*, i. e. *ad rationem ponere*, to call a Man to anſwer in Form of Law; which comes from the barbarous Latin *Adrationare*, i. e. *placitare*— In which Senſe, to *arraign* a Criminal, is *ponere eum ad rationem*.

ARRAIGNMENT, or Arrangement, in Law, the Act of *Arraigning*, or ſetting a Thing in Order. See Arraigning.

ARRAIATIO *Peditum*, the arraying of Foot Soldiers. See Arraying.

ARRAS-Hangings, a ſort of rich Tapeſtry, made at *Arras* in the County of *Artois* in *Flanders*. See Tapestry.

ARRANGEMENT, or Rangement, the Diſpoſition of the Parts of a Whole, in a certain Order. See Part and Disposition.

The modern Philoſophy ſhews us, that the Diverſity of Colours depends entirely on the Situation and the *Arrangement* of the Parts, which reflect the Light differently; the Diverſity of Taſte and Smells on the different *Arrangements* of the Pores, which render them differently ſenſible; and the Diverſity of Bodies on the different *Arrangement* of their Parts. See Body, &c.

The happy *Arrangement* of Words makes one of the greateſt Beauties of Diſcourſe. See Construction, &c.

ARRAY, in Law, the ranking or ordering a Jury or Inqueſt of Men impannel'd on any Cauſe. See Jury, Inquest, &c.

The Word may be derived either from the obſolete French *Array*, Order, or from *Raye*, a Line.—Hence the Verb, to *Array a Pannel*, Ann. 3 Hen. V. &c. q. d. to ſet forth the Men empanelled one by another. The *Array* ſhall be quaſhed, *ib.* By the Statute, every *Array* in Aſſize ought to be made four Days before.—Hence alſo, to challenge the *Array*; ſee Challenge.

ARRAYERS, *Arraiatores*, is uſed in ſome antient Statutes, for ſuch Officers as had care of the Soldiers Armour, and ſaw them duly accoutred in their Kinds. See Armour, Accoutrements, &c.

Such were the *Commiſſioners of Array*, appointed by King *Charles* I. in the Year 1642.

ARREARS, or Arrearages, the Remains of an Account; or a Sum of Money remaining in the Hands of an Accomptant. See Account and Accomptant.

The Word is alſo uſed more generally for a Remainder of Rents, or Monies unpaid at the due Time; whether they be Rents of a Manor, or any other Thing reſerved.

The Word is derived from the French *Arrerages*, which is formed from *arriere*, and that again from *retro*, behind.

ARREST, in common Law, an Execution of the Command of ſome Court, or Officer of Juſtice.—Hence, when a Perſon is legally ſtopp'd, apprehended, and reſtrained of his Liberty, for Debt, &c. he is ſaid to be *arreſted*, or put under an *Arreſt*; which is the beginning of *Impriſonment*. See Attachment, Imprisonment, and Hautelode.

To *move* or *plead in Arreſt of Judgment*, is to ſhew Cauſe why Judgment ſhould be ſtay'd, tho' there be a Verdict in the Cauſe. See Judgment and Verdict.

To *plead in Arreſt of taking the Inqueſt*, is to ſhew Cauſe why an Inqueſt ſhould not be taken. See Inquest.

The Word *Arreſt*, is originally French, and is uſed by them for a Decree, or Determination of a Cauſe debated to and fro: In which Senſe it ſeems deriv'd from the Greek ἀρεσὸν, *placitum*, the Pleaſure of the Court. See Arret.

ARRENTATION, Arrendare, in the Foreſt Law, the Licenſing an Owner of Lands in the Foreſt, to encloſe them with a low Hedge and ſmall Ditch, in conſideration of a yearly Rent. See Forest, Purlieu, &c.

Saving the Arrentations, denotes a Power reſerved to give ſuch Licenſes for a yearly Rent.

ARRESTANDIS *Bonis ne diſſipentur*, a Writ which lies for him whoſe Cattle or Goods are taken by another, who, during the Controverſy, makes, or is like to make them away, and will hardly be able to give Satisfaction for them afterwards.

ARRESTANDO *ipſum, qui pecuniam recepit ad proficiſcendum in Obſequium Regis*, &c. is a Writ which lies for the Apprehenſion of him that hath taken Preſt-Money for the King's Wars, and hides himſelf when he ſhould go. See Prest-*Money*.

ARRESTO *facto ſuper bonis Mercatorum Alienigenorum*, &c. is a Writ which lies for a Denizen againſt the Goods of Strangers of another Country found within this Kingdom, in Recompence of Goods taken from him in that Country, after he hath been denied Reſtitution there. See Mark.

This among the antient Civilians, was called *Clarigatio*, now barbarouſly *Repriſalia*. See Clarigatio and Reprisal.

ARRETED, Arrectatus, is ſometimes uſed in our antient Law-Books, for *imputed*, or laid to; as, No Folly may be *arreted* to one under Age.

ARRHABONARII, a Sect in Religion, who held that the Euchariſt is neither the real Fleſh and Blood of Chriſt, nor yet the Sign of them, but only the Pledge or Earneſt thereof.

The Word is derived from the Greek Ἀρραβων, *Arrha*, Earneſt.

ARRHA, Arrhes, or *Argentum Dei*. See Earnest, &c.

ARRHEPHORIA, a Feaſt among the *Athenians*, inſtituted in Honour of *Minerva*.—Boys, or, as ſome ſay, Girls, between 7 and 12 Years of Age, were the Miniſters that aſſiſted at this Feaſt. See Feast.

The Word is derived from the Greek Ἀρρηφόρια, which is compoſed of ἀρρητον, Myſtery, and φέρω, I carry.—This Feaſt was alſo called *Herſiphoria*, from *Herſe* the Daughter of *Cecrops*, on whoſe account it was eſtabliſh'd.

ARRIERE,

ARRIERE, a French Term, literally ſignifying the *hind*, or *poſterior* Part of any Thing; uſually wrote in *Engliſh*, abridgedly, *Rear*. See REAR.

ARRIERE-BAN, or ARIERE-*Ban*, in the French Cuſtoms, is a general Proclamation, whereby the King ſummons to the War all that hold of him; both his Vaſſals, *i. e.* the Nobleſſe, and the Vaſſals of his Vaſſals. See VASSAL, TENURE, &c.

To the Provoſt of *Paris* belongs the convoking and commanding of the *Ariere-Ban*. See PROVOST, &c.

M. *Caſeneuve* takes the Word to be compoſed of *Arriere* and *Ban*: The *Ban*, according to him, denotes the convening of the Nobleſſe or Vaſſals, who hold Fees immediately of the King; and *Arriere*, thoſe who only hold of the King mediately.—*Paſquier* obſerves, that the Word is frequently mentioned in the Salic Law.

ARRIERE-*Corps*. See CORPS.

ARRIERE-FEE, or FIEF, is a Fee dependant on ſome other ſuperior one. See FEE.

Theſe commenced at the Time when the Counts and Dukes, rendering their Governments hereditary in their Families, diſtributed to their Officers certain Parts of the royal Domains which they found in their Provinces; and even permitted thoſe Officers to gratify the Soldiers under them, with Parts thereof. See COUNT, DUKE, &c.

ARRIERE-GUARD. See REAR-*Guard*.

ARRIERE *Vaſſal*, or *Tenant*, the Vaſſal or Tenant of another Vaſſal or Tenant. See VASSAL, TENANT, &c. ſee alſo ARRIERE-FEE.

ARRONDIE, in Heraldry, a CROSS-*Arrondie*, or *rounded*, is that whoſe Arms are compoſed of Sections of a Circle, not oppoſite to each other, ſo as to make the Arm buldge out thicker in one Part than another; but both the Sections of each Arm lye the ſame Way, ſo that the Arm is every where of an equal Thickneſs; and all of them terminating at the Edges of the Eſcutcheon, like the plain Croſs. See CROSS.

ARSACIDES, ARSACIDÆ, the Deſcendants of *Arſaces* King of *Parthia*.

This *Arſaces*, according to the *Perſian* Chronicles, was of the Lineage of *Cyrus*; tho others affirm that he was deſcended from *Darius*.—Be this as it will, *Arſaces* having freed the *Parthians* from the Dominion of the *Seleucides*, they eſteemed him the Founder of their Monarchy, and would have all their future Kings bear his Name, and be called *Arſacids*. Whence the Poets have attributed the Appellation to the whole Nation.

The *Arſacides* began to reign in *Arſaces*, under *Seleucus* II. ſurnamed *Callinicus*, the third of the *Seleucides*, 240 Years before Chriſt; and continued about 460 or 470 Years; when *Artaxerxes* kill'd *Artabanus*, the laſt of the *Arſacides*, about the Year of Chriſt 227.

ARSENAL, a royal or publick Magazine, or Place appointed for the making, and keeping of Arms neceſſary either for Defence, or Aſſault. See ARMS and ARMORY.

The *Arſenal* of *Venice* is the Place where the Gallies are built and laid up.—The *Arſenal* of *Paris*, is that where the Cannon or great Guns are caſt. It has this Inſcription over the Door—

Vulcania Tela Miniſtrat,
Tela Gigantæos debellatura furores.

There are alſo *Arſenals*, or Store-houſes, appropriated to Naval Furniture and Equipments. See NAVY, YARD, &c.

The Word, according to ſome, is deriv'd from *Arx* or *Arcus*; or rather from *Ars*, an Engine; this being the Place where the Engines of War are preſerv'd.—Some derive it from *Arx Senatus*, as being the Defence of the Senate; others from the Italian *Arſenale*, or from the modern Greek *Arſenalis*; but the moſt probable Opinion is, that it is deriv'd from *Darſenaa*, which, in the Arabick, ſignifies an *Arſenal*.

ARSENIC, ARSENICUM, in natural Hiſtory, a ponderous mineral Subſtance, extremely cauſtic or corroſive, to the Degree of a violent Poiſon. See FOSSIL, CORROSIVE, &c.

The Word is compounded of the Greek ανερ, Man, and νικαω, I overcome, kill; alluding to its poiſonous Quality. See POISON.—

In an antient Manuſcript aſcribed to the Sybils, is a Verſe which plainly intimates *Arſenic*:

Tetraſyllabus ſum; prima pars mei Virum,
Secunda Victoriam ſignificat.

Arſenic is rank'd among the Claſs of Sulphurs. See SULPHUR.

There are divers Kinds of *Arſenic*; *viz.* Yellow, or Native; Red, and Cryſtalline.

Native Arſenic is of a Yellow, or Orange-colour; whence it is alſo denominated *Auripigmentum*, or *Orpiment*.—It is chiefly found in Copper-Mines, in a ſort of Glebes or Stones, of different Figures and Sizes. Its Colour, tho' always Yellow, yet admits of divers Shades and Mixtures, as a golden Yellow, reddiſh Yellow, green Yellow, &c. It is found to contain a Portion of Gold, but ſo little, as not to quit the Coſt of ſeparating it. See ORPIMENT.

Of this are prepared two other Kinds of *Arſenic*, viz. *White* and *Red*.

This, ſublimed with ſome other Matters, is the *Sandaracha Græcorum*. See SANDARACH.

Tho' ſome Naturaliſts will have Red *Arſenic*, and *Realgal*, two diſtinct Drugs, taking the latter for a native Mineral, and the former for a Preparation of a native *Arſenic*. See REALGAL.

Red Arſenic, called alſo *Realgal*, is only the native Yellow rubified by Fire.

The *White*, or *Cryſtalline*, is drawn from the Yellow, by ſubliming it with a Proportion of Sea-Salt.—'Tis this Species is chiefly in Uſe among us for real *Arſenic*. Some Authors give it a different Origin, and maintain it a native Matter, found in white ſcaly Glebes in the Mines.

White and Yellow *Arſenic* are alſo procurable from Cobalt: The Method of which, as practiſed in *Hungary*, is given us by Dr. *Krieg*, in the *Philoſophical Tranſactions*, N° 293.—The Cobalt being beat to Powder, and the light ſandy Part waſh'd off, by a Current of Water, they put what remains in a Furnace; the Flame of which paſſing over the Powder, takes along with it the Arſenical Part, in Form of a Smoak; which being receiv'd by a Chimney, and carried thence into a cloſe Brick Channel, ſticks by the Way to the Sides; and is ſcraped off, in form of a whitiſh or yellowiſh Powder.—From what remains of the Cobalt, they proceed to make *Smalt*. See SMALT.

The ſmalleſt Quantity of any of theſe *Arſenics*, being mixed with any Metal, renders it friable, and abſolutely deſtroys its Malleability.

Hence, the Refiners dread nothing ſo much as *Arſenic* in their Metals; nor could any thing be ſo advantageous to them, were ſuch a thing to be had, as a Menſtruum that would abſorb, or act on *Arſenic* alone; for then their Metals would be readily purified, without flying off, or evaporating. See REFINING.

A ſingle Grain of *Arſenic* will turn a Pound of Copper into a beautiful ſeeming Silver. This Hint many Perſons have endeavoured to improve on, for the making of Silver, but in vain, as it could never be brought to ſuſtain the Hammer: Some have been hang'd for coining Species of this ſpurious Silver. See SILVER, COINING, &c.

The Chymiſts furniſh ſeveral Preparations of *Arſenic*, which all turn on repeated Ablutions and Sublimations, to blunt the corroſive Salts thereof, and change them into a ſafe Medicine, after the Manner of Sublimate—Such are Ruby of *Arſenic*, &c. But it ſcarce appears worth the Pains: And whatever ſome may urge, *Arſenic* ſhould never be uſed inwardly in any Form, as gnawing and tearing the Parts, and occaſioning mortal Convulſions.—Its Fume taken into the Lungs, kills inſtantly: And the oftner it is ſublimed, ſays *Boerhaave*, the ranker it grows.—Butter and Cow's Milk taken in large Quantities, prove good Antidotes againſt *Arſenic*.

Regulus of ARSENIC, is the moſt fix'd and compact Part thereof, prepared, by mixing it with Pot-aſhes and Soap, diſſolving the whole, and caſting it into a Mortar; upon which the heavieſt Part falls to the Bottom. See REGULUS.

Cauſtic Oil of ARSENIC, is a Butyrous Liquor, like Butter of Antimony, prepared of *Arſenic* and corroſive Sublimate.—It ſerves to eat off fungous Fleſh, cleanſe carious Bones, &c.

ARSENICAL *Magnet*, *Magnes Arſenicus*, is a Preparation of Antimony, with Sulphur and White *Arſenic*.

ARSENOTHELYS, among the antient Naturaliſts, the ſame with *Hermaphrodite*. See HERMAPHRODITE.

The *Greeks* uſed the Word both of Men and Beaſts.—It is form'd from αρσην and θηλυς, Male and Female.

ARSIS and *Theſis*, a Phraſe in muſical Compoſition; where a Point being inverted, is ſaid to move *per Arſin & Theſin*; that is, riſes in one Part, and falls in another; or, on the contrary, falls in one Part, and riſes in another: Whence is produc'd a very agreeable Variety.

ART, ARS, is defined by the Schoolmen, a Habit of the Mind operative or effective according to right Reaſon; or, ſomewhat more intelligibly, a Habit of the Mind preſcribing Rules for the due Production of certain Effects; or the introducing of Changes in Bodies from ſome Foreknowlege and Deſign in a Perſon endued with a Principle or Faculty of Acting. See HABIT, ACTION, &c.

On this Footing, *Arts* are divided into *active* and *factive*.—Such as leave no external Effect after their Operation, as Dancing, Fiddling, &c. are called *active* or *practical Arts*: Thoſe which do leave an Effect, as Painting, &c. are called *factive*, or *Effective* Arts. *Magn. Moral.* lib. 1. cap. 35.

ART is better defined, after my Lord *Bacon*, a proper Diſpoſal of the Things of Nature by human Thought and Experience, ſo as to make them anſwer the Deſigns and Uſes of Mankind. See EXPERIMENT, &c.

Nature, according to that Philoſopher, is ſometimes free, and at her own Diſpoſal; and then ſhe manifeſts herſelf in a regular Order: as we ſee in the Heavens, Plants, Animals, &c.—Sometimes ſhe is irregular, and diſorderly, either thro' ſome uncommon Accident, or a Depravation in Matter, when the Reſiſtance of ſome Impediment perverts her from her Courſe; as in the Production of Monſters. See MONSTER.—At other Times ſhe is ſubdued and faſhion'd by human Induſtry, and made to ſerve the ſeveral Purpoſes of Mankind.

This laſt is what we call *Art*; in which Senſe, *Art* ſtands oppoſed to Nature. See NATURE, ARTIFICIAL, &c.

Hence, the Knowledge of Nature may be divided into the Hiſtory of Generations, of Prætergenerations, and of *Arts*.—The firſt conſiders Nature at Liberty; the ſecond, her Errors; and the third, her Reſtraints.—

ART is alſo uſed for Science or Knowledge reduced into Practice. See KNOWLEDGE.

Several of the Schoolmen hold Logic and Ethicks to be *Arts*; inaſmuch as they do not terminate in mere Theory, but tend to Practice. See THEORY and PRACTICE; ſee alſo LOGICKS, ETHICKS, &c.

In this Senſe, ſome Branches of the Mathematicks are *Arts*, others Matters of Doctrine, or Science. See MATHEMATICKS.

Staticks is wholly ſcientifical, as it takes up with the mere Contemplation of Motion: Mechanicks, on the contrary, is an *Art*, as it reduces the Doctrines of Staticks into Practice. See MATHEMATICKS.

ART is principally uſed for a certain Syſtem or Collection of Rules, Precepts, and Inventions or Experiments, which being duly obſerv'd, make the Things a Man undertakes ſucceed, and render them advantageous and agreeable. See RULE, PRECEPT, EXPERIMENT, &c.

In this Senſe, *Art* is oppoſed to *Science*, which is a Collection of ſpeculative Principles and Concluſions. See SCIENCE.

The Nature and Origin of Art, *and its Diſtinction from Science, will be farther conſider'd in the* Preface *to this Work.*

Arts, in this Senſe, may be divided, with reſpect to their Scope and Object, into *human*, as Medicine; and *divine*, as Theology. See MEDICINE and THEOLOGY.

Human, again, may be ſubdivided into *Civil*; as Law, Politicks, &c. *Military*, as Fortification, &c. *Phyſical*, as Agriculture, Chymiſtry, Anatomy, &c. *Metaphyſical*, as Logicks, pure Mathematicks, &c. *Philological*, as Grammar, Criticiſm, &c. *Mercantile*, to which belong the Mechanical Arts and Manufactures. See each in its Place.

ARTS are more popularly divided into *Liberal* and *Mechanical*.

The *liberal Arts* are thoſe that are noble, and ingenuous; or which are worthy of being cultivated without any regard to Lucre ariſing therefrom.—Such are *Poetry*, *Muſick*, *Painting*, *Grammar*, *Rhetoric*, the *military Art*, *Architecture*, and *Navigation*. See LIBERAL; ſee alſo POETRY, MUSIC, GRAMMAR, RHETORIC, &c.

Mechanical Arts, are thoſe wherein the Hand, and Body are more concern'd than the Mind; and which are chiefly cultivated for the ſake of the Profit they bring with them.—Of which kind are moſt of thoſe which furniſh us with the Neceſſaries of Life, and are popularly known by the Name of *Trades*.—Such are *Weaving*, *Turnery*, *Brewing*, *Maſonry*, *Clock-making*, *Carpentry*, *Joinery*, *Foundery*, *Printing*, &c. See TRADE, MANUFACTURE, &c.

The *mechanical Arts* take their Denomination from μηχανη, Machine; as being all practiſed by means of ſome Machine or Inſtrument. See MACHINE, &c.

With the *liberal Arts* it is otherwiſe; there being ſeveral of them which may be learnt and practiced without any Inſtrument at all: As Logic, Eloquence, Medicine properly ſo called, &c.

The *Arts* which relate to the Sight and Hearing, My Lord *Bacon* obſerves, are reputed liberal beyond thoſe which regard the other Senſes, which are chiefly employed in Matters of Luxury. See SENSE.

It has been well noted by ſome Philoſophers, that during the Riſe and Growth of States, the military *Arts* chiefly flouriſh; when arrived at their Height, the liberal *Arts*; and when on the declining hand, the voluptuary *Arts*.

There are alſo divers particular *Arts*; as the *Art* of Memory, the *Art* of Decyphering, *Art* of Flying, of Swimming, *Art* of Diving, &c. See MEMORY, DECYPHERING, FLYING, SWIMMING, DIVING, &c.

Democritus maintain'd, that Men learnt all their *Arts* from Brutes; the Spider taught 'em Weaving, the Swallow Building, the Nightingale Muſic; and ſeveral Medicine.

The Nature, Office, Hiſtory, &c. *of the ſeveral Arts; will be found under their reſpective Articles in this Dictionary.*

The Word *Art* is derived from the Greek αρετη, Virtue, Induſtry.—This is the Opinion of *Donatus*, on the firſt Scene of *Terence*'s *Andria*: *Ars* ἀπὸ τῆς ἀρετῆς, *dicta eſt per Syncopen*. Others derive it from ἀρὴς, Utility, Profit; which is found in that Senſe in *Æſchylus*.

ART is alſo applied to divers imaginary, and even ſuperſtitious Doctrines and Inventions.—Such are,

Lully's ART, or the *Tranſcendental Art*, by means whereof a Man may diſpute whole Days on any Topic in Nature, without underſtanding the leaſt tittle of the Thing in Diſpute; thus called from its Inventor *Raimond Lully*, or *Ramon Lull*.

It conſiſts chiefly in diſpoſing the ſeveral Sorts of Beings into divers Scales or Climaxs, to be run down in a deſcending Progreſſion.—Thus, whatever were propoſed to be talk'd on, they wou'd ſay, firſt, it is a *Being*, and conſequently, *one*, *true*, *good*, *perfect*: then, it is either *created*, *or increated*. Again, every created Being is either *Body* or *Spirit*, &c.

Angelical ART, or *the* Art *of Spirits*, is a Method of attaining to the Knowledge of any thing deſired, by means of an Angel, or rather of a Dæmon. See DÆMON.

Under this come the *Arts* of *Magic*, *Sorcery*, *Witchcraft*, &c. See MAGIC, SORCERY, WITCHCRAFT, &c.

Term of ART, *Maſter of* ARTS, } ſee { TERM, MASTER, DEGREE, FACULTY.

Ars Notoria, is a manner of acquiring Sciences by Infuſion, without any other Application than a little Faſting, and making a few Ceremonies. See FASTING, &c.

They who make Profeſſion of this *Art*, affirm that it was by means hereof that *Solomon*, in one Night's Time, acquired all his Knowledge.—*Delrio* ſhews it to be a criminal Curioſity, and founded on a ſecret Compact with the Devil. *Diſquiſ. Mag.* p. 11. It was ſolemnly condemn'd by the Sorbonne, in 1320.

St. *Anſelm*'s ART, is a ſuperſtitious Manner of curing Wounds, by barely touching the Linen wherewith thoſe Wounds had been cover'd. See WOUND and SYMPATHY.

Delrio, in his *Diſquiſitiones Magicæ*, obſerves that ſome *Italian* Soldiers, who practiced this *Art*, attributed the Invention thereof to St. *Anſelm*; but aſſures us withal, that it was really invented by *Anſelm* of *Parma*, a celebrated Magician.

St. *Paul*'s ART, is a Branch of the *Ars Notoria*, ſo called as being ſuppoſed to have been taught by St. *Paul*, after his being taken up into the third Heaven.

ART *and Part*, is a Term uſed in the North of *England*, and in *Scotland*.—When any one is charged with a Crime, they ſay he is *Art and Part* in committing the ſame; that is, he was both a Contriver, and acted a Part in it. See PRINCIPAL, ACCESSARY, &c.

ARTERIOTOMY, in Chirurgery, &c. the Operation of opening an Artery; or of letting of Blood by the Arteries; practiced in ſome extraordinary Caſes. See ARTERY, PHLEBOTOMY, &c.—For the Effects hereof, ſee ANEURISMA.

Arteriotomy, is a very dangerous Operation, ſeldom uſed with Deſign, except in the Temples, and behind the Ears, where the Arteries are eaſily cloſed again by reaſon of the *Cranium* underneath, which would be very difficult in any other Part.—In the other Parts it uſually proves fatal; and we have numerous Inſtances of Perſons kill'd in Bleeding, by a Miſtake of an Artery for a Vein.

Catherwood endeavours to introduce *Arteriotomy* in apoplectic Caſes, as much preferable to Venæſection; but he is not much followed. See APOPLEXY.

The Word is form'd of αρτηρια, and τεμνω, *ſeco*, I cut.

ARTERY, ARTERIA, in Anatomy, a hollow fiſtulous Canal, appointed to receive the Blood from the Ventricles of the Heart, and diſtribute it to all Parts of the Body, for the Maintainance of Heat and Life, and the Conveyance of the neceſſary Nutriment. See BLOOD, HEART, LIFE, &c.

The Word is Greek, αρτηρια; which ſome imagine deriv'd from ἀὴρ, *Aer*, the Air, and τηρέω, *ſervo*, to keep: But others who underſtand the Uſe of the Part better, derive it from ἀπὸ τῦ ἀιρεῖν, becauſe of its continual Throbbing or Beating.

The *Arteries* are ordinarily compoſed of three Coats or Membranes. The firſt or outermoſt, nervous or tendinous; being a Thread of fine Blood Veſſels with Nerves, for nouriſhing the other Coats. The ſecond muſcular, made up of circular, or rather ſpiral Fibres; of which there are more or fewer *Strata*, according to the Bigneſs of the *Artery*: Theſe Fibres have a ſtrong Elaſticity, by which they contract themſelves with Force, when the Power by which they have been ſtretched out, ceaſes. The third and inmoſt Coat is a fine, denſe, tranſparent Membrane, which keeps the Blood within its Channels, which otherwiſe upon the Dilatation

of

of an *Artery*, would eaſily ſeparate the ſpiral Fibres from one another. As the *Arteries* grow ſmaller, theſe Coats grow thinner.

All the *Arteries* are conical, *i. e.* begin with a Trunk, and growing leſs and narrower, end in Branches ſo minute, that they eſcape the Sight, unleſs aſſiſted with Microſcopes; by which, in the Tails of Tadpoles and very ſmall Eels, the Extremities of the *Arteries* ſeem, by the ſwift uninterrupted Courſe of the Blood, to be inoſculated or continued to the Originations of the Veins: Tho by the Tranſparency of thoſe Veſſels, the actual Continuation be not viſible. See ANASTOMOSIS, and INOSCULATION.

The Coats of the *Arteries* are of a very denſe, cloſe Contexture; by which means the Blood not being viſible thro' them, they generally appear white. Add, that the Blood proceeding from a greater Capacity to a leſs, is thereby ſomewhat obſtructed in its Paſſage; but being forced on by the Motion of the Heart, diſtends the Coats, and thereby occaſions a ſaliant Motion, call'd the *Pulſe*.—By this Thickneſs and Whiteneſs of the *Arteries*, with the Pulſation obſerved therein, *Arteries* are diſtinguiſh'd from Veins. See VEIN.

The Pulſe of the *Arteries*, like that of the Heart, conſiſts of two reciprocal Motions, a Syſtole or Contraction, and a Diaſtole or Dilatation: But they keep oppoſite Times; the Syſtole of the one anſwering to the Diaſtole of the other. See PULSE, SYSTOLE, and DIASTOLE.

All the *Arteries* of the Body, we have obſerved, ariſe in two large Trunks, from the two Ventricles of the Heart. That from the right Ventricle, is called the *Pulmonary Artery*, ſerving to carry the Blood into the Lungs: That from the left, the *Aorta*, or *great Artery*; which, by its numerous Ramifications, furniſhes all the reſt of the Body, as far as the remoteſt Stages of Circulation. See CIRCULATION *of the Blood*.

The *Great Artery*, after it leaves the Heart, divides into two large Trunks, called the *aſcending*, or upper; and *deſcending*, or lower, *Trunks*. See AORTA.

The aſcending Trunk, or *Aorta aſcendens*, conveys the Blood to the Head, and other upper Parts of the Body, and is ſubdivided into three Branches.—The firſt, the right *Subclavian*, whence ariſe the *Carotid*, *Vertebral*, *Cervical*, right *Axillary*, &c.—The ſecond, is the *left Carotid*.—The the third, the *left Subclavian*; whence ariſe the *left Cervical*, *Vertebral*, and *Axillary*.—See each deſcribed in its proper Article, SUBCLAVIAN, CAROTID, VERTEBRAL, CERVICAL, AXILLARY, &c.

The *deſcending Trunk*, or *Aorta deſcendens*, carries the Blood to the Trunk, and the lower Parts of the Body.

Out of this ariſe the *Bronchial*, *Intercoſtals*, *Coeliac*, *Phrenic*, *Meſenteric*, *Emulgent*, *Spermatic*, *Iliac*, *Umbelical*, *Epigaſtric*, *Hypogaſtric*, *Crural*, &c. with their ſeveral Ramifications.—See each in its Place.

A Draught of the ſeveral *Arteries*, with their Diviſions and Subdiviſions, in their natural Order and Poſition, as taken from the Life; ſee in Plate *Anatomy*.

ARTERY, is alſo applied to that fiſtulous Tube, compoſed of Cartilages and Membranes, which deſcends from the Mouth to the Lungs, for the Conveyance and Reconveyance of the Air, in Reſpiration. See RESPIRATION and LUNGS.

This is particularly called the *Aſpera Arteria*, or *Trachea*, and popularly the *Wind-pipe*. See TRACHEA.

ARTERIAL, or ARTERIOUS, in Anatomy, ſomething that relates to the Arteries. See ARTERY.

The *arterial* Blood is ſuppoſed more warm, florid, and ſpirituous than the venal. See BLOOD.

The Antients gave the Name *Vena Arterioſa*, to the Tube or Canal whereby the Blood paſſes from the right Ventricle of the Heart to the Lungs, as ſuppoſing it of an intermediate Nature and Office, between an Artery and a Vein.—The Moderns finding it a real Artery, call it the Pulmonary Artery. See PULMONARY.

The *Canalis Arterioſus*, is a Tube in the Heart of a Fœtus; which with the Foramen Ovale, ſerves to maintain the Circulation of the Blood, and divert it from the Lungs. See CANALIS *Arterioſus*, FÆTUS, CIRCULATION, and FORAMEN *Ovale*.

ARTHRITIS, in Medicine, a Diſeaſe better known under the Name of the *Gout*. See GOUT.

The Word is form'd from the Greek αρθρον, *Articulus*, a Joint; in regard the chief Seat of that Diſtemper is in the Joints.—

ARTHRODIA, in Anatomy, a Species of Articulation, wherein a flat Head of one Bone is received into a ſhallow Socket of another. See BONE and ARTICULATION.

Such is that of the *Humerus* with the *Scapula*. See HUMERUS, &c.

The Word is formed from the Greek αρθρον, *Articulus*, and δεχομαι, *recipio*, I receive.

ARTHROSIS, or ARTHRON, in Anatomy, a Juncture of two Bones, deſigned for Motion; called alſo *Articulation*. See ARTICULATION.

The Word is formed from the Greek αρθρον, *Articulus*, Juncture, Joint.

ARTICLE, ARTICULUS, a little Part or Diviſion of a Book, Writing, or the like.—*Aquinas* divides his Sum of Theology, into ſeveral Queſtions; and each Queſtion into divers *Articles*.—Such an Account conſiſts of ſo many *Articles*.

ARTICLE is alſo uſed for the ſeveral Clauſes, or Conditions of a Convention, Treaty of Peace, or the like. See TREATY, CONVENTION, &c.

In this Senſe we ſay, *Articles of Marriage*, *Articles of Capitulation*, *Preliminary Articles*, &c.—The Eſtabliſhment of an *Eaſt-India* Company at *Oſtend*, is a direct Breach of the eighth and ninth *Articles* of the Treaty of *Munſter*.

ARTICLES *of the Clergy*, *Articuli Cleri*, are certain Statutes touching Perſons and Cauſes eccleſiaſtical, made under *Edward* II. and III.

ARTICLE *of Faith*, is ſome Point of Chriſtian Doctrine which we are obliged to believe, as having been revealed by God himſelf, and allow'd and eſtabliſh'd as ſuch by the Church. See FAITH, &c.

ARTICLE, *Articulus*, in Anatomy, is a Joint, or Juncture, of two or more Bones of the Body. See BONE, JOINT, &c. ſee alſo ARTICULATION.

ARTICLE of *Death*, *Articulus Mortis*, the laſt Pangs, or Agony of a dying Perſon. See AGONY.

The Pope uſually ſends his Benediction to the Cardinals, &c. in *Articulo Mortis*.

ARTICLE, in Arithmetic, ſignifies the Number 10, or any Number juſtly diviſible into ten Parts; as 20, 30, 40, &c.—Theſe are ſometimes called *Decads*, and ſometimes *round Numbers*: *Harris*.

ARTICLE, in Grammar, is a Particle uſed in moſt Languages, for the declining of Nouns, and denoting the ſeveral Caſes and Genders thereof. See PARTICLE, NOUN, CASE, GENDER, &c.

The Uſe of *Articles* ariſes hence, that in Languages which have not different Terminations to expreſs the different States and Circumſtances of Nouns; there is ſomething required to ſupply that Office. See TERMINATION.

The *Latins* have no *Articles*; but the *Greeks*, and moſt of the modern Languages, have had Recourſe hereto, for fixing and aſcertaining the Vague Signification of common and appellative Names. See NAME and APPELLATIVE.

The *Greeks* have their ὁ, the eaſtern Tongues their *he Emphaticum*; the *Italians* their *il*, *lo*, and *la*.—The *French* their *le*, *la*, and *les*.—The *Engliſh* alſo have two *Articles*, *A* and *The*; which being prefixed to Subſtantives, apply their general Signification to ſome particular Thing.—Thus we ſay, *A Man*; that is, ſome Man or other: *The Man*; that is, that certain Man.—

Hence it appears that *A* is uſed in a larger, and more general Senſe, being applied indifferently to any particular Perſon or Thing.—Whereas, *The* diſtinguiſhes individually, and ſhews what particular Thing is ſpoke of.—If the Subſtantive to which the Particle *A* is affix'd, begin with a Vowel, or an *H*; we write and ſpeak it, *An*: So we ſay, An Eye, an Hour, &c.

Some Grammarians make the *Article* a diſtinct Part of Speech; others will have it a Pronoun; and others, with Mr. *Greenwood*, a Noun adjective. See SPEECH, PRONOUN, ADJECTIVE, &c.

Articles are Things of great Service in a Language, as they contribute to the more neat and preciſe expreſſing of ſeveral Properties and Relation which muſt otherwiſe be loſt.—And hence one great Diſadvantage of the Latin, above other Languages which have *Articles*; in that the *Article*, being either expreſſed, or left out, makes an Alteration in the Senſe, which the *Latins* cannot diſtinguiſh.—Thus when the Devil ſaid to our Saviour, *Si tu es filius Dei*, it may either be underſtood, *if you are a Son of God*, or, *if you are the Son of God*.—*Scaliger*, from the Want of *Articles* in the Latin, concluded them uſeleſs.

The *Italians* even prefix Articles to proper Names, which dont naturally need any, in regard they do of themſelves ſignify Things individually.—Thus they ſay, *Il Arioſto*, *Il Taſſo*, *Il Petrarcha*.—Even the *French* join the *Article* to the proper Names of Kingdoms, Provinces, &c. as *la Suede*, *la Normandie*.—And we our ſelves do it to the Names of certain Mountains and Rivers; as the *Rhine*, the *Danube*, the *Alps*, &c.

Indefinite ARTICLE. The *Article A* is ſaid to be *indefinite*, becauſe applied to Names taken in their more general, and confuſed Signification; as, He travelled with the Port and Equipage of a Prince; where the Word *Prince* may be underſtood of any Prince in the general.

Definite ARTICLE. The *Article The* is ſaid to be *definite*, or *demonſtrative*, as fixing the Senſe of the Word it is put before, to one individual Thing. See DEFINITE.

Fa. *Buffier* diſtinguiſhes a third kind of *Articles* in the French, which he calls intermediate, or *partitive*; ſerving to denote part of the Thing expreſſed by the Subſtantives they

added to: As, *Des Scavans ont cru*, ſome learned Men have ſuppoſed, &c. I want, *De la lumiere*, ſome Light, &c.

The Uſe and Diſtinction of the definite and indefinite *Articles le* or *la*, and *de* or *du*, make one of the greateſt Difficulties in the French Tongue, as being utterly arbitrary, and only to be acquired by Practice.—We may add, that in the *Engliſh*, tho' the *Articles* be ſo few, yet they are of ſuch frequent Uſe, that they eaſily diſcover any Stranger, from a natural Engliſhman. See ENGLISH and FRENCH.

ARTICULARIS, ARTICULAR, in Medicine, an Epithet applied to a Diſeaſe which more immediately infeſts the *Articuli*, or Joints.—The *Morbus Articularis*, is the ſame with the Greek ἀρθρῖτις, and our *Gout*. See ARTHRITIS and GOUT.

ARTICULATE *Sounds*, are thoſe which expreſs the Letters, Syllables, &c. of any Alphabet, or Language. See SOUND, LETTER, ALPHABET, &c.

Brutes cannot form *articulate* Sounds, cannot *articulate* the Sounds of their Voice; excepting ſome few Birds, as the Parrot, Pye, &c. See VOICE.

ARTICULATION, ARTICULATIO, in Grammar, a diſtinct Pronunciation of Words and Syllables. See PRONUNCIATION, &c.

Articulation, is that part of Grammar which treats firſt of Sounds, and Letters; then of their Combination, for the compoſing of Syllables and Words. Hence he who pronounces his Words clearly, and diſtinctly, is ſaid to pronounce them *articulately*. See LETTER, SYLLABLE, WORD, &c.

ARTICULATION, in Anatomy, a Juncture or Connexion of two Bones, deſign'd for Motion. See BONE, MOTION, &c.

There are various Forms and Kinds of *Articulation*, ſuited to the ſeveral Sorts of Motion and Action.—That which has a notable and manifeſt Motion, is called *Diarthroſis*. See DIARTHROSIS.—This is ſubdivided into *Enarthroſis*, *Arthrodia*, and *Ginglymus*. See each in its Place, ENARTHROSIS, ARTHRODIA, and GINGLYMUS.

That which only admits of an obſcure Motion, is called *Synarthroſis*; ſee SYNARTHROSIS.—It is ſubdivided into *Symphiſis*, *Sutura*, *Harmonia*, *Syſſarcoſis*, *Syncondroſis*, *Syneuroſis*, *Syntenoſis*, and *Synymenſis*. See SYMPHISIS, SUTURA, HARMONIA, &c.

ARTIFICIAL, ARTIFICIALIS, ſomething made by Art; not produced naturally, or in the common Courſe of Things. See ART.

'Art is uſually conſider'd as a Thing very different from 'Nature; and *artificial* Things, from natural ones: Whence 'ariſes another more grievous Error, *viz.* that Art is a dif-'ferent Principle built upon Nature, and of ſuch Power, 'as to be able, either to perfect what Nature had begun, 'to rectify and amend her when diſordered, or to free her 'when confined; tho' not utterly to divert or tranſmute 'her.—But the Truth is, *artificial* Things do not differ 'from natural ones in Nature or Form, but only in the 'Efficient: Man has no Power over Nature, beſide what 'he has by Motion; in vertue whereof, he can apply natu-'ral Bodies to, or remove them from, one another. Where 'ſuch Application, or joining of active Things to paſſive 'ones, is practicable, there may Man do any thing; where 'it is not, nothing. Gold we ſometimes ſee purified by the 'Chymiſt's Fire; and ſometimes find it perfectly pure in 'the Sands, Nature herſelf having done the Buſineſs: So 'the Rainbow is ſometimes form'd on high in the Water 'of a Cloud; and ſometimes here below by a ſprinkling of 'Water. Nature, therefore, governs all Things; under 'this Subordination, of the Courſe of Nature, the Latitude 'or Evagation of Nature, and *Art*, or Man ſuper-added 'to her other Works. *Bacon de Augmen. Scient.* lib. II. See NATURE.

ARTIFICIAL frequently coincides with *factitious*. See FACTITIOUS.

Thus we have *artificial* Sal-Armoniac, *artificial* Borax, &c. See ARMONIAC and BORAX.

ARTIFICIAL Day. See DAY.

ARTIFICIAL Globe, Sphere, &c. See GLOBE, SPHERE, &c.

ARTIFICIAL Horizon. See HORIZON.

ARTIFICIAL Eye. See EYE.

ARTIFICIAL *Numbers*, are *Secants*, *Sines*, and *Tangents*.—See SECANT, SINE, and TANGENT; ſee alſo LOGARITHMICAL.

ARTIFICIAL *Lines*, on a Sector or Scale, are certain Lines ſo contrived, as to repreſent the Logarithmick Sines, and Tangents; which, by the help of the Line of Numbers, will ſolve all Queſtions in Trigonometry, Navigation, &c. pretty exactly. See LINE, SCALE, SECTOR, &c.

ARTIFICIAL *Fire-works*, are Compoſitions of inflammable Materials; chiefly uſed on ſolemn Occaſions, by Way of Rejoycing. See FIRE-WORKS.

ARTIFICIAL *Arguments*, in Rhetoric, are all ſuch Proofs or Conſiderations as ariſe from the Genius, Induſtry, or Invention of the Orator. See ARGUMENT and INVENTION.

Such are *Definitions*, *Cauſes*, *Effects*, &c. which are thus called to diſtinguiſh them from Laws, Authorities, Citations, and other Arguments of that Nature, which are ſaid to be *inartificial* Arguments. See DEFINITION, AUTHORITY, &c.

ARTILLERY, the heavy Equipage of War; comprehending all ſorts of great Fire-arms with their Appurtenances, as Cannons, Mortars, Bombs, Petards, Muſquets, Carbines, &c. See CANNON, MORTAR, GUN, PETARD, &c.

In this Senſe, the Word *Artillery* coincides with what we otherwiſe call *Ordnance*. See ORDNANCE.

There was no attacking ſuch a Place for want of heavy *Artillery*.—The *Perſians*, we are told in the Embaſſy of *Figueroa*, would never, in 1518, have either *Artillery* or Infantry in their Armies, by reaſon they hinder'd their Charging and retiring with ſo much Nimbleneſs; wherein their chief military Addreſs and Glory lay.

The Term *Artillery* is ſometimes alſo applied to the antient Inſtruments of War, as the *Catapultæ*, battering Rams, &c. See ARIES, MACHINE, CATAPULTÆ, &c.

Park of ARTILLERY, is that Place in a Camp ſet apart for the *Artillery*, or large Fire-arms.

Traile or Train of *Artillery*, is a Set, or certain Number of Pieces of Ordnance mounted on Carriages, with all their Furniture fit for Marching.—To it frequently belong Mortar-pieces, with Bombs, Carcaſſes, &c. under the Direction of a Maſter of the *Artillery*. See MASTER.

There are Trains of *Artillery* in moſt of the King's Magazines, as in the *Tower*, at *Portſmouth*, *Plimouth*, &c.

ARTILLERY-*Company*, is a Band of Infantry, conſiſting of 600 Men, making part of the Militia or City-guard. See MILITIA.

Their Officers are a *Leader*, two *Lieutenants*, two *Enſigns*, three *Gentlemen of Arms*, &c.

ARTILLERY is alſo uſed for what we otherwiſe call *Pyrotechnia*, or the Art of Fire-works, with the Inſtruments and Apparatus belonging thereto. See PYROTECHNIA.

The Writers upon *Artillery*, are *Caſimir Semionowitz*, *Apole*, *Buchnerus*, *Braunius*, *Mieth*, and *De S. Remigio*, in his *Memores de Artillerie*, which contains an accurate Deſcription of all the Machines and Inſtruments of War now in Uſe, with every Thing that relates thereto.

ARTOTYRITES, or ARTOTYRITÆ, a Sect in Religion; being a Branch of the antient Montaniſts, who firſt appear'd in the ſecond Century, and infected all *Galatia*. See MONTANIST.

They uſed Bread and Cheeſe in the Euchariſt, or perhaps Bread baked with Cheeſe.—Their Reaſon was, that the firſt Men offer'd to God, not only the Fruits of the Earth, but of their Flocks too.

Hence, according to St. *Auguſtin*, came their Name, which is Greek; being compoſed of ἄρτος, Bread, and τυρος, Cheeſe.

ARVALES *Fratres*, were Prieſts in antient *Rome*, who aſſiſted in the Sacrifices of the *Ambarvalia* offer'd every Year to *Ceres* and *Bacchus* for the Proſperity of the Fruits of the Earth, *viz.* of the Corn and Wine. See PRIEST and AMBARVALIA, &c.

They were inſtituted by *Romulus*, and were twelve in Number; all of them Perſons of the firſt Diſtinction; the Founder himſelf having been of the Body.—They made a College, called *Collegium Fratrum Arvalium*. See COLLEGE.

The Mark of their Dignity, was a Garland, compoſed of Ears of Corn, tied with a white Ribbon, which *Pliny* ſays, was the firſt Crown in Uſe at *Rome*. See CROWN.

The Word is originally Latin, and is formed from *Arvum*, a Field; becauſe, in their Ceremonies, they went in Proceſſion a-round the Fields: Others ſay, becauſe they were appointed Arbitrators of all Differences relating to the Limits of Fields and Land-Marks.

According to *Fulgentius*, *Acca Laurentia*, *Romulus*'s Nurſe, was the firſt Founder of this Order of Prieſts: She, it ſeems, had twelve Sons, who uſed to walk before her in the Sacrifice; one of whom dying, *Romulus*, in favour of his Nurſe, promiſed to take his Place; and hence, ſays he, came this Sacrifice, the Number twelve, and the Name of Brother.—*Pliny* ſeems to indicate the ſame thing, when he mentions that *Romulus* inſtituted Prieſts of the Fields, after the Example of *Acca Laurentia* his Nurſe.

ARUSPICES, an Order of Prieſts among the antient *Romans*, who foretold Things to come, by inſpecting the Entrails of Beaſts killed in Sacrifice. See PRIEST and SACRIFICE.

The Word is derived from *haruga*, which ſignifies the Entrails of Victims; and *aſpicere*, to view or conſider. Others ſay, from *Aras*, and *Inſpicere*, to inſpect the Altars.—Fa. *Pezron* is poſitive the Word was originally form'd of the Celtic *Au*, Liver; and *ſpicio*, I look; whence *Auſpex*: Which being a Word ſomewhat rude of Pronunciation, they thence form'd *Aruſpex*. See AUSPICES.

The Doctrine or Diſcipline of the *Aruſpices*, was form'd into a preciſe Art, called *Aruſpicina*. See DIVINATION.

ARYTÆNOIDES, in Anatomy, the third and fourth Cartilages of the Larynx, ſituate under the Thyroides; call'd alſo *Guttales*. See LARYNX.

The *Arytænoides* are thus called on account of the Figure of an Ewer; which, together, they ſomewhat reſemble:

From

From ἀρύω, *haurio*, to drink; and εἶδος, *Forma*, Shape.

ARYTÆNOIDEUS, in Anatomy, a Pair of Muſcles of the Larynx. See LARYNX.

The *Arytænoideus* has its Head in one Arytænoid Cartilage, and its Tail in the other; and ſerves to bring them together, and ſhut the Rima or Glottis. See GLOTTIS.

ARYARYTÆNODEUS, in Anatomy, one of the Muſcles ſerving to cloſe the Larynx; otherwiſe called little *Arytænoideus*, and *Aryaritænoideus*, as deriving its Origin from the poſterior and inferior part of the Arytænoides. See ARYTÆNOIDES.

ARYTHMUS, in Medicine, a Sinking or Failure of the Pulſe, ſo as it can no longer be felt. See PULSE.

The Word is form'd from the privative Particle α, and ῥύθμος, *Modulus*, or *Pulſus*.

AS, among Antiquaries, has two different Significations.

1° It ſignifies a Weight; and in this Senſe the Roman *As* is the ſame with the Roman *Libra*, or Pound. See WEIGHT, LIBRA, POUND, &c.

The *As* had ſeveral Diviſions.—The principal were, the *Uncia*, or Ounce; which was the twelfth Part of the *As*: *Sextans*, the ſixth Part of the *As*, or two Ounces: *Quadrans*, the fourth Part of the *As*, or three Ounces: *Triens*, the third Part of the *As*, which was four Ounces: *Quincunx* was five Ounces: *Semis*, half the *As*, that is ſix Ounces: *Septunx*, ſeven Ounces: *Bes*, two Thirds of the *As*, or eight Ounces: *Dodrans*, three Fourths of the *As*, or nine Ounces: *Dextans*, ten Ounces: *Deunx*, eleven Ounces. See OUNCE, UNCIA, QUADRANS, &c.

Hence, alſo, the Word *As* came to ſignify a whole or entire Thing, or the Totality of any Thing; in which Senſe it was uſed, principally, in Matters of Succeſſion, and ſignified the whole Succeſſion, or Inheritance. Thus, to inherit to any Perſon, *ex aſſe*, was to inherit all his Eſtate, to be his ſole Legatee, his only Heir; and thus, to inherit, *ex triente*, *ex ſemiſſe*, *ex beſſe*, was to inherit a Third, an Half, or two Thirds of the Eſtate.

2° *As* was alſo the Name of a Roman Coin. See COIN.

Under *Numa Pompilius*, according to *Euſebius*, the *As* was either of Wood, Leather, or Shell.—In the Time of *Tullus Hoſtilius*, it was Braſs, and was call'd *As*, *Libra*, or Pound.—Four hundred and twenty Years after, the firſt *Punic* War having exhauſted the Treaſury, they retrench'd a *Sextans* or two Ounces, and thenceforward only made it of the Weight of a *Dextans*, or ten Ounces.—After this they took away another Ounce, and reduced the *As* to a *Dodrans*, or nine Ounces.—Laſtly, by the *Papirian* Law, they took away an Ounce and half more, and reduced the *As* to a *Septunx* and *Semuncia*: And 'tis generally thought that it reſted here all the Time of the Commonwealth. See MONEY.

This laſt was called the *Papirian As*, in regard the Law juſt mentioned was paſs'd in the Year of *Rome* 563, by *C. Papirius Carbo*, then Tribune of the People. Thus there were four different *As*'s in the Time of the Commonwealth.

The Figure which the *As* bore, was a *Janus* with two Faces on the one Side, and the Roſtrum or Prow of a Ship on the other Side.

The Word is derived from the Greek αἷς, which, in the *Dorick* Dialect, is uſed for εἷς, one, *q. d.* an entire Thing; as above noted. *Goodwin* will have it named *As*, quaſi *Æs*, becauſe made of Braſs.—*Budæus* has wrote nine Books *De Aſſe & ejus partibus*, of the *As* and its Parts.

ASAPPES, ASAPPI, an Order of Soldiers in the *Turkiſh* Army, whom they expoſe to the firſt Shock of their Enemies, to the end that being thus fatigued, and their Swords blunted, the Spahi's and Janizaries may fall on and find an eaſy Conqueſt.

The *Aſappes* are held of ſo little Value, that they frequently ſerve as Bridges for the Cavalry to paſs over, in ill Roads, and as Faſcines to fill up the Ditches of Places beſieged.—The greateſt Part of them are natural *Turks*; they travel on Foot, and have no Pay, but the Plunder they can get from the Enemy.

The Word is deriv'd from the Turkiſh *Saph*, which ſignifies Rank, File, Order; from whence they have formed *Aſphaph*, to range in Battle.

ASBESTINE *Paper* or *Cloth*, is ſuch as will burn in the Fire, be purified by it, and yet not conſume. See INCOMBUSTIBLE.

It is made of the *Asbeſtos*, or *Lapis Amianthus*; and is by ſome called *Linum Vivum*. See ASBESTOS.

The Antients are ſaid to have made Napkins and Towels of it, which, when foul, inſtead of Waſhing, they threw into the Fire to cleanſe. See LINUM *Incombuſtibile*.

ASBESTOS, or *Amianthus*, *Lapis*, in natural Hiſtory, called alſo *Caryſtius Lapis*, an incombuſtible Matter; ſuppoſed by ſome to be a ſort of Flax, growing on the *Pyreneans*; whence it is alſo called *Linum vivum*, *Linum Incombuſtibile*, &c.

The *Asbeſtos*, or *Lapis Asbeſtos*, is really a ſort of native, fiſſile Stone, which one may ſplit into Threads or Filaments, very fine, brittle, yet ſomewhat tractable, ſilky, and of a greyiſh ſilver Colour, not unlike *Talc* of *Venice*.

It is almoſt inſipid to the Taſte, indiſſoluble in Water; and expoſed to the Fire, neither conſumes nor calcines.—A large Burning-glaſs, indeed, reduces it into little Glaſs Globules, in proportion as the Filaments ſeparate; but common Fire only whitens it. See BURNING-*Glaſs*.

Theſe Filaments are of different Lengths, from one Inch to ten.—The Stone is found incloſed within other very hard Stones, and is brought from the Iſles of the *Archipelago*, the *Pyreneans*, and from *Montauban* in *France*. We have alſo ſeen Inſtances of it in *Scotland*, *Wales*, &c.

Several Perſons have pretended to the Secret of ſpinning the *Asbeſtos*: *B. Porta* aſſures, that in his Time, 'twas a thing known to every Body in *Venice*: And yet this ſhould ſeem hardly practicable, without the Mixture of ſome other very pliant Matter, as Wool, Line or Hemp along with it; the Filaments of the *Amianthus* it ſelf being too brittle to make any tolerably fine Works.—*See further of the natural Hiſtory, Preparation, Manufacturing*, &c. *of this celebrated Stuff, under the Article* LINUM *Incombuſtibile*.

The Works made of *Asbeſtos*, were heretofore held in ſo great Eſteem, that they were of equal Price with Gold; and none but Emperors and Kings had Napkins made of it. See ASBESTINE-*Cloth*.

Some Antiquaries are of Opinion, that the Antients made Shrouds of the *Asbeſtos*, wherein they burnt the Bodies of their Kings, in order to preſerve their *Aſhes* entire, and prevent their being mix'd with thoſe of Wood, and other combuſtible Matters, whereof the common Funeral Piles were form'd. See FUNERAL, BURNING, &c.

Others aſſert, that the Antients uſed the *Asbeſtos*, to make perpetual Wicks for ſepulchral Lamps.

However this be, there are ſome at this Day who uſe the *Asbeſtos* for the Wicks of ſuch Lamps as they would not have any trouble withal; becauſe the *Amianthus* never waſting, there is no occaſion for ſhifting the Wick. See LAMP.

The Word ἄσβεστος, *Asbeſtos*, properly ſignifies an *incombuſtible Body*; being formed of the privative Particle α, and σβεννυμαι, *extinguo*.—Notwithſtanding the common opinion that Fire has no Effect on the *Asbeſtos*; yet, in two Trials before the Royal Society, a Piece of incombuſtible Cloth made of this Stone, a Foot long, and half a Foot broad, weighing about an Ounce and half, was found to loſe above a Dram of its Weight, each time.

The *Asbeſtos* applied to any Part of the Body, excites an Itching; and yet we read of it as antiently preſcribed for Diſeaſes of the Skin, and particularly for the Itch: Unleſs it were rather the *Alumen Plumoſum* that was meant hereby; for even at this Day, they are frequently confounded. See ALUM and PLUMOSE.

ASCARIDES, in Medicine, a kind of little Worms, ſometimes found in the Rectum, and adhering to the Fundament. See WORMS and VERMES.

They are thus called from the Greek ἀσκαρίζω, *I leap*, on account of their continual troubleſome Motion, cauſing a moſt intolerable itching.

ASCENDANT, or ASCENDENT, or ASCENDING *Line*, in Genealogy, is underſtood of ſuch Relations as have gone before us; or thoſe nearer the Root of the Family. See LINE and CONSANGUINITY.

Such are Father, Grandfather, Great Uncle, &c.—They are thus called in Contradiſtinction to Deſcendants, or the deſcending Line. See DESCENDANT.

Marriage is always forbid between the *Aſcendents* and Deſcendents, in the direct Line. See MARRIAGE, DEGREE, &c.

ASCENDENT, in Aſtrology, the Horoſcope; or the Degree of the Equator which riſes upon the Horizon, at the Time of the Birth of any one. See HOROSCOPE.

This is ſuppoſed to have an Influence on his Life and Fortune, by giving him a Bent and Propenſity to one thing more than another. See NATIVITY, &c.

In the Cœleſtial Theme, this is alſo called the *Firſt Houſe*, the *Oriental Angle*, and the *Significator of Life*. See HOUSE, THEME, SIGNIFICATOR, &c.

Such a Planet ruled in his *Aſcendent*.—*Jupiter* was in his *Aſcendent*, &c.

Hence the Word is alſo uſed in a moral Senſe, for ſome Superiority which one Man has over another, from ſome unknown Cauſe.

ASCENDING, in Aſtronomy, is underſtood of thoſe Stars, or Degrees of the Heavens, &c. which are riſing above the Horizon, in any Parallel of the Equator. See RISING and HORIZON.

ASCENDING *Latitude*, is the Latitude of a Planet when going towards the Poles. See LATITUDE.

ASCENDING *Node*, is that Point of a Planet's Orbit, wherein it paſſes the Ecliptic, to proceed to the Northward. See ORBIT, PLANET, &c.

This

This is otherwiſe called the *northern Node*, and repreſented by this Character ☊. See NODE, *&c.*

ASCENDING, *Aſcendens*, in Matters of Genealogy, *&c.* See ASCENDENT.

ASCENDING *Signs*, among Aſtrologers, are thoſe which are upon their Aſcent or Riſe; from the Nadir or loweſt Part of the Heavens, to the Zenith or higheſt. See SIGN, ZENITH, NADIR, *&c.*

ASCENDING, in Anatomy, is applied to ſuch Veſſels as carry the Blood upwards, or from lower to higher Parts of the Body. See BLOOD and VESSEL.

The *Aſcending Aorta*, *Aorta aſcendens*, is the ſuperior Trunk of the Artery, which furniſhes the Head. See AORTA.

The *aſcending Cava*, *Vena Cava Aſcendens*, is a large Vein form'd by a Meeting or Union of the two Iliacks of one Side, with thoſe of the other. See CAVA.

Many of the antient Anatomiſts, call'd this the *deſcending Cava*; as imagining that the Blood deſcended from the Liver by this Vein, to ſupply the Parts below the Diaphragm. But the Moderns have ſhewn that it has a quite contrary Uſe, and ſerves for the Conveyance of the Blood from the lower Parts to the Head; whence its Appellation *Aſcendent.*

ASCENSION, ASCENSIO, a riſing, or moving upwards. See ASCENT, ASCENDANT, ASCENDING, *&c.*

ASCENSION is particularly uſed for that miraculous Elevation of our Saviour, when he mounted to Heaven in the Sight of his Apoſtles.—

Hence alſo, ASCENSION-*Day*, a Feſtival of the Church, held ten Days before *Whitſuntide*, in Memory of our Saviour's *Aſcenſion.* See FEAST.

ASCENSION, in Aſtronomy, is either *right* or *oblique.*

Right ASCENSION. See RIGHT *Aſcenſion.*

To find the *Right Aſcenſions* of the Sun, Stars, *&c.* trigonometrically, ſay, as Radius is to the Coſine of the Sun's greateſt Declination, ſo is the Tangent of the Diſtance from *Aries* or *Libra*, to the Tangent of *Right-Aſcenſion.*

To find the *Right-Aſcenſions* mechanically by the Globe. See GLOBE.

The Arch of Right-Aſcenſion, is that Portion of the Equator intercepted between the beginning of *Aries*, and the Point of the Equator which is in the Meridian: Or it is the Number of Degrees contained therein.—This coincides with the *Right-Aſcenſion* it ſelf.—The *Right-Aſcenſion* is the ſame in all Parts of the Globe.

We ſometimes alſo ſay, the *Right-Aſcenſion* of a Point of the Ecliptic, or any other Point of the Heavens. See DESCENSION.

Oblique ASCENSION. See OBLIQUE *Aſcenſion.*

To find the Oblique *Aſcenſions* of the Sun, either trigonometrically, or by the Globe. See ASCENSIONAL *Difference*, and GLOBE.

The Arch of Oblique-Aſcenſion, is an Arch of the Horizon intercepted between the beginning of *Aries*, and the Point of the Equator which riſes with a Star or Planet in an Oblique Sphere.—This coincides with the Oblique *Aſcenſion* it ſelf.—The Oblique *Aſcenſions* change according to the Latitude of the Places.

The Difference between the Right and Oblique *Aſcenſions*, is called the *aſcenſional Difference.* See ASCENSIONAL.

ASCENSIONAL *Difference*, is the Difference between the Right and Oblique *Aſcenſion.* See ASCENSION.

Or it is the Space of Time which the Sun riſes or ſets before or after ſix of the Clock.

To find the *Aſcenſional* Difference trigonometrically, having the Latitude of the Place, and the Sun's Declination given; ſay, As the Co-Tangent of the Latitude, is to the Tangent of the Sun's Declination, ſo is the Radius to the Sine of the *Aſcenſional* Difference.

For Example, ſuppoſe the Latitude be 51°. 30′. and the Sun's Declination 9°. 00′.

Then, to the Ar-co. of the Co-Tangent of — — —	51°. 30′.	0,099395
Add the Tangent of — —	9°. 00′.	9,199712
Sum is the Sine of — —	11°. 29′	=9,299107

which is the *aſcenſional* Difference required; and being reduced into Time, by allowing four Minutes of an Hour for every Degree, it will be 44′. 29″. See TIME.

If the Sun be in any of the northern Signs, and the *aſcenſional* Difference, as D O, be ſubſtracted from the Right *Aſcenſion* D, in *Tab. Aſtronomy*, Fig. 63. the Remainder will be the Oblique *Aſcenſion* O.—If he be in a ſouthern Sign, the *aſcenſional* Difference being added to the *Right Aſcenſion*, the Sum is the Oblique *Aſcenſion*; and thus may Tables of Oblique *Aſcenſions* be conſtructed for the ſeveral Degrees of the Ecliptick, under the ſeveral Elevations of the Pole. See TABLE.

ASCENSORIUM occurs in our antient Writers for a Stair or Step. See STAIR.

ASCENT, ASCENSUS, the Motion of a Body tending from below upwards. See MOTION.

In this Senſe the Word ſtands oppoſed to Deſcent. See DESCENT.

The Peripateticks attribute the ſpontaneous *Aſcent* of Bodies, to a Principle of Levity inherent in them. See LEVITY.

The Moderns deny any ſuch Thing as ſpontaneous Levity, and ſhew that whatever aſcends, does it in virtue of ſome external Impulſe or Extruſion. Thus it is that Smoak, and other rare Bodies, aſcend in Atmoſphere; and Oil, light Woods, *&c.* in Water: Not by any external Principle of Levity, but by the ſuperior Gravity or Tendency downwards of the Parts of the Medium wherein they are. See GRAVITY, MEDIUM, ATMOSPHERE, *&c.*

The *Aſcent* of light Bodies in heavy Mediums is produced after the ſame manner as the *Aſcent* of the lighter Scale of a Ballance.—It is not that ſuch Scale has an internal Principle whereby it immediately tends upwards; but it is impelled upwards by the Præponderancy of the other Scale; the Exceſs of the Weight of the one having the ſame Effect by augmenting its Impetus downwards, as ſo much real Levity in the other: By reaſon the Tendencies mutually oppoſe each other.—*See this further illuſtrated under the Articles* SPECIFIC *Gravity*, FLUIDS, HYDROSTATICAL *Ballance*, &c.

ASCENT *of Bodies on inclined Planes.* See the Doctrine and Laws thereof, under the Article *Inclined* PLANE.

ASCENT *of Fluids*, is particularly underſtood of their riſing above their own Level between the Surfaces of nearly contiguous Bodies, or in ſlender capillary Glaſs Tubes, or in Veſſels filled with Sand, Aſhes, or the like porous Subſtance. See FLUID.

This Effect happens as well *in vacuo* as in the open Air, and in crooked as well as ſtrait Tubes. — Some Liquors, as Spirit of Wine, and Oil of Turpentine, aſcend ſwifter than others; and ſome riſe after a different manner from others. Mercury does not aſcend at all, but rather ſubſides.

The Phænomenon, with its Cauſes, *&c.* in the Inſtance of Capillary Tubes, will be ſpoke of more at large under the Article CAPILLARY *Tube.*

As to Planes—Two ſmooth poliſhed Plates of Glaſs, Metal, Stone, or other Matter, being ſo diſpoſed as to be almoſt contiguous, have the Effect of ſeveral parallel capillary Tubes; and the Fluid riſes in them accordingly, the like may be ſaid of a Veſſel fill'd with Sand, *&c.* the divers little Interſtices whereof form, as it were, a kind of Capillary Tubes. So that the ſame Principle accounts for the Appearance in them all. And to the ſame may probably be aſcribed the *Aſcent* of the Sap in Vegetables. See VEGETABLE and VEGETATION.

Thus Sir *I. Newton*—'If a large Pipe of Glaſs be filled 'with ſifted Aſhes well preſſed together, and one End dip-'ped into ſtagnant Water, the Fluid will *aſcend* ſlowly in 'the Aſhes, ſo as in the Space of a Week or Fortnight, to 'reach the Height of 30 or 40 Inches above the ſtagnant 'Water. This *Aſcent* is wholly owing to the Action of 'thoſe Particles of the Aſhes which are upon the Surface of 'the elevated Water; thoſe within the Water attracting as 'much downwards as upwards: It follows, that the Action 'of ſuch Particles is very ſtrong; tho' being leſs denſe and 'cloſe than thoſe of Glaſs, their Action is not equal to that of 'Glaſs, which keeps Quickſilver ſuſpended to the Height 'of 60 or 70 Inches, and therefore acts with a Force which 'would keep Water ſuſpended to the Height of above 60 'Feet.—By the ſame Principle, a Sponge ſucks in Water, 'and the Glands in the Bodies of Animals, according to 'their ſeveral Natures and Diſpoſitions, imbibe various 'Juices from the Blood.' *Opticks*, p. 367.

If a Drop of Oil, Water, or other Fluid, be laid on a Glaſs Plane perpendicular to the Horizon, ſo as to ſtand without breaking or running off; and another Plane inclined to the former, ſo as to meet a-top, be brought to touch the Drop; then will the Drop break, and aſcend towards the touching End of the Planes: And it will aſcend the faſter in proportion as it is higher, by reaſon the Diſtance between the Planes is conſtantly diminiſhing.—After the ſame manner, the Drop may be brought to any part of the Planes, either upward or downward, or ſideways, by altering the Angle of Inclination.

Laſtly, if the ſame perpendicular Planes be ſo placed, as that two of their Sides meet and form a ſmall Angle, the other two being only kept a-part by the Interpoſition of ſome thin Body; and thus immerged in a Fluid tinged with ſome Colour: The Fluid will aſcend between the Planes, and this the higheſt where the Planes are neareſt; ſo as to form a Curve Line, which is found to be a juſt Hyperbola, one of the Aſymptotes whereof, is the Line of the Fluid, the other being a Line drawn along the touching Sides.—

The

The phyſical Cauſe in all theſe Phænomena, is the ſame Power of Attraction. See ATTRACTION.

ASCENT, in Aſtronomy, &c. See ASCENSION.

ASCENT in Logic, is a kind of Argumentation, wherein we riſe from Particulars to Univerſals. See UNIVERSAL, ARGUMENT, and PARTICULAR.

As, when we ſay, This Man is an Animal, and that Man is an Animal, and the other Man, &c. therefore every Man is an Animal.—Or Fire, Water, Air, and Earth, are four; therefore the Number of Elements is four.—See INDUCTION.

ASCETIC, ASCETA, ASCETES, an antient Name for ſuch Perſons, as in the primitive Times devoted themſelves to the Exerciſes of Piety and Virtue in a retired Life; and particularly to Prayer and Mortification. See SOLITARY.

Afterwards, when the Monks came in faſhion, this Title was beſtowed upon them; eſpecially ſuch of them as lived in Solitude. See MONK, HERMIT, ANCHORITE, &c.

The Word is derived from the Greek ἀσκηταὶ, which is form'd from ἀσκέω, *exerceo*, I exerciſe.

The Term *Aſcetic* is alſo uſed as a Title of ſeveral Books of Spiritual Exerciſes: As, the *Aſceticks*, or devout Treatiſes of St. *Baſil*, Archbiſhop of *Cæſarea* in *Cappadocia*.

We alſo ſay, the *Aſcetic Life*, meaning the Exerciſe of Prayer, Meditation, and Mortification.—See MYSTIC.

ASECRETA, a Secretary. See SECRETARY.

ASCETERIUM, ASSISTERIUM, ARCHISTERIUM, &c. are Words frequently uſed among our antient Writers, for a *Monaſtery*. See MONASTERY.

ASCII, in Geography, are thoſe Inhabitants of the Globe, which, at certain Times of the Year, have no Shadow. See GLOBE and SHADOW.

Such are the Inhabitants of the Torrid Zone; by reaſon the Sun is ſometimes vertical to them. See TORRID and ZONE.

To find on what Days the People of any Parallel are *Aſcii*. See GLOBE.

The Word is form'd of the privative Particle α, and σκια, *Umbra*, Shadow.

ASCITÆ, in Antiquity, a Sect or Branch of Montaniſts, who appear'd in the eleventh Century. See MONTANIST.

The Word is derived from the Greek ἀσκὸς, a Bag or Bottle. The *Aſcitæ* were ſo call'd, becauſe they introduc'd a kind of Bacchanals into their Aſſemblies, who danced round a Bag or Skin blow'd up; ſaying, they were thoſe new Bottles fill'd with new Wine, whereof Jeſus Chriſt makes mention, *Matth.* xix. 17.

Theſe are ſometimes alſo call'd *Aſcodrogites*.—

ASCITES, in Medicine, a Species of Dropſy, affecting chiefly the Abdomen, or Lower Belly. See ABDOMEN.

The *Aſcites* is the ordinary Water-Dropſy. See DROPSY.

The Word is borrowed from the Greek ἀσκὸς, *Uter*, Belly.

ASCLEPIAD, ASCLEPIADÆUS, a *Greek* or *Latin* Verſe of four Feet, containing a Spondee, a Coriambus, and two Dactyls. See FOOT and VERSE.

Such is the Verſe, *Mæcenas atavis Edite Regibus.*

Or of four Feet, and a long Syllable; the firſt a Spondee, and the ſecond a Dactyl, after which comes the long Syllable, ſucceeded by two Dactyls: as,

Sublimi feriam ſidera vertice.

ASCODROUTES, in Antiquity, a Sect of Hereticks, in the ſecond Century, who rejected all Uſe of Sacraments, on this Principle, that incorporeal Things cannot be communicated by Things viſible and corporeal. See SACRAMENT.

They made perfect Redemption conſiſt in the Knowledge of the Univerſe, *Theodoret*, lib. 1. *Hæret.*

ASCOLIA, in Antiquity, a Feaſt which the Peaſants of *Attica* celebrated in Honour of *Bacchus*. See FEAST.

They ſacrificed a Goat to him, and of the Skin thereof made a Foot-ball, which they blew up, and anointed with ſome unctuous Matter. The young People playing at this, and keeping themſelves always on one Foot, whilſt the other was ſuſpended in Air, by their frequent Falls, gave occaſion of Diverſion to the Spectators.—Hence this Feaſt took its Name; ἀσκὸς, ſignifying a *Bag* or *Budget*.

ASELLUS, in Medicine. See MILLEPEDES.

ASHLAR, a Term among Builders; by which they mean common or free Stones, as they come out of the Quarry, of different Lengths and Thickneſſes. See STONE and QUARRY.

ASHLERING, among Builders, Quartering to tack to, in Garrets, about 2 ½, or 3 Foot high, perpendicular to the Floor, up to the Underſide of the Rafters. See BUILDING, ROOF, COVERING, &c.

ASH, in Building. See TIMBER.

ASH-WEDNESDAY, the firſt Day of Lent; ſo called from a Cuſtom of the antient Church, of Faſting in Sackcloth, with *Aſhes* on their Heads, in Token of Humiliation. See LENT.

ASHES, *Cineres*, the terrene or earthy Part of Wood, and other combuſtible Bodies, remaining after they are burnt or conſumed with Fire. See EARTH, BURNING, FIRE, &c.

Aſhes are properly the Earth, and fix'd Salts of the Fuel, which the Fire cannot raiſe, all the other Principles being gone off in the Smoak. See SMOAK, FUEL, FIX'D, VOLATILE, SALT, &c.

The Chymiſts frequently call the *Aſhes* of a Body its *Calx*. See CALX and CALCINATION.

Aſhes, if well burnt, are uſually pure White, by reaſon the Oil to which they owe their Blackneſs when in a Coal, is ſuppoſed quite evaporated. See COAL, SULPHUR, &c. WHITE, BLACK, &c.

The *Aſhes* of Kali, Fern, or the like, are a principal Matter in the Compoſition of Glaſs. See KALI, GLASS, &c.

The *Aſhes* of all Vegetables are found to contain Iron, inſomuch that M. *Geoffroy* makes it a chymical Problem, which he propoſes to the Public, *To find Aſhes without any Particles of Iron therein.*—Whether the Metal exiſted in the Plants themſelves, or is produced in 'em by the Operation of Calcination, is a Point very ingeniouſly controverted between Meſſ. *Geoffroy* and *Lemery* the younger, in the Memoirs of the Royal Academy. *See the Subſtance of the Diſpute under the Article* METAL.

Aſhes, are of conſiderable Uſe in making Lixiviums, or Lyes, for the Purpoſes of Medicine, Bleaching, Sugar-Works, &c. See LIXIVIUM; ſee alſo BLEACHING, &c.

The Antients preſerved the *Aſhes* of their dead Anceſtors, with great Care and Piety, in Urns, for the Purpoſe. See FUNERAL, URN, &c.

Aſhes, of all Kinds, in Virtue of their Salt, make an excellent Manure for cold and wet Grounds. See MANURE.

Hence that of *Virgil*,

———*Ne pudet,*
Effœtos Cinerem immundum jactare per agras.

Pot-ASHES. See POT-*Aſhes*.

In the *Philoſophical Tranſactions*, N° 21. we have an Account of a Shower of *Aſhes* in the *Archipelago*, which held ſeveral Hours, and extended to Places diſtant above 100 Leagues. See SHOWER and RAIN.

ASIDE, in the Drama.—*An Aſide*, *Seorſim*, is ſomething which an Actor ſpeaks a-part, or, as it were, to himſelf, for the Inſtruction of the Audience, by diſcovering ſome Sentiment which otherwiſe did not appear, and which is to be concealed from the reſt of the Actors then preſent.

The ſeverer Criticks condemn all *Aſides*; and with ſome Reaſon; as they are a manifeſt Breach of Probability.—Accordingly, they are never to be uſed but at a Pinch, which a good Author will ſcarce ſuffer himſelf to be brought to. See PROBABILITY, TRAGEDY, COMEDY; ſee alſo SOLILOQUY.

ASPALATH, ASPALATHUM, in Pharmacy, the Wood of a prickly Tree, heavy, oleaginous, ſomewhat ſharp and bitter to the Taſte, of a ſtrong Smell and Purple Colour. See WOOD.

The *Aſpalath* is otherwiſe called *Rhodium*, or *Roſewood*, and was antiently in much Repute, as an Aſtringent or Dryer, but now diſuſed. See ROSE.

In Virtue, Taſte, Smell, and Weight, it reſembles the *Lignum Aloes*; and in Phyſick they are frequently ſubſtituted the one for the other. See ALOES.

There are four Kinds of *Aſpalath*—the firſt, of the Colour of Box; hard, ſolid, heavy, and of a Smell like Roſes, whence its Appellation *Roſewood*.— The ſecond, red, like Yew, and of a very agreeable Smell.—The third, hard, twiſted, knotty: It has a rank Smell, like that of a Goat, and a diſagreeable Taſte.—The fourth, has an aſh-colour'd Bark, and its a Wood of a Purple Dye.

The Roſe-wood is what the Inhabitants of *Martinico* call *Cypreſs-wood*. See CYPRESS.

It affords an Oil of an admirable Scent; reputed one of the beſt of Perfumes, chiefly uſed in ſcenting Pomatums and Liniments. See PERFUME.

ASPECT, ASPECTUS, in Perſpective, Gardening, &c. See PROSPECT, EXPOSURE, &c.

ASPECT, in Aſtronomy, is uſed for the Situation of the Stars, or Planets, in reſpect of each other; or certain Configurations, and mutual Relations between the Planets, ariſing from their Situations in the Zodiac. See STAR, PLANET, &c.

Tho' ſuch Configurations may be varied, and combined a thouſand Ways, yet only a few of them are conſidered.—Hence, *Wolfius* more accurately defines *Aſpect* the meeting of luminous Rays emitted from two Planets, to the Earth, either ſituate in the ſame Right Line, or including an Angle which is one or more Quota Parts of four Right Angles. See RAY and ANGLE.

Hence it follows, that Conjunction and Oppoſition are the two Extremes of the *Aſpects*; Conjunction being the Beginning, and Oppoſition the higheſt Term. See CONJUNCTION and OPPOSITION.

Beſide theſe two extreme *Aſpects*, Conjunction, and Oppoſition, the Antients reckon'd three other, *viz. Trigon* or *Trine*, the Angle meaſured by A B. *Tab. Aſtron.* Fig. 3. *Tetragon* or *Quadrate*, the Angle meaſured by the Quadrant A D; and *Sextile*, which is the Angle meaſured by the Sextant A G. See TRIGON, TETRAGON, QUADRATE and SEXTILE.

The Doctrine of *Aſpects* was introduced by the Aſtrologers, as the Foundation of their Predictions.—Hence *Kepler* defines *Aſpect* by an Angle form'd by the Rays of two Planets meeting on the Earth, able to excite ſome natural Power or Influence. Accordingly, we read much of *benign Aſpects*, *malign Aſpects*, &c.—But this Notion is long ago exploded. See ASTROLOGY.

To the antient *Aſpects*, the modern Writers have added ſeveral more; as *Decile*, containing the tenth Part of a Circle; *Tridecile*, three tenths; and *Biquintile*, four tenths, or two fifths.—*Kepler* adds others, as he tells us, from meteorological Obſervations; as, the *Semi-Sextile*, containing the twelfth part of a Circle; and *Quincunx*, containing five twelfths.—Laſtly, to the aſtrological Phyſicians we owe *Octile*, containing one eighth; and *Trioctile*, containing three eighths.

The Angle intercepted between two Planets in the *Aſpect* of Conjunction is 0; in the *Semi-Sextile Aſpect*, 30°; in *Decile*, 36°; in *Octile*, 45°; in *Sextile*, 60°; in *Quintile*, 72°; in *Quartile*, 90°; in *Tridecile*, 108°; in *Trine*, 120°; in *Trioctile*, 135°; in *Biquintile*, 144°; in *Quincunx*, 150°; in *Oppoſition*, 180.

Theſe Angles or Intervals are reckoned on the ſecondary Circles; for the manner whereof, ſee SECONDARY *Circle*.

The *Aſpects* are uſually divided into *Partile* and *Platic*.

Partile ASPECTS, are when the Planets are juſt ſo many Degrees diſtant, as is above expreſſed.—

Platic ASPECTS, are when the Planets do not regard each other from theſe very Degrees; but the one exceeds as much as the other comes ſhort.—

Double ASPECT, is uſed in Painting, where a ſingle Figure is ſo contrived, as to repreſent two or more different Objects, either by changing the Poſition of the Eye, or by means of angular Glaſſes.—

Inſtances hereof ſee under the Articles MIRROR, CATOPTRICK CISTULA, ANAMORPHOSIS, &c.

ASPER, in Grammar.—*Spiritus* ASPER, a Character or Accent, in form of a c; placed over certain Letters, in the Greek Tongue, to ſhew they are to be ſtrongly aſpirated, and to ſupply the Place of an *h*. See ASPIRATE.

ASPER alſo ſignifies a little Turkiſh Silver Coin, wherein moſt of the Grand Signior's Revenues are paid. See COIN and MONEY.

The *Aſper* is worth ſomething more than an *Engliſh* Halfpenny.—The only Impreſſion it bears, is that of the Prince's Head under whom it was ſtruck.—The Pay of the Janizaries, is from twelve to fifteen *Aſpers per Diem*. See JANIZARY.

ASPERA *Arteria*, in Anatomy, the *Wind-pipe*; otherwiſe called the *Trachea*. See TRACHEA and ARTERY.

The *Aſpera Arteria*, is a Canal ſituate in the Fore-part of the Neck, before the Oeſophagus: Its upper End is called the *Larynx*; from whence it deſcends to the fourth Vertebra of the Back, where it divides and enters the Lungs. See OESOPHAGUS, LARYNX, VERTEBRA, &c.

It is form'd of annular Cartilages ranged at ſmall and equal Diſtances from one another, growing ſmaller and ſmaller, as they approach the Lungs; and thoſe of the Bronchia ſo cloſe to one another, that, in Expiration, the ſecond enters within the firſt, and the third within the ſecond, and the following always enters the preceding. See RESPIRATION, &c.

Betwixt the Larynx and the Lungs, theſe Cartilages make not complete Rings; but their hind Part, which is contiguous to the Oeſophagus, is membranous, that they may better contract and dilate, and give way to the Food as it paſſes down the Gullet. See DEGLUTITION.

The Cartilages of the Bronchia are completely annular, yer their capillary Branches have no Cartilages, but inſtead of them ſmall circular Ligaments, which are at pretty large Diſtances from one another.—The Uſe of the Cartilages, is to keep the Paſſage for the Air open; but in the capillary Bronchia, they would hinder the ſubſiding of the Veſſels. See BRONCHIA.

Theſe Cartilages are tied together by two Membranes, external and internal: the external is compoſed of circular Fibres, and covers the whole Trachea externally; the internal is of an exquiſite Senſe, and covers the Cartilages internally: it is compoſed of three diſtinct Membranes; the firſt woven of two Orders of Fibres; thoſe of the firſt Order being longitudinal, for the ſhortening the Trachea; theſe make the Cartilages approach and enter one another: the other Order is of circular Fibres, for the contracting the Cartilages.

When theſe two Orders of Fibres act, they aſſiſt, together with the external Membrane, in Expiration, in Coughing, and in Altering the Tone of the Voice. See EXPIRATION, VOICE, &c.

The ſecond Membrane is altogether glandulous; and the excretory Veſſels of its Glands opening into the Cavity of the Trachea, ſeparate a Liquor for moiſtening the ſame, and defending it from the Acrimony of the Air.—The laſt is a Net of Veins, Nerves, and Arteries; the Veins are Branches of the *Vena Cava*, the Nerves of the Recurrent; and the Arteries, Sprigs of the Carotides. *See further under the Article* TRACHEA.

ASPERIFOLIÆ, in Botany, one of the Diviſions or Kinds of Plants. See PLANT.

The Characters of the *Aſperifolious* Kind, are, that the Leaves ſtand alternately, or without any certain Order on the Stalks: The Flowers are monopetalous, but have the Margin cut into five Diviſions, ſometimes deep, ſometimes ſhallow; and the upper Spike or Top of the Plant, is often curved back, ſomething like a Scorpion's Tail.

They are called *Aſperifoliæ*, becauſe they are uſually *rough-leav'd*, but not always ſo.

After each Flower there uſually ſucceed four Seeds; Mr. *Ray* reckoning the *Cerinthe* the only Plant of this Genus, that hath leſs than four Seeds at the Root of each Flower; this, indeed, hath but two.

The *Herbæ Aſperifoliæ*, are the *Pulmonaria Maculoſa*, *Cynogloſſa*, *Borago*, *Bugloſſa*, *Anchuſa*, *Echinum*, *Linum Umbilicatum*, *Heliotropium majus*, *Aparine major*, *Conſolida major*, *Lithoſpermum*, *Echium Scorpoides*, and *Cerinthe*.

ASPERITY, ASPERITAS, implies the Inequality, or Roughneſs of the Surface of any Body; whereby ſome Parts of it do ſo ſtick out beyond the reſt, as to hinder the Hand, &c. from paſſing over it eaſily and freely. See PARTICLE.

Aſperity, or Roughneſs, ſtands oppoſed to Smoothneſs, Poliure, &c. See POLISHING, &c.

From the *Aſperity* of the Surfaces of contiguous Surfaces, ariſes *Friction*. See SURFACE and FRICTION.

According to the Relations of *Vermuaſen*, the blind Man ſo famous for diſtinguiſhing Colours by the Touch, it ſhould appear that every Colour has its particular Degree and Kind of *Aſperity*. He makes Black the rougheſt, as it is the darkeſt of Colours; but the others are not ſmoother in proportion as they are lighter; *i. e.* the rougheſt do not always reflect the leaſt Light: For, according to him, yellow is two Degrees rougher than blue, and as much ſmoother than green. *Boyle* of Colours. See COLOUR, LIGHT, &c.

ASPERSION, the Act of ſprinkling with Water, or ſome other Fluid. See WATER.

Some contend for Baptiſm by *Aſperſion*, others by Immerſion. See BAPTISM, IMMERSION, &c.

The Word is form'd of the Latin *aſpergere*, to ſprinkle; of *ad*, to, and *ſpargo*, I ſcatter.

ASPHALITES, in Anatomy, the fifth Vertebra of the Loins. See VERTEBRA.

It is thus called becauſe conceived as the Support of the whole Spine of the Loins; from the Privative α and σφαλλω, *I ſupplant*.

ASPHALTOS, or ASPHALTUM, a ſolid, brittle, black, inflammable, bituminous Subſtance, reſembling Pitch, brought from *India*; whence it is alſo called *Jewiſh Pitch*. See PITCH.

The *Aſphaltos* belongs to the Claſs of Bitumens; and is the furtheſt maturated and concocted of the whole Tribe; but conſiſts of the ſame ſimple Principles as the reſt. See BITUMEN and SULPHUR.

It is found ſwimming on the Surface of the *Lacus Aſphaltites*, or Dead Sea, where antiently ſtood the Cities of *Sodom* and *Gomorrah*.—It is caſt up from time to time, in the Nature of a liquid Pitch, from the Earth which lies under this Sea; and being thrown upon the Water, ſwims like other fat Bodies, and condenſes by little and little, thro the Heat of the Sun, and the Salt that is in it.

The *Arabs* uſe it to pitch their Ships withal, as we do common Pitch.—Beſides, there was a deal of it imploy'd in the embalming of the Antients. See EMBALMING, &c.

It is ſuppoſed to fortify, and reſiſt Putrifaction; reſolve, attenuate, cleanſe and cicatrize Wounds: But is little uſed among us either externally or internally.

'Tis uſual to ſophiſticate the *Aſphaltos*, by mixing common Pitch along with it; the Reſult whereof makes the *Piſaſphaltum*, which the Coarſeneſs of the black Colour, and the fetid Smell eaſily diſcover.—Others, however, will have its pitchy Quality natural to it, and ſuppoſe *Piſaſphaltum* to be the native *Aſphaltum*. See PISASPHALTUM.

ASPHALTUM is alſo a kind of bituminous Stone, found near the antient *Babylon*, and lately in the Province of *Neuchatel*; which, mix'd with other Matters, makes an excellent Cement, incorruptible by Air, and impenetrable by Water; ſuppoſed to be the Mortar ſo much celebrated among

among the Antients, wherewith the Walls of *Babylon* were laid. See MORTAR, &c.

It yields an Oil which defends Ships from Water, Worms, &c. much better than the ordinary Compoſition; and which is alſo of good Service for the cleanſing and healing of Ulcers, &c.

ASPIC—*Oil of* ASPIC, vulgarly called *Oil of Spike*, is an inflammable Oil drawn from the Leaves and Flowers of a Plant frequent in the Southern Parts of *France*, reſembling Lavender, and by the Botaniſts called *Lavandula Mas.* See OIL.

It is much uſed by Painters and Farriers; and ſometimes alſo in Medicine.—The true Oil of *Aſpic*, is of a white Colour, and an aromatic Taſte; and is held the only Thing capable of diſſolving Sandarach: By which it is eaſily diſtinguiſh'd from the Counterfeit, which is only Oil of Turpentine mixed with a little Petrol.

ASPIRATE, ASPIRATIO, or *Spiritus Aſper*, in Grammar, a Character uſed to denote an Aſpiration. See ASPER and ASPIRATION.

ASPIRATION, the Act of *aſpirating*; i. e. of pronouncing any Syllable, or Word, ſtrongly; with a good deal of Breath, and Vehemence. See ASPIRATE and PRONUNCIATION.

This we do, for inſtance, in thoſe Words which have the Letter *H*, before them; as Harangue, Hook, Holland, Hero, &c. whereas the like Syllables are ſounded much ſofter and eaſier without the *H*, as in Ear, Eat, &c. See *H*.

The *Aſpirate*, by the *Greeks* called *Spiritus*, and marked over their Vowels, ſeems to be very different from the Letters; but is, nevertheleſs, a true Letter, as well as the reſt, and a real Conſonant.—By Letters we dont mean the Characters of the Alphabet, which are changeable according to the Languages and the People, and among the ſame People, according to Time and Cuſtom; and even according to the Fancy of particular Perſons.—Thus, ſome, for inſtance, write the *Aſpirates*, or Letters *aſpirated*; which, by others, are omitted; tho both the one and the other pronounce alike; as in *Huomo*, *Huomoni*, an Italian Word frequently written *uomo uomoni*. See ALPHABET.

But, by *Letters*, we mean articulate Sounds, form'd by the Organs of Speech, (*viz.*) The Throat, Mouth, Tongue, Palate, Teeth, &c. See LETTER and VOICE.

Theſe Sounds are of two Kinds, the one ſimple, and the other compound, or modified.—*Simple*, are thoſe pronounced by a ſingle Motion of the Organ; ſuch are the Vowels. See VOWEL.

Compound Sounds, are thoſe ſame ſimple Sounds modified by a Motion of the Organ ſuperadded to the Motion neceſſary to pronounce the ſimple Sound; of which Kind are the Conſonants. See CONSONANT.

Now an *Aſpirate* is an Effect or Conſequence of a Motion made by ſome of the Organs of Speech; and therefore muſt either be a Vowel or a Conſonant.—The former it cannot be, as not being a ſimple Sound, or a Sound that may be pronounced by it ſelf. It muſt therefore be a Modificative, or Conſonant; and in Effect it has all the Properties of one.

For, *1ſt*, it reſults from a Motion of the Organ, which, of it ſelf, produces no Sound. Thus the *Spiritus* of the *Greeks*, our *h aſpirate*, as well as that of the *French*, and other People, has no more Sound of it ſelf than *b*, *c*, *d*, &c. and the ſame Thing may be obſerved of the *Aleph*, *Hheth*, and *Caph*, of the Eaſtern Languages.

2dly, On the contrary, our *h*, the *Spiritus* of the *Greeks*, and the other *Aſpirates* juſt mentioned, are pronounced with all the Vowels, in the ſame manner as Conſonants are.—They modify thoſe Vowels, and are Effects of a Motion of the Organ ſuperadded to the Motion neceſſary to form the Vowel. Thus, to pronounce *ha*, two Motions of the Organ are required as well as for *ba*, or *ca*, &c. One for *a* which it ſelf is a Sound; the other for *h*, which yields no Sound, no more than *b*; but adds ſomething to *a* which modifies it, and makes that *ha* is not mere *a*, nor *ba*, nor *ca*, &c. And this muſt hold ſtill more ſenſibly in the ſtronger *Aſpirates*, as thoſe of the oriental Tongues הָ, הַ, הִ, הֵ, הוֹ, הֹ, הֶ, הָ, &c. In all which, there are evidently two Motions, the one for the Vowel, and the other to modify it: Now this being the Nature and Eſſence of a Conſonant, it follows, that let them be denoted in what Manner they will, whether as our *h*, as the Orientals do, *i. e.* by proper Characters in the Courſe of the Words themſelves; or, as the *Greeks* do ſome of theirs, by a Sign of Aſpiration placed over the Vowel; it matters not. The *Aſpirate* is no leſs a Conſonant in ἅῖρω, than in χαιρω; in ἕω, than in χέω; in ὅλη, than χολη; and ſo of others.

The third and laſt Reaſon is, that the Eaſtern Languages, which do not expreſs the Vowels, do yet expreſs the *Aſpirates*.

Add, that the *Aſpirate* is frequently chang'd into a Conſonant, and expreſs'd by a Conſonant. Thus, of ἕξ is made *Sex*; of ἑπτα, *Septem*; of ἑσπερος, *Veſperus*, &c. Of the Hebrew יין, οἶνος, and thence *Vinum*, &c. Nay, even in the ſame Language, *Heſiod*, ſpeaking of *Hercules*'s Buckler, uſes Ἥρσυν for Θήρσυν; making no Difference between a Θ and an *Aſpirate*. See CONSONANT.

Hence it evidently follows, that *Aſpirates* are real Conſonants; and that it muſt be an Error to rank א, ה, ח, ע, of the Eaſtern Languages, among the Vowels; and to exclude the *h* in ours, out of the Number of Letters.

ASSA-FOETIDA, or ASA-FOETIDA, a Gum or Reſin, brought from the *Eaſt-Indies*, of a browniſh Colour, a ſharp Taſte, and a very ſtrong, offenſive Smell; whence it is alſo called *Stercus Diaboli*, or Devil's Dirt.

'Tis not known from what Plant this Gum is procured: all that has been advanced on that Point by the Botaniſts and the Writers of Pharmacy, amounts to no more than Conjectures, founded on the different Relations of Travellers—They who after the Antients, ſuppoſe it drawn from the *Laſer*, or *Laſerpitium*, would be hard put to it to get clear of thoſe many Diſputes which have ſo often divided the Botaniſts on the Subject of the true *Laſer*, and the *Succus Cyrenaicus*, ſo infinitely prized among them. Indeed there ſeems but little Reſemblance between the Gum deſcribed by M. *Furetiere*, out of *Pliny*, lib. xix. c. 3. and our *Aſſa-Fœtida:* If they be the ſame, 'tis certain we are not acquainted with half its Virtues.

The modern *Aſſa-Fœtida*, which is little uſed but by the Farriers, is a Gum ſaid to diſtil during the Summer's Heats, from a little Shrub, frequent in *Perſia*, *Media*, *Aſſyria*, and *Arabia*.—It is at firſt white, bordering on yellow, then on red, and laſtly on Violet; and melts under the Fingers like Wax.

It is of known Efficacy in ſome uterine Diſorders; but the Rankneſs of its Smell occaſions it to be ſeldom uſed; yet in the *Eaſt-Indies* it makes an Ingredient in their Ragouts.

ASSA-DULCIS, a Name ſometimes given to Gum Benjoyn. See BENJOYN.

ASARABACKA, or ASSARA-BACARA, a Plant mentioned by *Pliny* and *Dioſcorides*, under the Name of the *Wild Nardus*; by us called ASARUM.

Avicenna relates, that it is brought from *China*; that its Roots reſemble thoſe of Gramen, or Dog's-Tooth; but that it has a pretty briſk Smell, and bites the Tongue when taſted.—Its Leaves were antiently much in Uſe, as an Emetic, and Cathartic; and in ſome Authors we find a ſuperſtitious Obſervance in the gathering 'em: They alledge, that if the Plant be pull'd forward it becomes vomitive, but if backwards purgative. *Rulandus* and *Fernelius* frequently deſcribe it as a Diuretic.

But it is chiefly uſed among us as a Sternutatory, in order to which, it is dried and reduced to a Powder, to be taken as a Snuff; in which Quality it drains the Head of mucous Humours.

ASSACH, or ASSATH, a kind of Purgation, antiently uſed in *Wales*, by the Oaths of 300 Men. See PURGATION and OATH.

ASSAILANT, one that aſſaults, or ſets upon another. See ASSAULT, ATTACK, &c.

ASSART, in Law, an Offence committed in the Foreſt, by pulling up, by the Roots, Woods which ſerve as Thickets and Covert for the Deer, and making them plain as arable Land. See FOREST.

This is the greateſt Treſpaſs that can be committed in the Foreſt, being more than a Waſte. For whereas Waſte of the Foreſt is but the felling and cutting down the Coverts, which may grow again; *Aſſart* is a total Extirpation thereof. See WASTE.

What we call *Aſſartum*, is elſewhere term'd *Diſboſcatio*.

ASSART was alſo uſed for a Parcel of Land aſſarted. See ASSART.

ASSART-*Rents*, were thoſe paid to the Crown for the Foreſt Lands *aſſarted*. See RENT.

ASSASSIN, a Perſon who kills another with the Advantage either of an Inequality in the Weapons, or by means of the Situation of the Place, or by attacking him at unawares. See MURTHER, DUEL, &c.

The Word *Aſſaſſin* is ſaid, by ſome, to have been brought from the *Levant*, where it took its Riſe from a certain Prince of the Family of the *Arſacides*, popularly called *Aſſaſins*, living in a Caſtle between *Antioch* and *Damaſco*, and bringing up a Number of young Men, ready to pay a blind Obedience to his Commands; whom he employed in murdering the Princes with whom he was at Enmity. See ARSACIDES.

The Jew *Benjamin*, in his Itinerary, places them near Mount *Libanus*; and calls them in Hebrew, from the Arabic אל אשי שין, *El aſiſin*; which ſhews that the Name did not come from *Arſacide*, but from the Arabic חשיש, *Aſis*, *Inſidiator*, a Perſon who lies in Ambuſh.

The

The *Aſſaſſins*, or *Aſſaſſinians*, *Aſſaſſinii*, abovementioned, poſſeſſed eight or twelve Cities about *Tyre*: They choſe themſelves a King, whom they call'd the *Old Man* of the Mountain. In 1213, they *aſſaſſinated Louis* of *Bavaria*. They were *Mahometans*, but paid ſome Tribute to the Knights-Templars.—The Favourers of the *Aſſaſſins* were condemned by the Council of *Lyons*, and under *Innocent* IV. in 1231.—The *Tartars* overcame them, and kill'd their old Man of the Mountain in 1257; upon which the Faction became extinct.

ASSATION, the preparing or dreſſing of Medicaments, or Foods, in their own Juices, without Addition of any foreign Moiſture.

Aſſation, in reſpect of culinary Matters, is more frequently call'd *Roaſting*; and in Pharmacy, *Uſtion* or *Torrefaction*. See DRESSING, ROASTING, TORREFACTION, &c.

The Word is form'd of the Latin *aſſare*, to roaſt.

ASSAULT, in the Art of War, an Attack made upon a Camp, Fortreſs, or Poſt, in order to become Maſter thereof. See ATTACK, FORTRESS, &c.

An *Aſſault* is properly a general Attack, wherein the Aſſailants do not ſcreen themſelves by any Works.—

The Words are, to give an *Aſſault* to ſuch a Place, to be commanded to the *Aſſault*, to ſtand an *Aſſault*, to repulſe an *Aſſault*, to carry by *Aſſault*, &c.

While an *Aſſault* laſts, and both Parties are mix'd; there is no uſe of Cannon on either Side; for they are afraid of deſtroying their own Men thereby.

A Governour is obliged to ſuſtain three *Aſſaults* ere he give up the Place—'Tis very difficult ſaving a Town from Pillage that is carried by *Aſſault*. See PILLAGE, &c.

The *Enfans perdus* march firſt to the *Aſſault*. See ENFANS *Perdus*.

ASSAULT, in Law, is a violent Injury offered to a Man's Perſon, of a larger Extent than Battery, for that it may be committed by only offering to give a Blow, or by a threatning Speech, &c. See BATTERY.

To rebuke a Collector with foul Words, ſo that he departed for Fear, without doing his Office, was adjudg'd an *Aſſault*; and to ſtrike a Man, tho' he be not hurt with the Blow, is reputed the ſame. In Treſpaſs for *Aſſault* and Battery, a Man may be found guilty of the *Aſſault*, and excuſed of the Battery, 25 *Edw.* 3.

ASSAY, or ESSAY, or SAY, in Coinage, &c. the Proof or Trial of the Goodneſs, Purity, Value, &c. of Gold, Silver, or other Metals. See GOLD, SILVER, METAL, &c.

The Methods of ASSAYING, *or making* ASSAYS, *ſee under the Article* ESSAY.

ASSAY *of Weights and Meaſures*, ſignifies the Trial or Examination of common Weights and Meaſures, uſed by the Clerk of the Market. See WEIGHT, MEASURE, STANDARD, CLERK *of the Market*.

ASSAYER of the King, is an Officer of the Mint, eſtabliſh'd for the *Aſſay*, or due Trial of Silver and Gold. See ASSAY.

The *Aſſayer* is indifferently appointed by the Maſter of the Mint, and the Merchants who bring Silver, &c. for Exchange. See MINT, COIN, &c.

ASSEMBLAGE, the joining or uniting of ſeveral Things together; or, the Things themſelves ſo joined, or united. See UNION, &c.

The *Aſſemblage* of two Bones for Motion, is called *Articulation*. See ARTICULATION.

The Carpinters and Joiners have various Kinds and Forms of *Aſſemblage*; as, with Mortoiſes and Tenons, with Dove-tails, &c. See MORTOISE, DOVE-TAIL, &c.

The *Europeans* admire the Carpentry of ſome *Indians*, where the *Aſſemblage* is made without either Nails or Pins. *Herrera*. See CARPENTRY, NAIL, &c.

The Word *Aſſemblage* is alſo uſed in a more general Senſe, for a Collection of ſeveral Things, ſo diſpoſed together, as that the whole has an agreeable Effect.—'Tis with Diſcourſe as with Bodies, which owe their chief Excellency to the juſt *Aſſemblage*, and Proportion of their Members.—

ASSEMBLY, a meeting of ſeveral Perſons in the ſame Place, and with the ſame common Deſign.

The Word is form'd from the Latin *adſimulare*; compounded of *ad* to, and *ſimul* together.

Aſſemblies of the Clergy, are called Convocations, Synods, Councils; tho' that annual one of the Kirk of *Scotland*, retains the Name *General Aſſembly*. See CONVOCATION, SYNOD, COUNCIL, &c.

Thoſe of Judges, &c. are called *Courts*, &c. See COURT.

The *Aſſemblies* of the *Roman* People were called *Comitia*. See COMITIA, &c.

The *Aſſembly* of a Preacher, &c. is his Audience.—The Academies have their *Aſſemblies*, or Days of *Aſſembly*. See ACADEMY, &c.

The *Aſſemblies* of Diſſenters, &c. are frequently called *Conventicles*. See CONVENTICLE.

ASSEMBLY is particularly uſed in the *Beau Monde*, for a ſtated and general Meeting of the polite Perſons of both Sexes; for the ſake of Converſation, Gallantry, and News.

Unlawful Aſſembly, in Law. See UNLAWFUL *Aſſembly*.

ASSEMBLIES *of the* Campus Martii, *or* Maii, *of the Field of* Mars, *or* May. See FIELD *of Mars*, &c. CAMPUS, &c.

Quarter, or *Place of* ASSEMBLY, in a Camp, &c. See QUARTER *of Aſſembly*.

ASSEMBLY, is alſo uſed in the military Art, for the ſecond Beat of the Drum, before the March. See DRUM.

On hearing this, the Soldiers ſtrike their Tents, roll them up, and then ſtand to their Arms. See MARCH.

The third Beating is called the *March*, as the firſt is called the *General*. See GENERAL.

ASSENT, ASSENSUS, an Agreement or Acquieſcence of the Mind, to ſomething propoſed, or affirmed.—Thus, to *aſſent* to any Propoſition, is to allow it true, or to perceive its Truth. See TRUTH.

The Schoolmen obſerve, that to every Propoſition, how compound or complex ſoever it be, there only goes one *Aſſent* of the Mind.—Thus, in the conditional Propoſition, *If the Sun ſhines it is Day*; there is only one *Aſſent* of the Mind, which regards the Connexion of the Effect with the Condition. So in the disjunctive Propoſition, Peter *either ſtudies, or does not ſtudy*; the Mind does not give a two-fold *Aſſent* to the two Parts thereof, it being enough that *Peter* do either the one or the other, for the Propoſition to be true. See PROPOSITION.

Aſſent is diſtinguiſhed, like Faith, into *implicite*, or *blind*; and *explicite*, or *ſeeing*. See FAITH, &c.

Others diſtinguiſh it into *actual* and *habitual*.—

Actual Aſſent, is a Judgment whereby the Mind perceives a thing to be true.—

Habitual Aſſent conſiſts in certain Habits induced in the Mind by repeated Acts. See HABIT and HABITUDE.

To this belongs *Faith*, which is an *Aſſent* ariſing from the Authority of the Perſon who ſpeaks: Such alſo is *Opinion*, which is defined an *Aſſent* of the Mind *cum formidine Oppoſiti*, &c. See FAITH, OPINION, &c.

For the Meaſures and Degrees of ASSENT, ſee PROBABILITY, VERISIMILITUDE, EVIDENCE, DEMONSTRATION, &c.

Fa. *Mallebranch* lays it down as an Axiom, or Principle of Method, never to allow any thing for Truth, from which we can forbear our *Aſſent* without ſome ſecret Reproach of our own Reaſon. See LIBERTY, METHOD, MAXIM, &c.

ASSERTION, ASSERTIO, in the Language of the Schools, a Propoſition which a Perſon advances; which he avows to be true, and is ready to maintain in publick. See PROPOSITION.

ASSESSOR, or ASSESSOUR, an inferior, or ſubordinate Officer of Juſtice, chiefly appointed to aſſiſt the ordinary Judge with his Opinion and Advice. See JUDGE and JUSTICE.

The Maſters in Chancery are *Aſſeſſors* of the Lord Chancellor. See MASTER and CHANCELLOR.

The Word is Latin, form'd of *ad*, to, and *ſedeo*, I ſit.

There are two Kinds of *Aſſeſſors* in the imperial Chamber, ordinary and extraordinary.—The *ordinary* are now in Number 41, whereof 5 are elected by the Emperor, *viz.* 3 Counts or Barons, and two *Juris Conſulti*, or Civil Lawyers. The Electors appoint 10, the ſix Circles 18, &c. They act in Quality of Councellors of the Chamber, and have Salaries accordingly. See IMPERIAL and CHAMBER.

ASSESSOR, is particularly uſed among us, for an Inhabitant of a Town, or Village, elected by the Community, to ſettle the Taxes, and other Impoſitions of the Year, to fix the Proportion which each Perſon is to bear, and to ſee the Collection made. See TAX, &c.

By the Stat. 16 & 17 *Car.* 2. two Inhabitants in every Pariſh were made *Aſſeſſors* for the Royal Aid. See AID.

ASSETS, in Law, Effects ſufficient to diſcharge the Burden laid on an Executor, or Heir, for ſatisfying the Teſtator's Debts or Legacies. See EXECUTOR, HEIR, TESTAMENT, LEGACY, &c.

The Word is form'd of the French *Aſſez*, enough; in regard whoever charges another with *Aſſets*, charges him with having enough deſcended or come to his Hands to diſcharge that which is in Demand.

Aſſets are of two Sorts, *real* and *perſonal*—Where a Man dies ſeiſed of Lands in Fee-ſimple, the Lands which deſcend to his Heir, are *Aſſets real*. See REAL.

Where he dies poſſeſs'd of any perſonal Eſtate, the Goods which come to the Hands of the Executor, are *Aſſets perſonal*. See PERSONAL.

Of real *Aſſets* there are two Sorts, *per Deſcent*, and *Aſſets enter mains*.

ASSETS *per Deſcent*, are where a Man enters into Bond, and dies ſeized of Lands in Fee-ſimple, which deſcend to his

his Heirs, and are therefore chargeable as *Aſſets* in his Hands. If the Heir alien the Lands before the Bond be put in Suit, he is diſcharged.

Assets *enter mains*, is when a Man dies indebted, leaveing to his Executors ſufficient wherewithal to diſcharge his Debts and Legacies. See Executor.

ASSEVERATION, an earneſt Affirmation, or Avouching. See Affirmation, &c.

ASSIDÆANS, Assidæi, in Antiquity, a Sect among the *Jews*; thus called from the Hebrew, חסידים *hhaſidim*, merciful, righteous.—The *Aſſidæ* are recorded as holding Works of Superrogation neceſſary.—They were the Fathers and Predeceſſors of the *Phariſees*; and from them likewiſe aroſe the *Eſſeni*. See Pharisee and Esseni.

The Jeſuit *Serrarius* and *Druſius*, have wrote againſt each other upon the Subject of the *Aſſidæans*, on occaſion of a Paſſage in *Joſeph Ben Gorion*; the firſt maintaining, that by the Name *Aſſidæans* he means *Eſſeni*, and the latter *Phariſees*.

ASSIENTO, in Matters of Commerce, a Contract or Convention between the King of *Spain* and other Powers, for furniſhing the *Spaniſh* Dominions in *America*, with Negro Slaves. See Negro, *&c.*

The Term is originally *Spaniſh*, and ſignifies a *Farm*: Accordingly, the firſt *Aſſiento* was a Treaty or Contract made with the *French Guinea* Company, whereby they were put in poſſeſſion of this Privilege, in conſideration of a certain Duty which they were to pay to the King of *Spain*'s *Farms*, for every Negro thus furniſhed.—

This Contract was ſigned in the Year 1702, to laſt ten Years, with a further Liberty allow'd the *Aſſientiſts* of two Years more, in caſe they had not furniſhed the whole Number ſtipulated before.—The two principal Articles regarded, firſt, the Number of Negroes to be provided, which was 3800 while the War ſhould laſt, and 4800 in caſe of Peace. Secondly, The Duty to be paid the King of *Spain*, during the Farm, or *Aſſiento*; which was fixed at 33 Pieces of Eight *per* Head.—

By the Treaty of *Utrecht*, *Philip* V. being acknowledged King of *Spain* by the Allies; it was one of the Articles of the Peace between *England* and *France*, that the *Aſſiento* Contract ſhould be transferred to the *Engliſh*.—Accordingly a new Inſtrument was ſigned in *May* 1713, to laſt 30 Years; and the furniſhing of Negroes to the *Spaniſh America*, was committed to the *South-Sea Company*, juſt then erected. See *South-Sea* Company.

In virtue hereof, they are yearly to furniſh 4800 Negroes; for which they are to pay at the ſame Rate as the *French*, with this Condition, that during the firſt 25 Years, only half the Duty ſhall be paid for ſuch as they ſhall import beyond the ſtated Number.

The laſt Article gives them a further Privilege not enjoyed by the *French*; which is, that the *Engliſh Aſſientiſts* ſhall be allowed, every Year, to ſend to the *Spaniſh America* a Ship of 500 Tons, loaden with the ſame Commodities as the *Spaniards* uſually carry thither; with a Licence to ſell the ſame concurrently with them at the Fairs of *Puerto Bello*, and *La vera Cruz*.—This additional Article is ſuppoſed as advantageous to the Company, as the whole Contract beſides; being granted contrary to the uſual *Spaniſh* Policy, which has ever ſollicitouſly preſerved the Commerce of their *America* to themſelves. See Register.

Some new Articles have been ſince added to the antient *Aſſienta*; as, that the *Engliſh* ſhall ſend their Regiſter-Ship yearly, even tho' the *Spaniſh Flota* and *Galloons* do not go; and that for the firſt 10 Years, the ſaid Ship may be of 650 Tun.

The manner of valuing the Negroes, in order to ſettle the King of *Spain*'s Duty, is the ſame as delivered under the Article Negro.

ASSIGN, in Law, a Term introduced in favour of Baſtards; who, becauſe they cannot paſs by the Name of *Heirs*, are compriſed under that of *Aſſigns*. See Heir and Bastard.

Assign is alſo uſed for the appointing of a Deputy, or the making over a Right to another. See Assignee.

In this Senſe we ſay, ſuch Lands or Eſtate were *aſſigned* or affected to ſuch Perſons for ſuch Uſes, *&c.* See Affection, &c.

In the Stat. 20 *Edw.* I. we read of Juſtices *aſſign'd* to take Aſſizes, *&c.* See Assize.

Assign alſo ſignifies to point out, or ſet forth.—Thus we ſay, to *aſſign* the real Cauſe of ſuch an Event, *&c.*

So, *to aſſign Error*, is to ſhew in what part of a Proceſs at Law, an Error is committed. See Error.

To aſſign falſe Judgment, Verdict, &c. is to declare how and where Judgment, Verdict, or the like, is unjuſt. See Judgment, Verdict, *&c.*

To aſſign Waſte, is to ſhew eſpecially wherein the Waſte is committed. See Waste.

ASSIGNEE, in Law, a Perſon to whom a Thing is appointed, or *aſſigned*, to be occupied, paid, or done. See Assign.

An *Aſſignee* differs from a Deputy in this, that the *Aſſignee* poſſeſſes or enjoys the thing in his own Right; and a Deputy in the Right of another. See Deputy.

Aſſignee may be ſo either *by Deed* or *by Law*.

Aſſignee by Deed, is when a Leſſee of a Term ſells and aſſigns the ſame to another: that other is his *Aſſignee by Deed*.—

Aſſignee by Law, is he whom the Law ſo makes without any Appointment of the Perſon.—Thus, an Executor is *Aſſignee* in Law to the Teſtator, who dies poſſeſſed of a Leaſe made to him and his *Aſſigns*. See Executor, Testator, *&c.*

ASSIGNMENT, the Act of *Aſſigning*, or transferring to another. See Assign.

The *Aſſignment of a Dower*, is the ſetting out of a Woman's Marriage-Portion by the Heir. See Establishment and Dower.

ASSIMILATION, the Act of *aſſimilating*; or an Act whereby Things are rendered ſimilar or like to one another. See Similitude, *&c.*

The Word is compounded of *ad*, to, and *ſimilis*, like.

Assimilation, Assimilatio, in Phyſicks, is properly a Motion whereby Bodies convert other duly diſpoſed Bodies, into a Nature like, or homogeneous to their own. See Motion, Body, *&c.*

Some Philoſophers call it, *the Motion of Multiplication*, meaning, that Bodies are hereby multiplied, not in Number, but in Bulk; which is more properly expreſſed by *the Motion of Augmentation* or *Accretion*. See Accretion, Accession, Augmentation, *&c.*

Such *Aſſimilation* we ſee in Flame, which converts the oily or other Particles of a Fuel into its own fiery and luminous Nature. See Flame, Fuel, Fire, *&c.*

The like we ſee in Vegetables, where the watery Juices imbibed from the Earth, being further prepared and digeſted in the Veſſels of the Plant, become of a vegetable Nature, and augment the Wood, Leaves, Fruit, *&c.* thereof. See Vegetable, Vegetation, Sap, Wood, Fruit, *&c.*

So in Animal Bodies, we ſee the Food *aſſimilated*, or changed into an animal Subſtance, by Digeſtion, Chylification, and the other Operations neceſſary to Nutrition. See Food, Digestion, Chylification, Nutrition, Animal, &c.

ASSISA, or Assise, *Aſſize*. See Assize.

Assisa *Cadera*, to *fall from the Aſſiſe*, in Law, is to be *nonſuited*. See Nonsuit.

Assisa *Cadit in Juratam*, is where the Thing in Controverſy is ſo doubtful, that it muſt neceſſarily be tried by a Jury. See Jury.

Assisa *capi in modum Aſſiſæ*, is when the Defendant pleads to the *Aſſize*, without taking any Exception to the Count, Declaration, or Writ.

Assisa *Nocumenti*, is an *Aſſize* of Nuiſance. See Nuisance and Annoyance.

Assisa *Panis & Cereviſiæ*, denotes the Power or Privilege of aſſigning, or adjuſting the Weight and Meaſure of Bread and Beer. See Assize.

Assisæ *Judicium*, in Law, ſignifies a Judgment of the Court, given either againſt the Plaintiff or Defendant, for Default. See Default.

Assisa *Continuanda*, is a Writ directed to the Juſtices, to take an *Aſſize* for the Continuance of a Cauſe, where certain Records alledg'd cannot in Time be procured by the Party. See Writ.

Assisa *proroganda*, is a Writ directed to the Juſtices of *Aſſize*, for the Stay of Proceedings, by reaſon of the King's Buſineſs, wherein the Party is imployed. See Writ.

ASSIZE, or Assise, *Aſſiſa*, in Law, a ſitting of Judges, or Juſtices; for the hearing and determining of Cauſes. See Judge, Justice, Cause, *&c.*

The Word is French, *Aſſiſe*, of *Aſſis*, ſeated; form'd of *Aſſideo*, I ſit by; which is compounded of *ad*, to, and *ſedeo*, I ſit. See Assessor.

Assize, or Assizes, were originally uſed for certain extraordinary Sittings of ſuperior Judges, in the inferior Courts depending on their Juriſdiction; to inquire whether the ſubaltern

altern Judges and Officers did their Duty; to receive the Complaints prefer'd againſt them; and take Cognizance of Appeals from them. See APPEAL, &c.

ASSIZE, was alſo a Court or Aſſembly, compoſed of ſeveral great Perſons of the Realm; held occaſionally in the King's Palace, for the final Deciſion of all Affairs of Importance. See COURT, PALACE, &c.

This is more uſually called, among our Writers, *Placita*, or *Curiæ Generales*. See PLACITA, &c.

Yet there is ſome Difference between *Aſſizes* and *Placita*. —The Vicounts, or Sheriffs, who originally were only Lieutenants of the Comites, or Counts, and render'd Juſtice in their Place; held two Kinds of Courts, the one ordinary, held every Day, and called *Placitum*; the other extraordinary, called *Aſſize*, or *Placitum Generale*; at which the Count himſelf aſſiſted for the Diſpatch of the more weighty Affairs.—Theſe *Aſſizes* were alſo called *Mallum*. See COUNT, VICOUNT, SHERIFF, &c.

Hence, the Term *Aſſize* came to be extended to all grand Days of Judgment, at which the Trials and Pleadings were to be ſolemn and extraordinary.

The modern Conſtitution of *Aſſizes* is pretty different from that hitherto ſpoke of.—Our *Aſſize* may be defined a Court, Place, or Time where, and when Writs and Proceſſes, either civil or criminal, or both, are conſider'd, diſpatch'd, decided, &c. by Judges and Jury. See PROCESS, COURT, DAY, JURY, &c.

In this Senſe, we have two Kinds of *Aſſizes*; general and ſpecial.

General ASSIZES, are thoſe held by the Judges twice a Year, in their ſeveral Circuits. See CIRCUIT.

The Nature of theſe *Aſſizes* is explained by my Lord *Bacon*, who obſerves that all the Counties of the Kingdom, are divided into ſix Circuits; thro each of which two learned Men, aſſigned by the King's Commiſſion, ride twice a Year, call'd *Juſtices* or *Judges of Aſſize*, who have ſeveral Commiſſions, by which they ſit, *viz.*

1° *Commiſſion of Oyer and Terminer*, directed to them, and many others of the beſt Account in their reſpective Circuits. See OYER *and Terminer*.—In this Commiſſion, the Judges of *Aſſize* are of the *Quorum*; ſo that without them there can be no Proceeding. This Commiſſion gives them Power to deal with Treaſons, Murders, Felonies, and other Miſdemeanors. See TREASON, FELONY, &c.

The ſecond is of *Goal-Delivery*, which is only to the Judges themſelves, and the Clerk of the *Aſſize* aſſociate.—By this Commiſſion they have to do with every Priſoner in Goal, for what Offence ſoever. See GOAL-*Delivery*, &c.

The third is directed to themſelves, and the Clerk of the *Aſſize*, to take Writs of Poſſeſſion, called alſo *Aſſizes*; and to do Right and Juſtice thereupon. See WRIT.

The fourth, is to take *Niſi prius*, directed to the Juſtices, and the Clerks of *Aſſizes*, whence they are alſo called Juſtices of *Niſi prius*. See NISI *prius*.

The fifth, is a *Commiſſion of Peace*, in every County of their Circuit; and all the Juſtices of the Peace, having no lawful Impediment, are bound to be preſent at the *Aſſizes*, to attend the Judges. See PEACE.

The Sheriff of every Shire is alſo to attend in Perſon, or by a ſufficient Deputy allow'd by the Judges, who may fine him if he fail. See SHERIFF.

This excellent Conſtitution of Judges, Circuits, and *Aſſizes*, was begun in the Time of *Henry* the Second; tho ſomewhat different from what it is now.

Special ASSIZE, is a particular Commiſſion granted to certain Perſons, to take Cognizance of ſome one or two Caſes, as a Diſſeiſin, or the like.—This was frequently practiced among our Anceſtors. *Bracton*, lib. 3. c. 12.

ASSIZE, or *Aſſiſe*, is alſo uſed for a Writ directed to the Sheriff, for the Recovery of Poſſeſſion of Things immoveable, whereof your ſelf, or Anceſtors, have been diſſeiz'd. See WRIT, POSSESSION, &c.

Littleton, and others, ſuppoſe theſe Writs of *Aſſize* to give the Denomination to the *Aſſizes*, or Courts ſo called; and aſſign ſeveral Reaſons of the Name of the Writ: As,

Firſt, becauſe ſuch Writs *ſettle* the Poſſeſſion, and Right in him that obtains by them. Secondly, Becauſe, originally, they were executed at a certain Time and Place *appointed*; for, by the *Norman* Law, the Time and Place muſt be known forty Days before the Juſtices ſit; and by our Law there muſt be fifteen Days Preparation, except they be tried in the ſtanding Courts at *Weſtminſter*.—But, it is more natural to ſuppoſe the Writs denominated from the Courts; and that they were call'd *Aſſizes*, becauſe antiently tried at ſpecial Courts of *Aſſize*, ſet and appointed for that Purpoſe.—Tho, of later Days, they are diſpatched at the general *Aſſizes*, along with the Commiſſions of *Oyer and Terminer*, &c.

This Writ is as well of Things corporeal, as incorporeal Rights, being of four Sorts, *viz.*

ASSIZE, or *Aſſiſe, of Novel Diſſeiſin*, which lies where a Tenant in Fee-ſimple, Fee-tail, or for Life, is lately diſſeis'd of his Lands or Tenements, Rent-ſervice, Rent-ſeck, or Rent-charge, Common of Paſture, common Way, &c. See DISSEISIN, TENANT, &c.

To this may be added, the Bill of freſh Force, directed to the Officers or Magiſtrates of Cities or Towns-corporate; being a kind of *Aſſize* for Recovery of Poſſeſſion in ſuch Places, within forty Days after the Force, as the ordinary *Aſſize* is in the County. See FRESH *Forces*.

ASSIZE of *Mort d'Anceſtor*, lies where my Father, Mother, Brother, Uncle, &c. dies ſeized of Lands, Tenements, Rents, &c. held in Fee-ſimple; and after their Death, a Stranger abates. See ABATEMENT.—It is good as well againſt the Abator, as any other in Poſſeſſion. See ABATOR.

ASSIZE of *Darrein Preſentment*, lies where I, or my Anceſtor have preſented a Clerk to a Church, and after the Church becomes vacant by his Death, or otherwiſe, a Stranger preſents his Clerk to the ſame Church, in my Diſturbance. See PRESENTATION, PATRONAGE, &c.

Theſe three *Aſſizes* were inſtituted by *Henry* the Second, in the Place of Duels; which, till then, had obtained on theſe Occaſions.—*Magna aſſiſa eſt regale Beneficium, Clementia principis de Concilio procerum populis indultum; a quo vitæ hominum & ſtatus Integritati tam Salubriter Conſulitur, ut in Jure quod quis in libero Soli tenemento poſſidet, retinendo, Duello Caſum homines declinare poſſunt*, &c. *Glanvill*, lib. xi. c. 7. See DUEL, COMBAT, &c.

ASSIZE of *Utrum*, lies for a Parſon againſt a Layman, or a Layman againſt a Parſon, for Land or Tenement, doubtful whether it be in Lay-fee, or Free-alms. See TITHE, &c.

ASSIZE, or *Aſſiſe*, is alſo uſed, according to *Littleton*, for a Jury. See JURY.

This, that Author ſuppoſes to be by a *Metonymia effecti*, the Jury being ſo called, becauſe ſummoned by Virtue of the Writ of *Aſſize*. See ASSIZE.

Yet it muſt be obſerved, that the Jury ſummoned upon a Writ of Right, is likewiſe called the *Aſſiſe*; but this may be ſaid to be καταχρηστικῶς, or abuſively ſo termed. *Aſſiſe*, in this Signification, is divided in *magnam & parvam*.

ASSIZE is alſo uſed, according to *Littleton*, for an Ordinance or Statute of *Aſſize*. See STATUTE and ORDINANCE.

Thus the Statute of Bread and Ale, *Anno* 51 *Hen.* 3. is termed the *Aſſize of Bread and Ale*.

ASSIZE, or *Aſſiſe*, is further uſed for the Scantling or Quantity it ſelf preſcribed by the Statute.

Thus we ſay, when Wheat is of ſuch or ſuch Price, Bread ſhall be of ſuch *Aſſize*.

ASSIZE *of the Foreſt*, is a Statute or Condition containing Orders to be obſerved in the King's Foreſt. It is called an *Aſſize*, becauſe it ſets down and appoints a certain Meaſure, Rate, or Order in the Things it concerns.

Clerk of ASSIZE. See CLERK *of Aſſize*.

ASSIZE, again, is uſed for the whole Proceſs in Court, founded on ſuch Writ of *Aſſize*; and ſometimes for a part of it, *viz.* the Iſſue or Verdict of the Jury.

Thus we read, that *Aſſizes of Novel Diſſeiſin ſhall not be taken but in their Shires; and after this Manner*, &c. Mag. Chart. cap. xii.—So in *Merton*, cap. iv. Hen. III. we meet with, *Certified by Aſſize, quitted by Aſſize*, &c.

ASSIZER of Weights and Meaſures, is an Officer who has the Care and Overſight of thoſe Matters. See CLERK *of the Market*.

ASSISOR, the ſame with *Aſſeſſor*. See ASSESSOR.

In *Scotland*, *Aſſiſors* are the ſame with our *Jurors*. See JUROR.

ASSISTANCE. See AID.

ASSISTANT, is uſed for a Perſon or Officer appointed to attend a principal Officer, for the more regular Diſcharge of his Function.—Such a Biſhop or Prieſt had ſeven or eight *Aſſiſtants*.

ASSISTANTS, are particularly uſed for a kind of Counſellors, or Controllers, added to the Generals or Superiors of Monaſteries, *&c.* to take Care of the Affairs of the Community.—The General of the Jeſuits has five *Aſſiſtants*, of conſummate Experience, choſen by him out of all the Provinces of the Order, and denominated from the Kingdoms or Countries to which they belong, *e. gr. Italy, Spain, Germany, France,* and *Portugal.* See GENERAL, JESUIT, *&c.*

In the like Senſe, moſt of our Trading Companies have their *Courts of Aſſiſtants.* See COMPANY, *&c.*

ASSISTANTS are alſo thoſe condemned to *aſſiſt* in the Execution of a Criminal. See ABSOLUTION.

ASSOCIATE, an Adjunct, Partner, or Member. See ADJUNCT, ASSOCIATION, *&c.*

The Word is compounded of the *Latin ad* and *ſocius*, Fellow, Companion.

ASSOCIATION, ASSOCIATIO, the Act of aſſociating or forming a Society, or Company. See ASSOCIATE, SOCIETY, COMPANY, *&c.*

Aſſociation is properly a Contract or Treaty of Partnerſhip, whereby two or more Perſons unite together, either for their mutual Aſſiſtance, or the Joint carrying on of an Affair; or even for a more commodious Manner of Life.—The cloſeſt of all *Aſſociations* is that made by the Band of Matrimony.

ASSOCIATION *of Ideas*, is where two or more Ideas, conſtantly and immediately follow or ſucceed one another in the Mind, ſo that one ſhall almoſt infallibly produce the other; whether there be any natural Relation between them, or not. See IDEA.

Where there is a real Affinity or Connection in Ideas, it is the excellency of the Mind, to be able to collect, compare, and range them in Order, in its Enquiries: But where there is none, nor any Cauſe to be aſſign'd for their accompanying each other, but what is owing to mere Accident or Habit; this unnatural *Aſſociation* becomes a great Imperfection, and is generally ſpeaking, a main Cauſe of Error, or wrong Deductions in reaſoning. See ERROR, *&c.*

Thus the Idea of Goblins and Sprights, has really no more Affinity with Darkneſs than with Light; and yet let a fooliſh Maid inculcate theſe often on the Mind of a Child, and raiſe them there together, 'tis poſſible he ſhall never be able to ſeparate 'em again ſo long as he lives, but Darkneſs ſhall ever bring with it thoſe frightful Ideas.—Let Cuſtom, from the very Childhood, have joined the Idea of Figure and Shape to the Idea of God, and what Abſurdities will that Mind be liable to, about the Deity?

Such wrong Combinations of Ideas, Mr. *Lock* ſhews, are a great Cauſe of the irreconcileable Oppoſition between the different Sects of Philoſophy and Religion: For we can't imagine, that all who hold Tenets different from, and ſometimes contradictory to one another, ſhou'd wilfully and knowingly impoſe upon themſelves, and refuſe Truth offered by plain Reaſon: But ſome looſe and independent Ideas are by Education, Cuſtom, and the conſtant Din of their Party, ſo coupled in their Minds, that they always appear there together: Theſe they can no more ſeparate in their Thoughts, than if they were but one Idea, and they operate as if they were ſo. This gives Senſe to Jargon, Demonſtration to Abſurdities, Conſiſtency to Nonſence, and is the Foundation of the greateſt, and almoſt of all the Errors in the World.

ASSOCIATION, in Law, is a Patent ſent by the King, either of his own Motion, or at the Suit of the Party Plaintiff, to the Juſtices of Aſſize; to have other Perſons *aſſociated* to them, in order to take the Aſſize. See PATENT and ASSIZE.

Upon this Patent of *Aſſociation*, the King ſends his Writ to the Juſtices of the Aſſize, by it commanding them to admit them that are ſo ſent.

ASSOILE, in our antient Law Books, ſignifies to abſolve, deliver, or ſet free from an Excommunication. See ABSOLUTION, EXCOMMUNICATION, *&c.*

ASSONANCE, in Rhetorick and Poetry, a Term uſed where the Words of a Phraſe, or a Verſe, have the ſame Sound or Termination, and yet make no proper Rhyme. See RHYME.

Theſe are uſually vitious in *Engliſh*; though the *Romans* ſometimes uſed them with Elegancy: As, *Militem comparavit, Exercitum ordinavit, Aciem luſtravit.*

The *Latins* call it *ſimiliter deſinens*; and the *Greeks* ομοιοτελευτον. See HOMOIOTELEUTON.

ASSONANT *Rhymes*, is a Term particularly applied to a kind of Verſes common among the *Spaniards*, where a Reſemblance of Sound ſerves inſtead of a natural Rhyme. See RHYME.

Thus, *ligera, cubierta, tierra, meſa*, may anſwer each other in a kind of *aſſonant* Rhyme, in regard they have each an *e* in the penultimate Syllable, and an *a* in the laſt.

ASSUMPSIT, in Law, a naked Contract; or a voluntary Promiſe, by Word of Mouth, by which a Man *aſſumes* and takes upon him to perform, and pay any thing to another. See CONTRACT, COVENANT, *&c.*

This Term comprehends any verbal Promiſe; and is variouſly expreſs'd by the Civilians, according to the Nature of the Promiſe: Sometimes, by *pactum*; ſometimes by *promiſſio, pollicitatio,* or *Conſtitutum.* See PACTUM.

Where a Man ſells Goods to another, the Law makes the *Aſſumpſit*; and promiſes that he ſhall pay for them.

ASSUMPTION, ASSUMPTIO, a Feaſt celebrated in the *Romiſh* Church, in honour of the miraculous Aſcent of the Holy Virgin, Body and Soul, into Heaven. See FEAST, VIRGIN, *&c.*

The Word is compounded of the *Latin ad*, to, and *ſumo*, I take.

This Feaſt is held with great Solemnity both in the Eaſtern and Weſtern Churches.—Yet is not the *Aſſumption* of our Lady any Point of Faith. The antient Martyrologies ſpeak of it with a great deal of reſerve, as a thing not yet fully aſcertained: Tho' a Divine who ſhould now deny it, would be obliged to retract.

The *Sorbonne*, in the Year 1696, in the Condemnation of *Mary* of *Agreda*, proteſted, among other things, that they believed that the Holy Virgin was *aſſumed*, or taken into Heaven, Body and Soul.

ASSUMPTION was alſo among our Anceſtors, uſed for the Day of the Death of any Saint: *Quia ejus anima in Cœlum* aſſumitur.

ASSUMPTION, in Logick, is the Minor, or ſecond Propoſition, in a categorical Syllogiſm. See MINOR, SYLLOGISM, *&c.*

ASSUMPTION is ſometimes alſo uſed for a Conſequence drawn from the Propoſitions whereof an Argument is compoſed. See CONSEQUENCE.

Thus we ſay, the Premiſſes are true, but the *Aſſumption* is captious. See PREMISSE, *&c.*

ASSUMPTIVE *Arms*, in Heraldry, are ſuch as a Man has a right to *aſſume* of himſelf, in virtue of ſome Action. See ARMS.

As, if a Man who is no Gentleman of Blood, nor Coat Armour, takes a Gentleman, Lord, or Prince, Priſoner in any lawful War; he becomes intitled to bear the Shield of ſuch Priſoner, and enjoy it to him and his Heirs.—The Foundation hereof is that Principle in Military Law, that the Dominion of Things taken in lawful War paſſes to the Conqueror.

ASSURANCE, in Law. See SECURITY.

ASSURANCE, or INSURANCE, in Commerce. See INSURANCE.

Policy of ASSURANCE, is a Contract whereby one or more Perſons oblige themſelves to make good any Damages which a Ship, a Houſe, or the like, may undergo, by Sea, Fire, or the like Dangers.—The Nature and Laws hereof ſee under the Article of POLICY *of Aſſurance.*

We have ſeveral Offices of *Aſſurance from Fire.*—As, the *Sun-Fire Office*; the *Hand-in-Hand Fire Office*; the *Phenix Office*, &c. ſome for Houſes, others for Goods; and ſome for both.

We have alſo *Aſſurances for Life*, in Virtue whereof, when the Perſon *aſſured* dies, a Sum of Money becomes payable to the Perſon in whoſe Favour the Policy of *Aſſurance* was given. See ANNUITY, *&c.*

ASSURANCE, in Logick. See CERTAINTY, EVIDENCE, DEMONSTRATION, *&c.*

ASSUROR, a Merchant, or other Perſon, who *aſſures* a Ship, Houſe, Life, or the like. See ASSURANCE.

Aſſurors are not anſwerable for what Damages ariſe thro' the Negligence, or other Fault of the Maſter or Seamen; or even thoſe which ariſe from any Vice or Defect in the thing *aſſured.* See AVERAGE.

ASTATI, or ASTATHII, or ASTATHYI, a Sect of Hereticks in the ninth Century, the Followers of one *Sergius*, who renewed the Errors of the *Manichees.* See MANICHEE.

They prevail'd much under the Emperor *Nicephorus*; but his Succeſſor, *Michael Curopalates*, curb'd them with very ſevere Laws.

The Word is derived from the *Greek* privative α, and ἵστημι, *ſto*, to ſtand firm, and ſignifies any thing unſtable and inconſtant.

ASTERISK, a Character in form of a ſmall Star, ſet over any Word, or Sentence, to make it the more conſpicuous, or to refer to the Margin for a Quotation, Explanation, *&c.* See CHARACTER, NOTE, REFERENCE.

The Word is derived from a Diminutive of the *Greek* ἀστὴρ, Star.

ASTERISM, ASTERISMUS, in Aſtronomy, the ſame with *Conſtellation.* See CONSTELLATION.

The Word comes from the *Greek* ἀστὴρ, *Stella*, Star. See STAR.

ASTHMA, in Medicine, a Diſeaſe of the Lungs, accompanied with a Shortneſs, and Difficulty of Reſpiration. See RESPIRATION and LUNGS.

Or, *Aſthma* is a Difficulty of Breathing, ariſing from a Diſorder of the Lungs; and uſually attended with violent Motions of the Diaphragm, Abdominal and Intercoſtal Muſcles, as alſo a rattling in the Throat.

The Word is *Greek*, ἄσθμα; form'd of the Verb ἄω, *Spiro*; I breath.

If Reſpiration be only thick and quick, without the other Symptoms, it is call'd a *Dyſpnœa.*—If it be ſo intenſe as to occaſion a violent Motion of the Muſcles of the Thorax; ſo that the Patient cannot be tolerably eaſy, except in an erect Poſture, it is call'd an *Orthopnœa.* See DYSPNÆA and ORTHOPNÆA.

The *Aſthma* is uſually divided into *Moiſt* and *Dry*, or *Manifeſt* and *Occult*, or *Pneumonic* and *Convulſive*: The firſt attended with an Expectoration of purulent Matter; the latter without.

The true *Aſthma* is occaſioned by an abundance of Seroſities, or of groſs viſcous or purulent Humours, collected in the Cavities of the Lungs, which ſtop up or ſtraighten the Paſſages of the Air, and compreſs the *Bronchia*. See BRONCHIA.

It is alſo owing to Empyema's, Phthiſis's, Crudities in the Stomach, Cachexies, *&c.* See EMPYEMA, PHTHISIS, *&c.*

The convulſive *Aſthma* is ſuppoſed to be occaſioned by an irregular Motion of the Animal Spirits; and happens when the Spirits do not flow faſt enough, or in ſufficient Quantity, into the Muſcles of the Breaſt, either by reaſon of an Obſtruction, or of ſome other Obſtacle: The neceſſary Conſequence whereof is a violent and painful Reſpiration.—The *Aſthma*, again, is either *continual*, or *periodical*, and *intermitting*; which laſt returns chiefly where a ſober Regimen is not obſerved.

The *Aſthma* is found to be the moſt violent when the Patient is in Bed, and in a prone Poſture; the Contents of the lower Belly, in that caſe, bearing againſt the *Diaphragm*, ſo as to leſſen the Capacity of the Breaſt, and to leave the Lungs leſs room to move.

The Cure of the true or pneumonic *Aſthma*, is by bleeding; after which Emeticks may be uſed; and if the Paroxyſm returns, Epiſpaſticks, with Glyſters inſtead of Purges.—Infuſions of *Fim. Equin.* or the Juice thereof, being deterſive and attenuating, are reputed excellent. *Linctus*'s alſo contribute to the Cure, *Millepedes*, Spirit of *Gum Armoniac*, with *Sal Armoniac*, *Coffee*, Tincture of *Sulphur*, &c. are commended in *Aſthmatick* Caſes.

For the convulſive Kind, the Cure is attempted by *Antiepilepticks*, *Antihyſtericks*, *Antiſpaſmodicks*, *Opiats*, &c.

ASTRAGAL, ASTRAGALUS, in Anatomy, a Bone of the Heel, having a convex Head, articulated with the two *Focils* of the Leg, by *Ginglymus*. See HEEL and FOOT.

The *Aſtragalus* call'd *Talus*, and *Os Baliſtæ*, is the firſt Bone of the *Tarſus*. See TALUS and TARSUS.

Some alſo apply the Name to the *Vertebræ* of the Neck.—*Homer*, in his *Odyſſee*, uſes the Term on this Occaſion. See VERTEBRÆ.

ASTRAGAL, in Architecture, is a little round Member, in form of a Ring, or Bracelet; ſerving as an Ornament on the Tops and at the Bottoms of Columns. See MOULDING, COLUMN, *&c.*

The *Aſtragal* is ſometimes alſo uſed to ſeparate the *Faſciæ* of the Architrave; in which caſe it is wrought in Chaplets, or Beads and Berries,

It is alſo uſed both above and below the Liſts, adjoining immediately to the Square, or Die of the Pedeſtal. See DYE and PEDESTAL.

The Word is derived from the *Greek* ἀστράγαλος, which ſignifies the *Ankle* or *Ankle-Bone*.

ASTRAGAL, in Gunnery, is a Kind of Ring or Moulding on a piece of Ordnance, at about half a Foot's Diſtance from the Mouth; ſerving as an Ornament to the Piece, as the former does to a Column. See ORDNANCE, CANON, *&c.*

ASTRAL, ſomething belonging to the *Stars*, or depending of the *Stars*. See STAR.

The Word comes from the *Latin aſtrum*, of the *Greek* ἄστρον, Star.

ASTRAL, or *Siderial Year*. See SIDERIAL and YEAR.

ASTRINGENTS, ASTRINGENTIA, in Medicine, *binding Remedies*; or ſuch as have the Power of contracting the Parts, and diminiſhing the Pores thereof. See MEDICINE.

Aſtringents act either by the Aſperity of their Particles, whereby they corrugate the Membranes, and make them draw up cloſer; or by thickening the Fluids, whereby they cannot run off ſo faſt as before.

Aſtringents therefore ſtand oppoſed to *Laxatives*. See LAXATIVE, PURGATIVE, *&c.*

Hence, *Aſtringents* are of the Claſs of Strengtheners, or Corroborants; the Nature and Operation whereof, ſee under the Article STRENGTHENER.

Aſtringents only differ from *Stypticks*, in Degree of Efficacy. See STYPTICK.

The Word is compounded of the *Latin ad* and *ſtringo*, I bind.

Among Simples, Mint, red Roſes, Nettles, Sanicle, Barbaries, Quinces, Pomegranates, Sloes, Cinnamon, Blood-ſtone, Alum, Chalk, Boles, Coral, Tutty, *&c.* are principal *Aſtringents*.

ASTROITES, or *Lapis* ASTROITES, in Natural Hiſtory, a Kind of figured Stone, found in divers Parts, and particularly the North of *England* See FIGURED-*Stone*.

The Form thereof is very uniform and regular; conſiſting of ſeveral thin pentagonal Joints ſet one over another, ſo as to form a Kind of five-angled Column.—The uſual Figures, as given by Dr. *Liſter*, are repreſented in *Tab. Nat. Hiſtory, Fig.* 14.

Theſe Stones, as now found, are all Fragments, conſiſting of from 1 to 25 Joints.—The Matter or Subſtance thereof when broken, is Flint-like, of a dark ſhining Poliſture, but much ſofter, and eaſily corroded by an acid Menſtruum.—They creep, like the *Cornu Ammonis*, in Vinegar; but a ſtronger Spirit, as of Nitre, agitates them with ſome Violence. See CORNU *Ammonis*.

The protuberant Parts repreſented under the top Joint of the firſt Figure are not found in all; but only in thoſe which are deep-jointed.—They are always five in Number. Dr. *Liſter* calls them *Wyers*; and compares them to the Antennæ of Lobſters.

'Tis controverted among the Naturaliſts, to what Species of Bodies the *Aſtroites*, *Trochites*, *Entrochi*, &c. are to be referr'd. Some will have 'em Native Stones, others Rock-Plants, and others Petrifactions of Plants. See STONE. See alſo PETRIFACTION, SPAR, TROCHITES, ENTROCHI, *&c.*

ASTROLABE, ASTROLABIUM, was originally uſed for a Syſtem or Aſſemblage of the ſeveral Circles of the Sphere, in their proper Order and Situation with reſpect to each other. See CIRCLE and SPHERE.

The antient *Aſtrolabes* were the ſame with our Armillary Spheres. See ARMILLARY.

The firſt and moſt celebrated of this Kind was that of *Hipparchus*, which he made at *Alexandria*, the Capital of *Egypt*, and lodg'd in a ſecure Place, where it ſerv'd for divers Aſtronomical Operations.—*Ptolomy* made the ſame uſe of it; but as the Inſtrument had ſeveral Inconveniences, he bethought himſelf to change its Figure, though perfectly natural and agreeable to the Doctrine of the Sphere; and to reduce the whole *Aſtrolabe* upon a Plane Surface, to which he gave the Denomination of *Planiſphere*. See PLANISPHERE.—Hence,

ASTROLABE, is uſed among the Moderns for a *Planiſphere*; or a *Stereographick* Projection of the Sphere upon the Plane of ſome Circle thereof. See PROJECTION and STEREOGRAPHICK.

The uſual Planes of Projection are that of the Equinoctial, the Eye being ſuppoſed in the Pole of the World; and that of the Plane of the Meridian, the Eye being ſuppoſed in the Point of Interſection of the Equinoctial and Horizon.

Stoffler, *Gemma Friſius*, and *Clavius*, have treated at large of the *Aſtrolabe*.—*For a further Account of the Nature and Kinds hereof, ſee the Article* PLANISPHERE.

ASTROLABLE, or *Sea* ASTROLABE, is an Inſtrument chiefly uſed for taking the Altitude of the Pole, the Sun, or Stars, at Sea. See ALTITUDE.

The *Aſtrolabe* repreſented *Tab. Navigation*, *Fig.* 22. conſiſts of a large Braſs Ring, about 15 Inches in Diameter, whoſe Limb, or a convenient Part thereof, is divided into Degrees and Minutes; fitted with a moveable Index, or Label, which turns upon the Centre and carries two Sights.—At the Zenith is a Ring, to hang it by in time of Obſervation.

To uſe the *Aſtrolabe*, turn it ſo to the Sun, as that the Rays may paſs freely through both the Sights F and G; in which Caſe, the Edge of the Label cuts the Altitude in the divided Limb.

The *Aſtrolabe*, though now grown into diſuſe, is at leaſt equal to any of the other Inſtruments uſed for taking the Altitude at Sea; eſpecially between the Tropicks, when the Sun comes near the Zenith.—There are a great many other uſes of the *Aſtrolabe*; whereof *Clavius*, *Henrion*, &c. have wrote entire Volumes.

The Word is form'd from the *Greek* ἄστρον, Star, and λαμβανω, *Capio*, I take —The *Arabs* call it, in their Tongue, *Aſtharlab*; a Word form'd by Corruption from the common *Greek* Name: Though ſome of 'em have endeavour'd to give it an *Arabick* Original. But the learned are generally ſatisfied that the *Arabs* borrowed both the Name and the Uſe of the Inſtrument from the *Greeks*.—*Naſſt Reddi Thouſi* has a Treatiſe in the *Perſian* Language, enti led, *Bait Babſil Aſtarlab*, wherein he teaches the Structure and Application of the *Aſtrolabe*.

ASTROLOGY, ASTTOLOGIA, the Art of foretelling future Events, from the Aſpects, Poſitions, and Influences of the Heavenly Bodies. See ASPECT, INFLUENCE, *&c.*

The Word is compounded of the *Greek* ἄστρον, Star, and λογος, Diſcourſe; whence, in the literal Senſe of the Name, *Aſtrology* ſhould ſignify no more than the *Doctrine or Science of the Stars*; which we read was its original Acceptation, and made the antient *Aſtrology*; though, in Courſe of Time, an Alteration has aroſe; that which the Antients called *Aſtrology* being by us termed *Aſtronomy*. See ASTRONOMY.

Aſtrology may be divided into two Branches, *Natural* and *Judiciary*.

To the former belong the predicting of natural Effects; as, the Changes of *Weather*, *Winds*, *Storms*, *Hurricanes*, *Thunder*, *Floods*, *Earthquakes*, &c. See NATURAL. See alſo WEATHER, WIND, RAIN, HURRICANE, THUNDER, EARTHQUAKE, *&c.*

To this our Countryman *Goad* chiefly keeps, in his two Volumes of *Aſtrology*; wherein he pretends, that Inundations may be foretold, and an Infinity of Phænomena explained from the Contemplation of the Stars.—Accordingly, he endeavours to account for the Diverſity of Seaſons, from the different Situations and Habitudes of the Planets, from their Retrograde Motions; the Number of fix'd Stars in the Conſtellations, *&c.*

This Art properly belongs to Phyſiology, or Natural Philoſophy.

Its Foundation and Merits the Reader may gather from what we have ſaid under the Articles, AIR, ATMOSPHERE, WEATHER, ÆTHER, FIRE, LIGHT, COMET, PLANET, MAGNETISM, EFFLUVIA, *&c.*

For

For this *Aſtrology*, Mr. *Boyle* has a juſt Apology in his *Hiſtory of the Air*.—Generation and Corruption being the Extremes of Motion, and Rarefaction and Condenſation the Mean ones; he ſhews, that the Effluvia of the Heavenly Bodies, as we find them immediately contribute to the latter, muſt alſo have a mediate Influence on the former; and conſequently, all phyſical Bodies be affected thereby. See GENERATION, CORRUPTION, RAREFACTION, CONDENSATION, *&c.*

'Tis evident, that the Properties of Moiſture, Heat, Cold, *&c.* employ'd by Nature to produce the two great Effects of Rarefaction and Condenſation almoſt wholly depend on the Courſe, Motion, Poſition, *&c.* of the heavenly Bodies.—And 'tis alſo clear that every Planet muſt have its own proper Light, diſtinct from that of any other; Light not being a bare viſible Quality, but endued with its ſpecifick Power. The Sun, we know, not only ſhines on all the Planets, but by his genial Warmth calls forth, excites, and raiſes the Motions, Properties, *&c.* peculiar to them; and his Rays muſt ſhare or receive ſomewhat of the Tincture thereof; and thus tinged be again reflected into the other Parts of the World, and particularly the adjacent Bodies of the planetary Syſtem. Whence, according to the Angle the Planets make with that grand Luminary, and the Degree wherein they are enlightened, either by his direct or his oblique Rays; together with their Diſtance and Situation in reſpect of our Earth; the Powers, Effects, or Tinctures, proper to each, muſt be tranſmitted hitherto, and have a greater or leſs effect on ſublunary Things.—See *Mede de Imperio Solis & Lunæ*, &c.

Judiciary, or *Judicial* ASTROLOGY, which is what we commonly call *Aſtrology*, is that which pretends to foretell moral Events; *i. e.* ſuch as have a Dependance on the Will and Agency of Man; as if that were directed by the Stars. See WILL, ACTION, *&c.*

The Profeſſors hereof maintain, "That the Heavens are one "great Volume, or Book wherein God has wrote the Hiſtory "of the World; and in which every Man may read his own "Fortune, and the Tranſactions of his Time.—The Art, ſay they, "had its Riſe from the ſame Hands as *Aſtronomy* itſelf: While "the antient *Aſſyrians*, whoſe ſerene unclouded Sky favour'd "their Cæleſtial Obſervations, were intent on tracing the Paths "and Periods of the heavenly Bodies; they diſcover'd a con"ſtant ſettled Relation or Analogy, between them and things be"low; and hence were led to conclude, theſe to be the *Paræ*, the "Deſtinies, ſo much talked of, which preſide at our Births, and "diſpoſe of our future Fate. See PARÆ, DESTINY, FATE, "*&c.*

"The Laws therefore of this Relation being aſcertained by a "Series of Obſervations, and the Share each Planet has therein; "by knowing the preciſe Time of any Perſon's Nativity, they "were enabled from their Knowledge in Aſtronomy, to erect a "Theme or Horoſcope of the Situation of the Planets, at that "Point of Time; and hence, by conſidering their Degrees of "Power and Influence, and how each was either ſtrengthened or "temper'd by other, to compute what muſt be the reſult there"of. See HOROSCOPE, NATIVITY, HOUSE, *&c.*

Thus the *Aſtrologers*.—But the chief Province now remaining to the modern Profeſſors, is the making of Calendars or Almanacks. See CALENDAR and ALMANACK.

Judicial *Aſtrology* is commonly ſaid to have been invented in *Chaldea*, and thence tranſmitted to the *Egyptians*, *Greeks*, and *Romans*.—Though it is to the *Arabs* we owe it. At *Rome* the People were ſo infatuated with it, that the *Aſtrologers*, or as they were then call'd, the *Mathematicians*, maintained their Ground in ſpight of all the Edicts of the Emperors to expel them out of the City. See MATHEMATICKS.

Add, that the *Bramæ*, who introduced and practiced this Art among the *Indians*, have hereby made themſelves the Arbiters of good and evil Hours, which gives them a vaſt Authority: They are conſulted as Oracles; and they have taken care never to ſell their Anſwers but at good Rates. See BRACHMAN.

The ſame Superſtition has prevailed in more modern Ages and Nations. The *French* Hiſtorians remark, that in the Time of Queen *Catherine de Medicis*, *Aſtrology* was in ſo much Vogue that the moſt inconſiderable thing was not to be done without conſulting the Stars. And in the Days of King *Henry* III. and IV. of *France*, the Predictions of *Aſtrologers* were the common Theme of the Court Converſation.

This predominant Humour in that Court was well rallied by *Barclay*, in his *Argenis*, Lib. II. on Occaſion of an *Aſtrologer*, who had undertook to inſtruct King *Henry* in the Event of a War then threatned by the Faction of the *Guiſes*.

"You maintain," ſays *Barclay*, "that the Circumſtances of Life "and Death depend on the Place and Influence of the Celeſtial "Bodies, at the Time when the Child firſt comes to Light; and "yet own that the Heavens revolve with ſuch vaſt Rapidity, that "the Situation of the Stars is conſiderably changed in the leaſt "Moment of Time.—What certainty then, can there be in "your Art; unleſs you ſuppoſe the Midwifes conſtantly "careful to obſerve the Clock; that the Minute of Time may "be convey'd to the Infant as we do his Patrimony? How often "does the Mother's Danger prevent this Care? And how many are "there who are not touched with this Superſtition? But ſuppoſe "them watchful to your Wiſh: If the Child be long in Deli"very; if, as is often the Caſe, a Hand or the Head come firſt, "and be not immediately followed by the reſt of the Body; "which State of the Stars is to determine for him? That, when "the Head made its Appearance; or when the whole Body was "diſengaged? I ſay nothing of the common Errors of Clocks, "and other Time-keepers, ſufficient to elude all your Cares.

"Again, why are we to regard only the Stars at his Nativity, "and not thoſe rather which ſhone when the *Fætus* was animated in the Womb? And why muſt thoſe others be excluded "which preſided while the Body remained tender, and ſuſceptible of the weakeſt Impreſſion, during Geſtations?

"But ſetting this aſide; and ſuppoſing, withal, the Face of "the Heavens accurately known: Whence ariſes this Dominion "of the Stars over our Bodies and Minds, that they muſt be "the Arbiters of our Happineſs, our manner of Life, and "Death? Were all they who went to Battle, and died together, "born under the ſame Poſition of the Heavens? And when a "Ship is to be caſt away, ſhall it admit no Paſſengers but thoſe "doomed by the Stars to ſuffer Shipwreck? Or rather, do not "Perſons born under every Planet go into the Combat, or aboard "the Veſſel; and thus notwithſtanding the Diſparity of their "Birth, periſh alike? Again, all who were born under the ſame "Configuration of the Stars do not live or die in the ſame man"ner. Are all who were born at the ſame Time with the King, "Monarchs? Or are they all even alive at this Day? View M. "*Villeroy*, here; nay view your ſelf: Were all that came into "the World with him as wiſe and virtuous as he; or all born "under your own Stars, Aſtrologers like you? If a Man meet "a Robber, you will ſay he was doomed to periſh by a Robber's "Hand; but did the ſame Stars which, when the Traveller was "born, ſubjected him to the Robber's Sword; did they likewiſe "give the Robber, who perhaps was born long before, a Power "and Inclination to kill him? For you will allow it as much "owing to the Stars that the one kills, as that the other is kill'd. "And when a Man is overwhelmed by the fall of a Houſe, did "the Walls become faulty becauſe the Stars had doom'd him "to die thereby; or rather, was not his Death owing to this, "that the Walls were faulty? The ſame may be ſaid with regard "to Honours and Employs: Becauſe the Stars that ſhone at a "Man's Nativity promiſed him Preferment, could thoſe have an "influence over other Perſons not born under them, by whoſe "Suffrages he was to riſe? Or how do the Stars at one Man's "Birth annul or ſet aſide the contrary Influences of other Stars, "which ſhone at the Birth of another?

"The Truth is, ſuppoſing the reality of all the planetary "Powers; as the Sun which viſits an Infinity of Bodies with the "ſame Rays, has not the ſame effect on all; but ſome things "are harden'd thereby, as Clay; others, ſoftened, as Wax; "ſome Seeds cheriſhed, others deſtroy'd; the tenderer Herbs "ſcorched up, others indemnified by their coarſer Juice: So, "where ſo many Children are born together, like a Field tilled "ſo many different Ways, according to the various Health, Habitude, and Temperament of the Parents, the ſame Celeſtial "Influx muſt operate differently. If the Genius be ſuitable and "towardly, it muſt predominate therein: If contrary, it will "only correct it. So that to foretell the Life and Manners of a "Child, you are not only to look into the Heavens, but into "the Parents, into the Fortune which attended the pregnant "Mother, and a thouſand other Circumſtances utterly inacceſſible.

"Further, does the Power that portends the new-born "Infant a Life, for Inſtance, of 40 Years; or perhaps a violent "Death at 30; does that Power, I ſay, endure and reſide ſtill "in the Heavens, waiting the deſtin'd time, when, deſcending "upon Earth, it may produce ſuch an effect? Or is it infuſed "into the Infant himſelf; ſo that being cheriſhed, and gradually "growing up together with him, it burſts forth at the appointed "Time, and fulfils what the Stars had given it in Charge? "Perſiſt in the Heavens it cannot; in that depending immediately on a certain Configuration of the Stars, when that is changed, the effect connected with it muſt ceaſe, and a new, perhaps a contrary one, take place. What Repoſitory then have "you for the former Power to remain in, till the Time come "for its Delivery? If you ſay it inheres or reſides in the Infant, "not to operate on him till he be grown to Manhood; the Anſwer is more prepoſterous than the former: For this, in the "Inſtance of a Shipwreck, you muſt ſuppoſe the Cauſe why the "Winds riſe, the Ship is leaky, or the Pilot, through Ignorance "of the Place, runs on a Shoal or a Rock. So the Farmer is "the Cauſe of the War, that impoveriſhes him; or of the favourable Seaſon which brings him a plenteous Harveſt.

"You boaſt much of the Event of a few Predictions, which, "conſidering the Multitude of thoſe your Art has produced, "plainly confeſs its impertinency.—A Million of Deceptions are "induſtriouſly hidden and forgot in favour of ſome eight or ten "which have ſucceeded. Out of ſo many Conjectures it muſt "be preternatural if ſome did not hit; and 'tis certain, that "conſidering you only as Gueſſers, there is no room to boaſt "you have been ſucceſsful therein. Do you know what Fate awaits "*Sicily* in this War; and yet are not apprehenſive what ſhall "befall your ſelf? Did not you foreſee the Oppoſition I was

"this

" this Day to make you? If you can ſay whether the King ſhall " vanquiſh his Enemies; find out, firſt, whether he will believe " you.

ASTRONOMY, Astronomia, the Doctrine of the Heavens, and the Phænomena thereof. See Heaven.

Aſtronomy is properly a mix'd mathematical Science, whereby we become acquainted with the Cæleſtial Bodies, their Magnitudes, Motions, Diſtances, Periods, Eclipſes, *&c.* See Mathematicks.

Some underſtand the Word *Aſtronomy* in a more extenſive Senſe; including under it the Theory of the Univerſe, and the primary Laws of Nature: In which Senſe it rather ſeems a Branch of *Phyſicks* than of *Mathematicks*. See Physicks, System, Nature, *&c.*

The Word is compounded of the *Greek* αστρ, Star; and νομος, Law, Rule.—Care muſt be taken to diſtinguiſh *Aſtronomy* from *Aſtrology*. See Astrology.

The Heavens may be conſider'd two Ways; either as they appear to the naked Senſe, or as they are diſcovered by the Underſtanding: And hence *Aſtronomy* is divided into two Branches, *Spherical* and *Theorical*.

Spherical Astronomy, *Theorical* Astronomy, } See { Spherical *Aſtronomy*. Theorical *Aſtronomy*.

The Invention of *Aſtronomy* has been variouſly aſſigned; and ſeveral Perſons, ſeveral Nations, and ſeveral Ages have laid claim to it.—From the Accounts given us by the antient Hiſtorians, it appears that Kings were the firſt Inventors and Cultivators of it: Thus, *Belus*, King of *Aſſyria*, *Atlas*, King of *Mauritania*, and *Uranus*, King of the Country ſituate on the Shore of the *Atlantick* Ocean, are ſeverally recorded, as the Perſons to whom the World owes this noble Science.

This, at leaſt, is pretty evident, that it was known to thoſe Nations long before it came into *Greece*: Agreeably to which, *Plato* tells us, it was a *Barbarian* who firſt obſerved the heavenly Motions; to which he was led by the clearneſs of the Weather in the Summer Seaſon, as in *Egypt* and *Syria*, where the Stars are conſtantly ſeen, there being no Rain or Clouds to interrupt the Proſpect. And the want of this clearneſs of Atmoſphere the ſame Author lays down as the Reaſon why the *Greeks* came ſo late to the Knowledge of *Aſtronomy*.

The generality of Writers fix the Origin of *Aſtronomy* and *Aſtrology* in *Chaldea*; and accordingly among the Antients we find the Word *Chaldean* frequently uſed for *Aſtronomer*.—Some chuſe to attribute the Invention to the antient *Hebrews*; and ſome, even, to the firſt Men; building on the Authority of *Joſephus*, and of what he mentions about *Seth*'s Pillars.—The *Muſſulmans* aſcribe it to *Enoch*, and other Orientals to *Cain*.—But theſe Opinions appear ſcarcely probable to others, in regard they find no Terms of *Aſtronomy* in the Language of thoſe firſt People, that is, in the *Hebrew* Language; which, on the contrary, are very frequent in the *Chaldee*: Though it muſt be own'd we have ſomething of this kind in *Job*, and the Books of *Solomon*.

We don't know whether it is worth noting, that *Rudbeck*, in his *Atlantis*, maintains *Aſtronomy* to have been invented by the *Swedes*: His Reaſons are, the great Diverſity in the length of the Days in that Country, which muſt naturally lead the People to conclude the Earth round, and that they lived near one of its Extremes: A Concluſion which the *Chaldeans*, and other Inhabitants of the middle Parts of the Globe, had no eaſy Way of coming at. The *Swedes*, adds our Author, prompted hereby to enquire further into the great Oppoſition of Seaſons, ſoon diſcover'd that the Sun bounds his Progreſs by a certain Space in the Heavens, *&c.*—But we have no Hiſtorical Facts to ſupport this reaſoning, which at beſt only proves that the thing might be ſo.

By *Porphyry*'s Account, *Aſtronomy* muſt have been of a very antient ſtanding in the Eaſt; for he tells us, that when *Babylon* was taken by *Alexander*, there were brought thence cæleſtial Obſervations, for the Space of 1903 Years, which therefore muſt have commenced within 115 Years of the Flood, or fifteen Years of the building of *Babel*:—*Epigenes*, according to *Pliny*, affirmed that the *Babylonians* had Obſervations of 720 Years, engraven on Bricks.—*Achilles Tatius* aſcribes the Invention of *Aſtronomy* to the *Egyptians*; and adds, that their Knowledge therein was engraven on Columns, and by that means tranſmitted to Poſterity.

From the *Egyptians*, *Aſtronomy* is commonly ſuppoſed to have paſs'd to the *Greeks*: *Laertius* tells us, that *Thales*, firſt, about the 90th Olympiad, and after him *Eudoxus* and *Pythagoras*, travell'd into *Egypt*, to be inſtructed herein; and that this laſt, in particular, living in a cloſe Community with the *Egyptian* Prieſts for ſeven Years, and being initiated into their Religion, was here let into the true Syſtem of the Univerſe; which he afterwards taught in *Greece* and *Italy*.—He was the firſt, among the *Europeans*, who taught that the Earth and Planets turn round the Sun, which ſtands immoveable in the Center; that the diurnal Motion of the Sun and fix'd Stars, was not real but apparent, ariſing from the Earth's Motion round its own Axis, *&c.* See Pythagorean.

Yet *Vitruvius* repreſents the Introduction of *Aſtronomy* into *Greece*, ſomewhat differently; maintaining, that *Beroſus*, a *Babylonian*, brought it thither immediately from *Babylon* itſelf; and open'd an *Aſtronomical* School in the Iſland of *Cos*. *Pliny*, Lib. VII. c. 37. adds, that in conſideration of his wonderful Predictions, the *Athenians* erected him a Statue in the *Gymnaſium*, with a gilded Tongue.—If this *Beroſus* be the ſame with the Author of the *Chaldee* Hiſtories, he muſt have been before *Alexander*.

After *Pythagoras*, *Aſtronomy* ſunk into neglect; moſt of the cæleſtial Obſervations brought from *Babylon*, were loſt, and 'twas but a very ſmall Number that *Ptolomy*, in his Time, was able to retrieve.—However, ſome few of his Followers continued to cultivate *Aſtronomy*; among whom were *Philolaus* and *Ariſtarchus Samius*.

At length, thoſe Patrons of Learning, the *Ptolomys*, Kings of *Egypt*, founding an Academy for *Aſtronomy*, at *Alexandria*, there aroſe ſeveral eminent *Aſtronomers* from the ſame; particularly *Hipparchus*, who, according to *Pliny*, undertook what wou'd have been a great Work even for a God to atchieve, *viz.* to number the Stars, and leave the Heavens as an Inheritance to Poſterity: He foretold the Eclipſes both of the Sun and Moon for 600 Years, and on his Obſervations is founded that noble Work of *Ptolomy*, intitled μεγαλη συνταξις. See Catalogue, *&c.*

The *Sarazens*, on their Conqueſt of *Egypt*, got a Tincture of *Aſtronomy*, which they carried with them out of *Africa* into *Spain*; and by this means *Aſtronomy*, after a long Exile, was at length introduced afreſh into *Europe*.

From this Time, *Aſtronomy* began to improve very conſiderably; being cultivated by the greateſt Genius's, and patronized by the greateſt Princes.—*Alphonſus*, King of *Caſtile*, enrich'd it with thoſe Tables which ſtill bear his Name. See Table.

Copernicus re-eſtabliſh'd the antient *Pythagorean* Syſtem; And *Tycho Brahe* publiſh'd a Catalogue of 770 fixed Stars, from his own Obſervations. See Copernican, Star. *&c.*

Kepler, from *Tycho*'s Labours, ſoon after diſcovered the true Theory of the World; and the phyſical Laws by which the heavenly Bodies move. See Planet, Period, Gravitation, *&c.*

Galileo firſt introduced Teleſcopes into *Aſtronomy*, and by their means diſcovered the Satellites of *Jupiter*; the various Phaſes of *Saturn*, the Mountains of the Moon, the Spots in the Sun, and its Revolution about its Axis. See Telescope, Satellite, Moon, Maculæ, *&c.*

Add, that *Hevelius*, from his own curious Obſervations, furniſhed a Catalogue of the fix'd Stars, much more complete than *Tycho*'s.—*Huygens* and *Caſſini* diſcovered the Satellites of *Saturn*, and his Ring.—And *Gaſſendus*, *Horrox*, *Bullialdus*, *Ward*, *Ricciolus*, *Gaſcoign*, &c. each contributed very conſiderably to the Improvement of *Aſtronomy*. See Saturn, Ring, Elliptic, Micrometer, *&c.*

The immortal *Newton* firſt demonſtrated from phyſical Conſiderations, the great Law that regulates all the heavenly Motions, ſets bounds to the Planets Orbs, and determines their greateſt Excurſions from the Sun, and their neareſt approaches to it.—'Twas he firſt taught the World whence aroſe that conſtant and regular Proportion obſerved by both primary and ſecondary Planets, in their Circulation round their central Bodies; and their Diſtances compared with their Periods.—He has given us a new Theory of the Moon, which accurately anſwers all her Inequalities, and accounts for 'em from the Laws of Gravity and Mechaniſm. See Newtonian. See alſo Attraction, Moon, Tide, *&c.*

Dr. *Halley* obliged the World with the *Aſtronomy* of Comets, and with a Catalogue of the Stars in the ſouthern Hemiſphere; and continues ſtill a Benefactor to *Aſtronomy*, by his Obſervations: To which it may be added, that he has in the Preſs, a new ſet of aſtronomical Tables; preferable by many Degrees to any yet publiſhed. See Comet, Table, *&c.*

Mr. *Flamſtead* upwards of forty Years watch'd the Motions of the Stars, and has given us a great number of curious Obſervations of the Sun, Moon, and Planets; beſides a noble Catalogue of 3000 fix'd Stars; which is more than double the Number in that of *Hevelius*.—Nothing now ſeem'd wanting to *Aſtronomy*, but an univerſal and compleat Theory of the cæleſtial *Phænomena*, explained according to their true Motions and phyſical Cauſes, which has been performed by Dr. *Gregory*. See Centripetal, Centrifugal, *&c.*

Astronomy is ſometimes divided, with reſpect to its different States, into *New* and *Old*.—The antient *Aſtronomy* is ſuch as the Art ſtood under *Ptolomy*, and his Followers; with all the Apparatus of ſolid Orbs, Epicycles, Excentricks, Deferents, Trepidations, *&c.* See Ptolomaic. See alſo Heaven, Epicycle, *&c.*

The antient *Aſtronomy* is deliver'd by *Claud. Ptolomy*, who died A. D. 147; in his μεγαλη Συνταξις; tranſlated in 827, into *Arabick*; and thence, in 1528, into *Latin*. An Epitome of it, for the uſe of Learners, was made by *Purbachius* and his Scholar *Regiomontanus*, in 1550; containing the whole Doctrine of the heavenly Motions, their Magnitudes, Eclipſes, *&c.*—On the Model hereof, *Albategennis* the *Arab*, compiled another Work, on the *Knowledge of the Stars*, publiſhed in *Latin* 1537.

The *New Aſtronomy* is ſuch as the Art has been ſince *Copernicus*; by whom thoſe fictitious Machines were thrown out; and the Conſtitution of the Heavens reduced to more ſimple, natural, and certain Principles. See Copernican. See alſo System, Sun, Earth,

TAB. ASTRONOMY.

Fig. 1. Eccentric

Fig. 2. Diurnal Motion. Aspect

Fig. 3. Trine. Tetragen.

Fig. 4. Declination.

Fig. 5. Declination.

Fig. 6. Meridian.

Fig. 7. Star.

Fig. 8. Meridian line.

Fig. 9. Meridian Line.

Fig. 10. Circular Velocity.

Fig. 11. Micrometer.

Fig. 12. Micrometer.

Fig. 13. Moon.

Fig. 14. Moon.

Fig. 15. Moon.

Fig. 16. Moon.

Comet.

Fig. 17. Moon.

Fig. 81 Moon

Fig. 19. Moon.

Fig. 20. Moon.

Fig. 21. Ptolomaick Sphere.

Fig. 14. Earth.

Fig. 15. Earth.

Fig. 16. Earth

Fig. 22. Copernican Sphere.

Fig. 24. Paracentric.

Fig. 27. Parallax.

Fig. 28. Parallax. Refraction.

Fig. 23. Comet.

Fig. 25. Comutation Reduction. Fig. 26.

Fig. 29. Parallax.

Fig. 30. Parallax.

Fig. 31. Parallax

Fig. 32. Particula- -Elongation

Fig. 33. Node

Fig. 34. Eclipse.

Fig. 35. Eclipse. 37.

Fig. 38. Eclipse.

Fig. 39. Sun.

Fig. 40. Geocentric.

Fig. 41. Crepusculum

Fig. 42. Crepusculum

Fig. 48 Culmination.

Fig. 43. Ptolomaic System.

Fig. 45. Tychonic System.

Fig. 44. Copernican System.

Fig. 46. Emersion.

Fig. 47. Penumbra.

Fig. 50. Equation of Time.

Astronomical Quadrant.

Fig. 53.

Fig. 55. Gunters Quadrant.

Fig. 62. Heliocentric-Latitude.

Fig. 60. Globe.

Fig. 52. Equator. Sphere. Hemisphere. Horizon. Tropick.

Globe.

Fig. 61.

Fig. 58.

Globe.

Fig 62 Suns Altitude.

Fig. 64. Ascensional- Anomaly. Difference.

Fig. 63.

Fig. 57. Gnomen.

Fig. 58. Retrogradation

Fig. 59. Retrogradation.

Fig. 60. Planet.

Fig. 61. Planet.

Fig. 56. Suttons Quadrant

Fig. 53. Horodictical Quadrant

Fig. 59. Globe.

EARTH, PLANET, ORBIT, *&c.* See alſo SPHERE, GLOBE, *&c.*

The modern *Aſtronomy* is deliver'd in *Copernicus*'s ſix Books of *Cæleſtial Revolutions*, publiſhed about the Year 1566; wherein, by retrieving *Pythagoras*'s and *Philolaus*'s *Dogma* of the Motion of the Earth, he laid the Foundation of a juſter Syſtem.—*Kepler*'s *Commentaries of the Motions of Mars*, publiſhed in 1609; wherein, in lieu of the circular Orbits admitted by all former *Aſtronomers*, he propoſed the elliptic Theory; which, in his Epitome of the *Copernican Aſtronomy*, publiſhed in 1635, he applied to all the Planets.—*Iſh. Bullialdus*'s *Aſtronomia Philolaica*, publiſhed in 1645, wherein he endeavoured to amend *Kepler*'s Theory, and render the Calculus more Exact and Geometrical: Some Errors committed by *Bullialdus* were pointed out by Dr. *Seth. Ward*, in his *Inquiry into the Philolaic Aſtronomy*, publiſhed in 1653; and corrected by himſelf in his *Foundations of the Philoaic Aſtronomy more clearly explain'd*, in 1657.—*Ward*'s *Aſtronomia Geometrica*, publiſhed in 1656; wherein a Geometrical Method is propoſed of computing the Planets Motions; though not conſiſtent with the true Laws of their Motions eſtabliſhed by *Kepler*. The ſame was propoſed the Year following by the Count *de Pagan*. The Truth is, *Kepler* himſelf does not ſeem to have been ignorant thereof; but rather choſe to ſet it aſide, as finding it contrary to Nature.—*Vin. Wing*'s *Aſtronomia Britannica*, publiſh'd in 1669; wherein, going on *Bullialdus*'s Principles, he gives juſt Examples of all the Precepts in practical *Aſtronomy*, well accommodated to the Capacity of Learners.—*Newton*'s *Aſtronomia Britannica*, publiſhed in 1657; and *Street*'s *Aſtronomia Carolina*, in 1661; both upon *Ward*'s Hypotheſis.

In *Ricciolus*'s *Almageſtum Magnum*, publiſhed in 1651, we have the ſeveral Hypotheſes of all the *Aſtronomers*, antient as well as modern.—And in Dr. *Gregory*'s *Elementa Aſtronomiæ Phyſicæ & Geometricæ*, in 1702, the whole modern Aſtronomy, as founded on the Diſcoveries of *Copernicus*, *Kepler*, and Sir *Iſaac Newton*.—The Marrow of the new *Aſtronomy* is alſo laid down by *Whiſton*, in his *Prælection. Aſtronomicæ*, in 1707.—For Novices in the Art, *Mercator*'s *Inſtitutiones Aſtronomicæ*, publiſhed in 1676; which contains the whole Doctrine, both according to the Antients and Moderns; and Dr. *Keill*'s *Introductio ad Veram Aſtronomiam*, in 1718, which only takes in the Modern, are the beſt calculated.

ASTRONOMICAL, ſomething that relates to *Aſtronomy*. See ASTRONOMY.

ASTRONOMICAL *Obſervations*. See CÆLESTIAL *Obſervations*.

The *Aſtronomical* Obſervations of the Antients, among which thoſe of *Hipparchus* make a principal Figure, are preſerved by *Ptolomy* in his *Almageſt*. See ALMAGEST.

In the Year 880, *Albategnius*, a *Sarazen*, applied himſelf to the making of Obſervations: In 1457, *Regiomontanus* undertook the Province at *Norimberg*; and his Diſciples *J. Wernerus*, and *Ber. Waltherus*, continued the ſame from 1475 to 1504. Their Obſervations were publiſhed together in 1544.—In 1509, *Copernicus*, and after him the Landgrave of *Heſſe*, with his Aſſiſtants *Rothmannus* and *Byrgius*, obſerved; and after them *Tycho*, at *Uranibourg*, from 1582 to 1601.—All the Obſervations hitherto rehearſed, together with *Tycho*'s *Apparatus* of Inſtruments, are contain'd in the *Hiſtoria Cæleſtis*, publiſhed in 1672, by Order of the Emperor *Ferdinand*.—Soon after, *Hevelius*, with a ſtill more magnificent and better contrived *Apparatus* of Inſtruments, deſcribed in his *Machina Cæleſtis*, began a Courſe of Obſervations. It is objected to him that he only uſed plain Sights, and could never be brought to take the Advantage of Teleſcopic ones; which occaſioned Dr. *Hook* to write Animadverſions on *Hevelius*'s Inſtruments, printed in 1674; wherein he deſpiſes them on account of their Inaccuracy: But Dr. *Halley*, who at the Inſtance of the Royal Society went over to *Dantzick* in the Year 1679, to inſpect his Inſtruments; approved of their Juſtneſs, as well as of the Obſervations made with them.

Jer. Horrox, and *Will. Crabtree*, two of our own Countrymen, are famous for their Obſervations from the Years 1635 to 1645.—They were followed by *Flamſteed*, *Caſſini* the Father and Son, *Halley*, *de la Hire*, *Roemer*, and *Kirchius*.—See *further under the Articles* OBSERVATORY, CATALOGUE, *&c.*

ASTRONOMICAL *Tables*,	See	*Aſtronomical* TABLE.
ASTRONOMICAL *Quadrant*,		*Aſtronomical* QUADRANT.
ASTRONOMICAL *Teleſcope*,		*Aſtronomical* TELESCOPE.
ASTRONOMICAL *Calendar*,		*Aſtronomical* CALENDAR.
ASTRONOMICAL *Hours*,		*Aſtronomical* HOURS
ASTRONOMICAL *Month*,		*Aſtronomical* MONTH.
ASTRONOMICAL *Year*,		*Aſtronomical* YEAR.
ASTRONOMICAL *Characters*, &c.		*Aſtron.* CHARACTERS, *&c.*

ASTRONOMICAL *Place*, of a Star or Planet, is its Longitude, or Place in the Ecliptick reckoned from the beginning *Aries*, *in Conſequentia*, or according to the natural Order of the Signs. See PLACE, LONGITUDE, *&c.*

ASTRONOMICAL *Time*. See *Aſtronomical* TIME.

ASTRONOMICALS, a Name uſed by ſome Writers for Sexageſimal Fractions; on account of their uſe in *Aſtronomical* Calculations. See SEXAGESIMAL.

ASYLUM, or AZYLUM, a Sanctuary, or Place of Refuge and Protection, where a Criminal who ſhelters himſelf is deem'd inviolable, and not to be touch'd by any Officer of Juſtice. See REFUGE, PRIVILEGE, *&c.*

The Word *Aſylum* is *Latin*: *Servius* derives it from the *Greek* ἄσυλον; which is compounded of the privative Particle α, and συλάω, *I take out, I draw*, becauſe no Perſon cou'd be taken out of an *Aſylum* without Sacrilege. See SACRILEGE.

The firſt *Aſylums* were eſtabliſh'd at *Athens*, by the Deſcendents of *Hercules*, to ſhelter themſelves from the fury of his Enemies. See HERACLIDES.

The Atars, Statues, and Tombs of Hero's, were, antiently, the ordinary Retreat of thoſe who found themſelves aggriev'd by the Rigour of the Laws, or oppreſs'd by the Violence of Tyrants: But of all others, Temples were held the moſt ſacred and inviolable Refuge. It was ſuppoſed that the Gods took upon them to puniſh the Criminal who thus threw himſelf upon them; and it had been a great Impiety in Man to take Vengeance out of the Hands of the Immortals. See ALTAR, TEMPLE, TOMB, STATUE, *&c.*

The *Iſraelites* had their Cities of Refuge, which were of God's own Appointment; where the Guilty, who had not committed any deliberate Crime, found Safety and Protection.—As to the Heathens, they allowed Refuge and Impunity, even to the vileſt and moſt flagrant Offenders, for the ſake of peopling their Cities; and it was by this means, and with ſuch Inhabitants, that *Thebes*, *Athens*, and *Rome*, were firſt ſtock'd.—We even read of *Aſylums* at *Lyons* and *Vienne* among the antient *Gauls*; and there are ſome Cities in *Germany* which ſtill preſerve the antient right of *Aſylum*.

Hence, on the Medals of ſeveral antient Cities, particularly in *Syria*, we meet the Inſcription, ΟΑΣΥΛΟΙ, to which is added, ΙΕΡΑΙ. For Inſtance, ΤΥΡΟΥ ΙΕΡΑΣ ΚΑΙ ΑΣΥΛΟΣ ΣΙΔΩΝΟΣ ΙΕΡΑΣ ΚΑΙ ΑΣΥΛΟΥ.— This Quality of *Aſylum* was given them, according to M. *Spanheim*, in regard of their Temples, and of the Gods revered by them.

The ſame Qualities has alſo been given to Deities: Thus *Diana* of *Epheſus* is call'd ασυλος.—Add, that the Camp form'd by *Romulus* and *Remus*, and which afterwards became a City, was firſt call'd *Aſylum*; and a Temple was therein erected to the God *Aſylæus*, Θεὸς ἀσυλαιος.

The Emperors *Honorius* and *Theodoſius* granting theſe Immunities to Church-yards, the Biſhops and Monks laid hold of a certain Tract or Territory, without which they fix'd the Bounds of the Secular Juriſdiction: And ſo well did they manage their Privileges, that Convents, in a little time, became next a-kin to Fortreſſes; where the moſt glaring Villains were in Safety, and braved the Power of the Magiſtrate. See CHURCH-*Yard*.

Theſe Privileges, at length, were extended not only to the Church-yards, but alſo to the Biſhop's Houſes, whence the Criminal cou'd not be removed without a legal Aſſurance of Life, and an entire Remiſſion of the Crime.—The Reaſon of the Extenſion was, that they might not be obliged to live altogether in the Churches, *&c.* where ſeveral of the Occaſions of Life cou'd not be decently done.

But, at length, the *Aſyla*, or Sanctuaries, were ſtripp'd of moſt of their Immunities, in regard they ſerved to make Guilt and Libertinage more daring and bold-faced. In *England*, particularly, they were entirely aboliſhed. See *the Article* SANCTUARY.

ASYMMETRY, ASYMMETRIA, a want of Symmetry or Proportion. See SYMMETRY.

In Mathematicks, the Term is particularly uſed for what we more uſually call *Incommenſurability*; which is when between two Quantities there is no common Meaſure: As, between the Side, and Diagonal of a Square.—In Numbers, ſurd Roots, as $\sqrt{2}$, *&c.* are incommenſurable to rational Numbers. See INCOMMENSURABLE, SQUARE, SURD, *&c.*

The Word is derived from the privative Particle α, συν, and μέτρια, q. d. *without Meaſure*.

ASYMPTOTE, in Geometry, a Line which continually approaches nearer and nearer to another, yet will never meet therewith, though indefinitely prolonged. See LINE.

The Word is compounded of the privative Particle α, συν, with, and πίπω, I fall; q. d. *In-coincident*, or which never meet.—Some *Latin* Authors call them *Intactæ*.

Bertinus gives us divers ſorts of *Aſymptotes*; ſome Strait, others Curve; ſome Concave, others Convex, *&c.* and further, propoſes an Inſtrument to deſcribe them withal.—Though, in ſtrictneſs, the Term *Aſymptotes* ſeems appropriated to right Lines.

Aſymptotes, then, are properly right Lines, which approach nearer and nearer to ſome Curve, of which they are ſaid to be the *Aſymptotes*; but which, though they and their Curve, were indefinitely continued, would never meet. See CURVE.

Aſymptotes may be conceived as Tangents to their Curves at an infinite Diſtance. See TANGENT.

Two Curves are alſo ſaid to be *Aſymptotical*, when they thus continually approach, without a poſſibility of meeting.—Thus two Parabola's, whoſe Axes are in the ſame right Line, are *Aſymptotical* to one another.

Of Curves of the ſecond Kind, that is, the Conick Sections, only the Hyperbola has *Aſymptotes*, which are two in Number.

All Curves of the third Kind have at leaſt one *Aſymptote*, but they may have three; and all Curves of the fourth Kind may have four *Aſymptotes*. See CURVE *of higher Kind*.

The Conchoid, Ciſſoid, and Logarithmick Curve, though not reputed Geometrical Curves, have each alſo one *Aſymptote*. See MECHANICAL, TRANSCENDENTAL, *&c.*

ASYMPTOTE *of the Conchoid*.—The Nature of *Aſymptotes* will be eaſily conceived in the Inſtance of the *Aſymptote* of a Conchoid.—Suppoſe MMAM, *&c.* (*Tab. Analyſis, Fig.* 1.) be a Part of a Conchoid, C its Pole, and the right Line Bd, ſo drawn that the Parts QM, EA, OM, *&c.* of right Lines drawn from the Pole C, are equal to each other: Then will the Line BD be an *Aſymptote* of the Curve: Becauſe the Perpendicular MI, *&c.* is ſhorter than MO, and MR than MQ, *&c.* ſo that the two Lines continually approach; yet the Points M, *&c.* and R, can never coincide, in regard there is ſtill a Portion of a Line to keep them aſunder; which Portion of a Line is infinitely diviſible, and conſequently muſt be diminiſh'd infinitely e're it become nothing. See DIVISIBILITY, INFINITE, *&c.* See alſo CONCHOID.

ASYMPTOTES *of the Hyperbola* are thus deſcribed.—Suppoſe a right Line DE (*Tab. Conicks, Fig.* 20.) drawn through the Vertex A of the Hyperbola, parallel to the Ordinates M*m*, and equal to the Conjugate Axes, *viz.* the Part DA, and that AE to the Semi-axis: Then, two right Lines drawn from the Centre C, of the Hyperbola, through the Points D and E; *viz.* the right Lines CF and CG, are *Aſymptotes* of the Curve.

For the Properties of the ASYMPTOTES *of a Hyperbola*, ſee HYPERBOLA.

If the Hyperbola GMR, *Fig.* 12. be of any kind whoſe Nature with regard to the Curve and its *Aſymptote*, is expreſs'd, by this general Equation $x^m y^n = a^{m+n}$; and the right Line PM be drawn any where Parallel to the *Aſymptote* CS, and the Parallelogram PCOM, be compleated: This Parallelogram is to the hyperbolick Space PMGB, contained under the determinate Line PM, the Curve of the Hyperbola GM indefinitely continued towards G, and the Part PB of the *Aſymptote* indefinitely continued the ſame way, as $m-n$ is to n: And ſo if m be greater than n, the ſaid Space is ſquareable; but when $m=n$, as it will be in the common Hyperbola, the Ratio of the foregoing Parallelogram to that Space is as 0 to 1; that is, the Space is infinitely greater than the Parallelogram, and ſo cannot be had: And when m is leſs than n, the Parallelogram will be to the Space, as a negative Number to a poſitive one, and the ſaid Space is ſquareable, and the Solid generated by the revolving of the indeterminate Space GMOL about the *Aſymptote* CE, is double of the Cylinder generated by the Motion of the Parallelogram PCOM about the Axis CO.

ASYMPTOTE *of a Logarithmic Curve*.—If MS be the Logarithmic Curve, PR an *Aſymptote*, PT the Subtangent, and MP an Ordinate; then will the indeterminate Space RPMS$=$PM$+$PT; and the Solid, generated by the Rotation of this Curve about the *Aſymptote* VP, will be $\frac{1}{2}$ of a Cylinder, whoſe Altitude is equal to the Length of the Subtangent, and the Semidiameter of the Baſe equal to the Ordinate QV. See LOGARITHMIC.

ASYMPTOTIC *Spaces*. See HYPERBOLA.

ASYNDETON, a Figure in Grammar, implying a defect or want of Conjunctions in a Sentence. See FIGURE and CONJUNCTION.

As, in the Inſtance, *Veni, Vidi, Vici*, I came, I ſaw, I conquer'd; where the Copulative *et*, and, is omitted.

The Word is derived from the privative α, and συνδέω, *colligo*, bind together.

Aſyndeton ſtands oppoſed to *Polyſyndeton*. See POLYSYNDETON.

ATAMADULET, the firſt Miniſter in the *Perſian* Empire. See MINISTER.

The *Atamadulet*, or, as *Tavernier* writes it, *Athematdoulet*; and *Sanſon*, *Etmadaulet*, is much the ſame with the Grand Viſier in *Turky*; excepting that he has not the Command of the Army, which the Viſier has. See VISIER.

The *Atamadaulet* is Great Chancellor of the Kingdom, Preſident of the Council, Superintendant of the Finances; and has the Charge of all Foreign Affairs.—The *Atmadaulet* is in effect Vice-Roy of the Kingdom: He iſſues the King's Mandates, or Orders, in this Style, *Bende derga Ali il alia Etmadolvet*; that is, I who am the ſupport of the Power, the Creature of this Port, the higheſt of all Ports, *&c.*

The Word is *Arabick*, compounded of *Itimâde* and *daulet*, that is, the Truſt of Majeſty, or according to *Tavernier*, the Support of Riches.

ATARAXY, ATARAXIA, a Term much uſed by the Stoicks, to denote that calmneſs and tranquillity of Mind, and that firmneſs of Judgment which ſets us free from any Agitations or Emotions ariſing from Self-Opinion, and the Knowledge we imagine our ſelves poſſeſs'd of. See STOICKS.

In this *Ataraxy*, they ſuppoſed the ſovereign Good to conſiſt. See GOOD.

The Word is purely *Greek*, compounded of ατυξ and τάξις, Order. See ATAXY.

ATAXY, ATAXIA, a want of Order or Regularity.—The Term is chiefly uſed in Medicine, where the Order of the Critical Days, or other Phænomena of a Diſeaſe, is inverted. See CRITICAL, *&c.*

The Phyſicians have frequent recourſe to an *Ataxy* or Irregularity of the Spirits, when at a loſs to account for any Diſorder in the Body. The Spirits, Dr. *Drake* obſerves, being always at Hand, are forced to bear the blame of a thouſand things they are innocent of. See SPIRIT.

The Word is compounded of the privative α, and τάξις, Order.

ATCHIEVEMENT, in Heraldry, the Coat of Arms of any Perſon or Family, duly marſhall'd with its external Ornaments, as *Supporters*, *Helmet*, *Wreath*, *Creſt*, and *Motto*. See COAT and ARMS. See alſo SUPPORTER, HELMET, *&c.*

Such are uſually hung out on the Fronts of Houſes after the Death of ſome conſiderable Perſon; and are now corruptly called *Hatchments*.

The Word is form'd of the *French*, *Achevement*, finiſhing, Conſummation, Perfection.

ATELLANÆ, or ATTELLANÆ, in Antiquity, a kind of comic and ſatyric Pieces, preſented on the *Roman* Theater; ſomewhat leſs ludicrous than the Farces on the *Engliſh* Stage, and yet leſs grave and ſerious than the *Greek* or *Latin* Comedies and Tragedies. See COMEDY, TRAGEDY, SCENE, *&c.*

The *Atellanæ*, or *Fabulæ Attellanæ* of the *Romans*, anſwer'd to the *Satyræ* among the *Greeks*. See SATYR, FABLE, *&c.*

They were thus called from *Atella*, or *Attella*, a City of *Tuſcany*, where they were firſt repreſented.

They became ſo licentious and impudent, that the Senate was at length obliged to ſuppreſs them. See SCENIC.

ATHANASIAN *Creed*. See CREED, TRINITY, *&c.*

ATHANASIANS. See ARIANS and ARIANISM.

ATHANATI, an Order of Soldiers among the antient *Perſians*.—The Word is originally *Greek*, and ſignifies *immortal*; being compounded of the privative α, and θανατος, Death.

The *Athanati* were a Body of Cavalry, conſiſting of ten thouſand Men, always compleat, becauſe, when any one of 'em died, another was immediately put into his Place.—It was for this Reaſon that they were call'd *Athanati*, or *immortales*.

ATHANOR, in Chymiſtry, a large immoveable Furnace, built of Brick or Earth, and cover'd with a Tower a-top; proper to maintain a temperate and equable Degree of Heat for a conſiderable time. See FURNACE, HEAT, *&c.*

The Heat of the *Athanor* is intended or remitted by opening or ſhutting a Regiſter. See REGISTER.

It is made to communicate its Heat by Tubes or Apertures at the Side of the Hearth or Fire-Place, to ſeveral adjacent Veſſels; by which means different Operations are carry'd on at the ſame time.—We meet with divers Forms and Conſtructions of this Furnace, in the Writers of Chymiſtry.

The *Athanor* is alſo call'd *Piger Henricus*, ſlow Harry; becauſe chiefly uſed in the ſlower Operation; and becauſe when once filled with Coals, it keeps burning a long time; whence the *Greeks* call it ακηδεῖν, q. d. *giving no trouble*, as it does need to be continually attended.—It is alſo call'd the *Philoſophical Furnace*, or *Furnace of Arcana*; and popularly, the *Tower Furnace*.

The Word *Athanor* is borrowed from the *Arabs*, who call an Oven, *Tanneron* from the *Hebrew* תנור, *Tannour*, an Oven, or Furnace; whence, with the additional Particle *al*, אלתנור, *Altannour*, &c.—Others chuſe to derive the Name from the *Greek* αθανατος, Immortal; becauſe of its durable Fire.

ATHEIST, ATHEUS, a Perſon who denies the Deity; who does not believe the Exiſtence of a God, nor a Providence; and who has no Religion, true nor falſe. See GOD, PROVIDENCE, RELIGION.

In general, a Man is ſaid to be an *Atheiſt* who owns no Being ſuperior to Nature, that is, to Men and the other ſenſible Beings in the World. See NATURE.

In this Senſe, *Spinoſa* may be ſaid to be an *Atheiſt*; and it is an Impropriety to rank him, as the learned commonly do, among *Deiſts*; ſince he allows of no other God beſide Nature, of which Mankind makes a Part; and there is no *Atheiſt* but allows of the Exiſtence of the World, and of his own in particular. See SPINOSISM. See alſo EXISTENCE, SUBSTANCE, *&c.*

Plato diſtinguiſhes three kinds of *Atheiſts*.—Some, who deny abſolutely that there are any Gods; others who allow the Exiſtence of Gods, but maintain that they don't concern themſelves with human Affairs, and ſo deny a Providence; and others, who believe there are Gods, but think they are eaſily appeas'd with a little Prayer, or the like; and that they remit the greateſt Crimes for the ſmalleſt Supplication. See EPICUREAN, *&c.*

The Word *Atheiſt* is derived from the privative α, and Θεὸς, God.

ATHENÆA, a Feaſt of the antient *Greeks*, held in Honour of *Minerva*, who was call'd Ἀθήνη. See FEAST.

Theſe were afterwards call'd *Panathenæa*. See PANATHENÆA.

ATHENÆUM, in Antiquity, a publick Place wherein the Profeſſors of the liberal Arts held their Aſſemblies, the Rhetoricians declaimed, and the Poets rehearſed their Verſes.

The

The *Athenæa* were built in form of Amphitheatres; and were alſo incompaſs'd with Seats, which *Sidonius* calls *Cunei*. See AMPHITHEATRE.

The two moſt celebrated *Athenæa* were that of *Rome*, and that at *Lions*; the former of which, according to *Aurelius Victor*, was built by the Emperor *Adrian*.

The Word is *Greek*, and is derived from *Athens*, a learned City, where many of theſe Aſſemblies were held; or from the *Greek* Name of *Pallas*, Ἀθήνη, Goddeſs of Science; intimating that *Athenæum* was a Place conſecrated to *Pallas*, or ſet a-part for the Exerciſes over which ſhe preſides.

ATHEROMA, in Medicine, a Kind of a Tumour or Swelling, of a pappy Conſiſtence, without pain, or diſcolouring the Skin. See TUMOR.

The *Atheroma* is contain'd in a Cyſtis or membranous Bag; and does not give way when touched with the Finger, nor retains any dent after preſſure.

The *Atheroma* is thus call'd from the *Greek* ἀθηρα, a Kind of Pap or Pulp which the Matter of this Tumour reſembles.—It is near a-kin to the *Meliceris* and *Steatoma*; and cured like them. See MELICERIS and STEATOMA.

ATHLETA, in Antiquity, a Wreſtler, or a ſtrong courageous Perſon, who employs himſelf in Exerciſes of the Body, as running, wreſtling, and other the like Gymnic Sports, for which the Antients had eſtabliſhed Prizes. See EXERCISE and GYMNASTIC. See alſo GAME, CIRCUS, *&c.*

The *Athletæ* lived in continual Abſtinence from Pleaſures, to render themſelves the more vigorous and robuſt. See ABSTINENCE.

The Word comes from the *Greek* ἀθλητὴς, of ἀθλέω, *certo*, *pugno*, I contend, I fight. See COMBAT, GLADIATOR, *&c.*

ATIA. See ODIO and ATIA.

ATLANTIS, or ATLANTICA, in Antiquity, an Iſland ſpoke of by *Plato* and other Writers, under ſome extraordinary Circumſtances; and render'd famous by a Controverſy among the Moderns about it.

The moſt diſtinct Account of this celebrated Place, is given us in *Plato*'s *Timæus*, and *Critias*; which amounts, in a few Words, to what follows.—" The *Atlantis* was a large Iſland in the We-
" ſtern Ocean, ſituate before, or oppoſite to, the Straights of
" *Gibraltar*. Out of this Iſland there was an eaſy Paſſage into
" ſome others, which lay near a large Continent exceeding all
" *Europe* and *Aſia*. *Neptune* ſettled in this Iſland, which he di-
" ſtributed among his ten Sons; to the youngeſt fell the extre-
" mity of the Iſland call'd *Gadir*, which in the Language of the
" Country ſignifies Ἔυμηλος, *Fertile*, or *abundant in Sheep*. The
" Deſcendants of *Neptune* reigned here from Father to Son, for
" a great Number of Generations, in the Order of Primoge-
" niture. They alſo poſſeſſed ſeveral other Iſlands; and paſſing in-
" to *Europe* and *Africa*, ſubdued all *Libya* as far as *Egypt*, and all
" *Europe* to *Aſia Minor*. At length the Iſland ſunk under Wa-
" ter; and for a long Time afterwards, the Sea thereabouts was
" full of Flats and Shelves.

The learned *Rudbecks*, Profeſſor in the Univerſity of *Upſal*, in an expreſs Treatiſe intitled, *Atlantica ſive Manheim*, maintains, very ſtrenuouſly, that *Plato*'s *Atlantis* is *Sweden*; and attributes to his Country, whatever the Antients have ſaid of their *Atlantis*, or *Atlantic Iſland*.—After the little Abridgment we have given of *Plato*'s Account, the Reader will be ſurprized to find *Sweden* taken for the *Atlantis*; and accordingly tho' *Rudbeck*'s Work be full of uncommon Erudition, the Author paſſes for a Viſionary in this Point.

Others will have *America* to be the *Atlantis*; and hence infer, that the new World was not unknown to the Antients: But what *Plato* ſays, does by no means quadrate thereto.—*America* ſhould rather ſeem to be the vaſt Continent beyond the *Atlantis*, and the other Iſlands mentioned by *Plato*.

Becman, in his *Hiſtory of Iſlands*, Cap. 5. advances a much more probable Opinion than that of *Rudbeck*'s.—The *Atlantis*, according to him, was a large Iſland extended from the *Canaries* to the *Azores*; and theſe Iſlands are the Remains thereof not ſwallowed up by the Sea.

The *Atlantis* took its Name from *Atlas*, *Neptune*'s eldeſt Son, who ſucceeded his Father in the Government thereof.

ATLANTIDES, among the Poets. See VERGILIÆ.

ATLAS, in Architecture, is a Name given to thoſe Figures, or Half-Figures of Men, ſo much uſed inſtead of Columns, or Pilaſters; to ſupport any Member of Architecture, as a Balcony, or the like. See COLUMN, *&c.*

Theſe are otherwiſe call'd *Telamones*. See TELAMON.

ATLAS, in Anatomy, the Name of the firſt *Vertebra* of the Neck, which ſupports the Head. See VERTEBRA and NECK.

It is ſo call'd in alluſion to the celebrated Mountain *Atlas*, in *Africa*, which is ſo high, that it ſeems to bear the Heavens; and to the Fable, in which, *Atlas*, the King of this Country is ſaid to bear the Heavens on his Shoulders.

The *Atlas* has no ſpiny *Apophyſes*; becauſe the Motions of the Head don't turn on this *Vertebra*, but on the ſecond. As it is obliged to turn about as often as the Head moves round, had there been any ſpiny *Apophyſes*, it would have incommoded the Motion of the Muſcles in the Extenſion of the Head.—It is alſo of a finer and firmer Texture than the other *Vertebræ*; and it differs further from them in that thoſe receive at one End, and are received at the other, whereas this receives at both Extremes; for two Eminences of the Occiput are inſerted within its two upper Cavities, which makes its Articulation with the Head; and at the ſame time, two other Eminences of the ſecond *Vertebræ* are received within its two lower Cavities, by means of which they are articulated together.

ATLAS is alſo a Title given to Books of univerſal Geography, containing Maps of the known Parts of the World; as if they were view'd from the Top of that celebrated Mountain, which the Antients eſteemed the higheſt in the World; or rather on Account of their holding the whole World like *Atlas*.

We have alſo *Atlas*'s of particular Parts, *Sea-Atlas*'s, &c.—The firſt Work under this Denomination was the *Great Atlas* of *Blaew*.

ATMOSPHERE, ATMOSPHÆRA, an Appendage of our Earth; conſiſting of a thin, fluid, elaſtic Subſtance, call'd *Air*, ſurrounding the Terraqueous Globe, to a conſiderable Heighth. See EARTH.

By *Atmoſphere* is uſually underſtood the whole Maſs. or Aſſemblage of ambient Air: Though, among the more accurate Writers, the *Atmoſphere* is reſtrain'd to that Part of the Air next the Earth, which receives Vapours and Exhalations; and is terminated by the Refraction of the Sun's Light. See REFRACTION.

The further or higher Spaces, though perhaps not wholly deſtitute of Air, are ſuppoſed to be poſſeſs'd by a finer Subſtance call'd *Æther*; and are hence denominated the *Ætherial Region*, or Space. See ÆTHER, HEAVEN, *&c.*

A late eminent Author conſiders the *Atmoſphere* as a large Chymical Veſſel, wherein the Matter of all the Kinds of ſublunary Bodies is copiouſly floating; and thus expoſed to the continual Action of that immenſe Furnace the Sun; whence innumerable Operations, Sublimations, Separations, Compoſitions, Digeſtions, Fermentations, Putrefactions, *&c.* See CHYMISTRY.

For *the Nature, Conſtitution, Properties, Uſes, Diverſities*, &c. of the ATMOSPHERE, ſee the Article AIR.

We have a large Apparatus of Inſtruments, contrived for indicating and meaſuring the State and Alterations of the *Atmoſphere*; as, *Barometers, Thermometers, Hygrometers, Manometers, Anemometers*, &c. ſee each under its proper Article, BAROMETER, THERMOMETER, HYGROMETER, *&c.*

The *Atmoſphere* inſinuates itſelf into all the Vacuities of Bodies; and thus becomes the great Spring of moſt of the Mutations here below; as Generation, Corruption, Diſſolution, *&c.* See GENERATION, CORRUPTION, DISSOLUTION, *&c.*

'Tis one of the great Diſcoveries of the modern Philoſophers, that the ſeveral Motions attributed by the Antients to a *Fuga-vacui*, are really owing to the Preſſure of the *Atmoſphere*. See FUGA-*Vacui*, PUMP, PRESSURE, *&c.*

Weight of the ATMOSPHERE.

Organical Bodies are peculiarly affected by this Preſſure: To this, Plants owe their Vegetation; and Animals their Reſpiration, Circulation, Nutrition, *&c.* See PLANT, ANIMAL, VEGETATION, CIRCULATION, *&c.*

To this alſo we owe ſeveral conſiderable Alterations in the animal Oeconomy, with regard to Health, Life, Diſeaſe, *&c.* See HEALTH, *&c.*

And hence, a Calculus of the preciſe Quantity of this Preſſure, becomes a Point worthy of Attention.

Our Bodies, then, are equally preſs'd on by the incumbent *Atmoſphere*; and the Weight they ſuſtain is equal to a Cylinder of *Air*, whoſe Baſe is equal to the Superficies of our Bodies.—Now, a Cylinder of *Air* of the Height of the *Atmoſphere*, is equal to a Cylinder of Water of the ſame Baſe, and 35 Foot high; or a Cylinder of Mercury, 29 Inches high; as appears from the Torricellian Experiments; as alſo from the Height to which Water aſcends in Pumps, Syphons, *&c.* See TORRICELLIAN. See alſo PUMP, SYPHON, *&c.*

Hence it follows, that every Foot ſquare of the Superficies of our Bodies, is preſſed upon by a Weight of Air equal to 35 cubical Feet of Water; and a cubical Foot of Water, being found, by Experiment to weigh 76 Pound *Troy* Weight, therefore the Compaſs of a Foot ſquare upon the Superficies of our Bodies, ſuſtains a quantity of Air equal to 2660 Pound: For $76+35=2660$; and ſo many Foot ſquare as the Superficies of our Body contains, ſo many times 2660 Pound does that Body bear.

Hence, if the Superficies of a Man's Body, contain 15 ſquare Feet, which is pretty near the Truth, he will ſuſtain a Weight equal to 39900 Pound, for $2660+15=39900$, which is above 13 Tun for the ordinary Load.

The Difference of the Weight of the Air which our Bodies ſuſtain at one time more than at another, is alſo very great.—The whole Weight of Air which preſſes upon our Bodies when the Mercury is higheſt in the Barometer, is equal to 39900 Pounds. Whence, the Difference between the greateſt and the leaſt preſſure of Air upon our Bodies, may be prov'd to be equal to 3982 Pounds.

The

The Difference of the Air's Weight, at different times, is meaſur'd by the different Height to which the Mercury is rais'd in the Barometer; and the greateſt Variation of the Height of the Mercury being 3 Inches, a Column of Air of any aſſignable Baſe equal to the Weight of a Cylinder of Mercury of the ſame Baſe, and of the Altitude of three Inches, will be taken off from the Preſſure upon a Body of an equal Baſe, at ſuch times as the Mercury is three Inches lower in the Barometer; ſo that every Inch ſquare of the Surface of our Bodies, is preſſed upon at one time more than another, by a Weight of Air equal to the Weight of 3 cubical Inches of Mercury.—Now a cubical Foot of Water being 76 Pound; a cubical Foot of Mercury muſt be 1064 Pound =102144 Drams: And as 102144 Drams is to a cubical Foot, or, which is all one, 1728 cubical Inches, ſo is $59\frac{192}{1728}$ Drams, to one cubical Inch. So that a cubical Inch of Mercury being very near =59 Drams; and there being 144 ſquare Inches in a Foot ſquare, therefore a Maſs of Mercury of a Foot ſquare, =144 ſquare Inches; and if three Inches high, muſt contain 432 cubical Inches of Mercury, which ×59 (the Number of Drams in a cubical Inch of Mercury) makes 25488 Drams.—And this Weight does a Foot ſquare of the Surfaces of our Bodies, ſuſtain at one time more than at another.

Suppoſe again, the Superficies of a human Body =15 Foot ſquare; then would the Body ſuſtain at one time more than at another, a Weight $=15\times2548=\frac{382320}{8}$ Drams $(=\frac{47790}{12}$ Ounces) = 3982 ½ Pound *Troy*.

Hence, it is ſo far from being a wonder that we ſometimes ſuffer in our Health, by a change of Weather; that it is the greateſt, we don't always do ſo.—For when we conſider that our Bodies are ſometimes preſſed upon by near a Tun and a half Weight more than at other, and that this Variation is often very ſudden; 'tis ſurprizing that every ſuch Change does not intirely break the Frame of our Bodies to pieces.

In effect, the Veſſels of our Bodies being ſo much ſtraitned by an increas'd Preſſure, would ſtagnate the Blood up to the very Heart, and the Circulation would quite ceaſe; if Nature had not wiſely contriv'd, that when the Reſiſtance to the circulating Blood is greateſt, the Impetus, by which the Heart contracts, ſhould be ſo too.—For, upon an increaſe of the Weight of the Air, the Lungs will be more forcibly expanded, and thereby the Blood more intimately broken and divided, ſo that it becomes fitter for the more fluid Secretions, ſuch as that of the nervous Fluid; by which the Heart will be more ſtrongly contracted. And the Blood's Motion towards the Surface of the Body being obſtructed, it will paſs in greater quantity to the Brain, where the Preſſure of the Air is taken off by the Cranium; upon which ſcore alſo, more Spirits will be ſeparated, and the Heart, on that account too, more enabled to carry on the Circulation, through all paſſable Canals, whilſt ſome others, towards the Surface, are obſtructed. See HEART, CIRCULATION, *&c.*

The moſt conſiderable Alteration made in the Blood, upon the Air's greater or leſſer Preſſure on the Surface of our Bodies, is its rendring the Blood more or leſs compact, and making it croud into a leſs, or expand into a greater Space, in the Veſſels it enters.—For the *Air* contain'd in the Blood, always keeps it ſelf in Equilibrio with the external *Air* that preſſes upon our Bodies; and this it does by a conſtant Niſus to unbend it ſelf, which is always proportionable to the compreſſing Weight by which it was bent: So that if the Compreſſion or Weight of the circumambient Air be ever ſo little abated, the Air contain'd within the Blood unfolds its Spring, and forces the Blood to take up a larger Space than it did before. See BLOOD, HEAT, COLD, *&c.*

The Reaſon we are not ſenſible of this Preſſure, is well explained by *Borellus, De mot. nat. à Grav. fac. prop.* 29, *&c.*—After ſhewing that Sand perfectly rammed in a hard Veſſel is not capable by any means of being penetrated or parted, not even by a Wedge; and likewiſe that Water contained in a Bladder compreſſed equally on all Sides, cannot yield or give way in any Part: He proceeds, "In like manner, within the Skin of an Animal "are contained a diverſity of Parts, ſome hard, as Bones; others "ſoft, as Muſcles, Nerves, Membranes, *&c.* others fluid, as "Blood, Fat, *&c.* Now 'tis not poſſible the Bones ſhould be "broke or diſplaced in the Body, unleſs the Weight lay heavier "on one Part than another, as we ſometimes ſee in Porters. "If the Preſſure be ſubdivided, ſo that it lay equally all around, "upwards, downwards, and ſideways, and no Part of the Skin "is exempt therefrom, it is evidently impoſſible any Fracture "or Luxation ſhould follow. The ſame may be obſerved of the "Muſcles and Nerves; which, though ſoft, yet being compoſed of ſolid Fibres, do mutually ſuſtain each other, and reſiſt "the common Weight. The ſame holds of Blood, and the other Humours; and as Water does not admit any manifeſt "Condenſation, ſo the Animal Humours contained in ther Veſſels may ſuffer an Attrition from an impulſe made in one or "more particular Places; but can never be forced out of their "Veſſels by an univerſal Compreſſion.—It follows, that as none "of the Parts undergo either Separation, Luxation, Contuſion, or "any other Change of Situation; 'tis impoſſible any Senſe of Pain "ſhould enſue, which can only be the effect of a Solution of Conti-"nuity." This is confirmed by what we ſee in Divers, *&c.* See DIVING.

The ſame is farther confirmed by Mr. *Boyle*; who including a young Frog in a Veſſel half full of Water, and intruding ſo much Air as that the Water muſt ſuſtain eight times the Weight it otherwiſe would; yet the Animalcule, notwithſtanding the great tenderneſs of its Skin, did not ſeem to be at all affected thereby.

For the Effects of the Removal of the Preſſure of the Atmoſphere, ſee AIR-*Pump*.

For the Cauſe of the Variations in the Weight and Preſſure of the Atmoſphere, ſee BAROMETER.

Height of the ATMOSPHERE.

The Height of the *Atmoſphere* is a Point about which the modern Naturaliſts have been very ſollicitous.—Had not the Air an elaſtic Power, but were every where of the ſame Denſity, from the Surface of the Earth to the extreme Limit of the *Atmoſphere*, like Water, which is equally Denſe at all Depths; it being above obſerved that the Weight of the Column of Air reaching to the Top of the *Atmoſphere* is equal to the Weight of the Mercury contained in the Barometer; and the Proportion of Weight likewiſe being known between equal bulks of Air and Mercury; it were eaſy to find the Height of ſuch Column, and conſequently of the *Atmoſphere* it ſelf.—For a Column of Air one Inch high, being to an equal Column of Mercury, as 1 to 10800; 'tis evident that 10800 ſuch Columns of Air, that is, a Column 900 Foot high, is equal in Weight to one Inch of Mercury: And conſequently the 30 Inches of Mercury ſuſtained in the Barometer, require a Column of Air 17000 Foot high, on which footing the Height of the *Atmoſphere* would only be 27000 Foot, or little more than five *Engliſh* Miles high. See TORRICELLIAN.

But the Air, by its elaſtic Property, being liable to expand and contract; and it being found by repeated Experiments in *England, France*, and *Italy*, that the Spaces it takes up, when compreſſed by different Weights, are reciprocally proportional to thoſe Weights themſelves; or, that the Air takes up the leſs Space, the more it is preſſed: It follows, that the Air in the upper Regions of the *Atmoſphere* where the Weight is ſo much leſs, muſt be much rarer than nearer the Surface of the Earth; and conſequently that the Height of the *Atmoſphere* muſt be much higher than is above aſſign'd.

If we ſuppoſe the Height of the whole *Atmoſphere* divided into innumerable equal Parts; the Denſity of the Air in each of the ſaid Parts being as its Quantity, and the Weight of the *Atmoſphere* being alſo as the Quantity of the whole incumbent Air; 'tis evident the Weight of the incumbent Air is every where as the Quantity of Air contained in the ſubjacent Part, which makes a Difference between each two contiguous Parts of incumbent Air.—Now, we have a Theorem in Geometry, that where the Differences of Magnitudes are geometrically proportionable to the Magnitudes themſelves, thoſe Magnitudes are in continual Arithmetical Proportion: Wherefore if, according to the Suppoſition, the Altitude of the Air by the continual Addition of the new Parts into which it is divided, do increaſe in a continual Arithmetical Proportion; its Denſity will be diminiſhed, or which amounts to the ſame, its Gravity increaſed, in continual Geometrical Proportion.

From ſuch a Series it is eaſy by making two or three Barometrical Obſervations of the Rarity of the Air at two or three different Heights; to find its Rarity at any other Height, or the Height correſponding to any Rarity; and conſequently the Altitude of the whole *Atmoſphere*, ſuppoſing the utmoſt Degree of Rarity known beyond which the Air cannot go. See the Articles BAROMETER, SERIES, PROGRESSION, *&c.* See alſo *Greg. Aſtron. Phyſ. Geom. Log.* 5. *Prop.* 3. and *Halley* in *Philoſoph. Tranſact.* N°. 181.

It muſt not be here omitted, that ſome Obſervations made by *Caſſini* and his Aſſociates, ſeem to render this Method precarious.—In continuing the Meridian Line of the Obſervatory at *Paris*, they meaſured the Altitudes of ſeveral Mountains with great accuracy; noting the Height of the Barometer at the Top of each; and found, that the Rarities of the Air as you aſcend from the Level of the Earth, are much greater than they ought to be, according to this Proportion.

Suſpecting, therefore, the juſtneſs of the Experiments, the Royal Academy made divers others, under great Dilatations of Air, far exceeding the Rarities found on the Tops of the Mountains; the Reſult whereof was, that they all exactly anſwered the Proportion of the incumbent Weights. Whence it ſhould follow, that the higher Air about the Tops of Mountains, is of a different Nature, and obſerves a different Law from that near the Earth.

The Reaſon hereof may be owing to the great Quantity of groſs Vapours and Exhalations here, more than there; which Vapours being leſs Elaſtic and not capable of ſo much Rarefaction as the pure Air above: The Rarefactions of the pure Air increaſe in a greater Ratio than the Weights diminiſh.—M. *Fontenelle*, however, from ſome Experiments of M. *de la Hire*, accounts for the Phænomenon in a different Manner; alledging, that the elaſtic

ſtic Power of Air is increaſed by the admixture of Humidity therewith; and conſequently, that the Air near the Tops of Mountains, being moiſter than that below, becomes thereby more Elaſtic, and rarifies in a greater Ratio than naturally and in a drier State it would.—But Dr. *Jurin* ſhews, that the Experiments produced to ſupport this Syſtem, are by no means concluſive. *Append. ad Varen. Geograph.*

Be this as it will, the Rarities of the Air at different Heights proving not to bear any conſtant Proportion to the Weights wherewith they are preſs'd; Experiments made with Barometers at the Feet and Tops of Mountains, cannot give the Height of the *Atmoſphere*; ſince our Obſervations are all made near the Earth; whereas the greater Part of the *Atmoſphere* is far beyond; and the farther from us, the farther does it ſeem to recede from the Nature and Laws of ours.—M. *de la Hire*, therefore, after *Kepler*, has recourſe to a more ſimple and ſecure Way of aſcertaining the Height of the *Atmoſphere*; viz. from the conſideration of the Crepuſcula.

'Tis allowed by Aſtronomers, that when the Sun is 18° below the Horizon, we begin or ceaſe to ſee the Twilight: Now the Ray whereby we do it, can be no other than a horizontal Line, or a Tangent to the Earth in the Place where the Obſerver is. But this Ray cannot come directly from the Sun, which is under the Horizon; and muſt therefore be a Ray reflected to us by the laſt inner and concave Surface of the *Atmoſphere*. We are to ſuppoſe that the Sun when 18° below the Horizon, emits a Ray which is a Tangent to the Earth, and ſtrikes upon this laſt Surface of the *Atmoſphere*, and is thence reflected to our Eye, being ſtill a Tangent, and horizontal.—If there were no *Atmoſphere*, there would be no Crepuſculum; and conſequently if the *Atmoſphere* were not ſo high as it is, the Crepuſculum would begin and end when the Sun is at a leſs Diſtance from the Horizon than 18°, And contrarily.—Hence we gather, that the largeneſs of the Arch by which the Sun is depreſs'd when the Crepuſculum begins or ends, determines the Height of the *Atmoſphere*. We are to note however, that 32′ Minutes muſt be ſubſtracted from the Arch of 18°, for the Refraction, which raiſes the Sun ſo much higher than he wou'd be; and 16′ more for the Height of the upper Limb of the Sun, which is ſuppoſed to ſend the Ray, above his Centre, which is ſuppoſed to be 18° low. The remaining Arch, therefore, which determines the Height of the *Atmoſphere*, is only 17° 12′.

Two Rays, one direct, and the other reflected, but both Tangents to the Earth, muſt neceſſarily meet in the *Atmoſphere*, at the Point of Reflection, and comprehend an Arch between 'em of 17° 12′, whereof they are Tangents.—Hence it follows from the Nature of the Circle, that a Line drawn from the Centre of the Earth, and cutting the Arch in two, will go to the Point of Concurrence of thoſe two Rays; and as it is eaſy finding the exceſs of this Line over the Semidiameter of the Earth, which is known, 'tis eaſy to find the Height of the *Atmoſphere*, which is only that exceſs.—On this Principle M. *de la Hire* diſcovers the Height of the *Atmoſphere* to be 37223 Fathoms, or near 17 *French* Leagues. The ſame Method was made uſe of by *Kepler*, who only rejected it, becauſe it gave the Height of the *Atmoſphere* 20 times greater than he otherwiſe allowed it.

It muſt be added, that in this Calculus, the direct and reflected Rays are ſuppoſed to be right Lines; whereas in fact they are Curves, form'd by the perpetual Refraction the Rays undergo in paſſing through a Series of different Denſities of Air.—Computing then, upon them as two ſimilar Curves; or rather as a ſingle Curve, one extreme whereof is a Tangent to the Earth: Its Vertex equally diſtant from both Extremes, determines the Height of the *Atmoſphere*; which therefore, will be found ſomewhat lower than in the former Caſe; the Point of Concurrence of two right Lines, which are here only Tangents to the Curve, the one at one end, and the other at the other; being higher than the Vertex of the Curve. On this footing, M. *de la Hire* finds the *Atmoſphere* 35362 Fathoms, or 16 Leagues. *Hiſt. de l. Acad. Roy. des Scienc.* An. 1713. See the Articles REFRACTION, CREPUSCULUM. *&c.*

ATMOSPHERES *of the Heavenly Bodies.*

Lunar ATMOSPHERE.—*That the Moon is ſurrounded, like the Earth, with a changeable* Atmoſphere, ſee evinced under the Article MOON.

The Reality of the Atmoſpheres of the other Planets, ſee alſo under the Article PLANET.

For the ATMOSPHERES *of Comets, and the Sun*, ſee COMET and SUN.—See alſo MACULÆ, TAIL, *&c.*

ATMOSPHERE *of ſolid*, or *conſiſtent Bodies*, is a kind of Sphere form'd by the Effluvia, or minute Corpuſcles emitted from them. See SPHERE and EFFLUVIA.

Mr. *Boyle* endeavours to ſhew that all Bodies, even the hardeſt and moſt coherent, as Gems, *&c* have their *Atmoſpheres*. See GEM.—See alſo MAGNET, MAGNETISM, *&c.*

ATOM, ATOMUS, in Philoſophy, a *Corpuſcle*; or a Part or Particle of Matter ſo minute as to be indiviſible. See CORPUSCLE.

The Word is *Greek*, ἄτομος; form'd of the privative α, and τεμνω, I cut, I divide.

Atoms are properly the *minima Naturæ*, the laſt or ultimate Particles into which Bodies are diviſible; and are conceived as the firſt Rudiments, or component Parts of all phyſical Magnitude, or the pre-exiſtent and incorruptible Matter whereof Bodies were form'd. See PARTICLE, BODY, *&c.*

The Notion of *Atoms* ariſes hence, that Matter is not diviſible, *in infinitum*. See DIVISIBILITY.

And hence many Authors are led to deny the reality of Atoms, together with that of Mathematical Points: An *Atom*, ſay they, either has Parts, or it has none: If it have none, it is a mere Mathematical Point: If it have, then do theſe Parts alſo conſiſt of others, and ſo to Infinity. See CONTINUITY, *&c.*

But this is to recede from the genuine Character of *Atoms*, which are not eſteemed indiviſible, becauſe of their want of Bigneſs, or Parts; (for all phyſical Magnitude muſt have three Dimenſions, Length, Breadth, and Thickneſs; and all Extenſion is diviſible) but they are indiviſible on acconnt of their Solidity, Hardneſs, and Impenetrability, which preclude all Diviſion, and leave no Vacancy for the Admiſſion of any foreign Force to ſeparate or diſunite them. See INDIVISIBLE, DIVISIBILITY, EXTENSION, MATTER, *&c.*

As *Atoms* are the firſt Matter, 'tis neceſſary they ſhou'd be indiſſolvible, in order to their being incorruptible.—Sir *Iſaac Newton* adds, that 'tis alſo required they be immutable, in order to the World's continuing in the ſame State, and Bodies being of the ſame Nature now as formerly. See HARDNESS.

Hence the Antients were alſo led to maintain *Atoms*, eternal; for that what is Immutable muſt be Eternal. See ETERNITY.

They alſo added Gravity, and in Conſequence thereof, Motion, to their *Atoms*: And further, obſerving that *Atoms* thus falling perpendicularly, cou'd not join or unite together; they ſuper-added a fortuitous or ſide Motion, and furniſh'd them with certain hooked Parts, in order to enable them to catch and hang the better together.—And from a caſual or fortuitous Jumble of theſe hamous *Atoms*, they ſuppoſed the whole Univerſe to be formed. See GRAVITY, MOTION, HAMOUS, *&c.*

ATOMICAL *Philoſophy*, the Doctrine of *Atoms*; or a Method of accounting for the Origin and Formation of all things, from the Suppoſition of *Atoms*, endued with Gravity and Motion. See ATOM, WORLD, *&c.*

The *Atomical* Philoſophy was firſt broach'd and taught by *Moſchus*, *Leucippus*, and *Democritus*: It was cultivated by *Epicurus*; whence it became alſo denominated the *Epicurean Philoſophy*. See EPICUREAN.

It has been ſince retrieved by *Gaſſendus*, and others; and is now eſpouſed and adhered to by a great Part of the philoſophical World, under the Denomination of the *Corpuſcular Philoſophy*. See CORPUSCULAR *Philoſophy*.

ATONEMENT. See PROPITIATION, SACRIFICE, *&c.*

ATONY, ATONIA, in Medicine, *&c.* a want of Tone or Tenſion; or a Relaxation of the Solids of a human Body; occaſioning a loſs of Strength, Faintings, *&c.* See TONE, SOLID, FIBRE, RELAXATION, *&c.*

The Word is compounded of the privative α, and τείνω, *tendo*, I ſtretch.

ATRABILIS, in the antient Medicine, black or aduſt Bile. See BILE and ADUST.

Atrabilis was one of the great Humours of the antient Phyſicians; whence aroſe the *Atrabilary*, one of their Temperaments; anſwering to what we call *Melancholly*. See HUMOUR, TEMPERAMENT, MELANCHOLLY, *&c.*

ATROPHY, ATROPHIA, an Indiſpoſition or Diſeaſe, wherein the Body or ſome of its Parts, do not receive the neceſſary Nutriment, but dwindles or waſtes inſenſibly. See NUTRITION.

Such are what we commonly call *Conſumptions*, *Phthiſes*, &c. See CONSUMPTION, PHTHISIS, *&c.*

An *Atrophy* is natural in old Age, call'd *Atrophia Senilis*. See OLD AGE, DEATH, *&c.*

The Word is compounded of the privative Particle α, and τρέφω, I feed, nouriſh.

ATTACHING, or ATTACHMENT, in Law, the taking or apprehending a Perſon or Thing by Commandment or Writ. See COMMANDMENT and WRIT.

The Word is form'd of the *French Attacher*, to faſten, tye; and that from the corrupt *Latin Attachiare*, of *Attexere*, to weave to; or rather from the *Celtic Tach*, a Nail, and *tacha*, to nail.

Lambard makes this Difference between an Arreſt and an *Attachment*; that an Arreſt proceeds out of an inferior Court by Precept, and an *Attachment* out of a higher Court, by Precept or Writ; and that a Precept to arreſt hath theſe formal Words, *Duci facias*, *&c.* and a Writ of *Attachment* theſe, *Præcipimus tibi quod attachies talem, & habeas eum coram nobis*. See ARREST.

By this it appears, that he who arreſts, carries the Party arreſted to another higher Perſon, to be diſpoſed of forthwith; whereas he that *attaches* keeps the Party *attached*, and preſents him in Court at the Day aſſigned in the *Attachment*.

There is this further Difference, that an Arreſt lies only upon the Body of a Man; and an *Attachment* ſometimes on his Goods too; for a Man may be *attach'd* by an hundred Sheep.

ATTACHMENT, by Writ, differs from a Diſtreſs in this, that an *Attachment* does not reach Lands, as a Diſtreſs does; and that a

Diſtreſs does not touch the Body, which an *Attachment* does.—Yet the two are frequently confounded together.

In the moſt common Uſe, an *Attachment* is an Apprehenſion of a Man by his Body, to bring him to anſwer the Action of the Plaintiff.—A Diſtreſs with a Writ, is the taking of a Man; a Diſtreſs without a Writ, is the taking of a Man's Goods for ſome real Cauſe, as Rent, Service, *&c.* See DISTRESS.

ATTACHMENT *out of the Chancery*, is had of courſe, upon an *Affidavit* made that the Defendant was ſerved with a *Subpœna*, and appears not; or iſſueth upon not performing ſome Order or Decree. See CHANCERY.

After the Return of this *Attachment* by the Sheriff, *quod non eſt Inventus in Balliva ſua*; another *Attachment*, with Proclamation, iſſues: And if he appear not thereupon, a Writ of Rebellion. See REBELLION, *&c.*

ATTACHMENT *of the Foreſt*, is one of the three Courts held in the Foreſt. See FOREST.

The loweſt Court is call'd the *Attachment*, the mean Swanimote, the higheſt, the Juſtice in *Eyre's* Seat. See SWANIMOTE, and JUSTICE.

The Court of *Attachments* ſeems ſo call'd, becauſe the Verderors of the Foreſt have therein no other Authority, but to receive the *Attachments* of Offenders againſt Vert and Veniſon taken by the reſt of the Officers, and to inroll them, that they may be preſented or puniſhed at the next Juſtice Seat.—This *Attachment* is by three means; by Goods and Chattels; by Body, Pledges, and Mainprize; or by Body only.—This Court is held every forty Days throughout the Year.

ATTACHMENT *of Privilege*, is, by Virtue of a Man's Privilege, to call another to that Court whereto he himſelf belongs, and in reſpect whereof he is privileged to anſwer ſome Action. See PRIVILEGE.

Foreign ATTACHMENT, is an *Attachment* of Goods or Money found within a Liberty or City, to ſatisfy ſome Creditor within ſuch City or Liberty.

By the Cuſtom of ſome Places, particularly *London*, a Man may *attach* Money or Goods in the Hands of a Stranger: As, if *A.* owes *B.* 10 *l.* and *C.* owes *A* 10*l.* *B.* may *attach* the 10*l.* in the Hands of *C.* to ſatisfy himſelf.

ATTACHIAMENTA *Bonorum*, in our antient Law Books, denotes a Diſtreſs taken upon the Goods or Chattels of any Perſon, ſued for perſonal Eſtate, or Debt, by the legal *Attachiators* or Bailiffs, as a Security to anſwer the Action.

ATTACHIAMENTA *de Spinis & Boſco*, ſignifies an antient Privilege ganted to the Officers of Foreſts, to take to their own uſe, Thorns, Bruſh, and Windfalls, within their own Precincts or Liberties. See FOREST.

ATTACK, an Attempt upon any Perſon or Thing; or the Act of beginning a Combat, or Diſpute. See AGGRESSOR.

ATTACK, in the military Art, is an Attempt or Engagement to force a Poſt, a Body of Troops, or the like. See ASSAULT.

We ſay to begin, to make, to ſuſtain an *Attack*, &c. Several Authors have wrote of the Art of *attacking* and defending. See DEFENCE.

ATTACK *of a Siege*, is the Effort made by the Beſiegers with Trenches, Mines, Galleries, *&c.* to make themſelves Maſters of a Fortreſs, in *attacking* one of its Sides. See SIEGE, FORTIFICATION, WORK, *&c.*

Falſe ATTACK, is that which is not vigorouſly proſecuted; ſerving only to make a Diverſion among the beſieged, and to oblige them to divide their Forces, that the true *Attack* may be carried on with greater Succeſs. See FALSE.

To ATTACK *in Flank*, is to *attack* both Sides of the Baſtion. See BASTION.

ATTAINDER, in Law, is when a Man has committed Felony, or Treaſon, and Judgment is paſſed upon him. See FELONY and TREASON.

The Children of a Perſon *attainted* of Treaſon cannot be Heirs to him, or any other Anceſtor; and if he were noble before, his Poſterity are hereby degraded and made baſe: Nor can this Corruption of Blood be ſalved but by an Act of Parliament, unleſs the Judgment be reverſed by a Writ of Error. See ATTAINTED.

Our antient Laws makes this Difference between *Attainder* and *Conviction*, that a Man was ſaid to be convicted preſently upon the Verdict; but not *attainted* till it appeared he was no Clerk, or being a Clerk, and demanded by his Ordinary, cou'd not purge himſelf. See CLERGY.—add, that *Attainder* is more extenſive than Conviction; Conviction being only by the Jury, and *Attainder* not before Judgment. See CONVICTION.

A Man is *attainted* two ways; by *Appearance*, or by *Proceſs*.

Attainder by Appearance, is either by *Confeſſion*, by *Battel*, or by *Verdict*.—*Confeſſion*, whereof *Attaint* grows, is twofold; one at the Bar before the Judges, when the Priſoner, upon his Indictment read, owns himſelf guilty, never putting himſelf on his Jury. The other is before the Coroner, in Sanctuary; where he, upon his Confeſſion, was in former times conſtrain'd to abjure the Realm, which is alſo call'd *Attainder by Abjuration*. See SANCTUARY and ABJURATION.

Attainder by Battel, is when the Party appeal'd by another, chuſing rather to try the Truth by Combat than by Jury, is vanquiſhed. See BATTEL, COMBAT, DUEL, *&c.*

Attainder by Verdict, is when the Priſoner at the Bar anſwering Not guilty to the Indictment, hath an Inqueſt of Life and Death paſſed on him, and is by the Verdict of the Jury pronounced, Guilty. See INQUEST.

Attainder by Proceſs, otherwiſe call'd *Attainder by Default*, or *Attainder by Outlawry*, is where a Party flies, or does not appear after being five times publickly call'd in the County-Court, and at laſt, upon his Default, pronounced, or returned outlawed. See OUTLAWRY.

Bill of ATTAINDER, is a Bill brought into Parliament, for *attainting*, condemning, and executing a Perſon for High-Treaſon. See BILL, PARLIAMENT, TREASON, *&c.*

ATTAINT, ATTINCTA, in Law, a Writ which lies after Judgment, againſt a Jury that hath given a falſe Verdict in any Court of Record; be the Action real or perſonal, if the Debt or Damages exceed 40*s.* See JURY and VERDICT.

If the Verdict be found falſe, the Judgment antiently was, that the Jurors Meadows ſhould be ploughed up, their Houſes broken down, their Woods grubbed up, and their Lands and Tenements forfeited to the King.

If it paſs againſt him that brought that *Attaint*, he ſhall be impriſoned, and grievouſly ranſomed at the King's Will.

ATTAINTED, in Law, is uſed for a Perſon found guilty of ſome Crime or Offence, particularly of Felony or Treaſon. See ATTAINDER.

Yet a Man is ſaid to be *attainted of Diſſeiſin*; and ſo it is uſed in *French*: as, *eſtre attaint, & vaincu en aucun cas*, is to be caſt in any Cauſe.

ATTAINT, among Farriers, ſignifies a knock, or hurt in a Horſe's Leg; proceeding either from a Blow with another Horſe's Foot, or from an over-reach in froſty Weather, when a Horſe being rough-ſhod, or having Shoes with long Calks, ſtrikes his hinder Feet againſt his Fore-leg.

The Farriers diſtinguiſh *upper Attaints*, given by the Toe of the Hind-foot upon the Sinew of the Fore-leg.—And *nether Attaints*, or Over-reaches on the Paſtern-Joint, which are little Bladders like Wind-Galls, coming either by a Wrench, a Strain, an Over-reach, or the like. The uſual Place is in the Heel or Truſh.

ATTENDANT, or ATTENDENT. See ASSISTANT. See alſo RETINUE, SATELLIT, *&c.*

ATTENDANT, ATTENDENS, in Law, ſignifies one that owes Duty or Service to another, or depends upon him: Thus if there be Lord, Meſne, and Tenant; and the Tenant hold of the Meſne by a Penny; and the Meſne hold over by two Pence: If the Meſne releaſes to the Tenant all his Right in the Land, and the Tenant die, his Wife ſhall be endowed of the Land, and ſhall be *Attendant* to the Heir, of the third Part of the Penny, not of the third Part of the two Pence; ſhe being to be endowed of the beſt Poſſeſſion of her Husband.—Where the Wife is endowed by the Guardian, ſhe ſhall be *Attendant* to the Guardian, and to the Heir at his full Age. See WIFE and WOMAN.

ATTENTION, ATTENTIO, a due Application of the Ear, or the Mind, to any thing ſaid, or done.

Attention of Mind is not properly an Act of Underſtanding, but rather of the Will, by which it calls the Underſtanding from the Conſideration of other Objects, and directs it to the thing in hand. See UNDERSTANDING and WILL.

Attention, in reſpect of Hearing, is the ſtretching or ſtraining the *Membrana Tympani*, ſo as to make it more ſuſceptible of Sounds, and better prepared to catch even a feeble Agitation of the Air. Or it is the adjuſting the Tenſion of that Membrane to the Degree of loudneſs or lowneſs of the Sound we are attentive to. See TYMPANUM. See alſo HEARING, *&c.*

The Word is compounded of *ad*, to; and *tenſio*, of *tendo*, I ſtretch.

ATTENUANTS, ATTENUATIVES, or ATTENUATING *Medicines*, ſuch as ſubtilize or break the Humours into finer Parts; and thus diſpoſe them for Motion, Circulation, Excretion, *&c.* See ATTENUATION and HUMOR.

Attenuants ſtand oppoſed to *Thickners*, or Medicines which condenſe, inſpiſſate, *&c.* See DETERGENT.

ATTENUATION, ATTENUATIO, the Act of *attenuating*; that is, of making any Fluid thinner, and leſs conſiſtent than it was before. See FLUID.

The Word is compounded of the *Latin ad*; and *tenuis*, thin, ſlender, weak.

Attenuation is defined more generally by *Chauvin*, the dividing or ſeparating of the minute Parts of any Body, which before, by their mutual Nexus or Implication, form'd a more continuous Maſs.—Accordingly, among the Alchymiſts, we ſometimes find the Word uſed for Pulverization, or the act of reducing a Body into an impalpable Powder. See POWDER and PULVERIZATION.

ATTESTATION, the giving Teſtimony, or Evidence of the Truth of any thing; eſpecially in Writing. See TESTIMONY, EVIDENCE, *&c.*

Thus

Thus we ſay, Miracles need be well *atteſted*, to gain Credit. See MIRACLE.

The Word is compounded of the *Latin ad*, to; and *teſtis*, witneſs.

ATTICISM, ATTICISMUS, a ſhort, conciſe Expreſſion or manner of ſpeaking; thus call'd from the People of *Attica*, or *Athens*, who abounded therein. See STYLE and LACONIC.

ATTIC, ATTICUS, ſomething relating to *Attica*, or the City *Athens*.

In Matters of Philology we uſe, *Attic Salt*, *Sales Attici*, for a delicate, poignant Kind of Wit and Humour, peculiar to the *Athenian* Writers: *Attic Witneſs*, *Atticus teſtus*, was a Witneſs incapable of Corruption: So an *Attic* Muſe was an excellent one, *&c.*

ATTIC is alſo uſed in Architecture for a Kind of Building, wherein there is no Roof or Covering to be ſeen; thus called becauſe uſual at *Athens*.

ATTIC, or ATTIC-*Order*, is alſo a kind of little Order, rais'd upon another larger one; by way of crowning, or to finiſh the Building. See ORDER.

It is ſometimes alſo uſed for the conveniency of having a Wardrobe, or the like; and inſtead of regular Columns, has only Pilaſters of a particular Form. See COLUMN and PILASTER.

There are alſo *Attics* uſed for high Altars.—The Order takes its Name from *Athens*, where it was firſt practiced.

ATTIC *of a Roof*, is a Kind of Parapet to a Terrace, Platform, or the like. See PARAPET, TERRACE, *&c.*

ATTIC *Continued*, is that which encompaſſes the whole Pourtour of a Building, without any Interruption; following all the Jets, the Returns of the Pavillions, *&c.*

ATTIC *Interpos'd*, is that ſituate between two tall Stories, ſometimes adorn'd with Columns, or Pilaſters. See STORY.

ATTIC *Baſe*, is a peculiar Kind of Baſe uſed by the antient Architects, in the *Ionick* Order; and by *Palladio*, and others of the Moderns, in the *Dorick*. See DORIC and IONIC.

The *Attic* is the moſt beautiful of all the Baſes. See BASE.

ATTIRE, in Botany, is uſed to denote the third Part or Diviſion of the Flower of a Plant; the other two being the *Empalement* and the *Foliation*. See FLOWER. See alſo EMPALEMENT, *&c.*

This *Attire* is of two Kinds; Semini-form, and Florid.—The *Semini-form Attire* conſiſts of two Parts; Chives, or the Stamina; and Semets, or Apices; one upon each *Attire*. See STAMINA and APICES.

The *Florid Attire* is uſually call'd *Thrums*, as in the Flowers of Marigold, Tanſy, *&c.*—Theſe Thrums are called *Suits*, which conſiſt of two, but moſt times of three Pieces,—The outer Part of the Suit is the Floret, whoſe Body is divided at the top, like a Cowſlip Flower, into five Parts or diſtinct Leaves. See THRUM, *&c.*

ATTIRE, in Hunting, the Head or Horns of a Deer. See HEAD.

The *Attire* of a Stag, if perfect, conſiſts of *Bur*, *Pearls*, *Beam*, *Gutters*, *Antler*, *Sur-antler*, *Royal*, *Sur-royal*, and *Croches*.—Of a Buck, the *Bur*, *Beam*, *Brow-antler*, *Black-antler*, *Advancer*, *Palm*, and *Spellers*. See the Article HUNTING.

ATTITUDE, in Painting and Sculpture, the Poſture of a Figure, or Statue; or the Diſpoſition of its Parts, by which we diſcover the Action it is engaged in, and the very Sentiment ſuppoſed to be in its Mind. See FIGURE, STATUE, and ACTION.

The repreſenting of theſe in a ſtrong and lively manner, makes what they call a *good Expreſſion*. See EXPRESSION.

The Word comes from the *Italian Attitudo*, which ſignifies the ſame thing.

ATTOLLENS, in Anatomy, a Name common to ſeveral Muſcles, whoſe Office or Action is to raiſe the Parts they belong to. See MUSCLE.

The *Attollents*, or *Attollent* Muſcles, are otherwiſe call'd *Elevators*. See ELEVATOR.

The Word is compounded of the *Latin ad*; and *tollo*, I raiſe, I lift.

ATTORNEY, ATTURNATUS, in Law, a Perſon appointed by another to do ſomething in his ſtead; particularly to ſollicit and carry on a Law Suit. See AGENT, DEPUTY, *&c.* See alſo, CAUSE, PROCESS, ACTION, *&c.*

Attorneys in Common Law are much the ſame with *Procurators*, *Proctors*, or *Syndics*, in the Civil Law. See PROCURATOR, PROCTOR, *&c.*

The Word is compounded of the *Latin ad*, to; and the *French tourner*, to turn; q. d. to turn a Buſineſs over to another.—The antient *Latin* Name, according to *Bracton*, is *Reſponſalis*. See RESPONSALIS.

Antiently, thoſe of Authority in Courts had it in their Power whether or no to ſuffer Men to appear or ſue by another than themſelves; as appears from *Fitz. de Nat. Brev.* in the Writ, *Dedimis poteſtatem de Attornato faciendo*; where it is ſhewed, that Men were driven to procure the King's Writs, or Letters Patent, to appoint *Attorneys* for them: But 'tis ſince provided by Statutes, that it ſhall be lawful to appoint an *Attorney* without ſuch Circuition; as appears by ſeveral Statutes, 20 *Hen.* III. *cap.* 10.—6 *Edw.* I. *cap.* 8. &c.

There is a great diverſity of Writs in the Table of the Regiſter, wherein the King, by his Writ, commands the Judges to admit of *Attorneys*; whereby there aroſe ſo many unskilful *Attorneys*, and ſo many miſchiefs thereby, that for reſtraining them it was enacted, 4 *Hen.* IV. *cap.* 18. that the Judges ſhould examine them, and diſplace the unskilful; and again 33 *Hen.* VI. *cap.* 7. that there ſhould be but a certain Number of *Attorneys* in *Norfolk* and *Suffolk*.

Attorney is either *General* or *Special*.

ATTORNEY *General* is he who by general Authority is appointed to manage the Affairs or Suits of the Community.

Such is the *Attorney-General* of the King, who is the ſame as *Procurator Cæſaris* in the *Roman* Empire. See PROCURATOR.

To him come Warrants for making out Patents, Pardons, *&c.* He is at the Head of managing all Law-Affairs of the Crown, either in criminal Proſecutions or otherwiſe; eſpecially in Matters of Treaſon, Sedition, *&c.* In all Courts he pleads within the Bar; but when a Privy-Counſellor, he cannot plead in any Court, but on the King's Affairs, without obtaining a Privy Seal for ſo doing.

Attorney-Special, is he who is employ'd in one or more Cauſes particularly ſpecified.

Attorneys are alſo diſtinguiſhed with reſpect to the Courts, into *Attorneys at large*, and *Attorneys Special*, belonging to this or that Court only.

ATTORNEY *of the Court of the Dutchy of* Lancaſter, *Atturnatus Curiæ ducatus Lancaſtriæ*, is the ſecond Office in that Court, being there, for his Skill in Law, placed as Aſſeſſor to the Chancellor of that Court. See DUTCHY *Court* and ASSESSOR. See alſo CHANCELLOR, *&c.*

ATTOURNMENT, in Law, a transferring of Duty and Service to another Lord; or an Acknowledgment which a Tenant makes of Homage and Service to a new Lord. See LORD and TENANT.

Thus, when one is Tenant for Life, and he in Reverſion grants his Right to another; it is neceſſary the Tenant for Life agree thereto, which is called *Attournment*; and without which nothing paſſes by the Grant.—*If the Grant be by Fine, in Court of Record, he ſhall be compelled to Attourn.* Stat. 27 *Hen.* VIII.

The Words uſed in *Attournment* are theſe; *I agree me to the Grant made to you*; or more commonly, *Sir, I Attourn to you by force of the ſame Grant*; or, *I become your Tenant*; *or deliver to the Grantee a Penny by way of Attournment*, Littl. Lib. 3.

Attournment is either by Word, or by Act; voluntary, or compulſary; by the Writ, *Per quæ ſervitia*, or by Diſtreſs.—It may be made to the Lord himſelf or to his Steward in Court. There is *Attournment* in Deed, and *Attournment* in Law. *Coke. Attournment* in Law is an Act, which though it be no expreſs *Attournment*, yet in Intendment of Law it is of equal Force. *Coke on Littl.*

ATTRACTION, ATTRACTIO, or TRACTIO, in Mechanicks, the Act of a moving Power, whereby a Moveable is brought nearer to the Mover. See POWER and MOTION.

As Action and Re-action are always equal, and contrary; it follows, that in all *Attraction*, the Mover is drawn towards the Moveable, as much as the Moveable to the Mover. See ACTION and REACTION.

The Word is compounded of *ad*, to; and *traho*, I draw.

ATTRACTION, or ATTRACTIVE *Force*, in Phyſicks, is a natural Power inherent in certain Bodies, whereby they act on other diſtant Bodies, and draw them toward themſelves. See FORCE.

This, the Perpateticks call the *Motion of Attraction*; and on many Occaſions, *Suction*; and produce various Inſtances where they ſuppoſe it to obtain.—Thus the Air, in Reſpiration, is taken in, according to them, by *Attraction*, or Suction; ſo is the Smoak through a Pipe of Tobacco; and the Milk out of the Mother's Breaſts: Thus alſo it is that the Blood and Humours riſe in a Cupping-Glaſs, Water in a Pump, and Smoak in Chimneys; ſo Vapours and Exhalations are *attracted* by the Sun; Iron by the Magnet, Straws by Amber, and electrical Bodies, *&c.* See SUCTION.

But the later Philoſophers generally explode the Notion of *Attraction*; aſſerting, that a Body cannot act where it is not; and that all Motion is perform'd by mere Impulſion.—Accordingly, moſt of the Effects which the Antients attributed to this unknown Power of *Attraction*, the Moderns have diſcovered to be owing to more ſenſible and obvious Cauſes; particularly the Preſſure of the Air. See AIR and PRESSURE.

To this are the Phænomena of Inſpiration, Smoaking, Sucking, Cupping-Glaſſes, Pumps, Vapours, Exhalations, *&c.* See RESPIRATION, SUCTION, PUMP, CUPPING-*Glaſs*, VAPOUR, SMOAK, EVAPORATION, *&c.*

For the Phænomena of magnetical and electrical Attraction, ſee MAGNETISM and ELECTRICITY.

The Power oppoſite to *Attraction* is call'd *Repulſion*; which is alſo argued to have ſome Place in natural Things. See REPULSION.

ATTRACTION, or ATTRACTIVE *Power*, in the *Newtonian* Philoſophy, is a Power or Principle, whereby all Bodies, and the Particles

Particles of all Bodies, mutually tend towards each other.—Or, more juſtly, *Attraction* is the effect of ſuch Power, whereby every Particle of Matter tends towards every other Particle. See MATTER and PARTICLE.

Attraction, its Laws, Phænomena, *&c.* make the great Hinge of Sir *Iſaac Newton*'s Philoſophy. See NEWTONIAN *Philoſophy*.

It muſt be obſerved, that though the great Author makes uſe of the Word *Attraction*, in common with the School Philoſophers; yet he very ſtudiouſly diſtinguiſhes between the Ideas.—The antient *Attraction* was a kind of Quality, inherent in certain Bodies themſelves; and ariſing from their particular or ſpecific Forms. See QUALITY and FORM.

The *Newtonian Attraction* is a more indefinite Principle; denoting, not any particular Kind or Manner of Action, nor the phyſical Cauſe of ſuch Action; but only a Tendency in the General, a *Conatus accedendi*; to whatever Cauſe, phyſical or metaphyſical, ſuch effect be owing; whether to a Power inherent in the Bodies themſelves, or to the Impulſe of an external Agent.

Accordingly, the great Author, in his *Philoſ. Nat. Prin. Math.* Notes, "that he uſes the Words *Attraction*, *Impulſe*, and *Pro-*"*penſion*, to the Centre, indifferently; and cautions the Reader "not to imagine that by *Attraction* he expreſſes the Modus of "the Action, or the efficient Cauſe thereof; as if there were "any proper Powers in the Centres, which in reality are only "mathematical Points; or, as if Centres could attract. *Lib.* I. *p.* 5.—So, he "conſiders centripetal Powers as *Attractions*; "though, phyſically ſpeaking, it were perhaps more juſt to call "them Impulſes." Ib. p. 147. He adds, "that what he calls "*Attraction* may poſſibly be effected by Impulſe, though not a "common or corporeal Impulſe; or in ſome other Manner un-"known to us." *Optic*, p. 322.

Attraction, if conſider'd as a Quality ariſing from the ſpecific Forms of Bodies, ought, together with Sympathy, Antipathy, and the whole Tribe of occult Qualities to be exploded. (See OCCULT *Quality.*) But when we have ſet theſe aſide, there will remain innumerable Phænomena of Nature, and particularly the Gravity or Weight of Bodies, or their Tendency to a Centre, which argue a Principle of Action ſeemingly diſtinct from Impulſe; where, at leaſt, there is no ſenſible Impulſion concern'd. Nay, what is more, this Action, in ſome reſpects, differs from all Impulſion we know of; Impulſe being always found to act in Proportion to the Surfaces of Bodies; whereas Gravity acts according to their ſolid Content, and conſequently muſt ariſe from ſome Cauſe that penetrates or pervades the whole Subſtance thereof.—This unknown Principle, (unknown we mean in reſpect of its Cauſe, for its Phænomena and Effects are moſt notorious) with all the Species and Modifications thereof, we call *Attraction*; which is a general Name, under which all mutual Tendencies, where no phyſical Impulſe appears, and which cannot, therefore, be accounted for from any known Laws of Nature, may be ranged.

And hence ariſe divers Kinds of *Attractions*; as, *Gravity*, *Magnetiſm*, *Electricity*, &c. which are ſo many different Principles, acting by different Laws; and only agreeing in this, that we do not ſee any phyſical Cauſes thereof; but that, as to our Senſes, they may really ariſe from ſome Power or Efficacy in ſuch Bodies, whereby they are enabled to act, even upon diſtant Bodies; though our Reaſon abſolutely diſallows of any ſuch Action.

ATTRACTION may be divided, with reſpect to the Law it obſerves, into two Kinds.—1°. That *which extends to a ſenſible Diſtance.*—Such are the *Attraction* of *Gravity*, found in all Bodies; and the *Attractions of Magnetiſm* and *Electricity*, found in particular Bodies.—*The ſeveral Laws and Phænomena of each, ſee under their reſpective Articles*, GRAVITY, MAGNETISM, and ELECTRICITY.

The *Attraction of Gravity*, call'd alſo among Mathematicians, the *Centripetal Force*, is one of the greateſt and moſt univerſal Principles in all Nature.—We ſee and feel it operate on Bodies near the Earth, (See WEIGHT.) and find, by Obſervation, that the ſame Power, (*i. e.* a Power which acts in the ſame Manner, and by the ſame Rules; *viz.* always proportionally to the Quantities of Matter, and as the Squares of the Diſtances) does alſo obtain in the Moon, and the other Planets, primary and ſecondary as well as the Comets: And even that this is the very Power whereby they are all retain'd in their Orbits, *&c.* And hence, as Gravity is found in all the Bodies which come under our Obſervation, it is eaſily infer'd, by one of the ſettled Rules of philoſophizing, that it obtains in all others; and as it is found to be as the Quantity of Matter in each Body, it muſt be in every Particle thereof; and hence every Particle in Nature is proved to *attract* every other Particle, *&c.* See *the Demonſtration hereof laid down at large, with the Application of the Principle to the Celeſtial Motions, under the Articles*, NEWTONIAN *Philoſophy*, SUN, MOON, PLANET, COMET, SATELLITE, CENTRIPETAL, CENTRIFUGAL, *&c.*

From this *Attraction* ariſes all the Motion, and conſequently all the Mutation, in the great World.—By this, heavy Bodies deſcend, and light ones aſcend; by this Projectiles are directed, Vapours and Exhalations riſe, and Rains, *&c.* fall. By this Rivers glide, the Air preſſes, the Ocean ſwells, *&c.* See MOTION, DESCENT, ASCENT, PROJECTILE, VAPOUR, RAIN, RIVER, TIDE, AIR, ATMOSPHERE, *&c.*

In effect, the Motions ariſing from this Principle make the Subject of that extenſive Branch of Mathematicks, call'd *Mechanicks*, or *Statics*; with the Parts or Appendages thereof, *Hydroſtaticks*, *Pneumaticks*, &c. See MECHANICKS, STATICKS, HYDROSTATICKS, PNEUMATICKS. See alſo MATHEMATICKS, PHILOSOPHY, *&c.*

2°. *That which does not extend to ſenſible Diſtances.*—Such is found to obtain in the minute Particles whereof Bodies are compoſed, which *attract* each other at, or extremely near, the Point of Contact; with a Force much ſuperior to that of Gravity; but which at any Diſtance therefrom decreaſes much faſter than the Power of Gravity.—This Power, a late ingenious Author chuſes to call the *Attraction of Coheſion*; as being that whereby the Atoms or inſenſible Particles of Bodies are united into ſenſible Maſſes. See COHESION, ATOM, PARTICLE, *&c.*

This latter Kind of *Attraction* owns Sir *Iſaac Newton* for its Diſcoverer; as the former does, its Improver.—The Laws of Motion, Percuſſion, *&c.* in ſenſible Bodies under various Circumſtances, as falling, projected, *&c.* as aſcertain'd by the later Philoſophers, do not reach to thoſe more remote, inteſtine Motions of the component Particles of the ſame Bodies, whereon the Changes of the Texture, Colour, Properties, *&c.* of Bodies depend: So that our Philoſophy, if only founded on the Principle of Gravitation, and carried ſo far as that would lead us, wou'd neceſſarily be very deficient. See LIGHT, COLOUR, *&c.*

But, beſide the common Laws of ſenſible Maſſes, the minute Parts they are compoſed of, are found ſubject to ſome others, which have been but lately taken notice of, and are yet very imperfectly known. Sir *Iſaac Newton*, to whoſe happy Penetration we owe the hint, contents himſelf to eſtabliſh, that there are ſuch Motions in the *minima naturæ*, and that they flow from certain Powers or Forces, not reducible to any of thoſe in the great World.—In virtue of theſe Powers, he ſhews, "that the ſmall "Particles act on one another even at a Diſtance; and that ma-"ny of the Phænomena of Nature are the Reſult thereof. "Senſible Bodies, we have already obſerved, act on one ano-"ther divers ways; and as we thus perceive the Tenor and "Courſe of Nature, it appears highly probable that there may "be other Powers of the like Kind; Nature being very uni-"form and conſiſtent with herſelf.—Thoſe juſt mentioned, reach "to ſenſible Diſtances, and ſo have been obſerved by vulgar "Eyes: But there may be others, which reach to ſuch ſmall Di-"ſtances, as have hitherto eſcaped Obſervation; and 'tis proba-"ble Electricity may reach to ſuch Diſtances, even without be-"ing excited by Friction."

The great Author juſt mentioned, proceeds to confirm the Reality of theſe Suſpicions from a great Number of Phænomena and Experiments, which plainly argue ſuch Powers and Actions between the Particles, *e. gr.* of Salts, and Water, Oil of Vitriol and Water, Aqua Fortis and Iron, Spirit of Vitriol and Salt-petre.—He alſo ſhews, that theſe Powers, *&c.* are unequally ſtrong between different Bodies; ſtronger, *e. gr.* between the Particles of Salt of Tartar, and thoſe of Aqua Fortis, than thoſe of Silver; between Aqua Fortis and Lapis Calminaris, than Iron; between Iron than Copper, Copper than Silver, or Mercury. So Spirit of Vitriol acts on Water, but more on Iron or Copper, *&c.*

The other Experiments which countenance the Exiſtence of ſuch Principle of *Attraction* in the Particles of Matter are innumerable; many of them the Reader will find enumerated under the Articles MATTER, ACID, SALT, MENSTRUUM, *&c.*

Theſe Actions, in virtue whereof the Particles of the Bodies above mentioned tend toward each other, the Author calls by a general, indefinite Name, *Attraction*, which is equally applicable to all Actions, whereby diſtant Bodies tend towards one another, whether by Impulſe, or by any other more latent Power: And from hence accounts for an Infinity of Phænomena, otherwiſe inexplicable, to which the Principle of Gravity is inſufficient.—Such are Coheſion, Diſſolution, Coagulation, Cryſtallization, the Aſcent of Fluids in Capillary Tubes, Animal Secretion, Fluidity, Fixity, Fermentation, *&c.* See the reſpective Articles, COHESION, DISSOLUTION, CRYSTALLIZATION, ASCENT, SECRETION, SPHERICITY, FIXITY, FERMENTATION, *&c.*

"Thus," adds our immortal Author, "will Nature be found "very conformable to herſelf, and very ſimple; performing all "the great Motions of the heavenly Bodies, by the *Attraction* "of Gravity, which intercedes thoſe Bodies, and almoſt all the "ſmall ones of their Parts, by ſome other attractive Power dif-"fuſed through the Particles thereof.—Without ſuch Principles, "there never would have been any Motion in the World; and "without the continuance thereof, Motion wou'd ſoon periſh, "there being otherwiſe a great Decreaſe or Diminution there-"of, which is only ſupplied by theſe active Principles." *Opticks*, p. 373.

We need not ſay how unjuſt it is in the generality of foreign Philoſophers, to declare againſt a Principle which furniſhes ſo beautiful a View; for no other Reaſon but becauſe we cannot conceive how a Body ſhould act on another at a Diſtance.—'Tis certain

certain, Philoſophy allows of no Action but what is by immediate Contact and Impulſion: (for how can a Body exert any active Power there, where it does not exiſt? To ſuppoſe this of any thing, even the ſupreme Being himſelf, would perhaps imply a Contradiction.) Yet we ſee Effects without ſeeing any ſuch Impulſe; and where there are Effects, we can eaſily infer there are Cauſes, whether we ſee them or no. But a Man may conſider ſuch Effects, without entering into the Conſideration of the Cauſes; as, indeed, it ſeems the Buſineſs of a Philoſopher to do: For to exclude a Number of Phænomena which we do ſee, will be to leave a great Chaſm in the Hiſtory of Nature; and to argue about Actions which we do not ſee, will be to build Caſtles in the Air.—It follows, therefore, that the Phænomena of *Attraction*, are Matter of phyſical Conſideration, and as ſuch entitled to a Share in a Syſtem of Phyſicks; but that the Cauſe, thereof will only become ſo when they become ſenſible; *i. e.* when they appear to be the Effects of ſome other higher Cauſes, (for a Cauſe is no otherwiſe ſeen than as it ſelf is an Effect, ſo that the firſt Cauſe muſt from the Nature of things be inviſible.) We are therefore at Liberty to ſuppoſe the Cauſes of *Attractions* what we pleaſe, without any Injury to the Effects.—The illuſtrious Author himſelf ſeems a little irreſolute as to the Cauſe; inclining, ſometimes, to attribute Gravity to the Action of an immaterial Cauſe, *Opticks*, p. 343. *&c.* And ſometimes to that of a material one. *Ib.* p. 325.

In his Philoſophy, the Reſearch into Cauſes is the laſt thing; and never comes in turn till the Laws and Phænomena of the Effect be ſettled; it being to theſe Phænomena that the Cauſe is to be accommodated.—The Cauſe even of any, the groſſeſt, and moſt ſenſible Action is not adequately known: How Impulſe or Percuſſion it ſelf works its Effect, *i. e.* how Motion is communicated by Body to Body, confounds the deepeſt Philoſophers; yet is Impulſe received not only into Philoſophy, but into Mathematicks; and accordingly the Laws and Phænomena of its Effects, make the greateſt Part of common Mechanicks. See PERCUSSION, and COMMUNICATION *of Motion*.

The other Species of *Attraction*, therefore, when their Phænomena are ſufficiently aſcertain'd, have the ſame Title to be promoted from phyſical to mathematical Conſiderations; and this, without any previous Inquiry into their Cauſes, which our Conceptions may not be proportionate to: Let their Cauſes be occult, as all Cauſes ever will be; ſo as their Effects, which alone immediately concern us, be but apparent. See CAUSE.

Our noble Countryman, then, far from adulterating Philoſophy with any thing Foreign, or Metaphyſical; as many have reproached him; has the Glory of opening a new Source of ſublimer Mechanicks, which, duly cultivated, might be of infinitely more Extent than all the Mechanicks yet known: 'Tis hence alone we muſt expect to learn the manner of the Changes, Productions, Generations, Corruptions, *&c.* of natural things; with all that Scene of Wonders opened to us by the Operations of Chymiſtry. See GENERATION, CORRUPTION, OPERATION, CHYMISTRY, *&c.*

Some of our own Countrymen have proſecuted the Diſcovery with laudable Zeal: Dr. *Keil* particularly, has endeavoured to deduce ſome of the Laws of this new Action, and applied them to ſolve divers of the more general Phenomena of Bodies, as Coheſion, Fluidity, Elaſticity, Softneſs, Fermentation, Coagulation, *&c.* And Dr. *Friend* ſeconding him, has made a further Application of the ſame Principles, to account at once, for almoſt all the Phænomena that Chymiſtry preſents.—So that the new Mechanicks ſhould ſeem already raiſed to a compleat Science; and nothing can now turn up, but we have an immediate Solution of, from the *attractive Force*.

But this ſeems a little too precipitate; a Principle ſo fertile, ſhould have been further explored; its particular Laws, Limits, *&c.* more induſtriouſly detected and laid down, e're we had gone to Application.—*Attraction*, in the groſs, is ſo complex a thing, that it may ſolve a thouſand different things alike: The Notion is but one Degree more ſimple and preciſe, than Action it ſelf; and till more of its Properties are aſcertain'd, it were better to apply it leſs, and ſtudy it more.

As a Specimen of the extent of the Principle, and the manner of applying it, we ſhall here ſubjoin the principal Laws and Conditions thereof; as ſettled by Sir *Iſaac Newton*, Dr. *Keil*, Dr. *Friend*, Dr. *Morgan*, &c.

Theor. I. Beſides that *attractive* Power whereby the Planets and Comets are retain'd in their Orbits; there is another, by which the ſeveral Particles whereof Bodies conſiſt, *attract*, and are mutually *attracted* by, each other; which Power decreaſes in more than a duplicate Ratio of the Increaſe of the Diſtance.

This *Theorem* we have already obſerv'd, is demonſtrable from a great Number of Phænomena.—We ſhall here only mention a few eaſy and obvious ones; as, the Spherical Figure, aſſumed by the Drops of Fluids; which can only ariſe from ſuch Principle: The uniting and incorporating of two Sperules of Quick-ſilver into one, upon the firſt touch, or extremely near approach of their Surfaces: The riſing of Water up the Sides of a Glaſs Bubble immerg'd therein, higher than the Level of the other Water, or of Mercury, up a Sphere of Iron, or the like. See SPHERICITY, DROP, *&c.*

As to the juſt Law of this *Attraction*, it is not yet determined; only this we know in the general, that the force, in receding from the Point of Contact, is diminiſhed in a greater Proportion than that of the duplicate Ratio of the Diſtances, which is the Law of Gravity. For that if the Diminution were only in ſuch duplicate Ratio, the *Attraction* at any ſmall aſſignable Diſtance would be nearly the ſame as at the Point of Contact: Whereas Experience teaches, that this *Attraction* almoſt vaniſhes, and ceaſes to have any Effect, at the ſmalleſt aſſignable Diſtance.—But whether to fix on a triplicate, quadruplicate, or ſome other proportion to the increaſing Diſtances, is not aſcertain'd by Experiment.

II. The Quantity of *Attraction* in all Bodies, is exactly proportional to the Quantity of Matter in the *attracting* Body; as being in reality the Reſult or Sum of the united Forces of the *Attractions* of all thoſe ſingle Particles of which it is compos'd; or, in other Words, *Attraction* in all Bodies is, *cæteris paribus*, as their Solidities.

Hence, 1°. At equal Diſtances the *Attractions* of homogeneal Spheres will be as their Magnitudes.—And,

2°. At any Diſtance whatever, the *Attraction* is as the Sphere divided by the Square of the Diſtance.

This Law, it muſt be noted, only holds in reſpect of Atoms, or the ſmalleſt conſtituent Particles, ſometimes call'd *Particles of the laſt Compoſition*; and not of Corpuſcles or Compoſitions made up of theſe; for they may be ſo put together, as that the moſt ſolid Corpuſcles may form the lighteſt Particles; *i. e.* the unfitneſs of their Surfaces for intimate Contact, may occaſion ſuch great Interſtices as will make their Bulks large in Proportion to their Matter.

III. If a Body conſiſt of Particles, every one whereof has an attractive Power decreaſing in a triplicate, or more than a triplicate Ratio of their Diſtances; the Force wherewith a Particle is *attracted* by that Body in the Point of Contact, or at an infinitely little Diſtance from the Contact, will be infinitely greater than if that Particle were placed at a given Diſtance from the Body. See INFINITE.

IV. Upon the ſame Suppoſition, if the *attractive* Force at any aſſignable Diſtance, have a finite Ratio to its Gravity; this Force in the Point of Contact, or at an infinitely ſmall Diſtance, will be infinitely greater than its Power of Gravity.

V. But if in the Point of Contact the *attractive* Force of Bodies have a finite Ratio to their Gravity; this Force in any aſſignable Diſtance is infinitely leſs than the Power of Gravity, and therefore ceaſes.

VI. The *attractive* Force of every Particle of Matter in the Point of Contact, almoſt infinitely exceeds the Power of Gravity, but is not infinitely greater than that Power; and therefore in a given Diſtance, the *attractive* Force will vaniſh.

This *attractive* Power, therefore, thus ſuperadded to Matter, only extends to Spaces extreamly minute, and vaniſhes in greater Diſtances; whence, the Motion of the heavenly Bodies, which are at prodigious Diſtance from each other, cannot at all be diſturb'd by it, but will continually go on as if there were no ſuch Power in Bodies.

Where this *attracting* Power ceaſes; there, according to Sir *Iſaac Newton*, does a repelling Power commence; or rather, the *attracting* does thence forward become a repelling Power. See REPELLING *Power*

VII. Suppoſing a Corpuſcle to touch any Body, the Force whereby that Corpuſcle is impell'd, that is, the Force with which it coheres to that Body, will be proportionable to the Quantity of Contact: For the Parts farther remov'd from the Point of Contact, contribute nothing towards its Coheſion.

Hence, according to the Difference in the Contact of Particles, there will be different Degrees of Coheſion: But the Powers of Coheſion are greateſt when the touching Surfaces are Planes; in which caſe, *cæteris paribus*, the Force by which one Corpuſcle adheres to others, will be as the Parts of the touching Surfaces.

Hence it appears why two perfectly poliſh'd Marbles, join'd together by their plane Surfaces, cannot be forc'd aſunder, but by a Weight which much exceeds that of the incumbent Air.

Hence alſo may be drawn a Solution of that famous Problem *concerning the Coheſion of the Parts of Matter*. See COHESION.

VIII. The Power of *Attraction* in the ſmall Particles increaſes, as the Bulk and Weight of the Particles diminiſhes.

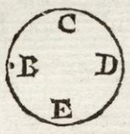
For, the Force only acting at or near the Point of Contact, the Momentum muſt be as the Quantity of Contact, that is, as the Denſity of the Particles, and the Largeneſs of their Surfaces: But the Surfaces of Bodies increaſe or decreaſe as the Squares, and the Solidities as the Cubes of the Diameter. Conſequently, the ſmalleſt Particles having the largeſt Surfaces in proportion to their Solidities, are capable of more Contact, *&c.*

Thoſe Corpuſcles are moſt eaſily ſeparated from one another, whoſe Contacts are the feweſt and the leaſt, as in Spheres infinitely ſmall.

Hence we have the Cauſe of Fluidity. See FLUIDITY, WATER, *&c.*

IX. The Force whereby any Corpuſcle is drawn to another nearly adjacent Body, ſuffers no Change in its Quantity, let the Matter of the *attracting* Body be increaſed or diminiſhed; ſup-

poſing the ſame Denſity to remain in the Body, and the Diſtance of the Corpuſcle to continue the ſame.

A. 

For ſince the *attractive* Powers of Particles are diffus'd only through the ſmalleſt Spaces; 'tis manifeſt that the remoter Parts at *C D* and *E* contribute nothing towards *attracting* the Corpuſcle *A*: And therefore the Corpuſcle will be *attracted* with the ſame Force towards *B*, whether theſe Parts remain or be take taken away; or, laſtly, whether others be added to them.

Hence, Particles will have different *attractive* Forces, according to their different Structure and Compoſition; thus a Particle perforated will not *attract* ſo ſtrongly as if entire. So, again, the different Figures into which a Particle is form'd, will occaſion a diverſity of Power: Thus a Sphere will *attract* more than a Cone, Cylinder, *&c.*

X. Suppoſe a Body of ſuch a Texture as that the Particles of the laſt Compoſition, by an external Force, ſuch as a Weight compreſſing them, or an Impulſe given by another Body, may be a little removed from their original Contact, but ſo as not to acquire new ones; the Particles by their *attractive* Force tending to one another, will ſoon return to their original Contacts.—But when the ſame Contacts and Poſitions of the Particles which compoſe any Body, return; the ſame Figure of the Body will alſo be reſtor'd: And therefore Bodies which have loſt their original Figures, may recover them by *Attraction*.

Hence appears the Cauſe of Elaſticity.—For, where the contiguous Particles of a Body have by any external Violence been forc'd from their former Points of Contact, to extremely ſmall Diſtances; as ſoon as that Force is taken off, the ſeparated Particles muſt return to their former Contact: By which means the Body will reſume its Figure, *&c.* See ELASTICITY.

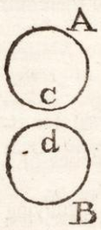
XI. But if the Texture of a Body be ſuch that the Particles by an impreſſed Force being remov'd from their Contacts, come immediately into others of the ſame Degree, that Body cannot reſtore it ſelf to its original Figure.

Hence we underſtand what Texture that is wherein the Softneſs of Bodies conſiſts. See SOFTNESS.

XII. The Bulk of a Body heavier than Water, may be ſo far diminiſh'd, that it ſhall remain ſuſpended in Water, without deſcending by its own Gravity. See SPECIFIC *Gravity*.

Hence it appears why ſaline, metallick, and other ſuch-like Particles, when reduc'd to ſmall Dimenſions, are ſuſpended in their Menſtruums. See MENSTRUUM.

XIII. Greater Bodies approach one another with a leſs Velocity than ſmaller.—For the Force with which two Bodies *A* and *B* approach, reſides only in the neareſt Particles; the more remote having nothing to do therein. No greater Force, therefore, will be apply'd to move the Bodies *A* and *B*, than to move the Particles *c* and *d*; but the Velocities of Bodies mov'd by the ſame Force are in a reciprocal Ratio of the Bodies: Wherefore the Velocity with which the Body *A* tends towards *B*, is to the Velocity with which the Particle *c* detach'd from the Body would tend towards the ſame *B*, as the Particle *c* is to the Body *B*; conſequently the Velocity of the Body *A* is much leſs than wou'd be the Velocity of the Particle *c* detach'd from the Body.



Hence it is that the Motion of large Bodies is naturally ſo ſlow and languid, that an ambient Fluid and other circumjacent Bodies generally retard them; whilſt the leſſer go on more briskly, and produce a greater number of Effects: So much greater is the *attractive* Energy in ſmaller Bodies than in the larger.—Hence again appears the Reaſon of that chymical Axiom; *Salts don't act till they are diſſolv'd.*

XIV. If a Corpuſcle placed in a Fluid be equally attracted every way by the circumambient Particles, no Motion of the Corpuſcle will enſue.—But if it be *attracted* by ſome Particles more than others, it will tend to that part where the *Attraction* is the greateſt; and the Motion produc'd will correſpond to the Inequality of the *Attraction*, *viz.* the greater the Inequality, the greater the Motion, and *vice verſa*.

XV. Corpuſcles floating in a Fluid, and *attracting* each other more than the Particles of the Fluid that lie between them, will force away the Particles of the Fluid, and ruſh to one another with a Force equal to that by which their mutual *Attraction* exceeds that of the Particles of the Fluid.

XVI. If a Body be immerged in a Fluid whoſe Parts more ſtrongly *attract* the Particles of the Body than they do one another; and if there be a number of Pores or Interſtices in the Body pervious to the Particles of the Fluid; the Fluid will immediately diffuſe itſelf through thoſe Pores. And if the Connexion of the Parts of the Body be not ſo ſtrong, but that it may be overcome by the Force of the Particles ruſhing within it; there will be a Diſſolution of the Body. See DISSOLUTION.

Hence, for a Menſtruum to be able to diſſolve any given Body, there are three things requir'd.—1°. That the Parts of the Body *attract* the Particles of the Menſtruum more ſtrongly than theſe *attract* each other. 2°. That the Body have Pores or Interſtices open and pervious to the Particles of the Menſtruum. 3°. That the Coheſion of the Particles which conſtitute the Body, be not ſtrong enough to reſiſt the Irruption of the Particles of the Menſtruum. See MENSTRUUM.

XVII. Salts are Bodies endued with a great *attractive* Force, though among them are interſperſed many Interſtices, which lie open to the Particles of Water; theſe are therefore ſtrongly *attracted* by thoſe ſaline Particles, ſo that they forcibly ruſh into them, ſeparate their Contacts, and diſſolve the Contexture of the Salts. See SALT.

XVIII. If the Corpuſcles be more *attracted* by the Particles of the Fluid than by each other; they will recede from each other, and be diffus'd through the whole Fluid.

Thus, if a little Salt be diſſolved in a deal of Water, the Particles of the Salt, though ſpecifically heavier than Water, will evenly diffuſe themſelves through the whole Water; ſo as to make it as Saline at Top as Bottom.—Does not this imply that the Parts of the Salt have a centrifugal, or repulſive Force, by which they fly from one another; or rather, that they *attract* the Water more ſtrongly than they do one another? For as all things aſcend in Water which are leſs *attracted* than Water by the Gravity of the Earth, ſo all the Particles of Salt floating in Water, which are leſs *attracted* by any Particle of Salt, than Water is, muſt recede from the Particle, and give way to the more *attracted* Water. *Newt. Opt.* p. 363.

XIX. Corpuſcles, or little Bodies ſwimming in a Fluid, and tending towards each other; if they be ſuppos'd elaſtick, will fly back again after their Congreſs, till ſtriking on other Corpuſcles, they be again reflected towards the firſt; whence will ariſe innumerable other Conflicts with other Corpuſcles, and a continu'd Series of Percuſſions and Reboundings.—But, by the *attractive* Power, the Velocity of ſuch Corpuſcles will be continually increaſed; ſo that the inteſtine Motion of the Parts will at length become evident to Senſe. See INTESTINE *Motion*.

Add, that in proportion, as the Corpuſcles *attract* each other with a greater or leſs Force, and as their Elaſticity is in a greater or leſs Degree, their Motions will be different, and become ſenſible at various Times, and in various Degrees.

XX. If Corpuſcles that *attract* each other happen mutually to touch, there will not ariſe any Motion, becauſe they cannot come nearer. If they be placed at a very little Diſtance from each other, a Motion will ariſe; but if further remov'd, the Force wherewith they *attract* each other, will not exceed that wherewith they *attract* the Particles of the intermediate Fluid, and therefore no Motion will be produced.

On theſe Principles depend all the Phænomena of Fermentation and Ebullition. See FERMENTATION and EBULLITION.

Hence appears the Reaſon why Oil of Vitriol, when a little Water is poured on it, works and grows hot: For, the ſaline Corpuſcles are a little disjoin'd from their mutual Contact, by the infus'd Water; whence, as they *attract* each other more ſtrongly than they do the Particles of Water, and as they are not equally *attracted* on every ſide, there muſt of neceſſity ariſe a Motion. See VITRIOL.

Hence alſo appears the Reaſon of that uncommon Ebullition occaſion'd by adding Steel-filings to the foreſaid Mixture. For the Particles of Steel are extremely elaſtick; whence there muſt ariſe a very ſtrong Reflection.

Hence alſo we ſee the Reaſon why ſome Menſtruums act more ſtrongly, and diſſolve Bodies ſooner, when diluted with Water.

XXI. If Corpuſcles mutually *attracting* each other have no elaſtick Power, they will not be reflected back from each other, but will form Congeries, or little Maſſes; *whence a Coagulum will ariſe*. See COAGULATION.

If the Gravity of the Particles thus amaſs'd, exceed the Gravity of the Fluid, *a Precipitation will ſucceed.*—Precipitation may alſo ariſe from an Increaſe or Diminution of the Gravity of the Menſtruum wherein the Corpuſcles are immerg'd. See PRECIPITATION.

XXII. If Corpuſcles ſwimming in a Fluid, and mutually *attracting* each other, have ſuch a Figure, as that in ſome given Parts they have a greater *attractive* Power than in others, and their Contact greater in thoſe Parts than in others; thoſe Corpuſcles will unite into Bodies with given Figures; *and thence will ariſe Cryſtallization.* See CRYSTALLIZATION.

Particles immerged in a Fluid moved with a ſwift or a ſlow progreſſive Motion, will *attract* each other in the ſame Manner as if the Fluid were at reſt; but if all the Parts of the Fluid do not move equally, the *Attractions* will be diſturbed.

Hence it is that Salts will not cryſtallize till the Water wherein they are diſſolved is cold.

XXIV. If between two Particles of a Fluid there happen to be a Corpuſcle whoſe two oppoſite Sides have a ſtrong *attractive* Power, that intermediate Corpuſcle will agglutinate or faſten the Particles of the Fluid to it ſelf.—And ſeveral ſuch Corpuſcles diffus'd through the Fluid, will fix all its Particles into a firm Body; *and the Fluid will be froze or reduc'd into Ice.* See FREEZING.

XXV. If a Body emit a great Quantity of Effluvia whoſe *attractive* Powers are very ſtrong; as thoſe Effluvia approach any other very light Body, their *attractive* Powers will overcome the Gravity of that Body, and the Effluvia will draw it towards themſelves;

ſelves: And as the Effluvia are cloſer and more copious at little Diſtances from the emitting Body, than at greater; the light Body will be continually drawn towards the denſer Effluvia, till ſuch time as it comes to adhere to the emitting Body it ſelf.

And hence moſt of the Phænomena of Electricity may be accounted for. See ELECTRICITY.

ATTRACTIVE, ATTRACTRIX, ſomething that has the Power or Faculty to *attract*. See ATTRACTION, FACULTY, *&c.*

ATTRACTIVE *Power*, or *Force*, *Vis attractiva*. See POWER, ATTRACTION, *&c.*

ATTRACTIVES, or ATTRACTIVE *Remedies*. See ATTRAHENT.

ATTRAHENTS, ATTRAHENTIA, or ATTRACTIVE *Remedies*, ſuch Medicines, externally applied, as by their Activity and Warmth penetrate the Pores; and mix with and rarefy any obſtructed Matter; ſo as to render it fit for Diſcharge, upon laying open the Part by Cauſtick or Inciſion. See MEDICINE, CAUSTIC, *&c.*

Attrahents are the ſame with what we otherwiſe call *Drawers*, *Ripeners*, *Maturantia*, *Digeſtives*, &c. See RIPENNER, DIGESTION, *&c.*

The principal Simples belonging to this Claſs, are the ſeveral Kinds of *Fats*, or *Adipes*; the Dungs of Pidgeons and Cows; Bran, Yeſt, Herring, the Sucking of a Leech, Melilot, Tobacco, Oil, Pitch, Roſin, Frankincence, *&c.* See each under its proper Articles, FAT, ADEPS, HERRING, OIL, PITCH, ROSIN, FRANKINCENCE, *&c.*

In many Inſtances, as the Matter rarefies and grows more fluid by means of ſuch Medicines; the refluent Blood is apt to waſh it back into the common Maſs; which ſometimes does a deal of Miſchief; or by making it take up more room upon its Rarefaction, occaſions it to diſtend more the Parts in which it is contained: Upon which a Senſe of Pain is excited, and thereby a greater Concourſe of fluid, and conſequently a needleſs Increaſe of the Tumor. So that Medicines under this Denomination require the moſt careful Management.

ATTRIBUTE, ATTRIBUTUM, in Philoſophy, a Property which agrees to ſome Perſon, or Thing; or a Quality, which determines ſomething to be after a certain Manner. See PROPERTY and QUALITY.

Thus, Underſtanding is an *Attribute* of Mind; Figure, an *Attribute* of Body, *&c.*

Spinoza makes the Soul and the Body to be of the ſame Subſtance; with this only Difference, that the Soul is to be conceiv'd under the *Attribute* of Thought, and the Body under that of Extenſion. See SUBSTANCE, SPINOSISM, *&c.*

Of the ſeveral *Attributes* belonging to any Subſtance, that which preſents it ſelf firſt, and which the Mind conceives as the Foundation of all the reſt, is call'd its *eſſential Attribute*. See ESSENCE and ESSENTIAL.

Thus, Extenſion is by ſome, and Solidity by others, made the eſſential *Attribute* of Body or Matter. See BODY, MATTER, EXTENSION, SOLIDITY, *&c.*

The other *Attributes* are call'd *accidental* ones. See ACCIDENT and ACCIDENTAL.

Mr. *Lock* endeavours to prove, that Thinking, which the *Carteſians* make the eſſential *Attribute* of the Mind, is only an accidental one. See THINKING, MIND, SOUL, *&c.*

ATTRIBUTE, in Logic, is an Epithet given to any Subject; or it is any predicate thereof; or whatever may be affirmed or denied of any thing. See SUBJECT, PREDICATE, *&c.*

Every Propoſition conſiſts of a Subject, an *Attribute*, and a conjunctive Particle. See PROPOSITION.

Attributes are uſually divided into *poſitive*, which give a thing ſomewhat; as when we ſay of a Man that he is *animate:* And Negative; as when we ſay of a Stone that it is *inanimate.*—Others, again, divide them into *common*, which agree to ſeveral different Things, as *Animal:* And proper, as *Thought*, &c.

The Word is compounded of the *Latin*, *ad*, to; and *tribuo*, I give.

ATTRIBUTES, in Theology, are underſtood of the ſeveral Qualities and Perfections which we conceive in God; and which conſtitute his proper Eſſence; as *Juſtice*, *Goodneſs*, *Wiſdom*, &c. See GOD.

The Heathen Mythologiſts divided the Deity into as many diſtinct Beings as he has *Attributes:* Thus the Power of God was call'd *Jupiter*; the Wrath and Vengeance of God, *Juno*, &c. See POETRY.

ATTRIBUTES, in Painting and Sculpture, are Symbols added to ſeveral Figures, to denote their particular Office and Character. See FIGURE and SYMBOL.

Thus the Club is an *Attribute* of *Hercules*; the Palm an *Attribute* of Victory; the Peacock of *Juno*; the Eagle of Jupiter, *&c.* See STATUE, SCULPTURE, *&c.*

ATTRITION, ATTRITIO, or *Triture*, or *Friction*, expreſſes ſuch a Motion of Bodies againſt one another, as ſtrikes off ſome ſuperficial Particles; whereby they become leſs and leſs. See MOTION and FRICTION.

The Word is form'd of *atterere*, to rub, wear; compounded of *ad*, to; and *tero*.

The grinding and poliſhing of Bodies is performed by *Attrition*. See GRINDING and POLISHING.

The Effects of *Attrition* in exciting Heat, Light, Electricity, *&c.* ſee under the Articles HEAT, LIGHT, FIRE, ELECTRICITY, *&c.*

A Feather by being only drawn through the Fingers has been found by Mr. *S. Grey* to acquire a Degree of Electricity, and would be attracted by the Finger when held near it; a human Hair, after having paſſed three or four times between the Finger and Thumb, would fly to his Finger at the Diſtance of half an Inch; and the Hair of a Dog's Ear, and the Threads of Silk would do the like. The like was found in Pieces of Ribband of ſeveral Colours, half a Yard long; the Hand held at the lower-end of any of which, would attract them at the Diſtance of five or ſix Inches. But if they imbibed the Moiſture of the Air, their Electricity would be much weakened thereby; in which Caſe, the Fire never failed to give them a ſtrong one. In effect, the ſame Author found Woollen, Paper, Leather, Woodſhavings, Parchment, and Gold-beater's Skin, to be Electrical; and that they not only came to the Hand, or any other ſolid Body, but attracted ſmall Bodies to them, ſometimes at the Diſtance of eight or ten Inches: ſome of theſe, alſo, appeared luminous upon Friction. See *Philoſ. Tranſ.* N°, 366.

ATTRITION is alſo frequently uſed for the Friction, or rubbing of ſuch ſupple Bodies one againſt another, as will not wear out, but occaſion ſome particular Determinations of the Fluids they contain.

Thus, the various Senſations of Hunger, Pain, or Pleaſure, are occaſion'd by the *Attritions* of the Organs form'd for ſuch Impreſſions. See HUNGER, PAIN, PLEASURE, *&c.*

ATTRITION, among Divines, is a Sorrow or Regret for having offended God; ariſing from a Senſe of the Odiouſneſs of Sin, and the Apprehenſions of having incurred the loſs of Heaven, and Puniſhment; *i. e.* the Pains of Hell. See HEAVEN and HELL.

Attrition is eſteem'd the loweſt Degree of Repentance, being a ſtep ſhort of Contrition. See REPENTANCE and CONTRITION.

ATTURNATO *faciendo vel Recipiendo*, a Writ which a Man owing Suit to a County, Hundred, or other Court, and deſiring to make an Attorney appear for him there, whom he doubts the Sheriff or Steward will not otherwiſe admit; purchaſeth, to command him to receive ſuch Attorney, and admit his Appearance by him. See ATTORNEY.

AVANT, a *French* Prepoſition, ſignifying *before*, or a priority either in reſpect of Time or Place; ſometimes uſed, in Compoſition, in our Language, but more uſually contracted, and wrote *Vaunt*, or *Vant*, or even *Van*. See VAN.

AVANT *Corps*, AVANT *Foſſe*, &c. AVANT *Gard*, &c. } See { VAN *Corps*. VAN *Foſſe*. VAN *Guard*, &c.

AVAUNCHERS, among Hunters, the ſecond Branches of a Hart's Horn. See HEAD, HUNTING, *&c.*

AVAST, a Term frequently uſed on board a Ship, ſignifying to *ſtop*, *hold*, or *ſtay*.

The Word is form'd of the *Italian*, *vaſta*, or *baſta*, it is enough, it ſuffices.

AUCTIO, AUCTION, a kind of Sale among the antient *Romans*, perform'd by the publick Cryer, *ſub haſta*, that is, under a Spear ſtuck up on that occaſion, and by ſome Magiſtrate who made good the Sale by Delivery of the Goods.

This was termed *Auctio*, q. d. increaſe; becauſe according to *Sigonius*, the Goods were ſold to him, *qui plurimum rem augeret*, who wou'd bid moſt for them.

And hence our *Engliſh* Word, *Auction*, which ſignifies the ſame thing among us.

AUBAINE, in the *French* Cuſtoms, the act of inheriting after a Foreigner, who dies in a Country where he is not naturalized.

The Word is form'd of *Aubain*, a Foreigner; which *Menage* derives further from the *Latin*, *Alibi natus*; *Cujas*, from *Advena*; *du Cange* from *Albanus*, a *Scot*, or *Iriſhman*; by reaſon theſe were antiently much given to travelling and living abroad.

The King of *France*, by the right of *Aubaine*, claims the Inheritance of all Foreigners in his Dominions; excluſive of all other Lords, and even of any Teſtament the deceaſed cou'd make. An Embaſſador, though not naturaliz'd, is not ſubject to the right of *Aubaine*. The *Swiſs*, *Savoyards*, *Scots*, and *Portugueze*, are alſo exempted from the *Aubaine*, as being reputed Natives and Regnicoles.

AUDIENCE. See HEARING, ATTENTION, and AUDITORY.

The Word is form'd from the corrupt *Latin*, *Audentia*, of *Audire*, to hear.

AUDIENCE is alſo uſed for the Ceremonies practiced in Courts, at the admiſſion of Embaſſadors, and publick Miniſters, to a hearing. See EMBASSADOR, *&c.*

Such an Embaſſador ſent to demand *Audience*; took his *Audience* of Leave to depart, *&c.*

AUDIENCE is also the Name of a Court of Justice, established by the *Spaniards* in the *West Indies*; answering in effect to the Parliaments in *France*.

They judge without Appeal, and have each a certain District, which ordinarily takes in several Provinces, call'd also *Audiences*, from the Names of the Tribunals to which they belong.

Hence *Sanson* divides *Spain* into as many of these *Audiences* as there are of those Tribunals.—New *Spain* comprehends three *Audiences*; those of *Guadalajara*, *Mexico*, and *Guatimala*.

AUDIENCE is also the Name of one of the Ecclesiastical Courts, which is, where-ever the Archbishop calls a Cause to his own Hearing. See COURT and ARCHBISHOP.

The Court of *Audience* is chiefly concerned in Differences arising upon Elections, Consecrations, Institutions, Marriages, *&c.*

AUDIENDO *& terminando*, a Writ, or rather a Commission, directed to certain Persons, when an Insurrection or great Misdemeanour is committed in any Place, for the Appeasing and Punishment thereof.

AUDIENTES, in Ecclesiastical History. See AUDITORES.

AUDIT, a regular hearing and examining of an Account, by Officers appointed for that purpose. See AUDITOR and ACCOUNT.

AUDITA *querela*, a Writ which lies against him, who, having taken a Statute-Merchant, or a Recognizance in the Nature of a Statute-Staple, or a Judgment, or a Recognizance of another; and craving, or having obtained Execution of the same from the Mayor and Bailiffs, before whom it was entered; at the Complaint of the Party who entered the same, upon Suggestion of some just Cause why Execution should not be granted; as a Release, or other Exception.—This Writ is granted by the Lord Chancellor, upon view of the Exception suggested, to the Judges of either Bench, willing them to grant Summons to the Sheriff of the County where the Creditor is, for his appearance at a certain Day before them.

AUDITOR, a Hearer, or one who listens or attends to any thing. See HEARING, ATTENTION, and AUDITORY.

AUDITOR is also used for several Officers, appointed to *audit*, or hear Accounts, Pleadings, *&c.* See ACCOUNT.

Antiently the Word *Auditor* was also used for *Judge*, and even for *Inquisitor*. *Notaries* are also frequently call'd *Auditores*.

AUDITOR, in our Law, is an Officer of the King, or some other great Person, who yearly, by examining the Accounts of under Officers accountable, makes up a general Book, with the Difference between their Receipts and Charge, and their Allowances or *Allocations*. See ACCOUNT.

AUDITORS *of the Revenue*, or *of the Exchequer*, are Officers who take the Accounts of those who collect the Revenues, Taxes, *&c.* rais'd by Parliament; as also of the Sheriffs, Escheators, Collectors, Tenants, and Customers, and set them down, and perfect them. See REVENUE and EXCHEQUER.

AUDITORS *of the Prest* or *Imprest*, are Officers in the Exchequer, who take and make up the great Accounts of *Ireland*, *Berwick*, the Mint, Customs, Wardrobe, First-fruits, Naval and military Expences, and of all Monies impressed to any Man for the King's Service. See PREST and IMPREST.

AUDITOR *of the Receipts*, is an Officer of the Exchequer who files the Tellers Bills, and makes an Entry of them, and gives the Lord Treasurer a Certificate of the Money receiv'd the Week before. See EXCHEQUER and TELLER.

He makes Debentures to every Teller, before they pay any Money, and takes their Accounts. He keeps the black Book of Receipts, and the Treasurer's Key of the Treasury, and sees every Teller's Money lock'd up in the new Treasury.

There are also *Auditors of the First-Fruits*; of the Principality of *Wales*; of the Dutchy of *Cornwal*, &c. See FIRST-*Fruits*, &c.

AUDITOR *of the Rota*. See ROTA.

AUDITORS *Conventual*, *Collegiate*, &c. were Officers formerly appointed among the Religious, to examine and pass the Accounts of the House.

AUDITORES, or AUDIENTES, in Church History, *Catechumens*; or those newly instructed in the Mysteries of the Christian Religion, and not yet admitted to Baptism. See CATECHUMEN.—Hence,

AUDITORIUM, AUDITORY, in the antient Churches, was that Part of the Church where the *Auditores* stood to hear, and be instructed. See CHURCH.

The *Auditorium* was that Part now call'd *Navis Ecclesiæ*. See NAVE.

In the primitive Times the Church was so strict in keeping the People together in that Place, that the Person who went from thence in Sermon-time was order'd by the Council of *Carthage* to be excommunicated.

AUDITORY, something belonging to the Sense of Hearing. See HEARING.

AUDITORY, AUDIENCE, is also a collective Name, denoting an Assembly of Persons, hearing, or attending to a Person who speaks in publick. See ASSEMBLY, ORATION, *&c.*

AUDITORY is also used for the Seat or Bench where a Magistrate, or Judge, hears Causes. See BENCH.

At *Rome*, the several Magistrates had *Auditories* or Seats of Justice according to their Dignity.—Those of the superior Officers were call'd *Tribunals*; those of the inferior, *Subsellia*. See TRIBUNAL, *&c.*

The *Pedanei* had their Benches or *Auditories* in the Emperor's Portico.—Those of the *Hebrews*, at the Gates of Cities.—The Judges appointed by the antient Lords distributed Justice under an Elm, which was usually planted before the Manor-House, and served them for an *Auditory*.

AUDITORY *Nerves*, in Anatomy, a pair of Nerves arising from the *Medulla Oblongata*, and distributed, the one to the Ear, the other to the Tongue, Eye, *&c.* See EAR and TONGUE.

The soft and spongy Branch of the *Auditory Nerve* being diffused through the Labyrinth and Tympanum of the Ear, is the immediate Organ of the Sense of Hearing See HEARING.

The *Auditory Nerves* make the seventh Conjugation, according to the way of reckoning of the Moderns; and the fifth according to the Antients. See PAIR and CONJUGATION.

Anatomists observe a singular Mark of the Wisdom and Contrivance of the Creator in the *Auditory Nerve*'s being thus dispatch'd to different Parts; an admirable and useful Consent being hereby established between them.—Hence it is that most Animals upon hearing any uncouth Sound, are found to erect their Ears, and prepare them to catch it; to open their Eyes, to stand upon the Watch; and to be ready with the Mouth to call out, or testify their Danger: Accordingly most Animals when surprized or terrified, shriek or cry out, *&c.* See CONSENT *of Parts*.

Dr. *Willis* observes a further use of this nervous Communication between the Ear and the Mouth; which is, that the Voice may correspond with the Hearing, and be a Kind of Eccho thereof; that what is heard with one of the two Nerves may be readily express'd with the Voice, by the help of the other. *Cereb. Anat.* c. 17.

Meatus AUDITORIUS, or AUDITORY, Passage in Anatomy. See MEATUS.

AVE-*Maria*, or AVE-*Mary*, the Angel *Gabriel*'s Salutation of the Virgin, at his bringing the Tidings of the Incarnation; thus called, as beginning with those Words, *Ave Maria*, Hail *Mary*. See VIRGIN, ANNUNCIATION, *&c.*

The *Ave-mary* is a Prayer or Formula of Devotion very usual in the *Romish* Church.—Their Chaplets and Rosaries are divided into so many *Ave-marys*, and so many *Pater-nosters*: And hence the Beads themselves, which indicate them, are also call'd *Ave*'s or *Ave-mary's*. See CHAPLET, ROSARY, *&c.*

AVELLANE, or *Cross* AVELLANE, in Heraldry, a Form of Cross which resembles four Filberds in their Husks or Cases, joined together at the great End. See CROSS.

Hence its Name; a Filberd in *Latin* being *Nux Avellana*.—*Syl. Morgan* says, it is this Cross which Ensigns the Mound of Authority, or the Sovereign's Globe.

AVENAGE, in Law, a certain Quantity of Oats, paid to a Landlord, in lieu of some other Duties; or, as a Rent, from the Tenant.

The Word is *French*, form'd of the *Latin*, *avena*, Oats.

AVENOR, an Officer under the Master of the Horse; who, by Order or Warrant from him, swears in all the Officers belonging to the Stables. See MASTER *of the Horse*.

The *Avenor* also makes up the Accounts of the Stables, and issues Debentures for paying the Officers and Servant.

In a Stat. *Car.* II. we find the *Avenor* mentioned as an Officer who provides Oats for the Stables.—In the *Rot. Parl.* 1 *R.* 21. *Edw.* III. we also read of *Avenor* of the Queen, of the Prince, *&c.*

AVENTURÆ, in our antient Writers, signify Tournaments, or Military exercises on Horseback. See TURNAMENT.

AVENTURE, or rather ADVENTURE, in our Law Books, a mischance, causing the Death of a Man, without Felony; as, when he is suddenly drowned, or burnt by any Misease or Mischance, falling into the Water or Fire. See MISADVENTURE, CHANCE, *&c.*

AVENUE, in Fortification, an Opening or Inlet into a Fort, Bastion, or the like Place. See FORT, BASTION, FORTIFICATION, *&c.*

The Word is form'd of the *French Avenir*, or *Advenir*, to come to, to arrive at. See ADVENT.

AVENUE, in Gardening, is a Walk, planted on each side with Trees, and leading to some Place. See VISTA. See also GROVE, GLADE.

All *Avenues*, *Mortimer* says, should lead to the Front of an House, Garden-Gate, Highway-Gate, or Wood, and terminate in a Prospect.—In an *Avenue* to an House, whatever the Length of the Walk is, it ought to be as wide as the whole Breadth of the Front, and if wider, better.

AVERAGE, AVERAGIUM, in Law, that Duty or Service which the Tenant is to pay the King, or other Lord, by his Beasts and Carriages. See SERVICE.

The Word is derived from the base *Latin*, *Averia*, Cattle; or the *French*, *Oeuvre*, Work.

AVERAGE is also used in Navigation and Commerce, for the Damage which a Vessel, or the Goods and Loading thereof, sustains, from the time of its Departure to its Return; as also, for the Charge or Contributions towards defraying such Damages.

A late Author who has wrote a Treatiſe expreſs upon *Average*, diſtinguiſhes two Kinds thereof; *Simple* or Private, and *Groſs* or Common.

To the firſt, the particular things which ſuffer, alone contribute; to the ſecond, all both the Ship and the Merchandizes contribute in common.

Of the firſt Kind are all extraordinary and unforeſeen Expences and Accidents, befalling either the Ship, or the Goods, or both; the Loſs in which Caſes, is to be wholly defray'd by the thing or things which occaſioned it.—Such as the loſs of Cables, Anchors, Maſts, and Sails, by reaſon of Storms, *&c.* As alſo Damages accruing to Goods through their own Defects, by waſting, rotting, wetting, Storms, Pirates, *&c.* The Sailor's Wages while the Ship is extraordinarily detained by Embargo's, provided ſhe be hired for the whole Voyage, and not *per* Month. All theſe are ſimple or private *Averages*, and not to be charged to the common Account.

For groſs or common *Average* to have Place, the Author juſt mentioned, ſhews, 1°. That ſomething muſt have been caſt into the Sea, and this out of abſolute Neceſſity. 2°. That the Commander have had the Conſent of the Owners for ſo doing. 3°. That it have only been done for the Safety of the whole Ship, and that the Ship have been ſaved in Conſequence thereof.—In ſuch Caſe, all thoſe for whoſe Intereſt the thing was caſt into the Sea, are to contribute to indemnify the Perſon whoſe Property it was: And every thing is to be taxed hereto, ſo much as Jewels, Gold, *&c.* notwithſtanding they do not any way burthen the Ship; and even the Veſſel it ſelf, but not Paſſengers, nor Proviſions. *Rainold. Chriſt. a Derſchau in Nov. Lit. Mar. Bal.* 1700.

To the occaſions of common *Average* may be added, Compoſitions with Pirates for the Ranſom of the Ship; as alſo Cables, Maſts, Anchors, *&c.* loſt or abandoned for the common Good; the Food and Phyſick of the Sailors wounded in Defence of the Ship; and the Pay and Proviſions of the Crew when the Ship is arreſted or put under Embargo by order of a Prince, provided it were hired for the Month, and not for the whole Voyage.

AVERAGE is more particularly uſed for the Quota or Proportion which each Merchant or Proprietor in the Ship or Loading is adjudg'd, upon a reaſonable Eſtimation, to contribute to a common *Average*.

AVERAGE is alſo a little Duty which thoſe Merchants who ſend Goods in another Man's Ship, pay to the Maſter thereof, for his care of them, over and above the Freight. See FREIGHT.

Hence, in Bills of Lading it is expreſſed.—Paying ſo much Freight for the ſaid Goods, with Primage and *Average* accuſtomed.

AVER-CORN, in antient Writings, ſuch Corn as by Cuſtom is brought by the Tenant's Carts or Carriages, to the Lord's Granary, or Barn.

AVERIA, in our Law Books, properly ſignify Oxen or Horſes uſed for the Plough; but in a general Senſe, any Cattle.

When mention is made of one Beaſt, they ſay, *Quidam equus, vel quidam Bos:* When of two, or more, they do not ſay *Equi* or *Boves*, but *Averia*.

AVERMENT, in Law, uſually ſignifies an Offer of the Defendant to make good, or juſtify an Exception pleaded in Abatement or Bar of the Plaintiff's Action.

The Word alſo ſignifies the Act as well as the Offer of juſtifying the Exception.

Averment is two-fold, general and particular.—A *general Averment* is the Concluſion of every Plea to the Writ, or in Bar of Replications, or other Pleadings; (for Counts, or Avowries in nature of Counts, need not be *averred*,) containing Matter affirmative, ought to be *averred* with an *hoc paratus eſt Verificare*.

Particular Averment is when the Life of a Tenant for Life, or Tenant in Tail, is *averred*, &c. And an *Averment* contains as well the Matter as the Form thereof.

AVERNI, among the antient Naturaliſts, certain Lakes, Grotto's, and other Places which infect the Air with poiſonous Steams or Vapours; call'd alſo *Mephites*. See MEPHITES, AIR, POISON, *&c.*

The Word is *Latin*, form'd of the *Greek* privative, α, and ὄρνις, Bird; as intimating that Birds could not fly over them, but drop'd down dead.

Averni are ſaid to be frequent in *Hungary* on account of the abundance of Mines therein. See MINE and MINERAL.

The Grotta *dei Cani*, in *Italy*, is famous. See GROTTA, EXHALATION, *&c.*

But the moſt celebrated *Avernus* was a Lake near *Bayæ*, in *Campania*, by *Strabo* call'd the *Lucrine Lake*, and by the *Italian* Geographers, *Lago di Tripergola*.—The Fumes it emitted are repreſented by the Antients as of ſo malignant a Nature, that Birds could not fly over it, but ſunk down dead; which ſome later Writers have choſe to attribute to this, that the ſulphurous Effluvia hereof, not being of conſiſtence to ſuſtain the Birds, they drop'd by their own Weight.

This Circumſtance, joined with the great Depth of the Lake, occaſioned them to take it for the Gate or Entrance of Hell; and accordingly *Virgil* makes *Æneas* deſcend this Way to the Inferi. *Vibius Sequeſter* ſays, there was no Bottom to be found of it: *Immenſæ Altitudinis cujus ima pars apprehendi non poteſt.* See HELL.

AVERRUNCATION, in Agriculture, the Act of ſcraping, cutting, or lopping off the ſuperfluous Branches of Trees. See PRUNING.

AVERRUNCI, in Antiquity, an Order of Deities among the *Romans*, whoſe Office was to avert Dangers and Evils. See GOD.

The *Greeks* call'd this Species of Gods, Ἀλεξικακοι, or Ἀποτρομπαιοι; and their Feaſt Ἀποτρομπη: Sometimes, Ἀποτροπαιοι.

The *Egyptians* had alſo their *Dii Averrunci*, or *Apotropæi*, who were pictured in a menacing Poſture, and ſometimes with Whips in their Hands.—*Iſis* was a Divinity of this Kind; as is ſhewn by *Kircher*. See *Oedip. Ægypt.* T. III. p. 487.

AVERPENY, *q. d.* Average-peny, Money contributed towards the King's Averages; or Money given to be freed thereof. See AVERAGE.

AVERSION. See ANTIPATHY.

AVERY, a Place where Oats, or Provender are kept for the King's Horſes. See AVERIA.

AUGES, in Aſtronomy, two Points in a Planet's Orbit, otherwiſe call'd *Apſides*. See APSIDES.

One of the *Auges* is particularly denominated the *Apogee*, the other *Perigee*. See APOGEE and PERIGEE.

AUGMENT. See AUGMENTATION.

AUGMENT, AUGMENTUM, in the *Greek* Grammar, an Increaſe of the Quantity, either of a Letter, or a Word. See QUANTITY.

There are two Kinds of *Augments.—Temporale*, or *of a Letter*, when a ſhort Vowel is changed into a long one; or a Dipthong into another longer one: thus call'd by reaſon the time of its Pronunciation is now lengthened.

Augmentum Syllabicum, or *of a Syllable*, is when a Letter or Syllable is added at the beginning of the Word; ſo that the Number of Syllables is enlarged.

AUGMENTS, in Mathematicks. See INCREMENTS, FLUXIONS, *&c.*

AUGMENTATION, AUGMENTATIO, the Act of *augmenting*; that is, of adding or joining ſomething to another, to render it larger, or more conſiderable. See ADDITION, ACCESSION, ACCRETION, AMPLIFICATION, *&c.*

AUGMENTATION is alſo uſed for the *Augment*; i. e. the Additament, or the thing added. See ADDITAMENT, ACCESSION, *&c.*

Such a Miniſter petitioned the King for an *Augmentation* of Salary, of Wages, *&c.*

AUGMENTATION was alſo the Name of a Court erected under *Henry* VIII. to the end the King might be juſtly dealt with, touching the Profit of ſuch Religious Houſes, and their Lands, as were given him by Act of Parliament the ſame Year.—This Court was diſſolv'd under Queen *Mary*, by the Parliament held the firſt Year of her Reign; but the Office of *Augmentation* remains to this Day.

The Court took its Name hence, that the Revenues of the Crown were thought to be much *augmented* by the Suppreſſion of the ſaid Houſes; many of which the King reſerved to the Crown.

AUGMENTATIONS, in Heraldry, are additional Charges frequently given as a particular Mark of Honour, and generally born either on an Eſcutcheon, or a Canton.—Such are the Arms of *Ulſter*, bore by all the Baronets of *England*.

AUGUR, in Antiquity, an Officer or Miniſter among the *Romans*, appointed to obſerve the Chattering and Feeding of Birds; and by means thereof, form Conjectures about future Events. See AUGURY.

The *Augurs* made a College or Community, which at firſt conſiſted of three Perſons, then four, and laſtly nine; four of them *Patricians*, and five *Plebians*.—*Cicero* was of the *College of Augurs*. See COLLEGE.

They bore an *Augural* Staff, or Wand, as the Enſign of their Office and Authority.

The Word *Augur* is derived from *Avis*, Bird, and *Garritus*, Chattering. *Pezron* derives it from the Celtic *Au*, Liver, and *Gur*, Man: So that according to him, an *Augur* is properly a Perſon who inſpects the Entrails, and divines by means of the Liver: Others derive it from the *Arabick Ogor*, good Fortune.

Augurs, properly ſpeaking, differed from *Auſpices*, and *Augury* from *Auſpicy*, in that the former was in ſtrictneſs confined to the chirping of Birds, and the latter to their flying, feeding, *&c.* See AUSPICES, *&c.*

AUGURY, in Antiquity, the Art of divining, or foretelling Events, by the chattering, ſinging, and feeding of Birds. See DIVINATION and AUGUR.

The Obſervation of *Auguries* is very antient, as having been prohibited by *Moſes* in *Leviticus*.—The Cup put in *Benjamin*'s Sack, in *Egypt*, was that uſed by *Joſeph* to take *Auguries* by.

In its more general Signification, the Word *Augury* comprizes all the different kinds of Divination; which *Varro* diſtinguiſhes into four Species of *Augury*, according to the four Elements.—Pyromancy, or *Augury* by the Fire; Aeromancy, or *Augury* by

the Air; Hydromancy, or *Augury* by the Water; and Geomancy, or *Augury* by the Earth. See AEROMANCY, PYROMANCY, *&c.*

The particular Branches are, *Alectoromancy, Anthropomancy, Belomancy, Catoptromancy, Capnomancy, Gastromancy, Geomancy, Aruspicina, Libanomancy, Lecanomancy, Necromancy*, &c. See each described under its proper Article.

Cicero, who was one of the College, wonders how two *Augurs* could meet without laughing at each other; by which it appears what Opinion he had of the Art.—And yet no Affair of Moment could be resolv'd on without first consulting them; and ther Advice, be it what it would, was, by a Decree of the Senate, enjoin'd to be exactly and religiously performed.

AUGUST, AUGUSTUS, something majestick, venerable, sacred. See MAJESTY, *&c.*

The Title *Augustus* was first given by the *Roman* Senate to *Octavius*, after his being confirmed by them in the Sovereign Power.—It was conceived as expressing something divine, or elevated above the Pitch of Mankind; being form'd of the Verb *augeo*, I grow, Increase; *tanquum supra humanam sordem* auctus.

The Successors of *Augustus* assumed the same Quality; so that thence-forward Emperor and *Augustus* were the same thing: They became synonimous Terms, See EMPEROR.

The presumptive Heir of the Empire, or he who was destined to succeed to the Dignity, was first created *Cæsar*; which was a step necessary to arrive at that of *Augustus* or Emperor.—Yet F *Pagi* maintains the Converse; *viz.* that it was necessary to be *Augustus*, previously to the being *Cæsar*. See CÆSAR.

M. *Flechier* observes, that the Emperor *Valentinian* proclaimed his Brother *Valens*, *Augustus*; without first declaring him *Cæsar*; which had never been practiced before.—'Tis added, that *Marcus Aurelius*, upon his succeeding to *Antoninus*, immediately created *L. Verus*, both *Cæsar* and *Augustus*. This was the first time the *Romans* had known two *Augusti* at once; for which reason the Year when it was done, *viz.* 161, was mark'd in the *Fasti* with the Consulate of the two *Augusti*.

It was a surprizing Spectacle to the People of *Rome* to see themselves governed by two Sovereigns, after so much Blood spilt for the Choice of a single Master.

The Empresses also took the Quality of *Augustæ*; and even some Ladies of the Imperial Family, who had never been Wives of Emperors.

On Medals and Coins, some of the antient Kings of *France* are also found with the Appellation *Augusti*; particularly *Childebert, Clothaire*, and *Clovis*: add that the Wife of this last, *Chrototochilda*, is also call'd by *Heric*, in his Book of the Miracles of St. *Germain*, indifferently, either *Augusta*, or *Queen*.

The *Historia* AUGUSTA, is the History of the *Roman* Emperors from the time of *Adrian* to *Carinus*, composed by six *Latin* Writers.

AUGUSTALIA, in Antiquity, a Feast instituted in Honour of the Emperor *Augustus*. See FEAST.

This Festival was first established after he had ended all his Wars, and settled the Affairs of *Sicily, Greece, Asia, Syria*, and the *Parthians*.—The Day whereon he made his Entry into *Rome*, was appointed to be kept a Feast; and was called *Augustalis*. See AUGUSTALIS.

AUGUSTALIA was also a Name given to the Games celebrated in Honour of the same Prince, on the 4th of the Ides of *October*. See GAME. See also AUGUSTALIS.

AUGUSTALIS, in Antiquity, a Name given by the *Romans* 1°. to those who led the first Ranks of an Army; 2°. to certain Magistrates in Cities; 3°. to all the Officers of the Emperor's Palace.

The Governor or Præfect of *Egypt* is particularly called *Augustalis*, or *Præfectus Augustalis*; as being first established by *Augustus*, after the Defeat of *Mark Anthony* and *Cleopatra*. He resided at *Alexandria*.

AUGUSTALIS was also a Priest or Pontiff, invested with the Direction and Superintendency of the Games perform'd in Honour of *Augustus*. See GAME, PONTIFF, *&c.*

The *Augustales* were instituted by *Tiberius*, immediately after *Augustus*'s Death; as is observ'd by *Tacitus*, who assures us they were Priests.—Several Cities had six of these *Augustales*; whence they were call'd, *Seviri Augustales*.

AUGUSTAN *Confession*, was a Confession of Faith, made by the the antient Reformers at *Augusta*, or *Augsburg*, in *Germany*. See CONFESSION, REFORMATION, PROTESTANT, LUTHERANISM, *&c.*

AUGUST, in Chronology. See MONTH.

AUGUSTINS, an Order of Religious; thus called from St. *Augustin*, whose Rule they observe. See ORDER and RELIGIOUS.

The *Augustin's*, popularly also called *Austin Fryars*, were originally Hermits, whom Pope *Alexander* IV. first congregated into one Body, under their General *Lanfranc*, in 1256. See HERMIT.

The *Augustins* are cloth'd in Black, and make one of the four Orders of Mendicants. See MENDICANT.

From these arose a Reform, under the Denomination of *Barefoot Augustins*, or *Minorites*, or *Fryars Minor*. See MINOR and MINORITE.

There are also Canons Regular of St. *Augustin*, who are clothed in white, excepting their Cope, which is black.—At *Paris* they are known under the Denomination of, *Religious of Genevieve*; that Abby being the Chief of the Order. See GENEVIEVE.

There are also *Augustines*, or Nuns, who observe the Rule of St. *Augustin*. See RELIGIOUS and NUN.

The AUGUSTIN of *Jansenius* is a celebrated Treatise of that Author, Bishop of *Ypres*, entitled, *Cornelii Jansenii Episcopi Iprensis, Augustinus*; the first Tome whereof contains a Discourse against *Pelagianism*; and the second divers Treatises of Reason; the use of Authority in Theological Matters; the State of Innocence; fall of Nature by Sin, Grace, *&c.*—From these several Treatises were collected the five famous Propositions, enumerated under the Article JANSENISM.

AU-GUY-l'AN-NEUF, or AGUILLANNEUF. See MISLETO and VISCUS.

AVIGNON-*Berry*, call'd also, *French Berry*, is the Fruit of a Shrub, by some Authors call'd *Licum*; growing plentifully near *Avignon*, &c. in *France*. See BERRY.

The Berry is somewhat less than a Pea; its Colour Green, approaching towards a Yellow; of an astringent and bitter Taste. —It is much used by the Dyers who stain a yellow Colour with it; and by the Painters, who make a fine golden Yellow of it. See YELLOW.

AULA, in our antient Law-Books, signifies a Court Baron. —*Aula ibidem tenta quarto die August*, &c. See BARON.

Aula Ecclesiæ is what we now call *Navis Ecclesiæ*. See NAVE.

AULIC, AULICA, an Act which a young Divine maintains in some foreign Universities, upon the Admission of a new Doctor of Divinity. See ACT.

It is so called from the *Latin, Aula*, a Hall; it being in the Hall of the University that this Act is usually held. See UNIVERSITY, DEGREE, DOCTOR, *&c.*

The Person who presides at the Disputation is the same, that is, to take the Doctor's Cap.

AULIC, AULICUS, is also a Name attributed to certain Officers of the Emperor, who compose a superior Court or Council, which has an universal Jurisdiction, and without Appeal, over all the Subjects of the Empire, in all Processes enter'd therein. See EMPEROR and EMPIRE.

We say *Aulic* Council, the *Aulic* Court or Chamber, *Aulic* Councellor, *&c.*

The *Aulic* Council is established by the Emperor, who nominates the Officers; but the Elector of *Mentz* has a right of visiting it.—It is compos'd of a President, who is a Catholick; a Vice-Chancellor, presented by the Elector of *Mentz*, and of eighteen Assessors, or Counsellors, nine whereof are Protestants, and nine Romanists. See ASSESSOR.

They are divided into two Benches, one whereof is taken up by Nobles, and the other by Lawyers.—They hold their Assembly in the Presence of the Emperor; and for that reason are called *Justitium Imperatoris*, the *Emperor's Justice*; and *Aulic Council*, because theirs follows the Emperor's Court, *Aula*, and has its Residence in the Place where he is.—This Court clashes a little with the Imperial Chamber of *Spires*; in that they are preventive of each other: It not being allowed to remove any Cause from the one to the other. See IMPERIAL CHAMBER.

Nor can the Emperor himself hinder or suspend the Decisions of either Court; much less call any Cause before himself which has once been before them; without the Consent of the States of the Empire. Yet, in some Cases the same Council forbears making any peremptory Conclusion without the Emperor's Participation; and only Decrees thus, *Fiat Votum ad Cæsarem*; that is, make a Report hereof to the Emperor in his Privy-Council.

AULNEGER, or ALNAGER. See ALNAGER.

AUMONE, or ALMS. See ALMS.

Tenure in AUMONE, is where Lands are given to a Religious House, or Church, that some Service may be said for the good of the Donor's Soul. See TENURE.

AUMONIER, or ALMONER. See ALMONER.

AUNCIENT *Demain*. See ANTIENT *Demain*.

AVIARY, a House or Apartment for the keeping, feeding, and propagating of Birds. See BIRD.

The Word is form'd of the *Latin, Avis*.

AUNCEL-*Weight, quasi, Handsel-Weight*, is a kind of Ballance, consisting of Scales hanging on Hooks fasten'd at each End of a Beam or Staff, which a Man lifts up on his Hand or Fore-finger, and so discovers the Equality or Difference between the Weight and the Thing weigh'd. See BALLANCE.

There being great Deceits practiced in these Weights, they were prohibited by several Statutes; and the even Ballance alone commanded. See WEIGHT and STANDARD.

The Word is still used in some Parts of *England*, to signify Meat sold by poising in the Hand, without putting it into the Scales.

AVISO, an Advice, piece of Intelligence, or Advertisement; to notify some Event, or Matter worthy of Knowledge. See ADVERTISEMENT, *&c.*

The Word is *Italian*, and is chiefly used in Matters of Commerce.

AVO-

AVOCATORIA, a Mandate of the Emperor of *Germany*, directed to ſome Prince or Subject of the Empire, to ſtop his unlawful Proceedings in any Cauſe brought by way of Appeal before him. See EMPEROR and EMPIRE.

AVOIDANCE, in Law, has two Significations: The one, when a Benefice becomes void of an Incumbent; the other, when we ſay in Pleadings in Chancery, confeſſed or *avoided*, traverſed or denied, *&c.* See VOIDANCE.

AVOIRDUPOIS, or AVERDUPOIS *Weight*, a kind of Weight uſed in *England*; the Pound whereof contains ſixteen Ounces. See WEIGHT.

The Proportion of a Pound *Avoirdupois* to a Pound *Troy*, is as 17 to 14. See TROY, POUND, and OUNCE.

All the larger and coarſer Commodities are weigh'd by *Avoirdupois* Weight; as Groceries, Cheeſe, Wool, Lead, Hops, *&c.* Bakers who live not in Corporation Towns, are to make their Bread by *Avoirdupois* Weight; thoſe in Corporations by *Troy* Weight.—The Apothecaries buy their Drugs by *Averdupois*, but ſell their Medicines by *Troy*.

AVOWEE, ADVOCATUS. See ADVOUEE and ADVOCATE.

The *Avowee* is he to whom the Right of Advowſon of any Church belongs, ſo that he may preſent thereto in his own Name: he is thus called by way of Diſtinction from thoſe who ſometimes preſent in another Man's Name, as a Guardian that preſents in the Name of his Ward; as alſo from thoſe who only have the Lands whereto an Advowſon belongs for Term of Life, or Years, by Intruſion, or Diſſeiſin.

AU PIS ALLER, a *French* Phraſe, ſometimes uſed among *Engliſh* Writers, ſignifying, *at the worſt*.

AURA, an airy Exhalation, or Vapour. See VAPOUR and EXHALATION.

The Word is *Latin*, deriv'd from the *Greek* ἀύρα, gentle Wind.

AUREA *Alexandrina*, in Pharmacy, a kind of Opiate or Antidote, in great Fame among the antient Writers. See ANTIDOTE.

It is called *Aurea*, from the Gold which enters its Compoſition; and *Alexandrina*, as having been firſt invented by a Phyſician named *Alexander*.—It is reputed a good Preſervative againſt the Colick and Apoplexy.

AURELIA, a Term uſed by natural Hiſtorians for the firſt apparent Change of the *Eruca*, or Maggot of any Species of Inſect. See INSECT.

Aurelia is the ſame with what other Writers call *Nympha*. See NYMPHA.

AUREOLA, the Crown of Glory given by Painters and Statuaries to Saints, Martyrs, and Confeſſors; as a Mark of the Victory which they have obtain'd. See CROWN.

F. *Sirmond* ſays, the Cuſtom hereof was borrow'd from the Heathens, who us'd to encompaſs the Heads of their Deities with ſuch Rays.

The Word *Aureola*, in its Original, ſignified a Jewel which was propos'd as the Prize of a Diſpute; and was given as the Reward of Victory.

Among the *Romiſh* School-Divines, *Aureola* is ſuppoſed to be a ſpecial Reward beſtow'd on Martyrs, Virgins, Doctors, and other Saints, on account of their Works of Supererogation.

AURICHALCUM, is a factitious Metal, popularly call'd *Braſs*. See BRASS.

The *Aurichalcum* is a Mixture of Copper and Calamine-ſtone melted together by a very vehement Fire, in Furnaces made on purpoſe. See COPPER and CALAMINARIS.

AURICLE, AURICULA, in Anatomy, the external Ear; or that Part of the Ear which is prominent from the Head. See HEAD.

The Word is a diminutive of *Auris*, Ear; q. d. *little Ear*.

For the Structure and Variety in the Auricle; with the ſeveral Parts thereof, their Names, &c. ſee EAR.

AURICLE is alſo applied to two Appendages of the Heart; being two muſcular Caps, covering the two Ventricles thereof. See VENTRICLE.

They move regularly like the Heart; only in an inverted Order; their Syſtole correſponding to the Diaſtole of the Heart and *Vice verſa*. See further of their Structure and Office under the Article HEART. See alſo SYSTOLE and DIASTOLE, *&c.*

AURICULA *Judæ*, or *Jew's Ear*, a kind of Fungus or Muſhroom, reſembling in Figure, a human Ear. See FUNGUS and MUSHROOM.

It grows on old Elder Trees, which is the Tree whereon, 'tis pretended, *Judas* hang'd himſelf; which has given occaſion to the Name.

This Fungus ſteep'd in Water, and applied to the Eyes, frees them of Inflammations: 'Tis alſo uſed Gargle-wiſe in Decoctions, againſt Inflammations of the Throat, or ſwelling of the Tonſils.

AURICULAR, AURICULARIS, ſomething known or learnt only by the Ears. See EAR.

Thus we ſay, an *Auricular* Witneſs, *Auritus Teſtis*, a Witneſs by hearſay. See WITNESS, EVIDENCE, TESTIMONY, *&c.*

AURICULAR *Confeſſion*. See CONFESSION.

The little Finger is alſo call'd *Auricularis*, becauſe uſed in cleanſing the Ear. See FINGER.

AURIGA, in Aſtronomy, the *Waggoner*; a Conſtellation of fixed Stars in the Northern Hemiſphere. See STAR and CONSTELLATION.

The Stars in the Conſtellation *Auriga*, in *Ptolomy*'s Catalogue are 14; in *Tycho*'s 23; in the *Britannia* Catalogue 68; the Longitudes, Latitudes, Magnitudes, *&c.* are as follow.

Stars in the Conſtellation AURIGA.

Names and Situations of the Stars.	Sign.	Longitude. ° ′ ″	Latitude. North. ° ′ ″	Magn. Nort.
Præced. over the North Foot	♊	11 22 20	14 52 35	6
Mid. and South over the Foot		11 49 45	14 1 48	6
In the Heel of the North Foot		12 19 33	10 24 53	4 3
Laſt of three over the Foot		13 18 44	15 04 00	5
		13 41 48	16 32 24	6
5				
		13 44 35	16 48 05	6
In the præced. Cubit		14 31 09	20 54 23	4
Againſt the Hand, præced. *Hædus*		14 18 57	18 10 10	4
		16 20 03	28 33 29	6
Subſeq. *Hædus*		15 06 52	18 15 15	4
10				
South of three in the Loins		16 15 17	15 23 18	5
		17 32 33	23 15 07	6
Bright one of the Fore Shoulder, *Capella*		17 31 41	22 51 47	1
		16 11 20	9 34 13	6
Middle one in the Loins		17 28 54	16 58 39	5
15				
Nebuloſæ againſt the Hips	South.	16 49 17	10 13 20	6
	Middle.	16 53 03	10 35 44	7
Northern ones in the ſame	Præced.	17 07 13	10 48 09	7
	Subſeq.	17 15 18	10 46 03	6
North of three in the Loins		18 10 58	18 34 24	6
20				
Subſeq. in the Hip		18 26 49	14 07 31	5
		17 36 57	5 43 03	7
Bright one in the South Foot		18 13 56	5 21 34	2
In the Fore-thigh		18 53 40	11 10 50	5
In the Fore-knee		19 50 21	8 50 44	5
25				
		21 02 46	7 05 27	6
Inform. al. *Tauri* 116th		21 06 07	2 29 23	4 5
In the Neck		23 09 56	26 22 40	6
		23 26 40	16 04 34	7
Præced. in the Hind-Arm		23 30 15	15 43 40	6
30				
North in the Head		24 50 04	32 13 30	5 6
In the Hind-thigh		23 50 36	13 50 33	6
Subſeq. in the Hind-Arm		23 57 35	15 41 06	5
South of two in the Head		25 36 22	30 49 00	4
Brighter one in the Hind-ſhoulder		25 35 32	21 28 20	2
35				
A leſſer one contiguous to that		25 40 12	22 27 52	6
		25 52 25	24 25 20	6
In the Wriſt of the Hinder-Hand		25 36 42	13 44 19	3 4
		26 19 09	19 31 48	6 7
		26 40 07	19 31 14	6 7
40				
Inform. following the Eaſtern Arm		27 00 04	15 00 59	6
		27 48 43	25 15 32	6
		28 59 02	22 59 32	6
		29 06 51	22 56 34	6
Inform. under the Hind-Knee		29 02 42	6 04 47	4 5
45				
		29 27 23	30 03 05	6
	♋	0 12 40	25 54 20	5
		1 17 52	23 20 54	6
		1 52 18	7 09 30	6
Al. Of *Gemini* 22d		3 27 46	4 46 30	5 6
50				
		3 20 23	19 16 34	5 6
		3 26 45	16 10 35	5 6
		3 26 27	16 40 44	5
Al. Of *Gemini* 25th		4 06 16	5 47 05	6
Of *Gemini* 27th		4 24 39	5 04 50	6
55				
		3 55 02	21 21 22	5
		4 22 35	25 40 10	6
		4 40 47	20 27 01	5
		5 38 35	18 45 08	4 5
		6 21 56	15 52 47	6
60				
Inform. behind *Auriga* towards *Gemini*, and the hither Feet of *Urſa Major*		6 26 15	15 28 07	6
		6 35 28	15 31 22	7
		6 37 03	22 09 30	4 5
		7 40 23	15 11 33	6 7
		10 03 39	16 43 40	4 5
65				
		11 06 34	18 26 35	5
		12 30 02	14 28 11	5
		12 20 53	18 24 21	5

AURIPIGMENTUM, call'd alſo *Orpiment*. See ORPIMENT.

AVOWRY, in Law, is where one takes a Diſtreſs for Rent or other thing; and the other ſues Replevin. In which Caſe the taker ſhall juſtify, in his Plea, for what Cauſe he took it: And if he took it in his own Right, is to ſhew it, and ſo *avow* the taking; which is called his *Avowry*. If he took it in the Right of another, when he has ſhewed the Cauſe, he is to make Conuſance of the taking, as being a Bailiff or Servant to him in whoſe Right he did it. See DISTRESS, *&c.*

AURIS, an *Ear*. See EAR.

The cutting off the Ears was a Puniſhment inflicted by the *Saxon* Laws on thoſe who robbed Churches; and afterwards on every Thief; and at length on divers other Criminals. See PUNISHMENT.

AURISCALPIUM, an Inſtrument wherewith to pick and cleanſe the Ear from Wax. See EAR, CERUMEN, *&c.*

The Word is compounded of the *Latin*, *Auris*, Ear; and *Scalpo*, I ſcratch.

AURORA, *Crepuſculum*, *Twilight*; that faint Light which begins to appear in a Morning, when the Sun is within eighteen Degrees of the Horizon. See CREPUSCULUM and TWILIGHT.

The Poets have perſonified, and even made it a Goddeſs; repreſenting her with a Chariot, roſy Fingers, *&c.*

Nicod. derives the Word, *ab Oriente ſole Quia aer aureſcit.*

AURORA *Borealis*, or AURORA *Septentrionalis*, the Northern *Dawn* or *Light*; is an extraordinary Meteor, or luminous Appearance, ſhewing it ſelf in the Night Time, in the Northern Part of the Heavens. See METEOR.

'Tis uſually of a reddiſh Colour, inclining to yellow, and ſends out frequent Coruſcations of pale Light, which ſeem to riſe from the Horizon in a pyramidal undulating Form, and ſtrike, with great Velocity, up to the Zenith.

This kind of Meteor never appears near the Equator, and was ſo rare in *England*, that none are recorded in our Annals ſince that remarkable one, *Novemb.* 14. 1574. till the ſurpriſing *Aurora Borealis*, *March* 6. 1716. which appeared for three Nights ſucceſſively, but by far more ſtrongly on the firſt.—Indeed, in the Years 1707 and 1708, five ſmall ones were obſerv'd in little more than eighteen Months.

Hence it ſhould ſeem that the Air or Earth, or both, are not at all times diſpos'd to produce this *Phænomenon*; for though 'tis poſſible it may happen in the Day-time, in bright Moon-ſhine, or in cloudy Weather, and ſo paſs unobſerv'd; yet that it ſhould appear ſo frequent at ſome times, and ſo ſeldom at others, cannot well this way be accounted for.—That in *March* 1716, was viſible to the Weſt of *Ireland*, Confines of *Ruſſia*, and to the Eaſt of *Poland*; extending at leaſt near 30° of Longitude, and 50° in Latitude, that is, over almoſt all the North of *Europe*; and in all Places at the ſame time, it exhibited the like wondrous Circumſtances.

A ſufficient number of Obſervations have not yet been made by the Curious, to enable them to aſſign the Cauſe of this *Phænomenon*, with any certainty.—Dr. *Halley*, however, imagines that watery Vapours, or Effluvia, rarified exceedingly by ſubterraneous Fire, and tinged with ſulphurous Streams, which Naturaliſts ſuppoſe to be the Cauſe of Earthquakes; may alſo be the Cauſe of this Appearance: Or, that 'tis produced by a kind of ſubtile Matter, freely pervading the Pores of the Earth, and which entering into it near the ſouthern Pole, paſſes out again with ſome Force into the Æther at the ſame Diſtance from the Northern; the obliquity of its Direction being proportion'd to its Diſtance from the Pole. This ſubtile Matter, by becoming ſome way or other more denſe, or having its Velocity increas'd, may be capable of producing a ſmall Degree of Light, after the manner of Effluvia from electrick Bodies, which by a ſtrong and quick Friction, emit Light in the Dark: To which ſort of Light this ſeems to have a great Affinity. *Phil. Tranſ.* N°. 347.

AURUM, in Natural Hiſtory, *Gold*. See GOLD.

The Word is chiefly applied to certain Chymical Preparations, whereof Gold is the Baſis or principal Ingredient.—Such are the *Aurum potabile*, *Aurum fulminans*, &c.

AURUM *fulminans*, fulminating or thundering Gold. See *Aurum* FULMINANS.

It is inflammable, not only by Fire, but alſo by a gentle Warmth; and gives a Report much louder than that of Gunpowder.

Its Effect is commonly ſaid to be principally downwards; in oppoſition to Gun-powder, which is chiefly upwards; but this rather ſeems a vulgar Error. See GUN-POWDER.

A Scruple of this Powder acts more forcibly than half a Pound of Gun-powder: a ſingle Grain laid on the Point of a Knife, and lighted at the Candle, goes off with a greater Noiſe than a Musket.—It is ſaid to conſume even to the very laſt Atom.

AURUM *potabile*, *Potable Gold*, is a Compoſition made of Gold, by reducing it, without any Corroſive, into a Gum, or Subſtance like Honey, of the Colour of Blood; which Gum ſteep'd in Spirit of Wine, acquires a Ruby-colour, and is call'd *Tincture of Gold*.

An Ounce of this Tincture, mix'd with ſixteen Ounces of another Liquor, is call'd *Aurum potabile*, becauſe of its Gold-colour; and is ſaid to be a ſovereign Remedy againſt ſeveral Diſeaſes. See *Potable* GOLD.

A modern Phyſician has aſſerted that Gold is a Reſin drawn from the Earth; and that the grand Secret of rendering Gold *potable*, does not conſiſt in diſſolving this Reſin by means of Corroſives, but by a Water, wherein it melts like Ice or Snow in hot Water; and this Water muſt be nothing but a Water extracted from Gold, agreeable to an Axiom that he lays down, which is, that Matters of different Natures have no Ingreſs into one another; but that every Menſtruum or Diſſolvent ought to be taken from Bodies of the ſame kind with thoſe it is to act upon.

The ſame Author obſerves, that Blood and Urine furniſh a *Sal Armoniac*, which mingled with *Aqua-fortis*, acts upon Gold: whence he conjectures, that there may be a conformity of Nature between Gold and Blood; and that by conſequence, Gold well open'd and ſubtiliz'd, might produce a Reſin, and a Fire that wou'd augment the Blood.

AURUM *Moſaicum*. See MOSAIC *Gold*.

AURUM *Moſaicum* is alſo a Preparation in Pharmacy, thus called from its golden Colour and Appearance. It is made of Mercury, Tin, Sal Armoniac, and Flowers of Sulphur, by grinding, mixing, then ſetting them three Hours in a Sand Heat.—The dirty Sublimate being taken off, the *Aurum Moſaicum* is found at the Bottom of the Matraſs.

It is recommended in moſt chronical and nervous Caſes; and particularly Convulſions of Children.

AURUM *Reginæ*. See QUEEN *Gold*.

AUSCULTARE, in our antient Cuſtoms.—In regard the reading of Prayers with a graceful Tone or Accent, makes ſome Impreſſion on the Hearers; there was antiently a Perſon appointed, in Monaſteries, to hear the Monks read, who inſtructed them how to perform it, before they were admitted to read publickly in the Church, or before the People.—This was call'd *Auſcultare*, q. d. to hear, liſten.

Quicunque Lecturus vel Cantaturus eſt aliquid in Monaſterio; ſi neceſſe habeat ab eo, viz. *Cantore, priuſquam incipiat debet Auſcultare. Lanfranc in Decret. pro Ord. Benedict.*

AUSPICES, in Antiquity, a ſort of Prieſts or Southſayers, appointed to obſerve the Flight of Birds, and thence to form Preſages of future Events. See DIVINATION.

The *Auſpices* were thus call'd, *Quaſi Aviſpices, ab avibus Inſpiciendis.*—They are ordinarily confounded with the *Augurs*, tho' in ſtrictneſs there be a Difference. See AUGUR.

AUSPICY, AUSPICIUM, a kind of Augury amongſt the Antients, which conſiſted in conſidering the Flight and feeding of Birds, in order to know whether any Undertaking they were about, would prove happy or unfortunate. See AUSPICES and AUGURY.

Pliny attributes the Invention hereof to *Tireſias* the *Theban*. See DIVINATION, OMEN, *&c.*

AUSTERE, implies a rough, aſtringent Taſte; ſuch as that of Vitriol, *&c.* See TASTE.

Auſtere things differ from acerb or ſour ones; in that they conſtringe the Mouth and Tongue ſomewhat leſs, and are devoid of Acidity. See ACERB.

The Word comes from the *Greek*, αὐστηρὸς.

AUSTERITY, AUSTERENESS *of Taſte*, that which denominates a ſapid Body, *Auſtere*. See AUSTERE.

AUSTERITY, in a moral Senſe, ſignifies *Severity*, or a rigid Carriage and Deportment in any thing.

Thus we ſay, *Auſterity* of Manners; the *Auſterities* of the Monaſtick Life. The *Auſterity* of the *Roman* Cenſors kept the People in their Duty. The greateſt *Auſterity* of the *Carthuſians* is perpetual Solitude. See CENSOR, CARTHUSIAN, SOLITARY, *&c.*

AUSTRAL, AUSTRALIS, the ſame with *Southern*. See SOUTH and SOUTHERN.

Thus, *Auſtral Signs*, are the ſix laſt Signs of the Zodiack; ſo called, becauſe they are on the South-ſide of the Equinoctial. See SIGN.

The Word is derived from *Auſter*, the South-Wind. See WIND.

AUSTRALIS *Piſcis*, is a Conſtellation of the Southern Hemiſphere; not viſible in our Latitude. See CONSTELLATION.

AUTHENTICK, AUTHENTICUS, ſomething genuine, and of good Authority; in oppoſition to what is fictitious and ſpurious.

It alſo ſignifies ſomething ſolemn, and celebrated; cloth'd in all its Formalities; and atteſted by proper Perſons to whom credit has been regularly given.

In this Senſe we ſay, the Truths of Chriſtianity are founded on *Authentic* Teſtimonies, *&c.*—*Authentic* Papers, Inſtruments.—The Nobility, and Perſons of Rank, were particularly call'd *Authentic Perſons*, as being ſuppoſed more deſerving of Credit than others.

The Word is *Greek*, Αὐθεντικος; q. d. *cum Authoritate.*

AUTHEN-

AUTHENTICKS, AUTHENTICÆ, in the Civil Law, is a Name given to the Novels of *Juſtinian*. See NOVEL.

The Reaſon of the Denomination is not well known.—*Alciat* will have it to have been firſt given them by *Accurſius*.

They were Originally compoſed in *Greek*, and afterwards tranſlated into *Latin* by the Patrician *Julian*, who alſo reduced them into fewer Words and leſs Compaſs.—In the time of *Bulgarus*, there was a ſecond Verſion made, more exact and literal, though not quite ſo elegant as the former.

This Tranſlation, ſays the Author juſt cited, being preferred by *Accurſius*, he call'd it the *Authentica*, by way of preference over that of *Julian*, as being more conformable to the Original.

The *Authenticks* or Novels are divided into IX Collations, or Chapters. See CHAPTER, CIVIL-*Law*, &c.

AUTHOR, AUCTOR, properly denotes one who created or produced any thing; and is applied by way of Eminence to the firſt Cauſe, *viz.* God.—Thus we ſay the *Author* of Nature, &c. See CAUSE, GOD, NATURE, &c.

The Word is *Latin*, form'd of the *Greek*, αυτος, *Ipſe*.

The Term *Author* is ſometimes alſo uſed in the ſame Senſe with *Inventor*.—*Polydore Virgil* has wrote eight Books of the *Authors* or Inventors of things, &c. See INVENTION.

Pythagoras is held the *Author* of the Dogma of *Metempſychoſis*. See METEMPSYCHOSIS, &c.

AUTHOR, in Matters of Literature, is a Perſon who has wrote or compoſed ſome Book, or Writing. See BOOK, WRITING, &c.

Thus we ſay the ſacred *Authors*; anonymous *Authors*, &c.—The *Latin Authors* pillaged the *Greeks*, &c. See ANONYMOUS, &c.

An *Original Author* is he who firſt treated of any Point or Subject; who did not follow any other Perſon, imitate any Model either in the Matter or the Manner of what he has wrote. See ORIGINAL.

AUTHORITY, AUCTORITAS, a right to command, and make one's ſelf obey'd. See POWER.

In this Senſe we ſay the Supreme or Soveriegn *Authority*; Abſolute or Deſpotic *Authority*; the Royal *Authority*; the Epiſcopal *Authority*; the *Authority* of the Church; of a Father, &c. See SUPREME, SOVEREIGN, ROYAL, DESPOTIC, &c. See alſo JURISDICTION, GOVERNMENT, &c.

AUTHORITY, is alſo uſed for the Teſtimony of an Author, or Writing. See TESTIMONY.

The Word is alſo particularly underſtood of an Apophthegm, or Sentence of ſome great or eminent Perſon, quoted in a Diſcourſe, either by way of Proof, or Embelliſhment.

The Term alſo includes Rules, Laws, Canons, Decrees, Deciſions, &c. alledged in Confirmation of a Matter in Diſpute. See CONFIRMATION, &c.

Paſſages quoted from *Ariſtotle* are of great *Authority* in the Schools: Texts of Scripture are of deciſive *Authority*.

Authorities make a Species of Arguments call'd by Rhetoricians, *inartificial*, or *extrinſic Arguments*. See ARGUMENT.

For the Uſe and Effect of Authorities, ſee EVIDENCE, REASON, PROBABILITY, FAITH, REVELATION, &c.

AUTOCEPHALUS, a Perſon who is his own Chief or Maſter, and has no other over him. See ACEPHALUS.

The Word is compounded of the *Greek* αὐτος, *ipſe*; and κεφαλὴ, *Caput*, Head.

This Denomination was given by the *Greeks* to certain Archbiſhops, who were exempted from the Juriſdiction of Patriarchs.—Such was the Archbiſhop of *Cyprus*, by a general Decree of the Council of *Epheſus*, which freed him from the Juriſdiction of the Patriarch of *Antioch*. See ARCHBISHOP, PATRIARCH, &c.

There were ſeveral other Biſhops in the Eaſt, who were *Autocephali*; and in the Weſt, thoſe of *Ravenna* pretended to the ſame Right.—The VIth Council, Canon 39. ſays, they have the ſame Authority with Patriarchs; but this is not to be underſtood in the full Latitude of the Words; but only as intimating, that the *Autocephali* have the ſame Authority over their Biſhops, that Patriarchs had over their Archbiſhops: In which Senſe only they are equal to Patriarchs. See BISHOP, METROPOLITAN, &c.

AUTOGRAPHY, AUTOGRAPH, the very Hand-writing of any Perſon: Or the Original of a Treatiſe, or Diſcourſe.—In oppoſition to a Copy. See HAND-*writing*, ORIGINAL, COPY, &c.

The Word is form'd of the two *Greek* Words αὐτος, and γράφω, *ſcribo*.

AUTOMATON, or AUTOMATUM, a ſelf-moving Engine; or a Machine which has the Principle of Motion within it ſelf. See MACHINE and MOTION.

Such were *Archytas*'s Dove, mentioned by *Aulus Gellius*, *Noct. Att. L.* 10. and *Regiomontanus*'s Wooden Eagle, which, as *Hakewill* relates, flew forth of the City, met the Emperor, ſaluted him, and return'd: As alſo his Iron Fly, which at a Feaſt flew out of his Hands, and taking a round, returned thither again. *Apol.* c. 10. §. 1.

Among *Automata* are reckoned all Mechanical Engines which go by Springs, Weights, &c. included within them; ſuch are Clocks, Watches, &c. See SPRING, PENDULUM, CLOCK, WATCH, &c.

The Word is *Greek*, αὐτόματος, compounded of αὐτος, *ipſe*, and μάτην, *facile*; whence αυτοματος, *ſpontaneous*.—The Carteſians maintain Brutes to be mere *Automata*. See CARTESIANISM, CAUSE, &c.

AUTOPSY, AUTOPSIA, an ocular Demonſtration; or the ſeeing a thing one's ſelf. See SIGHT, VISION, &c.

The Word is compounded of αὐτὸς, *ipſe*, and ὄψις, *Viſus*, Sight

AUTUMN, AUTUMNUS, the third Seaſon of the Year; being that wherein the Harveſt, and the Fruits of the Summer are gathered. See SEASON, YEAR, &c.

Autumn begins on the Day when the Sun's Meridian Diſtance from the Zenith, being on the decreaſe, is a mean between the greateſt and leaſt; which happens when the Sun enters ♎. Its End coincides with the beginning of *Winter*. See WINTER, &c.

Some derive the Word from *augeo*, I increaſe, *quod annum frugibus augeat*.

Divers Nations computed the Years by *Autumns*; the *Engliſh-Saxons*, by Winters.—*Tacitus* tells us, the antient *Germans* were acquainted with all the other Seaſons of the Year, but had no Notion of *Autumn*. *Linwood* obſerves of the beginning of the ſeveral Seaſons of the Year, that

Dat Clemens Hyemem, dat Petrus Ver Cathedratus,
Æſtuat Urbanus, Autumnat *Bartholomæus.*

AUTUMN, in Alchymy, the Time or Seaſon when the Operation of the Philoſopher's-ſtone is brought to Maturity and Perfection. See ALCHYMY and PHILOSOPHER'S-*Stone*.

AUTUMNAL, ſomething peculiar to *Autumn*. See AUTUMN.

AUTUMNAL *Point*, is one of the Equinoctial Points; being that from which the Sun begins to deſcend towards the North Pole. See EQUINOCTIAL *Point*.

AUTUMNAL *Equinox*, is the Time when the Sun is in the *Autumnal* Point. See EQUINOX.

AUTUMNAL *Signs* are thoſe through which the Sun paſſes during the Seaſon of *Autumn*. See SIGN.

The *Autumnal Signs* are *Libra*, *Scorpius*, and *Sagittary*. See LIBRA, SCORPIUS, and SAGITTARIUS.

AUXESIS, in Rhetorick, a Figure, when any thing is magnified too much. See FIGURE and HYPERBOLE.

AUXILIARY, AUXILIARIS, any thing that is helping or aſſiſting to another. See AUXILIUM.

Thus we ſay a Prince is to truſt more to his own Soldiers, than to *Auxiliary* Troops, &c.

AUXILIARY *Verbs*, in Grammar, are ſuch as help to form or conjugate others; that is, are prefixed to them to form ordenote the Mood and Tenſe thereof. See VERB, CONJUGATION, &c.

Such, in *Engliſh* are, *have*, *am*, or *be*; in *French*, *eſtre* and *avoir*; in *Italian*, *ho* and *ſono*, &c.

All the modern Languages we know of make uſe of *auxiliary* Verbs.—The reaſon is, that the Verbs thereof do not change their Terminations or Endings, as thoſe of the *Latin* and *Greek*, to denote the different Tenſes or Times of being, doing, or ſuffering; nor the different Moods or Manners of their ſignifying: So that to ſupply this defect, recourſe is had to different *auxiliar* Verbs. See TERMINATION, TENSE, PERSON, &c.

The *Auxiliary am* ſupplies the want of Paſſives in our Language. See PASSIVE.

Beſides the perfect *auxiliary* Verbs, we have ſeveral defective ones; as *do*, *will*, *ſhall*, *may*, *can*, and *have*; which by changing their own Terminations, ſave the neceſſity of changing thoſe of the Verbs they are added to.—Thus, inſtead of *ego uro*, *tu uris*, *ille urit*, &c. we ſay, I *do* burn, thou *doſt* burn, he *doth* burn, &c.

AUXILIUM, in Law. See AID.

AUXILIUM *Curiæ*, ſignifies an Order of the Court for the ſummoning of one Party at the Suit of another.

AUXILIUM *ad Filium Militem faciendum & filiam Maritandam*, was a Writ directed to the Sheriff of every County, where the King or other Lord had any Tenants, to levy of them reaſonable Aid, towards the Knighting his Son, and the Marriage of his eldeſt Daughter. See AID.

AWARD, in Law, the Judgment of one who is neither aſſign'd by Law, nor appointed by the Judge, for ending a Matter in Controverſy; but is choſen by the Parties themſelves that are at variance. See ARBITRATOR, ARBITRATION, &c.

AWN, in Botany, *Ariſta*; the Beard growing out of the Husk of Corn or Graſs. See ARISTA, CORN, &c.

AWNING, on board a Ship, is when a Sail, a Tarpaulin, or the like, is hung over any part of the Ship, above the Decks, to keep off the Sun, Rain, or Wind.

In the Long-boat they make an *Awning*, by bringing the Sail over the Yard and Stay; and boming it out with the Boat-hook.

AXILLA, or ALA, in Anatomy, the Cavity under the upper Part of the Arm; commonly called the *Arm-pit*. See ARM.

The Word is a diminutive of *Axis*; q. d. *little Axis*. See AXIS.

Abſceſſes in the *Axillæ* are uſually dangerous, on account of the many Blood-Veſſels, Lymphaticks, Nerves, *&c.* thereabout, which form large Plexus's. See ULCER.

By the antient Laws, Criminals were to be hang'd by the *Axillæ*, if they were under the Age of Puberty. See HANGING, PUBERTY, *&c.*

AXILLA, in Botany, is the ſpace comprehended between the Stems of Plants and their Leaves. See PLANT, STEM, LEAF, *&c.*

Hence we ſay, thoſe Flowers grow in the *Axillæ* of the Leaves, *i. e.* at the Baſe of the Leaves or their Pedicles. See FLOWER, *&c.*

AXILLARY, AXILLARIS, in Anatomy, ſomething that belongs to the *Axillæ*, or lies near them. See AXILLA.

AXILLARY *Vein* is one of the ſubclavian Veins; which paſſing under the Arm-pits, divides it ſelf into ſeveral other Veins. See SUBCLAVIAN and VEIN.

AXILLARY *Artery* is a Remainder of the Trunk of the ſubclavian Artery; which paſſing under the Arm-pits, changes its Name, and is call'd *Axillary*. See ARTERY.

The ſecond *Vertebra* of the Back is alſo call'd *Axillary*; in regard it is the neareſt to the Arm-pits. See AXIS and VERTEBRA.

AXINOMANCY, AXINOMANTIA, a Species of Divination, or Method of foretelling future Events by means of an Ax or Hatchet. See DIVINATION.

The Word is form'd from the *Greek* ἀξινη, *ſecuris*, and μαντεία, *divinatio*.

This Art was in good repute among the Antients; and was performed by laying an Agat-ſtone on a red-hot Hatchet. See AGAT.

AXIOM, AXIOMA, a ſelf-evident Truth; or a Propoſition whoſe Truth every Perſon perceives at firſt ſight. See TRUTH and PROPOSITION.

Thus, that the whole is greater than a Part; that a thing cannot give what it ſelf has not; that a thing cannot be and not be at the ſame time; that from nothing, nothing can ariſe, *&c.* are *Axioms*.—The Word is *Greek*, ἀξιωμα, q. d. *dignitas*, *Auctoritas*, or even *Effatum:* Whence *Cicero* in lieu thereof uſes the Word *Pronuntiatum*.

By *Axioms*, call'd alſo *Maxims*, are underſtood all common Notions of the Mind, whoſe Evidence is ſo clear and forcible, that a Man cannot deny them without renouncing common Senſe and natural Reaſon. See MAXIM, EVIDENCE, *&c.*

The Rule of *Axioms* is this, that whatever Propoſition expreſſes the immediate clear Compariſon of two Ideas without the help of a third, is an *Axiom*.—On the other hand, a Truth which does not ariſe from an immediate Compariſon of two Ideas, is no *Axiom*. See IDEA, RELATION, *&c.*

Wolfius aſſigns the Eſſence of an *Axiom* thus: Whatever Propoſition ariſes immediately from the Conſideration of a ſingle Definition, is an *Axiom*.—Thus it neceſſarily following from the Geneſis of a Circle, that all right Lines drawn from the Centre to the Circumference thereof, are equal; inaſmuch as they all repreſent the ſame Line in different Situations: This is an *Axiom*. See DEFINITION.

Hence, the Truth of *Axioms* being perceived by the meer Intuition of a Definition; they need no Demonſtration: Since they are neceſſarily as true, as the Definition is juſt. See DEMONSTRATION.

Several Authors abuſe this Property of *Axioms*, and obtrude for *Axioms* the Premiſſes of Syllogiſms, which they are not able to prove.—*Euclid* himſelf lies liable to Exception on this Account, having aſſumed the Equality of Figures which mutually agree, or are congruous to each other, as an *Axiom*. See CONGRUENCY.

Axioms, in effect, ſtrictly ſpeaking, are no other than identick Propoſitions.—Thus to ſay that all Right Angles are equal to each other, is as much as to ſay, all Right Angles are Right Angles: Such Equality being implied in the very Definition, the very Name. See DEFINITION.

My Lord *Bacon* propoſes a new Science, to conſiſt of general *Axioms*, under the Denomination of *Philoſophia prima*. See PHILOSOPHY, KNOWLEDGE, *&c.*

AXIOM is alſo an eſtabliſhed Principle in ſome Art or Science. See PRINCIPLE, *&c.*

Thus, it is an *Axiom* in Phyſicks, that Nature diſcovers herſelf moſt in the ſmalleſt Subjects; that Nature does nothing in vain; that Effects are proportional to their Cauſes, *&c.* Thus it is an *Axiom* in Geometry, that things equal to the ſame third are alſo equal to one another; that if to equal things you add Equals, the Sums will be Equal, *&c.* So it is an *Axiom* in Opticks, that the Angle of Incidence is equal to the Angle of Reflection, *&c.* It is an *Axiom* in Medicine, *&c.* that there is no ſincere Acid in the human Body, *&c.*

In this Senſe the general Laws of Motion are call'd *Axioms*; as, that all Motion is Rectilinear, that Action and Re-action are equal, *&c.* See *Laws of* NATURE.

Theſe particular *Axioms*, it may be obſerved, do not immediately ariſe from any firſt Notions or Ideas, but are deduced from certain Hypotheſes: This is particularly obſervable in phyſical Matters, wherein, as ſeveral Experiments contribute to make one Hypotheſis, ſo ſeveral Hypotheſes contribute to one *Axiom*. See HYPOTHESIS, *&c.*

AXIS properly ſignifies a Line or long Piece of Iron or Wood paſſing through the Centre of a Sphere, which is moveable upon the ſame. See SPHERE.

In this Senſe we ſay the *Axis of a Sphere*, or Globe; the *Axis*, or *Axle-Tree of a Wheel*, &c. See GLOBE, WHEEL, *&c.*

AXIS *of the World*, in Aſtronomy.—The *Axis of the World* is an imaginary Right Line, conceived to paſs through the Centre of the Earth, and terminating at each End in the Surface of the mundane Sphere. See SPHERE.

About this Line as an *Axis*, the Sphere, in the Ptolemaic Syſtem, is ſuppoſed daily to revolve. See EARTH and ROTATION. See alſo PTOLOMAIC.

This *Axis* is repreſented by the Line PQ, *Tab. Aſtronomy, Fig.* 52.—The two extream Points hereof, in the Surface of the Sphere, *viz.* P and Q, are called its *Poles*. See POLE.

AXIS *of the Earth*, is a Right Line, upon which the Earth performs its diurnal Rotation. See EARTH, ROTATION, *&c.*

Such is the Line PQ, *Tab. Geography, Fig.* 7.—The two extream Points hereof are alſo called *Poles*. See POLE.

The *Axis* of the Earth is a Part of the *Axis* of the World.—It always remains parallel to it ſelf, and at Right Angles with the Equator. See PARALLELISM.

AXIS *of a Planet*, is a Line drawn through the Centre thereof, about which the Planet revolves. See PLANET, *&c.*

The Sun, Moon, and all the Planets, except Mercury and Saturn, are known, by Obſervation, to move about their ſeveral *Axes*; and the like Motion is eaſily infer'd of thoſe two. See SUN, MOON, MERCURY, SATURN, *&c.*

AXES *of the Horizon*, the *Equator*, *Ecliptic*, *Zodiac*, &c. are Right Lines drawn through the Centres of thoſe Circles perpendicularly to the Planes thereof. See CIRCLE. See alſo HORIZON, ECLIPTIC, EQUATOR, *&c.* See alſo PLANE, *&c.*

AXIS, in Mechanicks.—The *Axis of a Ballance* is the Line upon which it moves or turns. See BALLANCE.

AXIS *of Oſcillation*, is a Right Line parallel to the Horizon, paſſing through the Centre, about which a Pendulum vibrates. See OSCILLATION and PENDULUM.

AXIS, in Geometry.—*Axis of Rotation*, or *Circumvolution*, is an imaginary Right Line, about which any plane Figure is conceived to revolve, in order to generate a Solid. See SOLID, GENESIS, *&c.*

Thus a Sphere is conceived to be formed by the Rotation of a Semicircle about its Diameter or Axis, and a Right Cone by that of a Right Angle Triangle about its perpendicular Leg, which is here its *Axis*.

AXIS *of a Circle or Sphere*, is a Line paſſing through the Centre of a Circle or Sphere, and terminating at each End, in the Circumference thereof. See CIRCLE and SPHERE.

The *Axis of a Circle*, &c. is otherwiſe call'd the *Diameter* thereof.—Such is the Line AB. *Tab. Geometry. Fig.* 27. See DIAMETER.

AXIS is yet more generally uſed for a Right Line proceeding from the Vertex of a Figure to the Baſe thereof. See FIGURE, VERTEX, and BASE.

AXIS *of a Cylinder* is properly that quieſcent Right Line about which the Parallelogram turns, by whoſe Revolution the Cylinder is formed. See CYLINDER.

Though, both in Right and Oblique Cylinders, the Right Line joining the Centres of the oppoſite Baſis, is alſo called the *Axis of the Cylinder*.

AXIS *of a Cone* is the Right Line or Side upon which the right angled Triangle forming the Cone makes its Motion. See CONE.

Hence it follows that only a Right Cone can properly have an *Axis*; in regard an Oblique one cannot be generated by any Motion of a Plane Figure about a Right Line at reſt.

But in Regard the *Axis* of a Right Cone is a Right Line drawn from the Centre of its Baſe to the Vertex; in Analogy hereto the Writers of Conicks do likewiſe call the ſame Line drawn from the Centre of the Baſe of an Oblique Cone to the Vertex, the *Axis* thereof.

AXIS *of a Veſſel*, is that Quieſcent Right Line paſſing through the Middle thereof, perpendicularly to its Baſe, and equally diſtant from its Sides.

AXIS *of a Conick Section*, is a Right Line paſſing through the Middle of the Figure, and cutting all the Ordinates at Right Angles. See CONICK *Section*.

Thus if AP, *Tab. Conicks, Fig.* 31. be drawn perpendicularly to MN, ſo as to divide the Section into two equal Parts; it is called the *Axis of the Section*. See SECTION.

Tranſverſe AXIS, called alſo the *firſt* or *principal* AXIS of an Ellipſis or Hyperbola, is the *Axis* AP, laſt defined: Being thus called in contradiſtinction to the conjugate or ſecondary *Axis*. See TRANSVERSE.

The Tranſverſe *Axis* in the Ellipſis the longeſt; and in the Hyperbola cuts the Curve in the Points A and P. *Fig.* 32.

Conjugate AXIS, or *ſecond* AXIS *of the Ellipſis*, is the Line FF, *Fig.* 31. drawn through the Centre of the Figure C, parallel to the Ordinate MN, and perpendicularly to the Tranſverſe *Axis* AP; being terminated at each extream by the Curve. See ELLIPSIS.

The

The Conjugate is the ſhorter of the two *Axes* of an Ellipſis. See CONJUGATE.

Conjugate, or *ſecond* AXIS *of an Hyperbola*, is the Right Line FF, *Fig* 32. drawn through the Centre parallel to the Ordinates, M N, M N, perpendicularly to the *Axis* AP. See HYPERBOLA.

The Length of this *Axis*, though more than infinite, may be found by this Proportion, $\sqrt{AM \times PM} : AP :: {}^{2}MN : FF$.

AXIS *of a Parabola*. See PARABOLA.

The *Axis of a Parabola* is of an indeterminate Length, that is is infinite.—The *Axis* of the Ellipſis is determinate.—The Parabola has only one *Axis*; the Ellipſis and Hyperbola two. See CURVE.

AXIS *in Opticks*.—*Optick* AXIS, or *Viſual Axis*, is a Ray paſſing through the Centre of the Eye; or it is that Ray which proceeding out of the Middle of the luminous Cone, falls perpendicularly on the cryſtalline Humour, and conſequently paſſes through the Centre of the Eye. See OPTICK, RAY, CONE, VISION, *&c.*

Common or *mean* AXIS, is a Right Line drawn from the Point of Concourſe of the two optick Nerves, through the Middle of the right Line, which joins the Extremity of the ſame optick Nerves. See OPTICK *Nerve*.

AXIS *of a Lens*, or *Glaſs*, is a right Line paſſing along the *Axis* of that Solid whereof the Lens is a Segment. See LENS and GLASS.

Thus a ſpherical convex Lens, being a Segment of ſome Sphere; the *Axis* of the *Lens* is the ſame with the *Axis* of the Sphere; or it is a right Line paſſing through the Centre thereof. See CONVEX, *&c.*

Or the *Axis* of a Glaſs is a right Line joining the Middle Points of the two oppoſite Surfaces of the Glaſs. See OPTICK *Glaſs*.

AXIS *of Incidence*, in Dioptricks, is a right Line drawn through the Point of Incidence, perpendicularly to the refracting Surface. See INCIDENCE.

Such is the Line DB, *Tab. Opticks, Fig.* 56.

AXIS *of Refraction*, is a right Line continued from the Point of Incidence or Refraction, perpendicularly to the refracting Surface, along the further Medium.—Such is the Line BE.

Or it is that made by the incident Ray, perpendicularly prolonged on the Side of the ſecond Medium. See REFRACTION.

AXIS *of a Magnet*, or *Magnetical* AXIS, is a Line paſſing thro' the middle of a Magnet, length-wiſe; in ſuch manner, as that however the Magnet be divided, provided the Diviſion be according to a Plane wherein ſuch Line is found, the Loadſtone will be made into two Loadſtones. See MAGNET and MAGNETISM.

The extreams of ſuch Lines are called the Poles of the Stone. See POLE and POLARITY.

AXIS, in Anatomy, is the third Vertebra of the Neck; reckoning from the Skull. See VERTEBRA.

'Tis thus called by reaſon the two firſt Vertebræ, with the Head, move thereon, as on an *Axis*. See HEAD and NECK.

Spiral AXIS, in Architecture, is the *Axis* of a twiſted Column, drawn ſpirally, in order to trace the Circumvolutions without. See *Twiſted* COLUMN.

AXIS *of the Ionick Capital*, is a Line paſſing perpendicularly through the middle of the Eye of the Volute. See IONIC and VOLUTE.

The *Axis* is otherwiſe call'd *Cathetus*. See CATHETUS.

AXIS *in Peritrochio*, is one of the five mechanical Powers, or ſimple Machines; contrived chiefly for the raiſing of Weights to a conſiderable Height. See MECHANICAL *Power*, &c.

It conſiſts of a Circle, repreſented AB, (*Tab. Mechanicks, Fig.* 44.) concentric with the Baſe of a Cylinder, and moveable together with it, about its *Axis* EF.—This Cylinder is call'd the *Axis*; the Circle, the *Peritrochium*; and the *Radii*, or Spokes, which are ſometimes fitted immediately into the Cylinder, without any Circle, the *Scytalæ*. See PERITROCHIUM.

Round the *Axis* winds a Rope, whereby the Weight, *&c.* is to be rais'd.

The *Axis in Peritrochio* takes place in the Motion of every Machine, where a Circle may be conceived deſcribed about a fix'd *Axis*, concentric to the Plane of a Cylinder about which it is placed; as in Crane-Wheels, Mill-Wheels, Capſtans, *&c.* See WHEEL.

Doctrine of the AXIS *in Peritrochio.*

1. If the Power, applied to an *Axis in Peritrochio*, in the Direction AL, *Fig.* 7. perpendicular to the Periphery of the Wheel, or to the Spoke, be to a Weight G, as the Radius of the *Axis* CE, is to the Radius of the Wheel CA, or the Length of the Spoke; the Power will juſt ſuſtain the Weight, *i. e.* the Weight and the Power will be *in Equilibrio*.

2. If a Power be applied to the Wheel in F, according to the Line of Direction FD, which is oblique to the Radius of the Wheel, though parallel to the perpendicular Direction; it will have the ſame Proportion to a Power which acts according to the perpendicular Direction AL, which the whole Sine has to the Sine of the Angle of the Direction DFC.

Hence, ſince the Diſtance of the Power in A, is the Radius CA; the Angle of Direction DFC being given, the Diſtance DC is eaſily found.

3. Powers applied to the Wheel in ſeveral Points, F and K, according to the Directions, FD and KI, parallel to the perpendicular one AL, are to each other as the Diſtances from the Centre of Motion CD and DI, reciprocally.

Hence, as the Diſtance from the Centre of Motion increaſes, the Power decreaſes; *& vice verſa*.—Hence alſo, ſince the Radius AC is the greateſt Diſtance, and agrees to the Power acting according to the Line of Direction; the perpendicular Power will be the ſmalleſt of all thoſe able to ſuſtain the Weight G, according to the ſeveral Lines of Direction.

4. If a Power acting according to the Perpendicular AL, lift the Weight G; the Space of the Power will be to the Space of the Weight, as the Weight to the Power.

For, in each revolution of the Wheel, the Power paſſes thro' its whole Periphery; and in the ſame time the Weight is rais'd a Space equal to the Periphery of the *Axis*: The Space of the Power, therefore, is to the Space of the Weight, as the Periphery of the Wheel to that of the *Axis*: But the Power is to the Weights as the Radius of the *Axis* to that of the Wheel. Therefore, *&c.*

5. *A Power, and a Weight being given, to conſtruct an* Axis in Peritrochio, *whereby it ſhall be ſuſtain'd.*

Let the Radius of the *Axis* be big enough to ſupport the Weight without breaking. Then, as the Power is to the Weight, ſo make the Radius of the Wheel, or the Length of the Spoke, to the Radius of the *Axis*.

Hence, if the Power be but a ſmall part of the Weight, the Radius of the Wheel muſt be vaſtly great.—*E. gr.* Suppoſe the Weight 3000, and the Power 50, the Radius of the Wheel will be to that of the *Axis* as 60 to 1.

This Inconvenience is provided againſt by encreaſing the number of Wheels and Axes; and making one turn round another, by means of Teeth or Pinions. See WHEEL.

AXUNGIA, a kind of Fat, the ſofteſt and moiſteſt of any in the Bodies of Animals. See FAT.

It is different from *Lard*, which is a firm Fat; and from *Suet* Leaf, or Adeps, which is a kind of dry Fat.

The *Latins* diſtinguiſh Fat into *Pinguedo*, call'd alſo *Axungia*; and *Adeps*, or *Sevum*; but many of our modern Writers confound them. See PINGUEDO.

The Phyſicians make uſe of the *Axungia* of the Gooſe, the Dog, the Viper, and ſome others, eſpecially that of Man, which is of extraordinary Service in the drawing and ripening of Tumors, *&c.* See ATTRAHENT. See alſo VIPER, *&c.*

The Word is ſuppoſed to be form'd, *ab Axe Rotarum quæ unguntur*.

AXUNGIA *of Glaſs*, call'd alſo the *Gall*, and *Salt of Glaſs*, is a Scum taken from the Top of the Matter of Glaſs before it be vitrified. See GLASS.

AYEL, in Law, a Writ which lies where the Grandfather being ſeized in his Demeſn the Day he died, a Stranger enters the ſame Day, and diſpoſſeſſes the Heir. See WRIT.

AYRY, or *Aery* of Hawks, a Neſt or Company of Hawks; ſo call'd from the old *French* Word *Aire*, which ſignifies the ſame thing. See HAWK and HAWKING

AYZAMENTA. See EASEMENTS.

AZIMUTH, in Aſtronomy.—The *Azimuth of the Sun*, or *a Star*, is an Arch of the Horizon, comprehended between the Meridian of the Place, and any given Vertical. See MERIDIAN and VERTICAL.

The *Azimuth* is the Complement of the Eaſtern and Weſtern Amplitude to a Quadrant. See AMPLITUDE.

The *Azimuth* is found by this Proportion; as Radius is to the Tangent of the Latitude, ſo is the Tangent of the Sun's Altitude to the Coſine of the *Azimuth* from the South, at the time of the Equinox.

To find the Azimuth by the Globe, ſee GLOBE.

The Word is pure *Arabick*, where it ſignifies the ſame thing.

Magnetical AZIMUTH, is an Arch of the Horizon contained between the Sun's *Azimuth*-Circle, and the magnetical Meridian; or it is the apparent Diſtance of the Sun from the North or South Point of the Compaſs. See MAGNETICAL.

It is found, by obſerving the Sun with an *Azimuth* Compaſs, when he is about 10 or 15 Degrees high, either in the Forenoon Afternoon. See *Azimuth* COMPASS.

AZIMUTH *Compaſs* is an Inſtrument uſed at Sea for finding the Sun's magnetical *Azimuth*. See *Magnetical* AZIMUTH.

The Deſcription and Uſe of the *Azimuth Compaſs*, ſee under the Article *Azimuth* COMPASS.

AZIMUTH *Dial*, is a Dial whoſe Style or Gnomon is at right Angles to the Plane of the Horizon. See DIAL.

AZIMUTHS, call'd alſo vertical Circles, are great Circles interſecting each other in the Zenith and Nadir, and cutting the Horizon at right Angles. See VERTICAL.

The Horizon being divided into 360°; for this reaſon they uſually conceive 360 *Azimuths*.—Theſe *Azimuths* are repreſented by the Rhumbs on Sea Charts. See HORIZON, RHUMB, CHART, *&c.*

On the Globe theſe Circles are repreſented by the Quadrant of Altitude when ſcrew'd in the Zenith. See GLOBE, QUADRANT *of Altitude*, &c.

On theſe *Azimuths* is reckoned the Heighth of the Stars and the Sun, when he is not on the Meridian. See ALTITUDE, SUN, STAR, *&c.*

AZONES, in Mythology, a Term antiently applied to ſuch of the Gods as were not the private Divinities of any particular Country or People, but were acknowledg'd as Gods in every Country, and worſhipp'd by every Nation. See GOD.

The Word is derived from the *Greek* privative α, and ζώνη, Zone, Country.

Theſe *Azones* were a Degree above the viſible and ſenſible Gods, which were call'd *Zonæi*; who inhabited ſome particular Part of the World, and never ſtirr'd out of the Diſtrict or Zone that was aſſign'd them.

AZOTH, among the antient Chymiſts, ſignified, ſometimes, the firſt Matter of Metals; ſometimes an univerſal Medicine; and ſometimes the Mercury of a Metal.—But the Term is now diſuſed. See METAL, MERCURY, *&c.*

AZURE, the blue Colour of the Skies. See BLUE, COLOUR, SKY, *&c.*



AZURE, in Heraldry, ſignifies a blue Colour, in the Coats of Arms of all Perſons under the Degree of a Baron. See COLOUR.

In the Eſcutcheons of Noblemen, Blue is call'd *Saphir*; and in thoſe of ſovereign Princes, *Jupiter*.

In engraving, it is repreſented by Strokes or Hatches drawn horizontally, as in the annexed Figure.

The *French* prefer this Colour to all others, by reaſon the Field of the Arms of their Kings is *Azure*.

AZURE is alſo uſed for a mineral Colour, prepared from the *Lapis Armenus*. See ARMENUS.

The *Azure* is very near a-kin to Ultramarine; being procured from the Armenian Stone much after the ſame Manner as the other is from *Lapis Lazuli*. See ULTRAMARINE and LAPIS *Lazuli*.

AZYGOS, in Anatomy, a Vein otherwiſe called *Vena ſine pari*, becauſe ſingle. See VEIN.

The *Vena Azygos* is the third Branch of the aſcending Trunk of the *Cava*.—It deſcends through the right Side of the Cavity of the *Thorax*, and at its arrival at the eighth or ninth *Vertebra*, begins to keep the Middle, and ſends forth on each Side, intercoſtal Branches to the Interſtices of the eight lower Ribs; and there is divided into two Branches, the larger of which is inſerted ſometimes into the *Cava*, but oftener into the Emulgent: The other enters the *Cava*, commonly a little below the Emulgent, but is ſeldom joined to the Emulgent it ſelf. See CAVA and EMULGENT.

AZYMITES, they who Communicate with Bread not leavened or fermented. See AZYMUS.

This Appellation is given by *Cerularius*, to thoſe of the *Latin* Church, upon his Excommunicating them in the XIth Century.

The *Armenians* and *Maronites* do alſo make uſe of *Azymus*, or unleavened Bread, in their Office; on which Account ſome *Greeks* call them *Azymites*. See ARMENIAN and MARONITE.

AZYMUS, ſomething not fermented, or that is without Leaven. See FERMENT and LEAVEN.

The Term *Azymus* is much uſed in the Diſputes betwixt thoſe of the *Greek* and *Romiſh* Church; the latter of whom contend, that the Bread in the Maſs ought to be *Azymus*, unleaven'd, in imitation of the paſchal Bread of the *Jews*, and of our Saviour, who inſtituted the Sacrament on the Day of the Paſſover; and the latter ſtrenuouſly maintaining the former, from Tradition, and the conſtant Uſage of the Church. See SACRAMENT, EUCHARIST, *&c.*

This Diſpute was not the Occaſion of the Rupture between the *Greek* and *Latin* Churches; *Photius* having broke with the Popes 200 Years before.—The Patriarch *Cerularius*, in the XIth Century, excommunicated the *Latins* for adhering to the Uſe of *Azymus* Bread.

St. *Thomas*, in 4 *Sent. Diſt.* 11. q. 2. *Art.* 2. *Quæſtiunc.* 3. relates, that during the firſt Ages of the Church, none but unleavened Bread was uſed in the Euchariſt, 'till ſuch time as the *Ebionites* aroſe, who held that all the Obſervances preſcribed by *Moſes* were ſtill in force: Upon which, both Eaſtern and Weſtern Churches took to the Uſe of leaven'd Bread; and after the Extinction of that Hereſy, the Weſtern Church returned to the *Azymus*; the Eaſtern pertinaciouſly adhering to the former Uſage.

This Account is controverted by Fa. *Sirmond*, in a Diſſertation expreſs; wherein he ſhews, that the *Latins* had conſtantly communicated in leaven'd Bread, till the Xth Century. And Cardinal *Bona*, *Rerum Liturgic*, c. 23. p. 185. owns a deal of diſtruſt of what St. *Thomas* alledges —In the Council of *Florence* it was decreed that the Point lay at the Diſcretion of the Church; and that either leavened or unleavened Bread might be uſed: The Weſtern Church has preferred the latter.

The Word is derived from the *Greek* ἄζυμος, *ſine fermento*, which is compoſed of the privative α, and ζύμη, *Ferment*.

B A C

B A C

B, THE ſecond Letter of our Alphabet, and of moſt others, is the firſt Conſonant, and firſt Mute, and in its Pronunciation reſembles the Bleating of a Sheep; upon which account *Pierius* tells us in his Hieroglyphicks, that the *Egyptians* repreſented the Sound of this Letter by the Figure of that Animal. 'Tis alſo one of thoſe Letters which the *Eaſtern* Grammarians call *Labial*, becauſe the principal Organs employ'd in its Pronunciation, are the Lips. It has a near Affinity with the other *Labials* P and V, and is often uſed for P both by the *Armenians* and other *Orientals*, as in *Betrus* for *Petrus*, *apſens* for *abſens*, &c. and by the *Romans* for V, as in *amabit* for *amavit*, *Berna* for *Verna*, &c. whence aroſe that Jeſt of *Aurelian* on the Emperour *Bonoſus*, *Non ut vivat natus eſt, ſed ut bibat.* B requires an intire Cloſure and Preſſure of the Lips to pronounce it, and therefore can ſcarce ever end the Sound of a Word: But when you endeavour to pronounce it there, you are obliged to add an E to open the Lips again, as in *Job*, which is ſounded *Jobe*. This Letter alſo if it paſs through the Noſe, becomes an M; as appears by thoſe who have the Noſtrils ſtopt by a Cold or otherwiſe, when they endeavour to pronounce the Letter M; for Inſtance, *many Men*, is by ſuch an one ſounded *bany Ben*. With the Antients B ſtood for 300, as appears by this Verſe:

Et B *trecentum per ſe retinere videtur.*

When a Line was drawn above it, $\overline{B}$, it ſtood for 3000, with a kind of Accent below it for 200; but among the *Greeks* and *Hebrews* this Letter ſignified only 2. B F in the Preface to the *Decrees* or *Senatus-Conſulta* of the old *Romans*, ſignified *Bonum*. 'Tis often found on Medals to mark the *Epocha*. *Plutarch* obſerves that the *Macedonians* changed Φ into B, and pronounced *Bilip*, *Beronice*, &c. for *Philip*, *Pheronice*, &c. and thoſe of *Delphos* inſtead of B uſed Π, as βάδειν for πάδειν, βιχὸν for πιχὸν, &c. The *Latins* ſaid *ſuppono*, *oppono*, for *ſubpono*, *obpono*, and pronounced *optinuit*, tho they wrote *obtinuit*, as *Quintilian* has obſerved. They alſo uſed B for F or PH; thus in an antient Inſcription mentioned by *Gruter*, OBRENDARIO is uſed for OFRENDARIO.

BABYLONISH *Hours*. See *Hours*.

BACCHANALIA, a Religious Feaſt in Honour of *Bacchus*, celebrated with much Solemnity among the Antients, particularly the *Athenians*, who even computed their Years thereby, till the Commencement of the *Olympiads*. The *Bacchanalia* are ſometimes alſo call'd *Orgia*, from the *Greek* ὀργὴ, Fury, Tranſport; by reaſon of the Madneſs and Enthuſiaſm wherewith the People appear'd to be poſſeſs'd at the Time of their Celebration. They were held in Autumn, and took their Riſe from *Egypt*; whence, according to *Diodorus*, they were brought into *Greece* by *Melampus*. The Form and Diſpoſition of the Solemnity depended, at *Athens*, on the Archon, and was at firſt exceedingly ſimple, but by degrees became incumber'd with a world of ridiculous Ceremonies, and attended with a world of Diſſoluteneſs and Debauchery; inſomuch that the *Romans*, who grew aſham'd of 'em, ſuppreſs'd them by a *Senatuſ-conſultum* throughout all *Italy*. The Women had a great Share in the Solemnity, which is ſaid to have been inſtituted on their account; for a great Number of 'em attending *Bacchus* to the Conqueſt of the *Indies*, and carrying in their Hands the *Thyrſus*, i. e. a little Lance cover'd with Ivy and Vine-Leaves, ſinging his Victories and Triumphs wherever they went, the Ceremony was kept up after *Bacchus*'s Deification under the Title of *Bacchanalia*, and the Women were inſtall'd Prieſteſſes thereof under that of *Bacchantes*. Theſe Prieſteſſes at the Time of the Feaſt run thro the Streets and over the Mountains cover'd with Tygers Skins, their Hair diſhevell'd, their *Thyrſus* in one Hand and Torches in the other, howling and ſhrieking *Euhoe Evan*, *Euhoe Bacche*. Men and Women met promiſcuouſly at the Feaſt, all perfectly naked, except for the Vine-Leaves and Cluſters of Grapes which bound their Heads and Hips; here they danced and jump'd tumultuouſly, and with ſtrange Geſticulations ſung Hymns to *Bacchus*, till weary and giddy they tumbled down diſtracted. See *Caſtellanus*'s *Eortologion*.

BACCHIUS, in the *Latin* Poetry, is a particular Kind of Foot, conſiſting of three Syllables; where the firſt is ſhort, and the two laſt long, as *Egeſtas*: It is the Reverſe of a *Dactyle*, and takes its Name from that of *Bacchus*, becauſe frequently uſed in the Hymns compoſed in his Honour.

BACCIFEROUS *Plants*, whether Trees, Shrubs, or Herbs, are ſuch as bear Berries, *i. e.* Fruit cover'd with a thin Membrane, wherein is contained a Pulp, which grows ſoft and moiſt when ripe, and encloſes the Seed within its Subſtance. The *Bacciferous* Trees Mr. *Ray* divides into four Kinds: (1.) Such as bear a caliculate or naked Berry; the *Flower* and *Calix* both falling off together, and leaving the Berry bare, as the *Saſſafras* Tree, *&c.* (2.) Such as have a naked monopyreneous Fruit, that is, containing in it only one Seed, as the *Arbutus*, *Terebinthus*, *Lentiſcus*, &c. (3.) Such as have a naked but polypyreneous Fruit, that is, containing two or more Kernels or Seeds within it, as the *Jaſaminum*, *Liguſtrum*, &c. (4.) Such as have their Fruit compoſed of many *Acini*, or round ſoft Balls ſet cloſe together like a Bunch of Grapes, as the *Uva marina*, *Rubus vulgaris*, *Rubus Idæus*, and the *Rubus minor fructu cæruleo*. See *Plant*.

BACILLI, in *Medicine*, ſuch Compoſitions as are of a cylindrical Figure, like a Stick; call'd alſo Lozenges: from the *Latin* Word *Baculus*, a Staff.

BACK-STAFF, in Navigation, an Inſtrument by the *French* called the *Engliſh Quadrant*; invented by Captain *Davis*: of good Uſe in taking the Sun's Altitude at Sea. It conſiſts of three Vanes, A, B, and C, and of two Arches. [*Plate of Navigation*, *Fig.* 5.] The Vane at A called the Horizon-Vane; that at B the Shade-Vane; and that at C the Sight-Vane. The leſſer Arch B is of 60 Degrees, and that of C (or *f g*) of 30 Degrees.

To Uſe the Back-Staff; the Shadow-Vane B is ſet upon the *60th* Arch, to an even Degree of ſome Altitude leſs by 10 or 15 Degrees, than you judge the Complement of the Sun's Altitude will be: The Horizon-Vane is put on at A, and the Sight-Vane on the *30th* Arch *f g*: The Obſerver's Back being then turned to the Sun (whence the Name of *Back-Staff* or *Back-Quadrant*) he lifts up the Inſtrument, and looks thro the Sight-Vane, raiſing or falling the Quadrant, till the Shadow of the upper Edge of the Shade-Vane fall on the upper Edge of the Slit in the Horizon-Vane; and then if you can ſee the Horizon thro the ſaid Slit, the Obſervation is well made: But if the Sea appear inſtead of the Horizon, move the Sight-Vane lower towards *g*: If the Sky appear, move it upwards towards *f*, and ſo try if it comes right: Then obſerve how many Degrees and Minutes are cut by that Edge of the Sight-Vane which anſwers to the Sight-Hole, and to them add the Degrees cut by the upper Edge of the Shade-Vane, the Sum is the Sun's Diſtance from the *Zenith*, or the Complement of his Altitude. To find the Sun's Meridian, or greateſt Altitude on any Day, continue the Obſervation as long as the Altitude is found to increaſe, which you will perceive by the Appearance of the Sea inſtead of the Horizon, removing the Sight-Vane lower: but when you perceive the Sky appear inſtead of the Horizon, the Altitude is diminiſh'd; therefore deſiſt from farther Obſervation at that Time, and add the Degrees upon the 60 Arch to the Degrees and Minutes upon the 30 Arch, and the Sum is the *Zenith* Diſtance, or Co-altitude of the Sun's upper Limb.

And becauſe it is the *Zenith* Diſtance, or Co-altitude of the upper Limb of the Sun, not the Center that is given by the Quadrant, in obſerving by the upper End of the Shade-Vane, add 16 Minutes, the Sun's Semidiameter, to that which is produced by your Obſervation, and the Sum is the true *Zenith* Diſtance of the Sun's Center. If you obſerve by the lower Part of the Shadow of the Shade-Vane; then the lower Limb of the Sun gives the Shadow; and therefore you muſt ſubſtract 16 Minutes from what the Inſtrument gives: But conſidering the Height of the Obſerver above the Surface of the Sea, which is commonly between 16 and 20 Foot, you may take 5 or 6 Minutes from the 16 Minutes, and make the Allowance but of 10 Minutes, or 12 Minutes, to be added inſtead of 16 Minutes. Mr. *Flamſtead* contrived a Glaſs *Lens*, or double Convex, to be placed in the middle of the Shade-Vane, which makes a ſmall bright Spot on the Slit of the Horizon-Vane, inſtead of the Shade: Which is a great Improvement, if the Glaſs be truly made; for by this means the Inſtrument may be uſed in hazy Weather, and

a much more accurate Obſervation made in clear Weather, than could be by the Shadow.

BACK-BONE. See *Spina Dorſi*.

BACK-STAYS *of a Ship*, are Ropes whoſe Uſe is to keep the Maſt from falling aft: All Maſts, Top-Maſts and Flag-Staves have Stays, except the Sprit-Sail-Top-Maſt; the Stay of the Main-Maſt, which is called the *Main-Stay*, is by a Lannier faſten'd to a Collar which comes about a Knee belonging to the Head; the Main-Top-Maſt-Stay is faſten'd to the Head of the Fore-Maſt by a Strap, and a Dead-Man's Eye; and ſo is the Main-Top-Gallant-Maſt ſtayed to the Head of the Fore-Top-Maſt: The Fore-Maſt and Maſts belonging to it, are in the ſame manner ſtayed to the Bold-Sprit and Sprit-Sail, Top-Sail-Maſt, which Stays do likewiſe ſtay the Bolt-Sprit it ſelf. The Mizzen-Stay comes to the Main-Maſt by the Half-Deck, and the Top-Maſt-Stays come to the Shrowds with Crows-Feet. The Length of the Stay is the ſame with that of the Maſt it belongs to; the Main-Maſt, Fore-Maſt, with the Maſts belonging to them, have alſo *Back-Stays*, which help to keep the Maſt from pitching forward or over-board, becauſe they go on either Side of the Ship.

BACULE, in Fortification, a Kind of Portcullis or Gate, made like a Pit-fall with a Counter-Poiſe, and ſupported by two great Stakes: It is uſually made before the *Corps-de-Garde* advancing near the Gates.

BACULOMETRY, the Art of Meaſuring acceſſible and inacceſſible Lines, by the help of one or more Staves.

BACULUS DIVINATORIUS, or *Virgula Divina*; A Branch of Hazle-Tree, fork'd, uſed for the Diſcovery of Mines, Springs, &c. See *Virgula divina*.

BADGER, from the French *Bagagier*, i. e. a Carrier of Luggage; a licens'd Huckſter, or Perſon that buys Corn or other Proviſions, and carries them from one Place to another to make Profit of.

BAG, in Commerce a Term uſed to ſignify different Quantities of Commodities; a Bag of Almonds, for inſtance, is about 3 Hundred Weight, of Anniſeed from 3 to 4 Hundred, of Pepper from 1 ½ to 3 Hundred, of Goats-Hair from 2 to 4 Hundred, of Cotton-Yarn from 2 ½ to 4 ½, &c.

BAGNIO, an *Italian* Term ſignifying a *Bath*. Hence *Bagnio* is become a general Name in *Turkey* for the Priſons where their Slaves are incloſed; it being uſual in thoſe Priſons to have *Baths*. See *Baths*.

BAGNOLIANS, a Sect of *Hereticks* in the Eighth Century; in reality *Manichees*, tho they diſguis'd their Errors. They rejected the *Old Teſtament*, and Part of the *New*; held the World to be Eternal; and affirm'd God did not create the Soul, when he infus'd it into the Body. They derive their Name from *Bagnols*, a City in *Languedoc*.

BAGPIPE, a Muſical Inſtrument of the Wind-kind; chiefly uſed in Country Places. It conſiſts of two principal Parts: The firſt a Leathern Bag, which blows up like a Foot-Ball, by means of a Portvent, or little Tube fitted to it, and ſtopp'd by a Valve. The other Part conſiſts of three Pipes, or Flutes; the firſt called the Great Pipe, or Drone, and the ſecond the Little one; which paſs the Wind out only at Bottom: The third has a Tongue, and is play'd on by compreſſing the Bag under the Arm, when full, and opening or ſtopping the Holes, which are eight, with the Fingers. The little Pipe is ordinarily a Foot long, that play'd on 13 Inches, and the Portvent ſix. The *Bagpipe* takes in the Compaſs of three Octaves.

BAGUETTE, in Architecture, a little round Moulding leſs than an *Aſtragal*, ſometimes carv'd, and enrich'd with Foliages, Pearls, Ribbands, Laurels, &c. Tho according to *M. le Clerc*, when the *Baguette* is enrich'd with Ornaments, it changes its Name, and is called *Chapelet*.

BAILE, or *Bale*; the Seamen call Lading or Caſting the Water by Hand out of a Boat, *Bailing*, and when the Water is thus *bailed* out, they ſay, *The Boat is freed*. They call alſo thoſe Hoops that bear up the Tilt of the Boat *Bailes*.

BAIL, in Law, from the French *Bail*, a Guardian, or Goaler; is uſed for the ſetting at Liberty one arreſted or impriſoned upon an Action, either Civil or Criminal, under Sureties taken for his Appearance at a Day and Place aſſigned. 'Tis call'd *Bail*, becauſe hereby the Party confined is delivered into the Hands of thoſe who bind themſelves for his forth-coming: perhaps from the French *Bail*, *locatio*, a letting out any thing to Farm, &c. *Bail* is either Common or Special: *Common Bail* is in Actions of ſmall Prejudice or ſlight Proof, in which Caſes any Sureties are taken: *Special Bail* is given in Caſes of greater Moment, where 'tis requir'd that the Sureties be Subſidy Men at the leaſt, and according to the Value. *Manwood* diſtinguiſhes between *Bail* and *Mainpriſe* thus: He that is *mainpriſed* is ſaid to be at large, and to go about at his Liberty, without Ward, till the Time of Appearance; whereas he who is let to *Bail* to two or more Men, is always accounted by Law, to be in their Ward and Cuſtody for the Time; and they may, if they pleaſe, actually keep him in Priſon.

Bale in Commerce, a Pack or certain Quantity of Merchandize, as a *Bale* of Spicery, of Books, or Thread.

BAILEMENT, a Term in Law, ſignifying the Delivery of Things, whether Writings or Goods, to another; but ſometimes to the *Bailor*, that is, back to him who deliver'd them; ſometimes to the Uſe of him to whom they are deliver'd; and ſometimes to a third Perſon.

BAILIFF, in its Original ſignifies *Guardian*, and is uſed to expreſs an Officer who does Juſtice in a certain Diſtrict or Territory. *Paſquier* maintains, that *Bailiffs* were originally a Kind of Commiſſioners, or Judges Delegate, ſent into the Provinces to examine whether or no Juſtice were well diſtributed by the Counts, who were then the Ordinary Judges. *Loyſeau* refers the Origin of *Bailiffs* to the Uſurpation and Idleneſs of the great Lords, who having got the Adminiſtration of Juſtice into their own Hands, and being weary of the Burden, turn'd it over to their Commiſſioners, whom they call'd *Bailiffs*. The *Bailiffs* had at firſt the Intendance of Arms, of Juſtice, and of the Finances; but abuſing their Power, they were by degrees ſtripp'd of it, and the greateſt Part of their Authority transferr'd to their Lieutenants, who were to be Men of the Long Robe. 'Tis true, in *France* they have ſtill ſome Prerogatives, as being reputed the Heads of their reſpective Diſtricts; in their Name Juſtice is adminiſtred, Contracts and other Deeds paſſed, and to them is committed the Command of the Militia. From theſe it was that the *Engliſh Bailiffs* originally took both their Name and their Office: For as the *French* have eight Parliaments, which are ſupreme Courts, whence no Appeal lies, within the Precincts of the ſeveral Parliaments, or Provinces, and in which Juſtice is adminiſtred by *Bailiffs*, at leaſt by their Lieutenants; ſo in *England* are ſeveral Counties wherein Juſtice was adminiſtred by a Viſcount or Sheriff, who appears likewiſe to have been called *Bailiff*, and his Diſtrict or County *Bailiwick*. Further, the Counties were again ſubdivided into Hundreds; within which 'tis manifeſt Juſtice was antiently render'd by Officers call'd *Bailiffs*. But thoſe Hundred-Courts are now ſwallow'd up by the County-Courts, certain Franchiſes alone excepted, (ſee *County* and *Hundred*) and the *Bailiffs* Name and Office is grown into ſuch Contempt, at leaſt theſe *Bailiffs* of Hundreds, that they are now no more than bare Meſſengers, and Mandatories within their Liberties, to ſerve Writs, and ſuch mean Offices. Theſe *Bailiffs* are of two Kinds, *viz. Bailiffs Errant*, and *Bailiffs of Franchiſes*. *Bailiffs Errant* are thoſe whom the Sheriff appoints to go up and down the County to ſerve Writs, ſummon County-Courts, Seſſions, Aſſizes, &c. *Bailiffs of Franchiſes* are thoſe who are appointed by every Lord within his Liberty, to do ſuch Offices therein, as the *Bailiff Errant* does at large in the County. There are alſo *Bailiffs of the Foreſt*, and *Bailiffs of Mannors*, who direct the Husbandry, fell Trees, gather Rents, pay Quit-Rents, &c. The Word *Bailiff* ſtill retains ſome of its antient Significancy; being applied to the Chief Magiſtrates of ſeveral Corporate Towns, as *Ludlow*, *Leominſter*, &c. And again, the Government of ſome of the King's Caſtles is committed to Perſons call'd *Bailiffs*, as the *Bailiff* of *Dover* Caſtle. *Borel* derives the Word *Bailiff* from the *Greek* βαλὶ, Counſel. *Cambden* will have *Bailiff* to have been a Term uſed in the *Lower Empire*, and to have paſſed thence into *Sicily*, ſo to *France* and *England*, ſignifying *Conſervator*. This is certain, we frequently find the Word *Bajulus*, and ſometimes *Baylus*, to ſignify a Judge, whence *Bailiff* was eaſily form'd.

BAILIWICK the Place of the Juriſdiction of a *Bailiff* within his Hundred or Lord's Franchiſe.

BAIRAM, a Feaſt of the *Turks*, which they celebrate after the Faſt of *Ramazan*. 'Tis kept twice in the Year, once immediately after *Ramazan*, which they call *Grand Bairam*, and again 70 Days after, which they call *Little Bairam*. *Bairam* holds for three Days, during which no Work is done; but Preſents paſs from one to another with many Manifeſtations of Joy. If the Day after *Ramazan* ſhould prove ſo cloudy, as to prevent the Sight of the New-Moon, *Bairam* is put off to the next Day, when it begins tho the Moon be ſtill obſcured. When they celebrate this Feaſt; after numerous Ceremonies, or rather ſtrange Mimickries, in their Moſque, they end it with a ſolemn Prayer againſt the *Infidels*, to root out Chriſtian Princes, or to arm them one againſt another, that they may have an Opportunity to extend the Borders of their Law.

BAJULUS, an Officer in the Court of the *Greek* Emperors. The *Bajuli* were the *Præceptors* of the Emperors, whereof there were ſeveral Degrees; the *Grand Bajulus*; and the *Bajuli* who were the *Sub-Præceptors*. The firſt Officer who bore this Title was *Antiochus*, in the Time of the younger *Theodoſius*. Hence the *Italians* uſe the Word *Bajulus of the Kingdom*, in the ſame Senſe with the *Protector* of the Kingdom in *England*.

BAKING, the Art of preparing Bread, or of reducing Meals of any Kind, whether ſimple or compound, into Bread.

Bread. The Forms of *Baking* are various, but may be reduced to two; the one for unleavened, the other for leavened Bread: for the firſt the chief is *Manchet-Baking*, the Proceſs whereof is as follows. The Meal ground and bolted is put into a Trough, and being opened in the Middle, to a Buſhel is poured in about three Pints of warm Ale, with Barm and Salt to ſeaſon it. This is kneaded together with the Hands thro the Brake; or for want thereof with the Feet thro a Cloth: after having lain an Hour to ſwell, 'tis molded into Manchets; which, ſcotch'd in the Middle, and prick'd a-Top to give room to riſe, are baked in the Oven by a gentle Fire. For the ſecond, call'd *Cheat-Bread-Baking*, 'tis thus: The Meal being in the Trough, ſome Leaven (ſaved from a former Batch fill'd with Salt laid up to ſour, and at length diſſolved in warm Water) is ſtrain'd thro a Cloth into a Hole made in the Middle of the Heap, and work'd with ſome of the Flower to a moderate Conſiſtence; this is covered up with Meal, where it lies all Night, and in the Morning the whole Heap is ſtirr'd up and mixt together with a little warm Water, Barm and Salt, by which it is ſeaſon'd, ſtiffen'd, and brought to an even Leaven: 'tis then kneaded or trodden, molded and *baked* as before.

The Learned are in great doubt about the Time when *Baking* firſt became a particular Profeſſion, and *Bakers* were introduced. 'Tis generally agreed they had their Riſe in the Eaſt, and paſs'd from *Greece* to *Italy* after the War with *Pyrrhus*, about the Year of *Rome* 583. Till which time every Houſewife was her own *Baker*: For the Word *Piſtor*, which we find in the *Roman* Authors, before that time ſignified a Perſon who ground or pounded the Grain in a Mill or Mortar to prepare it for *Baking*, as *Varro* obſerves. According to *Athenæus*, the *Cappadocians* were the moſt applauded *Bakers*, after them the *Lydians*, then the *Phœnicians*. To the foreign *Bakers* brought into *Rome*, were added a Number of Freed-Men, who were incorporated into a Body, or, as they call it, a College; from which neither they nor their Children were allowed to retire. They held their Effects in common, and could not diſpoſe of any Part of 'em. Each *Bake-houſe* had a *Patronus*, who had the Superintendency thereof; and theſe *Patroni* elected one out of their Number each Year, who had the Intendence over all the reſt, and the Care of the College. Out of the Body of the *Bakers* were every now and then one admitted among the Senators. To preſerve Honour and Honeſty in the College of *Bakers*, they were expreſly prohibited all Alliance with Comedians and Gladiators; each had his Shop or *Bake-houſe*, and they were diſtributed into 14 Regions of the City. They were excuſed from Guardianſhips and other Offices, which might divert 'em from their Employment. See *College*.

BALANCE, *Libra*, or *the Scales*, one of the ſix ſimple Powers in Mechanicks, uſed principally for determining the Equality, or Difference of Weights in heavy Bodies, and conſequently their Maſſes or Quantities of Matter. The *Balance* is of two Kinds, *viz.* the Antient and Modern. The Antient or *Roman*, call'd the *Statera Romana*, or Steelyard, conſiſts of a Lever or Beam, moveable on a Centre, and ſuſpended near one of its Extremes: On one ſide the Centre are applied the Bodies to be weigh'd, and their Weight; meaſured by the Diviſions mark'd on the Beam, in the Place where a Weight moveable along the Beam being fix'd, keeps the *Balance in Æquilibrio*. This is ſtill in Uſe in Markets, &c. where large Bodies are to be weigh'd. See *Statera*.

The Modern *Balance*, now ordinarily in Uſe, conſiſts of a Lever or Beam ſuſpended, exactly by the Middle; to the Extremes whereof are hung Scales. In each Caſe the Beam is call'd the *Brachia*; the Line on which the Beam turns, or which divides its *Brachia*, is call'd the *Axis*, and when conſider'd with regard to the Length of the *Brachia*, is but eſteem'd a Point, and call'd the Centre of the *Balance*; and the Places where the Weights are applied, the *Points of Suſpenſion* or *Application*. In the *Roman Balance* therefore, the Weight uſed for a Counterbalance is the ſame, but the Points of Application various; in the Common *Balance*, the Counterpoiſe is various, and the Points of Application the ſame. The Principle on which each is founded is the ſame, and may be conceiv'd from what follows.

Doctrine of the Balance.

The Beam A B (*Plate of Mechanicks*, *Fig.* 9.) the principal Part of the *Balance*, is a Lever of the firſt kind, which (inſtead of reſting on a *Fulcrum* at C, the Centre of its Motion) is ſuſpended by ſomewhat faſtened to C, its Centre of Motion. Hence the Mechaniſm of the *Balance* depends on the ſame Theorem as that of the Lever, (See *Lever*). Wherefore, as the known Weight is to the unknown, ſo is the Diſtance of the unknown Weight from the Centre of Motion to the Diſtance of that of the known Weight, where the two Weights will counterpoiſe each other; conſequently the known Weight ſhews the Quantity of the unknown Weight. Or thus, the Action of a Weight to move a *Balance* is by ſo much greater, as the Point preſſed by the Weight is more diſtant from the Centre of the *Balance*, and that Action follows the Proportion of the Diſtance of the ſaid Point from that Centre. When the *Balance* moves about its Centre, the Point B deſcribes the Arch B *b* (*Fig.* 10.) whilſt the Point A deſcribes the Arch A *a*, which is the biggeſt of the two; therefore in that Motion of the *Balance*, the Action of the ſame Weight is different, according to the Point to which it is applied: Hence it follows, that the Proportion of the Space gone thro by that Point at A is as A *a*, and at B as B *b*; but thoſe Arches are to one another as C B, C A.

Varieties in the Application of the Balance.

If the *Brachia* of a *Balance* be divided into equal Parts, one Ounce applied to the ninth Diviſion from the Centre, will equiponderate with three Ounces at the third; and two Ounces at the ſixth Diviſion act as ſtrongly as three at the fourth, &c. Hence it follows, that the Action of a Power to move a *Balance*, is in a *Ratio* compounded of the Power itſelf, and its Diſtance from the Centre; for that Diſtance is as the Space gone thro in the Motion of the *Balance*. It may be here obſerv'd, that the Weight equally preſſes the Point of Suſpenſion at whatever Height it hangs from it, and in the ſame manner as if it was fixed at that very Point; for the Weight at all Heights equally ſtretches the Cord by which it hangs.

A *Balance* is ſaid to be *in Æquilibrio*, when the Actions of the Weights upon each *Brachium* to move the *Balance*, are equal, ſo as mutually to deſtroy each other. When a *Balance* is *in Æquilibrio*, the Weights on each Side are ſaid to equiponderate: unequal Weights may alſo equiponderate; but then the Diſtances from the Centre muſt be reciprocally as the Weights. In which caſe, if each Weight be multiplied by its Diſtance, the Products will be equal; which is the Foundation of the Steelyard. Thus in a *Balance* whoſe *Brachia* are very unequal; a Scale hanging at the ſhorteſt, and the longeſt divided into equal Parts: If ſuch a Weight be apply'd to it, as at the firſt Diviſion ſhall equiponderate with one Ounce in the Scale; and the Body to be weigh'd be put into the Scale, and the abovementioned Weight be moved along the longeſt *Brachium*, till the *Æquilibrium* be found; the Number of Diviſions between the Body and the Centre ſhews the Number of Ounces that the Body weighs, and the Sub-Diviſions the Parts of an Ounce.

On the ſame Principle alſo is founded the *deceitful Balance*, which cheats by the Inequality of the *Brachia*; for Inſtance: Take two Scales of unequal Weights, in the Proportion of 9 to 10, and hang one of them at the tenth Diviſion of the *Balance* above-deſcribed, and the other at the ninth Diviſion, ſo that there may be an *Æquilibrium*; if then you take any Weights, which are to one another as 9 to 10, and put the firſt in the firſt Scale, and the ſecond in the other Scale, they will equiponderate. *Several Weights hanging at ſeveral Diſtances on one Side, may equiponderate with a ſingle Weight on the other Side*: To do this it is required, that the Product of that Weight, by its Diſtance from the Centre, be equal to the Sum of the Products of all the other Weights, each being multiplied by its Diſtance from the Centre: To demonſtrate which, Hang three Weights, of an Ounce each, at the ſecond, third, and fifth Diviſions from the Centre, and they will equiponderate with the Weight of one ſingle Ounce applied at the tenth Diviſion of the other *Brachium*; and the Weight of one Ounce at the ſixth Diviſion, and another of three Ounces at the fourth Diviſion, will equiponderate with a Weight of two Ounces on the other Side at the ninth Diviſion. *Several Weights unequal in Number on either Side, may equiponderate*: In this caſe, if each of them be multiplied by its Diſtance from the Centre, the Sums of the Product on either Side will be equal; and if thoſe Sums are equal, there will be an *Æquilibrium*: To prove which, hang on a Weight of two Ounces at the fifth Diviſion, and two others, each of one Ounce, at the ſecond and ſeventh, and on the other Side hang two Weights, each alſo of one Ounce, at the ninth and tenth Diviſions, and theſe two will equiponderate with thoſe three.

To the Perfection of a *Balance* 'tis required, that the Points of Suſpenſion be exactly in the ſame Line as the Centre of the *Balance*; that they be preciſely equi-diſtant from that Point on either Side; that the *Brachia* be as long as conveniently they may; that there be as little Friction as poſſible in the Motion of the Beam and Scales; and laſtly, that the Centre of Gravity of the Beam, be placed a little below the Centre of Motion. See *Motion*, *Mechanicks*, &c.

Balance of the Air, is uſed for the Weight of that Fluid, whereby, according to its known Property, it preſſeth where 'tis leaſt reſiſted, till it is equally adjuſted in all Parts. See *Air*. See alſo *Gravity*, and *Barometer*.

Hydroſtatical Balance, is a Machine for determining the ſpecifick Gravities of Bodies. See *Hydroſtatical*.

Balance of Trade, is the Difference between the Value of Commodities bought of Foreigners, and the Value of the native Productions tranſported into other Nations. 'Tis neceſſary that this *Balance* be kept in Trading Nations; and if it cannot be made in Commodities, it muſt in Specie.

Balance of a Watch or Clock, is that Part of either, which by its Motion regulates and determines the Beats: The Circular Part of it is called the *Rim*, and its Spindle the *Verge*: There belong to it alſo two Pallats or Nuts, which play in the Fangs of the Crown-Wheel: And in Pocket-Watches, that ſtrong Stud in which the lower Pivot of the Verge plays, and in the Middle of which one Pivot of the Crown-Wheel runs, is called the *Potence*: The wrought Piece which covers the *Balance*, and in which the upper Pivot of the *Balance* plays, is the *Cock*: The ſmall Spring in new Pocket-Waches is called *Regulator*. See *Clock* and *Watch*.

Balance, one of the Signs of the *Zodiack*. See *Libra*.

BALANI, in Natural Hiſtory, are certain Excreſcences uſually growing to the Shells of the larger Sort of Sea-Shell-Fiſh. See *Shell*.

BALANUS, or *Glans*, is ſometimes uſed for the Nut of the Yard; ſometimes alſo the *Clitoris* is ſo called. It is ſometimes alſo uſed for a Suppoſitory. See *Penis*, &c.

BALAUSTINES, in Pharmacy, are the Flowers of the Pomegranate, which are very rough to the Tongue and Palate, and very aſtringing; they are therefore uſed in Diarrheas, and other Fluxes, Hernias, &c.

BALCONY, in Architecture, a Projecture beyond the Naked of a Wall or Building, ſupported by Pillars, or Conſoles, and encompaſſed with a Balluſtrade. This Contrivance is not only made uſe of in Houſes, but alſo in Ships. The Word comes from the *Italian*, *Balcone*, and that from the *Latin*, *Paleus*, or the *German*, *Palk*, a Beam. *Covarruvias* derives it from βάλλειν, *jacere*; aſſerting that *Balconies* were originally little Turrets over the Gates of Citadels, whence Darts, &c. were thrown on the Enemy.

BALDACHIN, or *Baldaquin*, a Piece of Architecture in Form of a Canopy, ſupported with Columns, and ſerving as a Crown or Covering to an Altar. The Word comes from the *Italian*, *Baldacchino*.

BALE, in Commerce, a Pack of Merchandize, of different Quantity; a *Bale* of Cotton-Yarn is from 3 to 4 Hundred Weight, of Raw-Silk from 1 to 4 Hundred, of Lockram or Dowlas either three, three and a half, or four Pieces, &c.

BALISTA, a military Engine in Uſe among the Antients, ſomewhat like our Croſs-Bow, tho much bigger; it had its Name from βάλλειν, *jacere*, being uſed in caſting of Stones, &c. in which it differed from the *Catapulta*, which was uſed only for caſting Darts and Arrows; in in other reſpects they were alike, and were each bent in the ſame manner. *Marcellinus* deſcribes the *Baliſta* thus; a round Iron Cylinder is faſten'd between two Planks, from which reaches a hollow ſquare Beam placed Croſs-wiſe, faſten'd with Cords, to which are added Screws; at one End of this ſtands the Engineer, who puts a Wooden Shaft with a big Head, into the Cavity of the Beam; this done, two Men bend the Engine, by drawing ſome Wheels: when the Top of the Head is drawn to the utmoſt End of the Cords, the Shaft is driven out of the *Baliſta*, &c.

BALKS, in Agriculture, are Ridges or Banks between two Furrows or Pieces of arable Land: the Word is uſed ſometimes for Poles or Rafters over Out-houſes or Barns; and among Bricklayers for great Beams, ſuch as are uſed in making Scaffolds.

BALL AND SOCKET, a Machine contrived to give an Inſtrument full play. It conſiſts of a *Ball* or *Sphere* of Braſs, fitted within a conclave Semi-Globe, ſo as to be moveable every way, both Horizontally, Vertically, and Obliquely. 'Tis carried by an endleſs Screw, and is principally uſed for the managing of Surveying Inſtruments; to which it is a very neceſſary Appendage. The antient *Balls and Sockets* had two Concaves, or Channels, the one for the Horizontal, the other for the Vertical Direction. The *French* call it *Genou*, *Knee*.

BALLAST, in Navigation, any heavy Matter uſed to ſink a Veſſel to its proper Depth in Water, or to give it a juſt Weight and Counterpoiſe; to prevent its Overturning. The ordinary *Ballaſt* is Sand, or Stones ſtowed in the Bottom, or Hold, next the falſe Keel of a Veſſel. The *Ballaſt* is ſometimes one half, ſometimes a third, and ſometimes a fourth Part of the Burden of the Veſſel. Flat Veſſels require the moſt. Maſters of Veſſels are obliged to declare the Quantity of *Ballaſt* they bear, and to unload it at certain Places. They are prohibited unloading their *Ballaſt* in Havens, Roads, &c. the Neglect of which has ruin'd many excellent Ports. The Word comes from the *Flemiſh*, *Balaſt*; the *French* call it *Leſt*, and the *Latins*, *Laſtagium*. See *Leſtage*.

BALLON, in Chymiſtry, a *French* Word for a large round ſhort-neck'd Matraſs, or Veſſel uſed in Chymiſtry, to receive what is diſtilled or drawn off by the means of Fire. *Ballon* is alſo uſed in Architecture for a round Globe placed a-top of a Pillar, or the like, by way of a Pillar. See *Acroter*, or *Crowning*.

BALLOTING, a Method of Voting at Elections, &c. by means of little Balls of ſeveral Colours, which the *French* call *Ballotes*.

BALLS, or *Ballets*, a frequent Bearing in Coats of Arms, in Heraldry, but never ſo called; but according to their ſeveral Colours have ſeveral Names, as Beſants when the Colour is Or; Plates when it is Argent; Hurts when it is Azure; Torteauxes when it is Gules; Pomeis when it is Vert; Pellets, or Agreſſes, when Sable; Golpes when 'tis Purple; Orenges when Tanné; Guzes when Sanguine: which are all the Colours uſually mentioned in Heraldry.

BALLUSTRADE, in Architecture, an Aſſemblage of one or more Rows of little turn'd Pillars, high enough to reſt the Elbows on, fixed upon a Terras, or the Top of a Building, or elſe to make a Separation between one Part of it and another. *Ducange* derives the Word from *Balauſtrum*, or *Balauſtrium*, a Place among the Antients where their *Baths* were rail'd in.

BALM, or *Balſam*, a kind of Gum, in very great Reputation in Medicine and Chirurgery; uſed to be liquified by means of Spirit of Wine or Oil, and found a ſovereign Remedy in the Cure of Wounds and ſeveral Diſeaſes. The Ladies ſet a particular Value on it, in regard when mix'd with the Yolk of an Egg and Spirit of Wine, it makes an admirable Paint. There are various Kinds of *Balms* or *Balſams*, if into the Number hereof we take all thoſe which Empirics, or even Phyſicians and Chirurgeons call by this Name; ſuch are *Apoplectic Balſams*, *Stomachic Balſams*, *Bezoardic*, *Hyſteric*, *Vulnerary*, *Magiſterial*, &c. But the *Genuine*, that is, the *Natural Balſams*, come in a little Compaſs, being in great meaſure reducible to theſe two, the *Balm* of *Gilead*, and *Balm* or *Balſam* of *Peru*.

Balm of *Gilead*, or of the *Levant*, is held in the greateſt Eſteem, tho there are ſome who hold that of *Peru* equal to it in Virtue. 'Tis drawn by Inciſion from a Tree called *Balſamum*, growing in *Egypt* and *Judea*, and which is held ſo precious, that it makes Part of the ſpecial Revenue of the *Grand Signior*, without whoſe Permiſſion none are allowed to be planted or cultivated. The Inciſion through which this admirable Juice flows, is made in the Dog-Days: *Theophraſtus* ſays it muſt be made with Iron Nails; *Pliny* with Glaſs, becauſe, ſays he, Iron makes the Plant die: *Tacitus* tells us, that when the Branches are full of Sap, their Veins ſeem to apprehend the Iron, and ſtop when the Inciſion is made with that Metal, but flow freely when opened with a Stone, or a Piece of broken Pitcher: Laſtly, *Marmol* ſays, the Veins muſt be opened with Ivory or Glaſs. The Juice is white at firſt, afterwards becomes green, by degrees a Gold Colour, and when old the Colour of Honey. It is at firſt muddy, but by degrees grows clear, and of the Conſiſtence of Turpentine. Its Smell is agreeable, and very brisk; its Taſte bitter, ſharp and aſtringent; it eaſily diſſolves in the Mouth, and leaves no Stain on Woollen Cloth. The *Balſam* commonly in Uſe is brought hither from *Cairo*, and is not properly the Gum, or Tears of the Tree, flowing by Inciſion, for it yields but little that way; but is prepared from the Wood and the green Branches of the Tree diſtilled; and yet even this is frequently adulterated with *Cyprus Turpentine*: Beſides which, there is likewiſe a Liquor extracted from the Seed of the Plant, which is frequently paſſed off for the true *Balſam*, tho its Smell is much weaker, and its Taſte much bitterer. The Tree is about the Height of a *Granada* Tree; its Leaves like thoſe of Rue, always green; its Flowers white, and in form of Stars, whence ſpring out little pointed Pods, incloſing a Fruit like an Almond, called *Carpobalſamum*, as the Wood is called *Xylobalſamum*, and the Juice *Opobalſamum*. See *Opo-balſamum*.

The *Carpobalſamum* enters the Compoſition of Treacle, having little other Uſe in Medicine: It muſt be choſen of an aromatick Taſte and agreeable Smell. See *Carpo-balſamum*. The *Xylobalſamum*, which like the other Products of the *Balſam-Tree*, is brought from *Cairo*, is uſed in Troches of *Hedycrum*. 'Tis in little Faggots, the Bark red, the Wood white, and reſinous, and aromatick. See *Xylo-balſamum*. There is likewiſe a *Balm* of *Mecca*, which is a dry white Gum reſembling Copperas, eſpecially when old. 'Tis brought from *Mecca* by the Return of the Caravans of Pilgrims and *Mahometan* Merchants, who travel there out of Devotion to the Birth-Place of their Prophet. It has all the Virtues of the *Balm* of *Gilead*, or *Judea*; and is probably the ſame, only harden'd, and its Colour alter'd.

Balſam of *Peru* is of three Kinds; or rather, one and the ſame *Balſam* has three ſeveral Names, *viz.* *Balſam*

ſam of Inciſion, which is a white glutinous Reſin ouzing at an Inciſion in the Tree, and afterwards thicken'd and harden'd. This is excellent for green Wounds, and much reſembles the *Opobalſamum*, excepting in Smell, which diſtinguiſhes it. *Dry Balſam*, which is diſtill'd from the Tips of Branches cut off, to which are faſten'd little Veſſels to receive the Liquor, which at firſt is like Milk, but reddens by being expoſed to the Sun. Its chief Uſe is in the Compoſition of the *Lac Virginale*, which is made much better with this, than with Styrax or Benjoin. Laſtly, *Balſam of Lotion*, which is blackiſh, and is drawn from the Bark, Roots, and Leaves of the Tree minced and boiled together. This is uſed in Wounds like the *white Balſam*; and on account of its excellent Smell, by the Perfumers.

Beſides theſe two *Balſams*, which alone are to be eſteemed genuine ones, Naturaliſts reckon *Balſam of Copaif* or *Copayba*, of *Tolu* or *liquid Amber*, and a *New Balſam*. *Balſam of Copa*, *Copaif*, *Campaif* or *Copayba*, comes from *Braſil* in earthen Bottles, pointed a-top. 'Tis a kind of Oil, either clear or thick; the firſt white, of a reſinous Smell: the other a little more on the yellow; both are admirable for Wounds: The *Jews* uſe it after Circumciſion to ſtop the Blood. *Balſam of Tolu* is a liquid Reſin, which as it grows old becomes of the Colour and Conſiſtence of *Flanders* Size. It comes by Inciſion from ſome Trees growing in *New Spain*; where the Inhabitants receive it in little Veſſels of black Wax: In Taſte and Smell it reſembles *Balm of Gilead*; as it grows old it takes the Conſiſtence of *dry Balm*. *Balſam of liquid Amber* is a clear reddiſh Reſin, produced by a Tree in *New Spain*, called by the Natives *Oſoſol*, much reſembling Ambergreaſe, eſpecially in Smell, whence its Name. The *New Balſam* is liquid; when new it is called *Oil of liquid Amber*, and when old *Balſam of liquid Amber*; it comes from both the *Spains*, in Barrels; and is very rare among us: 'Tis found ſovereign for Wounds, eſpecially in *Fiſtulas in Ano*: It reſembles *Balſam of Tolu* in Smell and Colour, and is expreſs'd in the manner of *Oil of Laurel*, from a red Fruit in the Iſland of *St. Domingo*.

Artificial Balſams, in Pharmacy, are Medicines uſually employ'd externally: In Conſiſtence they ſomewhat exceed a common Unguent, and are prepared principally to recreate the nobler Parts, by their excellent Odor. There are ſome alſo of a more liquid Conſiſtence, between an Oil and Liniment; the principal Uſe whereof is in Wounds: They are made various Ways, and of various Aromaticks and diſtill'd Oils; Oil of Nutmegs, or white Wax, are uſually the Baſis of *Balſams*; with theſe are mixed Deer's Greaſe, Manna, *&c.* According to the different Intentions they are to anſwer, they acquire different Names, as *Apoplectick*, *Stomachick*, &c. *Balm* or *Balſam of Sulphur* is of two kinds, *viz.* that of *common Sulphur*, and that of *Sulphur with Aniſe*: the firſt is drawn by Fire from a Compoſition of Nut Oil drawn without Fire, Flower of Sulphur, Oil of Tartar, and White Wine mix'd. This is uſed to digeſt and reſolve crude Matters gathered in any Part of the Body: 'tis applied externally, and ſerves for the Baſis of the Plaiſter of *Sulphur*. *Balſam of Sulphur aniſated*, is drawn from Oil of green Aniſe and Flower of Sulphur diſſolved together. *Balm of Saturn*, is a *Salt of Saturn*; Dr. *Harris* ſays, a *Sugar of Saturn*, diſſolved in Oil or Spirit of Turpentine digeſted, till the Matter have acquired a red Tincture. This is found to reſiſt the Putrefaction of Humours, and is good to cleanſe and cicatrize Ulcers.

Balm or *Balſam*, among the Chymiſts, is the Spirit of common Salt extracted by Art. The Preparation is this: They diſſolve the Salt, and place its Diſſolution, well clarified, in Horſe-Dung to purify, for the Space of two or three Months, and then diſtil it ſtrongly with a Sand-Heat; upon which there ariſes a pretious Unctuoſity, wherein Things the moſt corruptible being ſteep'd, are ſaid to remain entire, eternally. 'Tis ſaid, that 'twas by this means ſome of the Antients preſerved dead Bodies entire without reducing 'em to Mummy, and particularly that of the Woman mentioned by *Volaterran* to be found in a Mauſoleum near *Albania*, in the Time of Pope *Alexander* VI. which was by his Order thrown ſecretly into the *Tiber*, to prevent Idolatry; ſhe being found as freſh as when alive, tho ſhe had been dead 1300 Years.

BALNEUM, a Word much uſed by Chymiſts, generally ſignifying a Veſſel of Water, in which another is placed that requires a more gentle Heat than the naked Fire.

Balneum Mariæ, is by ſome ſo called, as being ſuppoſed to have been firſt invented by the Bleſſed Virgin; but by others with more Propriety, *Balneum Maris*, or *Sea-Bath*, in regard the Veſſel here floats on a kind of Sea. Here the Cucurbit is placed in hot Water, which warms the Matter contain'd. A Sand Heat is ſometimes alſo called *Balneum ſiccum*, or *cineritium*, or *arenoſum*. See *Bath*, *Sand*, &c.

BALOTADE, a Leap in which a managed Horſe offers to ſtrike out with his hind Legs, but does it not, only making an Offer, and ſhewing the Shoes of his hind Feet.

BALSAM. See *Balm*.

BALSAMICK, a Term in Phyſick, ſignifying that Property in a Medicine, whereby 'tis render'd ſoft, gently attenuating, and ſomewhat agglutinant.

BAN, or *Bans*, a ſolemn Proclamation or Publication of any thing, or a publick Edict or Summons; as of a Prince to the Nobles of a Province, frequent among the *French*; of a Lord to his Vaſſals, *&c.* to call 'em to Arms. Hence the Uſe of the Word *Banns* in publiſhing Matrimonial Contracts in the Pariſh-Church before Marriage; that if there be any Exceptions againſt either Party, as to prior Engagements, *&c.* there may be an Opportunity of making them. Theſe are what *Tertullian* ſeems to mean by *Trinundina Promulgatio*. *Bracton* mentions *Bannus Regis*, for a Proclamation of Silence made by the Court before the Congreſs of the Champions in a Combat. Some derive the Word from the *Britiſh*, *Ban*; *Clamor*, *Noiſe*: Others from the *German*, *Ban*, *Publication* or *Proſcription*, becauſe frequently made with Sound of Trumpet; whence alſo come the Words, *Baniſhment*, *Banner*, *Abandon*, &c. *Borel* derives it from the *Greek*, πᾶν, *all*, becauſe the Convocation is general.

BANC, or *Bench*, in Law, is a Seat or Bench of Judgment; as *Bancus Regis* the King's Bench, and *Bancus communium placitorum* the Common Bench. *Jus Banci*, or the Privilege of having a Bench, was antiently only allowed to the King's Judges, *qui ſummam adminiſtrant juſtitiam*. Inferior Courts, as Courts Baron, Hundred Courts, *&c.* were not allowed that Privilege; and even at this Day the Hundred Court of *Freibridge*, in *Norfolk*, is held under an Oak at *Geywood*; and that of *Woolfry*, in *Herefordſhire*, under an Oak, near *Aſhton* in that County, called *Hundred-Oak*. *King's Banc* or *Bench*, is a Sovereign Tribunal where the King himſelf formerly preſided, the Judges being placed in a lower *Bench* at his Feet. The Juriſdiction of this Court is very extenſive, and reaches throughout all *England*, the Law ſuppoſing the King himſelf to be preſent. See *King's-Bench*. *Common Bank* or *Common Pleas*, the ſecond Court of Juſtice in *England*, where common and ordinary Cauſes are pleaded between Subject and Subject. Here moſt Civil Cauſes are tried, whether real or perſonal, according to the Rigour of the Law. Here are uſually four Judges, the Chief whereof is called Lord Chief Juſtice of the Common Pleas. Formerly there were ſeven Judges, then ſix, then five, *&c.* See *Common Pleas*.

BAND, any Piece of Stuff cut long and narrow, as the *Swarth-Band* for Infants, *&c.*

Band, in Architecture, a general Name for any flat low Member; which is alſo called *Face*, from the Latin *Faſcia*, which *Vitruvius* uſes for the ſame thing; and ſometimes *Fillet*, *Plinth*, &c. See *Faſcia*, *Plinth*, *Fillet*, &c.

Band, Knights of the, are a military Order in *Spain*, inſtituted by *Alphonſus* XI. King of *Caſtile*, *Anno* 1332. It takes its Name from the *Banda*, Band, or red Ribbond which comes a-croſs over the Right Shoulder and under the Left Arm of the Knight. This Order is for none but Nobles; the eldeſt Sons of Grandees are excluded; and before Admittance, 'tis requiſite to have ſerved at leaſt ten Years either in the Army, or at Court. They are bound to take up Arms for the *Catholick Faith* againſt the *Infidels*. The King himſelf is Grand Maſter of the Order.

Band of Soldiers, ſo many as fight under the ſame Flag or Enſign; from *Bandum*, which the *Romans* uſed in the ſame Senſe with *Vexillum*, or *Banner*. Thus *Romulus* called thoſe who fought under the ſame Manipule, (a Handful of Hay being then uſed for a Flag) *Manipulus Militum*.

BANDAGE, a Ligature to bind up Wounds. Theſe are of ſeveral Sorts, and adapted to the different Parts of the Body where the Wound happens. The Knowledge of their proper Uſe is no ſmall Part of Surgery. *Truſſes* uſed in Ruptures are alſo thus called. See *Ligature*.

BANDALIERE, a large leathern Belt, thrown over the Right Shoulder, and hanging down under the Left Arm; wore by the antient Muſqueteers, both for the ſuſtaining of their Fire-Arms, and for the Carriage of their Muſket-Charges; which being put up in little wooden Caſes, coated with Leather, now commonly call'd *Bandaleers*, were hung to the number of 12 to each *Bandaliere*. The *French* Soldiery ſtill retain the *Bandaliere*; their Horſe, their Muſqueteers, and common Guards, wearing it indifferently; excepting for ſome Difference in its Garniture. The Word ſeems form'd from the French *Bandoalier*, a kind of *Banditti* particularly infeſting the *Pyreneans*; who were formerly diſtinguiſh'd by this Piece of Furniture; and were themſelves ſo denominated, *quaſi Ban de Voliers*, *a Knot of Robbers*.

BANDELET, in Architecture, any little Band or flat Moulding, as that which crowns the Doric Architrave: 'tis alſo called *Tenia*, from the Latin *Tænia*, which *Vitruvius* uſes for the ſame thing.

BANDEROLLE, a little Standard in form of a Guidon, extended further in Length than in Breadth, hung out on the Masts of Vessels, &c.

BANIANS, a religious Sect in the *Indies*, who believe a Metempsychosis; and will therefore eat no living Creature, nor even kill noxious Animals, but endeavour to release them if they see 'em in the hands of others: they are so fearful of having Communication with other Nations, that they break their Cups if one of a different Religion has drank out of 'em, or even touch'd 'em; and empty the Water out of a Pond where he has wash'd himself. If they happen to touch one another, they must wash and purify themselves before they drink, eat, or enter their own Houses. They carry, hanging at their Necks, a Stone called *Tamberan*, as big as an Egg, and perforated in the Middle, through which run three Strings; this Stone, they say, represents their Great God, and upon that account they have great Respect shewn them by all the *Indians*. *Banian*, in their Language, signifies, *innocent People and without Guile*; for, besides their refraining to hurt any the least living Creature, they profess to pardon the Injuries done to themselves.

BANISHMENT, or *Exile*, among us is of two Kinds; the one voluntary and upon Oath, the other by Compulsion, for some Offence or Crime. This Punishment is by the *Civilians* called *Bannimentum*, and was antiently term'd *Deportatio*, if perpetual; if for a Time, *Relegatio*.

BANK, in Commerce, a Term given to certain Societies, Cities, or Communities, who take on 'em the Charge of the Money of private Persons, to improve it, or to keep it secure. There are several of these *Banks* establish'd in the several principal Trading Cities in *Europe*; as in *Venice*, *London*, *Amsterdam*, *Hamburgh*, *Paris*, &c. But of all others that of *Venice* is the most considerable, as being the most antient, and that whereon the others are model'd. The *Bank of Venice*, commonly call'd the *Banco del Giro*, is properly a Board of publick Credit and Interest; or a general and perpetual Purse for all Merchants and Traders; establish'd by a solemn Edict of the Commonwealth, which enacts, That all Payments of Wholesale Merchandize, and Letters of Exchange, shall be in *Banco*, or *Bank Notes*; and that all Debtors and Creditors shall be obliged, the one to carry their Money to the *Bank*, the other to receive their Payments in *Banco*; so as Payments are perform'd by a simple Transfer from the one to the other: he who was before Creditor on the *Bank-Books*, becoming Debtor as soon as he has resign'd his Right to another, who is enter'd down as Creditor in his Place; so that the Parties only change a Name, without any effective Payment being made. Indeed, there are sometimes effective Payments made, especially in Matters of Retail, and when Foreigners are disposed to have ready Money to carry it off in Specie; or when particular Traders chuse to have a Stock by 'em to negotiate in Letters of Exchange, &c. The Necessity of these effective Payments, has given occasion to the opening a Fund of ready Money; which is found so far from diminishing the Stock, that this Liberty of withdrawing Money at pleasure rather augments it. By means of this *Bank*, the Republick, without incroaching on the Freedom of Commerce, or without paying any Interest, is Mistress of 500000 Ducats, to which the Capital of the *Bank* is limited, to be in readiness on any pressing Occasion; the Republick being Security for the Capital.

The Word *Bank* originally signified a *Bench*, which the first *Bankers* had in the publick Places, in Markets, Fairs, &c. on which they told their Money, wrote Bills of Exchange, &c. Hence when a *Banker* fail'd they broke his *Bank*, to advertize the Publick, that the Person to whom the *Bank* belong'd was no longer in a Condition to continue his Business. As this Practice was very frequent in *Italy*, 'tis said the Term *Bankrupt* is derived from the Italian *Banco rotto*, *broken Bench*.

BANKER, a Person who negotiates and trafficks in Money; who receives and remits Money from Place to Place, by Commission or Correspondents, by means of Bills or Letters of Exchange. See *Exchange*, *Bank*, &c. In *Italy* the Employment of a *Banker*, especially in Republicks, does not derogate from the Nobility; and hence it is, that most of the Cadets, or younger Sons of Condition, undertake it for the Support of their Family. The *Romans* had two Kinds of *Bankers*, tho their Office was much more extensive than that of the *Bankers* among us; being publick Officers, in whom were united the Functions of a *Broker*, *Agent*, *Banker*, and *Notary*; managing the Exchange, taking in Money, assisting in Buying and Selling, and drawing the Writings necessary on all these Occasions.

BANKRUPT, a Trader, who consumes his Stock, or runs out in Trade, so as not to be able to answer the Demands of his Creditors. His absconding from his Place of Abode, or being denied to his Creditors, suffering himself to be arrested willingly, for Debt, and suffering himself to lie two Months in Prison, on any lawful Action, is by Law deemed an Act of *Bankruptcy*. See *Commission of Bankruptcy*.

BANKRUPTCY, the Failure, Absconding, and Relinquishment of Traffick in a Merchant, Banker, or other Trader. There is some Difference however, between a *Bankruptcy* and a *Failure*; the first being supposed voluntary and fraudulent, and the latter constrain'd and necessary, by means of Accidents, &c. A *Failing*, or Stopping of Payment, diminishes the Merchant's Credit, but does not note him with Infamy, as *Bankruptcy* does. When a Merchant, &c. fails to appear at the *Exchange*, &c. without apparent Reason, 'tis call'd a *Failing of Presence*; the *Bankruptcy* becomes open from the Day he absconds, or the Seal is affix'd to his Effects. Those who *fail* are oblig'd to give in to their Creditors, a State or Inventory of all their Effects and Debts, and to surrender their Books; otherwise they are reputed *fraudulent Bankrupts*. All Payments and Transfers, as also all Acts, Obligations, &c. of Persons who *fail*, are null unless made ten Days before the *Failing* is become publick. See *Bank*.

BANNERET, an antient Knight or Lord, who had a Right to carry a *Banner* for assembling of his Vassals, when a *Ban* was proclaim'd, and might also form 'em into a Troop of Horse; from the Word *Banner*, or from *Ban* or *Bande*, which formerly signified a *Banner*. Antiently there were two kinds of Knights, Great and Little; the first whereof were call'd *Bannerets*, the second *Bachelors*; the first composed the upper, the second the middle Nobility. To be qualified for a *Banneret*, one must be a Gentleman of Family, and must have a Right to raise a certain Number of arm'd Men; with Estate enough to subsist at least 28 or 30 Men. This must have been very considerable in those Days, in regard each Man, besides his Servant, had two Horse-men to wait on him, armed, the one with a Cross-Bow, the other with a Bow and Hatchet. The Form of the *Banneret's* Creation was this: On a Day of Battle the Candidate presented his Flag to the King or General, who cutting off the Train or Skirt thereof, and making it a Square, return'd it again, the proper *Banner* of *Bannerets*: Hence *Bannerets* were sometimes call'd *Knights of the Square Flag*, and by this Form of their Flag they were distinguish'd from *Barons*. Others will have *Bannerets* to have been Persons who had some Portion of a Barony assign'd 'em; and enjoy'd it under the Title of *Baro Proximus*, with the same Prerogatives as the *Baron* himself. Some Authors attribute the Institution of *Bannerets* to *Conan*, Lieutenant of *Maximus*, who commanded the *Roman* Legions in *England* under the Empire of *Gratian*, in 383. This General, say they, revolting, divided *England* into 40 Cantons, and in these Cantons distributed 40 Knights, to whom he gave a Power of assembling, on Occasion, under their several *Banners*, as many of the effective Men as were found in their respective Districts; whence they were call'd *Bannerets*. However this be, it appears from *Froissart*, &c. that antiently such of the Military Men, as were rich enough to raise and subsist a Company of arm'd Men, and had a Right to do so, were call'd *Bannerets*. Not, however, that these Qualifications render'd 'em Knights, but only *Bannerets*; the Appellation of Knights being only added thereto, because they were of the Upper Nobility, or simple Knights before. Among the *Spaniards*, *Bannerets* are known by the Name of *Riccos hombres*. *Larrey* will have *Bannerets* so call'd, because of the *Banner* or *Standard* waved in the face of the Army at the time of their Creation. *Bannerets* were second to none but Knights of the Garter; but they dwindled, and at last became extinct, on the Institution of *Baronets* by King *James* I.

BANNIMUS, is the Form of Expulsion of any Member from the University of *Oxford*, affixing the Sentence up in some publick Place, as a Denunciation or Promulgation of it.

BANQUETTE, in Fortification, is a little Foot-Path or Elevation of Earth in Form of a Step, along a Parapet, or that by which the Musquetters get up to discover the Counterscarp, or to fire on the Enemies in the Moat, or in the Covert-Way: These are generally a Foot and half high, and almost three Foot broad.

BAPTISM, in Theology, from the Greek βαπτίζειν, *to dip* or *plunge*, the Ceremony of Washing; or a Sacrament whereby a Person is initiated into Christianity, and Original Sin wash'd away in Infants, and actual Sins in Adults who receive it. The *Jews* practised this Ceremony, after Circumcision, on their Proselytes, long before the Coming of Jesus Christ. For the Matter of *Baptism*, any natural Water is held sufficient, but nothing else is allow'd: For this reason Pope *Stephen* II. excommunicated a Priest for *baptizing* a Child with Wine. In the Primitive Times this Ceremony was perform'd by Immersion, as it is to this Day in the *Oriental* Churches, according to the Signification of the Word. The Practice of the *Western* Churches, is to sprinkle the Water on the Head or Face of the Person to be *baptiz'd*, except

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in the Church of *Milan*, in whoſe Ritual 'tis order'd, that the Head of the Infant be *plunged* three times into the Water. A trine Immerſion was firſt uſed, and continued for a very long time: This was to ſignify either the three Days that our Saviour lay in the Grave, or the Three Perſons in the Trinity. But it was afterwards laid aſide, becauſe the *Arians* uſed it: 'twas then thought proper to *plunge* but once, leſt the *Hereticks* ſhould think that the *Catholicks*, like them, divided the Trinity. Some are of Opinion, that *Sprinkling* in *Baptiſm* was begun in cold Countries. 'Twas introduced in *England* about the Beginning of the 9th Century. At the Council of *Calchyt*, in 816, it was order'd, that the Prieſt ſhould not only *ſprinkle* the holy Water upon the Head of the Infant, but likewiſe always *plunge* them in the Baſon. There are abundance of Ceremonies deliver'd by Eccleſiaſtical Writers, as uſed in *Baptiſm*, which are now diſus'd; tho there are not wanting thoſe who contend for their Re-admiſſion; as the giving Milk and Honey to the *baptized*, in the *Eaſt*; Wine and Milk, in the *Weſt*, &c. It appears, that in the Primitive Times none were *baptized* but Adults. Formerly there were great Diſputes, whether the *Baptiſm* of *Hereticks* was valid. The general Opinion run for the Affirmative, provided it was conferr'd in the Name of the Trinity, and therefore they allow'd even that of the Laity, or Women in caſe of Neceſſity. The Council of *Roan* in 1072, order'd, that the Prieſt ſhould *baptize* faſting, &c. Theological Authors diſtinguiſh three Kinds of *Baptiſm*. 1. The *Baptiſm of Water*, which is that above-mention'd. 2. The *Baptiſm of Fire*, which is the perfect Love of God, join'd with a Deſire to be *baptiz'd*; call'd alſo the *Baptiſm of the Spirit*: on occaſion this may ſupply the Place of *Water-Baptiſm*. 3. *Baptiſm of Blood*; which is the Martyrdom of a *Catechumen*. *Baptiſm*, in the Primitive Times, was only adminiſter'd at *Eaſter* and *Whitſuntide*, except in Caſes of Neceſſity. The *Catechumens* were not forward in coming to *Baptiſm*. St. *Ambroſe* was not *baptiz'd* before he was elected Biſhop of *Milan*; and ſome of the *Fathers* not till the time of their Death; ſome deferring it out of a tender Conſcience; and others out of too much Attachment to the World, it being the prevailing Opinion of the Primitive Times, that *Baptiſm*, whenever conferr'd, waſh'd away all antecedent Stains and Sins. The *Fathers* rallied this ſuperſtitious Delicacy to ſuch a degree, that they introduced a different Extreme; the ridiculous Zeal of ſome People carrying them to *baptize* the Dead by Proxy.

Baptiſm, or *Chriſtening*, in the Sea-language, a Ceremony in long Voyages aboard Merchant-Ships; practis'd both on Perſons and Veſſels which paſs the Tropick, or Line, for the firſt time. The *Baptiſm of Veſſels* is ſimple, and conſiſts only in the waſhing them throughout with Sea Water; that *of Paſſengers* is more myſterious: but neither the one nor the other without making the Crew drunk; the Seamen, on Chriſtening the Ship, pretending to a Right of cutting off the Beak-Head, unleſs redeem'd by the Maſter or Captain. The *Chriſtening of a Seaman*, or *Paſſenger*, is as follows: The oldeſt of the Crew who has paſs'd the Line, or Tropick, comes, whimſically dreſt, his Face black'd, a Groteſque Cap on his Head, a Waggoner or other Sea-Book in his Hand, follow'd by the reſt of the Seamen maſqu'd like himſelf, each having ſome Kitchen Utenſil in his Hand, with Drums beating: he places himſelf gravely on a Seat prepar'd on the Deck, at the Foot of the Main-Maſt. At the Tribunal of this pleaſant Magiſtrate, each Paſſenger not yet initiated, ſwears, he will take care the ſame Ceremony be obſerv'd, whenever he is in the ſame Circumſtance: by giving a little Money, by way of Gratification, he is diſcharg'd with a little *ſprinkling* of Water; otherwiſe, as is uſually the Caſe with the Seamen, he is heartily *drench'd* with Streams of Water pour'd on him: Ship-Boys are inclos'd in a Cage, and *drench'd* at Diſcretion; and beſides, in Memory of the Ceremony, are oblig'd to whip each other, which they never ſpare.

BAPTISTERY, the Place where Perſons are *baptiz'd*, or the Font in which 'tis done. Antiently in the Churches which *baptiz'd* by Immerſion, the *Baptiſtery* was a kind of *Pond* where the *Catechumens* were *plunged*. In the firſt Times the *Baptiſtery* was a little Church adjoining to a greater, purpoſely appointed for the Adminiſtration of this Ceremony. There were ſeveral Fonts and Altars in each *Baptiſtery*, becauſe then they *baptized* a Number at once, all of whom received the Euchariſt immediately after. At firſt, theſe *Baptiſteries* were only in the great Cities where Biſhops reſided, who alone had the Right of *baptizing*; but they afterwards allow'd Pariſhes to have Fonts, for the more commodious Adminiſtration of *Baptiſm*. This Right was confin'd to Pariſhes alone; and if any Monaſteries were found with *baptiſmal* Fonts, 'twas becauſe they had *baptiſmal* Churches in another Place: Tho the Biſhops ſometimes granted them to Monks, upon condition that they would have a ſecular Prieſt along with 'em to take care of the People; but they afterwards found means to throw off the Prieſt, and make themſelves Maſters of the Church, and attach it, with its *baptiſmal* Fonts, to their own Monaſtery.

BAR, in Heraldry, one of the honourable Members of a Coat of Arms, which is hereby divided into two equal Parts from Angle to Angle, beginning at the Top on the Left Hand, and running Diagonal-wiſe to the Right. It takes up one Third of the Coat, and is commonly uſed for the Diſtinction of Baſtards.

Bar, in Heraldry, is likewiſe a Fiſh, or Barbel, often placed in Coats of Arms, commonly in a bended leaning Poſture.

Bar, in Law, is a Deſtruction for ever, or the taking away for a time, the Action of him that hath Right; and it is call'd a *Plea in Bar* when ſuch a *Bar* is pleaded. The Word *Bar* is alſo uſed for a *material Bar*, as the Places where Serjeants or Counſellors ſtand to plead Cauſes in Court, Priſoners to anſwer Indictments, &c. Whence our *Lawyers* who are call'd to the *Bar*, or licenſed to plead, (in other Countries call'd *Licentiati*) are term'd *Barriſters*.

Bars, in the Menage, the Ridges or upper Parts of the Gums, between the Under-Tuſhes and the Grinders of a Horſe; the outward Sides whereof are always call'd the *Gums*. Theſe *Bars* ſhould be ſharp-ridg'd and lean; for ſince all the Subjection a Horſe ſuffers, proceeds from thoſe Parts, if they have not theſe, they will be very little or not at all ſenſible, ſo that the Horſe can never have a good Mouth: for, if they be flat, round, and inſenſible, the Bit will not have its Effect; and conſequently, ſuch a Horſe can be no better govern'd by his Bridle, than if one took hold of his Tail.

Bars, in Muſick, Strokes drawn perpendicularly a-croſs the Lines of a Piece of Muſick, including between each two, a certain Quantity or Meaſure of Time, which is various as the Time of the Muſick is triple or common. In common Time, between each two *Bars* is included the Meaſure of four Crotchets, in triple Time three Crotchets. Their principal Uſe is to regulate the Beating, or Meaſure of Time in a Conſort. See *Time*.

BARACK, or *Baraque*, a Hutt or little Lodge for Soldiers in a Camp; thoſe for the Horſe were formerly called *Baracks*, and thoſe for the Foot *Hutts*; but *Barack* is now uſed indifferently for both: they are generally made by fixing four forked Poles in the Ground, and laying four others a-croſs them; afterwards they build up the Walls with Sods, Wattles, or what the Place affords: the Top is planked, thatched, or covered with Turf, as they have Convenience. When the Army is in Winter Quarters, the Soldiers uſually build *Baracks*; in the Summer they are content with their Tents. The Word comes from the Spaniſh *Barraca's*, little Cabins which the Fiſhermen make on the Sea-Shore.

BARALIPTON, a Term in Logick; a Syllogiſm in *Baralipton* is, when the two firſt Propoſitions thereof are general, and the third particular; the middle Term being the Subject of the firſt, and the Attribute of the ſecond: For Example,

Every Evil ought to be fear'd:
Every violent Paſſion is an Evil:
Therefore ſomething that ought to be fear'd is a violent Paſſion.

BARALLOT, the Name of a Sect. The *Barallots* were *Hereticks* at *Bologne* in *Italy*, who had all things in common, even their Wives and Children. They gave ſo readily into all manner of Debauchery, that they were alſo term'd *Compliers*.

BARANG, the Name of an Officer among the *Greeks* of the *Lower Empire*, whoſe Buſineſs it was to keep the Keys of the City-Gates where the Emperor reſided. *Codinus* ſays, *Barangs* are thoſe Officers who ſtood at the Door of the Emperor's Bed-Chamber and Dining-Room. Some think they were *Engliſhmen*, and took their Name from the Engliſh *bar*, to ſhut or make faſt. They were arm'd with an Ax.

BARBACAN, in Architecture, a Canal or Opening left in the Walls, for Water to come in and go out at, when Edifices are rais'd in Places liable to be overflow'd; or to drain off the Water from a Terras. The Word comes from the Italian *Barbacane*, which *Spelman* derives from the Arabick.

Barbacan, a military Term, ſignifying a Cleft or Aperture made in the Walls of a Caſtle or Fortreſs, to fire thro upon the Enemy. Some think the Word implies a wooden Parapet; others any kind of Defence or Safeguard againſt the Enemy: *Du Cange* calls it the *outer Defence*. 'Twas formerly a Fort at the Entrance of a Bridge, or without the City, having a double Wall, with Towers.

BARBARA, a Logical Term: A Syllogiſm in *Barbara*, is that whereof all the Propoſitions are univerſal and affirmative; the middle Term being the Subject in the firſt Propoſition, and Attribute in the ſecond: For Example,

Whoever ſuffers a Man to ſtarve, whom he ought to ſuſtain, is a Murderer:
Whoever is rich, and refuſes to give Alms, ſuffers thoſe to ſtarve whom he ought to ſuſtain:
Therefore, whoever is rich, and refuſes to give Alms, is a Murderer.

BARBARIAN. The *Greeks* call'd all thoſe *Barbarians* who were not of their Country; as did alſo the *Romans*, generally. This Word ſignified with them no more than Foreigner, and did not carry that Odium with it as it does now. This may appear from thoſe Lines of *Ovid*, who was certainly a well-bred Man.

Barbarus hic ego ſum, quia non intelligor ulli,
Et rident ſtolidi verba Latina Getæ.

Strabo derives the Word βαρβαρος from εβαρβαειζειν, *balbutire*, by reaſon Foreigners coming to *Athens* uſed to ſtammer, or ſpeak coarſely: Others derive it from βαρβαρ, a Word that Foreigners frequently ſtumbled on, which yet had no Meaning; others from the Arabick *Bar*, a Deſart; and *Voſſius* from the Chaldee Adverb ברא, *extra*, *foris*.

BARBARISM, in Grammar, is a hard or coarſe Expreſſion, and ſuch as is not uſed by polite Authors; 'tis a Fault between a Soleciſm and Impropriety, and is committed by uſing any foreign Word or Phraſe, not ſuited to the Genius of the Language; or by the dropping of Particles, Pronouns, or Prepoſitions, where they are neceſſary. *Suidas*, *Heſychius*, &c. confine the *Barbariſm* to a ſingle Word; but *Vaugelas* extends it to Phraſes.

BARBE, in Commerce, a kind of Horſes brought from *Barbary*, much eſteem'd for their Vigour and Swiftneſs: They are uſually of a ſlender Make, and their Legs far apart. 'Tis a Maxim, *that* Barbs *grow ripe but never old*, becauſe they retain their Vigour to the laſt; which makes 'em prized for Stallions. 'Tis ſaid they were antiently wild, and run at large in the Deſarts of *Arabia*; and that it was in the Time of *Chequi Iſmael*, that they firſt began to tame 'em. 'Tis ſaid there are *Barbs* in *Africa* that will outrun Oſtriches, ordinarily ſold, according to *Dapper*, for 1000 Ducats, or 100 Camels. They are fed very ſparingly; *Dapper* ſays with Camel's Milk. 'Tis added, that in *Barbary* they preſerve the Genealogy of their *Barbs*, with as much Care as the *Europeans* do thoſe of their noble Families; and that to ſell 'em, they always produce their Titles of Nobility.

Barbe, a military Term. *To fire en Barbe*, is to fire the Cannon over the Parapet inſtead of thro the Embrazures; but in this caſe the Parapet muſt be but three Foot and a half high.

Barbe, or *Barde*, is alſo an old Term for the Armour of the Horſes of the antient Knights, and Soldiers, who were accouter'd at all Points. *La Cruſca* ſays, the *Barde* is an Armour of Iron or Leather, wherewith the Neck, Breaſt, and Shoulders of the Horſe are cover'd.

BARBOTINE, a Grain, otherwiſe call'd *Semen Santonicum*, and *Semen contra Vermes*, or *Worm-Seed*; which ſee.

BARDESANITES, an Heretical Sect, the Followers of *Bardeſanes*, of *Meſopotamia*; who as ſoon as he became a Chriſtian, diſtinguiſh'd himſelf by his Knowledge in Philoſophy, but afterwards renouncing the Chriſtian Religion, embraced the Errors of *Valentinus*, and added to them others of his own: He aſſerted the Actions of Mankind to depend on Fate. His Followers invented other Notions.

BARDS, antient Poets among the *Gauls* and *Britons*, who deſcribed and ſung in Verſe the brave Actions of the great Men of their Nation. The Deſign of their Verſes was to paint and recommend Virtue, and ſometimes to put an end to the Difference between Armies at the very point of Engagement. The *Bards* differ'd from the *Druids*, in that the latter were Prieſts and Teachers of the Nation, but the former only Poets and Writers, (See *Druid.*) *Larrey*, *Bodin*, and *Paſquier*, indeed will have the *Bards* to have been Prieſts; *Cluverius* and *Paſquier* Philoſophers; and *Cluverius* Orators too, but without much Foundation in Antiquity. *Strabo* divides the Sects of Philoſophers among the *Gauls* and *Britons* into three, *viz.* the *Druids*, *Bards*, and *Evates*. The *Bards*, adds he, are the Singers and Poets; the *Evates*, the Prieſts and Natural Philoſophers; and the *Druids*, to Natural Philoſophy add alſo the Moral. *Hornius* however reduces 'em to two Sects, *viz.* *Bards* and *Druids*; others to one, and make *Druid* a general Name comprehending all the others: *Cluverius* will have it, that there were *Bards* alſo among the antient *Germans*; becauſe *Tacitus* makes mention of their Songs and Poems which contain'd their Hiſtory. *Bochart* derives the Word from *parat*, *to ſing*. *Camden* agrees with *Feſtus*, that *Barde* properly ſignifies a *Singer*: and adds, that the Word is pure *Britiſh*. Others derive the Name from *Bardus*, a *Druid*, the Son of *Dryis*, and the fifth King of the *Celtæ*.

BAR-FEE, a Fee of 20 Pence, which every Perſon acquitted of Felony pays the Gaoler.

BARGE, a little floating Veſſel uſed in the Navigation of Rivers, &c. *Barges* are of various Kinds, and acquire various Names, according to the Variety of their Uſes and Structures: As,

A Company's Barge,	*A* Severn-*Trow*,
A Row-Barge,	*A* Ware-*Barge*,
A Royal-Barge,	*A Light Horſeman*,
A Sand-Barge,	*A Weſt-Country-Barge.*

BARK, the exterior Part of Trees, ſerving 'em for a Skin or Covering, (See *Plant.*) There are a great many kinds of *Barks* in uſe in the ſeveral Arts: Some in Medicine, as the *Quinquina*, or *Jeſuits Bark*, *Macer*, &c. ſee *Cortex*; others in Dying, as the *Bark of the Alder* or *Willow*; others in Spicery, as *Cinnamon*, *Caſſia lignea*, &c. ſee *Cinnamon*, &c. the *Bark of Oak* in Tanning, ſee *Tanning*; others on other Occaſions, as *Cork*; that of the *Linden-Tree* for Cordage for Wells; that of a kind of *Birch* uſed by the *Indians* for Canoos, capable of holding 24 Perſons. The Antients wrote their Books on *Barks*, eſpecially thoſe of the *Aſh* and *Linden*; not on the exterior or outer *Bark*, but the inner and finer.

The *Bark* of Trees in general is of a ſpungy Texture, and by many little Fibres which paſs thro the capillary Tubes whereof the Wood conſiſts, communicates with the Pith; ſo that the proper Nutriment of the Tree being imbibed by the Roots, and carried up thro the fine arterial Veſſels of the Tree by the Warmth of the Soil, &c. to the Top of the Plant, is there condens'd by the cold Air, and returns by its own Gravity down the Veſſels which do the Office of Veins, lying between the Wood and inner *Bark*, leaving as it paſſes by, ſuch Parts of its Juice as the Texture of the *Bark* will receive, and requires for its Support: See *Sap*. That ſoft whitiſh Rind or Subſtance between the inner *Bark* and the Wood, which Mr. *Bradley* thinks to do the Office of Veins, ſome account a *third Bark*, only differing from the others in that its Fibres are cloſer; 'tis this contains the liquid Sap, Gums, &c. found in Plants in the Spring and Summer Months. It hardens by little and little, by means of the Sap it tranſmits, and is converted imperceptibly into the woody Part of the Tree. There are few Trees but what have it; yet 'tis ſtill found in leſs Quantity, as the Tree is more expoſed to the Sun: that of the *Oak* is ordinarily about an Inch Diameter. 'Tis here that the Corruption of Trees generally begins: whence thoſe who fell and cut out Trees, ought always to take care to leave as little of it on, as poſſible. See *Wood*.

In the two *Indies* they manufacture the *Bark* of a certain Tree into a kind of Stuff or Cloth. 'Tis ſpun and dreſs'd much after the manner of Hemp. The long Filaments ſeparated from it, upon beating and ſteeping it in Water, compoſe a Thread, of a middle kind between Silk and common Thread; neither ſo ſoft nor bright as Silk, nor ſo hard or flat as Hemp. Some of theſe Stuffs are pure *Bark*, and are call'd *Penaſſes*, *Beambonnes*, &c. In others they mix Silk with the *Bark*, and call 'em *Guingans* and *Nillas*: the *Foutalongees* too, are part Silk part *Bark*, and are only diſtinguiſh'd by being ſtriped.

Bark, a little Veſſel for the Sea, with pointed or triangular Sails, in number two, or three at the moſt. *Menage* derives the Word from the Latin *Barca*; *Fournier* from *Barce*, a City in *Africa*; and *Toletanus* from *Barcelona*; others, among whom *Salmaſius*, from the Greek βαις, a round Building; *Scaliger* from βαγις, *ab Oneribus gerendis*. Some Authors uſe the Word *Bark* for any Veſſel that has no Maſts. Of *Barks* there are various Kinds: As,

A Binlander,	*A Sknit*,
A Sack,	*A Snaul*,
A Sattee,	*A Snouke.*

BARK-BINDING, a Diſtemper incident to Trees, cured by ſlitting the *Bark*, or cutting it along the Grain of the Tree.

BARK-GALLING, is when Trees are gall'd by Thorns, or by being bound to Stakes, &c. and is cured by Clay laid on the gall'd Place, and bound up with Hay.

BARKING *of Trees*, is the Peeling off or Stripping the *Bark* from the Wood. The Month of *May* is the Seaſon for *Barking of Trees*, becauſe then the Sap looſens the *Bark* from the Wood; which 'tis very hard to effect in any other Time, unleſs the Seaſon be very wet; Heat and Dryneſs being always oppoſite thereto.

BARM-YEAST, the Head or Workings-out of Ale or Beer. See *Leven*, *Paſt*, *Baking*, &c.

BARNABITES, a Set of Religious, or Regular Prieſts, of the Congregation of St. *Paul*. Their Habit is black, and the ſame with that they wore when firſt eſtabliſhed, *Anno Domini* 1533. by the expreſs Bulls of Pope *Clement* VII. Their Office is to inſtruct, catechize, and

ſerve

ſerve in Miſſions. This Order was founded by *Antoine Marie Zacariah*; they were call'd *Barnabites* from the Church of St. *Barnabas*, at *Milan*.

BARNACLE, in Natural Hiſtory, a little Sea-Animal, frequent among the Weſtern Iſles of *Scotland*; the manner of whoſe Production has occaſion'd ſome Speculation among the Learned. The *Barnacle*, at firſt, appears in form of a little Shell-fiſh growing on old weather-beaten Timber, chiefly *Aſh* and *Fir*, driven in great Quantities by the Weſtern Ocean upon the Shores. The Shell, Sir *Robert Murray* tells us, reſembles that of a Muſcle in Colour and Conſiſtence, very thin about the Edges, and about half as thick as broad, croſs'd with Sutures, &c. It hangs to the Wood by a Neck longer than the Shell, of a filmy Subſtance, round and hollow, not unlike the Wind-pipe of a Chicken, by which it ſeems to draw its Nouriſhment from the Wood, both for its own Vegetation and that of the Animal incloſed. The Curioſity is, that inſtead of a Fiſh, which one expects in the Shell, there is found a perfect feather'd Fowl, vulgarly call'd *Solan Gooſe*. In a number which Sir *Robert Murray* open'd, he found the *Sea-Fowl* perfectly form'd; the Bill like that of a Gooſe, the Eyes mark'd, the Neck, Breaſt, Wings, &c. very compleat; the Feathers every where perfect; and the Feet like thoſe of other Water-Fowl. He obſerves, he never ſaw any of 'em alive; nor does he know any body that ever did: But adds, he is credibly inform'd they have been ſeen as big as the Fiſt. The *French* have alſo their *Barnacles*, which they call *Macreuſe*, or *Macroul*, on the Coaſts of *Normandy*, &c. only differing from the *Scotiſh*, in that the one ſeems of the *Gooſe* Kind, the other of the *Duck* Kind. Dr. *Tanc. Robinſon*, rejecting the popular Opinions of their being generated from rotten Woods, Fruits dropp'd into the Sea, and there metamorphos'd into Birds, &c. obſerves, that the *Barnacles* are all oviparous, from the Anatomy of their Parts ſerving to Generation, and that they are both Male and Female. The *French* eat the *Macreuſe* on Fiſh-Days, and throughout all *Lent*, taking it for a kind of Fiſh. Yet Mr. *Ray* obſerves, 'tis a real Fowl; and refers it to the Species of *Sea-Ducks* deſcrib'd by Mr. *Willoughby*.

BARNACLES, Horſe-Twitchers or Brakes, are Inſtruments which Farriers apply to Horſe's Noſes when they will not ſtand quietly to be ſhod, blooded, &c.

BAROCO, a Term in Logick. A Syllogiſm in *Baroco* has the firſt Propoſition univerſal and affirmative, but the ſecond and third particular and negative; and the middle Term the Attribute in the two firſt: For Example,

Every Virtue is attended with Diſcretion:
Some kinds of Zeal are not attended with Diſcretion:
Therefore ſome kinds of Zeal are not Virtues.

BAROMETER, a Machine for meaſuring the Weight of the Atmoſphere, and the Variations therein, in order chiefly to determine the Changes of Weather, from the Greek βαρος, *onus*, and μετρον, *menſura*. The *Barometer* is frequently confounded with the *Baroſcope*, tho ſomewhat improperly; the latter, in ſtrictneſs, being a Machine that barely ſhews an Alteration in the Weight of the *Atmoſphere*: but 'tis one thing to know that the Air is heavier at one time than at another, and another to meaſure how much that Difference is; which is the Buſineſs of the *Barometer*.

The *Barometer* is founded on the *Torricellian* Experiment, as 'tis call'd from its Inventor *Torricelli*: which is no more than a Glaſs Tube fill'd with Mercury, hermetically ſeal'd at one End; the other open, and immerg'd in a Baſon of ſtagnant Mercury. Now, as the Weight of the *Atmoſphere* diminiſhes, the Mercury in the Tube will here deſcend; on the contrary, as it increaſes, the Mercury will again aſcend: the Column of Mercury ſuſpended in the Tube being always equal to the Weight of the incumbent *Atmoſphere*; as is ſhewn under the Word *Torricellian*.

The Mechaniſm of the Barometer *is as follows.*

A Glaſs Tube A B, Plate *Pneumaticks*, *Fig.* 1. hermetically ſeal'd in A, having its Diameter about $\frac{1}{10}$ of an Inch, and its Length at leaſt 31 Inches, is fill'd with Mercury ſo juſtly, as not to have any Air over it, nor any Bubbles adhering to the Sides of the Tube; which is beſt done by means of a Glaſs Funnel, with a capillary Tube. The Orifice of the Tube, fill'd after this manner, ſo as to overflow, is cloſely preſs'd by the Finger, ſo as to exclude any Air between it and the Mercury, and thus immerg'd in a wooden Veſſel, of a convenient Diameter; ſo, however, as not to touch the Bottom: At the Diſtance of 28 Inches from the Surface of the Mercury, are fix'd two Plates, C E and D F, divided into two Inches, and theſe again ſubdivided into any Number of ſmaller Parts: Laſtly, the Tube is incloſed in a wooden Frame, to prevent its being broke; and the Baſon, tho open to the Air, ſecured from Duſt; and the *Barometer* is compleat.

Many Attempts have been made to render the Changes in the *Barometer* more ſenſible, and ſo to meaſure the *Atmoſphere* more accurately; which has given Riſe to a great Number of *Barometers* of different Structures. Hence comes the *Wheel Barometer*, *Diagonal Barometer*, *Horizontal Barometer*, *Pendant Barometer*, &c. of each whereof in their turns.

Des Cartes, and after him *Huygens*, uſed a Tube A B, *Fig.* 2. having a Cylindrick Veſſel C D; one half of which Veſſel, together with the upper Part of the Tube, were fill'd with Water; the other half of the Veſſel, and the lower Part of the Tube, with Mercury: But here, tho the Column ſuſpended was larger, and conſequently the Variation greater, yet the Air impriſon'd in the Water getting looſe by degrees, fill'd the void Space in the top, and ſo ruin'd the Machine. He then bethought himſelf of placing the Mercury a top, and the Water at bottom, in the manner following: A D G, *Fig.* 3. is a bent Tube hermetically ſeal'd in A, and open in G; the cylindrick Veſſels B C and F E are equal, and about 29 Inches a-part; the Diameter of the Tube is about a Line, that of each Veſſel 15 Lines, and the Depth of the Veſſels about 10; the Tube is fill'd with Mercury (the common *Barometer* ſtanding about 29 Inches) which will be ſuſpended between the middle of the Veſſel F E, and that of the Veſſel B C; the remaining Space to A, being void both of Mercury and Air: Laſtly, common Water, ting'd with a ſixth Part of *Aqua Regis*, to prevent its freezing, is pour'd into the Tube F G, till it riſes a Foot above the Mercury in D F. When, then, the Mercury riſing above the Level of that contain'd in F E, through the Tube A D, becomes a Balance to the Weight of the *Atmoſphere*; as the *Atmoſphere* increaſes, the Column of Mercury will increaſe, conſequently the Water will deſcend; as the *Atmoſphere* again grows lighter, the Column of Mercury will deſcend, and the Water aſcend. This *Barometer* therefore, which is the ſame with that of Dr. *Hook*, will diſcover much minuter Alterations in the Air than the common one: for, inſtead of two Inches, the Fluid will here vary two Foot; and by enlarging the Diameters of the Cylinders, that Variation may be ſtill increas'd; but it has this Inconvenience, that the Water will evaporate, and ſo render the Alterations precarious; tho the Evaporation be, in ſome meaſure, prevented by a Drop of Oil of ſweet Almonds ſwimming a-top. On account of this Defect, others have had recourſe to a

Horizontal, or *Rectangular Barometer*, A B C D, *Fig.* 4. the Tube whereof is bent, in form of a Square B C D; a-top of its perpendicular Leg it is join'd to a Veſſel or Ciſtern A B; and its Variation accounted on the Horizontal Leg C D. Now here the Interval, or Space of Variation, may be made of any Extent at pleaſure, and ſo the minuteſt Change in the Air become ſenſible. For the Diameter of the Tube C D being given, 'tis eaſy to find the Diameter of the Veſſel A B, ſo as that the Scale of Deſcent in the Tube D C ſhall have any given Proportion to the Scale of Aſcent in the Veſſel A B; the Rule being, that the Diameter of the Veſſel is to that of the Tube in a ſubduplicate reciprocal Ratio of their Scales. The Diameters then of C D and A B being given, together with the Scale or Aſcent of the Mercury in the Veſſel, the Scale of Mercury in the Tube is found thus; as the Square of the Diameter of the Tube is to the Square of the Diameter of the Veſſel, ſo, reciprocally, is the Scale of Mercury in the Veſſel to the Scale of Mercury in the Tube.

This and the preceding Contrivance of *Huygens*, are founded on a Theorem in Hydroſtaticks, *viz.* that *Fluids having the ſame Baſe, gravitate according to their perpendicular Altitude, not according to the Quantity of their Matter*; whence the ſame Weight of the *Atmoſphere* ſupports the Quickſilver that fills the Tube A D and the Ciſtern B, as would ſupport the Mercury in the Tube alone. See *Hydroſtaticks*.

This laſt however, with its Virtues, has great Defects; for, by reaſon of the Attraction between the Parts of the Glaſs and of the Mercury, (which Dr. *Jurin* has ſhewn to be conſiderable) the Length of the Scale, (conſequently the Quantity of Motion) and the Attrition againſt its Sides, eſpecially in ſudden Riſes and Deſcents, the Mercury breaks, ſome Parts of it are left behind, and the Equability of its Riſe and Fall ruin'd. Some therefore prefer the

Diagonal Barometer, where the Space of Variation is conſiderably larger than in the common one, and yet the Riſe and Fall more regular than in the others. The Foundation of the *Diagonal Barometer* is this; that in a Torricellian Tube A B, *Fig.* 5. inclined at any Angle to the Horizon, the Cylinder of Mercury equivalent to the Weight of the *Atmoſphere*, is to a Cylinder of Mercury, equivalent to the ſame placed in a vertical Tube, as the Length of the Tube A B to the perpendicular Height B C. Hence, if the Height B C be ſubtriple, ſubquadruple, &c. of the Length of the Tube, the Changes in the *Diagonal Barometer* will

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be double, or triple, &c. of the Changes in the *common Barometer*. This *Barometer* will ſcarce allow its Tube to be inclined to the Horizon at a leſs Angle than 450, without undergoing the Inconveniency of the *Horizontal* one.

Wheel-Barometer is a Contrivance of Dr. *Hook*, to make the Alterations in the Air more ſenſible; the Foundation of this is the *common Vertical Barometer*, with the Addition of a couple of Weights A and B, *Fig.* 5. hanging in a Pulley, the one playing at liberty in the Air, the other reſting on the Surface of the Mercury in the Tube, and riſing and falling with it. Thus is the Motion of the Mercury communicated, by means of the Pulley, to an Index which turns round a graduated Circle; and thus the two Inches of vertical Aſcent are here improv'd to 4, 5, or more, at pleaſure. But the Friction of the Parts, in the Pulley, and Index, is ſo conſiderable, that unleſs the Machine be made with a great deal of Accuracy, it does not anſwer.

Pendant Barometer is a Machine rather pretty, and curious, than uſeful. It conſiſts of a conical Tube placed vertically, its upper and ſmaller Extreme hermetically ſealed; it has no Veſſel or Ciſtern; its conical Figure ſupplying that Defect: for when fill'd, like the reſt, there will be as much Mercury ſuſtain'd as is equivalent to the Weight of the *Atmoſphere*; and as that varies, the ſame Mercury takes up a different Part of the Tube, and ſo becomes of a different Weight. Thus when the Weight of the *Atmoſphere* is increas'd, the Mercury is driven up into a narrower part of the Tube, by which means its Column is lengthen'd, and, for the Reaſon juſt given, its Weight increas'd. Again, the *Atmoſphere* decreaſing, the Mercury ſinks into a wider Part of the Tube, by which means its Column is ſhorten'd, and its Preſſure accordingly weaken'd. Thus the ſame Mercury is ſtill a Balance to the *Atmoſphere* under all its Variations. The Inconvenience in this *Barometer* is, that to prevent the Mercury and Air from changing Places, the Bore of the Tube muſt be very ſmall; which Smallneſs of the Bore renders the Friction ſo ſenſible, as to impede its playing.

Marine Barometer is likewiſe a Contrivance of Dr. *Hook*, to be uſed at Sea, where the Motion of the Waves renders the others impracticable. 'Tis nothing more than a double *Thermometer*, or a Couple of Tubes half fill'd with Spirit of Wine; the one hermetically ſeal'd at both Ends, with a Quantity of common Air incloſed; the other ſeal'd at one End, and open at the other. Now, the Air, we know, is able to act on the Spirit of Wine, and to raiſe it two ways; the one by its Gravity, as in the *Torricellian Tube*; the other by its Heat, as in the *Thermometer*. If then the two Tubes be graduated, ſo as to agree with each other at the time when the Air is incloſed, it will eaſily follow, that, where-ever the two agree afterwards, the Preſſure of the *Atmoſphere* is the ſame, as at the time when the Air was incloſed. If in the *Thermometer* open to the Air the Liquor ſtand higher, conſidering withal how much the other is riſen or fallen from the other Cauſe of Heat or Cold, the Air is heavier; on the contrary, when it is lower, compar'd with the other, the Air is lighter than at the time when the Inſtrument was graduated. Here the Spaces anſwering to an Inch of Mercury will be more or leſs, according to the Quantity of the Air incloſed, and the Smallneſs of the Tubes; and may be increas'd, almoſt in any Proportion.

But it muſt be remember'd, that the Denſity and Rarity of the Air, on which this Machine is founded, don't only depend on the Weight of the *Atmoſphere*, but alſo on the Action of Heat and Cold. This, therefore, can never be a juſt *Barometer*; but may properly enough be call'd a *Menoſcope*, or Inſtrument to ſhew the Denſity of the Air.

Statical Barometer or *Baroſcope*, uſed by Mr. *Boyle*, *Otto*, *Guerric*, &c. is fallacious, and liable to be acted on by a double Cauſe: It conſiſts of a large Glaſs Bubble, balanced by a Braſs Weight, in a nice Pair of Scales: for theſe two Bodies being of equal Gravity, but unequal Bulk, if the Medium in which they equiponderate be changed, there will follow a Change of their Weight; ſo that if the Air grows heavier, the greater Body being lighter in Specie, will loſe more of its Weight than the leſſer and more compact; but if the Medium grow lighter, then the bigger Body will outweigh the leſs.

But the moſt accurate *Barometer* ever yet invented, is that of Mr. *Caſwell*; the Structure whereof he deſcribes as follows: Suppoſe A B C D, *Fig.* 6. a Bucket of Water, wherein is the *Barometer x r e z y o s m*, conſiſting of a Body *x r s m*, and a Tube *e z y o*. The Body and Tube are both concave Cylinders, communicating with each other, made of Tin, or rather Glaſs. The Bottom of the Tube, *z y*, has a Lead Weight to ſink it, ſo as the Top of the Body may juſt ſwim even with the Surface of the Water, by the addition of ſome Grain Weights a-top. The Water, when the Inſtrument is forced with its Mouth downwards, gets up into the Tube to the Height *y o*. There is added on the Top a ſmall concave Cylinder, which we call the *Pipe*, to diſtinguiſh it from the other at Bottom, which we call the *Tube*: this Pipe is to ſuſtain the Inſtrument from ſinking to the Bottom. *m d* is a Wire, *m s*, *d e* two Threads oblique to the Surface of the Water, performing the Office of *Diagonals*. Now, while the Inſtrument ſinks more or leſs, by the Alteration of the Gravity of the Air; there, where the Surface of the Water cuts the Thread, is form'd a ſmall Bubble, which aſcends up the Thread, as the Mercury of the *common Barometer* aſcends, & *vice verſa*. This Inſtrument, as appears from a Calculation which he annexes, ſhews the Alterations in the Air more accurately than the *common Barometer*, by 1200 times. He obſerves, that the Bubble is ſeldom known to ſtand ſtill a Minute; that a ſmall Blaſt of Wind, that can't be heard in a Chamber, will make it ſink ſenſibly; that a Cloud always makes it deſcend, &c.

Phænomena of the Barometer.

The Phænomena of the *Barometer* are various; the Cauſes aſſign'd for 'em by ſeveral Authors as various; nor is its Uſe in predicting the Weather yet perfectly aſcertain'd.

On the top of *Snowdon Hill*, 1240 Yards high, Dr. *Halley* found the Mercury lower by 3 Inches 8 Tenths than at the Foot thereof; whence it appears, that at every 30 Yards the Mercury ſinks $\frac{1}{10}$ of an Inch. Mr. *Derham*, from ſome Experiments he made at the Top and Bottom of the Monument, allows 32 Feet perpendicular Aſcent to a Fall of the Mercury of $\frac{1}{10}$ of an Inch: Whence we have not only a Foundation for determining the Height of the *Atmoſphere*, which on this Foundation (were it equally denſe every where) would not be found more than 5 Miles and $\frac{1}{10}$; but alſo a very accurate Method of meaſuring the Height of Mountains. Thus, if on the Surface of the Earth the Mercury be at 30 Inches, at 1000 foot high, it will be at 28,91 Inches; at 2000 Foot, 27,86; at 3000, 26,85; at 4000, 25,87; at 5000, 24,93; at 1 Mile, 24,67; at 2 Miles, 20,29; at 5 Miles, 11,28; at 10 Miles, 4,24; at 15 Miles, 1,60; at 20, 0,95; at 30 Miles, 0,08; at 40, 0,012: tho it muſt be obſerv'd, this is on a Suppoſition that the *Atmoſphere* is equally denſe every where.

The greateſt Height the Mercury has been known to ſtand at in the *Barometer*, at *London*, is 30 Inches $\frac{3}{8}$, its leaſt 28 Inches; its greateſt Height at the Obſervatory at *Paris*, has been found 28 Inches $\frac{4}{10}$, and its leaſt 26 $\frac{4}{10}$ of the *Paris* Foot, which exceeds the *London* Foot by $\frac{9}{144}$: and with theſe Obſervations agree others made at *Hall*, in *Saxony*, by *Wolfius*. 'Tis true, there is an Experiment wherein the Height of the Mercury is found ſuprizingly to exceed theſe Numbers; Mercury perfectly purged being ſuſpended in a Tube, in the *Torricellian* way, at the Height of 75 Feet; tho by the leaſt Shake it falls down to the ordinary Height. See the Accounts of this Phænomenon under the Word *Torricellian*.

The Phænomena of the *Barometer*, Mr. *Boyle* obſerves, are ſo very precarious, that 'tis exceedingly difficult to form any general Rules about the Riſe or Fall thereof. Even that which ſeems to hold moſt univerſally, *viz.* That when high Winds blow the Mercury is the lower, ſometimes fails.

Dr. Halley *gives us the following Obſervations.*

That in calm Weather, when the Air is inclined to Rain, the Mercury is commonly low; in ſerene good ſettled Weather, high.

That on great Winds, tho unaccompanied with Rain, the Mercury is the loweſt of all, with regard to the Point of the Compaſs the Wind blows on. That, *cæteris paribus*, the greateſt Heights of the Mercury are on Eaſterly and North-Eaſterly Winds. That after great Storms of Wind, when the Mercury has been low, it riſes again very faſt.

That in calm froſty Weather it ſtands high.

That the more Northerly Places find greater Alterations than the more Southern: And that within the Tropicks, and near them, there is little or no Variation of the Height of the Mercury at all.

Dr. Beal *obſerves*;

That, *cæteris paribus*, the Mercury is higher in cold Weather than in warm, and uſually in the Morning and Evening higher that at Mid-Day.

That in ſettled and fair Weather, the Mercury is higher than either a little before or after, or in the Rain; and that it generally deſcends lower after Rain than it was before it. If it chance to riſe higher after Rain, is is generally follow'd by a ſettled Serenity.

That there are frequently great Changes in the Air, without any perceptible Alteration in the *Barometer*.

For the *Uſe of Barometers* an ingenious Author obſerves, That by their means we may regain the Knowledge which ſtill reſides in Brutes, and which we forfeited by not continuing in the open Air, as they generally do; and by our Intemperance, corrupting the Craſis of our Senſes.

As to *the Predictions from Barometers*, Dr. *Halley* has found, that the Riſing of the Mercury forebodes fair Weather after foul, and an Eaſterly or North-Eaſterly Wind.

That

That the Falling thereof portends Southerly or Weſterly Winds with Rain, or ſtormy Winds, or both.

That in a Storm, the Mercury beginning to riſe, is a pretty ſure Sign that it begins to abate.

Mr. *Patrick* obſerves, that in hot Weather the Falling of the Mercury preſages Thunder; that when foul Weather happens ſoon after the Fall of the Mercury, it ſeldom holds long; and the ſame is obſerv'd, if fair Weather ſucceed preſently after its Riſe.

Laſtly, Mr. *Derham*, from a long Series of *Barometrical Obſervations* made by Dr. *Scheucher*, at *Zurich*, compar'd with others made at the ſame times by himſelf at *Upminſter*, obſerves that throughout the whole Year the Mercury was lower at the former Place than at the latter, by ſometimes one and ſometimes above two Inches; tho the Difference at a Medium he computes to be about half an Inch; and thence concludes the Situation of *Zurich* to be near $\frac{1}{4}$ of an *Engliſh* Mile higher than that of *Upminſter*. He found, however, a conſiderable Harmony between the two; the one uſually riſing and falling, and that much or little, as the other did; tho this Harmony is not ſo compleat, as has been obſerv'd in *Barometers* nearer home, as at *London*, *Paris*, in *Lancaſhire*, &c.

Cauſe of the Phænomena of the Barometer.

Theſe are the Phænomena of the *Barometer*; to account for which, the *Hypotheſes* that have been framed, are almoſt infinite. Indeed, as the Weight of the *Atmoſphere* is generally allow'd to be the Foundation of the *Barometer*, ſo 'tis generally granted, that the Alterations in the Weight of the Air, are the Occaſions of thoſe in the *Barometer*; and yet even this does not obtain univerſally. Dr. *Liſter*, for inſtance, accounts for the Changes of the *Barometer* from the Alterations of Heat and Cold. This, he ſays, he has often obſerv'd, that in Storms, &c. when the Mercury is at the loweſt, it breaks and emits ſmall Particles, which he calls a kind of *fretting*; and argues, that in all times of its Deſcent, it is more or leſs on the Fret. In this Diſorder, he thinks, its Parts are contracted and brought cloſer together, and for that reaſon deſcend: Beſides, in the fretting they let go little Particles of Air, before incloſed in 'em; and theſe riſing into the Top of the Tube, the Mercury muſt ſink, both from the Column's being ſhorten'd by their Eſcape, and by their lying upon it. Mercury therefore, he adds, riſes either in very hot or very cold Weather, between the Tropicks, &c. as being then in its natural State; and again, in the intermediate Degrees of Heat and Cold it falls, as being contracted, and as it were convuls'd and drawn together. But this Account, however ingenious, comes far ſhort of accounting for the Phænomena; nay, in ſome reſpects, contradicts them.

The Changes in the Weight of the *Atmoſphere*, therefore, muſt be laid down as the Cauſe of thoſe in the *Barometer*; but then, for the Cauſe of that Cauſe, or whence thoſe Alterations ariſe in the *Atmoſphere*, will be no eaſy Matter to determine; there being, perhaps, no one Principle in Nature, that will account for ſuch a Variety of Appearances, and thoſe too ſo irregular. 'Tis probable, the Winds, as driven this or that way, have a great Share in 'em; ſome Share too, Vapours and Exhalations riſing from the Earth may have; ſome, the Changes in the Air of the neighbouring Regions; and ſome, the Flux and Reflux occaſion'd in the Air by the Moon.

Dr. *Halley* thinks the Winds and Exhalations ſufficient; and on their footing gives us a very probable Rationale of the *Barometer*: the Subſtance of what may be ſaid on that Head is as follows.

1*ſt*, Then, the Winds muſt neceſſarily alter the Weight of the Air in any particular Country; and that, either by bringing together and accumulating a greater Quantity of Air, and ſo loading the *Atmoſphere* of any Place; which will be the Caſe, as often as two Winds blow at the ſame time from oppoſite Points towards the ſame Point; or, by ſweeping away part of the Air, and removing ſome of the Load, give room for the *Atmoſphere* to expand itſelf; which will be the Caſe, when two Winds blow at the ſame time, and from the ſame Point, oppoſite ways; or, laſtly, by cutting off the perpendicular Preſſure of the *Atmoſphere*, which happens, as often as any ſingle Wind blows briskly any way; it being found by Experiment, that a ſtrong Blaſt of Wind, even made by Art, will render the *Atmoſphere* lighter; and accordingly, the Mercury, in a Tube under which it paſſes, as well as in another at a Diſtance from it, ſubſides conſiderably. See *Philoſ. Tranſact.* N°. 292.

2*dly*, The cold nitrous Particles, and even Air itſelf condens'd in the Northern Parts, and driven elſewhere, muſt load the *Atmoſphere*, and increaſe its Preſſure.

3*dly*, Heavy, dry Exhalations from the Earth, muſt increaſe the Weight of the *Atmoſphere*, and heighten its Elaſtick Force, as we find the ſpecifick Gravity of Menſtruums increas'd by diſſolv'd Salts and Metals.

4*thly*, The Air being render'd heavier from theſe and the like Cauſes, is thereby the more able to ſupport the Vapours; which being likewiſe intimately mix'd with it, and ſwimming every where equably throughout it, make the Weather ſerene and fair: Again, the Air being made lighter from the contrary Cauſes, it becomes unable to ſupport the Vapours wherewith it is replete; theſe therefore precipitating are gathered into Clouds, and thoſe in their Progreſs coaleſce into Drops of Rain.

Theſe things obſerv'd, it appears pretty evident, that the ſame Cauſes which increaſe the Weight of the Air, and make it more able to ſupport the Mercury in the *Barometer*, do likewiſe make a ſerene Sky, and a dry Seaſon; and the ſame Cauſes which render the Air lighter, and leſs able to ſupport the Mercury, do likewiſe generate Clouds and Rain.

Hence, 1*ſt*, When the Air is lighteſt, and the Mercury in the *Barometer* loweſt, the Clouds are very low, and move ſwiftly; and when after Rain the Clouds break, and a calm Sky again ſhines forth, being purg'd of its Vapours, it appears exceedingly bright and tranſparent, and affords an eaſy Proſpect of remote Objects.

2*dly*, When the Air is heavier, and the Mercury ſtands higher in the Tube, the Weather is calm, tho ſomewhat leſs clear, by reaſon the Vapours are diſpers'd every where equally; if any Clouds now appear, they are very high, and move ſlowly. And when the Air is heavieſt of all, the Earth is frequently found envelop'd in pretty thick Clouds, which appear to be form'd out of the groſſer Exhalations, and which the Air is then able to ſuſtain, tho a lighter *Atmoſphere* could not.

3*dly*, Hence it is, that with us the Mercury ſtands higheſt in the coldeſt Seaſons, and when the Wind blows from the North or North-Eaſt Corner: for in that Caſe there are two Winds blowing towards us at the ſame time, and from oppoſite Corners; there being a conſtant Weſt Wind found in the *Atlantick* Ocean, at the Latitude correſponding to ours. To which we may add, that in a North Wind, the cold condens'd Air of the Northern Parts is brought hither.

4*thly*, Hence, in the Northern Regions, the Variation of the Mercury is more ſenſible than in the Southern ones; the Winds being found both more ſtrong, more frequent, more various, and more oppoſite to each other in the former than the latter.

Laſtly, Hence it is, that between the Tropicks, the Variation of the Mercury is ſcarce ſenſible; the Winds there being extremely gentle, and uſually blowing the ſame way.

Now, this Account, however well adapted to many of the particular Caſes of the *Barometer*, yet comes ſhort of ſome of the principal and moſt obvious ones; and is, beſides, liable to ſeveral Objections.

For, 1*ſt*, If the Wind were the ſole Agent in effecting theſe Alterations, we ſhould have no Alterations without a ſenſible Wind, nor any Wind without ſome Alteration of the Mercury; both which are contrary to Experience.

2*dly*, If two Winds be ſuppos'd blowing from the ſame Place, *viz.* *London*, oppoſite ways, *viz.* N. E. and S. W. there will be two others, blowing from oppoſite Points, *viz.* N. W. and S. E. to the ſame Place; which two laſt will balance the firſt, and bring as much Air towards the Point, as the others ſwept from it. Or thus, In proportion as the Air is carried off N. E. and S. W. the adjacent Air will croud in from the other Points, and form a couple of new Currents in the Direction N. W. and S. E. to fill up the Vacancy, and reſtore the *Æquilibrium*. This is a neceſſary Conſequence from the Laws of Fluids.

3*dly*, If the Wind were the ſole Agent, the Alterations in the Height of the Mercury wou'd only be relative or topical; there would be ſtill the ſame Quantity ſupported at ſeveral Places taken collectively: Thus what a Tube at *London* loſt, another at *Paris*, or at *Piſa*, or at *Zurich*, &c. wou'd at the ſame time gain. But we find the very contrary true in Fact; for from all the Obſervations hitherto made, the *Barometers* in ſeveral Parts of the Globe riſe and fall together; ſo that it muſt be ſome Alteration in the abſolute Weight of the *Atmoſphere*, that accounts for the Riſe and Fall of the Mercury.

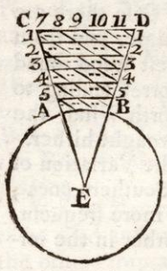
Laſtly, Setting aſide all Objections, theſe popular Phænomena, the Mercury's Fall before, and Riſe after Rain, are really inexplicable on the foot of this Hypotheſis: for, ſuppoſe two contrary Winds ſweeping the Air from over *London*: we know that few, if any, of the Winds reach above a Mile high; all therefore they can do, will be to cut off a certain Part of the Column of Air over *London*: If the Conſequence of this be the Fall of the Mercury, yet there is no apparent Reaſon for the Rains following it. The Vapours indeed, may be let lower, but 'twill only be till they come into an Air of the ſame ſpecifick Gravity with themſelves; and there they will ſtick as before.

M. *Leibnitz* endeavours to ſupply the Defects of this Hypotheſis with a new one of his own. He aſſerts, that a Body immers'd in a Fluid, only weighs with that Fluid while it is ſuſtained thereby; ſo that when it ceaſes to be ſuſ-

tain'd, *i. e.* to fall, its Weight ceaſes to make a Part of that of the Fluid; which by this means becomes lighter. Thus, adds he, the watery Vapours, while ſuſtain'd in the Air, increaſe its Weight; but when let fall, ceaſe to weigh along with it. Thus the Weight of the Air is diminiſh'd; and thus the Mercury falls, and Rain enſues.

But M. *Leibnitz*'s Principle, notwithſtanding the Experiment he brings to confirm it, is falſe, as has been made appear by a counter-Experiment of Dr. *Deſaguliers*. For, a Body, whether ſpecifically equal, or lighter, or heavier than a Fluid, while it is immerg'd in it, whether it be at Reſt or in Motion, adds to the Fluid a Weight equivalent to that of an equal Bulk of the Fluid; as follows from that Law in *Hydroſtaticks*, *That Fluids gravitate according to their perpendicular Altitudes*. However, were M. *Leibnitz*'s Principle true, yet 'tis defective; and that in the ſame reſpect with Dr. *Halley*'s: Nor wou'd it account for the Phænomena more than the other. For, ſuppoſing the Vapours, by being condens'd, to be put in a Motion downwards, and ſo ceaſing to gravitate with the *Atmoſphere*; they will therefore fall, till they reach a Part of the *Atmoſphere* of the ſame ſpecifick Gravity with themſelves; and there they will hang as before. If the Mercury fall, 'twill only be during the Time of that Deſcent; for theſe once fix'd, the former Gravity is retriev'd; or, were it not retriev'd, yet no Rain wou'd enſue the Fall of the Mercury.

If it might be allow'd us to add any thing after theſe great Men, it ſhould be as follows: Suppoſe any Number of watery Veſicles, *v. g.* a Million, floating in any Part of the *Atmoſphere*, over any determinate Portion of the Globe; for inſtance, over A B. If the upper Veſicles be condens'd by the Cold of the upper Regions, their ſpecifick Gravity will be increas'd, and they will deſcend; the Horizontal Claſs 1 *v. g.* to 2, 2 to 3, *&c.* where meeting with other Veſicles not yet precipitated, they will coaleſce, or run into larger Veſicles, by the known Laws of Attraction. Or, if we rather chuſe to have the Wind act, let it drive either horizontally, or obliquely: In the former Caſe, the Veſicles, Claſs 8, will be driven againſt 9; that, againſt 10, *&c.* or the oblique Claſs A 7, driven againſt 5, 8 againſt 4, *&c.* By this means likewiſe will the Particles coaleſce, and form new and larger Veſicles, as before; ſo that their Number, which before was a Million, will now be reduced, *v. g.* to a Hundred Thouſand: But by the ſame Coalition whereby their Number is diminiſh'd, their ſpecifick Gravity is increas'd, *i. e.* they come to have more Matter in the ſame Space, or under the ſame Surface; as may be eaſily prov'd from Principles of Geometry: For, in augmenting the Maſs of any homogeneous Body, the Increaſe of Surface does not keep pace with that of the Solidity; but that of the former, is as the Square of the Diameter; and that of the latter, as the Cube of the ſame. If then the Diameter of a Veſicle were 4, and its Surface and Maſs 24; after Coalition, if its Diameter be 6, its Surface or Bulk will be 54, and its ſolid Content 81. But ſince the ſame Quantity of Matter is now in a leſs Space, or under leſs Dimenſions, it will loſe leſs of its Weight by the Reſiſtance of the Medium. This is evident; for, a Body immerg'd in a Fluid, loſes nothing of its Weight, but by the Friction of its Parts againſt thoſe of the Fluid; but the Friction is evidently as the Surface: therefore, where the Surface is leſſen'd, the Reſiſtance muſt be ſo too. Conſequently, the Veſicles, whoſe Gravity before the Coalition was equal to the Reſiſtance of the Medium, now that Reſiſtance is diminiſh'd, will deſcend; and that with a Velocity, in a *Ratio* of the Increaſe of the Maſs to the Increaſe of the Surface. In their Deſcent, as they arrive at denſer Parts of the *Atmoſphere*, *v. g.* at 4, 5, *&c.* their Maſs and Surface again will be increas'd by new Coalitions; and thus, by conſtant freſh Acceſſions, more than equal to the conſtant Reſiſtances, they will be enabled to purſue their Journey thro all the Stages of the Air, till they reach the Earth; their Maſſes exceedingly magnified; and in the form of Rain.



Now that the Vapours are got down, let us conſider how the *Barometer* muſt have been affected in their Paſſage. E'er any of the Veſicles began to ſubſide, either from the Action of the Cold, or of the Wind, they all floated in the Portion of the *Atmoſphere* A B C D, and all gravitated towards the Centre E. Here now, each reſpectively reſiding in a Part of the Medium of the ſame ſpecifick Gravity with it ſelf, will loſe as much of its Weight, as is equal to that of a Part of the Medium of the ſame Bulk with itſelf, *i. e.* each will loſe all its Weight. But then, whatever Weight each loſes, it communicates to the Medium, which now preſſes on the Surface of the Earth A B, with its own Weight, and that of the Veſicles conjointly. Suppoſe then, this united Preſſure keeps up the Mercury in the *Barometer* at 30 Inches: By the Coalition of the Veſicles from the Cauſes aforeſaid, their Surfaces, and conſequently their Friction is leſſen'd: They will therefore communicate leſs of their Weight to the Air, *i. e.* leſs than the whole; and conſequently will deſcend with the Exceſs, *i. e.* with a Velocity equal to the Remainder, as before obſerv'd. Now as the Veſicles can act no otherwiſe on the Surface of the Earth AB, but by the Mediation of the interjacent Air; in proportion as their Action on the Medium is leſs, their Action on the Earth will be leſs. 'Tis alſo evident, that the Surface of the Earth A B, muſt be now leſs preſs'd than before; and that in proportion, as the Veſicles reſerve more of their Weight uncommunicated to the Medium, to promote their own Deſcent, *i. e.* in proportion to the Velocity of the falling Veſicles; which is, again, in proportion to their Bulks. Thus, as the Veſicles deſcend; their Bulks continually increaſing, the Friction, and therefore the Preſſure on the Earth, and laſtly, the Height of the Mercury, will continually decreaſe, during the whole time of the Fall. Hence we ſee, both why the Veſicles, when once beginning to fall, perſevere; why the Mercury begins to fall at the ſame time; and why it continues and ceaſes to fall together with 'em: which were the great Deſiderata in the Philoſophy of the *Barometer*.

I ſee but one Objection that lies againſt this Theory; and 'tis this, That the Veſicles being put in Motion, and ſtriking againſt the Particles of the Medium and one another with ſome Moment, will meet with a conſiderable Reſiſtance from the *Vis Inertiæ* thereof; by which means their Deſcent will be retarded, and the Preſſure of the *Atmoſphere* retriev'd; the *Impetus* of the moving Veſicles being ſuppoſed to compenſate for their Loſs of Surface. Thus a heavy Body, ſuſtain'd in a Fluid by a Hair, and moved up and down therein, preſſes more on the Bottom, than when held at Reſt; which additional Preſſure will be the greater, as the Velocity of the falling Veſicles is the greater; a greater Impulſe being requir'd to break thro the *Vis Inertiæ* of the contiguous Particles, in a leſs time than in a larger. But we have both Reaſon and Experiment againſt this Objection: For, beſides that the Velocity of the Veſicles, in theſe Circumſtances, muſt be very ſmall, and their Impulſe inconſiderable; beſides, that the *Vis Inertiæ* of the Air muſt be exceedingly weak, by reaſon of its extreme Subtility; and that it muſt be a very improper Vehicle to convey an Impulſe to a Diſtance, by reaſon of its Elaſticity: we find, that even in Water, (a groſs un-elaſtick Medium) and a Piece of Lead, (a ponderous Body which falls with a great Moment) that even here the Body, in its Deſcent thro the Fluid, gravitates conſiderably leſs than when ſuſtain'd at Reſt therein: In which the ſeveral Experiments of *Reaumer*, *Ramazzini*, and *Deſaguliers*, all agree.

BARON, a Term uſed in various Senſes: Firſt, as a Degree of Nobility next below a Viſcount, and above a Gentleman; in which Senſe it is the ſame as in other Nations, where *Baroniæ* are *Provinciæ*; and Barons are thoſe who have the Government of Provinces, as their Fee holden of the King, ſome having greater, ſome leſs Authority within their Territories: and, probably, all thoſe were call'd *Barons* that had ſuch Seigniories or Lordſhips, as are now call'd *Court-Barons*; who are the ſame with *Seigneurs* in *France*. Soon after the Conqueſt, all ſuch came to Parliament, and ſat as Peers in the Upper Houſe; but growing very numerous, it was in the Reign of King *John* ordain'd, that none but the *Barones majores* ſhould, for their extraordinary Wiſdom, Intereſt, or Quality, be ſummon'd to Parliament. But this State of the Nobility being very precarious, and depending ſolely on the Prince's Pleaſure, they at length obtain'd of the King Letters-Patent of this Dignity to them and their Heirs Male; and theſe were call'd *Barons by Patent*, or *Creation*, whoſe Poſterity are now by Inheritance Lords of Parliament; of which kind the King may create at his Pleaſure. Nevertheleſs, there are *Barons by Writ*, as well as *Letters-Patent*; thoſe who were firſt *by Writ*, may now juſtly be call'd *Baron by Preſcription*, for that they and their Anceſtors have continued *Barons* beyond the Memory of Man, and by having their *Sirnames* annex'd to the Title of *Lord*; whereas *Barons by Patent* are named by their *Baronies*. The Original of *Barons by Writ*, *Camden* refers to *Henry* III. and *Barons by Patent*, or *Creation*, commenc'd in the time of *Richard* II. To theſe there is a third kind added, call'd *Barons by Tenure*, and ſuch are the Lords the Biſhops, who, by virtue of *Baronies* annex'd to their Biſhopricks, ſit in the Upper Houſe of Parliament, and are call'd *Lords Spiritual*. Formerly all Men were call'd *Barons*, at leaſt all of the King's Family, or that held immediately of him. *Chamberlain* obſerves, that from the Time of the Suppreſſion of the Rebellion of the *Barons* by *Henry* III. only ſuch among 'em as had continued loyal, were call'd *by Writ* to Parliament; and that thoſe only were reputed *Peers of the Realm*, who were thus call'd *by Writ*; and thus the others loſt their *Peerage*. Antiently the *Earls Palatine*, and *Earls Marches of England*

land had their *Barons*; and in *Cheſhire* there is one ſtill ſubſiſting, *viz.* the *Barony of Burford*. But as no Biſhop, but thoſe who hold immediately of the King, are *Peers of the Realm*, (for the Biſhop of *Sodor* and *Man*, holding immediately of the Earl of *Derby*, is no *Peer of England*,) ſo no *Baron*, but thoſe who hold immediately of the King, are *Peers of the Realm*. See *Peer*.

Baron is alſo us'd for an Officer; as the *Barons of the Exchequer*; of whom the *Lord Chief Baron* is the chief; three others are his Aſſiſtants, in Cauſes of Juſtice between the King and his Subjects, touching Matters belonging to the *Exchequer* and the King's Revenue. They are call'd *Barons*, becauſe *Barons of the Realm* were us'd to be imploy'd in that Office. Their Office is alſo to look to the Accompts of the King; to which end they have *Auditors* under them; as well as to decide Cauſes relating to the Revenue, brought by any means into the *Exchequer*. So that of late they have been conſtantly Perſons learn'd in the Law; whereas formerly they were *Majores & diſcretiores in Regno, ſive de Clero eſſent, ſive de Curia*. Sir *William Temple* ſays, that *Baronies* were originally the larger Shares of the Lands of conquer'd Countries, which the *Northern* Invaders, ſuch as the *Goths*, &c. uſed to divide among their Generals, and chief Commanders; as the ſmaller Shares, divided among the Soldiers, were call'd *Feuda*, or *Fees*.

There are alſo *Barons of the Cinque-Ports*; which are Members of the Houſe of Commons; two ſtand for each Port. (See *Cinque-Port*.) *Baron* is alſo uſed for the Huſband, in relation to the Wife; which two in Law are call'd *Baron and Feme*. The Chief Magiſtrates alſo of the City of *London*, before they had a *Lord-Mayor*, were call'd *Barons*.

Menage derives the Word *Baron* from the Latin *Baro*, a ſtrong valiant Man. Others from the German *bawer*, Peaſant. *Iſidore*, and after him *Camden*, take the Word in its original Senſe to ſignify, *a mercenary Soldier*. The Meſſieurs of the *Port Royal* derive it from βαρὺς, *Authority, Power*. *Cicero* uſes the Word *Baro* for a *ſtupid brutal Man*. And the old *Germans* make mention of *buffeting a Baron*, i. e. *a Villain*. The *Italians* uſe the Word *Barone* to ſignify *a Beggar*, and *baronare*, *to beg*. Others, again, derive it from the *old Gauliſh*, *Celtick*, and *Hebrew* Languages: but the moſt probable Opinion is, that it comes from the Spaniſh *Varo*, a ſtout noble Perſon; whence Wives come to call their Huſbands, and Princes their Tenants, *Barons*. In the *Salick* Laws, as well as the Laws of the *Lombards*, the Word *Baron* ſignifies *a Man*. In the general and the old Gloſſary of *Philomenes*, he tranſlates *Baron* by ἀνηρ, *Man*. M. *de Marca* and *Camden*, derive it from the German *Bar*, *Man*, or *Freeman*: Others again from *Banner haires*, Enſign-Bearer.

BARON AND FEME, a Term in Heraldry, when the Coat of Arms of a Man and his Wife are born *per* Pale in the ſame Eſcutcheon, the Man's being always on the Dexter Side, and the Woman's always on the Siniſter: But here the Wife is not an Heireſs; for then her Coat muſt be born by the Husband on an Ineſcutcheon, or Eſcutcheon of Pretence.

BARONET, a Diminutive of *Baron*, a Dignity or Degree of Honour next beneath a *Baron*, and above a *Knight*, having Precedency of all other *Knights*, excepting thoſe of the *Garter*. 'Tis given by Patent, and is the loweſt Degree of Honour that is Hereditary. The Word *Baronet* is uſed in ſome of our old Statutes, &c. for *Banneret*; particularly in a Statute of *Richard* II. The Order of *Baronets* was founded by King *James* I, in 1611, who rais'd 'em in lieu of *Knights Bannerets*; or, as others will have it, in lieu of the antient *Valvaſors*. They had ſeveral conſiderable Privileges given 'em, with an *Habendum* to them and their Heirs Male. They were allow'd to charge their Coat with the Arms of *Ulſter*, which are in a Field Argent a Hand Gules; and that upon condition of their defending the Province of *Ulſter*, in *Ireland*, againſt the Rebels, who then haraſs'd it extremely; and, to that end, were to raiſe and keep up 30 Soldiers, at their own Expence, for three Years together; or, to pay into the *Exchequer*, a Sum ſufficient to do it; which, at 8 *d. per* Day *per* Head, is 1095 *l.* now always remitted 'em. Their Number was at firſt limited to 200, but was afterwards increas'd. The Title *Sir* is granted 'em by a peculiar Clauſe in their Patents, tho they be not dubb'd *Knights*. A *Baronet*, and his eldeſt Son being of full Age, may claim *Knighthood*. To be a *Baron* 'tis requir'd a Perſon have 1000 *l. per Ann.*

BARONY, the Dignity, Territory, and Fee of a *Baron*; under which Notion are not only compriz'd the Fees and Lands of *Temporal Barons*, but alſo of *Biſhops*; who, beſides their Spiritual Eſtates, have alſo Temporal ones given 'em by the King, and call'd *Baronies*; by which they become *Barons*, and are Lords of Parliament. In antient Times, 13 Knights Fees and ¼ made up a *Tenure per Baroniam*, which amounted to 400 Marks *per Ann.*

This *Barony*, according to *Bracton*, is a Right inviſible. Wherefore, if an Inheritance be to be divided among Copartners, tho ſome Capital Meſſuages may be divided, yet, if the Capital Meſſuage be the Head of a *County*, or *Barony*, it may not be parcell'd; and the Reaſon is, leſt by this Diviſion, many of the Rights of *Counties* and *Baronies*, by Degrees, come to nothing, to the Prejudice of the Realm; which is ſaid to be compos'd of *Counties* and *Baronies*. The *Baronies* belonging to Biſhops are, by ſome, call'd *Regalia*, as being held ſolely on the King's Liberality. Theſe don't conſiſt in one *Barony* alone, but in many; for, *tot erant Baroniæ, quot majora prædia*.

BAROSCOPE, a Machine to ſhew the Alterations in the Weight of the *Atmoſphere*, from βαρὺς, *onus*, and σκοπέω, *video*. See *Barometer*.

BARRATRY, in a marine Senſe, is the Maſter of a Ship's cheating the Owners or Inſurers, whether by running away with the Ship, ſinking her, deſerting her, or embezzeling the Cargo.

BARREL, a Veſſel or Meaſure for things liquid. The *Barrel*, Wine Meaſure, contains 42 Gallons, or half of a Hogſhead. Ale or Beer Meaſure, 36 Gallons, or half a Hogſhead. (See *Meaſure.*) The *Barrel* or *Barrille* of *Florence*, is a liquid Meaſure containing 20 Fiaſques, Flasks, or one third of a Star or Staio. The *Barique*, *Barrel* of *Paris*, contains 210 Pints, or 26 Septiers and an half; four *Bariques* make three Muids.

Barrel is alſo uſed for a certain Quantity, or Weight, of ſeveral Merchandizes; which is various as the Commodities vary. In this ſenſe we ſay, a *Barrel*, or *Cask*, of Herrings, or Mackerel; 12 whereof make a Laſt. A *Barrel* of Gun-powder for Ships, is ordinarily about 100 Pounds Weight. Authors derive the Word from the Spaniſh *Barril*, an earthen Veſſel with a wide Belly and narrow Neck. The *Roman Barrel*, according to *Vigenere*, contains four Congia, or 76 Pints, and weighs 170 Pounds 10 Ounces.

Barrel, in Anatomy, a pretty large Cavity behind the Drum of the Ear. It is lined with a Membrane, in which there are ſeveral Veins and Arteries. It is always full of a purulent Matter in Children; and in its Cavity there are four ſmall Bones, *viz.* the *Malleolus*, the *Incus*, the *Stapes*, and the *Os orbiculare*. See *Ear*.

BARRETOR, in Law, a common Mover or Maintainer of Suits, Quarrels, or Parties, either in Courts or elſewhere; and who is himſelf never quiet; *qui cum Terentiano Davo omnia perturbat*. *Lambard* derives the Word from the Latin *Barathro*, or *Balatro*, a vile Knave or Unthrift. *Skene* ſays, that *Barretors* are *Simoniſts*; and derives the Word from the Italian *Barrataria*, Corruption, or Bribery in a Judge.

BARRICADO, a military Term for a Fortification, or Retrenchment, haſtily made with Veſſels of Earth, Carts, Trees, &c. to preſerve an Army from the Enemy's Shot, or Aſſault. The general Matter of *Barricados* is Trees, which are croſs'd with Battoons as long as an Half-Pike, bound about with Iron at the Feet, and uſually ſet up in Paſſages, or Breaches, to keep back as well the Horſe as Foot.

BARRIER, a kind of Fortification made at a Paſſage, Retrenchment, Gate, &c. to ſtop up the Entry thereof. It is uſually made of great Stakes, about four or five Foot high, placed at the Diſtance of eight or ten Foot one from another, with overthwart Rafters, to ſtop either Horſe or Foot that wou'd ruſh in; in the middle of which is a moveable Bar of Wood, which opens and ſhuts at Pleaſure.

Barriers have been likewiſe uſed to ſignify a martial Exerciſe of Men, armed and fighting together with ſhort Swords, within certain Rails or *Bars*, whereby they are incloſed from the Spectators.

BARRISTERS, in Law, Perſons who for their long Study, and Knowledge of the Common Law, are call'd out to the *Bar*, to take on 'em the Protection, and Defence of Clients. Theſe, in other Countries, are call'd *Licentiates*. To paſs *Barriſters* they were formerly oblig'd to ſtudy eight Years, now ſeven. The Exerciſe requir'd, was 12 grand Moots perform'd in the *Inns of Chancery* in time of the grand Readings, and 24 petty Moots at the *Inns of Chancery* in Term-Time, before the Readers of the reſpective *Inns of Chancery*. A *Barriſter* newly called, is to attend the next ſix long Vacations the Exerciſe of the Houſe, *viz.* in Lent and Summer, and is thereupon for theſe three Years call'd a *Vacation Barriſter*. Theſe are call'd *Utter Barriſters*, i. e. Pleaders without the *Bar*, to diſtinguiſh 'em from *Benchers*, or thoſe who have been *Readers*, who are ſometimes admitted to plead within the *Bar*, as the King's, Queen's, or Prince's *Council* are; hence call'd *Inner Barriſters*.

BARRULET, in Heraldry, is the half of the Cloſet, and the quarter of the Bar.

BARRY; when an Eſcutcheon is divided Bar-ways into an even Number of Partitions, it is expreſs'd in Blazon by the Word *Barry*, and the Number of Pieces is to be ſpecified;

cified: But if the Diviſions be odd, then the Field muſt be firſt named, and the Number of Bars expreſſed.



BARRY-BENDY, is when an Eſcutcheon is divided evenly both Bar and Bend-ways, as thus, *Barry-Bendy*, *Or*, and *Sable*.



BARRY-PILY, is when a Coat is thus divided, and it is to be blazon'd *Barry-Pily* of eight Pieces.

BARTER, in Commerce, ſignifies to truck, or exchange one Commodity for another. The Word comes from the Spaniſh *Baratar*, to deceive or cheat in bargaining; perhaps, becauſe thoſe who deal this way, uſually endeavour to over-reach one another.

BARTON, in *Devonſhire*, and the Weſt of *England*, is uſed for the Demeſne Lands of a Mannor, for the Mannor-Houſe, and in ſome Places for Out-Houſes, Fold-Yards, &c.

BASALTES, a kind of Stone, or Marble, deſcribed by the antient Naturaliſts as of the Hardneſs and Colour of Iron. The largeſt Block of it that was ever ſeen, *Pliny* ſays, was placed by *Veſpaſian* in the Temple of *Peace*: In it were repreſented 16 Children playing on the Banks of the *Nile*. He adds, that the Statue of *Memnon*, in the Temple of *Serapis*, at *Thebes*, which neighed at the Riſing of the Sun, was made of this Stone. Moſt of the antique *Egyptian* Figures remaining, are apparently of this Stone. Some of the Antients call it *Lapis Lydius*, from *Lydia*, the Place where it was found in moſt abundance; and the Moderns, the Touch-ſtone, as being uſed to examine Gold and Silver. It was hard, heavy, cloſe, black, and reſiſted the File; and had its Name from *Baſal*, Iron, or βασανιζω, *diligenter examino*. *Dalechampius* ſays, there are Stones of the ſame kind near *Gaillon* in *Normandy*; others are brought from *Ethiopia* and *Germany*.

BASE, in Architecture, from the Greek βασις, *Reſt*, or *Support*, is uſed to ſignify any Body which bears another; but particularly for the lower Parts of a Column and a Pedeſtal. The *Baſe* is ſometimes alſo call'd *Spira*, from *Spiræ*, the Folds of a Serpent laid at Reſt, which make a Figure not unlike it.

The *Baſe of a Column* is that part between the Shaft and the Pedeſtal, if there be any Pedeſtal; or, if there be none, between the Shaft and the Plinth, or Zocle. (See *Column* and *Pedeſtal.*) The *Baſe* is ſuppoſed to be the Foot of the Column; or, as ſome will have it, 'tis that to a Column which a Shoe is to a Man. The Members or Ornaments whereof it is compoſed, are ſuppoſed by others to have been originally intended to repreſent the Iron Circles wherewith the Feet of Trees and Poſts which ſupported the antient Houſes were girt, in order to ſtrengthen them.

The Baſe is different in the different Orders.

The *Tuſcan Baſe* is the moſt ſimple of all the Orders; conſiſting only of a ſingle *Tore* beſides the *Plinth*.

The *Dorick Baſe* has an *Aſtragal* more than the *Tuſcan*; tho that was introduced by the Moderns.

The *Ionick Baſe* has a large *Tore* over two ſlender *Scotias*, ſeparated by two *Aſtragals*; tho in the moſt antient Monuments of this Order there are no *Baſes* at all; which the Architects are at a loſs to account for.

The *Corinthian Baſe* has two *Tores*, two *Scotias*, and two *Aſtragals*.

The *Compoſite* has an *Aſtragal* leſs than the *Corinthian*.

The *Attick Baſe*, ſo call'd becauſe firſt uſed by the *Athenians*, has two *Tores* and a *Scotia*, and is very proper for *Ionick* and *Compoſite* Columns.

Baſe, or *Baſis*, in Fortification, is the external Side of the *Polygon*; or, the imaginary Line which is drawn from the *flank'd Angle* of a *Baſtion*, to that which is oppoſite thereto.

Baſe of a Figure, in Geometry, is the loweſt Part of its *Perimeter*.

Baſe, in Muſick, that Part of a Conſort which is the moſt heard, which conſiſts of the graveſt, deepeſt and longeſt Sounds; or, which is play'd on the largeſt Pipes, or Strings, of a common Inſtrument, *viz.* an *Organ*, or *Lute*; or, on Inſtruments larger than ordinary, for that purpoſe, as *Baſs-Viols*, *Baſſons* or *Baſs-Hautboys*, &c. Muſicians hold the *Baſe* the principal Part of a Conſort, and the Foundation of the Compoſition: tho ſome will have the *Treble* the chief Part; which others only make a Circumſtance, or Ornament. *Counter-Baſe*, is a *ſecond Baſe*, where there are ſeveral in the ſame Conſort. *Thorough Baſe*, is the Harmony made by *Baſs-Viols*, or *Theorbos*, continuing to play, both while the Voices ſing, and the other Inſtruments perform their Part; and alſo filling the Intervals when any of thoſe ſtop. M. *Broſſard* obſerves the *Thorough-Baſe* to be a Part of the modern Muſick; firſt invented in 1600, by an *Italian*, call'd *Ludovico Viadana*. 'Tis play'd by Cyphers mark'd over the Notes, on the *Organ*, *Spinette*, *Harpſichord*, *Theorbo*, *Harp*, &c. and frequently, ſimply, and without Cyphers, on the *Baſs-Viol*, *Baſſon*, &c.

Baſe of a Triangle; any one Side thereof is occaſionally ſo call'd, tho properly 'tis the loweſt Side, or that which lies parallel to the Horizon. Indeed, in a *rectangled Triangle*, the *Baſe* is properly that Side oppoſite to the *right Angle*, i. e. the *Hypothenuſe*. The *Baſe of a ſolid Figure* is its loweſt Side, or that whereon it ſtands: *Baſe of a Conick Section* is a right Line in the *Hyperbola* and *Parabola*, made by the common Interſection of the *ſecant Plane*, and the *Baſe* of the *Cone*.

BASE-COURT, in Law, is any Court that is not of Record. See *Court*.

BASE-FEE, or *Baſe-Eſtate*, in Law, is a Baſe-Tenure, or Tenure at the Will of the Lord. See *Fee*.

BASE-POINT, in Heraldry. See *Eſcutcheon*.

BASE-RING *of a Cannon*, is the *great Ring* next behind the *Touch-hole*.

BASE-TENURE, is holding by Villanage, or other cuſtomary Service; as diſtinguiſh'd from the *higher Tenure in capite*, or by military Service. See *Tenure*.

BASIL, among Joiners, &c. the Angle to which the Edge of an Iron Tool is ground. To work on ſoft Wood they uſually make their *Baſil* 12 Degrees, for hard Wood 18; it being obſerv'd, that the more acute or thin the *Baſil* is, the better and ſmoother it cuts; and the more obtuſe, the ſtronger and fitter for Service.

Baſil, a Monaſtick Order. The Order of St. *Baſil* is the moſt antient of all the religious Orders; it takes its Name from St. *Baſil*, Biſhop of *Ceſarea*, in *Cappadocia*, who was the Author of the Rule obſerv'd by this Order. The Order of St. *Baſil* was antiently very famous in the Eaſt.

BASILARE OS. See *Sphænoides Os*.

BASILIC, or *Baſilica*, in Architecture, from the Greek βασιλικη, *royal Houſe*, or *Palace*; a Term antiently uſed for a large Hall, or publick Place, with Iſles, Porticos, Galleries, &c. where the Princes adminiſter'd Juſtice in Perſon: But the Word has been ſince transfer'd to ſignify any great Church, Court of Juſtice, or Exchange. *Azor* is of opinion, that *Baſilics* were formerly ſuch Churches as were not conſecrated: But *Baronius* ſeems to have more Reaſon, when he ſays the Term was applied to the moſt magnificent Churches; ſuch, which by their Grandeur as far ſurpaſs'd other Churches, as Princes Palaces do private Houſes. Thus we ſtill ſay, the *Baſilic of St. Peter*, for the *Church of St. Peter*, &c. M. *Perrault* ſays, that *Baſilics* differ'd from *Temples*, in that the Columns of *Temples* were without-ſide, and thoſe of *Baſilics* within. There were formerly four kinds of *Churches* at *Rome*, *viz. Patriarchal*, *Titular*, *Diaconial*, and *Oratorial*; whereof the firſt were thoſe particularly call'd *Baſilics*. See *Church* and *Temple*.

BASILICA, in Anatomy, the Name of a Vein, call'd alſo *Hepatica*; ariſing from the Axillary Branch, and running the whole Length of the Arm. It divides it ſelf into two; the one whereof runs down the *Radius*, the other down the *Ulna*; the little Branches whereof extend to the Fingers. There are two Veins of this Name; the one whereof is call'd the *ſuperficial*, or *ſubcutaneous*; the other, the *deeper* or *inner Baſilica*.

BASILICON, in Pharmacy, is an Unguent ſo call'd, compos'd of Roſin, Wax, Pitch, and Oil; which the Surgeons uſe for a *Suppurative*.

BASILICS, a Collection of the *Roman* Laws, tranſlated into Greek by the Order of *Baſilius* and *Leo*, which were of Force in the *Eaſtern* Empire till its Diſſolution. They comprehended the *Inſtitutes*, *Digeſts*, *Code*, and *Novels*, and ſome Edicts of *Juſtinian*, and other Emperors. The Collection conſiſted of 60 Books; for which reaſon it was call'd Ἑξηκονταβιβλος. It is ſuppoſed to be the Work of the Emperor *Leo*, the Philoſopher, who gave it the Name of his Father *Baſil*. Of the 60 Books, there are now remaining 41; the remaining 19 are, in ſome meaſure, ſupplied from the *Synopſis Baſilicon*, &c.

Baſilics were Officers in the *Grecian* Empire, who carried the Emperor's Orders. The Word is deriv'd from βασιλικος, *regal*.

BASILICUS, or *Cor Leonis*, is a fix'd Star of the firſt Magnitude, in the Conſtellation *Leo*. Its Longitude, Latitude, &c. ſee among thoſe of the other Stars in the Conſtellation *Leo*.

BASILIDIANS, were Hereticks, the Followers of *Baſilides*, who lived near the Beginning of the ſecond Century: He was educated in the *Gnoſtick* School over which *Simon Magus* preſided; with whom he agreed, that *Chriſt* was only a Man in Appearance, that his Body was a Phantom, and, that he gave his Form to *Simon* the *Cyrenian*, who was crucified in his Stead. He allow'd his Diſciples to renounce the Faith to avoid Martyrdom; becauſe, ſays he,

Jeſus

tended to find many Myſteries in the Name of God, by which they impoſed upon the People. They alſo invented certain Amulets, to which they attributed great Virtues. We learn from *Euſebius*, that this Impoſtor wrote 24 Books upon the Goſpels, and that he forged ſeveral Prophets; to two of which he gave the Names *Barcaba* and *Barcoph*: His Diſciples ſuppoſed there were particular Virtues in Names, and thought with *Pythagoras* and *Plato*, that Names were not found by chance, but naturally ſignified ſomething. *Baſilides*, to imitate *Pythagoras*, made his Diſciples keep ſilence for five Years.

BASIOGLOSSUM, or rather *Baſigloſſum*, in Anatomy, is a Pair of Muſcles which ariſe fleſhy from the Baſis of the *Os Hyoides*, and are inſerted into the Root of the Tongue: They ſerve to draw the Tongue towards the Bottom of the Mouth. The Word comes from the *Greek* βασις, Foundation, and γλῶσσα, *lingua*, a Tongue.

BASIS, in Anatomy, is applied to the upper and broader part of the Heart, in oppoſition to the *Mucro*, or Point; becauſe, conſidering it as a Cone, which it reſembles in Shape, this Name is proper to it, altho by its Situation it is uppermoſt. The Root of the *Os Hyoides* hath likewiſe this Name. See *Heart*.

BASON, in Anatomy, is a round Cavity in form of a Tunnel, ſituate between the anterior Ventricles of the Brain, deſcending from its Baſe, and ending in a Point at the *Glandula Pituitaria*; 'tis form'd of the *Pia Mater*, and receives the Seroſity which comes from the Brain, and paſſes thro the Pituitary Gland, and from thence into the Veins. That Capacity alſo is called *Baſon*, which is formed by the *Oſſa Ilia* and *Sacrum*, and contains the Bladder of Urine, the *Matrix*, and the Inteſtines. See *Pelvis*.

Baſons of a Balance, two Pieces of Braſs, or other Matter, faſtened to the Extremities of the Strings; the one to hold the Weight, the other the thing to be weigh'd. See *Balance*.

Baſon, or *Diſh*, among Glaſs-Grinders. They uſe various kinds of *Baſons*, of Copper, Iron, &c. and of various Forms, ſome deeper, others ſhallower, according to the Focus of the Glaſſes to be ground. In theſe *Baſons* it is, that Convex Glaſſes are form'd, as Concave ones are form'd on Spheres or Bowls. Glaſſes are work'd in Baſons two ways: In the firſt the *Baſon* is fitted to the Arbor, or Tree, of a Lath, and the Glaſs (fix'd with Cement to a Handle of Wood) preſented and held faſt in the Right Hand within the *Baſon*, while the proper Motion is given by the Foot to the *Baſon*: In the other, the *Baſon* is fix'd to a Stand, or Block, and the Glaſs with its wooden Handle moved. The *moveable Baſons* are very ſmall, ſeldom exceeding five or ſix Inches in Diameter; the others are larger, ſometimes above ten Foot Diameter. After the Glaſs has been ground in the *Baſon*, 'tis brought ſmoother with Greaſe and Emery; and poliſh'd firſt with Tripoli, and finiſh'd with Paper cemented to the Bottom of the *Baſon*. See *Glaſs*, *Lens*, *Mirror*.

Baſon, among Hatters, a large round Shell, or Caſe, ordinarily of Iron, placed over a Furnace; wherein the Matter of the Hat is moulded into Form. The Hatters have alſo *Baſons* for the Brims of Hats, uſually of Lead, having an Aperture in the middle, of a Diameter ſufficient for the largeſt Block to go through. See *Hat*.

Baſon is alſo uſed on various Occaſions for a Reſervatory of Water; as, the *Baſon* of a *Jet d'Eau*, or Fountain; the Baſon of a Port, of a Bath, &c. which laſt *Vitruvius* calls *Labrum*. See *Fountain*.

BASS-VIOL, a Muſical Inſtrument, of the ſame Form with that of the *Violin*, except that 'tis much larger. 'Tis ſtruck like that, with a Bow; but has Strings and eight Stops, divided into Half-Stops, or Semi-Tones. The Sound it yields is much more grave, ſweet, and agreeable, than that of the *Violin*, and of much better effect in a Conſort. See *Violin*.

BASSON, or *Baſſoon*, a Muſical Inſtrument of the Wind Kind, ſerving for the *Baſe* in Conſorts of Muſick, Hautboys, &c. To make it more portable it divides into two Parts: Its Diameter at Bottom is nine Inches, and its Holes are ſtopp'd with Keys, &c. like large Flutes.

BASSO RELIEVO, or *Baſs Relief*, a Piece of Sculpture, the Figures whereof do not project far, or ſtand out from the Ground with their full Proportion. M. *Felibin* diſtinguiſhes three Kinds of *Baſſo Relievo*'s; in the firſt the Front Figures appear almoſt with their full *Relievo*, in the ſecond they do but ſtand out one half, and in the third much leſs, as in Coins, Vaſes, &c. See *Relievo*.

BASTARD, a natural Child, or one born out of lawful Wedlock: differing from one born in Adultery, or Inceſt, in that the Perſons concern'd are free, or allow'd to marry. See *Marriage*, *Adultery*, *Concubines*, &c.

The *Baſtards*, or natural Sons of a King in *France*, are Princes when own'd; thoſe of a Prince, or Nobleman, are Gentlemen; but thoſe of a Gentleman are only Plebeians, and pay Taxes. *Baſtards* cannot ſucceed before they are legitimated; nor have Succeſſors except their own Children begot in Wedlock; otherwiſe their Succeſſion belongs to the King. By the *Roman* Law the Mother ſucceeded her Baſtard-Child, & *vice verſa*: But there was a great Difference between *Baſtards* and thoſe they call'd *Spurious*. The Law did not own the latter, nor allow them Suſtenance, becauſe they were born in common and uncertain Proſtitution. *Is non habet Patrem, cui Pater eſt Populus*. The former ſort, born in Concubinage, which reſembles Marriage, ſucceeded their Mothers, and had a Right to demand Suſtenance of their natural Fathers. They were look'd upon as domeſtick Creditors, that ought to be treated the more favourably, for being the innocent Product of their Parents Crimes. *Solon* would have it, that the Parents ſhould be deprived of their paternal Authority over their *Baſtards*, becauſe, as they were only Parents for Pleaſure, that ought to be their only Reward. Antiently in *Rome*, natural Children were quite excluded from ſucceeding their Father *ab inteſtat.* but they might be appointed Heirs in general. The Emperors *Arcadius* and *Honorius* made a Reſtriction, that when there were legitimate Children, the *Baſtards* ſhould only come in for a Twelfth, to be ſhared with their Mother. *Juſtinian* afterwards ordered, that they might come in for Half; and ſucceed *ab inteſtat.* for a Sixth, when there were Legitimates. *Baſtards* might be legitimated by ſubſequent Marriage, or by the Prince's Letters. Only the King in *France* can give a Right of Legitimacy, and a Power to ſucceed. The Emperor *Anaſtaſius* allow'd Fathers to legitimate their *Baſtards* by Adoption alone: But this was aboliſhed by *Juſtin* and *Juſtinian*, leſt by this Indulgence they ſhould authorize Concubinage. The Pope has ſometimes legitimated *Baſtards*. Nay, the Holy See has ſometimes diſpens'd not only with Illegitimates, but the Offſpring of Adultery, as to Spiritual Conſiderations, in allowing of their Promotion to Epiſcopacy. *Baſtards* not legitimated, may diſpoſe of their Goods by Donation among the Living, or by Will. Thoſe legitimated by ſubſequent Marriage, are in the ſame State, and enjoy the ſame Rights, with thoſe born in Wedlock: But thoſe who are legitimated by the King's Letters, are not eſteemed legitimate, or capable of ſucceeding, but with regard to ſuch of their Parents as have conſented to their Legitimation. Pope *Clement* VII, by his Bull, forbad a Prieſt to reſign his Benefice to his *Baſtard*. A *Baſtard*'s Arms ſhould be croſſed with a Bar, or Fillet, from the Left to the Right. They were not formerly allow'd to carry the Arms of their Father, and therefore they invented Arms for themſelves; and this is ſtill done by the natural Sons of a King. *Baſtards* cannot be admitted to ſimple Benefices, or the loweſt Orders, without a Diſpenſation from the Biſhop; or into Holy Orders, or a more than ſimple Benefice, without one from the Pope: nor are they allow'd to bear Office without the Prince's Letters.

A *Baſtard*, by the Law of *England*, cannot inherit Land as Heir to his Father; nor can any Perſon inherit Land as Heir to him, but one that is Heir of his Body. If a Child be begotten by him, who doth marry the Woman after the Child's Birth, yet is it in Judgment of the Law a *Baſtard*, tho the Church holds it legitimate. If a Man take a Wife who is great with Child by another, not her Husband, it is call'd the Child, and may be the Heir of the Husband, tho it were born but one Day after the Eſpouſals ſolemniz'd. If one marry a Woman and die before Night, and never bed her, and ſhe have a Child after, it is accounted his Child, and legitimate. If a Man or Woman marry again, and have Iſſue by the ſecond Wife or Husband, whilſt the firſt is living, ſuch Iſſue is a *Baſtard*. If a Woman elope with a Stranger, and hath a Child by him, her Husband being within the four Seas, this is legitimate, and ſhall inherit the Husband's Lands. He that gets a *Baſtard* in the Hundred of *Middleton*, in *Kent*, forfeits all his Goods and Chattels to the King.

BASTERNA, a Kind of Vehicle, or Chariot, uſed by the antient *Roman* Ladies. *Salmaſius* obſerves, that the *Baſterna* ſucceeded the *Litter*; from whence it differ'd very little, except that the *Litter* was borne on the Shoulders of Slaves, and the *Baſterna* by Beaſts. *Caſaubon* ſays, it was borne by Mules. *F. Daniel*, *Mabillon*, &c. call it a Kind of Chariot, and ſay it was drawn by Oxen, to go the more gently: And *Gregory de Tours* gives an Inſtance of its being borne by wild Bulls. The Inſide they call'd *Cavea*, Cage; and it had ſoft Cuſhions or Beds, beſides Glaſſes on each Side, like our Chariots. The Mode of *Baſterna's* paſſed from *Italy* into *Gaul*, and thence into other Countries; and to this we owe our Chariots; which, tho we call 'em *Currus*, yet have they no Conformity to the antient *Currus*, but are in effect *Baſterna's* improv'd. *Papias* thinks, that *Baſterna* is wrote for *Veſterna*: *Roſweid* ſays, it ſhould be *Vix Sterna*, which he concludes from *Iſidore*, who ſays, *Baſterna*, *Viæ ſterna*. The Word, however, ſeems derived from βάζω or βάσκω, I carry; or from βάσις, any thing proper for a Carriage. See *Coach*.

BASTILE, is a ſmall antique fortified Caſtle with Turrets, made uſe of, at preſent, for Priſons; as that at *Paris*, built by *Charles* V. 1369. which alone has retained this Name. Originally, it ſignified a Redoubt before a Place beſieg'd.

BASTION, in the Modern Fortification, a huge Maſs of Earth uſually faced with Sods, ſometimes with Brick, rarely with Stone, ſtanding out from a Rampart, whereof it is a principal Part. This is what in the antient Fortification was called *Bulwark*. A *Baſtion* conſiſts of two Faces and two Flanks. The Faces are the Lines B C and C D, (*Tab. Fortification*, *Fig.* 1.) including the Angle of the *Baſtion*: The Flanks are the Lines B A, S D. The Union of the two Faces makes the outmoſt or ſaliant Angle, called alſo the *Angle of the Baſtion*: The Union of the two Faces to the two Flanks, makes the Side Angles, called the *Shoulders* or *Epaules*: And the Union of the two other Ends of the Flanks to the two Curtains, the Angles of the Flanks. *Baſtions* are either ſolid or hollow.

The Foundation of the *Baſtion* is that great Rule in Fortification, *viz.* That every Part of the Works muſt be ſeen and defended, from ſome other Part: Mere Angles therefore are not ſufficient, but Flanks and Faces are indiſpenſably requiſite. If the *Baſtions* E F G and H I K conſiſted of Faces alone, the Angles G and H could not be defended from the Lines F G or I H. But if the *Baſtion* conſiſts of Flanks and Faces, as A B C S D, all the Points may be defended from the Flanks; there being none *v. g.* in the Face B C, but what may be defended from the oppoſite Flank E L, nor any in the Curtain A E, but may be defended from the adjacent Flanks B A and E L; nor any in one Flank B A, but may be defended from the other E L. For the Proportions of the Faces are not to be leſs than 24 *Rhineland* Perches, nor more than 30. The Flanks are better as they are longer, provided they ſtand at the ſame Angle of the Line of Defence: Hence the Flank muſt ſtand at right Angles to the Line of Defence. Indeed, in the antient Fortification, the Flank is made perpendicular to the Courtine, ſo as to have the Angle out of the Enemies Eye; but this is now provided for, by ſinking the lower Part of the Flank two or three Perches, as the Line A S, nearer the Axis of the Baſtion C H: Which Part thus ſunk, is better if made concave, than rectilinear, and if double, with a Ditch between, than if ſingle. The Diſpoſition of the Flanks makes the principal Part of Fortification; 'tis that on which the Defence principally depends, and which has introduced the various Forms and Manners of Fortifying. If the Angle of the *Baſtion* be leſs than 60 Degrees, it will be too ſmall to give Room for Guns; and beſides, ſo acute as to be eaſily beaten down by the Enemies Guns; to which may be added, that it will either render the Line of Defence too long, or the Flanks too ſhort: It muſt therefore be more than 60 Degrees; but whether or no it ſhould be a right Angle, or ſome intermediate Angle between 60 and 90, or even whether or no it ſhould exceed a right Angle, is ſtill diſputed. Hence it follows, that a Triangle can never be fortified, in regard either ſome or all of the Angles will be either 60 Degrees, or leſs than 60. See *Fortification*.

Solid Baſtions are thoſe that are fill'd up entirely, and have the Earth equal to the Height of the Rampart, without any void Space towards the Centre. *Void* or *hollow Baſtions* are thoſe that have a Rampart, or Parapet, ranging only round about their Flanks and Faces, ſo that a void Space is left towards the Centre; and the Ground is there ſo low, that if the Rampart be taken, no Retrenchment can be made in the Centre, but what will lie under the Fire of the Beſieged.

A *Flat Baſtion* is a *Baſtion* built in the middle of a Courtain, when it is too long to be defended by the *Baſtion*, at its Extremes: Dr. *Harris* ſays, 'tis a *Baſtion* built on a right Line.

A *Cut Baſtion* is that which has a re-entring Angle at the Point; ſometimes alſo called *Baſtion with a Tenaille*; uſed, when without ſuch a Contrivance the Angle would be too acute. We likewiſe give the Term *Cut Baſtion* to ſuch a one as is cut off from the Place by ſome Ditch, &c. ſome modern Engineers having found the Art of Fortifying by Pieces detach'd from the reſt. Theſe are alſo called *Ravelines*.

A *Compoſed Baſtion* is when the two Sides of the interior Polygon are very unequal, which makes the Gorges alſo unequal.

A *Regular Baſtion* is that which hath its due Proportion of Faces, Flanks, and Gorges.

A *Deformed* or *Irregular Baſtion* is that which wants one of its Demi-Gorges; one Side of the interior Polygon being too ſhort. See *Gorge*.

A *Demi-Baſtion* hath but one Face and Flank. To fortify the Angle of a Place that is too acute, they cut the Point, and place two *Demi-Baſtions*, which make a *Tenaille*, or a re-entring Angle. Their chief Uſe is before a Hornwork or Crownwork. See *Tenaille*.

A *Double Baſtion* is that, which on the Plain of the great *Baſtion* hath another *Baſtion* built higher; leaving 12 or 18 Feet between the Parapet of the lower and the Foot of the higher.

BASTON, in Law, is uſed for one of the Wardens of the Fleet; being Officers who attend the King's Courts with a red Staff, for taking ſuch to Ward as are committed by the Court. See *Warden*.

BATCHELOR, in a College Senſe, a Perſon poſſeſs'd of the *Bacculaureate*, which is the firſt Degree in the Liberal Arts or Sciences. At *Oxford*, e'er a Perſon be entitled to the Degree of *Batchelor of Arts*, he muſt have ſtudied there four Years; three Years more to become *Maſter of Arts*; and ſeven more to commence *Batchelor of Divinity*. At *Cambridge*, to commence *Batchelor of Arts*, he muſt have reſided three Years; three Years more to commence *Maſter*; and ſeven more ſtill to become *Batchelor of Divinity*. He may commence *Batchelor of Law* after having ſtudied it ſix Years. See *Degree*.

In *France*, e'er the Theology-Chairs were founded, they had their *Baccularei Curſores*, and *Baccularei Formati*; the former whereof were yet in their Courſe, or had not yet paſs'd thro their Offices; and the latter had. The *Curſores* were again divided into *Baccularei Biblici*, who explain'd the Scriptures, and *Baccularei Sententiarii*, who explain'd the Maſter of the Sentences.

There is ſcarce any Word whoſe Origin is more controverted among the Criticks than that of *Batchelor*, *Baccularius*. *Martinius* derives the Word from the *Latin Baccalaurea*, *quaſi bacca laurea donatus*; in alluſion to the Cuſtom that antiently obtain'd, of crowning the Poets with Laurel, *baccis lauri*, as *Petrarch* was at *Rome* in 1341; and *Alicatus* and *Vives* are of the ſame Opinion. *Rhenanus* derives it from *Baculus* or *Bacillus*, a Staff, becauſe at their Commencement a Staff was put into their Hands, as a Symbol of their Authority, of their Studies being finiſh'd, and of the Liberty they were reſtored to. Thus the antient Gladiators had a Staff given 'em as a Diſcharge, which *Horace* calls *rude Donatus*. But *Spelman* rejects this Opinion, in regard there is no Appearance, that the Ceremony of putting a Staff in the Hand was ever uſed in the creating of *Batchelors*.

Batchelor was alſo a Title given to a young Cavalier, who made his firſt Campaign, and received the military Girdle accordingly. *Cambden* defines a *Batchelor*, a Perſon of a middle Degree between a ſimple Knight and a 'Squire: Or, as ſome will have it, *Batchelor* was a common Name for all the Degrees between a mere Gentleman and a Baron: Thus we find the Lord Admiral ſometimes ſo call'd. See *Knight Batchelor*.

Knights Batchelors were antiently ſo call'd, *quaſi Bas Chevaliers*, as being the loweſt Order of Knights, or inferior to Bannerets, &c. See *Knight*. At preſent theſe are call'd *Equites Aurati*, from the gilt Spurs that are put on 'em at the time of their Creation. The Dignity was at firſt confined to the military Men, but afterwards was confer'd on Men of the Robe. The Ceremony is exceedingly ſimple; the Candidate kneeling down, the King touches him lightly with a naked Sword, and ſays, *Sois Chevalier*, *au nom de Dieu*; and afterwards, *Avance Chevalier*. *Loyſeau* derives the Word, in this Senſe, from *Bas Eſchelon*, as being the laſt of the military Orders; *Cujas*, from *Buccellarius*, a kind of Knights antiently in great Eſteem; *Du Cange*, from *Baccalaria*, a kind of Fees, or Farm conſiſting of ſeveral Pieces of Ground, each whereof contain'd 12 Acres, or as much as two Oxen wou'd plough; the Poſſeſſors of which *Baccalaria* were call'd *Batchelors*: He adds, that *Batchelor* ſometimes ſignifies *Labourer*, and ſometimes a *Freeman of a City*. A *Batchelor of Arms* was a Name formerly given to a Perſon who came off Victor in his firſt Engagement. Laſtly, *Caſeneuve* and *Altaterra* derive the Word *Batchelor* from *Baculus*, a Staff, in regard the young Cavaliers exerciſed themſelves in fighting with Staffs and Bucklers: Which Opinion is confirm'd from their being call'd *Baculares* in *Oderic*, and *Bacularii* by *Walſingham* in *Richard* II's Time.

BAT-FOWLING, a Method of catching Birds in the Night, by lighting ſome Straw or Torches near the Place where they are at Rooſt; for, upon beating them up, they fly to the Flames, where, being amaz'd, they are eaſily caught in Nets, or beat down with Buſhes fix'd to the Ends of Poles, &c.

BATH, a convenient Receptacle of Water for Perſons to waſh, or plunge in, either for Health or Pleaſure. See *Water*. *Baths* are either *Natural* or *Artificial*. *Natural* again, are either *Hot* or *Cold*. *Hot Baths*, call'd alſo *Thermæ*, owe their Origin partly to the Admixture of ſulphureous Particles, while the Water is paſſing thro its ſubterranean Canals; or rather, while it creeps thro Beds and Mines of Sulphur, &c. and partly to the Fumes and Vapours exhaling up thro the Pores of the Earth, where Sulphur is, whether pure or impure, as in Coals, Amber, &c. For theſe Sub-

Subſtances continually emit Fumes, which warm the Waters in their Paſſage thro 'em. In moſt *Hot Baths*, however, there are likewiſe mixt Particles of Iron, Allom, Nitre, and other Mineral Bodies, which give 'em an acid aſtringent Taſt. The chief *hot Bath* in our Country, is that near *Wells* in *Somerſetſhire*; another there is of leſſer Note at *Buxton*. Theſe Waters abound with a Mineral Sulphur: They are hot, of a blueiſh Colour, and ſtrong Scent, and ſend forth thin Vapours. In the City of *Bath* are four *hot Baths*; one Triangular, called the *Croſs Bath*, from a Croſs that formerly ſtood in the midſt of it; the Heat of which is more gentle than the others, becauſe it has fewer Springs: The ſecond is the *Hot Bath*, which heretofore was much hotter than the reſt, when it was not ſo large as it now is: The other two are the *King's* and the *Queen's Bath*, divided only by a Wall, the laſt having no Spring, but receiving the Water from the *King's Bath*, which is about 60 Feet ſquare, and has in the middle of it many hot Springs, which render its healing Quality more effectual. Each of theſe hath a Pump to throw out Water upon the Diſeaſed, where 'tis required. The Waters of theſe *Baths* don't paſs thro the Body, like other Mineral Waters; but if Salt be added, they purge preſently. On Settlement, it affords a black Mud, uſed by way of Cataplaſm in Aches; of more Service to ſome than the Waters themſelves: the like it depoſits on Diſtillation, and no other. Dr. *Aſtendoff* found the Colour of the Salt drawn from the *King's* and *Hot Bath*, yellow, and that from the *Croſs Bath* white; whence he concludes, that the *Croſs Bath* has more Allom and Nitre than the *Hotter*, which abound more with Sulphur; and yet the *Croſs Bath* is found to looſen ſhrunk Sinews, by which it ſhould not ſeem to abound much with Allom: 'tis harſher to the Taſt than the others, and ſoaks the Hands more. The *Croſs Bath* preys on Silver, and all of 'em on Iron, but none on Braſs.

The *Bath* is very uſeful in Diſeaſes of the Head, as Palſies, *&c.* in cuticular Diſeaſes, as Leproſies, *&c.* Obſtructions and Hardneſs of the Bowels, the Scurvy and Stone, and in moſt Diſeaſes of Women and Children. Theſe *Baths* have perform'd many Cures, and are commonly uſed as a laſt Remedy in obſtinate Chronick Diſeaſes; where they ſucceed well, if they agree with the Conſtitution of the Patient: but whether they will agree or not, cannot be known without Trial.

Cold Baths were long baniſh'd out of Medicine, tho the Antients had them in the greateſt Eſteem: But the Improvements accruing to Phyſick from Geometry and Mechanicks, have brought them into uſe again; and the preſent Age can boaſt abundance of noble Cures perform'd by 'em, and ſuch as were long attempted in vain by the moſt powerful Medicines. The *Cold Bath* is one of the moſt univerſal and innocent Remedies yet diſcover'd. 'Tis ſerviceable in moſt Chronick Diſtempers, and reckon'd ſo ſafe that Phyſicians ſometimes preſcribe it in a beginning Phthiſis, or Conſumption, when the Lungs are but ſlightly affected. The Effect of *Cold-Bathing* is attributed not only to its Chilneſs and conſtringing Power, but in ſome meaſure to the Weight of the Water. For, ſuppoſing a Perſon immerged two Foot, and the Area of his Skin to be 15 Foot, he ſuſtains a Weight of Water, added to that of the Air, = 2280 *l.* for 2, the Number of Cubical Feet of Water preſſing upon a Foot ſquare of the Skin × 76, the Number of Pounds in a Cubical Foot of Water, is = 152; which × 15, the ſuppoſed Number of ſquare Feet on the Surface of the Body, is = 2280 *l. Troy*. Beſides, the Water in *Bathing* enters the Body, and mixes with the Blood. For the Riſe and Progreſs of *Cold-Bathing*, and the Cures effected thereby, ſee *Floyer's* and *Baynard's* Hiſtory of *Cold-Bathing*.

For *Artificial Baths*, they are various, according to the various Occaſions. See *Balneum*. Sometimes they conſiſt of Milk and emollient Herbs, Roſe-Water, *&c.* when the Deſign is to humectate; at other times of Bran and Water, when the Deſign is only to cleanſe: Sometimes again, they are made of a Decoction of Roots and Plants, with an Addition of Spirit of Wine, when a Perſon *bathes* for a great Pain or Tumor, *&c.* To theſe may be added the *Bagnio*, where People are made to ſweat by the Heat of a Room, and pouring on of hot Water; after which they generally go into a *hot Bath*. See *Bagnio*.

Vapour-Baths are when the Patient is not plunged into what is prepar'd for the *Bath*, but only receives its Steam or Fume upon thoſe Parts of his Body which require it: Thus, in ſome Diſtempers of the Fundament, and Womb, the Patient ſits and receives the Fumes of a proper Fomentation or Decoction. There is another Species of *Baths*, made by the burning of Spirit of Wine, the Patient being placed in a convenient cloſe Chair for the Reception of the Fume, which riſes and provokes Sweat in a plentiful manner: Care is here taken to keep the Head out, and ſecure Reſpiration. This *Bath* has been found very effectual in removing old obſtinate Pains in the Limbs, and Venereal Complaints; and will often compleat a Cure left unperform'd by Salivation. See *Sudatory*.

Baths, in Architecture, were alſo large pompous Buildings among the Antients, erected for the ſake of *Bathing*. On the ſide of each *Bath* were Lavers, which afforded hot Water and cold, to alter its Temperature at Pleaſure. Theſe *Baths* were frequented more for the ſake of Pleaſure than Health. The moſt magnificent were thoſe of *Titus*, *Paulus Emilius*, and *Diocleſian*, of which there are ſome Ruins ſtill remaining. 'Tis ſaid, that at *Rome* there were 856 *Baths*, publick and private. *Fabricius* adds, that the exceſſive Luxury of the *Romans*, appear'd in nothing more viſible, than in their *Baths*. *Pliny* tells us, that Common People, and even Slaves, had the Walls and Grounds beſmear'd with rich Ointments. *Seneca* complains, that the *Baths* of Plebeians were fill'd from Silver Pumps; and that the Freed-men trod on Gems. *Macrobius* tells us of one *Sergius Oratus*, a Voluptuary, who had *pendent Baths*, hanging in the Air. See *Thermæ*.

Bath, in Chymiſtry. See *Balneum*, and *Artificial Bath*.

Knights of the Bath, a military Order in *England*, inſtituted by *Richard* II, who ordain'd that there ſhould be no more than four; but his Succeſſor *Henry* IV, increas'd them to 46. Their Motto was, *Tres in uno*, ſignifying the three Theological Virtues. 'Twas the Cuſtom to *bathe* before they receiv'd the Golden Spurs; but this was only obſerv'd at firſt, being afterwards gradually dropt: However, this gave them the Name. The Order of *Knights of the Bath* is ſcarce ever confer'd, but at the Coronation of Kings, or the Inauguration of a Prince of *Wales*, or Duke of *York*. They wear a red Ribbon Belt-wiſe. *Camden* and others ſay, *Henry* IV was the Inſtitutor in 1399, and upon this occaſion: That Prince being in the *Bath*, was told by ſome Knight, that two Widows came to demand Juſtice of him; when his Majeſty leaping out of the *Bath*, cryed, he ought to prefer doing Juſtice to his Subjects to the Pleaſure of the *Bath*; and thereupon created *Knights of the Bath*. Some Authors, however, will have the Order of the *Bath* to have been on foot long before *Henry* IV. Be this as it will, 'tis certain the *Bath* had been uſed long before, in the Creation of Knights, in *France*; tho there was no Order for making of Knights.

BATHMUS, in Anatomy, a Bone, the ſame as *Trochlea*. Which ſee.

BATON, in Architecture, is a large Ring, or Moulding, in the Baſe of a Column, otherwiſe call'd *Tore*. See *Tore*.

Baton, in Heraldry, a Kind of Bend that has only one third of the uſual Breadth. See *Battoon*.

BATRACHITES, a Stone ſuppoſed to be found in Frogs, to which the antient Phyſicians and Naturaliſts attribute the Virtue of reſiſting Poiſon. The Word is form'd from the *Greek*, βάτραχος, *rana*, a frog.

BATRACHOMYOMACHIA, a War of the Frogs and the Mice; the Title of a fine Burleſque Poem, uſually aſcribed to *Homer*. The Subject of the War is the Death of *Pſycharpax*, a Mouſe, Son of *Troxartes*, who being mounted on the Back of *Phyſignates*, a Frog, on a Voyage to her Palace, to which ſhe had invited him, was ſeiz'd with Fear when he ſaw himſelf in the middle of the Pond, ſo that he tumbled off and was drown'd. *Phyſignates* being ſuſpected to have ſhook him off with Deſign, the Mice required Satisfaction, and unanimouſly declared War againſt the Frogs. *Stephens*, *Nunius*, and other modern Authors, take the Poem not to be *Homer's*; but the Antients ſeem of another Opinion; and *Statius*, who wrote under *Domitian*, makes no doubt of it. The Word comes from the *Greek* βάτραχος, *frog*, μῦς, *mouſe*, and μαχία, *pugna*.

BATABLE *Ground* was Land lying between *England* and *Scotland*, heretofore in queſtion to which it belong'd, when they were diſtinct Kingdoms. It ſignifies the ſame as litigious, or diſputable Ground. From *battre*, to beat.

BATTALION, a little Body of Infantry rang'd in form of Battel and ready to engage. A Battalion uſually contains from 5 to 800 Men, of which one Third are uſually Pikes in the middle, and the other two Thirds are Muſquets poſted on the Wings: But the Number of Men it conſiſts of is not determined. They are uſually drawn up with ſix Men in File, or one before another; thoſe in Length, or Side by Side, being call'd Ranks: Some Regiments conſiſt but of one Battalion, others more numerous are divided into ſeveral. *French* Regiments have 16 Companies to a Battalion. See *Regiment*. The Word *Battalion* comes from *Battel*, an Engagement of two Armies, *&c.* and that from *Battualia*, the Place where two Men fight; or from *Battalia*, the Exerciſe of People who learn to fight.

BATTEN is a Name the Workmen give to a Scantling of wooden Stuff, from two to four Inches broad, and about an Inch thick; the Length is pretty conſiderable, but undetermined. The Term is chiefly uſed in ſpeaking of Doors, *&c.* which are not framed of whole Deal, *&c.* with Stiles, Rails, and Pannels, like Wainſcot, but are made

made to appear as if they were, by means of theſe Pieces, or *Battens*, bradded on the plain Board round the Edges, and ſometimes croſs 'em, and up and down: Hence *Batten Doors* are ſuch as ſeem to be Wainſcot ones, but are not. Theſe are ſaid to be either ſingle or double, as the *Battens* are fitted on to one Side, or to both.

BATTERY, in Law, an Act that tends to the Breach of the Peace of the Realm, by violently ſtriking or beating a Man, who may therefore indict the other Party, or have his Action of Treſpaſs, or Aſſault and Battery, againſt him, (for every Battery implies an Aſſault) and recover ſo much in Coſts and Damages as the Jury will give him. This Action will lie as well before as after the Indictment. But if the Plaintiff made the firſt Aſſault, the Defendant ſhall be quit, and the Plaintiff be amerced to the King for his falſe Suit. In ſome Caſes a Man may juſtify the beating another in a moderate manner, as a Maſter his Servant, *&c.*

Battery, in War, the Place where the Cannons are planted to play upon the Enemy. They are uſually placed on a Platform, conſiſting of Planks, that ſupport the Wheels of Carriages, and hinder the Weight of the Cannon from ſinking them into the Ground. The Platform is raiſed a little behind, to check the recoiling of the Pieces. The *Battery* of a Camp is uſually ſurrounded with a Trench and Palliſadoes at the Bottom, as alſo with a Parapet on the Top, having as many Holes as there are Pieces of Artillery, and with two Redoubts on the Wings, or certain Places of Arms capable of covering the Troops which are appointed for their Defence. In all *Batteries*, the open Space left to put the Muzzles of the great Guns out, are called *Embrazures*; and the Diſtances between the Embrazures, *Merlons*. The Guns are generally about 12 Foot diſtant one from another, that the Parapet may be ſtrong, and the Gunners have room to work. A *ſunk* or *buried Battery*, is when its Platform is ſunk or let down into the Ground, with Trenches cut in the Earth againſt the Muzzles of the Guns, to ſerve for Embrazures. This ſort of *Battery*, which the *French* call *En Terre* and *Ruinante*, is generally uſed upon the firſt making Approaches, to beat down the Parapet of any Place.

Croſs Batteries are two *Batteries* at a conſiderable Diſtance from each other, which play athwart one another at the ſame time, and upon the ſame Point, forming right Angles; where what one Bullet ſhakes, the other beats down. A *Battery d'Enfilade* is one which ſweeps the whole Length of a ſtrait Line, a Street, *&c.* A *Battery en Echarp* is that which plays obliquely. A *Battery de Revers*, or *Murdering Battery*, is one that bears upon the Back of any Place; and being placed on an Eminence, ſees into it. A *Battery Joint*, or *par Camerade*, is when ſeveral Guns play at the ſame time upon one Place.

Battery en Rouage is that uſed to diſmount the Enemy's Pieces.

BATTEURS d'ESTRADE, or *Scouts*, are Horſe ſent out before, and on the Wings of an Army, two or three Miles, to make Diſcoveries; of which they give an Account to the General.

BATTLEMENTS, Indentures or Notches on the top of a Wall, Parapet, or other Building, in form of Embrazures, for the ſake of looking thro 'em, *&c.* Theſe were much affected in the old Fortification.

BATTOLOGY, in Grammar, is a multiplying Words without occaſion, or a needleſs Repetition of the ſame Words over and over in a Diſcourſe; like *Battus*, a ridiculous Poet mentioned by *Ovid*, who introduces him, ſaying,

Montibus (inquit) erant, & erant ſub montibus illis.



BATTOON, a Term in Heraldry, ſignifying a fourth part of a Bend-Siniſter: It is the uſual Mark of Illegitimacy, and is always borne couped or cut off after this manner.

Battoon alſo ſignifies the Earl-Marſhal's Staff.

BATTUS, a certain Order of Penitents at *Avignon*, and in *Provence*, whoſe Piety carries them to exerciſe ſevere Diſcipline upon themſelves, both in publick and private.

BAVINS, in War, Bruſh-Faggots made with the Bruſh at length.

BAY, in Geography, a little Gulph, or an Arm of the Sea, ſtretching up into the Land, and larger in the middle within, than at its Entrance, which is call'd the *Mouth of the Bay*. *Bay*, or *Pen*, likewiſe ſignifies a Pond-Head made up a great Height, to keep in Store of Water for driving the Wheels of the Furnace, or Hammer, belonging to an Iron Mill, by the Stream that comes thence thro a Paſſage, or Flood-gate, call'd the *Pen-ſtock*. To *bay* is to bark as a Dog does. Among Huntſmen Deer are ſaid to *bay*, when, after being hard run, they turn head againſt the Hounds.

BAYONET, a ſhort-pointed Sword made Lancet-faſhion, and having, inſtead of an Hilt, an hollow Iron Handle to fix it at the end of a Muſket, ſo as not to hinder its Firing or Charging. All the Troops of the Infantry carry them in the Field: They are of great Service to the Dragoons and Fuzileers, after they have ſpent their Powder and Ball. This Inſtrument is alſo uſed in hunting the Boar or Bear; for which purpoſe 'tis made larger.

BAYS, in Commerce, a kind of coarſe Woollen Stuff, very open, and not croſs'd, having a long Nap, ſometimes frized on one Side, and ſometimes not frized, according to the Uſes it is intended for. This Stuff is wrought on a Loom, with two Treddles, like Flannel. The Manufacture of *Bays* is very conſiderable in *England*, particularly at *Colcheſter*; and in *Flanders*, particularly about *Liſle* and *Tournay*, &c. Formerly the *French*, as well as *Italians*, were furniſh'd with *Bays* from *England*; but of late the *French* Workmen have undertaken to counterfeit 'em, and ſet up Manufactures of their own, and that with Succeſs; eſpecially at *Niſmes*, *Montpellier*, &c. The Commerce of *Bays* is very conſiderable to *Spain*, *Portugal*, and *Italy*. Their chief Uſe is for Linings, eſpecially in the Army: The Looking-Glaſs-makers uſe 'em behind their Glaſſes, to preſerve the Tin or Quickſilver; and the Caſe-makers, to line their Caſes.

BDELLIUM, or *Bedellium*, a kind of Gum. The Name is well known among the Learned; but they can't agree what it is. 'Tis mention'd in *Geneſis*, *c.* 2. *v.* 12. and *Joſephus* explains the Paſſage, by ſaying 'tis the Gum of a Tree reſembling the Olive-Tree; and that the Manna wherewith the *Jews* were fed in the Deſert, reſembled this Drug: But *Scaliger* and others ſet aſide this Explication, and own, they don't know what the *Bdellium* mention'd in Scripture is.

The *Bdellium* in uſe among us, ſeems again to have been unknown to the Antients: Some ſay it diſtils from a kind of Thorn; others from a Tree reſembling that which produces the Myrrh. Some ſay it is produced on the Banks of the River *Senegal* in *Africa*; others, near the City *Saraca* in *Arabia Felix*. When good, 'tis in clear tranſparent Pieces, of a reddiſh Grey without; when touch'd with the Tongue, yellow, bitter, ſoft, and odoriferous. It enters the Compoſition of *Mithridate*, and the *Emplaſtrum divinum*.

BEACON, a Signal for the better ſecuring the Kingdom from foreign Invaſions: On certain eminent Places of the Nation are placed long Poles erect, whereon are faſten'd Pitch-Barrels to be fir'd by Night, and Smoke made by Day, to give Notice in a few Hours to the whole Kingdom of an approaching Invaſion. Theſe are commonly call'd *Beacons*; whence comes *Beaconage*, Money paid towards the Maintenance of a *Beacon*. The Word is derived from the *Saxon*, *Beacnian*, to nod, or ſignify: Hence alſo the Word *beckon*.

BEAD, in Architecture, a round Moulding in the *Corinthian* and *Roman* Orders, carved in ſhort Emboſſments, like *Beads* in Necklaces. See *Baguette*. A *Bead* is uſually about $\frac{1}{4}$ of a Circle, and only differs from a *Boultine* in Bigneſs. When large, the Workmen call 'em *Boultines*; tho ſometimes an Aſtragal is thus carved. A *Bead-plain* is alſo frequently ſet on the Edge of each Faſcia of an Architrave. A *Bead* is often placed on the Lining-Board of a Door-Caſe, and on the upper Edges of Skirting-Boards.

Bead, among the *Romaniſts*. See *Chaplet*.

BEAD-ROLL, among the *Romiſh* Prieſts, a Liſt or Catalogue of ſuch Perſons, for the Reſt of whoſe Souls they are oblig'd to rehearſe a certain Number of Prayers, *&c.* which was done by their *Beads*.

BEADLE ſignifies a Meſſenger or Apparitor of a Court, who cites Men to the Court to appear and anſwer. It is alſo an Officer under all Pariſhes and Companies. 'Tis moreover, an Officer at the Univerſities, whoſe Place it is to walk before the Maſters. Some ſay they are call'd *Bedelli*, from a Corruption of *Pidelli*, as ſerving and running on foot. Others from *Pedo*, *ſeu Baculo*, *quia Virga utebantur*; forming *Pedellus* from *Pedum*, a kind of Wand, which is their Symbol; and from *Pedellus*, *Bedellus*. Others derive the Word from the *Hebrew* בדל *bedal*, *ordinare*, *to range* or *diſpoſe*. *Spelman*, *Voſſius*, and *Somner*, derive it from the *Saxon*, *Bidel*, *a publick Crier*; in which Senſe Biſhops, in ſome antient *Saxon* Manuſcripts, are call'd *Beadles of God*, *Dei Bedelli*. The Tranſlator of the *Saxon New Teſtament*, renders *Exactor* by *Bydele*; and the Word is uſed in the ſame Senſe in the Laws of *Scotland*.

BEAK, in Architecture, a little Fillet left on the Edge of a Larmier, which forms a Canal, and makes a kind of Pendant. *Chin-Beak* is alſo uſed for a Moulding, the ſame with the Quarter-round, except that its Situation is inverted. We find but few Examples hereof in the antient Buildings; but 'tis very frequent in the modern.

Beak, or *Beak-head*, of a Ship, is that Part of it which is faſten'd to the Stern, and is ſupported by a Knee; and is the becoming Part, or Grace of a Ship. See *Stern*.

BEAM, in Building, the largeſt Piece of Wood in a Building, being laid a-croſs the Walls, and ſerving to ſupport

port the principal Rafters of the Roof. No Houſe has leſs than two of theſe *Beams*, *viz.* one at each Head: Into theſe the Girders of the Garret-Floor are alſo framed; and, if the Building be Timber, the Teazle Tenons of the Poſts. The Proportions of Beams near *London*, are fix'd by Statute, as follows: A Beam 15 Foot long, muſt be ſeven Inches on one ſide its Square, and five on the other; If it be 16 Foot long, one ſide muſt be eight Inches, the other ſix: If 17 Foot long, one ſide muſt be 10 Inches, the other ſix: In the Country they uſually make 'em ſtronger. Sir *H. Wotton* adviſes theſe to be of the ſtrongeſt and moſt durable Timber. *Herrera* tells us, that in *Fer. Cortez*'s Palace, in *Mexico*, there were 7000 Beams of Cedar: But he muſt certainly uſe the Word *Beam* in a greater Latitude than what we do. In effect, the *French*, under *Poutre*, *Beam*, take in not only the Pieces which ſupport the Rafters, but alſo thoſe which ſuſtain the Joiſts for the Cielings. Some of their beſt Authors have conſider'd the Force or Strength of *Beams*, and brought their Reſiſtance to a preciſe Calculation; particularly M. *Varignon*, and M. *Parent*; the Syſtem of the latter is as follows.

When, in a *Beam* breaking Parallel to its Baſe, which is ſuppoſed to be a Parallelogram, two Plans of Fibres, which were before contiguous, are ſeparated, there is nothing to be conſider'd in thoſe Fibres, but their Number, Bigneſs, Tenſion before they broke, and the Lever by which they act; all theſe together making the Reſiſtance of the *Beam* to be broke. Suppoſe then another *Beam* of the ſame Wood, where the Baſe is likewiſe a Parallelogram, and of any Bigneſs, with regard to the other, at Pleaſure; the Height of each of theſe, when laid Horizontal, being divided into an indefinite Number of equal Parts, and their Breadth into the ſame Number, in each of their Baſes will be found an equal Number of little quadrangular Cells, proportional to the Baſes whereof they are Parts: Theſe then will repreſent little Baſes, or which is the ſame thing, the Thickneſſes of the Fibres to be ſeparated for the Fracture of each *Beam*; and ſince the Number of Cells is equal in each, the Ratio of the Baſes of both *Beams* will be that of the Reſiſtance of their Fibres, both with regard to Number and Thickneſs. Now, the two *Beams* being ſuppoſed of the ſame Wood, the Fibres, the moſt remote from the Points of Support, which are thoſe which break the firſt, muſt be equally ſtretch'd when they break. Thus the Fibres, *v. g.* of the 10th Diviſion, are equally ſtretch'd in each Caſe, when the firſt breaks; and in whatever Proportion the Tenſion be ſuppoſed, 'twill ſtill be the ſame in both Caſes; ſo that the Doctrine is entirely free, and unimbarraſs'd with any Syſtem of Phyſicks. Laſtly, 'tis evident the Levers whereby the Fibres of the two *Beams* act, are repreſented by the Height of their Baſes; and of Conſequence, the whole Reſiſtance of each *Beam* is the Product of its Baſe by its Height; or, which is the ſame thing, the Square of the Height multiplied by the Breadth: Which holds, not only in caſe of Parallelogrammatick, but alſo of Elliptick Baſes.

Hence, if the Baſes of two *Beams* be equal, tho both their Heights and Breadths be unequal, their Reſiſtance will be as the Heights alone; and by Conſequence, one and the ſame *Beam* laid on the ſmalleſt ſide of its Baſe, will reſiſt more than when laid flat, in proportion as the firſt Situation gives it a greater Height than the ſecond: and thus an Elliptick Baſe will reſiſt more, when laid on its greateſt Axis, than on its ſmalleſt.

Since in *Beams* equally long, 'tis the Baſes that determine the Proportion of their Weights or Solidities; and ſince their Baſes being equal, their Heights may be different, two *Beams* of the ſame Weight may have Reſiſtances differing to Infinity: Thus, if in the one the Height of the Baſe be conceiv'd infinitely great, and the Breadth infinitely ſmall, while in the other the Dimenſions of the Baſe are finite; the Reſiſtance of the firſt will be infinitely greater than that of the ſecond, tho their Solidity and Weight be the ſame. If therefore all required in Architecture were to have *Beams*, capable of ſupporting vaſt Loads, and at the ſame time have the leaſt Weights poſſible, 'tis plain they muſt be cut thin as *Laths*, and laid edge-wiſe.

If the Baſes of the two *Beams* be ſuppos'd unequal, but the Sum of the Sides of the two Baſes equal, *v. g.* if they be either 12 and 12, or 11 and 13, or 10 and 14, *&c.* ſo that they always make 24; and further, if they be ſuppos'd to be laid edge-wiſe; purſuing the Series, it will appear, that in the *Beam* of 12 and 12 the Reſiſtance will be 1728, and the Solidity or Weight 144; and that in the laſt, or 1 and 23, the Reſiſtance will be 529, and the Weight 23: The firſt therefore, which is ſquare, will have leſs than half the Strength of the laſt, with regard to its Weight. Hence M. *Parent* remarks, that the common Practice of cutting the *Beams* out of Trees as ſquare as poſſible, is ill Husbandry: He hence takes occaſion to determine geometrically, what Dimenſions the Baſe of a *Beam*, to be cut out of any Tree propos'd, ſhall have, in order to its having the greateſt poſſible Reſiſtance; or, which is the ſame thing, a Circular Baſe being given, he determines the Rectangle of the greateſt Reſiſtance that can be inſcribed, and finds that the Sides muſt be nearly as 7 to 5, which agrees with Obſervation.

Hitherto the Length of the *Beams* has been ſuppoſed equal; if it be unequal, the Baſes will reſiſt ſo much the leſs, as the *Beams* are longer. To this it may be added, that a *Beam* ſuſtained at each End, breaking by a Weight ſuſpended from its middle, does not only break at the middle, but alſo at each Extreme; or, if it does not actually break there, at leaſt immediately before the Moment of the Fracture, which is that of the Æquilibrium between the Reſiſtance and the Weight, its Fibres are as much ſtretch'd at the Extremes as in the Middle: So that of the Weight ſuſtain'd by the middle there is but one third Part which acts at the middle, to make the Fracture; the other two only acting to induce a Fracture in the two Extremes. A *Beam* may either be ſuppoſed loaden only with its own Weight, or with other foreign Weights applied at any diſtance, or only with thoſe foreign Weights; ſince according to M. *Parent* the Weight of a *Beam* is not ordinarily above $\frac{1}{10}$ part of the Load given it to ſuſtain, 'tis evident that in conſidering ſeveral Weights they muſt be all reduced by the common Rules to one common Centre of Gravity. M. *Parent* has calculated Tables of the Weights that will be ſuſtained by the middle, in *Beams* of various Baſes and Lengths, fitted at each End into Walls, on a Suppoſition that a Piece of Oak of an Inch ſquare and a Foot long, retain'd horizontally by the two Extremes, will ſuſtain 315 *lib.* in its middle before it breaks, which 'tis found by Experience it will. See *Mem. French Academy*, *An.* 1708.

BEAM-COMPASSES, an Inſtrument made in Wood or Braſs, with ſliding Sockets, or Curſors, ſerving to carry ſeveral ſhifting Points, in order to draw and divide Circles with very long Radii. They are of uſe in large Projections for drawing the Furniture, on Wall-Dials, *&c.* See COMPASSES.

BEAM-FILLING in Building, the filling up the vacant Space between the Raiſon and Roof, with Stones, or Bricks, laid between the Rafters on the Raiſon, and plaiſter'd on with Loom; frequent where the Garrets are not pargeted, or plaiſter'd.

BEAM, among Hunters, that Part of the Head of a Deer, which bears the Antlers, Royals, and Tops; the little Streaks wherein are called *Circles*. From the *Saxon Beam*, a Tree; becauſe they grow out of the Head, as Branches out of a Tree.

BEAMS of a Ship are the large, main, croſs Timbers, which hold the Sides of a Ship from falling together, and which alſo ſupport the Decks and Orlops. The *main Beam* is next the Main-Maſt; and from it they are reckoned by *Firſt*, *Second*, and *Third*. The *great Beam* of all is called the *Midſhip-Beam*.

BEAR, in Aſtronomy, a Name given to two Conſtellations; called the *Greater* and the *Leſſer Bear*; or *Urſa Major*, and *Minor*: The Pole-Star is ſaid to be in the Tail of the *Leſſer*; becauſe that Star is never above two Degrees diſtant from the North-Pole of the World. See URSA *Major & Minor*.

BEAR is alſo a Term uſed in Heraldry: Thus, he that hath a Coat of Arms, is ſaid to *bear* in it the ſeveral Charges or Ordinaries which are in his Eſcutcheon; as, if there are three Lions Rampant in it, he is ſaid *to bear three Lions Rampant*. See CHARGE, *&c.*

At Sea, when a Ship ſails towards the Shore, ſhe is ſaid *to bear in with the Land*; when a Ship that was to Windward comes under another Ship's Stern, and ſo gives her the Wind, ſhe is ſaid *to bear under her Lee*; if a Ship ſails into an Harbour with the Wind large, or before the Wind, ſhe is ſaid *to bear in with the Harbour*, &c. In Conding they ſay, *bear up the Helm*, that is, let the Ship go more large before the Wind; and *bear up round*, that is, let the Ship go between her two Sheets, directly before the Wind. There is likewiſe another Uſe of the Word, in reference to the Burden of a Ship, (which Word is derived from hence;) for, they ſay a Ship *bears*, when having too ſlender a Quarter ſhe will ſink too deep into the Water with an over-light Freight, and thereby can carry but a ſmall Quantity of Goods.

BEARD. See HAIR, and TONSURE.

BEARD of a Comet, the Rays which the Comet emits towards that part of the Heavens to which its proper Motion ſeems to direct it; in which the *Beard* of the Comet is diſtinguiſhed from the *Tail*, which is underſtood of the Rays emitted towards that part whence its Motion ſeems to carry it. 'Tis called *Beard*, from ſome fancied Reſemblance it bears to the *Beard* of a Man. See COMET.

BEARER, in Architecture, a Poſt, or Brick-Wall, trimmed up between the two Ends of a Piece of Timber to ſhorten its Bearing, or to prevent its bearing with the whole Weight at the Ends only.

BEARER of a Bill of Exchange, &c. the Perſon in whoſe Hands it is, and in favour of whom the laſt Order or Endorſement was paſſed. When a Bill is ſaid to be *payable to Bearer*, it is underſtood to be payable to him who firſt offers himſelf after it becomes due. To be paid a Bill of this kind, there needs neither Order nor Transfer: yet 'tis good to know to whom 'tis paid. See BILL OF EXCHANGE.

BEARERS, in Heraldry. See SUPPORTERS.

BEARING, in Geography and Navigation, the Situation of one Place from another, with regard to the Points of the Compaſs; or, the Angle, which a Line drawn thro the two Places makes with the Meridians of each. The *Bearings* of Places are uſually determined from the Magnetick Needle: In the managing of theſe lies the principal Part of Surveying; ſince the *Bearing* and *Diſtance* of a ſecond Point from a firſt being found, the Place of that ſecond is found; or the *Bearings* of a third Point from two others, whoſe *Diſtance* from each other is known, the Place of the third is found: Inſtrumentally we mean; for, to calculate Trigonometrically, there muſt be more *Data*. Mr. *Collins* gives the Solution of a Problem in the *Philoſ. Tranſact.* where the *Diſtances* of three Objects in the ſame Plain being given, and the *Bearings* from a fourth Place in the ſame Plain obſerv'd, the *Diſtances* from the Place of Obſervation to the reſpective Objects are requir'd. See SURVEYING.

BEARING *of a Piece of Timber*, in Carpentry, the Space either between the two fix'd Extremes thereof, when it has no other Support; which is called *bearing at length*: or between one Extreme, and a Poſt, Brick-Wall, &c. trimm'd up between the Ends to ſhorten its *Bearing*.

BEASTS *of Chaſe*, in our Statute-Books, are five; the Buck, Doe, Fox, Martin, and Roe. *Beaſts of the Foreſt* are, the Hart, Hind, Hare, Boar, and Wolf. *Beaſts* and *Fowls of the Warren* are, the Hare, Coney, Pheaſant, and Partridge. See GAME.

BEATIFICATION, in the *Romiſh* Church, an Act whereby the Pope declares a Perſon happy, after Death. *Beatification* differs from *Canonization*: in the former the Pope does not act as a Judge in determining the State of the *beatified*, but only grants a Privilege to certain Perſons to honour him by a particular religious Worſhip, without incurring the Penalty of ſuperſtitious Worſhippers; but in *Canonization* the Pope ſpeaks as a Judge, and determines *ex Cathedra* upon the State of the *canoniz'd*. *Beatification* was introduc'd when 'twas thought proper to delay the *Canonization* of Saints, for the greater Aſſurance of the Truth, and Manifeſtation of the rigorous Steps taken in the Procedure. See CANONIZATION.

BEATING, in Medicine, a Term applied to the Agitation or Palpitation of the Pulſe or Heart. Some Phyſicians diſtinguiſh 81 different Kinds of Simple *Beatings*, and 15 Compound ones. They compute about 60 *Beats* in the Space of a Minute in a temperate Man. See PULSE.

BEATING *of Gold and Silver*. See GOLD-BEATING, &c.

BEATS in a Watch, or Clock, are the Strokes made by the Fangs, or Pallets of the Spindle of the Ballance; or of the Pads in a Royal Pendulum. See CLOCK-WORK.

BEAU-PLEADER, a Writ on the Statute of *Marlbridge*, whereby it is provided that no Fine ſhall be taken of any Man in any Court for *fair-pleading*, i. e. for not *pleading* aptly, and to the purpoſe.

BEAUTY, a Term whereby we expreſs a certain relation of ſome Object, either to an agreeable Senſation, or to an Idea of Approbation. When therefore I ſay a thing is *beautiful*, I either mean that I perceive ſomething that I approve, or that ſomething gives me Pleaſure: Whence it appears, that the Idea affix'd to the Word *Beauty* is double; which renders the Word equivocal, and is the Source of all the Diſputes on the Subject of *Beauty*. We muſt therefore diſtinguiſh between Ideas and Senſations. Ideas take up the Mind; Senſations intereſt the Heart. Tho we ſee nothing in an Object to intereſt us, we may yet diſcover ſomething in its Idea to merit our Approbation. Such an Object therefore pleaſes, and does not pleaſe, *i. e.* it pleaſes the Idea, and not the Senſation. On the contrary, there are ſome Objects whoſe Ideas don't offer any thing laudable, which yet excite agreeable Senſations. There is therefore *Beauty* and *Beauty*. 'Tis exceeding hard to fix any general Characteriſticks of *Beauty*: For, as the Ideas and Senſations of different Perſons differ according to the Habitudes of the Body, and the Turn of the Mind; ſo do the relations of Objects to thoſe Ideas and Senſations vary, whence what we call *Beauty* reſults. Hence ariſe thoſe different Opinions of a *beautiful Thought*, a *beautiful Woman*, a *beautiful Painting*, &c. M. *Perrault* diſtinguiſhes two Kinds of *Beauties* in Architecture, which chime in pretty aptly with the two Species of *Beauty* above. The one he calls *poſitive* and *convincing*, ſuch as the Richneſs of the Materials, Grandeur of the Structure, Neatneſs of the Workmanſhip, Symmetry, &c. The others he calls *arbitrary*, which depend on the Will, and might have their Proportion changed without Deformity. Theſe only pleaſe by the Connexion, or Aſſociation of their Ideas with others of a different Kind, and which pleaſe of themſelves; and owe their Beauty to that Prepoſſeſſion of the Mind, whereby a thing whoſe Value we do know, inſinuates an Eſteem for others which we do not. Thus he obſerves, there are many things in Architecture which Reaſon and good Senſe would judge deformed, and which however, Cuſtom has not only made tolerable, but even *beautiful*, by their being always joined with other *Beauties* that are poſitive. Thus, being at firſt pleaſed with viewing 'em in Company, and merely on account of their Company, at length we become pleaſed with 'em alone; and thus we frequently fall in love with Deformities, and grow fond of Faults. Hence the Uſe of Foils appears founded on an ill Philoſophy. If a *Beauty* takes off from a *Deformity*, the *Deformity* in its turn takes off from the *Beauty*: 'Tis the Foil therefore is the Gainer, the Diamond loſes. The Diamond pleaſes, we are pleaſed in ſome meaſure with every thing about it, particularly the Foil; the Foil diſpleaſes, we are in ſome meaſure diſpleaſed with every thing about it, particularly the Diamond: The Mind can't be well pleaſed and diſpleaſed at the ſame time. By viewing the Diamond and Foil together, a Man might in a long Courſe of Time find the one almoſt as *beautiful* as the other. The Diſparity would be always diminiſhing, till they came near a Level: By removing 'em a-part, they would by degrees return to their original State, *i. e.* the Diamond would recover, and the Foil loſe its Luſtre. See LOVE.

BECHICA, Medicines proper for Diſeaſes of the Lungs and Breaſt; frequently alſo call'd *Pectorals*. *Bechick* is alſo uſed for any thing relating to a Cough, &c. The Word comes from the *Greek*, βῆξ, βηχὸς, *Cough*.

BED. The old *Romans* had various kinds of *Beds* for Repoſe; as, their *Lectus cubicularis*, or *Chamber-Bed*, whereon they ſlept; their *Table-Bed*, or *Lectus diſcubitorius*, whereon they eat, (for they always eat lying) there being uſually three Perſons to one *Bed*, whereof the middle Place was accounted the moſt honourable, as well as the *middle Bed*. They had alſo their *Lectus lucubratorius*, whereon they ſtudied; and a *Lectus funebris*, or *emortualis*, whereon the Dead were carried to the Pile.

BED of the Carriage of a great Gun, is that thick Plank which lies immediately under the Piece; being, as it were, the Body of the Carriage.

BED-CHAMBER: with us, the *Gentlemen of the Bed-Chamber* are Perſons of the firſt Rank, 11 in Number; whoſe Office is, each in his turn, to wait a Week in the King's *Bed-Chamber*, lying by the King on a *Pallat-Bed* all Night, and to wait on the King when he eats in private. The firſt of theſe is *Groom of the Stole*, or *Long-Robe*. See STOLE.

BED, in Gardening, a Piece of made Ground, rais'd above the Level of the reſt.

BED, in Maſonry, a Courſe, or Range, of Stones; and the Joint of the *Bed* is the Mortar between two Stones placed over each other.

BED, in ſpeaking of Minerals and Foſſils, ſignifies certain *Strata*, or Thickneſſes of Matter diſpoſed over each other. See STRATA and VEIN.

BED, or BEDDING-MOULDING, in Architecture, a Term uſed by the Workmen for thoſe Members in a Cornice which are placed below the Coronet; and now a *Bed-Moulding* uſually conſiſts of theſe four Members, an O---G, a Liſt, a large Boultine, and another Liſt under the Coronet.

BEECH-OIL, an Oil drawn from the Fruit, or Maſt, of the *Beech-Tree*. The *Beech-Maſt* is a kind of Seed in form of a Nut, or Acorn, containing a whitiſh, oleaginous Pith, of a very agreeable Taſte; whereof is made an Oil much valued in Sallades, &c. 'Tis very common in *Picardy*, and other Places, where the Maſt abounds. They draw it cold, by Expreſſion, after the Maſt has been ſhell'd, and ground, or pounded. An Attempt was made a few Years ago, to introduce the Manufacture of *Beech-Oil* in *England*, and a Patent granted to the Proprietor, but without Succeſs; the Country-People, it ſeems, turning their Maſt to better account in feeding the Hogs with it, than in ſelling it to the Patentee, and his Co-Proprietors, for *Oil*. See OIL.

BEER, a popular Drink, prepared from Malt and Hops. *Mathiolus* takes the *Zythum* and *Curmi* of the Antients, to be the ſame with the *Beer* of our Days; and thinks the only Difference between *Zythum* and *Curmi*, to lie in ſome Circumſtances of the Preparation, which render the one ſtronger than the other. See MALT-LIQUORS.

Tacitus, ſpeaking of the antient *Germans*, *Dioſcorides*, *Galen*, &c. condemn *Beer* as prejudicial to the Head, Nerves, and membranous Parts, as occaſioning a more laſting and more uneaſy Drunkenneſs than Wine, and as promoting a Suppreſſion of Urine, and ſometimes a Leproſy.

M. *Per-*

M. *Perrault*, *Rainſſant*, &c. defend the Modern *Beer*; urging, that the Hops uſed with us, and which the Antients were Strangers to, having a Faculty of purifying the Blood, and removing Obſtructions, ſerve as a Corrector, and free the Drink from the Inconveniences laid at the door of that of the Antients. For the Manner of preparing *Beer*, ſee BREWING; for its Qualities, ſee MALT-LIQUOR. The Word comes from the old *German*, *Biere*: *Voſſius* derives it from the *Latin*, *bibere*, to drink; others from the *Hebrew*, *Bar*, Corn; others from *Bion*, a Drink mentioned by *Pliny*.

BEER-MEASURE. See MEASURE.

BEGLERBEG, a *Turkiſh* Title for a Governor of a Province, who has under him ſeveral *Sangiacks*, or Sub-Governors. There are 28 *Beglerbegs* in the *Ottoman* Empire. *Dins-Beglerbeg* is the Baſha of the Sea, or the Admiral of the *Turks*. *Beg*, in the *Turkiſh* Language, ſignifies Lord; and *Beglerbeg*, or *Beglerbeghi*, Lords of Lords.

BEGUARD, or BEGGHARD, the Name of an Heretical Sect in *Germany*, which ſprung up towards the End of the 13th Century. Their Head was one *Dulcinus*. Their principal Tenets were, that Man, in this Life, might be impeccable; and, that he might arrive to a Degree of Perfection not to be exceeded; that this State was as happy as Heaven, which when once obtain'd, they were no longer obliged to obſerve the Faſts of the Church, nor obey their Superiors; that every intellectual Creature is ſelf-happy; that it ſtands in need of nothing but the Light of Glory to raiſe it to the Viſion and Enjoyment of God; that none, but the Imperfect, apply themſelves to practiſe virtuous Actions; that *Jeſus Chriſt* ſhould not be adored in the Elevation of the Hoſt, nor the Myſteries of his Incarnation be regarded: They condemn'd good Works, and ſpread abroad impure Doctrines. Theſe Fanaticks, who wore the Habits of Monks, without paying regard to any Rule, or obſerving Celibacy, were condemn'd under Pope *Clement* V. at the Council of *Vienna*, in 1311.

BEGUINES are devout Societies of young Women, eſtabliſh'd in ſeveral Parts of *Flanders*, *Picardy*, and *Lorrain*. They maintain themſelves by the Work of their own Hands; they lead a middle kind of Life, between the Laick and Religious; but make no Vows. Theſe Societies began at *Nivelle*, in *Flanders*, *A. D.* 1226, and ſoon ſpread into *France*. Their Habit was particular, but modeſt; they lived in common, and had Men of great Piety for their Governors. Some of them giving into abſurd Opinions, Pope *Clement* V. aboliſhed their Inſtitution; upon which they ceas'd in *France*: But, *John* XXII. Succeſſor to *Clement* V. explain'd that Decree, and declar'd only thoſe Societies of the *Beguines* extinct, who had fallen into Hereſy.

BELAY on board a Ship, ſignifies the ſame as *faſten*; thus they ſay, *belay the Sheet*, or *Tack*, that is, faſten it to the Kennel, &c.

BELCHING. See RUCTATION.

BELL, a popular Machine, rank'd by Muſicians among the number of Muſical Inſtruments *of Percuſſion*. Its Form needs no Deſcription; its Parts are the *Body*, or *Barrel*, the *Clapper* with-in-ſide, and the *Ear* or *Cannon*, whereby it is hung to a large Beam of Wood; its Matter is a Metal compounded of twenty Pounds of Pewter to an hundred of Copper, call'd *Bell-Metal*. The Thickneſs of its Edges is uſually $\frac{1}{15}$ of the Diameter, and its Height twelve times its Thickneſs. The *Bell-Founders* have a *Diapaſon*, or *Bell-Scale*, wherewith they meaſure the Size, Thickneſs, Weight, and Tone of their *Bells*. The Uſes of *Bells* are ſumm'd up in the *Latin* Diſtich:

Laudo Deum verum, Plebem voco, congrego Clerum,
Defunctos ploro, Peſtem fugo, Feſta decoro.

For the *Method of Caſting Bells*, &c. ſee FOUNDERY. Mr. *Hauksbee*, and others, find by Experiment, the Sound of a *Bell* ſtruck under Water, to be a fourth deeper than in the Air: But *Merſenne* ſays, 'tis of the ſame Pitch in either Element. *Bells* are obſerv'd to be heard further, placed on Plains, than on Hills; and ſtill further in Vallies, than on Plains: the Reaſon of which is not difficult to aſſign, if it be conſidered, that the higher the ſonorous Body is, the rarer is its Medium; conſequently, the leſs Impulſe it receives, and the leſs proper Vehicle it is to convey it to a Diſtance.

The firſt *Bells* are ſaid to have been made at *Nola*, in *Campania*, whereof St. *Paulinus* was Biſhop; at leaſt, 'tis ſaid, he was the firſt who brought 'em into the Church. And hence, 'tis added, they had their *Latin* Names, *Nolæ* and *Campanæ*: But others ſay, they take theſe Names, not from their being invented in *Campania*, but becauſe 'twas here the manner of hanging and balancing of 'em, now in Uſe, was firſt practis'd; at leaſt, that they were ballanced and hung on the Model of a Ballance invented or uſed in *Campania*. For, in *Latin* Writers we find *Campana Statera*, for a Counter-poiſe, and in *Greek* καμπανίζειν, for *ponderare*, to load or weigh. *Polydore Virgil* aſcribes the Invention of *Bells* to Pope *Sabinian*, St. *Gregory*'s Succeſſor; but by Miſtake; for St. *Jerome*, Cotemporary with *Paulinus*, makes mention of a *Bell*. In effect, Pope *Sabinian* did not invent *Bells*; but he was the firſt who appointed the Canonical Hours to be diſtinguiſh'd by 'em. We even find mention made of *Bells* in *Ovid*, *Tibullus*, *Martial*, *Statius*, and *Manilius*, and the *Greek* Authors, under the Titles of *Tintinnabula*, and *Sounding Braſs*. *Suetonius*, *Dion*, *Strabo*, *Polybius*, *Joſephus*, and others, mention 'em under the Names of *Petaſus*, *Tintinnabulum*, *Æramentum*, *Crotalum*, *Signum*, &c. But theſe appear to have been little elſe but Baubles, and little like the huge *Bells* in uſe among us.

Hieronymus Magius, who has a Treatiſe expreſs on *Bells*, (wrote, when in Chains, in *Turkey*, and which is accounted very remarkable, purely from his Memory, without the Aſſiſtance of any Books) makes large *Bells* a modern Invention. Indeed, we don't hear of any before the ſixth Century: In 610, we are told, *Loup*, Biſhop of *Orleans*, being at *Sens*, then beſieg'd by the Army of *Clotharius*, frighted away the Beſiegers by ringing the *Bells* of St. *Stephen*'s. The firſt large *Bells* in *England* are mention'd by *Bede* towards the latter End of that Century. The *Greeks* are commonly ſaid to have been unacquainted with 'em till the ninth Century, when their Conſtruction was firſt taught them by a *Venetian*. Indeed, 'tis not true that the Uſe of *Bells* was entirely unknown in the antient *Eaſtern* Churches, and that they call'd the People to Church, as at preſent, with wooden Mallets. *Leo Allatius*, in his *Diſſertation of the Greek Temples*, proves the contrary from ſeveral antient Writers. 'Tis his Opinion, that *Bells* firſt began to be diſuſed among 'em, after the taking of *Conſtantinople* by the *Turks*; who, it ſeems, prohibited 'em, leſt their Sounds ſhould diſturb the Repoſe of Souls, which, according to them, wander in the Air. He adds, that they ſtill retain the Uſe of *Bells* in Places remote from the Commerce of the *Turks*; particularly, very antient ones in Mount *Athos*. *F. Simon* thinks the *Turks* rather prohibited the *Chriſtians* the Uſe of *Bells*, out of political, than religious Reaſons; inaſmuch as the Ringing of *Bells* might ſerve as a Signal for the Execution of Revolts, &c. See MINARET. The City *Bourdeaux* was deprived of its *Bells* for Rebellion; and when 'twas offer'd to have 'em reſtored, the People refus'd it, after having taſted the Eaſe and Conveniency of being freed from the conſtant Din and Jangling of *Bells*.

Matthew Paris obſerves, that antiently the Uſe of *Bells* was prohibited in Time of Mourning; tho at preſent they make one of the principal Ceremonies of Mourning. *Mabillon* adds, that 'twas an antient Cuſtom to ring the *Bells* for Perſons about to expire, to advertiſe the People to pray for 'em; whence our *Paſſing-Bells*. *Lobineau* obſerves, that the Cuſtom of *ringing Bells*, at the Approach of Thunder, is of ſome Antiquity; but that the Deſign was not ſo much to ſhake the Air, and ſo diſſipate the Thunder, as to call the People to Church, to pray the Pariſh may be preſerved from that terrible Meteor.

The Cuſtom of *baptizing*, or *bleſſing Bells*, is very antient. Some ſay 'twas introduced by Pope *John* XIII. in 972; but 'tis evidently of an older ſtanding; there being an expreſs Prohibition of the Practice in a Capitulary of *John* XIII. *Alcuin* ſays 'twas eſtabliſh'd long before Pope *John* XIII. Yet this is only to be underſtood of an Order of that Pope, for reſtoring the Practice which had been diſuſed. See BAPTISM.

Nankin, a City of *China*, was antiently famous for the Largeneſs of its *Bells*; but their enormous Weight having brought down the Steeple, the whole Building fell to Ruin, and the *Bells* have ever ſince lain on the Ground. One of theſe *Bells* is near 12 *Engliſh* Foot high, the Diameter $7\frac{1}{2}$, and the Circumference 23; its Figure almoſt Cylindric, except for a Swelling in the middle; and the Thickneſs of the Metal about the Edges, ſeven Inches. From the Dimenſions of this *Bell*, its Weight is computed at 50000 Pounds, which is more than double the Weight of that of *Erfort*, ſaid by Father *Kircher* to be the greateſt *Bell* in the World. Theſe *Bells* were caſt by the firſt Emperor of the preceding Dynaſty, about 300 Years ago. They have each their Name, the Hanger *Schoui*, the Eater *Che*, the Sleeper *Choui*, the Will *Fi*. Father *le Compte* adds, that there are ſeven other *Bells* in *Pekin*, caſt in the Reign of *Youlo*, each of which weighs 120000 Pounds. But the Sounds even of their biggeſt *Bells*, are very poor; being ſtruck with a Wooden in lieu of an Iron Clapper. The *Ægyptians* have none but wooden Clocks, except one brought by the *Franks* into the Monaſtery of St. *Anthony*.

BELL: The Sound of a *Bell* conſiſts in a vibratory Motion of the Parts thereof, much like that of a Muſical Chord. The Stroke of the Clapper, 'tis evident, muſt change the Figure of the *Bell*, and of round, make it oval: But the Metal having a great degree of Elaſticity, that Part which the Stroke drove furtheſt from the Centre will fly back again, and that even ſomewhat nearer to the Centre than before: So that the two Points which before

were

were the Extremes of the longer Diameter, now become thoſe of the ſhorter. Thus the Circumference of the *Bell* undergoes alternate Changes of Figure, and by means thereof gives that tremulous Motion to the Air wherein Sound conſiſts. See SOUND.

M. *Perrault* maintains, that the Sound of the ſame *Bell*, or *Chord*, is a Compound of the Sounds of the ſeveral Parts thereof; ſo that where the Parts are homogeneous, and the Dimenſions of the Figure uniform, there is ſuch a perfect Mixture of all theſe Sounds, as conſtitutes one uniform, ſmooth, even Sound; and the contrary Circumſtances produce Harſhneſs. This he proves from the *Bell*'s differing in Tune according to the Part you ſtrike; and yet ſtrike it any where, there is a Motion of all the Parts. He therefore conſiders *Bells* as compoſed of an infinite Number of Rings, which, according to their different Dimenſions, have different Tones, as Chords of different Length have: And when ſtruck, the Vibrations of the Parts immediately ſtruck, determine the Tone; being ſupported by a ſufficient Number of conſonant Tones in other Parts. See TUNE.

BELLOWS, a Machine uſed to give a briſk Agitation to the Air, by enlarging and contracting its Capacity by Turns. *Bellows* are of various Kinds, as *Domeſtick Bellows*, *Enamellers Bellows*, *Smiths Bellows*. See FORGE. The *Bellows* of an Organ are ſix Foot long, and four broad; each having an Aperture of four Inches, that the Valve may play eaſily. There ſhould likewiſe be a Valve at the Noſe of the *Bellows*, that one mayn't take the Air from the other. To blow an Organ of 16 Feet there are required four Pair of *Bellows*. There are ſome *Bellows* triangular, which only move on one Side. Others call'd *Lanthorn-Bellows*, from their reſembling a Paper Lanthorn: Theſe move each way, and yet ſtill continue parallel to each other. The *Heſſian Bellows* are a Contrivance for driving Air into a Mine for the Reſpiration of the Miners. This M. *Papin* improved, changing its Cylindrical Form into a Spiral one; and with this, working it only with his Foot, he could make a Wind to raiſe two Pound Weight. See the *Philoſ. Tranſact.*

BELOMANCY, a kind of Divination by Arrows; (from βέλος, *an Arrow*, and μαντία, *Divination*,) practiſed in the *Eaſt*, but chiefly among the *Arabians*. 'Twas performed in different manners: One was to mark a Parcel of Arrows, and put eleven, or more of 'em, into a Sack; theſe were afterwards drawn out, and according as they were mark'd, or not, they judged of future Events. Another way was to have but three Arrows, upon one of which was wrote, *God orders it me*; upon another, *God forbids it me*; and upon the third was wrote nothing at all. Theſe were put into a Quiver, out of which they drew one of the three at random; if it happen'd to be that with the firſt Inſcription, the Thing they conſulted about was done; if it chanced to be that with the ſecond Inſcription, 'twas let alone; but if it proved that without an Inſcription, they draw'd over again. This was an antient Practice, and probably that which *Ezekiel* mentions, *ch.* xxi. 21. At leaſt St. *Jerome* underſtands it ſo, and obſerves that the Practice was frequent among the *Aſſyrians* or *Babylonians*. Something like it is alſo mentioned in *Hoſea*, *ch.* iv. only that *Rods* are there mentioned inſtead of *Arrows*, which is rather *Rhabdomancy* than *Belomancy*. *Grotius*, as well as *Jerome*, confounds the two together, and ſhews that it prevail'd much among the *Magi*, *Chaldeans* and *Scythians*; whence it paſſed to the *Sclavonians*, and thence to the *Germans*, whom *Tacitus* obſerves to make uſe of it. See RHABDOMANCY.

BELTS, in Aſtronomy, two *Faſciæ*, or Girdles, obſerv'd in *Jupiter*'s Body, more lucid than the reſt, and terminated by Parallel Lines, being ſometimes broader and ſometimes narrower; nor do they conſtantly take up the ſame Places in his Diſk. *Huygens* obſerved a *Belt* in *Mars* in 1656, much broader than thoſe of *Jupiter*, and poſſeſſing the middle Part of his Diſk, but very obſcure. See JUPITER, &c.

BEN, or *Behen*, a Name given to a Medicinal Root, rank'd among the Cardiacs and Counter-Poiſons; and to an Oil expreſs'd from this Root, uſed by Perfumers, &c. The Root of *Ben* is divided into white and red: The firſt is inſipid, leaving only a little Bitterneſs behind it on the Tongue; the red is fibrous, brown without, and reddiſh within. They are both brought from *Syria*, and have the ſame Virtues, being ſubſtituted for each other; they muſt be choſen dry, and are of an aromatick, aſtringent Taſte.

BENCHERS in an Inn of Court, the Seniors of the Houſe, who have the Government and Direction thereof; and out of whom is yearly choſen a Treaſurer, &c.



BEND, in Heraldry, one of the eight honourable Ordinaries; containing a fifth when uncharged, but when charged a third part of the Eſcutcheon: It is made by two Lines drawn thwartways from the Dexter-Chief to the Siniſter-Baſe Point; thus he beareth Or, a *Bend* Sable. A *Bend* is ſubdivided into a *Benlet* which is the ſixth part of the Shield, a *Garter* which is the Moiety of a *Bend*, a *Coſt* which is the fourth part of a *Bend*, and a *Ribbon* which is the Moiety of a *Coſt*. There is alſo a *Bend-Siniſter*, which is drawn from the *Siniſter-Chief Point* to the *Dexter-Baſe*, and this is ſubdivided into the *Scrape*, or *Scarp*, and the *Battoon*; which latter is the fourth part of the *Bend*. This *Battoon* is the moſt uſual Mark of Illegitimacy; but then it never extends itſelf quite athwart the Shield, but is cut off a little at each End: When two ſtreight Lines drawn within the *Bend* run nearly parallel to the outward Edges of it, that is called *Voiding*; and he that bears it, is ſaid *to bear a Bend* voided thus: He beareth Ermine, a *Bend* voided Gules.

BEND: At Sea they ſay *bend the Cable*, when it is to be made faſt to the Ring of the Anchor; and to *bend two Cables*, is the ſame as to tie them together. To *unbend the Cable*, is to looſen it from the Ring of the Anchor; which is done when a Ship deſigns to be long at Sea. To *bend a Main-Sail*, is to make it faſt to the Yard in its proper Place. The *Bends* in a Ship are the ſame with the *Wailes*, or *Wales*, which are the outermoſt Timbers of a Ship, on which Men ſet their Feet in climbing up: They are reckoned from the Water the firſt, ſecond, and third *Bend*: They help much to ſtrengthen the Ship, and have the Beams, Knees, and Foot-Hooks bolted into them.



BENDY, the Term in Blazonry for an Eſcutcheon's being divided *Bend-ways* into an even Number of Partitions; but if they are odd, the *Field* muſt firſt be named, and then the Number of the *Bends*.

BENEDICTINES, a Set of Religious, who profeſs to live by the Rule of St. *Benedict*. The *Benedictines* are divided into ſeveral Congregations. They wear a looſe black Gown, with large wide Sleeves, and a Capuche on their Heads, ending in a Point behind. In the Canon Law they are called *Black Friars*, diſtinguiſhing them from the other Orders by their Habit, and not by the Name of their Patriarch St. *Benedict*. There is only this Difference between the antient *Monks* and the *Benedictines*, in that the former were mere *Monks*, without any Attachment to a particular Order. The Liſt of Saints of the *Benedictin* Order is very ample; but they are accuſed by *Baronius*, and many other Writers, of putting thoſe in the Liſt who were never of that Order.

BENEFICE, in an Eccleſiaſtical Senſe, a Church endow'd with a Revenue for the Performance of Divine Service; or, that Revenue itſelf, aſſign'd to an Eccleſiaſtical Perſon for Life, in return for the Service he is to do to that Church. All Church-Preferments, except Biſhopricks, are called *Benefices*; and all *Benefices* are, by the Canoniſts, ſometimes called *Dignities*: But we now ordinarily diſtinguiſh between *Benefice* and *Dignity*, uſing the Word *Dignity* for *Biſhopricks*, *Deanaries*, *Arch-Deaconries*, and *Prebends*; and *Benefices* for PARSONAGES, VICARAGES, or DONATIVES; which ſee.

Benefices are divided by the *Canoniſts* into *Simple* and *Sacerdotal*: In the firſt there is no Obligation but to read Prayers, ſing, &c. as Canons, Chaplains, Chantors, &c. The ſecond is charg'd with a Cure of Souls, or the Direction and Guidance of Conſciences, as *Vicarages*, *Rectories*, &c. The *Canoniſts* make three manners of *vacating* a *Benefice*, viz. *de Jure*, *de Facto*, and *by the Sentence of a Judge*. A *Benefice* is vacated *de Jure*, when the Perſon enjoying it is guilty of Crimes expreſs'd in thoſe Laws, as Hereſy, Simony, &c. A *Benefice* is vacated *de Facto*, as well as *de Jure*, by the natural Death, or the Reſignation of the Incumbent; and that Reſignation may be either expreſs, or tacit, as when he engages in a State, &c. inconſiſtent with it; as among the *Romaniſts* by Marrying, Entering a Religious Order, &c. A *Benefice* is vacant by the *Sentence of a Judge*, by way of Puniſhment for certain Crimes, as Concubinage, Perjury, Sorcery, &c. The *Romaniſts*, again, diſtinguiſh *Benefices* into *Regular* and *Secular*. *Regular*, or *Titulary Benefices*, are thoſe held by a *Religious*, or a *Regular*, who has made Profeſſion of ſome Religious Order, as an Abby, Priory, Conventual, &c. Or rather, a *Regular Benefice* is ſuch as can't be conferr'd on any but *Religious*, either by its Foundation, by the Inſtitution of a Superior, or by Preſcription: For Preſcription, 40 Years Poſſeſſion by a *Religious*, without a Diſpenſation, makes the *Benefice Regular*. *Secular Benefices* are thoſe that are only to be given to *Seculars*; of which kind are almoſt all their Cures. All *Benefices* are reputed *Secular*, till the contrary is made appear. They are called *Secular Benefices*, becauſe held by *Secular Prieſts*, i. e. by ſuch as live in the World, and are not engaged in any Monaſtick Order. Some *Benefices*, *Regular* of themſelves, are *ſecularized* by the Pope's Bull. See REGULAR and SECULAR.

A *Benefice in Commendam* is that, the Direction and Management whereof, upon a Vacancy, is given or commended to an Eccleſiaſtick for a certain Time, till it may be conveniently provided for. See COMMENDAM.

The Term *Benefice* comes to us from the old *Romans*, who uſing to diſtribute part of the Lands they had conquered on the Frontiers of the Empire to their Soldiers, thoſe who enjoy'd ſuch Rewards were call'd *Beneficiarii*, and the Lands themſelves *Beneficia*, as being held on the pure Beneficence and Liberality of the Prince. Theſe *Benefices* at firſt were given for Life only, but afterwards became Hereditary and Patrimonial. From the *Romans* both the Name and the Thing paſſed into *France* and *England*, with this Difference, as Mr. *Blount* obſerves, that *Benefices* were not given as mere Gratuities for paſt Services, but as Warrants for future ones, and were accordingly held by the Tenure of ſerving, on occaſion, in the Wars, &c. So that what was before a *Benefice*, became now converted into a *Fee*. Hence, doubtleſs, came the Term *Benefice* to be applied to Church-Livings; for, beſides that the Eccleſiaſticks held for Life, like the Soldiers, the Riches of the Church aroſe from the *Beneficence* of Princes.

As to the Origin of *Eccleſiaſtical Benefices*, 'tis hard to determine when the Effects of the Church were firſt divided; 'tis certain, till the fourth Century all the Revenues were in the Hands of the Biſhops, who diſtributed them by their *Oeconomi*; they conſiſted principally in Alms and voluntary Contributions. As the Church came to have Inheritances, Part thereof was aſſign'd for the Subſiſtance of the Clergy, and call'd a *Benefice*, for which we find ſome footing in the fifth and ſixth Century; but then there does not appear to have been any certain Partition, nor any preciſe Quota allotted to each Particular, but the Allotments were abſolutely diſcretional till about the twelfth Century. At firſt each was contented with a ſingle *Benefice*, but Pluralities were, by degrees, introduced, on pretence of Equity: For, a ſingle *Benefice* being ſometimes ſcarce thought a Competency, the Prieſt was allow'd two: As his Quality, or Occaſions, increas'd, ſo the Number of *Benefices* that were to ſupport 'em were increas'd too. Hence ſome affecting to equal Princes in Quality, pretend to Revenues anſwerable thereto.

V. Ferrier obſerv'd, that in his Time there were five *Caſes* by which *Benefices* were acquir'd: By the *Nominative*, as in royal Nominations; by the *Genitive*, as where the Children of Great Men, &c. are provided of *Benefices* by their Birth; by the *Dative*, as when ſpeaking of a *Benefice*, 'tis ſaid, *Date, & dabitur vobis*; by the *Accuſative*, as where by virtue of an Accuſation, either true or falſe, an Incumbent is diſpoſſeſs'd, and another admitted; by the *Ablative*, as when *Benefices* are taken away by Force from the poor and helpleſs: but the *Vocative Caſe*, which is the moſt juſt and legitimate, is out of uſe. The *Nominative* is for the King; the *Genitive* for the Great; the *Dative* for the Rich; the *Accuſative* for the Cunning; and the *Ablative* for the Ambitious; but the *Vocative* is reſerved for the *Holy Ghoſt* alone.

BENEVOLENCE is uſed, both in our Statutes and Chronicles, for a voluntary Gratuity given by the Subjects to their Sovereign. The firſt *Benevolence*, *Stow* obſerves in King *Edward* the IV's Days, was granted that Prince in regard of his great Expences in Wars, &c. There was one given by Act of Parliament to King *Charles* II. In other Nations this is called *Subſidium Charitativum*, given ſometimes by Tenants to their Lords, by the Clergy to their Biſhops, &c.

BENJOYN, or, as 'tis commonly called, *Benjamen*, an excellent kind of Reſin, imported from the Kingdom of *Lao*, and other Parts of the *Eaſt-Indies*. 'Tis procured by a Wound or Inciſion in a Tree, whoſe Leaves reſemble thoſe the Lemmon-Tree. 'Tis of a yellowiſh Colour, of an agreeable Scent, and eaſy to melt. There are three Sorts of it: The firſt is call'd *Amygdaloides*, becauſe of its being interſpers'd with ſeveral white Spots which reſemble broken Almonds: This comes from *Siam*. The ſecond is black and very odoriferous; it drops from young Trees, and comes from *Sumatra*; 'tis call'd *Benzoinum de Boninas*. The third Sort is alſo black, but leſs odoriferous; this is found in the Iſlands of *Java* and *Sumatra*. 'Tis uſed in Phyſick, as a Pectoral and Anti-Aſthmatick; and thrown on live Coals, it ſerves to perfume Houſes, &c.

BERENGARIANS, a Religious Sect who adher'd to the Opinions of *Berenger*, Archdeacon of *Angiers*, who oppos'd the Doctrine of Tranſubſtantiation and the real Preſence, a conſiderable time before *Luther*. He is further charged by the *Romaniſts* with decrying Marriage, and maintaining the common Uſe of all ſorts of Women, and aſſerting Infant-Baptiſm of no effect. His Followers were divided on the Head of the Euchariſt: Tho they all agreed that the Bread and Wine were not eſſentially chang'd, yet ſome allow'd it to be chang'd in effect, tho under an Impanation, which was the Opinion of *Berenger* himſelf: Others denied any Change at all, and reſolved all into Figure; others again allow'd a Change in part; and others an entire Change, with this Reſtriction, that to thoſe who preſented themſelves unworthily it was chang'd back again.

BERENICES *Hair*, or *Coma Berenices*, a Conſtellation in the Northern Hemiſphere, conſiſting of Stars near the *Lion's Tail*.

BERGAMOT is a kind of Eſſence, drawn from a Fruit, produc'd by ingrafting the Lemon-Tree on the *Bergamot-Pear* Stock. 'Tis no more than the oily Fluid of theſe Lemons expreſs'd by the Fingers. There is likewiſe a kind of Snuff of the ſame Name, which is only clean Tobacco, with a little of the Eſſence rubb'd into it.

BERGHMOTH, vulgarly call'd *Barmote*, a Court held on a Hill for deciding Pleas and Controverſies among the *Derbyſhire* Miners. From the *Saxon Berg*, *Mons*, and *Mote*, *Conventus*.

BERLIN, a particular kind of Vehicle of the Chariot-kind, much uſed of late; taking its Name from the City *Berlin* in *Germany*; tho ſome attribute the Invention of it to the *Italians*. 'Tis a very convenient Machine to travel in, being lighter, and leſs apt to be overturn'd, than a Chariot. The Body of it is hung high by Shafts to leathern Braces; there being a kind of Stirrup or Footſtool for the Conveniency of getting into it: Inſtead of Side-Windows, there are Sheds to let down in bad Weather, and draw up in good.

BERME, in Fortification, is a ſmall Space of Ground four or five Foot wide, left without between the Foot of the Rampart and the Side of the Moat, to receive the Earth that rolls down from thence, and to prevent its falling into the Moat. Sometimes, for more Security, the *Berme* is palliſadoed.

BERNARDINE, the Name of a religious Order extended over great part of *Europe*. This Order is an Improvement of that of St. *Benedict*, made by *Robert Abbe de Moleine*; and again by St. *Bernard Abbe de Clervaux*. Their uſual Habi ti sa white Gown, with a black Scapulary; but when they officiate, they put on a large white Coul with great Sleeves, and a Hood of the ſame Colour.

BERIL, or BERYL, a precious Stone, much like Chryſtal, brought from the *Indies*; there are ſome alſo found on the Banks of the *Euphrates*. There are ſeveral Kinds of *Berils*. Lapidaries reckon ten: The moſt eſteemed are the *Beril*, the *Chryſoberil*, and the *Chryſopraſin*. The *Beril* borders much on the Sea-green; whence the *Latins* call it *Aqua Marina*, *Sea-Water*. To give it a Luſtre, it muſt be cut Facet-wiſe: Poliſhing does not give it any Brillant, if cut any other way. The *Chryſoberil* is ſomewhat paler, and partakes more of the yellow. *Chryſopraſin* partakes moſt of the green. Some Authors take the *Beril* to be the Diamond of the Antients: This is certain, the ableſt modern Jewellers ſometimes miſtake the one for the other. The *Beril* is ſometimes found in Pieces large enough to form fine Vaſes. 'Tis ſaid, there are many of 'em at *Cambaye*, *Martaban*, *Pegu*, and *Ceylon*.

The Properties of the *Beril* were very wonderful in the Opinion of the antient Naturaliſts: It kept People from falling into Ambuſcades of Enemies, excited Courage in the fearful, cured Diſeaſes of the Eyes and Stomach. It does none of theſe things now; becauſe People are not ſimple enough to believe it has the Virtue to do 'em.

BERRY, a Grain, Fruit, or Seed, produced by ſeveral Treees and Shrubs for the Conſervation, and Re-production of their Kind. *Berries* are of various Sizes, Forms, Properties, and Uſes, according to the Plants whereon they grow: Some uſed in Medicine, as *Juniper-Berries*, *Buckthorn-Berries*, &c. Others in Dying, as *French* or *Yellow Berries*, &c. See GRAIN and SEED.

BESANT, a ſort of Coin ſtruck at *Conſtantinople*, in the Time of the Emperors, antiently called *Biſance*; 'twas pure Gold, or 24 Carats fine. Its Value is not determin'd. Hence the Gold offer'd by the King at the Altar, and on Feſtivals, is ſtill call'd *Beſant*, or *Biſant*.

BES, or BESSIS, the Mark, or eight Ounces, Part of the *As*; *Bes* for *Bis*, which is two *Triens*, which are each four in Value. See AS.

BESTIARII, among the antient *Romans*, thoſe who combated with Beaſts, or were expos'd to 'em. We uſually diſtinguiſh two Kinds of *Beſtiarii*: The firſt were thoſe condemn'd to the Beaſts, either as being Enemies, taken Priſoners, or as being Slaves, and guilty of ſome enormous Crime. Theſe were all expos'd naked, and without Defence to the Beaſts; nor did it ought avail to conquer and kill the Beaſt, freſh ones being continually let looſe on 'em, till they were dead. The *Chriſtians* were *Beſtiarii* of this Kind, even ſome of 'em who were *Roman* Citizens, tho 'twas the Privilege of ſuch to be exempt from it: But it ſeldom happen'd that two were requir'd for the ſame Man; on the contrary, one Beaſt frequently diſpatch'd ſeveral Men. *Cicero* mentions

a Lion, which alone diſpatch'd 200 *Beſtiarii*. Thoſe who ſucceeded the firſt were call'd ἑφεδροι, and the laſt ἔσχατοι. See MERIDIANI.

The ſecond Kind of *Beſtiarii*, *Seneca* obſerves, conſiſted of young Men, who, to become expert in managing their Arms, fought ſometimes againſt Beaſts, and ſometimes againſt one another; and of Bravo's, who, to ſhew their Courage and Dexterity, expos'd themſelves to this dangerous Combat. *Auguſtus* encourag'd this Practice in young Men of the firſt Rank; *Nero* expoſed himſelf to it; and 'twas for the killing Beaſts in the Amphitheatre, that *Commodus* acquir'd the Title of the *Roman Hercules*. *Vigenere* to theſe adds two Kinds of *Beſtiarii* more: The firſt were thoſe who made a Trade of it, and fought for Money; the ſecond was where ſeveral *Beſtiarii* armed, were let looſe at once againſt a Number of Beaſts.

BEVEL, in Maſonry, and among Joiners, a kind of Square, one Leg whereof is frequently crooked, according to the Sweep of an Arch or Vault. 'Tis moveable on a Point or Centre, and ſo may be ſet to any Angle. Its Make and Uſe are pretty much the ſame as thoſe of the common Square and Mitre, except that thoſe are fix'd; the firſt at an Angle of 90 Degrees, and the ſecond at 45; whereas the *Bevil* being moveable, may, in ſome meaſure, ſupply the Office of both, and yet, which 'tis chiefly intended for, ſupply the Deficiencies of both; ſerving to ſet off, or transfer, Angles either greater or leſs than 90 or 45 Degrees. Hence a *Bevil* Angle is uſed to denote any other Angle but thoſe of 90 or 45 Degrees.



BEVILE, a Term in Heraldry ſignifying Broken, or opening like a Carpenter's Rule. Thus he beareth Argent a chief *Bevile* Vert, by the Name of *Beverlis*.

BEY, a Term uſed for a Governour of a maritime Country or Town in the Turkiſh Empire. The *Turks* write the Word *Begh*, or *Bek*, but pronounce it *Bey*. Properly it ſignifies *Lord*, but is particularly applied to a *Lord of a Banner*, whom in the ſame Language they call *Sangiakbeghi*, or *Bey: Sangiak*, which among them ſignifies *Banner*, or *Standard*, being the Badge of him who commands in a conſiderable Place of ſome Province, having under him a conſiderable Number of *Spahi's*, or Horſe. Each Province in *Turkey* is divided into ſeven of theſe *Sangiacks*, or *Banners*, each of which qualifies a *Bey*; and theſe are all commanded by the Governour of the Province, whom they alſo call *Beghiler-Beghi*, or *Beyler-bey*, i. e. *Lord of the Lords*, or *Beys of the Province*. Theſe *Beys* are in a great meaſure the ſame that *Bannerets* formerly were in *England*.

BEZOAR, or BEZOARD, a Medicinal Stone, eſteem'd a Sovereign Counter-Poiſon, and an excellent Cardiac. 'Tis alſo given in Vertigo's, Epilepſies, Palpitation of the Heart, Jaundice, Cholick, and ſo many other Diſeaſes, that were its real Virtues anſwerable to its reputed ones, it were doubtleſs a *Panacea*. Indeed, its Rarity, and the peculiar Manner of its Formation, have, perhaps, contributed as much to its Reputation, as any intrinſick Worth. At preſent it begins to be prized leſs, and a great many able Phyſicians diſcard it, as of no Uſe or Efficacy at all.

There are ſeveral Kinds of *Bezoar*; the Chief are the *Oriental*, the *Occidental*, and that of *Germany*. The *Oriental* is in the moſt Eſteem, and is brought from ſeveral Parts of the *Eaſt-Indies*, chiefly *Golconda* and *Cananor*: 'Tis there found mingled with the Dung of an Animal of the Goat Kind call'd *Pazan*; in the Belly whereof this Stone is found: The Buds of a certain Shrub which the Animal uſes to brouze, are uſually found in the middle of it, and ſuppoſed to be the Seed whence it ariſes. The *Bezoar* ordinarily grows of the Bigneſs of an Acorn, ſometimes of that of a Pigeon's Egg. It is compoſed of ſeveral ſhining Skins, or Coats, like an Onion, ſometimes of a Blood-Colour, ſometimes a pale yellow, a browniſh red, and Honey-Colour. The Number of *Bezoards* produced by each Animal is various, ſome yielding one, two, &c. to ſix, and others none at all. The larger the Stone the more valuable, its Price increaſing like that of the Diamond. A Stone of one Ounce is ſold in the *Indies* for 100 Franks, and one of four Ounces for 2000 Livres. *Oriental Bezoar* muſt be choſe ſhining, of a Smell like that of Ambergreeſe, ſmooth to the Touch, and in large Pieces; its Figure is indifferent, its Colour uſually Olive. *Bezoar* is eaſily ſophiſticated, and the Deceit as eaſily diſcover'd. The Methods of proving it are, *1ſt*, to ſteep it three or four Hours in lukewarm Water; if the Water ben't ting'd, nor the *Bezoar* loſe of its Weight, 'tis pure. *2dly*, To try it with a ſharp, red hot Iron; if it enters the Stone, and the Heat makes it fry and ſhrivel, 'tis factitious. *3dly*, To rub it over a Paper ſmear'd with Ceruſſe; if it leave a yellow Teint, 'tis good.

Occidental Bezoar, or *Bezoar* of *Peru*, is very different from the firſt. 'Tis found in the Belly of ſeveral Animals, peculiar to the Country: In ſome 'tis the Bigneſs of a Nut, in others of a Pullet's Egg; in ſome 'tis oval, in others flat, in others round; 'tis uſually of an Aſh-Colour, ſometimes duſky; and form'd of Scales, like the *Oriental*, but much thicker; 'tis ſmooth and even without-ſide, but when broke, looks as if it had been ſublimated, by reaſon of the little ſhining Needles whereof it appears to be compoſed. The Animals that produce it are the Guanaco's, Jacho's, Vicunna's, and Taragua's; the *Bezoar* of which laſt is the moſt eſteemed, this Animal being much like the Goat that produces the *Oriental*.

The *German Bezoar*, which ſome call *Cow's Eggs*, is found in the Stomach of ſome Cows, but more frequently in that of the Chamois or Iſard. Theſe are ſuppoſed to be nothing elſe bnt the Hair of thoſe Animals, which being occaſionally lick'd off by the Tongue, is ſwallow'd down, and being impregnated with the Saliva, &c. is condens'd into Balls. Some of theſe *Bezoars* weigh 18 Ounces, but they are not much eſteem'd, tho they are uſed in ſome Medicines, and by the Painters in Miniature, to make their yellow Colours.

Beſides theſe three Kinds of *Bezoar* which the Shops afford, there are three other Kinds much rarer, *viz.* the *Stone of the Hog*, that of *Malacca* or *Porcupine*, and that of the *Ape*. The firſt call'd by the *Dutch*, *Pedro de Porco*, and by the *Portugueſe*, who firſt brought it into *Europe*, *Pedro de Vaparis*, found in the Gall-Bladder of a Boar in the *Eaſt-Indies*. In Figure and Size it reſembles a Filbert, tho more irregular; its Colour not fix'd, but moſt commonly white with a Teint of blue; it is ſmooth and ſhining. The *Indians* attribute infinite Virtues to this *Bezoar*: They call it *Maſtica de Soho*, and prefer it to the *Oriental Bezoar*; not ſo much on account of its being ſuppoſed the beſt Preſervative in the World againſt Poiſons, as on account of its being Sovereign in the Cure of the *Mardoxi*, a Diſeaſe they are very liable to, and which is not leſs dangerous than the Plague in *Europe*. The other Properties they aſcribe to it are, that 'tis admirable againſt malignant Fevers, Small-Pox, and moſt Diſeaſes of Women not with Child; Experience ſhewing, that it promotes Abortion in thoſe who uſe it indiſcreetly. To uſe it, they infuſe it in Water, or Wine, till it has communicated a little Bitterneſs to it. To facilitate the Infuſion, and at the ſame time preſerve ſo precious a Stone, they uſually ſet it in a gold Caſe pierced with Holes.

Bezoars of Porcupines and *Monkies* only differ from thoſe of the *Hog*, in that they are found in the Gall-Bladders of thoſe Animals; unleſs we ſay with *Tavernier*, that theſe two, which he calls *Malacca-Stones*, are not taken from the Gall-Bladders, but the Head of the Monkey and Porcupine; and that they are held in ſuch Eſteem by the Natives of *Malacca*, that they never part with 'em, unleſs as Preſents to Ambaſſadors, or the greateſt Princes of the Eaſt. Some add, that they are likewiſe found in *Siam*. Indeed, the Form, Colour and Properties of theſe three *Bezoars* are ſo near a-kin, that 'tis more than probable, that 'tis the ſame Stone under three different Names.

Bezoar is applied by the Chymiſts, to ſeveral of their Preparations, on account of the *Bezoardick* Qualities they are ſuppos'd to have.

Animal BEZOAR is the Heart and Lungs of the Viper pulverized together.

Mineral BEZOAR is an Emetick Powder of Antimony corrected with Spirit of Nitre, and ſoftened by repeated Lotions, which carry off the purgative Virtue of the Antimony, and ſubſtitute a Diaphoretick one. It promotes Sweat like the Stone of that Name.

BEZOARDICUM *Joviale*, or *Bezoar of Jupiter*, a Regulus made by melting three Ounces of Regulus of Antimony and two of Block-Tin, which, powder'd and mix'd with ſix Ounces of Corroſive Sublimate, and diſtill'd off in a kind of Butter, and that diſſolv'd in Spirit of Nitre, the Solution is diſtill'd three times; the *Bezoar* remaining at bottom, to be powder'd, waſh'd, and mingled with Spirit of Wine, till it grow inſipid.

BEZOARDICUM *Lunale*, or *of the Moon*, is made by mixing eight Ounces of rectified Butter of Antimony with one of fine Silver. This is diſſolv'd in Spirit of Nitre, by gently pouring it on, freſh and freſh, till the Ebullition ceaſe; when, the Spirit is drawn off by a gentle Heat, and the *Bezoar* manag'd as the former.

BEZOARDICUM *Martiale*, a Diſſolution of *Crocus Martis* by Reverberation in Butter of Antimony, with Spirit of Nitre pour'd on it; the reſt as in the firſt.

BIBITORY *Muſcle*. See ADDUCENS OCULI, which is the ſame.

BIBLE, a *Book* by way of Eminence ſo call'd, containing the Scriptures, *i. e. the Old and New Teſtament*. *Bibles* are diſtinguiſh'd according to their Language, into *Hebrew*, *Greek*, *Latin*, *Chaldee*, *Syriack*, *Arabick*, *Coptick*, &c. an

Acquaintance with which making a conſiderable Article in Theological Criticiſm; we ſhall here ſubjoin ſome Account thereof.

Hebrew BIBLES are either Manuſcript or Printed. The beſt Manuſcripts are thoſe copied by the *Jews* of *Spain*. Thoſe copied by the *Jews* of *Germany*, are leſs exact, but more common: The two Kinds are eaſily diſtinguiſh'd from each other; the former being in beautiful Characters, like the *Hebrew Bibles* of *Stephens* and *Plantin*; the latter in Characters like thoſe of *Munſter* and *Gryphæus*. *F. Simon* obſerves, that the oldeſt Manuſcript *Hebrew Bibles* are not above 6 or 700 Years old; nor does Rabbi *Menaham*, who quotes a vaſt Number of 'em, pretend any of 'em exceed 600 Years.

The moſt antient printed *Hebrew Bibles* are thoſe publiſhed by the *Jews* of *Italy*, eſpecially of *Peſaro* and *Breſſe*. Thoſe of *Portugal* alſo printed ſome Parts of the *Bible* at *Lisbon*, before their Expulſion. This may be obſerv'd in the general, that the beſt *Hebrew Bibles* are thoſe printed under the Inſpection of the *Jews*; there being ſo many *Minutiæ* to be obſerv'd, that 'tis ſcarce poſſible for any other to ſucceed in it.

In the beginning of the ſixth Century *Dan. Bombergua* printed ſeveral *Hebrew Bibles* in *Folio* and *4to* at *Venice*, moſt of which are eſteem'd both by the *Jews* and *Chriſtians*: The firſt in 1517, which is the leaſt exact, and generally goes by the Name of *Felix Pratenſis*, the Perſon who reviſed it: The ſecond in 1526, with the Maſſora and the Commentaries of ſeveral Rabbins, and a *Hebrew* Preface by Rabbi *J. Benchajim*. In 1548 the ſame *Bombergua* printed the *Folio Bible* of Rabbi *Benchajim*, which is the beſt and moſt perfect of 'em all: 'Tis diſtinguiſh'd from the firſt of the ſame Rabbi, by the Comment of Rabbi *D. Kimchi* on the *Paralipomena*, which are not in the preceding. From this Edition it was, that *Buxtorf*, the Father, printed his *Hebrew Bible* of the Rabbins at *Baſil*, in 1618; but in this are ſeveral Faults, eſpecially in the *Commentaries* of the Rabbins, where that learned Man corrected ſome places that were againſt the *Chriſtians*. In the ſame Year appear'd at *Venice* a new Edition of the *Bible* of the Rabbins by *Leo de Modena*, a Rabbin of that City, who pretended to have corrected a great Number of Faults in the former Edition; but, beſides that 'tis much inferior to the other *Hebrew Bibles* of *Venice*, with regard to Paper and Print, it has paſs'd thro the Hands of the Inquiſitors, who have alter'd many Paſſages in the *Commentaries* of the Rabbins.

For *Hebrew Bibles* in *4to*, that of *R. Stephens* is eſteem'd for the Beauty of the Characters; but 'tis very incorrect. *Plantin* alſo printed ſeveral beautiful *Hebrew Bibles* at *Antwerp*; the beſt is that of 1566, in *4to*. *Manaſſeh Ben Iſrael*, a learned *Portugueſe Jew*, publiſhed two Editions of the *Hebrew Bible* at *Amſterdam*, the one in *4to*, the other in *8vo*; the firſt has two Columns, and for that reaſon is commodious for the Reader. In 1634, R. *Jac. Lombroſo* publiſh'd a new Edition in *4to* at *Venice*, with ſmall literal Notes at the bottom of each Page, where he explains the *Hebrew* Words by *Spaniſh* Words. This *Bible* is much eſteem'd by the *Jews* at *Conſtantinople*: In the Text they have diſtinguiſh'd between Words where the Point *Camets* is to be read with a *Camets-hatuph*, that is, by an o and not an a.

Of all the Editions of the *Hebrew Bible* in *8vo*, the moſt beautiful and correct are the two of *Jo. Athia*, a *Jew* of *Amſterdam*. The firſt, of 1661, is the beſt Paper; but that of 1667, the moſt exact: That however, publiſh'd ſince at *Amſterdam* by *Vander Hooght* in 1705, is preferable to any of 'em.

After *Athia*, three *Hebraiſing Proteſtants* engaged themſelves in reviſing and publiſhing the *Hebrew Bible*, viz. *Clodius*, *Jablonski*, and *Opitius*. *Clodius*'s Edition was publiſh'd at *Frankfort* in 1677, in *4to*: At the bottom of the Page it has the various Readings of the former Editions; but the Author does not appear ſufficiently vers'd in the Accenting, eſpecially in the Poetical Books; beſides that not being publiſh'd under his Eye, many Faults have crept in. That of *Jablonski* in 1699, in *4to*, at *Berlin*, is very beautiful, as to Letter and Print: but, tho the Editor pretends he made uſe of the Editions of *Athia* and *Clodius*, ſome Criticks find it ſcarce different in any thing from the *4to* Edition of *Bombergua*. That of *Opitius* is alſo in *4to*, at *Keil* in 1709; the Character is large and good, but the Paper bad: 'Tis done with a great deal of Care; but the Editor made uſe of no MSS. but thoſe of the *German* Libraries; neglecting the *French* one, which is an Omiſſion common to all three. They have this Advantage however, that beſides the Diviſions uſed by the *Jews*, both general and particular, into *Paraſches* and *Peſukim*, they have alſo thoſe of the *Chriſtians*, or of the *Latin Bibles*, into Chapters and Verſes; the *Keriketib* or various Readings, *Latin* Summaries, &c. which make 'em of conſiderable Uſe, with regard to the *Latin* Editions and the Concordances.

The little *Bible* of *R. Stephens* in *16to*, is much prized for the Beauty of the Character. Care, however, muſt be taken; there being another Edition of *Geneva* exceedingly like it, excepting, that the Print is worſe, and the Text leſs correct. To theſe may be added ſome other *Hebrew Bibles* without Points, in *8vo* and *24to*, which are much coveted by the *Jews*; not that they are more exact, but more commodious than the reſt, and are uſed in their Synagogues and Schools: of theſe there are two beautiful Editions, the one of *Plantin*, in *8vo*, with two Columns, and the other in *24to*, reprinted by *Raphalenge* at *Leiden*, in 1610. There is alſo an Edition of them by *Laurens* at *Amſterdam*, in 1631, in a larger Character; another in *12mo* at *Frankfort*, in 1694, full of Faults, with a Preface of M. *Leuſden* at the head of it.

Greek BIBLES. There are a great Number of Editions of the *Bible* in *Greek*; but they may be all reduced to three or four principal ones, *viz.* that of *Complutum*, or of *Alcala de Henares*, that of *Venice*, that of *Rome*, and that of *Oxford*. The firſt was publiſh'd in 1515 by Cardinal *Ximenes*, and inſerted in the *Polyglot Bible*, uſually call'd the *Complutenſian Bible*. This Edition is not juſt, the *Greek* of the *Seventy* being alter'd in a great many places according to the *Hebrew* Text. This Edition has been reprinted in the *Polyglot Bible* of *Antwerp*, in thoſe of *Paris*, and in the *4to Bible* commonly call'd the *Bible of the Vatable*.

The ſecond *Greek Bible* is that of *Venice* in 1518. Here the *Greek* Text of the *Septuagint* is reprinted juſt as it ſtood in the MS. full of Faults of the Copiſts, but eaſily amended. This Edition has been reprinted at *Strasburg*, *Baſil*, *Frankfort*, and other Places, with ſome Alterations, to bring it nearer the *Hebrew*. The moſt commodious is that of *Frankfort*, there being added to this, little *Scholia* where are ſhewn the different Interpretations of the old *Greek* Tranſlators: The Author of this Collection has not added his Name; but 'tis commonly aſcribed to *Junius*.

The third *Greek Bible* is that of *Rome* in 1587, with *Greek Scholia* collected from the MSS. in the *Roman* Libraries by *Pet. Morin*. This fine Edition has been reprinted at *Paris* in 1628, by *J. Morin*, Prieſt of the Oratory, who has added the *Latin* Tranſlation, which in the *Roman* was printed ſeparately, with *Scholia*. The *Greek* Edition of *Rome* has been reprinted in the *Polyglot Bible* of *London*; to which are added, at bottom, the various Readings of the *Alexandrian* MS. This has been alſo reprinted in *England* in *4to* and *12mo*, with ſome Alterations. It has been again publiſh'd at *Franeker* in 1709, by *Boz*, who has added all the various Readings he cou'd find.

The fourth *Greek Bible* is that done from the *Alexandrian* MS. begun at *Oxford* by Dr. *Grabe* in 1707. In this the *Alexandrian* MS. is not printed ſuch as it is, but ſuch as 'twas thought it ſhould be, *i. e.* 'tis alter'd whereever there appear'd any Fault of the Copiſts, or any Word inſerted from any particular Dialect: This, ſome think a piece of Merit, but others a Fault; urging that the MS. ſhould be given abſolutely and entirely of itſelf, and all Conjectures, as to the Readings, to be thrown into the Notes.

Latin BIBLES, how numerous ſoever, may be all reduc'd to three Claſſes, *viz.* the *Antient Vulgate*, made from the *Greek Septuagint*; the *Modern Vulgate*, the greateſt part of which is done from the *Hebrew Text*; and the *New Latin Tranſlations*, done alſo from the *Hebrew Text* in the 16th Century. We have nothing remaining of the *Antient Vulgate* uſed in the Primitive Times in the *Weſtern* Churches, but the *Pſalms*, *Wiſdom*, and *Eccleſiaſtes*. *Nobilius* has endeavour'd to retrieve it from the Works of the antient *Latin* Fathers; but 'twas impoſſible to do it exactly, in regard moſt of the Fathers did not keep cloſe to it in their Citations.

As to the *Modern Vulgate*, there are a vaſt Number of Editions very different from each other. Cardinal *Ximenes* has inſerted one in the *Bible* of *Complutum*, corrected and alter'd in many Places. *R. Stephens*, and the Doctors of *Louvain*, have took a world of Pains in correcting the *Modern Vulgate*. The beſt Edition of *Stephens*'s *Latin Bible* is that of 1540, reprinted in 1545; in which are added, on the Margin, the various Readings of ſeveral *Latin* MSS. which he had conſulted. The Doctors of *Louvain* reviſed the *Modern Vulgate* after *R. Stephens*; and added the various Readings of ſeveral *Latin* MSS. The beſt of the *Louvain* Editions are thoſe, at the End of which are added the Critical Notes of *Francis Luke*, of *Bruges*.

All theſe Reformations of the *Latin Bible* were made before the Time of Pope *Sixtus* V. and *Clement* VIII. Since which, People have not dared to make any Alterations, exceping in Comments, and ſeparate Notes. The Correction of *Clement* VIII. in 1592, is now the Standard throughout all the *Roman* Churches: That Pontiff made two Reformations; but 'tis the firſt of 'em that is follow'd. From this the *Bibles* of *Plantin* were done, and from thoſe

of

of *Plantin* all the reſt; ſo that the common *Bibles* have none of the After-Corrections of the ſame *Clement* VIII. publiſh'd at *Rome* in 1592. 'Tis a heavy Charge that lies on the Editions of Pope *Clement*, *viz.* that they have ſome new Texts added, and many old ones alter'd, to countenance and confirm what they call the *Catholick Doctrine*: Witneſs that celebrated Paſſage of St. *John*, *Tres ſunt in unum*. See VULGATE.

There are a great Number of *Latin Bibles* of the third Claſs, comprehending the Verſions from the Originals of the Sacred Books made within theſe 200 Years: The firſt is that of *Pagninus*, a *Dominican*, printed at *Lions* in 4*to*, much eſteem'd by the *Jews*. This the Author improv'd in a ſecond Edition: In 1542, there was a beautiful Edition of the ſame at *Lions* in *Folio*, with *Scholia*, publiſh'd under the Name of *Michael Villanovanus*, i. e. *Michael Servetus*, Author of the *Scholia*. Thoſe of *Zurich* have likewiſe publiſh'd an Edition of *Pagninus*'s Bible in 4*to*. And *R. Stephens* reprinted it in *Folio*, with the *Vulgate*, in 1557, pretending to give it more correct than in the former Editions. There is alſo another Edition of 1586, with four Columns, bearing the Name of the *Vatable*: And we find it again in the *Hamborough* Edition of the *Bible*, in four Languages. In the Number of *Latin Bibles* is alſo, uſually, rank'd the *Verſion* of the ſame *Pagninus* corrected, or rather render'd literal, by *Arias Montanus*; which Correction being approv'd of by the Doctors of *Louvain*, &c. was inſerted in the *Polyglot Bible* of *Philip* II. and ſince in that of *London*. There have been various Editions of it in *Folio*, 4*to*, and 8*vo*; to which have been added the *Hebrew* Text of the *Old Teſtament*, and the *Greek* of the *New*. The beſt of 'em all is the firſt, which is in *Folio*, 1571.

Since the Reformation, there have been ſeveral *Latin* Verſions of the *Bible* from the Originals by *Proteſtants*. The moſt eſteem'd are thoſe of *Munſter*, *Leo de Juda*, *Caſtalio*, and *Tremellius*: The three laſt whereof have been reprinted various times. *Caſtalio*'s fine *Latin* pleaſes moſt People; but there are ſome who think it too much affected: the beſt Edition thereof is that in 1573. *Leo de Juda*'s Verſion, alter'd a little by the Divines of *Salamanca*, was added to the antient *Latin* Edition, as publiſh'd by *R. Stephens* with Notes, under the Name of *Vatable*. That of *Junius* and *Tremellius* is prefer'd eſpecially by the *Calviniſts*, and has undergone a great Number of Editions.

One may add a fourth Claſs of *Latin Bibles*, compreprehending the *Vulgate* Edition corrected from the Originals. The *Bible* of *Iſidorus Clarius* is of this Number: That Author not being contented with reſtoring the antient *Latin* Copy, has corrected the Tranſlator in a great number of places, which he thought ill render'd. Some *Proteſtants* have follow'd the ſame Method; and among others, *Andrew* and *Luke Oſiander*, who have each publiſh'd a new Edition of the *Vulgate*, corrected from the Originals.

Oriental BIBLES. At the head of the *Oriental* Verſions of the *Bible*, muſt be placed that of the *Samaritan*, that being the moſt antient of all, and admitting no more for *Holy Scripture* but the *Pentateuch*, or *Five Books of Moſes*. This Tranſlation is made from the *Samaritan Hebrew* Text, which is a little different from the *Hebrew* Text of the *Jews*. This Verſion has never been printed alone; nor any where but in the *Polyglots* of *London* and *Paris*.

Chaldee BIBLES are no more than the Gloſſes made by the *Jews* in the Time when they ſpake the *Chaldee* Tongue. Theſe they call by the Name of *Targumim*, or *Paraphraſes*, as not being any ſtrict Verſion of the Scripture. They have been inſerted entire in the large *Hebrew Bibles* of *Venice* and *Baſil*; but are read more commodiouſly in the *Polyglots*, being there attended with a *Latin* Tranſlation.

Syriack BIBLES. In the Year 1562, *Widmanſtadius* printed the whole *New Teſtament* in *Syriac* at *Vienna*, in a beautiful Character: After him there were ſeveral other Editions; and it was inſerted in the *Bible* of *Philip* II. with a *Latin* Tranſlation. *Gabriel Sionita* alſo publiſhed a beautiful *Syriack* Edition of the *Pſalms* at *Paris* in 1525, with a *Latin* Interpretation. The whole *Bible* is printed in *Syriack* in the *Polyglots* of *London* and *Paris*.

Arabick BIBLES. In the Year 1516, *Aug. Juſtinian*, Biſhop of *Nebio*, printed at *Genoa* an *Arabick* Verſion of the *Pſalter*, with the *Hebrew* Text and *Chaldee* Paraphraſe, adding *Latin* Interpretations. There are *Arabick* Verſions of the whole *Scriptures* in the *Polyglots* of *London* and *Paris*; and we have an Edition of the *Old Teſtament* entire, printed at *Rome* in 1671, by Order of the Congregation *de propaganda Fide*; but 'tis of little Eſteem, as having been alter'd by the *Vulgate* Edition. The *Arabick Bibles* among us, are not the ſame with thoſe uſed by the *Chriſtians* in the *Eaſt*. Some learned Men take the *Arabick* Verſion of the *Old Teſtament*, printed in the *Polyglots*, to be that of *Saadias*: at leaſt, in the main. Their Reaſon is, that *Aben Ezra*, a great Antagoniſt of *Saadias*, quotes ſome Paſſages of his Verſion, which are the ſame with thoſe in the *Arabick* Verſion of the *Polyglots*; yet others are of opinion, that *Saadias*'s Verſion is not extant. In 1622, *Erpenius* printed an *Arabick Pentateuch*, call'd alſo the *Pentateuch of Mauritania*, as being made by the *Jews* of *Mauritania*, and for their Uſe. This Verſion is very litteral, and eſteem'd very exact. The *four Evangeliſts* have alſo been publiſh'd in *Arabick*, with a *Latin* Verſion, at *Rome* in 1591, *Folio*. Theſe have been ſince reprinted in the *Polyglots* of *London* and *Paris*, with ſome little Alterations of *Gabriel Sionita*. *Erpenius* publiſh'd an *Arabick New Teſtament*, entire, as he found it in his MS. Copy, at *Leyden*, in 1616.

Coptick BIBLES. We have no Part of the *Bible* printed in *Coptick*; but there are ſeveral Manuſcript Copies in the good Libraries, eſpecially in that of the *French* King.

Æthiopick BIBLES. The *Æthiopians* have alſo tranſlated the *Bible* into their Language. There have been printed ſeparately, the *Pſalms*, *Canticles*, ſome Chapters of *Geneſis*, *Ruth*, *Joel*, *Jonas*, *Sophonias*, *Malachias*, and the *New Teſtament*; all which have been ſince reprinted in the *Polyglot* of *London*. For the *Æthiopick New Teſtament*, which was firſt printed at *Rome* in 1548, 'tis a very unaccurate Piece, and is printed in the *Engliſh Polyglot* with all its Faults.

Armenian BIBLES. There is a very antient *Armenian* Verſion of all the *Bible*, done from the *Greek* of the *Seventy*, by ſome of their Doctors, about the Time of St. *Chryſoſtom*. This was firſt printed entire in 1664, by one of their Biſhops at *Amſterdam*, in 4*to*; with the *New Teſtament* in 8*vo*.

Perſian BIBLES. Some of the Fathers ſeem to ſay, that all the *Scripture* was formerly tranſlated into the Language of the *Perſians*; but we have nothing now remaining of the antient Verſion, which was, doubtleſs, done from the *Septuagint*. The *Perſian Pentateuch* printed in the *London Polyglot*, is, doubtleſs, the Work of Rabbi *Jacob*, a *Perſian Jew*. In the ſame *Polyglot* we have likewiſe the *four Evangeliſts* in *Perſian*, with a *Latin* Tranſlation; but this appears very modern, incorrect, and of little Uſe.

Gothick BIBLES. 'Tis generally ſaid, that *Wlphilas*, a *Gothick* Biſhop, who lived in the fourth Century, made a Verſion of the whole *Bible*, excepting the Book of *Kings*, for the Uſe of his Country-men. That Book he omitted, by reaſon of the frequent Mention of the Wars therein; as fearing to inſpire too much of the military Genius into that People. We have nothing remaining of this Verſion, but the *four Evangeliſts*, printed in 4*to* at *Dort*, in 1665, from a very antient MS.

Muſcovite BIBLES. An entire *Bible* in the *Sclavonick* Tongue, was printed at *Oſtravia* in *Volhinia*, in the Year 1581; and this is what we commonly call the *Muſcovite Bible*. 'Twas printed at the Expence of *Con. Baſil*, Duke of *Oſtravia*, for the common Service of all *Chriſtians* who ſpeak the *Sclavonick* Language, whereof the *Muſcovitiſh* is a Dialect.

BIBLES *in Vulgar Tongues* are too numerous to be here rehearſed. See *F. Simon*'s CRITICAL HISTORY. See alſo the Word POLYGLOT, PENTATEUCH, *&c.*

BICEPS, in Anatomy, a Name common to ſeveral Muſcles, from their having two Heads. Such is the

BICEPS *Cubiti*, a Muſcle of the Arm, one of whoſe Heads ariſes from the upper Edge of the Cavity of the Head of the *Scapula*, and is round and tendinous, and incloſ'd in the Channel in the Head of the *Humerus*. The other ariſes from the *Proceſſus Coracoides*; it is broad and tendinous: and both unite about the Middle and Fore-part of the Arm, and make one Belly, which is inſerted by a ſtrong and round Tendon into the Tuberoſity, at the upper end of the *Radius*. Some of the Fibres of this Tendon form a large and thin *Aponeuroſis*, which covers all the Muſcles of the Radius and Fingers externally. Care ought to be taken in *Blood-letting*, not to cut a-croſs, but according to the Length of the Fibres of this *Aponeuroſis*. This, with the *Brachiæus internus*, bend the Arms.

BICEPS *externus*. See GEMELLUS.

BICEPS *Tibiæ*, a Muſcle of the Leg with two Heads; the one coming from the Tuberoſity of the *Iſchium*, and the other from the middle of the *Linea aſpera*; both which join together, and are inſerted by one Tendon into the ſuperior and external Part of the *Perone*. Its Uſe is to help to bend the *Tibia*, and is likewiſe employ'd in turning the Leg, together with the Foot and Toes, outward, when we ſit down.

BIDENTALES, Prieſts among the antient *Roman*, inſtituted for the Performance of certain Ceremonies, on occaſion of a Thunderbolt's falling in any Place. The firſt and principal Part of their Office was, the ſacrificing of a Sheep of two Years old, which in their Language was call'd *Bidens*, as having Teeth on each Side; whence alſo the Place

ſtruck with a Thunderbolt, was call'd *Bidental*. This was not allow'd to be walk'd over; but was encompaſs'd with a Wall, or Palliſade, and an Altar erected over it; whence alſo the Prieſts, who officiated at it to perform the preſcribed Expiation, took the Name *Bidentales*.

BIGA, a Chariot drawn by two Horſes. The *Bigæ* and *Quadrigæ* were the Chariots that run in the Liſt. The *Bigæ* are of a very antient ſtanding: all the Heroes in *Homer*, *Heſiod*, *Virgil*, &c. fought in 'em. Hence *Bigats*, or *Begats*, a kind of Coin whereon was repreſented Victory drawn in a Chariot by two Horſes. Many of the antient Medals call'd *Conſular*, are *Bigats*. The Word comes from the *Latin Bijuga*, of *bis* and *jugum*, double Yoke.

BIGAMY, a double Marriage, or the poſſeſſing of two Wives at the ſame time. Among the antient *Romans*, thoſe convicted of *Bigamy* were branded with a Note of Ignominy; and in *France*, were antiently puniſh'd with Death.

BIGAMY, in the Canon Law, is where a Perſon has eſpous'd two Women ſucceſſively, or ſimply, eſpous'd a Widow: Each of which the *Canoniſts* account Impediments to be a Clerk, or to hold a Biſhoprick without a Diſpenſation. This Point of Diſcipline they found on that of St. *Paul*, *A Biſhop muſt be the Husband of one Wife*. *Bigamy* they make of two Kinds; *Real*, as where the Party actually marries twice; and *Interpretative*, where he marries a Widow, or a Woman debauch'd before, which is eſteem'd a kind of double Marriage. Here *F. Doucin* diſtinguiſhes and obſerves, that *Irenæus* having been married twice, muſt in this Senſe have been guilty of *Bigamy*, and therefore made Biſhop of *Tyre* contrary to the Canons. He therefore thinks with St. *Jerom*, &c. that thoſe only who married two Wives after Baptiſm, came under the Incapacity of *Bigamy*: But St. *Ambroſe*, *Auguſtin*, &c. are expreſs, that 'tis *Bigamy*, whether the firſt Wife were married or contracted before, or after Baptiſm. By a Statute of *Edward* I. thoſe guilty of *Bigamy* were excluded the Benefit of the Clergy; but this is ſince repeal'd. The *Romaniſts* make a third kind of *Bigamy* by *Interpretation*; as, when a Perſon in holy Orders, or that has taken on him ſome Monaſtick Order, marries: This the Biſhop can diſpenſe withal, at leaſt on ſome Occaſions. There is alſo a kind of ſpiritual *Bigamy*; as, when a Perſon holds two incompatible Benefices, *v. g.* two Biſhopricks, two Vicarages, two Canonries, *&c. ſub eodem Tecto*.

BIGNESS. See MAGNITUDE.

BIGOT, a Perſon fooliſhly obſtinate, or perverſely wedded to an Opinion. The Word comes from the *German Bey* and *Gott*, or the *Engliſh by God*. *Camden* relates, that the *Normans* were firſt call'd *Bigots*, on occaſion of their Duke *Rollo*, who receiving *Giſſa*, Daughter of King *Charles*, in Marriage, and with her the Inveſtiture of the Dukedom, refus'd to kiſs the King's Foot in token of Subjection, unleſs he would hold it out for that purpoſe: And being urged to it by thoſe preſent, anſwer'd haſtily, *No by God*; whereupon the King turning about, call'd him *Bigot*; which Name paſs'd from him to his People.

BILARIUS PORUS, or *Hepatick Duct*, a conſiderable Appendage of the Liver, form'd after the manner of a Vein, from the Concurrence of infinite ſmall Ramifications ſpringing from the Glands of the Liver, which unite into ſeveral Trunks, equal in Magnitude to the Branches of the *Hepatick Arteries*, which accompany 'em Branch for Branch thro the whole Subſtance of the Liver, and are wrapp'd up in the ſame *Capſula* with the *Porta*. Theſe Branches are about the Size of a Wheat-Straw, the biggeſt large enough to admit the little Finger; and are diſtinguiſhable from the *Porta* by their Contents, being always full of *Bile*. Beſides the *Capſula* common to this and the *Porta*, it has a thick white Coat proper to itſelf, like the Muſculous Coat of an Artery. On the concave Side of the Liver the ſeveral Ramifications meet, and form one Trunk, or Channel, properly call'd the *Bilary Pore*, about the Bigneſs of a Gooſe-Quill, which deſcending about two Inches, meets with the *Cyſtick Duct*, and together with it forms what we call the *Ductus communis*; which deſcending in a right Line, about four Inches, diſcharges itſelf into the *Duodenum*, by an oblique Inſertion, oftentimes at the ſame Aperture with the *Pancreatick Duct*. The *Porus Bilarius* communicates with the Gall-Bladder, by a *Duct* firſt deſcribed by Dr. *Gliſon*, and afterwards by M. *Perrault*, who gave it the Name of the *Cyſt-Hepatick Duct*. *Verheyen*, in *Oxen*, found two, three, or four of theſe *Cyſt-Hepatick Ducts*; and the like has been obſerv'd in a Dog and a Man. See CYST-HEPATICK DUCT.

BILDGE of a Ship, is the Bottom of her Floor: *Bildge-Water* therefore is that, which by reaſon of the Flatneſs of the Ship's Bottom, lies on her Floor, and cannot go to the Well of the Pump; and conſequently the *Dutch*, whoſe Ships are often of this Form, do much uſe a ſort of Pumps call'd *Bildge-Pumps*; or, as we call them, *Burr-Pumps*, to carry off the *Bildge-Water*. Alſo when a Ship ſtrikes on a Rock, they ſay, ſhe is *bildged*. And *Billage* is the Breadth of her Floor when ſhe lies a-ground.

BILE, a yellow, bitter Juice, ſeparated from the Blood in the Liver, collected in the *Porus Bilarius*, and Gall-Bladder, and thence diſcharged by the Common *Duct* into the *Duodenum*. The *Bile* is of two Kinds, *Hepatick* and *Cyſtick*: The firſt, properly call'd *Bile*, ſeparated immediately from the Glands of the Liver into the *Porus Bilarius*: The ſecond, call'd *Gall*, ſeparated likewiſe from the Glands of the Liver into the Gall-Bladder, by Roots or Ducts proper to itſelf. The *Cyſtick Bile* is thicker, a deeper yellow, and bitterer; is not evacuated continually, but only when its Receptacle is replete; in which Caſe the Contraction of the irritated Fibres propels it into the *Duodenum*. The *Hepatick* is thinner, more mild and pellucid, and is continually oozing out; being expell'd by the ſole Actions of the neighbouring Humours. The *Cyſtick Bile*, or Gall, reſiſts Acids, and, mix'd with other Fluids, gives 'em the like Property: It abſterges like Sope, and renders Oils capable of mixing with Water; it reſolves and attenuates Reſins, Gums, and other tenacious Bodies, rendering 'em homogeneal to itſelf. 'Tis neither alcalious nor acid, but ſeems a Concretion of Oil, Salt, and Spirits diluted with Water. By a Chymical Analyſis Dr. *Drake* obſerves it affords ſome Sulphur, or Oil, ſome volatile Salt, a good deal of fix'd Salt, (in which particularly it differs from all other animal Liquors) and a pretty Quantity of *Caput Mortuum*, or Earth: the Baſis is Phlegm. The Effect of the *Bile* is, by mixing with the Chyle and the Fæces, to attenuate, reſolve, abſterge, and ſtimulate the *Fibræ motrices*, to mix together things very different, to bruiſe and blunt thoſe that are ſharp and ſaline, to divide thoſe that are coagulated, to open the Paſſages for the Chyle, to excite Appetite, to act the Part of a Ferment, and to aſſimilate crude things to things concocted. Theſe Effects the *Cyſtick Bile* has in a greater, the *Hepatick* in a leſs Degree. Dr. *Quincy* thinks their principal Uſe is to ſheath and blunt the Acids of the Chyle, entangling them with its Sulphurs, ſo as to prevent their being ſufficiently diluted in the Pancreatick Juice to enter the Lacteals: Which he thinks confirmed by this, that notwithſtanding the great Quantity of acid Salts in the Aliment in the Stomach, there are never any found in the Chyle after it has paſs'd the *Duodenum*, and been impregnated with the Chyle continually oozing out from the *Porus Bilarius*.

Borelli aſſerts, that Part of the *Bile* diſcharged into the Inteſtines, re-enters the *Meſaraick* Veins, and mixing with the Blood of the *Vena Porta*, is again percolated thro the Liver; and *Boerhaave* ſeems of the ſame Opinion. Some will have the *Cyſtick Bile* brought to its Receptacle three different Ways, and that 'tis even compoſed of three different Kinds of *Bile*, whence its new Properties. *Boerhaave* takes thoſe Properties to reſult from its ſtagnating in the Gall-Bladder; and, with *Malpighi*, thinks the bitter Part may probably take that Property in the Glandules between the Coats of the Gall-Bladder, which are furniſh'd from the *Cyſtick* Arteries; whence it proceeds bitter, and mixes with the reſt in the Bladder.

The *Bile* is a Juice of very great Importance, with regard to the good or ill Habitude of the Animal. Dr. *Woodward* has traced its Effects throughout the Body very minutely, and makes no Scruple to aſcribe moſt of the Diſeaſes thereof to ſome Diſorder of the *Bile*. This he takes to be the chief Spring in the Animal Machine, and from this accounts for moſt of the Phœnomena of a Body, whether healthy or diſeas'd: And yet the Antients took it to be no more than an Excrement, for which they could not find any Uſe. Many of the Moderns, from the ſmall Quantity of *Bile* ſecern'd, have been led into a Miſtake, that this Secretion is not the ſole End of ſo conſiderable a Viſcus as the Liver. Dr. *Keil* obſerves, that in a Dog whoſe common *Duct* was near as big as that of a Man, he gather'd at the Rate of about two Drams an Hour; tho in a human Body, there is Reaſon to think the Quantity ſecreted to be greater.

Sometimes the *Bile* from yellow becomes greeniſh, like Verdigreeſe, and frequently pale, like the Yolks of Eggs, and that without any other apparent Cauſe than a little Motion, a Convulſion, or a violent Paſſion of the Mind. This occaſions many and terrible Diſeaſes, as Nauſea's, an Abhorrence of Food, Anxiety, Sighing, Cardialgia's, Wind, Diarrhea's, Dyſenteries,, acute Diſeaſes, Fevers, and Convulſions. Sometimes it becomes black, and takes the Name of *Choler*: In this Caſe it ſometimes taſtes like a very ſharp Vinegar; ſometimes like putrified Blood, gnawing, burning, diſſolving, conſuming, occaſioning Inflammations, Gangrenes, Mortifications, violent Pains, and terrible Fermentations. Of *black Bile*, *Boerhaave* diſtinguiſhes three Kinds: Firſt, the mildeſt, ariſing from the Matter of the Blood, put in too great Motion, which hence takes the Name of *Aduſt*: The ſecond is an Aggravation of the firſt ariſing from the ſame Cauſes, only heighten'd: The third is a cor-

rupt, parch'd *Bile*, which, if it aroſe from a greeniſh, or paliſh *Bile*, is ſtill worſe. Too great an Evacuation of the *Bile*, either upwards or downwards, robs the Chilefaction of its main Inſtrument; hence it prevents Digeſtion, Secretion, Excretion of the Fæces, produces an acid Temperature, Cold, Weakneſs, Paleneſs, Swoonings, &c. If when prepared it be prevented its Diſcharge into the Inteſtines, it produces a Jaundice.

For the Manner in which the Secretion of the *Bile* in the Liver is effected, there are various Opinions. Some maintain, that the Pores of the Secretory Glandules of the Liver, have a certain Configuration and Magnitude, to which the Particles of the *Bile* floating in the Blood being juſt anſwerable, both in Bulk and Figure, are admitted in, and all the reſt excluded. Others, with *Silvius* and *Liſter*, not allowing any Difference in the Configuration, as knowing that the Pores of all the Veſſels are Circular, and that Particles of all Kinds will be admitted, if ſmall enough, have recourſe to a Ferment which they ſuppoſe to reſide in the Liver, by means whereof the Particles of the Blood, in their Paſſage thro the Secretory *Ducts*, aſſume the Form of *Bile*. But as this is little elſe than begging the Queſtion, others have recourſe to another Hypotheſis; maintaining, that the Fluids contain'd in the Blood of the *Vena Porta*, while that enters the Subſtance of the Liver in its way to the Extremities of the *Vena Cava*, indifferently apply to the Apertures of the Secretory Tubules contiguous to the extreme Branches of the *Porta*, which are wide enough, and to the Roots of the *Cava*, which are not wide enough, to receive 'em; by which means being ſeparated from the Society and the inteſtine Motion of the other and the eſſential Parts of the Blood, and being no longer agitated by the Vital Action of the Blood-Veſſels, and expoſed to the Action of the *Bilary* Veſſels, they conſtitute a new Humour diſtinct from the Blood, call'd *Bile*, &c.

Laſtly, Dr. *Keill* accounts for this Secretion of the *Bile* from the ſtrong Attraction between the Particles whereof the *Bile* is compoſed. He obſerves, that the Heart and Liver being ſo near each other; were the *Cœliack* Artery to have carried all the Blood to the Liver, conſidering the Velocity of the Blood, ſo viſcid a Secretion as the *Bile* cou'd never have been effected. Nature therefore forms a Vein for the purpoſe, *viz.* the *Porta*, and by it ſends the Blood from the Branches of the *Meſenterick* and *Cœliack* Arteries to the Liver; by which the Blood is brought a great way about, paſſing thro the Inteſtines, Stomach, Spleen, and Pancreas, e'er it arrives at the Liver: Thus its Velocity is exceedingly diminiſh'd, and the Particles that are to form the Gall have a ſufficient time to attract one another, and unite before they come to their ſecerning Veſſels. But, as if this Diminution of Velocity were not ſufficient for the purpoſe, Nature has gone further; having made the Cavities of all the Arteries increaſe as they divide: thus the Sum of the Branches ariſing from the *Aorta*, is to the *Aorta* itſelf as 102740 to 100000. And yet, as if that Proportion were too little for the preſent Purpoſe, Nature has here taken a further Step, and increas'd the Branches ſpringing from the *Meſenterick* Artery in a greater Ratio. Thus, in a Body which he examined, he found the Sum of the Branches more than double that of the Trunk; and therefore the Velocity of the Blood in the former, muſt be leſs than half that of the latter. He further ſhews, from a juſt Calculation, that the Time the Blood now takes in its Paſſage from the *Aorta* to the Liver is at leaſt 26 Minutes: whereas, had an Artery gone directly from the *Aorta* to the Liver, it would have paſſed in little more than half a Second, *viz.* in 2437 times the Space it now takes up in its Paſſage. Whence it appears, that the Blood was not in a State fit to yield *Bile*, had it gone directly from the *Aorta* to the Liver; and that a longer Time, and more languid Motion, was neceſſary to have the *Bilious* Particles in a readineſs to be ſeparated. He adds, that were the Humours ſeparated by the Glands at all Times and Places the ſame in the Blood, and not form'd after this manner, Nature wou'd not have been at ſo much expence to retard the Blood's Velocity: Beſides that, the *Bile* has another Advantage from the Uſe of the *Porta*; for, by running thro ſo many Parts e'er it reach the Liver, it leaves behind it moſt of its Lympha; by which means the Particles being brought nearer each other, are, by their mutual Attraction, ſooner united. For the Parts concern'd in the Secretion of the *Bile*, ſee Liver, Bilary Pore, Gall-Bladder, &c. See alſo Secretion.

The Word *Bile* comes from the *Latin Bilis*, which ſome fetch further from the *Greek* Βία, Violence, becauſe *Bilious* People are inclined to Anger. Others fetch it from the *Latin bullire*, to boil. The *Bile* is a Part found in all Animals: even Pigeons, &c. which have no Gall-Bladder, yet have *Bile*; their Liver being found very bitter. M. *Tauvry* obſerves, that the *Bile* becomes one of the principal Cauſes of Thirſt, by mixing with the Salival Juice.

BILINGUIS, in Law, the Name of the Jury which paſſes in any Caſe betwixt an *Engliſhman* and an *Alien*; whereof one Moiety to be *Natives*, the other *Foreigners*, if required. The Word in the *Latin* ſignifies *double-tongued*.

BILL, an Edge-Tool, fitted to a Handle, uſed to lop Trees, &c. When ſhort, it is call'd an *Hand-Bill*; when long, an *Hedging-Bill*.

Bill is alſo a *Declaration* in Writing, expreſſing the Wrong and Grievance the Complainant hath ſuffer'd by the Party complain'd of; or elſe ſome Fault committed by him againſt ſome Law or Statute of the Realm. This *Bill* is commonly addreſs'd to the *Lord Chancellor*; eſpecially for unconſcionable Wrongs done ſometimes to others having Juriſdiction, according as the Law they are grounded on, directs. It contains the Facts complain'd of, the Damages ſuſtain'd, and the Petition of Proceſs againſt the Defendant for Redreſs.

Bank-Bills: Inſtruments whereby private Perſons become entitled to a Part in the *Bank-Stock*. They are form'd on the Model of the *Lombard-Bills*.

Bill *of Entry*, an Account of Goods enter'd at the *Cuſtom-Houſe*, both Inward and Outward; wherein is expreſs'd, the Merchant importing or exporting, the Quantity of Goods, and the Sorts, and from whence imported, or to what Place exported.

Bill *of Exchange*, a Writing ordering the Payment of a Sum of Money in one Place, to any Perſon aſſign'd by the Remitter, in conſideration of the like Value paid the Drawer in another Place. The whole Eſtate and Effects of Merchants uſually conſiſt in *Bills of Exchange*. There is ſome Diſpute about the Nature and Sanction of a *Bill of Exchange*: Some take it to be the Contract of an Exchange; but the more general Opinion is, that it is a mere Contract of Buying and Selling; that the Money given the Perſon who gives the *Bill*, is the Price of Sale; and that paid at the appointed Place, the Thing bought and ſold.

Bills of Exchange were unknown in the antient *Roman Juriſprudence*. According to the common Opinion, they are the Invention of the *Jews*; who being baniſh'd *France*, for ſome enormous Crimes charg'd on 'em, retired into *Lombardy*, about the 12th Century, and found means to withdraw their Effects, which they had lodg'd in the Hands of Friends, by ſecret *Letters* and *Bills*, conceiv'd in ſhort, preciſe Terms, like the modern *Bills of Exchange*; and this by the Aſſiſtance of Merchants and Travellers. The Faction of the *Gibellins*, being expell'd *Italy* by the *Guelphs*, retired to *Amſterdam*, and uſed the ſame Means, for the Recovery of their Effects in *Italy*, as the *Jews* had done: Hence the *Dutch* Merchants took the Hint of negotiating *Bills of Exchange*; and ſoon ſpread the Practice throughout all *Europe*. The ſame *Gibellins* are ſaid to be the Inventors of the *Rechange*, on account of Damages and Intereſts, when *Bills of Exchange*, which they call'd *Polizza di Cambio*, were not paid, but return'd on Proteſt.

That which gives the Eſſence, and Form to a *Bill of Exchange*, is the Ceſſion, or Vendition of a Sum of Money made by the Drawer, to him, on whoſe Account it is drawn, to be receiv'd of his Correſpondent in another Place; which Ceſſion, or Vendition, is made, in the Mercantile Terms, *for Value receiv'd*, i. e. for a like Sum given by the Perſon for whoſe Sake the *Bill* is drawn, to the Drawer, in Money, Merchandize, or other Effects. So that there are three things neceſſary to eſtabliſh the Quality of a *Bill of Exchange*; *1ſt*, That it be drawn by one City to another; *2dly*, That there be three Perſons concern'd, the Drawer, the Perſon for whom 'tis drawn, and he on whom 'tis drawn; *3dly*, That it make mention, that the Value which the Drawer has receiv'd, is in another *Bill of Exchange*, in Money, Merchandize, or other Effects, which are to be expreſs'd; otherwiſe 'tis no *Bill of Exchange*. When a *Bill of Exchange* is conceiv'd for *Value in my ſelf*, 'tis not ſuppoſed the Drawer has receiv'd the Sum; but the Perſon, for whom 'tis drawn, ſtands Debtor to him for it: When a *Bill of Exchange* bears, *for which Sum I promiſe to furniſh Bills of Exchange* to ſuch a Place, the Perſon for whom the *Bill* is drawn, may compel him to give the *Bills*, or to return the Money.

Bill *of Lading*, an Inſtrument ſign'd by the Maſter of a Ship, acknowledging the Receipt of the Merchant's Goods, and obliging himſelf to deliver them, at the Place to which they are conſign'd, in good condition; of which *Bills* there are uſually three: the firſt the Merchant keeps; the ſecond is ſent to the Factor to whom the Goods are conſign'd; and the third is kept by the Maſter of the Ship.

Bill, in Law, a Security for Money under the Hand and Seal of the Debtor, without any Condition, or Forfeiture, in caſe of Non-Performance; in which it is diſtinguiſh'd from a Bond or Obligation.

Bill *of Parcels*, an Account of the particular Sorts and Prices of the Goods bought, given by the Seller to the Buyer.

Bill, in Parliament, a Paper containing Propoſitions offer'd to the Houſes, to be paſs'd by them, and then preſented to the King to paſs into an Act or Law. See Parliament.

Bill *of Sale*, is when a Perſon wanting a Sum of Money, delivers Goods as a Security to the Lender, to whom he gives this *Bill*, impowering him to ſell the ſaid Goods, in caſe the Sum borrow'd is not repaid, with Intereſt, at the Time appointed.

Bill *of Store*, a kind of Licence granted at the *Cuſtom-Houſe* to Merchants, to carry ſuch Stores and Proviſions as are neceſſary for their Voyages, Cuſtom-free.

Bill *of Sufferance*, a Licence granted at the *Cuſtom-Houſe*, to a Merchant, to ſuffer him to trade from one *Engliſh* Port to another, without paying Cuſtom.

Billa Vera, *the Bill is true*. The Grand Inqueſt impannell'd and ſwore before the Juſtices of Eyre, &c. endorſing a *Bill* whereby any Crime puniſhable in that Court is preſented to 'em, with theſe two Words, ſignify thereby, that the Preſenter has furniſhed his Preſentment with probable Evidence, and worthy further Conſideration; whereupon the Party preſented is ſaid to ſtand indicted of the Crime, and bound to make an Anſwer thereto, either by confeſſing or traverſing the Indictment. If the Crime touch his Life, it is yet refer'd to another Inqueſt, call'd the *Inqueſt of Life and Death*, by whom if he be found guilty, he ſtands convict of the Crime, and is condemn'd by the Judge. See Inquest, Indictment, &c.



BILLET, in Heraldry, a Bearing in form of a long Square. *Billets* are ſaid to be couch'd, or inverted, when their longeſt Side is parallel to the Top of the Shield, and the ſhorteſt perpendicular. Theſe were antiently Pieces of Cloth of Gold, or Silver, longer than broad, placed at a diſtance by way of Ornament, on Clothes, and afterwards tranſlated to their Coat-Armour. *Gwillim* miſtakes, when he ſays a *Billet* repreſents a Letter ſeal'd up. A Coat is ſaid to be *billeted*, when it is charg'd with *Billets*. Thus, he bears *Argent-Billette*, a *Croſs engrail'd Gules*, by the Name of *Heath*. *Bloom* ſays, the *Billets* muſt be number'd when they are not above ten.

BILLIARDS, a very ingenious Game play'd on an oblong Table, with little ivory or wooden Balls, which are driven by crooked Sticks, made on purpoſe, into Hazards, or Holes, on the Edge and Corners, according to certain Laws, or Conditions of the Game. The Word comes from the *French Billard*; of *Billa* the *Balls* made uſe of, and that from the *Latin Pila*, a Ball.

BILLON, in Coinage, a kind of baſe Metal, either of Gold or Silver, in whoſe Mixture Copper predominates. According to M. *Boutteroue*, *Billon of Gold* is all Gold beneath Standard, or 21 Carats; and *Billon of Silver*, all below ten Pennyweights. But, according to others, and among the reſt M. *Boizard*, Gold and Silver beneath the Standard, as far as twelve Carats, and ſix Pennyweights, are properly baſe Gold and Silver; and all under thoſe, *Billon of Gold*, and *Billon of Silver*, in regard Copper is the prevailing Metal. The Word is *French*, form'd, according to *Menage*, from the *Latin*, *Binus Denarius*. We don't find 'tis naturaliz'd among us; but the Neceſſity we are frequently under of uſing it in the Courſe of this Work, requir'd its being explain'd.

BIMEDIAL, a Term in Mathematicks: when two Medial Lines, as A B and B C, commenſurable only in Power, and containing a Rational Rectangle, are compounded, the whole A C ſhall be irrational, and is call'd a firſt *Bimedial Line*.

A | ——— B | —— C |

BINARY ARITHMETICK. A kind of *Arithmetick* firſt propos'd by M. *Leibnitz*; wherein, in lieu of the ten Figures in the common *Arithmetick*, and the Progreſſion from 10 to 10, he has only two Figures in all his *Arithmetick*, and uſes a more ſimple Progreſſion from two to two; ſhewing it of conſiderable Advantage in the Sciences. All his Characters are 0 and 1. And the Cypher, here, multiplies every thing by 2, as in the common *Arithmetick* by 10: Thus, 1 is one; 10, two; 11, three; 100, four; 101, five; 110, ſix; 111, ſeven; 1000, eight; 1001, nine; 1010, ten, &c. which is built on the ſame Principles with the common *Arithmetick*.

Hence immediately appears the Reaſon of a celebrated Property of the Duplicate Geometrical Proportion in whole Numbers, *viz.* that one Number of each Degree being had, one may thence compoſe all the other whole Numbers above the double of the higheſt Degree. It being here, *v. g.* as if one ſhould ſay, 111 is the Sum of 4, 2, and 1. Which Property may ſerve Eſſayors to weigh all kinds of Maſſes with a little Weight; and may be uſed in Coins, to give ſeveral Values with little Pieces. This Method of expreſſing Numbers once eſtabliſh'd, all the Operations will be eaſy: In Multiplication particularly, there will be no need for a Table, or getting of any thing by heart.

100	4
10	2
1	1
111	7

He does not recommend this Method for common Uſe, becauſe of the great Number of Figures uſed to expreſs a Number: Adding, that if the ordinary Progreſſion was from 12 to 12, or from 16 to 16, it would be ſtill the more expeditious; but its Uſe is in diſcovering the Properties of Numbers, in making Tables, &c. What makes the *Binary Arithmetick* the more remarkable is, that it appears to have been the ſame with that uſed 4000 Years ago among the *Chineſe*, and left in Ænigma by *Fohy*, the Founder of their Empire, as well as of their Sciences.

M. *Lagni* has propoſed a new Syſtem of *Logarithms*, on the foot of the *Binary Logarithms*; which he finds ſhorter, more eaſy, and natural, than the common ones.

Binary Number, that compos'd of two Units.

Binary Measure, in Muſick, is that wherein you beat equally, or the Time of Riſing is equal to that of Falling. See Time.

BINDING *of Books*. See Book-Binding.

BINOCLE, or Binocule, in Opticks, a double Teleſcope, *i. e.* conſiſting of two Tubes join'd together, by which a remote Object may be viewed with both Eyes at once. It was invented by *F. Rheita*, a *Capuchin*, who deſcribes it in a Book call'd, *Oculus Henoc & Eliæ*. Since which *F. Cherubin* has wrote a large Volume thereon. See Teleſcope.

BINOMINAL, in Algebra, a Number produced by the Addition of two Numbers of incommenſurable Magnitudes, or a Root conſiſting of two Parts, or Members, connected by the Sign +: Thus $a + e$, or $5 + 3$, is a *Binominal*, conſiſting of the Sum of thoſe two Quantities: if it have three Parts, as $a + b + c$, it is call'd a *Trinominal*; if it have four Members, it is call'd a *Quadrinominal*; if more, a *Multinominal*. See Number.

BIOGRAPHER, an Author who writes the Hiſtory, or Life of any Perſon, or Perſons, as *Plutarch*, *Corn. Nepos*, &c. From the *Greek* βίος, *vita*, and γράφω, *ſcribo*.

BIQUADRATICK, the next Power above the Cube, or the Square of a Cube Root. See Extraction, Power, and Root.

BIQUINTILE, an Aſpect of the Planets, when they are 144 Degrees diſtant from each other.

BIRDLIME, a viſcid Subſtance, prepar'd various Ways, and from various Materials. The beſt uſed among us, is made from Holly-Bark, boil'd 10 or 12 Hours; when, the green Coat being ſeparated from the other, 'tis cover'd up a Fortnight in a moiſt Place, pounded into a tough Paſte, that no Fibres of the Wood be left, and waſh'd in a running Stream till no Motes appear, put up to ferment four or five Days, skimm'd as often as any thing ariſes, and laid up for Uſe. To uſe it, a third part of Nut-Oil is incorporated with it over the Fire. The *Birdlime* brought from *Damaſcus* is ſuppos'd to be made of *Sebaſtens*, their Kernels being frequently found in it; but this does not endure either Froſt or Wet: that brought from *Spain* is of an ill Smell; that of the *Italians* is made of the Berries of Miſleto, heated, mix'd with Oil, as before; to make it bear the Water, they add Turpentine. 'Tis ſaid, the Bark of our Lantone, or way-faring Shrub, makes *Birdlime* as good as the beſt.

BIRDS are diſtinguiſh'd as they belong to Land or Water: Of *Land Fowl*, ſome have crooked Beaks and Talons; and of theſe ſome are carnivorous and rapacious call'd *Birds of Prey*; ſome frugivorous, call'd by the general Name of *Parrots*. Of *Birds of Prey*, ſome prey in the Day-time; and of theſe are reckon'd a greater and leſſer Sort: The greater are either of a more bold and generous Nature, as the *Eagle-kind*; or of a more cowardly and ſluggiſh, as the *Vulture*: The leſſer diurnal *Birds of Prey*, are the *Hawk-kind*, which are wont to be reclaim'd and mann'd, for Fowling, and call'd *Hawks*; and by the Falconers diſtinguiſh'd into *long-winged*, as the *Falcon*, *Lanner*, &c. whoſe Wings reach almoſt as far as the End of their Train; or *ſhort-wing'd*, as the *Goſs-Hawk* and *Sparrow-Hawk*, whoſe Wings, when cloſed, fall much ſhort of the End of their Trains: Thoſe of the *Hawk-kind* which are of a Nature more cowardly, and ſluggiſh, or elſe indocile, are neglected by our Falconers, and ſo live at large; and of theſe alſo there is a greater Sort, as the *Buzzard-kind*; and a leſſer, as the *Butcher-kind*, or *Shrike*, (about the Bigneſs of a *Blackbird*, and found in *England.*) The *Bird of Paradiſe* is Exotick. Of *Birds of Prey* with crooked Beaks and Talons, ſome are Nocturnal, as the *Owl-kind*, which prey by Night; and theſe are either horned, or eared, as the *Eagle-Owl*, *Horn-Owl*, &c. or without Horns, as the *Brown-Owl*, *Grey-Owl*, &c. There is a Sort of *Land Birds* with crooked Beak and Talons, call'd frugivorous, becauſe tho they do ſometimes eat Fleſh, yet they eat Fruits too; and theſe are known by the general Name of *Parrots*, and are diſtinguiſh'd into three Sorts, according to their Bigneſs; the greateſt Size being call'd *Maccaws*; the middle-ſized, and moſt common, *Parrots*,

rots, and *Poppinjays*; and the leaſt Sort, *Parrakeets*: and all this Kind make uſe of their Beak in climbing, and move the upper Jaw. *Land Birds* that have their Bill and Claws more ſtreight, are diſtinguiſh'd into three Sizes; the greateſt Kind are, ſuch as by reaſon of the Bulk of their Bodies, and Smallneſs of their Wings, cannot fly at all; theſe are *Exotick Birds* of a ſingular Nature; ſuch as the *Oſtrich*, the *Caſſowary*, and the *Dodo*: The middle-ſized Kind are divided, by their Bills, into ſuch as have large, thick, ſtrong, and long ones; ſome of which feed promiſcuouſly on Fleſh, Inſects, and Fruits, as the *Crow-kind*, which are wholly black; and the *Pie-kind*, which are party-colour'd: Some feed on Fiſh only, as the *Kings-fiſher*; and ſome on Inſects only, as the *Wood-pecker*: And into ſuch as have a ſmaller and ſhorter Bill; whoſe Fleſh is either white, as the *Poultry-kind*; or blackiſh, as the *Pigeon* and *Thruſh-kind*. The leaſt ſized Kind of *Land Birds*, with ſtreight Bills and Claws, are called *Small-Birds*; and theſe are of two Kinds; *ſoft-beaked*, which have ſlender, ſtreight, and pretty longiſh Bills, moſt of them, and feed chiefly upon Inſects; and *hard-beaked*, which have thick and hard Bills, and feed moſtly on Seeds.

Water-Fowl, are ſuch as frequent Waters and watry Places to ſeek their Food; and theſe are all cloven-footed, and generally have long Legs, and thoſe naked, or bare of Feathers, a good way above the Knee, that they may the more conveniently wade in Waters. Of theſe they reckon two Kinds; a greater, as the *Crane*, *Jabiru*, &c. and a leſſer, which are either piſcivorous, feeding on Fiſh, as the *Heron*, *Spoon-Bill*, *Stork*, &c. or *Muſduckers*; or inſectivorous, of which ſome have very long Bills, which are ſometimes crooked, as in the *Curlew* and *Whimbrell*; and ſometimes ſtreight, as in the *Woodcock* and *Godwit*: others have middle-ſized Bills, as the *Sea-Pye* and *Red-Shank*, &c. and a third Sort have ſhort Bills, as the *Lapwing* and *Plover*. Thoſe are reckon'd ſhort Bills, which exceed not an Inch and half; middle-ſized Bills, to two Inches and half; and long Bills above two Inches and half. There is another kind of *Water-Fowl*, which ſwim in the Water; ſome of which are cloven-footed, as the *Moor-Hen*, and *Coot*, &c. but moſt are whole footed; and of theſe ſome few have very long Legs, as the *Flammant*, the *Avoſetta*, and *Corrira*; but moſtly they are ſhort-legg'd: Of which ſome few have but three Toes on each Foot, as the *Penguin*, *Razor-Bill*, &c. but generally they have four Toes on each Foot, and theſe either all connected together by intervening Membranes, as in the *Pelican*, *Soland-Gooſe*, &c. or more uſually with the Back-Toe looſe; and this Kind are either *narrow-bill'd*, or *broad-bill'd*: Thoſe with *narrow Bills* have them either blunt, and hooked at the Tip; of which Sort ſome are ſerrate, as in the *Diver-kind*; and ſome not toothed, as in the *Puffin*; or ſharp-pointed and ſtreighter; of which, ſome Sort have long Wings, as the *Gull-kind*; and ſome ſhorter, as thoſe *diving Birds* call'd *Douckers*. Thoſe with broad Bills may be divided into the *Gooſe-kind*, which are larger; and the *Duck kind*, which are ſmaller; and theſe latter into *Sea-Ducks*, or *River* and *Plaſh-Ducks*. Moſt *Water-Fowls* have a ſhort Tail; and none of this Kind have their Feet diſpos'd like *Parrots* and *Wood-peckers*, that have two Toes forward, and two backward, none having more than one Back-Toe, and ſome none at all. See *Willoughby*'s ORNITHOLOGIA.

BIRTH, *of a Fœtus*, its Delivery from the Mother. See FOETUS; for the Number of *Births* ſee MARRIAGE: Under which the Proportion of *Births* to Marriages, of *Births* to Burials, and of *Male-Births* to Females, are computed.

BIRTH, or *Birthing*, a Term among the Seamen for due Diſtance obſerved between Ships lying at an Anchor, or under Sail; and the Raiſing, or Bringing up the Sides of the Ship: Alſo the proper Place a-board to put their Cheſts, &c. is call'd the *Birth*; and a convenient Place to moor a Ship in, is alſo call'd by this Name.

BISHOP, a Prelate, or Perſon conſecrated for the Spiritual Government and Direction of a Dioceſe. See DIOCESE. 'Tis a long Time that *Biſhops* have been diſtinguiſh'd from mere *Prieſts*; but whether that Diſtinction be of divine or human Right, whether it was ſettled in the Apoſtolical Age, or introduced ſince, is much controverted. On the one Side ſtands the *New Teſtament*, wherein 'tis certain the Names *Biſhop* and *Prieſt* are uſed indifferently: On the other Side is *Tradition*, the *Fathers*, and the *Apoſtolical Conſtitutions*. Indeed, there appear no Footſteps of any Inſtitution of *Biſhops*, diſtinct from *Prieſts* in the Scriptures; neither do the Oppoſers thereof pretend to ſhew any Mark of any other Form of Church-Government therein. So that it may ſeem probable, the Apoſtles did not ſettle any thing of this kind at all; but either left the Spiritual Oeconomy in the Hands of the *Prieſts*, or of thoſe together with the People. Accordingly new Occaſions requiring new Meaſures, in a little Time, the Functions of this *Prieſthood* were divided, and the *Prieſts* diſtinguiſh'd into Degrees; the Political Part of Religion being aſſign'd principally to *Biſhops*, and the Evangelical to the *Prieſts*, &c. Or rather, as ſome others will have it, the Functions of *Teaching* and *Preaching* were reſerv'd to the *Biſhop*, and that of *Ordination* ſuperadded; which was their principal Diſtinction, and the Mark of their Sovereignty in their Dioceſe. See EPISCOPACY.

The Word comes from the *Saxon Biſchop*, and that from the *Greek* Ἐπίσκοπος, an Overſeer, or Inſpector; which was the Title the *Athenians* gave thoſe whom they ſent into the Provinces ſubject to 'em, to ſee whether every thing were kept in Order; and the *Romans* gave the ſame Title to thoſe who were Inſpectors and Viſitors of the Bread and Proviſion. It appears from a Letter of *Cicero*, that he himſelf had a *Biſhoprick*, being *Epiſcopus Oræ & Campaniæ*. *Dioceſe* was alſo uſed for the Extent of this Government; and *Cicero* uſes it in this Senſe, Διοίκησις.

Biſhops are of various Kinds, *Archbiſhops*, *Biſhops*, and *Suffragan-Biſhops*, which ſee; as alſo *Acephals*, *Metropolitans*, &c.

The Function of a *Biſhop*, in *England*, may be conſider'd as twofold, *viz.* what belongs to his *Order*, and what to his *Juriſdiction*. To the *Order* belong the Ceremonies of Dedication, Confirmation, and Ordination: To his *Juriſdiction*, by the Statute Law, belongs the Licenſing of Phyſicians, Chirurgeons, and School-maſters, the Uniting ſmall Pariſhes, (tho this laſt Privilege is now peculiar to the *Biſhop* of *Norwich*) to aſſiſt the Civil Magiſtrate in the Execution of Statutes relating to Eccleſiaſtical Matters, and to compel the Payment of Tenths, and Subſidies due from the Clergy: by the Common Law, he is to certify the Judges, touching legitimate and illegitimate Births and Marriages; and by that and the Eccleſiaſtical Law, he is to take care of the Probate of Wills, the Granting Adminiſtrations, to collate to Benefices, grant Inſtitutions on the Preſentation of other Patrons, command Induction, order the collecting and preſerving the Profits of vacant Benefices for the Uſe of the Succeſſors, defend the Liberties of the Church, and viſit his Dioceſe once in three Years. To the *Biſhop* belong Suſpenſion, Deprivation, Depoſition, and Degradation; and EXCOMMUNICATION, which ſee.

The *Biſhops* of *England* are all *Barons* and *Peers*. *Barons* in a threefold manner, *viz.* *Feudal*, in regard of Lands and Baronies annex'd to their *Biſhopricks*; by *Writ*, as being ſummon'd by *Writ* to Parliament; and by *Patent*, or *Creation*: Accordingly, they have the Precedence of all other *Barons*, and ſit in the Upper Houſe, both as *Barons* and *Biſhops*. They have two ſpecial Privileges next to Regal: The firſt, that in their Courts they ſit and paſs Sentence, of themſelves, and by their own Authority: The *Biſhops* Courts are not like all other Courts; but, Writs are ſent out in their own Name, *teſte* the *Biſhop*, not the King's Name, as the Kings Courts do. The ſecond, That, like the King, they can depute their Authority to another, as their *Suffragan*, *Chancellor*, *Commiſſary*, &c. They have this Advantage over *Lay-Lords*, that in whatever *Chriſtian* Country they come, their *Epiſcopal* Degree and Dignity is acknowledg'd; and they may, *quatenus Biſhops*, ordain, &c. They have their Vote in the Trial and Arraignment of a *Peer*; but e'er Sentence of Death, &c. they withdraw, and vote by Proxy. They have ſeveral Immunities, as from Arreſts, Outlawries, Diſtreſs, &c. Liberty to hunt in the King's Foreſts, &c. to have certain Tuns of Wine Duty-free, &c. Their Perſons may not be ſeiz'd, as *Lay-Peers* may, upon Contempt, but their Temporalties alone. They may qualify as many Chaplains as a *Duke*, viz. Six. By Law, the Crime of *Epiſcopicide*, which a Clergyman commits by killing his *Biſhop*, is equivalent to *Parricide*, viz. *Petty-Treaſon*. The *Biſhops* in *England* are 24, *Archbiſhops* two, *Suffragans* none.

The Form of Conſecrating a *Biſhop* is different in different Churches. In the *Greek* Church, the *Biſhop* Elect being, by the Aſſiſtant *Biſhops*, preſented for Conſecration, and the Inſtrument of Election put in his Hand, after ſeveral Prayers, the firſt call'd *Diaconique*, the *Biſhop* Elect demanding Conſecration, makes Profeſſion of his Faith; after which he receives a Benediction: He is then interrogated as to his Belief of the *Trinity*; to which he anſwers by a long Profeſſion of Faith, and receives a ſecond Benediction. Laſtly, he is ask'd what he thinks of the Incarnation; to which he anſwers in a third Profeſſion of Faith, with the Paſtoral Staff: after which he is led up to the Altar; where, after certain Prayers, and three Croſſes on his Head, he receives the *Pallium*, if he be an *Archbiſhop*, or *Patriarch*; he then receives the Kiſs of Peace, of his Conſecrator and two Aſſiſtants; and, ſitting down, reads, prays, and gives the Communion to his Conſecrator and others.

In the *Romiſh* Church, the *Biſhop* Elect being preſented by the Elder Aſſiſtant to the Conſecrator, takes the Oath: He is then examin'd as to his Faith; and, after ſeveral Prayers, the *New Teſtament* is drawn open over his Head, and he receives the Unction on his Head by Chriſma. The

Paſtoral Staff, *Ring*, and *Goſpel*, are then given him; and, after Communion, the *Mitre* put on his Head: Each Ceremony being accompanied with proper Prayers, &c. the Proceſs ends with *Te Deum*.

In *England*, the King being certify'd of the Death of a *Biſhop* by the Dean and Chapter, and his Leave requeſted to elect another, the *Conge d'Elire* is ſent to 'em, nominating the Perſon he would have choſen. The Election is to be within 20 Days after the Receipt of the *Conge d'Elire*; and the Chapter, in caſe of refuſing the Perſon named by the King, incurs a *Præmunire*. After Election, and its being accepted of by the *Biſhop*, the King grants a Mandate under the Great Seal for Confirmation; which the *Archbiſhop* conſigns to the Vicar-General; conſiſting, moſtly, in a ſolemn Citation of ſuch as have any Objections to the *Biſhop* Elect, a Declaration of their Contumacy in not appearing, and an Adminiſtration of the Oaths of Supremacy, and Canonical Obedience. Sentence being read by the Vicar-General, the Confirmation concludes with a Treat: Then follows the Conſecration, by the *Archbiſhop* and two Aſſiſtant *Biſhops*. The Ceremony is the ſame as in the *Romiſh* Church, ſave that, having put on the *Epiſcopal* Robes, the *Archbiſhop* and *Biſhops* lay their Hands on his Head, and conſecrate him with a certain Form of Words. After Communion they go to a Banquet.

The Tranſlation of a *Biſhop* to another *Biſhoprick*, only differs in this, that there is no Conſecration. *Note*, A *Biſhop* differs from an *Archbiſhop* in this, that an *Archbiſhop* with *Biſhops* conſecrate a *Biſhop*, as a *Biſhop* with Prieſts ordain a *Prieſt*; that the *Archbiſhop* viſits a Province, as the *Biſhop* a Dioceſe; that the *Archbiſhop* convocates a Provincial Synod, as the *Biſhop* a Dioceſan one; and that the *Archbiſhop* has Canonical Authority over all the *Biſhops* of his Province, as the *Biſhop* over the Prieſts in his Dioceſe.

Bishop's-Court, an *Eccleſiaſtical Court* held in the Cathedral of each Dioceſe; the Judge whereof is the *Biſhop's Chancellor*, antiently call'd *Eccleſiaſticus*, and *Eccleſiæ Cauſidicus*, the Church-Lawyer; who judges by the Civil and Canon Law; and, if the Dioceſe be large, has his Commiſſaries in remote Parts, who hold what they call Conſiſtory Courts, for Matters limited to him by his Commiſſion.

BISMUTH, a Mineral Body, half Metallick; compos'd of the firſt Matter of Tin, while yet imperfect; and found in Tin Mines. Its Subſtance is hard, heavy, ſharp, and brittle, of a large Grain, poliſh'd, white, and ſhining. 'Tis alſo call'd *Tin of Glaſs*; becauſe, when broke, it ſhews a vaſt Number of little poliſh'd Subſtances like Glaſs: 'Tis alſo call'd *Marchaſite*, by way of Excellence, becauſe ſurpaſſing all others in Whiteneſs and Beauty. It contains an Arſenical Salt, very dangerous to take inwardly. Its Precipitate is a very white Magiſtery, which is mix'd with Waters and Pomatums to make a Fucus to beautify the Complexion, and preſerve the Skin. There are alſo Flowers prepar'd from it, which take away Spots in the Face; whence 'tis otherwiſe call'd *Blanc de Perle*. See the Proceſs in *Charras*.

Alonſo Barba ſays, there has been lately found a Mine of *Biſmuth* in *Bohemia*; and ranks it among the Metals: But *Biſmuth* is properly the Regulus of the Stone call'd *Cobalt*; whence is prepar'd *Arſenick*, *Lapis Lazuli*, and *Biſmuth*. M. *Stahl*, a *German* Phyſician, gives us its Preparation.

There is alſo an *Artificial Biſmuth*, which is that ordinarily uſed, made by reducing Tin into thin *Laminæ*, or Plates, and cementing them by a Mixture of *white Tartar*, *Salt-Petre*, and *Arſenick*, ſtratified in a Crucible over a naked Fire. The ſame is alſo made of a Stone call'd *Zin*, uſing Lead inſtead of Tin, and a little Calamine Stone.

BISQUET, a Confectioner's Preparation of fine Flower, Eggs, and Sugar, with Anniſeeds and Citron Peel, baked in the Oven in Tin or Paper Moulds.

Sea-Bisquet, a *Bread* much dried, by paſſing the Oven twice, to make it keep: For long Voyages they bake it four times, and prepare it ſix Months before the Embarkment. The Word comes from the *Latin bis*, and the *French cuit*, q. d. *twice baked*.

BISSECTION, in Geometry, the Diviſion of any Quantity into two equal Parts; the ſame with *Bipartition*: Thus, to *biſſect* any Line, is to divide it into two equal Parts.

BISSEXTILE, or *Leap-Year*, in Chronology, a Year conſiſting of 366 Days, happening once each four Years, by reaſon of the Addition of a Day in the Month of *February*, to recover the ſix Hours which the Sun ſpends in his Courſe each Year, beyond the 365 Days, ordinarily allow'd for it. The Day thus added, is alſo call'd *Biſſextile*; *Cæſar* having appointed it to be the next after the 25th of *March*, which among them was the 7th of the *Calends* of *April*. Thus the 6th of the *Calends* of *March* is this Year reckon'd twice over; whence the *Intercalary Day*, and the *Year* when it happens, are both call'd by the Name *Biſſextile*.

However, the Aſtronomers concern'd in reforming the *Calendar*, by Order of Pope *Gregory* XIII. obſerving that the *Biſſextile* in four Years added 40 Minutes more than the Sun ſpent in returning to the ſame Point of the *Zodiack*, and computing that theſe ſupernumerary Minutes in 133 Years wou'd form a Day; to prevent any Changes being thus inſenſibly introduc'd in the Seaſons, 'twas appointed, that in the Courſe of 400 Years, there ſhou'd be three *Biſſextiles* retrench'd: Accordingly, in the Year 1700, there was no *Biſſextile*, for that reaſon. By the Statute *de Anno Biſſextili*, 21. *Hen.* III. To prevent Miſunderſtandings, the *Intercalary Day*, and that next before it, are to be accounted as one Day. See Year.

BISTER, or Bistre, among Painters, a Colour made of Chimney-Soot boil'd, and afterwards diluted with Water, ſerving to waſh their Deſigns. Inſtead of this ſome uſe the Strokes of a Pen, ſome *Indian* Ink, others a black Stone, &c.

BIT, an eſſential Part of a *Bridle*; its Form and Uſe well known; its Parts and Kinds various.

For the ſeveral Parts of a *Bit*, thoſe of a *Snaffle* or *Curb-Bit*, are, the *Mouth-Piece*, the *Cheeks* and *Eyes*, *Guard* of the *Cheek*, *Head* of the *Cheeks*, the *Port*, the *Welts*, the *Campanel* or *Curb* and *Hook*, the *Boſſes*, the *Bolſters* and *Rabbets*, the *Water-Chains*, the *Side-Bolts*, *Bolts* and *Rings*, *Kirbles* of the *Bit* or *Curb*, *Trench*, *Top-roll*, *Flap* and *Jeive*.

The Kinds of *Bits* are, 1. The *Muſroll*, *Snaffle*, or *Watering Bit*. 2. The *Cannon Mouth*. 3. The *Cannon* with a faſt Mouth all of a Piece, only knee'd in the middle, to form a Liberty or Space for the Tongue. 4. The *Cannon Mouth*, with the Liberty in form of a Pigeon's Neck. 5. The *Cannon* with a Port Mouth and an Upſet, or mounting Liberty. 6. The *Scotch Mouth* with an Upſet. 7. The *Cannon Mouth* with a Liberty, after M. *Pignatel's* manner. 8. The *Maſticadour*, or *Slavering Bit*. 9. The *Cats Foot Bit*. 10. The *Baſtonet Bit*, &c.

BITE of a mad Dog. See Hydrophobia.

Bite of a Viper. See Viper.

Bite of a Tarantula. See Tarantula.

BITTERNESS, a particular Savour or Senſation, ſuppos'd to reſult from this, that all the Particles of the bitter Body are broken, blunted, and diminiſh'd, ſo as none of 'em remain long and rigid; which is confirm'd from this, that Foods burnt, and their Particles much comminuted and broken by the Fire, become *bitter*.

BITUMEN, an inflammable Matter, fat and unctuous. Naturaliſts diſtinguiſh three Kinds of *Bitumens*, hard, ſoft, and liquid or oily; and each of theſe they ſubdivide into ſeveral others. Among the hard *Bitumens* are rank'd *yellow Amber*, (ſome add *Ambergreeſe*) *Jet*, *Aſphaltum* or *Bitumen of Judea*, *Piſaſphaltum*, *Pit-Coal*, *Black-Stone*, and *Sulphurs*. The ſoft are, *Maltha*, *Bitumen of Colao*, *of Sirnam*, and *Copal*. Laſtly, The *Naphta* of *Italy*, and *Petroleum*, are rank'd among the liquid *Bitumens*.

Of theſe *Bitumens* ſome are foſſil, others are found floating on the Surface of certain Lakes, and others ſpring from the Earth like Fountains. Some *Bitumens* are ſo hard, that they are uſed in Forges, inſtead of Coals; others ſo glutinous, that they ſerve inſtead of Cement, or Mortar in Buildings; of which kind it was, that the famous Walls of *Babylon* were built: and others ſo liquid, that they are burnt in Lamps inſtead of Oil. The *Bitumen* in moſt Eſteem is that of *Judea*. See Asphaltum; and the other *Bitumens* under their proper Heads. *Strabo* derives the Word from Πίσσα, Pitch.

BIVALVE, a Term uſed by the Writers of Natural Hiſtory, for ſuch Shell-Fiſh as have two Shells, as Cockles, Muſcles, Oiſters, &c. which are ſaid to be of the *Bivalve-kind*; and alſo for the *Siliqua*, or Seed-Pods of ſuch Plants as open all their whole Length to diſcharge their Seeds; ſuch as Peaſe, Beans, &c. for thoſe the Botaniſts ſay have a *Bivalve Siliqua*.

BIVENTER, in Anatomy, the ſixth Muſcle of the Jaw, and laſt of thoſe ſerving to open it: 'Tis call'd *Biventer*, or *Digaſtricus*, as having two Bellies for its two Extremities, and a Tendon in the middle. It takes its Origin from a Sciſſure between the *Occipital Bone* and the *Maſtoidal Apophiſes*, whence paſſing its Tendon thro a Hole in the *Stylohyoideus* and an *Annular Ligament* of the *Os Hyoides*, there ariſe ſome Fibres which join its ſecond Belly; whence going fleſhy, and returning upwards, it is inſerted into the middle of the inferiour Part of the lower Jaw. By this Contrivance it is enabled to draw the Jaw downwards.

BLACK, ſomething opake and porous, that imbibes all the Light falling on it, reflects none, and therefore exhibits no Colour. See Blackness. There are various Kinds of *Blacks* which paſs in Commerce, *viz. Dyers Black*, *German Black*, *Ivory Black*, *Spaniſh Black*, *Lamp-Black*, &c.

Dyers Black, is one of the five Simple and Mother Colours uſed in *Dying*. 'Tis made differently, according to the different Quality and Value of the Stuffs to be *dyed*. For Broad-Cloths, fine Ratines, and Druggets, &c. they uſe Paſtel, or Woad, and Indigo; the Goodneſs of the Colour con-

fiſts in there not being above ſix Pounds of Indigo to a Ball of Paſtel, when the Paſtel begins to caſt its blue Flower; and in its not being heated for Uſe above twice. Thus blued, the Stuff is boil'd with Alum, or Tartar, then madder'd; and, laſtly, the *Black* given with Galls, Copperas, and Sumac: To bind it, and prevent its ſmeering in Uſe, the Stuffs are well ſcower'd in the Fulling Mill, when white, and well waſh'd afterwards. For Stuffs of leſs Value, 'tis ſufficient they be well *blued* with Paſtel, and *black'd* with Galls and Copperas: But no Stuff can be regularly *dyed* from *White* into *Black*, without paſſing thro the intermediate *Blue*. Yet there is a Colour call'd *cold Black*, or *Jeſuits Black*, prepar'd of the ſame Ingredients as the former, but without being firſt *dyed Blue*. Here the Drugs are diſſolv'd in Water that had boil'd four Hours, and ſtood to cool till the Hand wou'd bear it; then the Stuff dipp'd in it, and again taken out ſix or eight times. Some prefer this *Black* to the other, but on weak grounds. This Method of *Dying Black* is ſaid to have been invented by the *Jeſuits*, and to be ſtill practis'd in their Houſes, where they retain Numbers of *Dyers*. See GRAY. See alſo DYING.

German or *Frankfort* BLACK is made of the Lees of Wine burnt, then waſh'd in Water, and ground in Mills for that Purpoſe, together with Ivory or Peach-Stones burnt. This *Black* makes the principal Ingredient in the Rolling-Preſs-Printers Ink. It is ordinarily brought from *Frankfort*, *Mentz*, or *Strasbourg*, either in Lumps, or Pouder. That made in *France* is leſs valued than that of *Germany*, by reaſon of the Difference between the Lees of Wine uſed in the one and the other; tho ſome prefer that made at *Paris* to that of *Frankfort*.

Ivory or *Velvet* BLACK, is made of *Ivory* burnt, ordinarily, between two Crucibles well luted; which being, thus, render'd perfectly black, and in Scales, is ground in Water, and made into Troches, or little Cakes, us'd by the Painters; as alſo by the Jewellers, to *blacken* the Bottom or Ground of their Collets, wherein they ſet their Diamonds to give 'em their Teint or Colour.

Spaniſh BLACK, ſo call'd becauſe firſt invented by the *Spaniards*, and moſt of it brought from them, is no other than burnt Cork; uſed in various Works, particularly among Painters.

Lamp-BLACK, or *Smoke*-BLACK, the Smoke of Roſin, prepar'd by melting and purifying the Roſin in Iron Veſſels; then ſetting fire to it under a Chimney, or other Place made for the Purpoſe, and lined a-top with Sheep-Skins, or thick Linen Cloth, to receive the Vapour, or Smoke, which is the *Black*: In this manner they prepare vaſt Quantities of it at *Paris*. In *England* it is, ordinarily, prepar'd from the reſinous Parts of Woods, burnt under a kind of Tent, which receives it: It is uſed on various Occaſions, particularly in the Printers Ink; for which it is mix'd with Oils of Turpentine and Linſeed, all boil'd together. It muſt be obſerv'd, that this *Black* takes fire very readily, and, when on fire, is very difficultly extinguiſh'd: The beſt Method of putting it out is, with wet Linen, Hay, or Straw; for Water alone won't do it.

Earth-BLACK is a kind of Coal found in the Ground, which, well pounded, is uſed by the Painters *in Freſco*.

There is alſo a kind of BLACK made of Silver and Lead, uſed to fill up the Strokes and Cavities of Things engrav'd.

BLACKNESS, the Quality of a black Body, or a Colour ariſing from ſuch a Texture and Situation of the Superficial Parts of the Body, as does, as it were, deaden, or rather abſorb, the Light falling on it, without reflecting any, or very little, of it to the Eye. In which Senſe *Blackneſs* ſtands directly oppoſed to *Whiteneſs*; which conſiſts in ſuch a Texture of Parts, as indifferently reflects all the Rays thrown upon it, of what Colour ſoever they be. Sir *Iſaac Newton*, in his *Opticks*, ſhews, that for the Production of *black* Colours, the Corpuſcles muſt be leſs than thoſe which exhibit any other Colours; becauſe, where the Sizes of the component Particles are greater, there is too much Light reflected to conſtitute this Colour; but, if there be a little leſs than is requiſite to reflect the white, and very faint blue of the firſt Order, they will reflect ſo little Light, as to appear intenſely black; and yet may, perhaps, reflect it variouſly to and fro within them ſo long, till it happen to be ſtifled and loſt; by which means they will appear *black*, in all Poſitions of the Eye, without any Tranſparency. And from hence it appears why Fire, and Putrefaction, by dividing the Particles of Subſtances, turn them *black*; why ſmall Quantities of *black* Subſtances impart their Colours very freely, and intenſely, to other Subſtances to which they are applied; the minute Particles of theſe, by reaſon of their very great Number, eaſily over-ſpreading the groſs Particles of others: Hence alſo appears, why Glaſs ground very elaborately with Sand, on a Copper-Plate, till it be well poliſh'd, makes the Sand, together with what by rubbing is worn off from the Glaſs and Copper, become very *black*; and why *black* Subſtances do, ſooneſt of all others, become hot in the Sun's Light, and burn, (which Effect may proceed partly from the Multitude of Refractions in a little room, and partly from the eaſy Commotion of ſo very ſmall Particles;) and alſo why *Blacks* are uſually a little inclined towards a bluiſh Colour: for, that they are ſo, may be ſeen by illuminating white Paper, by Light reflecting from *black* Subſtances, where the Paper will uſually appear of a bluiſh white; and the Reaſon is, that *black* borders on the obſcure blue of the firſt Order of Colours; and therefore, reflects more Rays of that Colour than of any other. It is neceſſary alſo, to the Production of *Blackneſs* in any Bodies, that the Rays be ſtopp'd, retain'd, and loſt in them; and theſe conceive Heat (by means of a Burning-Glaſs, *&c.*) more eaſily than other Bodies; becauſe the Light which falls upon them is not reflected outwards, but enters the Bodies, and is often reflected and refracted in them, till it be ſtifled and loſt. See LIGHT and COLOUR.

BLACK ROD, or Gentleman-Uſher of the *Black Rod*, is Chief Gentleman-Uſher to the King: He is call'd in the *Black* Book, *Lator Virgæ Nigræ & Hoſtiarius*, and elſewhere *Virgi-Bajulus*. His Duty is to bear the *Rod* before the King at the Feaſt of St. *George* at *Windſor*: He has alſo the keeping of the Chapter-Houſe Door, when a Chapter of the Order of the *Garter* is ſitting; and, in time of Parliament, attends the Houſe of Peers. His Badge is a *Black Rod*, with a Lion Gold a-top. This *Rod* has the Authority of a Mace. The Office was formerly held by Patent.

BLACKS, or NEGRO's, a Nation of People, ſo call'd from the Colour of their Skin: For the Reaſon of their Colour, and the Commerce made with 'em, ſee NEGRO.

BLADDER, in Anatomy, a thin expanded membranous Body found in ſeveral Parts of an Animal, ſerving as a Receptacle of ſome Juice, or of ſome liquid Excrement; from whence it takes various Denominations, as *Urinary-Bladder*, *Gall-Bladder*, &c.

BLADDER, by way of Eminence, is a large Veſſel, which ſerves as a Receptacle of the Urine of Animals, after its Secretion from the Blood in the Kidneys. It is ſituated between the Duplicature of the *Peritonæum*, and the lower Part of the *Abdomen*, between the *Os Sacrum* and the *Os Pubis*, above the ſtrait Gut in Men, and in the Neck of the Womb in Women. It is tied to the Navel by the *Urachus* degenerated into a Ligament, its Sides to the *Umbilical Arteries*, and its Neck to the *Inteſtinum Rectum* in Women. It is compos'd of three Coats; the firſt a Covering of the *Peritonæum*; the ſecond is compos'd of Muſcular Fibres, which run irregularly ſeveral ways; and the third, which is full of Wrinkles for facilitating its Dilatation, is both glandulous and nervous. Its Glands ſeparate a viſcous and ſlimy Matter, which defends it from the Acrimony of the Salts in the Urine: Around its Neck there goes a ſmall Muſcle, call'd *Sphincter Veſicæ*, which contracts the Orifice of the *Bladder*, to prevent the Urine from dripping involuntarily, or till it thruſt open the Paſſage, by the Contraction of the ſecond Coat of the Blader, which is therefore call'd *Detruſor Urinæ*. The *Bladder* has Blood-Veſſels from the *Hypogaſtricks*; and Nerves from the *Intercoſtals*. See URINE, *&c.*

BLAIN, a Diſtemper incident to Beaſts, conſiſting in a Bladder growing on the Root of the Tongue againſt the Wind-Pipe, which at length ſwelling, ſtops the Wind. It comes by great chafing, and heating of the Stomach; whereby, as ſome judge, it ſtill grows, and increaſeth by more Heat.

BLANCHING, the Art or Manner of *Bleaching*, or *Whitening*. See BLEACHING.

BLANCHING *of Wax*. See WAX.

BLANCHING, in Coinage; the Preparation of the Pieces, given 'em before the ſtriking, to give 'em the Luſtre and Brillant. The *Blanching*, as now practis'd, is perform'd by heating the Pieces in a kind of Peel, with a Wood Fire, in manner of a Reverberatory, ſo as the Flame paſſes over the Peel. The Pieces being ſufficiently heated, and cooled again, are put ſucceſſively to boil in two other Peels of Copper, wherein are Aqua fortis, common Salt, and Tartar of *Montpellier*; when they have been well drain'd off this firſt Water in a Copper Sieve, they throw Sand and freſh Water over 'em; and when dry, they are well rubb'd.

The antient Method of *Blanching* was, by putting the Pieces, after heating, in a large Veſſel of common Water, and ſome Ounces of Aqua fortis; but in different Proportions for Gold and Silver. This Method is now diſus'd, partly by reaſon of its Expenſiveneſs, and partly becauſe it diminiſhes the Weight of the Metal. See COINING.

BLANK VERSE. See VERSE and RHYME.

BLATA BIZANTIA, or *Unguis Odoratus*, the upper Part of a Shell call'd by the *Latins Conchylium*. Theſe Shells are of different Magnitudes; but the Figure, in all, is that of a Claw of a Wild Beaſt; whence its ſecond Name; the firſt being occaſion'd by its being uſually brought from *Conſtantinople*, the antient *Bizantium*. The *Blata Bizan-*

tia is very thin, of a brown Colour, burns readily; and in burning ſmells ill. Its Uſe in Phyſick is the ſame with that of *Caſtoreum*, viz. for Vapours. Inſtead of the *Blata Bizantia*, which is very rare, is frequently ſubſtituted another kind of Shell, of leſs Virtue, call'd *Solen*.

BLAZE, *in the Manege*. See STAR.

BLAZING-STAR. See COMET.

BLAZONING, in Heraldry, the Art of Deciphering the Arms, or Armories of Noble Houſes, &c. or of Naming all the Parts in their proper and particular Terms. There is this Difference between *Arms* and *Blazon*; that the firſt are the Device or Figures bore on the Coat, or Shield; and *Blazon*, the Deſcription thereof in Words. See ARMS and DEVICE. In *Blazoning* a Coat, 'tis a ſpecial Rule, to begin with the *Field* firſt, and then proceed to the *Blazon* of the *Charge*. If the *Field* be taken up with ſeveral things, whether of one or various kinds, that which lies next and immediately on the *Field*, muſt be firſt named; then thoſe more remote. After the Metal-Colour of the *Field* is named, the Manner of the Diviſion of the *Eſcutcheon* by Line, whether downright, or bend-ways, muſt be expreſs'd. After the *Field* in Colour, and the *Line* and *Charge*, if there be more Parts of the *Field* poſſeſs'd by the *Charge* than one, the principal Part of the *Field* muſt be named firſt. The Arms of all Emperors, Kings, and Princes, are *blazon'd* by Planets; thoſe of the Nobility by precious Stones; and Baronets, Knights, Eſquires, and Gentlemens Coats, by Metal and Colour. It muſt farther be obſerv'd, that Metal muſt never be put on Metal, nor Colour on Colour; for, in ſo doing, the Arms are falſe. It may be added, that when Lions ſtand upright in a Coat, they are call'd *Rampant*; when walking forward, *Paſſant*; when they look you in the Face, *Paſſant Guardant*: In other Poſtures they have other Terms, as *Saliant*, *Regardant*, &c. which ſee. Wolves and Bears are term'd after the manner of Lions; Gryphons (inſtead of *Rampant* and *Saliant*) are term'd *Sergreant*; Lions, Gryphons, and Eagles, are alſo *Langued* and *Armed*; Swans, *Membred*; Hawks, *Jeſs'd* and *Bell'd*; Cocks, *Armed*, *Creſs'd*, and *Jowlop'd*. And note, All theſe Things are to be expreſs'd in *Blazon*, when met with, *viz.* when the Tongues, Bills, and Claws, are found of different Colours from the Body: When a living Creature proceeds from the Bottom of the *Ordinary*, 'tis term'd *Iſſuant*; when over two Colours, *Jeſſant*; if it proceed from the middle of any *Ordinary*, or common *Charge*, *Naiſſant*.

There are various Etymologies of the Word *Blazon*: The moſt probable brings it from the *German*, *blaeſen*, to blow a Horn; it being the Cuſtom of thoſe who preſented themſelves at the Liſts in the antient Tournaments, *to blow a Horn*, to notify their coming. After this the Heralds ſounded their Trumpets, and then *blazon'd* the Arms of thoſe who preſented themſelves; deſcribing them aloud, and ſometimes expatiating on the Praiſes and high Exploits of the Perſons who bore them.

BLEACHING, or BLANCHING, the Art and Manner of *Whitening* Linens, Stuffs, and Silks, &c. The Proceſs in each is as follows.

For bleaching Silk. While 'tis yet raw, 'tis put in a thin Linen Bag, and thrown into a Veſſel of boiling River-Water, wherein Soap has been diſſolv'd, then boil'd two or three Hours, and the Bag being turn'd ſeveral times, taken out, beaten, and waſh'd in cold Water, ſlightly wrung out, and thrown into a Veſſel of cold Water mix'd with Soap and a little Indigo: The Indigo gives it the bluiſh Caſt always obſerv'd in white Silks. After taking out of the ſecond Veſſel, 'tis wrung out, and all the Water and Soap expreſs'd, ſhook out to untwiſt and ſeparate the Threads, and hung up in the Air, in a kind of Stove made on purpoſe, wherein is burnt Sulphur; the Vapour whereof gives the laſt Degree of *Whiteneſs* to the Silk. See SILK.

To bleach Woollen Stuffs. There are three Manners of *Whitening* Stuffs; the firſt with Water and Soap; the ſecond with Vapour of Sulphur; the third with Chalk, Indigo, and Vapour of Sulphur. For the firſt, the Stuffs being taken from the Fulling-Mill, are put into ſoap'd Water, pretty hot, and work'd a-freſh by Force of Arms over a Bench, which finiſhes the *Whitening* the Fulling-Mill had begun; and laſtly, waſh'd out in clear Water and dried: This is call'd the Natural Way of *Bleaching*. In the ſecond Method, they begin with waſhing the Stuff in River-Water; 'tis then laid to dry on Poles, and, when half dry, ſpread out in a kind of Stove well cloſed, wherein is burnt Sulphur; the Vapour whereof diffuſing itſelf, ſticks by little and little over all the Stuff, and gives it a fine *Whitening*: this is commonly call'd *Bleaching* by the Flower. In the third Method, after the Stuffs have been waſh'd, they are thrown into cold Water, impregnated with Chalk and Indigo; after they have been well agitated here, they are waſh'd a-freſh in Eldar Water, half dried on Poles, and ſpread in a Stove to receive the Vapour of the Sulphur; which finiſhes their *Bleaching*. This is not eſteem'd the beſt Method of *Bleaching*, tho agreeable enough to the Sight. It may be here obſerv'd, that when a Stuff has once receiv'd the Steam of Sulphur, 'twill ſcarce receive any beautiful Dye, but *Black* or *Blue*.

To bleach fine Linens. After taking 'em from the Loom, while yet raw, they are ſteep'd a Day in clear Water, waſh'd out and clear'd of their Filth, and thrown into a Backing Tub, fill'd with a cold Lixivium, or Lie. When taken out of the Lie, they are waſh'd in clear Water, ſpread in a Meadow and water'd from time to time, with Water from little Dikes, or Canals, along the Ground, by means of Scoops, or hollow Peels of Wood, call'd by the *Dutch*, who pretend to be the Inventors of 'em, *Gieter*. After lying a certain time on the Ground, they are paſs'd thro a new Lie, pour'd on, hot; and again waſh'd in clear Water, and laid a ſecond Time on the Ground, and every thing repeated as before; then paſs'd thro a ſoft gentle Lie, to diſpoſe 'em to reſume the Softneſs which the other harſher Lies had taken from 'em, waſh'd in clear Water, ſoap'd with black Soap, and that Soap again waſh'd out in clear Water: they are then ſteep'd in Cow's Milk, the Cream firſt skimm'd off, which finiſhes their *Whitening*; and Scowering gives 'em a Softneſs, and makes 'em caſt a little Nap: When taken out of the Milk, they are waſh'd in clear Water for the laſt time. After all this Proceſs, they give the Linen its firſt Blue, by paſſing it thro a Water wherein a little Starch, Smalt, and *Dutch* Lapis have been ſteep'd. Laſtly, the proper Stiffneſs and Luſtre is given with Starch, pale Smalt, and other Gums, the Quantity and Quality whereof may be adjuſted according to occaſion. In fine Weather, the whole Proceſs of *Bleaching* is atchiev'd in a Month's Time; in ill Weather, it takes up ſix Weeks, or more.

To bleach coarſe Linens. They are taken from the Loom, and laid in wooden Frames, full of cold Water; where, by means of wooden Hammers, work'd by a Water-Mill, they are beat ſo, as inſenſibly to waſh and purge themſelves of their Filth; then ſpread on the Ground, where the Dew which they receive for eight Days, takes off more of their Rawneſs; then put in a kind of wooden Tubs, or Pans, with a hot Lie over 'em. Thus lixiviated, they are again purg'd in the Mill, laid a-freſh on the Ground, and, after eight Days more, paſs'd thro a ſecond Lie, and all things repeated, till ſuch time as they have acquir'd their juſt Degree of *Whiteneſs*. For *Bleaching* of Hair, ſee HAIR. For *Bleaching* of Wax, ſee WAX, &c.

BLEEDING, an Operation in Chirurgery, conſiſting in the Opening of a Vein with a Lancet, for the evacuating of corrupted or redundant *Blood*. *Bleeding* is the ſureſt and moſt efficacious Species of Evacuants. It was very rare among the Antients, but is frequent among the Moderns. *Oſtienſis* obſerves, that at *Rome* Perſons of Quality are not allow'd *to be let blood*, even in their moſt dangerous Diſeaſes, without Leave from the Pope. The *Hippopatamus* is ſaid to have firſt taught Men the Uſe of *Bleeding*: For that Animal being overcharg'd with *Blood*, rubs herſelf againſt a pointed Bulruſh, and opens a Vein; till finding her Plenitude diſcharged, ſhe welters in the Mire to ſtanch the *Blood* again. See STIPTICK: See alſo PHLEBOTOMY.

BLEMISH, a Term in Hunting, when the Hounds, or Beagles, finding where the Chace has been, make a Proffer to enter, but return.

BLEMMYES, People ſuppos'd to be without Heads, and to have their Eyes and Mouth in their Breaſt; mention'd by *P. Mela*, and other antient Authors. They are ſuppos'd to have inhabited Part of *Æthiopia*. Some Authors derive the Fable of the *Blemmyes* from this, that their Heads were hid between their Shoulders, by hoiſting thoſe up to an extravagant Height. *Bochart* derives the Word *Blemmyes* from בלי, which implies a Negation, and מוכו, *Brain*: In which Senſe the *Blemmyes* muſt have been People without Brains.

BLIGHT, or BLAST, a Diſeaſe incident to Plants, and affecting 'em variouſly; the whole Plant ſometimes periſhing of it, and ſometimes only the Leaves, which will be ſcorch'd and ſhrivel'd up, the reſt remaining green and flouriſhing. This Diſeaſe ſeldom happens, but upon the blowing of ſharp Eaſtern Winds, which are moſt frequent with us about *March*; whence that Month proves, of all others, the moſt fatal to Plants: From this Circumſtance, ſome imagine the Colds that then reign being exaſperated by the Eaſtern Winds, effect *Blights*; but Mr. *Bradley* furniſhes us with a better Account: for, on this Principle, it were hard to ſay, why one Plant, or one Part of a Plant, ſhould be *blighted* more than another. He obſerves, then, that Caterpillars generally attend thoſe Winds, and that they infect ſome one kind of Tree more than another, and even ſome particular Branches more than others; and thence infers, either that the Eggs of thoſe Inſects, or the Inſects themſelves, are brought to us by the Eaſterly Winds; or that the Temperature of the Air, when the Eaſtern Winds blow, is neceſſary to hatch thoſe Creatures, ſuppoſing the Eggs to have been already laid on the infected Parts. Now, each of

theſe Cauſes ſeem to have their Effect: Thoſe *Blights* attended with large Worms or Caterpillars, ſeem hatch'd by the Eaſtern Winds; and thoſe others, which only produce the ſmall Inſects, that occaſion the Curling of the Leaves of Trees, may proceed from Swarms of 'em, either ready hatch'd, or in the Egg, brought with the Wind. The Coldneſs of thoſe Winds he ſhews to be no Objection againſt their being fitted to hatch Inſects; different Inſects requiring vaſtly different degrees of Heat. To this he ſhews, that every Inſect has its proper Plant, or Tribe of Plants, which it naturally requires for its Nouriſhment, and will feed on no other; and in which, therefore, it lays its Eggs: 'Tis no wonder then, that one kind of Tree ſhould be infected, and all the reſt eſcape. That Wind, *v. g.* which brings, or hatches, the Caterpillars on the Apple-Tree, will not infect the Pear, Plum, or Cherry; becauſe, were the Shoals of Inſects natural to the Apple, to light on thoſe other Trees mention'd, they would either want their proper Matrix to hatch in; or, were they ready hatch'd, would periſh for want of proper Food. So that 'tis morally impoſſible, all kinds of Plants ſhould be *blighted* at the ſame time, unleſs the Eggs of every kind of Inſect natural to each Tree, could be brought at one time with the Wind; or, that an Eaſterly Wind cou'd contain in it at once, as many different Degrees of Cold, or Heat, as wou'd be requir'd to hatch and maintain each different Claſs of Inſects. Nor is it any Objection, that in *Blights* there are not frequently any Animals immediately perceivable. By the Microſcope, we diſcover Animalcules a Million of times leſs than the ſmalleſt which comes under ordinary Notice: Theſe, the gentleſt Air may be conceiv'd capable of blowing from Place to Place; ſo that 'tis no wonder if they be brought to us from the remoteſt Regions, eſpecially the North-Eaſt Parts of *Great Tartary*, &c. where the Cold is intenſe enough to give 'em Life; and from whence there is not Sea enough, by the Warmth and Saltneſs of whoſe Vapours they may be ſuffocated. Thoſe brought from the North-Eaſt Parts of *America*, may be probably deſtroy'd by paſſing the vaſt *Atlantick* Ocean, which may be the reaſon why the North-Weſt Wind is not ſo infectious.

What confirms this Doctrine of *Blights* is, that the more knowing among Country-People, while the Eaſtern Winds blow, uſe to guard againſt *Blites* by burning Heaps of Weeds, Chaff, and other Combuſtibles, on the Wind-ſide of their Orchards, that the Smoke may either poiſon the Inſects, or their Eggs, as they paſs along. It may be added, that theſe Fires are often made with good Succeſs, to deſtroy the Caterpillars, even after they were hatch'd, and had began to devour the Trees. Another Method of preſerving Trees from *Blights* is, by ſprinkling Pepper-Duſt; which, 'tis ſaid, is preſent Death to all Inſects, and even all Animals. Corn is liable to *Blights* like other ſorts of Grain. The *Blight* of Wheat, call'd *Smut*, is prevented by waſhing the Wheat in three or four Waters, ſtirring it well all the time, and skimming off the light Wheat, then ſteeping it 30 or 40 Hours in Water impregnated with Salt, with the Addition of ſome Alum, till it be capable of ſuſtaining a Body of twice the ſpecifick Gravity of an Egg; when taken out, ſome ſlack'd Lime is ſifted on it, to dry it fit for ſowing the next Day: Such a Proceſs ſecures the Grain from being infeſted with any kind of Vermine.

BLINDNESS, a Privation of the Senſation of Sight, ariſing from a total Depravation of the Organs thereof, or an involuntary Obſtruction of their Functions. The Cauſes of *Blindneſs* are various; proceeding from *Cataracts*, *Gutta Serena's*, &c. which ſee. *Aldrovandus* tells us of a Sculptor, who became *blind* at 20 Years of Age, and yet 10 Years after made a perfect Marble Statue of *Coſmo* II. *de Medicis*; and another of Clay, like *Urban* VIII. *Bartholin* tells us of a *blind* Sculptor in *Denmark*, who diſtinguiſh'd perfectly well, by mere Touch, not only all Kinds of Wood, but all the Colours; and *F. Grimaldi* gives us an Inſtance of the like kind, beſide the *blind* Organiſt lately living in *Paris*, who is ſaid to have done the ſame. *F. Zaha* gives abundance of Inſtances of the amazing Sagacity of *blind* People, in his *Oculus Artificialis*. The Author of the Embaſſy of D. *Garcia de Silva Figueroa* into *Perſia* tells us, that in ſeveral Parts of that Kingdom are found vaſt Numbers of *blind* People of all Ages, Sexes, and Conditions; by reaſon of little Flies which prick the Eyes and Lips, and enter the Noſtrils, carrying certain *Blindneſs* with 'em. See SIGHT.

The Chymiſts ſay their Veſſels are *blind*, which have no Opening but at one Side. See COECUM.

BLINDS, in Fortification, Defences made of Wood, or Branches interwoven and laid a-croſs between two Rows of Stakes about the Height of a Man, and four or five foot a-part. They are uſed particularly at the Heads of Trenches, when they are extended in Front towards the Glacis; ſerving to ſhelter the Workmen.

BLISTER. See VESICATORY.

BLOCK, a Piece of Marble, as it comes out of the Quarry, e'er it has aſſum'd any Form from the Workman's Hand. See MARBLE.

BLOCK, in Falconry, the Perch whereon the Bird of Prey is kept. This is to be cover'd with Cloth.

BLOCKADE, the Siege of a Place, intended to be taken by Famine; wherein all the Paſſages, and Avenues, are ſeiz'd, and ſhut up, ſo as no Supplies of Proviſion can be brought in. A *Blockade*, in ſtrictneſs, is no regular Siege; inaſmuch as there is not any Deſign of an Attack. A *Blockade* is form'd by the Cavalry. The Word is ſometimes alſo uſed at the Beginning of a Siege, when Forces are ſent to ſeize the principal Avenues, where the *Beſiegers* intend to fix their Quarters. It comes from the *German Blochus*, a wooden Houſe; or from the *Gauliſh Blocal*, Barricade: Others derive it from the *Latin buculare*, to ſhut up the Paſſage.

BLOCK-LAND was formerly that which we now call *Freehold Land*, or *Land* held by Charters; and it was by that Name diſtinguiſh'd from *Folk-land*, which was *Copy-hold Land*.

BLOCKS, a-board a Ship, are Pieces of Wood in which the Shivers are placed, and wherein the Running-Ropes go: Of theſe, ſome are ſingle, ſome double; and ſome have three, four, or five Shivers in them. They are named and diſtinguiſh'd by the Ropes they carry, and the Uſes they ſerve for.

BLOMARY, the firſt Forge in an Iron-Mill thro which the Metal paſſes after it is melted out of the Mine. See IRON.

BLOOD, a warm, red Liquor or Humour, circulating, by means of Arteries and Veins, through every Part of the Body. While in its Veſſels, it appears to the naked Eye, uniform and homogeneous; but, when let out and cold, ſeparates ſpontaneouſly into two different Parts; the one red and fibrous, which coheres into a Maſs, and is call'd the *Cruor*; the other thin and tranſparent, which retains its Fluidity when cold, and, being ſuppos'd ſpecifically heavier than the other, ſuſtains and bears it up, and is call'd the *Serum*. The Proportion of the *Serum* to the *Cruor*, Dr. *Drake* makes at a Medium, as one and an half to one: But Mr. *Boyle*, more accurately, makes the *Serum* $\frac{13}{25}$ of the whole *Blood*; and Dr. *Jurin* $\frac{15}{27}$ of the whole Weight, or $\frac{3}{4}$ of the Bulk.

By the Microſcope, the *Blood* appears to conſiſt of little red Globules, ſwimming in an aqueous Liquor, ſuppos'd to be the *Cruor* and *Serum*, that appear ſo diſtinct when let out. M. *Leewenhoeck* computes theſe Globules to be twenty five thouſand times ſmaller than the ſmalleſt Grains of Sand; and Dr. *Jurin* makes 'em ſtill leſs. Upon an accurate Menſuration, he found the Diameter of one, equal to $\frac{1}{3240}$ of an Inch, or $\frac{1}{324}$ of an ordinary Hair of the Head. Dr. *Drake* thinks, that tho the rapid Motion of the *Blood* may make the *Cruor* appear round, and perhaps, by a kind of Whirling, or Rotation, really convolute 'em; yet that their Figure is not naturally Globular, when let out, as appears from their Coheſion, or hanging together in a Lump; which ſpherical Bodies, touching in a very few Points, are not apt to do: But, on the contrary, this Property, he thinks, argues an Implication of their Fibres within one another: Which is confirm'd by what Dr. *Adams* obſerv'd by his Microſcope, *viz.* that immediately after Emiſſion of *Blood*, 'tis ſo far from exhibiting any red Globules, that it appears to conſiſt of infinite Branches, running in no certain Order, and variouſly colour'd.

By a Chymical Analyſis, the *Blood* is found to conſiſt of *Phlegm*, as the Baſis or Vehicle of Volatile Salts; of *Oil*, which, by ſome nice Examiners, has been found of two Kinds; and of *Caput mortuum*, or Earth; which, tho it may conſiſt of divers Subſtances, eſſentially different from each other, yet all we get out of it is a little fix'd Salt. From the beſt Experiments in this kind it appears, that in ſeven Ounces of human Blood, there are five Ounces two Drachms of Phlegm, three Drachms of a ſubtile, ſpirituous Oil, two Grains of a thicker Oil, two Drachms of Salt, and about two of Earth. Dr. *Jurin* adds, that the *Serum*, upon a Chymical Analyſis, exhibits a great deal of Phlegm, and of the other Principles a ſmall Quantity; and, on the contrary, the *Cruor* yields leſs Phlegm, but the other Principles much more copiouſly than the *Serum*. From which Data he concludes, that the Globules conſiſt of ſome Phlegm united with the Oil and Salts, and a ſmall Quantity of Earth; but in what Proportion, and how, and in what Parts they are form'd, &c. is not determin'd. Indeed, it muſt be conſider'd, that the Principles which the Chymiſts thus produce ſeparate, may poſſibly be much alter'd by the Fire. Thus, 'tis paſt doubt, the Oils drawn from the *Blood* by Fire, are vaſtly different from the natural Oil which circulates with the *Blood*. To which may be added, that the *Caput mortuum* remaining after Diſtillation, may, poſſibly, be a new Production, which had no Exiſtence under any Form reſembling that in the *Blood*.

The

The Source, or Origin, of the *Blocd* is the *Chyle*, which paſſing the *Lacteals*, is deliver'd into the *Subclavian*; where, mixing with the *Blood*, they proceed together to the *Right Ventricle* of the Heart; and there, being yet more intimately mix'd, they circulate together thro the whole Body; till after ſeveral Circulations, and Secretions, at the ſeveral Strainers of the Body, they are aſſimilated ſo as to make one uniform compound Maſs, which appears to be nothing elſe but *Chyle*, alter'd by the Artifice of Nature, and exalted into *Blood*; there being no Appearance of any thing extraneous mix'd with the Liquor circulating in the *Blood-Veſſels*, but *Chyle*; excepting what had been before ſeparated from it, for ſome particular Purpoſes, which being once ſerved, it is returned to it again: unleſs, perhaps, it may receive ſome Portion of Air in the Lungs. That there is Air mix'd in the *Blood*, and circulating with it, is paſt doubt; but, whether any more than was at firſt contain'd in the Food whereof the *Chyle* is form'd, is a Queſtion not yet decided. The principal Arguments urg'd for it, are, the Neceſſity of Reſpiration; which is accounted for on another Principle: and the florid Colour the *Blood* receives in the Lungs, and firſt ſhews in the *Vena Pulmonalis*; which is countenanced by an Experiment made with the red grumous Part of the *Blood* after Coagulation on *Blood-letting*; for, upon turning the Under-Surface, which was before black, upwards, and expoſing it to the Air, by its Contact therewith it acquires a florid Colour, like that of the *Blood* in the *Vena Pulmonalis*. But this Effect others account for from the extraordinary Agitation and Comminution of the Blood in the Lungs.

Indeed, Dr. *Keill* and ſome others go further. Mr. *Boyle* having examin'd the Specifick Gravity of *Blood*, and found that of the *Serum* to be greater than that of *Blood*, in the Proportion of 1190 to 1040, *i.e.* nearly as 8 to 7, it follow'd, that the *Cruor*, or *Blood-Globules*, were ſpecifically lighter than the *Serum*, and that in a great degree; which was further confirm'd by the *Globules* being ſuſtain'd in the *Serum*, both while circulating, and when let out. Hence it was conjectur'd, that theſe *Globules* were nothing elſe but thin Veſicles fill'd with a ſubtle aerial Subſtance: And this Opinion was confirm'd from its being obſerv'd, in viewing the Circulation by a Microſcope, that a *Blood-Globule*, in paſſing thro a very narrow Veſſel, wou'd change its Shape from a Globular to an Oval Form, and wou'd again recover its former Figure, as ſoon as it was got thro its narrow Paſſage; which Appearance was naturally enough aſcribed to the Elaſticity of the included Air: And, from this Conjecture, were accounted for a great Number of the Phænomena of the Animal Oeconomy, particularly Dr. *Keill*'s *Theory of Muſcular Motion*. But this Principle Dr. *Jurin* has examin'd, and appears to have overthrown. He made ſeveral Experiments, in ſome of which the *Cruor* before ſuſpended a-top of the *Serum*, by its Adheſion to the Sides of the Porringer being cut off, and put in another Veſſel of *Serum*, immediately ſunk. In others, the *Cruor* buoy'd up in the *Serum*, even without any Adheſion to the Sides of the Glaſs, and merely by the Bubbles of Air adhering to its Surface, upon including it in a Receiver, and exhauſting the Air, the Bubbles burſting, the *Cruor* wou'd ſink; whence he concludes, the *globular* Part of the *Blood* to be heavier than the *ſerous*: And, from other Experiments, he aſcertains the Proportion of the Gravity of *Blood* to that of *Serum*, to be as 1054 to 1030; whence the Quantity of the *Globules* being before fix'd at $\frac{1}{4}$ of the whole, the preciſe Gravity of the *Globules* beyond that of the *Serum* is eaſily determined. The *Blood-Globules*, therefore, are not *Veſicles* fill'd with Air, or any other fluid Subſtance lighter than *Serum*: Which is further confirm'd from this, that *Blood-Globules* are not found to dilate, or undergo any Alteration, in an exhauſted Receiver, when view'd thro a Microſcope; whereas, were they fill'd with any elaſtick Fluid, they would either burſt, or at leaſt dilate into 70 or 80 times the Space.

As to the Heat of the *Blood*, Authors are exceedingly divided about the Cauſe thereof: The Antients aſcrib'd it to a vital Flame, or innate Heat lodg'd in the Heart, and thence communicated to the *Blood*. Dr. *Willis* imagines a kind of Accenſion in the *Blood*; and thinks its Heat reſults from its being, as it were, ſet on fire, and perſevering in that State. Dr. *Henſhaw* ſolves it from an Ebullition conſequent on the Mixture of two Fluids, ſo diſſimilar as the *Chyle* and *Blood*. Others have recourſe to the chymical Principles of Alcali and Acid; others to the mutual Action of the Principles, or component Parts of he *Blood*, by means whereof an inteſtine Motion, and by that means an inteſtine Heat, or Incaleſcence, is effected. Dr. *Drake*, with more Reaſon, attributes the Heat of the *Blood* to the Spring of the Air inclos'd together with it in the Veſſels: For, Air being incloſed in the *Blood-Veſſels*, will endeavour to expand it ſelf, and, conſequently, if it have Force enough, will drive outwards the Parts of the Body that incloſe it; by which means it cauſes the *Blood* to beat againſt the Sides of the Veſſels, which having muſculous, contractile Coats, do in their Turns compreſs it again, and ſo cauſe a reciprocal *Æſtus* in the *Blood*, greater than the mere circulatory Motion cou'd; whence the Parts of the Solids, or containing Veſſels, being put into a conſtant Agitation, a Heat is produced in both, which they mutually impart to each other. *Laſtly*, Dr. *Boerhaave* accounts for it from the Action of the Heart, and the Re-action of the *Aorta*: For, the *Blood*, driven by the Heart obliquely againſt the Sides of the *Aorta*, preſſes them, and ſpends almoſt its whole Momentum againſt the Curvity thereof, and is, by its Figure and Elaſticity, preſs'd back again. Every Moment of Time, therefore, each Particle of *Blood* acquires a new Motion, a new Niſus and Rotation: Hence follows a perpetual Attrition, Attenuation, rubbing off of Angles, and a Similitude and Homogeneity of all the Parts; and hence the *Maſs* derives its Fluidity, Heat, Diviſion into Particles accommodated to all Veſſels, Preſſure into the Lateral Tubes, *&c.*

Nor is the Cauſe of the *Redneſs* of the *Blood* leſs obſcure: The Chymiſts account for it from the Exaltation of its Sulphur; others from the Mixture of ſaline and ſubacid Juices with ſulphureous; and others from the Colour of the Heart. The *French* Philoſophers attribute this *Redneſs* to the Smallneſs of the Size, and Roundneſs of the Figure of the Particles that compoſe the *Cruor*; notwithſtanding, that *red* being the Colour, of all others, leaſt refrangible, and the *Globular* Figure, of all others, moſt refrangible, that Figure ſeems, of all others, leaſt apt to produce this Colour. Others fetch the Colour of the *Blood* from the Impregnation of the Air in the Lungs: For, that Air is diſpos'd to produce ſuch an Effect, appears from the Experiment above. But others, more reſerv'd, extend this Effect of the Air no further, than to account for the Difference of *Redneſs* between the *Venal* and *Arterial Blood*; ſuppoſing, that after its Colour has been heighten'd, and render'd more florid by the Mixture of the Air in the Lungs, it retains it pretty well in the Arteries; but that circulating in the Body, and carried thro the Veins, the Air tranſpires, by degrees, thro the Pores of the Veſſels, and leaves the Liquor of a paler Dye. *Boerhaave* accounts for the Colour of the *Blood* from the ſame Cauſe as for its Heat, *viz.* from the Action of the Heart, and Re-action of the Sides of the *Aorta*. *Borelli*, to aſcertain the Cauſe of the *Redneſs*, took a Parcel of the *Cruor*, after it had ſeparated itſelf as far as ſpontaneouſly it wou'd from the *Serum*, and waſhing it frequently in Water, found it ſeparable into a viſcous, ſlippery Subſtance, conſiſting of white, or colourleſs Fibres, (which roſe to the Surface of the Water, and there gather'd into a Skim, or coherent Pellicle of a reticular Texture) and a deep *red* Pouder, which precipitated pretty plentifully to the Bottom. Hence it appears, that the *red* Colour of the *Blood* is imparted to it by *red* tinging Particles, as in the common Caſe of Dyers. By examining the *red* Precipitate apart, and finding which of the Elements it conſiſted chiefly of, a Man who wou'd reaſon about the Colour of the *Blood* from Principles of the Chymiſts, might carry that Matter nearer an Iſſue.

However, this *red* Colour, tho generally found in all terreſtrial Animals, is not yet abſolutely neceſſary and eſſential; there being whole Species which have their circulating *Liquor*, or *Blood*, white and limpid: To which Dr. *Drake* adds an Inſtance of a pure white *Blood*, like Milk, which he let out of the *Median* Vein of a Man, and which, when cold, did not ſeparate into a Craſſamentum, as the *red* uſually does; nor yield a Skim, or Cream, or turn ſour upon keeping, as Milk does. Dr. *Beal* gives us another Inſtance of the like kind; and Dr. *Lower* adds a third, of a Perſon who bled ſo long at the Noſe, till at laſt the Broth he drank, flow'd, little alter'd, that Way as *Blood*.

From the Principles, or conſtituent Parts of the *Blood* above-recited, variouſly combined and diſtributed by the Circulatory Motion impreſs'd by the Heart, (ſee CIRCULATION,) and by the Oſcillatory, expanſive Motion of the interſpers'd Air, and the Re-action of the Contractile Veſſels, flow all the Properties, and Operations of the *Blood*. From this Mixture of Elements, and their lax Compoſition, it becomes ſuſceptible of various Alterations and Impreſſions; the principal whereof are, *Coagulation*, which uſually attends it out of the Body, ſometimes in it, and ſcarce ever without an artificial Procurement, but always mortal: and *Diſſolution*, which is juſt oppoſite to the former, and conſiſts in ſuch a Comminution of the Fibrous Parts of the *Blood*, as indiſpoſes it for a Separation of the *Cruor* from the *Serum*. This is frequently the Conſequence of Malignant and Peſtilential Fevers, *&c.* and is likewiſe occaſion'd by ſome Kinds of Poiſons. Theſe two contrary Affections of the *Blood*, Dr. *Drake* aſcribes to the oppoſite Kinds of Salts, Acids, and Volatile Alcalies. For tho, adds he, in a human Body no ſincere Acid is found, nor cou'd it, indeed, be conſiſtent with Life; yet it may, and does often enter the *Blood* ſo compounded, as to bridle the Volatile, Alcalious Salt of the *Blood*, and ſo hinder the due Attenuation

and Mixture of the ſeveral Parts; as is the Caſe in a *Diabetes*, and, perhaps, in a *Chloroſis*, where the *Blood* is thick and torpid: On the other hand, where the Alcalious are too redundant, the *Blood* is render'd too thin and fluid, ſo that the Difference of its conſtituent Parts is loſt.

Another Affection frequent in the *Blood* is, a too great abundance of Oils, or ſaline Particles, by means whereof the active Parts of the *Blood* are too much clogg'd, and thoſe Parts which ſhould be ſecreted for peculiar Uſes in the Body, are detain'd; and perhaps the Solids, thro which it paſſes, too much lubricated, their Tone vitiated, ſhrunk, relax'd, *&c.* whence that Sluggiſhneſs and Inactivity of very fat People. The contrary Affection to this is, the defect of Oil in the *Blood*; which being, as it were, its Balſam, lines and preſerves the Parts from being fretted and corroded by the Salts, whoſe Spicula, or Edges, are, as it were, ſheathed in this ſoft Balſamick Matter, and their Attrition againſt the ſolid Parts prevented. This State of the *Blood* is uſually attended with a general Atrophy, and a Fretting and Corroſion, of ſome particular Parts; whence ſerous Defluxions, Apoſthumations, and Ulcers, eſpecially in the Lungs, whoſe tender, veſiculous Subſtance is more eaſily annoy'd than any other, by the Acrimony of the ſaline *Serum*.

There are other leſs conſiderable Affections of the *Blood*, reſulting from its Temperature and Mixture, with regard to the earthy Parts; the Conſequences of which are, the Stone, *&c.* and others that don't originally ſpring from any Dyſcraſy, or undue Mixture of the Elements, but from an Alteration in its Motion; ſuch as an Augmentation, or Diminution, of its progreſſive Motion, or the like Changes in its elaſtick Motion; whence ſupernatural Fermentations are induced: The Occaſions here may be various; ſometimes Fevers, and other Diſorders occaſion'd by Surfeits, Debauches, catching Cold, violent Exerciſe, *&c.* whence Atonias; at other times, ſome latent Malignity of the Air, whence Epidemical Diſeaſes.

The *Blood* thus variouſly compounded and circumſtantiated, viſits even the minuteſt Parts of the Body, by means of its Circulative Motion: The Cauſe and Courſe whereof ſee under CIRCULATION. In this Round, thoſe Particles of the *Blood* which conform beſt to the Figure and Structure of the Parts thro which they paſs, are appoſited to 'em, either for their Accretion, or for the Reparation of ſuch as the conſtant rapid Force of the *Blood* wears off.

About the Matter of Nutrition, or the Source whence the Nouriſhment is deriv'd, great Conteſts have aroſe among the Phyſicians and Anatomiſts; ſome contending for a nutritious Juice convey'd thro the Lungs; ſome ſetting up the *Lymph*, others the *Chyle*, ſome the *Serum* of the *Blood*, ſome the *Cruor*, as the univerſal *Succus alibilis*, &c. However, all theſe, except they who bring the Nutriment thro the Nerves, make the *Blood* the *Vehicle*, that conveys the Alimentary Parts thro the Body, whatſoever they be, and whenceſoever derived: But, perhaps it was on the ſcore of its Heterogeneity, or Compoſition of different Elements, that they did not make it ſelf the Nutritious Fluid, without reſtraining that Faculty to ſome particular Parts thereof. But Dr. *Drake* makes no Scruple to ſay, that the *Blood*, in its largeſt Acceptation, as conſiſting of all the Parts before deſcribed, is ſimple and homogeneous enough for the Purpoſes of Nutrition; and that every Part thereof contributes ſomething, either materially or inſtrumentally, to the Augmentation, or Reparation, of the Parts thro which it paſſes. See NUTRITION.

For the Manner in which the *Blood* is form'd, and how the *Chyle* is aſſimilated into *Blood*, ſee SANGUIFICATION.

The Quantity of *Blood* in a human Body, has been variouſly eſtimated by various Authors. Where note, That in Computations of this Kind, not only the Fluid contain'd in the Veins and Arteries, but alſo that in the Lymphæducts, Nerves, and the other Veſſels ſecreted from it, and return'd to it, are included. This Dr. *Lower* computes, in an ordinary Man, at about 20 Pounds; Dr. *Moulin* at about $\frac{1}{20}$ of the Weight of the whole Man, which may amount to about 8 or 10 Pounds: But Dr. *Keill*, from a more accurate Calculation, built on the Proportion of the Coats to the Veſſels, ſhews, that in a Body weighing 160 Pounds, 100 Pound thereof are *Blood*. Hence he propoſes a Method of determining the Velocity of the *Blood*: For, as each Ventricle of the Heart is capable of receiving an Ounce of *Blood*; being full in their *Diaſtole*, we may ſuppoſe they throw out about an Ounce each *Syſtole*. Now, the Heart beats about 4000 times in an Hour; therefore, every Hour 4000 Ounces, or 250 Pound of *Blood*, paſſes thro the Heart. So that a Quantity of *Blood* equal to the whole Maſs, paſſes in two Hours and a half: but, the Sum of the Sections of the Branches of an Artery being always greater than that of the Trunk, the Velocity of the *Blood* will conſtantly decreaſe as the Artery divides; and the Ratio of its greateſt to its leaſt Velocity in the Arteries may be thus found, as 5223 to 1. Again, the Veins are to the Arteries, as 441 to 324; wherefore, as the *Blood* returns to the Heart by the Veins, its Velocity will be ſtill further diminiſh'd, and may be found to move more ſlowly in the Veins than in the *Aorta*, 7116 times. Again, the farther the *Blood* goes off the Heart, the more ſlowly it returns. The Times of theſe are directly as the Spaces, and reciprocally as the Velocities; conſequently, ſome Parts may be ſome thouſands of times longer in returning to the Heart than others. From the Diameter of the *Aorta*, and the Quantity of *Blood* driven out every Pulſe, the Velocity of the *Blood* in the *Aorta* is eaſily determin'd, and found to be at the rate of 52 Feet in a Minute. But Dr. *Jurin* ſhews, that in any two Arteries tranſmitting equal Quantities of *Blood*, the *Momentum* of the *Blood* is greater in the Artery more remote from the Heart than in that nearer; and that its *Momentum* is greater in all the capillary Arteries together, than in the *Aorta*; and, laſtly, that the *Momentum* of the *Blood* is greater in any of the Veins, than in the Artery correſponding to it; and therefore greater in the *Vena Cava* than the *Aorta*.

Laſtly he ſhews, that the *Momentum* of the *Blood* in the *Vena Cava*, is equal to that of the Quantity of *Blood* thrown out into the *Aorta* at each *Syſtole*, whoſe Velocity is ſuch as wou'd paſs the whole Length of the Arteries and Veins in the Interval of Time between two Pulſes; and that the abſolute *Momentum* of the *Blood* in the *Cava*, without any regard to the Reſiſtance, is equal to the *Momentum* of a Weight of 30 Pounds paſſing over the Space of an Inch in a Second. But note, that the Motion of the *Blood* is here ſuppoſed equable, which in reality it is not. See HEART.

As to the Transfuſion of the *Blood* of one Animal into the Veins of another, firſt ſet on foot by Dr. *Lower*, ſee the Method and Effects thereof under TRANSFUSION.

In the *Philoſophical Tranſactions* we have ſeveral very uncommon Inſtances of ſpontaneous *Bleeding*; particularly of a Child that *bled* at the Noſe, Ears, and hind-part of the Head, for three Days; from that to the ſixth, ſhe ſweat *Blood* from the Head; on the ſixth, *bled* at the Head, Shoulders, and Waſte; and for three Days more continued to *bleed* at the Toes, Bend of the Arms, Joints of the Fingers of each Hand, and at the Fingers Ends till ſhe died: After her Death were found, in the Places whence the *Blood* iſſued, little Holes like the Prickings of a Needle. For the Stanching of *Blood*, ſee STIPTICK.

BLOOD *of Jeſus Chriſt*, a military Order inſtituted at *Mantua* in 1608, by *Vin. Gonzagua* IV. The Deviſe of this Order was, *Domine probaſti me*; or that, *Nihil hoc triſte recepto*. *Hermant* ſpeaks of this Order, and obſerves it took its Name from ſome Drops of the *Blood of Chriſt*, ſaid to have been preſerv'd in the Cathedral Church of *Mantua*. Their Number was reſtrain'd to 20, beſides the Grand Maſter; the Office whereof was attach'd to himſelf and his Succeſſors.

There is alſo a Congregation of Nuns at *Paris* call'd by the ſame Name, reform'd from the *Bernardines*.

BLOOD-LETTING. See PHLEBOTOMY.

BLOOD-SHOTTEN, a Diſtemper of the Eyes, where the *Blood-Veſſels* are greatly diſtended, ſo as to make the Eyes appear red.

BLOODY-HAND, one of the four kinds of Treſpaſſes in the King's Foreſt, by which the Offender being taken with his Hands or other Part *bloody*, is judg'd to have killed the Deer, tho he be not found Hunting or Chaſing.

BLOSSOM. See FLOWER.

BLOWING *of Glaſs*, one of the Methods of forming the divers kinds of Works in the *Glaſs* Manufacture. 'Tis perform'd by dipping the End of an Iron Pipe in the melted *Glaſs*, and *blowing* thro it with the Mouth, according to the Circumſtances of the *Glaſs* to be *blown*. See GLASS.

BLUE, one of the Primitive Colours, otherwiſe call'd *Azure*. See COLOUR.

The Painters BLUE is made different, according to the different kinds of *Paintings*. In *Limning*, *Freſco*, and *Miniature*, they uſe indifferently *Ultramarine*, *blue Aſhes*, and *Smalt*; theſe are their natural *Blues*, excepting the laſt, which is partly natural, partly artificial: See each under its proper Head. In *Oil* and *Miniature* they alſo uſe *Indigo prepared*; ſee INDIGO; as alſo a *factitious* ULTRAMARINE, which ſee. Enamellers and Painters on Glaſs have *Blues* proper to themſelves; each preparing 'em after their own manner. See ENAMELLING, and PAINTING *on Glaſs*.

BLUE *of the Dyers*, is one of their ſimple, or Mother-Colours, uſed in the Compoſition of others: 'Tis made of *Woad*, *Indigo*, and a *Paſtel* brought from *Normandy*: Of the three, the *Paſtel* is eſteem'd the beſt, and the moſt neceſſary: *Woad*, tho of leſs Force and Effect, yet makes a tolerable Colour: *Indigo* only makes a ſpurious Colour; yet it may be uſed along with *Paſtel*, if it be well prepar'd, and ben't mix'd in too great a Proportion. *Woad* having but little Subſtance, can neither be uſed alone, nor is it capable of correcting the *Indigo*, without the Aſſiſ-

tance of *Paſtel*. Some *Dyers* heighten their *Blue* by adding Braſil and other Woods. The ways of brightening *Blues* are, by paſſing the Stuff, when dyed and well waſh'd, thro luke-warm Water; or, which is much better, by working and fulling the *dyed* Stuff with melted Soap, and then ſcouring it well. *Blues* are *dyed* immediately from the *Whites*, without any other Preparation than Fulling.

Turnſol BLUE, is a *Blue* uſed in Painting on Wood, made of the Seed of that Plant. 'Tis prepar'd by boiling four Ounces of *Turnſol* in a Pint and half of Water wherein Lime has been ſlack'd. See TURNSOL.

Flanders BLUE, is a Colour bordering on *Green*, ſeldom uſed but in Landskips.

Antiently, *Blue* was the Symbol of the Sea; for which Reaſon, in the *Circenſian* Games the Combatants who repreſented the Sea were clad in *Blue*; and thoſe who had diſtinguiſh'd themſelves by any notable Exploit at Sea, were rewarded with a *blue Enſign*.

BLUEING *of Metals*, is the heating any Metal till it aſſume a *blue* Colour; particularly practis'd by Gilders, *&c.* who *blue* their Metals e'er they apply the Gold or Silver Leaf. See GILDING.

BLUENESS, the quality of a Body that is *blue*; or, ſuch a Size and Texture of the Parts that compoſe the Surface of a Body, as diſpoſes 'em to reflect the *blue* or *azure* Rays of Light, and thoſe only, to the Eye. See LIGHT and COLOUR. For the *Blueneſs* of the Skies, Sir *Iſaac Newton* obſerves, that all the Vapours, when they begin to condenſe and coaleſce into natural Particles, become firſt of ſuch a Bigneſs as to reflect the *azure* Rays, e'er they can conſtitute Clouds of any other Colour. This, therefore, being the firſt Colour they begin to reflect, muſt be that of the fineſt and moſt tranſparent Skies, in which the Vapours are not arrived to a Groſsneſs ſufficient to reflect other Colours.

M. *de la Hire*, and before him *Leonardo da Vinci*, obſerves, that any *black* Body view'd thro a thin *white* one, gives the Senſation of *blue*; and this he aſſigns as the Reaſon of the *Blueneſs* of the Sky, the immenſe Depth whereof being wholly devoid of Light, is view'd thro the Air illuminated and whitened by the Sun. For the ſame Reaſon, he adds, it is, that Soot mix'd with a *white* makes a *blue*; for *white* Bodies being always a little tranſparent, and mixing themſelves with the *black* behind, give the Perception of *blue*. From the ſame Principle he accounts for the *Blueneſs* of the Veins on the Surface of the Skin, tho the Blood they are fill'd with be a deep red; for red, he obſerves, unleſs view'd in a clear, ſtrong Light, appears a dark brown bordering on black: Being then in a kind of Obſcurity in the Veins, it muſt have the Effect of a black; and this, view'd thro the Membrane of the Vein and the white Skin, will produce the Perception of *Blueneſs*.

BLUSHING, a Phænomenon in the Animal Oeconomy, excited from a Senſe of Shame, *&c.* It is ſuppoſed to be produced from a kind of Conſent, or Sympathy, between ſeveral Parts of the Body, occaſion'd by the ſame Nerve being extended to 'em all. Thus the fifth Pair of Nerves being branch'd from the Brain to the Eye, Ear, Muſcles of the Lips, Cheeks, Palate, Tongue, Noſe, *&c.* hence a thing ſeen, or heard, that is ſhameful, affects the Cheeks with Bluſhes, driving the Blood into the minute Veſſels thereof, at the ſame time that it affects the Eye and Ear. For the ſame Reaſon it is, as Mr. *Derham* obſerves, that a ſavoury Thing ſeen or ſmelt, affects the Glands and Parts of the Mouth: If a Thing heard be pleaſing, it affects the Muſcles of the Face with *Laughter*; if melancholy, it exerts it ſelf on the Glands of the Eyes, and occaſions *Weeping*, &c. And to the ſame Cauſe Dr. *Willis* aſcribes the Pleaſure of *Kiſſing*.

BOAT, a little floating Veſſel, for the Navigation of Rivers, Lakes, *&c.* The *Boat* acquires various Names, according to its various Structure, and the various Uſes it is appointed for, and the Places where it is to be uſed. The ſeveral *Boats*, and their Names, are,

A Jolly Boat,
A Long Boat,
A Skiffe,
A Pinnace,
A Water Boat,
A Yaul,
} Boats for Ships.

A Canoe,
A Cruckle,
A Currycurry,
A Deal-Hooker,
A Felucca,
A Ferry-Boat.

A Gondola,
A Greenland Boat,
A Bermudas Boat,
A Ballon of Siam,
A Horſe Boat,
A Periaga,
A Pleaſure-Boat,
A Ponton,

A Praw,
A Flying Praw,
A Punt,
A Tilt-Boat,
A Tod-Boat,
A Well-Boat,
A Wherry.

De Chales propoſes the Conſtruction of a *Boat*, which, what Burden ſoever it bear, ſhall not only ſail againſt the Current without either Sails or Oars, but alſo advance ſo much the faſter, as the Rapidity of the Water is greater. Its Make is the ſame with that of the others, excepting only a Wheel added to its Side, with a Cord, which winds round a Roller as faſt as the Wheel turns. See VESSEL.

M. *de la Hire* has given us an Examen of the Force neceſſary to move *Boats*, both in ſtagnant and running Water, either with Ropes faſten'd to 'em, or with Oars, or with any other Machine: wherein he ſhews, that the larger the Surface of the *Oars* plung'd in the Water, and the ſmaller that of the *Boat* preſented to the Water is; and again, the longer that Part of the *Oar* between the Hand and the Place where the *Oar* reſts on the *Boat*, and the ſhorter that between this laſt Point and the Water; the freer will the *Boat* move, and the greater Effect will the *Oar* have. See ROWING.

Hence 'tis eaſy to calculate the Force of any Machine that ſhall be apply'd to *Rowing*; *v. g.* If we know the Abſolute Force of all the Men who *Row*, it muſt be chang'd into a Relative Force, according to the Proportion of the two Parts of the *Oar*; *i. e.* if the Part out of the *Veſſel* be double the other, and all the Men together can act with the Force of 900 Pounds; we compute firſt, that they will exert 300: Which 300, multiply'd by the Surface the *Veſſel* preſents to the Water, gives a Solid of Water of a certain Weight; whoſe Weight may be found, and of Conſequence the Velocity impreſs'd on the *Veſſel* by the *Oars*. Or the Velocity of the *Oars* may be found in the ſame manner, by multiplying the 300 Pounds, by the Surface of all the Parts of the *Oars* plung'd in the Water. Nor would there be any Difficulty in finding firſt the Relative Forces, then the Abſolute ones; the Velocities either of the *Oars*, or of the *Veſſel* being given, or the Proportion of the two Parts of the *Oar*.

BOAT-SWAIN, is an Officer on Board a Ship, who has Charge of her Rigging, Ropes, Cables, Anchors, Sails, Flags, Colours, Pendants, *&c.* He takes care of the Ship's *Long-Boat*, and its Furniture; and ſteers her, either by himſelf or his *Mate*. He calls out the ſeveral Gangs aboard, to the due Execution of their Watches, Works, *&c.* and he is likewiſe a kind of *Provoſt-Marſhal*, who ſees and puniſhes all Offenders who are ſentenc'd by the Captain, or a Court-Martial of the Fleet.

BOCARDO, in Logick, the fifth Mode and the third Figure. In a Syllogiſm in *Bocardo*, the firſt Propoſition is particular and negative, the ſecond univerſal and affirmative; and the Medium, or middle Term, the Subject in the two Propoſitions. Thus,

Some Animal is not Man,
Every Animal has a Principle of Senſation,
Therefore ſomething has a Principle of Senſation beſides Man.

BODY, in Phyſicks, a ſolid, extended, palpable Subſtance; compoſed, according to the *Peripateticks*, of *Matter*, *Form*, and *Privation*; according to the *Epicureans* and *Corpuſcularians*, of an Aſſemblage of hooked, heavy *Atoms*; according to the *Carteſians*, of a certain Quantity of *Extenſion*; according to the *Newtonians*, of a *Syſtem*, or Aſſociation of ſolid, maſſy, hard, impenetrable, moveable Particles, rang'd or diſpos'd in this or that Manner; whence reſult Bodies of of this or that Form; diſtinguiſh'd by this or that Name. Theſe Elementary or Component Particles of Bodies muſt be infinitely hard; vaſtly harder than the Bodies compounded of 'em; nay, ſo hard as never to wear, or break in pieces. "This Sir *Iſaac Newton* obſerves to be neceſſary, in order "to the *World's* perſiſting in the ſame State, and *Bodies* "continuing of the ſame Nature and Texture in ſeveral "Ages. For ſhould the *Component Particles* break or "wear, the Nature and Frame of Things depending on "them, would be chang'd. *Water* and *Earth* compoſed of "old worn *Particles*, and Fragments of Particles, would not "be of the ſame Nature and Texture now with *Water* and "*Earth* compoſed of *Entire Particles* in the beginning: "And therefore, that Nature may be laſting, the Changes "of *Bodies* are to be placed only in the various Separations, "and new Aſſociations and Motions of theſe *permanent* "*Particles*. *Bodies* don't break in the midſt of *ſolid Par*"*ticles*, but in the joinings of thoſe *Particles*, which only "touch in a few Points. Theſe *Particles* have not only "a *Vis Inertiæ*, accompany'd with ſuch paſſive Laws of "Motion as naturally reſult from that Force; but like"wiſe with certain active Principles, ſuch as that, *v. g.* of "*Gravity*, (See GRAVITY.) And that which occaſions "Fermentation and the Cohesion of *Bodies*. See FERMEN"TATION and COHESION. For the reſt, *Bodies* being on"ly particular *Aſſociations* or *Syſtems* of primitive *Parti*"*cles* of Matter, have the ſame Properties, and follow the "ſame Laws with *Matter*." See MATTER; ſee alſo PARTICLES.

The Exiſtence of BODIES, or of external *Objects*, is a Thing not to be demonſtrated in any Manner whatever.

The

The Order in which we arrive at the Knowledge of the Exiſtence of *Bodies*, ſeems to be this; We firſt find we have *Senſations*; then obſerve we have not thoſe Senſations when we pleaſe; and thence conclude, we are not the abſolute Cauſe thereof, but that there is requir'd ſome other Cauſe for their Production. Thus we begin to know, that we don't exiſt alone, but that there are ſeveral other *Things* in the World together with us. But even this Dr. *Clark* owns to fail of a Demonſtration of the Exiſtence of a *corporeal World*: He adds, that all the Proof we have of it is this; That God would not create us ſuch, as that all the Judgments we make about *Things* exiſting without us, muſt neceſſarily be falſe. If there be no External *Bodies*, it follows, that 'tis God who repreſents the Appearances of *Bodies* to us; and that he does it in ſuch a manner as to deceive us. Some think this has the Force of a Demonſtration: 'Tis evident God can't deceive us; 'tis evident he does deceive and delude us every Moment, if there be no *Bodies*; 'tis evident therefore, there muſt be *Bodies*.

Againſt the *Exiſtence of Bodies*, or any External *World*, Mr. *Berkley* argues very ſtrenuouſly, " That neither our " Thoughts, Paſſions, nor Ideas form'd by the Imaginati- " on, exiſt without the *Mind*, he obſerves is allow'd; and " that the various Senſations impreſs'd on the *Mind*, " whatever *Objects* they compoſe, cannot exiſt otherwiſe " than in a *Mind* perceiving them, is not leſs evident: " This appears from the meaning of the Term *Exiſt*, " when apply'd to ſenſible Things. Thus, the Table I write " on exiſts; *i. e.* I ſee and feel it; and were I out of my " Study, I ſhould ſay it exiſted; *i. e.* Were I in my Study, " I ſhould ſee and feel it as before. There was an Odor; " *i. e.* I ſmelt it, *&c.* But the *Exiſtence* of unthinking " *Beings*, without any Relation to their being perceiv'd, is " unintelligible; their *Eſſe* is *Percipi*: Nor is it poſſible " they ſhould have any Exiſtence out of the *Mind* that " perceives them." The Notion of *Bodies*, he endeavours to ſhew founded on the Doctrine of *Abſtract Ideas*: " What are Light and Colours, Heat and " Cold, Extenſion and Figures, in a word, the Things " we ſee and feel, but ſo many Senſations, Notions, Ideas, " or Impreſſions on the *Senſe*? And is it poſſible to ſepa- " rate, even in Thought, any of theſe from Perception? " The ſeveral *Bodies* then, that compoſe the Frame of the " World, have not any Subſiſtence without a *Mind*; their " *Eſſe* is to be perceiv'd or known; and as long as they are " not perceiv'd by Me, nor any other thinking Being, they " have no ſhadow of Exiſtence at all.—— The *Things* we " perceive, are Colour, Figure, Motion, *&c.* that is, the " Ideas of thoſe *Things*: But has an Idea any Exiſtence " out of the Mind? To have an Idea, is the ſame thing " as to perceive: That therefore wherein Colour, Figure, " *&c.* exiſt, muſt perceive them. 'Tis evident, therefore, " there can be no unthinking *Subſtance*, or *Subſtratum* of " thoſe Ideas. But you will argue, If the Ideas themſelves " don't exiſt without the *Mind*, there may be Things like " 'em, whereof they are Copies or Reſemblances, which " exiſt without the *Mind*: 'Tis anſwer'd, an *Idea* can be " like nothing but an *Idea*; a *Colour* or *Figure* can be like " nothing elſe but another *Figure* or *Colour*. It may be " farther ask'd, whether thoſe ſuppoſed *Originals*, or *Ex- " ternal Things* whereof our Ideas are the Pictures, be " themſelves perceiveable or not? If they be, they are " Ideas; if they be not, I appeal to any one whether it be " Senſe to ſay, A *Colour* is like ſomewhat which is Inviſi- " ble; hard or ſoft, like ſomewhat Intangible, *&c.* Some " diſtinguiſh between Primary and Secondary Qualities; " the former, *viz.* Extenſion, Solidity, Figure, Motion, " Reſt and Number, they maintain have a real Exiſtence " out of the *Mind*: For the latter, under which come all " other ſenſible Qualities, as Colours, Sounds, Taſtes, *&c.* " they allow the Ideas we have of 'em, are not Reſem- " blances of any *Things* exiſting without the *Mind*, or " unperceiv'd; but depend on the Size, Texture, Motion, " *&c.* of the minute Particles of Matter: Now 'tis cer- " tain, that thoſe Primary Qualities are inſeparably united " with the other Secondary ones, and cannot even in " Thought be abſtracted from them; and therefore muſt " only exiſt in the *Mind*. Can any Man conceive the Ex- " tenſion and Motion of a *Body*, without all the other ſen- " ſible Qualitys? For my part, I find it impoſſible to " frame an Idea of a *Body* extended and moving, without " giving it ſome Colour, *&c.* In effect, Extenſion, Fi- " gure and Motion, abſtracted from all other Qualities, are " Inconceivable: Where the others, therefore, are, there " theſe too muſt be; *i. e.* in the *Mind*, and no where elſe. " Again, Great and Small, Swift and Slow, are allow'd to " exiſt no where without the *Mind*; being merely relative, " and changing, as the Frame or Poſition of the Organ " changes: The Extenſion therefore that exiſts without the " *Mind*, is neither great nor ſmall, the Motion neither " ſwift nor ſlow; *i. e.* they are nothing.—— That Num- " ber is a Creature of the *Mind*, is plain (even tho the " other Qualities were allow'd to exiſt) from this; that " the ſame thing bears a different Denomination of Num- " ber, as the *Mind* views it with different Reſpects: Thus " the ſame Extenſion is 1, or 3, or 36, as the *Mind* con- " ſiders it, with reference to a Yard, a Foot, or an Inch. " Nay, many of the modern Geometricians hold, that a " finite Line may be divided into an infinite Number of " Parts, and each of thoſe Infiniteſimals into an infinity of " others; and ſo on, *in Infinitum*: So that the ſame " Thing is either Unity or Infinity; either no Number or " all Number. In effect, after the ſame manner as the " modern Philoſophers prove Colours, Taſtes, *&c.* to have " no Exiſtence in Matter, or without the *Mind*; the ſame " thing may be proved of all ſenſible Qualities whatſo- " ever. Thus, they ſay, Heat and Cold are only Affec- " tions of the *Mind*, not at all Patterns of *real Beings* ex- " iſting in *corporeal Subſtances*; for that the ſame *Body* " which ſeems cold to one hand, ſeems warm to another. " Now why may we not as well argue, that Figure and " Extenſion are not Patterns or Reſemblances of Qualities " exiſting in Matter; becauſe to the ſame Eye, at different " Stations, or to Eyes of different Structure at the ſame " Station, they appear various? Again, Sweetneſs, 'tis " proved, does not exiſt in the Thing ſapid; becauſe the " Thing remaining unalter'd, the Sweetneſs is chang'd to " Bitterneſs, as in a Fever, or otherwiſe vitiated Palate. " Is it not as reaſonable to ſay, that Motion does not exiſt " out of the *Mind*? ſince if the Succeſſion of Ideas in the " *Mind* become ſwifter, the Motion, 'tis acknowledg'd, " will appear ſlower, without any external Alteration.— " Again, were it poſſible for ſolid figur'd Bodies to exiſt " out of the *Mind*, yet it were impoſſible for us ever to " know it: Our Senſes, indeed, give us Senſations or " Ideas, but don't tell us that any Thing exiſts without " the *Mind*, or unperceiv'd, like thoſe which are perceiv'd: " This the Materialiſts allow. No other way therefore re- " mains, but that we know 'em by *Reaſon*'s inferring their " Exiſtence from what is immediately perceiv'd by Senſe. " But how ſhould Reaſon do this, when 'tis confeſs'd there " is not any neceſſary Connection between our Senſations " and theſe *Bodies*? 'Tis evident from the *Phænomena* of " Dreams, Phrenſies, *&c.* that we may be affected with " the Ideas we now have, tho there were no *Bodies* exiſ- " ting without them: Nor does the Suppoſition of external " *Bodies* at all forward us, in conceiving how our Ideas " ſhould come to be produc'd. The Materialiſts own " themſelves unable to conceive in what manner *Body* can " act on *Spirit*; or how it ſhould imprint any Idea on the " *Mind*. To ſuppoſe therefore *Bodies* exiſting without " the *Mind*, is little elſe than to ſuppoſe, God has created " innumerable *Beings* entirely uſeleſs, and ſerving to no " Purpoſe at all. On the whole, it appears that the *Exiſ- " tence of Bodies* out of a *Mind* perceiving 'em, is not only " impoſſible, and a Contradiction in Terms; but were it " poſſible, nay real, it were impoſſible we ſhould ever " know it. And again, that ſuppoſing there are no ſuch " Things, yet we ſhould have the very ſame Reaſon to " ſuppoſe there were that we now have: Suppoſe, *v. g.* an " Intelligence affected with the ſame Train of Senſations, " impreſs'd in the ſame Order, and with the ſame Vivid- " neſs; would it not have all the Reaſon to believe the " Exiſtence of *Bodies* repreſented by his Ideas that we " have?——All our Ideas and Senſations are viſibly Inac- " tive; nay, the very Being of an Idea implies Paſſiveneſs " and Inertneſs: So that it is impoſſible for an Idea to do " any thing; or, in ſtrictneſs, be the Cauſe of any thing: " It cannot therefore be the Reſemblance or Pattern of " any active *Being*; unleſs Oppoſites can be ſaid to reſem- " ble one another.

" Now we find a continual Succeſſion of Ideas in the " *Mind*; but theſe, it has been proved, don't depend on " any External *Body* as their Cauſe: It remains therefore, " that their Cauſe is an Incorporeal active *Subſtance* or " *Spirit*. For that I am not the Cauſe of my own Ideas, " is plain from this, that when I open my Eyes in broad " Day-light, I can't help ſeeing various Objects. Now the " fix'd Rules or Methods wherein the *Mind* we depend on " excites in us the Ideas of Senſe, are call'd *Laws of Na- " ture*: Theſe we learn by Experience; which teaches us, " that ſuch and ſuch Ideas are attended with ſuch and " ſuch other Ideas in the ordinary Courſe of Things.—— " Ideas are not any how, and at random produced; there " is a certain Order and Connexion eſtabliſh'd among 'em, " like that of Cauſe and Effect: And there are ſeveral " Combinations of 'em made in a very regular artful Man- " ner, which we call *Bodies*; and the Syſtem of thoſe, *the " World*. In ſtrictneſs, however, the Connexion of Ideas " does not imply the Relation of Cauſe and Effect; but, " only of a Mark or Sign of the Thing ſignify'd: The " Fire I ſee is not the Cauſe of the Pain I feel, but the " Mark that forewarns me of it. The Noiſe I hear, is

" not the Effect of this or that Motion or Colliſion of Na-
" tural *Bodies*, but the Sign thereof. The *Carteſians* own
" ſomewhat like this: The Action of *Bodies* on our
" Organs, ſay they, is not the Efficient Cauſe of our
" Ideas and Perceptions, but only the *Occaſional Cauſe*,
" which determines God to act on the *Mind*, according to
" the Laws of the Union of the *Soul* and *Body*. See
" CAUSE. Mr. *Berkeley*, indeed, taking away *Bodies*, takes
" away what theſe Philoſophers account the Occaſions of
" their Ideas: By an *Occaſion*, he ſays, muſt either be
" meant the Agent that produces an Effect, or ſomething
" obſerv'd to accompany or go before it, in the ordinary
" Courſe of Things: But Matter is allow'd to be paſſive
" and inert, and can't therefore be an Agent or Efficient
" Cauſe; and this Matter primitively and in it ſelf, is al-
" low'd imperceivable, and devoid of all particular ſenſi-
" ble Qualities; *i. e.* it has not this or that particular
" Colour, this or that particular Figure, *&c.* but has Co-
" lour in the General, Figure in the Abſtract, *&c.* but an
" Abſtract is no Object of Senſe: Matter therefore can't
" be the Occaſion of our Ideas in the latter Senſe."

How far the great Argument of the Maintainers of a material World, *from the Impoſſibility of God's deceiving us, and from the Evidence that he does ſo, if there be no ſuch thing*, will go againſt this Reaſoning, we leave to the Reader. See EXTERNAL *World*.

For the Colours of BODIES: Sir *Iſaac Newton* ſhews, that *Bodies* appear of this or that Colour, as they are diſpos'd to reflect moſt copiouſly the Rays of Light originally endu'd with thoſe Colours. See LIGHT and COLOUR. But the particular Conſtitutions whereby they reflect ſome Rays more copiouſly than others, remain yet to be diſcover'd. However, ſome of the Laws and Circumſtances thereof, he delivers in the following *Propoſitions*.

1. Thoſe Surfaces of tranſparent *Bodies*, reflect the greateſt Quantity of Light, which have the greateſt Refracting Power; *i. e.* which intercede Mediums, that differ moſt in their refractive Denſities: And in the Confines of equally refracting Mediums, there is no Reflexion. 2. The leaſt Parts of almoſt all Natural *Bodies*, are in ſome meaſure tranſparent; and the Opacity of thoſe *Bodies*, ariſes from the multitude of Reflexions caus'd in their internal Parts. See OPACITY, *&c.* 3. Between the Parts of Opake and Colour'd *Bodies*, are many Spaces, either empty, or replete with Mediums of different Denſities; as Water between the tinging Corpuſcles, wherewith a Liquor is impregnated; Air between the aqueous Globules, that conſtitute Clouds or Miſts: and even Spaces, void both of Air and Water, between the Parts of hard *Bodies*, are not yet perhaps wholly void of all Subſtance. See MEDIUM. 4. The Parts of the *Bodies*, and their Interſtices, muſt be leſs than of ſome definite Bigneſs, to render them opake and colour'd. 5. The tranſparent Parts of *Bodies*, according to their ſeveral Sizes, reflect Rays of one Colour, and tranſmit thoſe of another, on the ſame Grounds that thin Plates or Bubbles do reflect, or tranſmit thoſe Rays: And this appears to be the Ground of all their Colour. See COLOUR. 6. The Parts of *Bodies*, on which their Colours depend, are denſer than the Medium which pervades their Interſtices. 7. The Bigneſs of the component Parts of Natural *Bodies*, may be conjectur'd from their Colours; on this Principle, that tranſparent Corpuſcles, of the ſame Thickneſs and Denſity with a Plate, do exhibit the ſame Colour. 8. The Cauſe of Reflexion, is not the impinging of Light on the ſolid or impervious Parts of *Bodies*, as commonly believ'd. See REFLEXION. 9. *Bodies* reflect and refract Light, by one and the ſame Power variouſly exercis'd, in various Circumſtances. See REFRACTION; ſee alſo LIGHT, RAY, *&c.*

BODIES, are diſtinguiſh'd into *Animate* and *Inanimate*; *i. e.* into thoſe inform'd by a *Soul*, and thoſe which are not; or thoſe that have Life, and thoſe that have none.

Some conſider *Bodies*, either as *Natural* and *Senſible*; *viz.* as form'd by Phyſical Cauſes, and cloth'd with Phyſical Qualities: (In which Senſe, *Body* makes the Object of *Phyſicks*.) See PHYSICKS. Or, as *Intellectual* or *Quantitative*, in the General or Abſtract; and according to the three Dimenſions: In which Senſe, *Body* makes the Subject of *Geometry*. See GEOMETRY.

BODY, with regard to *Animals*, is us'd in oppoſition to the Soul; *viz.* for that Part compos'd of Bones, Muſcles, Canals, Juices, Nerves, *&c.* In which Senſe, *Body* makes the Subject of *Anatomy*. See ANATOMY.

The human BODY, conſider'd with regard to the various voluntary Motions it is capable of performing, is an Aſſemblage of an infinite Number of Levers, drawn by Cords: If conſider'd with regard to the Motions of the Fluids it contains, 'tis another Aſſemblage of an Infinity of Tubes and hydraulick Machines. Laſtly, If conſider'd with regard to the Generation of thoſe ſame Fluids, 'tis another infinite Aſſemblage of Chymical Inſtruments and Veſſels; as Philters, Alembics, Recipients, Serpentines, *&c.* and the whole is a Compound which we can only admire, and whereof the greateſt Part eſcapes our Admiration itſelf. The principal Chymical *Apparatus* in the whole *Body*, is that wonderful Laboratory the Brain: 'Tis in this, that precious Extract, call'd *Animal Spirits*, the only material Movers of the whole Fabrick, is ſecreted from the Blood. See BRAIN, SPIRITS, BLOOD, HEART, *&c.*

In the Machine of the *Animal* BODY, the Retainers to the Doctrine of *Trituration* maintain the *Brain* to do the Office of the *Beam* of a Preſs, the *Heart* of a *Piſton*, the *Lungs* of *Bellows*, the *Mouth* of a *Millſtone*, and the *Teeth* of *Peſtles*; the *Stomach* of a *Preſs*, the *Inteſtines* of a *Reſervoir*, the *Veſſels* of *Sieves* or *Strainers*, and the *Air* of a *Pondus*, or Spring that ſets the Machine a going. See TRITURATION.

The *Soul*, *Rohault* well obſerves, is not the Form of the *Human Body*: So far is the Animal Life from depending on the *Soul*, becauſe of its ceaſing when the *Soul* is ſeparated; that on the contrary, the Continuance of the *Soul* depends entirely on the Diſpoſition of the *Body*: the former never quitting the latter, till its Oeconomy or Order is interrupted. The *Carteſians* maintain the *Soul* and *Body* to be too diſproportionate, for Thoughts or Ideas of the *Soul* to be caus'd by the Motions of *Bodies*, and *vice verſa*: Thus, their reciprocal Motions not being able to be the direct Cauſe of the one and the other, are only deem'd the Occaſion, or occaſional Cauſe. God, on occaſion of the Motion of a *Body*, impreſſes an Idea or Senſation on the *Soul*; and again, on occaſion of an Idea of the *Soul*, communicates a Motion to the *Body*: of conſequence, God is, as it were, the Mediator of all the Commerce between *Soul* and *Body*. See CAUSE.

Phyſicians divide the *Body* into three Venters, or Cavities, the *Head*, *Thorax*, and *lower Venter*; which ſee: The reſt of the *Body* they call *Members*. See PARTS.

BODY, *Corpus*, is alſo apply'd by Anatomiſts to ſeveral particular Parts of the Animal Fabrick: As the *Callous Body* of the Brain; the *Cavernous* or *Spongeous Bodies* of the Penis, *&c.* See CORPUS *Calloſum*, CORPORA *Cavernoſa*, &c.

BODY *in Geometry*. The *Regular* or *Platonick Bodies*, are thoſe whoſe Sides and Angles are equal; of theſe there are only Five, *viz.* The *Tetrahedron*, conſiſting of four Angles; the *Octahedron* of eight; the *Icoſihedron* of twenty; the *Dodacahedron* of twelve Pentagons; and the Cube of ſix Squares. See REGULAR *Body*.

BODY *in Law*. A Man is ſaid to be bound, or held, in *Body* and Goods; that is, he is liable to remain in Priſon, in default of Payment. In *France*, by an Ordonnance of 1667, all Reſtraints of *Body*, for Civil Debts, are null after four Months, unleſs they exceed 200 *Livres*. A Woman, tho in other Reſpects ſhe cannot engage her Perſon but to her Husband, may be *taken by the Body*, when ſhe carries on a ſeparate Trade.

BODY *in War*, is an Aſſemblage or Collection of Forces, Horſe and Foot, united and marching under ſome Chief. An Army, rang'd in Form of Battle, is divided into three *Bodies*; the Vant-Guard, the Rear-Guard, and the *Main Body*; which laſt is ordinarily the General's Poſt. See CORPS.

BOGOMILES or BOGARMITES, a Sect of Hereticks, ſprung from the *Manichees*, or rather the *Paulicians* in the 12th Century. The Chief hereof, *Baſil*, was burnt, by Order of the Emperor *Alexander Commenius*. They denied the Trinity; maintain'd, that God had a human Form, that the World was created by evil Angels, and that it was the Archangel *Gabriel* that became incarnate. They rejected the Books of *Moſes*, and only admitted ſeven Books of Scripture: They maintain'd the Lord's Prayer to be the only Euchariſt; that the Baptiſm of the *Catholicks* was that of St. *John*, and theirs that of *Jeſus Chriſt*; and that all thoſe of their Sect conceiv'd the Word, or *Logos*, as much as the Virgin. Laſtly, That there was no other Reſurrection but Repentance. *Du Cange* derives the Name from two Words in the *Bulgarian* Language, *Bog*, *deus*, and *Milia*, *miſerere*, have Mercy.

BOILING, *Ebullition*, in Phyſicks, the Agitation of a fluid Body, ariſing from the Application of Fire, *&c.* The Phænomenon of *Boiling* may be thus accounted for: The minute Particles of the Fuel being detach'd from each other, and impell'd *in Orbem*, with a great Velocity, (*i. e.* being converted into Fire) paſs the Pores of the containing Veſſel, and mix with the Liquid. By the Reſiſtance they here meet withal, their Motion is deſtroy'd; *i. e.* they communicate it wholly to the quieſcent Water; hence ariſes, at firſt, a ſmall inteſtine Motion in the Water, and from the continued Action of the firſt Cauſe, the Effect is increas'd, and the Motion of the Water continually accelerated: So that the Water, by degrees, becomes ſenſibly agitated. But, now, the Particles of the Fire ſtriking on thoſe in the loweſt Surface of the Water, will not only give 'em an Impulſe upwards, contrary to the Laws of Æquilibrium, but will likewiſe render 'em ſpecifically lighter than before, ſo as to determine 'em to aſcend according to the Laws of Æquilibrium: And this, either by inflating 'em into little Veſicles, by the

Attraction of the Particles of Water around 'em; or by breaking and ſeparating the little Spherules of Water, and ſo increaſing the Ratio of their Surface to their ſolid Content. There will therefore be a conſtant Flux of Water from the Bottom of the Veſſel to the Top; and conſequently a reciprocal Flux from the Top to the Bottom: *i. e.* The upper and under Water will change Places; and hence we have the Reaſon of that Phænomenon, of the Water's being hot at Top ſooner than at Bottom. Again, an intenſe Heat will diminiſh the ſpecifick Gravity of Water, ſo as not only to make it mount in Water, but alſo in Air; whence ariſe the Phænomena of *Vapour* and *Smoak*: Tho the Air incloſed in the Interſtices of the Water, muſt be allow'd a good ſhare in this Appearance: for that, Air being dilated, and its Spring ſtrengthned by the Action of the Fire, breaks its Priſon, and aſcends thro the Water into the Air; carrying with it ſome of the contiguous Spherules of Water, ſo many as ſhall hang in its *Villi*, or as can adhere immediately to it. The Particles of Air in the ſeveral Interſtices of the fluid Maſs thus expanded, and moving upwards, will meet and coaleſce in their Paſſage; by which means great Quantities of the Water will be heav'd up, and let fall again alternately; as the Air riſes up, and again paſſes from the Water: For the Air, after Coalition, tho it may buoy up a great heap of Water, by its Elaſticity while in the Water, yet can't carry it up together with itſelf into the Atmoſphere; ſince when once got free from the upper Surface of the Water in the Veſſel, it will unbend itſelf in the Atmoſphere, and ſo its Spring and Force become juſt equal to that of the common unheated Air. Add to this, that were the Spring and Motion of the Air ſufficient to carry up the Water with it, yet it would not have that Effect; but the Water wou'd run off at the Extremities of the Air; all, except ſo much as ſhould be either entangled in its *Villi*, or immediately adhere to its Surface by Attraction: And hence we ſee the Reaſon of the principal Phænomenon of *Boiling*, *viz.* The fluctuating of the Surface of the Water. See EBULLITION, and EFFERVESCENCE.

Water, only lukewarm, *boils* very vehemently in the Recipient of an Air-Pump, when the Air is exhauſted: The Reaſon is obvious; for the Preſſure of the Atmoſphere being taken off from its Surface, the Air included in the Interſtices of the Water, dilated by a feeble Heat, has Spring enough to heave up the Water, and diſengage itſelf.—— When the Water ceaſes *boiling*, it is again excited thereto by pouring cold Water upon the Recipient; and when it *boils* the moſt vehemently, ceaſes by pouring on hot Water: The Reaſon whereof is ſcarce gueſs'd at. See HEAT, FIRE, *&c.*

BOLE, in Medicine, is us'd, in the general, for ſeveral Kinds of Earths that enter *Galenical* Preparations, and are uſed by Painters and other Artiſts. See EARTHS.

BOLE-ARMONIAC, or *Ammoniac*, is a kind of Earth, of conſiderable Medicinal Virtue, brought from *Armenia*. The Phyſicians ſometimes call it *Rubrica Synopica*, from the City of *Synope*, where it is ſuppos'd to be found. 'Tis of a pale red Colour, and partakes much of the Nature of Stone; but ſoft, fat, friable, eaſily pulveriz'd, and ſticks to the Tongue. 'Tis eſteem'd Deſiccative and Stiptic; in which Quality 'tis us'd in ſeveral Diſeaſes, both internal and external. This *Bole* is eaſily falſify'd; and the Merchants frequently ſell *Lemnian-Earth* in lieu thereof. *Matthiolus* ſays, 'tis found in Gold, Silver, and Copper Mines. See AMMONIAC.

BOLE *of the Levant*, is a Medicinal Earth brought from the *Levant*; nearly of the ſame Nature, and having the ſame Uſes with the *Bole-Armoniac*. *Pomet* ſays, there is no ſuch thing among us, as either true *Bole-Armoniac*, or *Bole of the Levant*; and that all the *Boles* now in uſe, are brought either from the Provinces of *France*, or the neighbouring Countries. But this does not ſeem ſufficiently warranted; and the New *Tarifs*, or Duties on Goods imported into *France*, which mention 'em both, make it credible that there are of either kind imported into that Kingdom. Indeed, it appears, that 'tis the *Levant Bole* which paſſes among us for the *Armoniac*: It enters ſeveral Compoſitions, particularly *Diaſcodium*, to give it the Colour, *&c.*

BOLLANDISTS, a modern Term, now become of ſome Conſequence in the Republick of Letters. The *Bollandiſts*, are certain *Jeſuits of Antwerp*, who have been a conſiderable Time, and continue ſtill employ'd in collecting the Lives of the Saints. As we find frequent Occaſion to quote that learned Body in this Work, and are indebted to 'em for ſeveral excellent Obſervations that occur therein; the Reader will not be diſpleas'd to find the Occaſion of their Name.

In the beginning of the XVIIth Century, F. *Heribert Roſweide*, a Jeſuit of *Antwerp*, laid a Deſign of collecting the Lives of the *Saints*, as wrote by the Original Authors, with Notes, like thoſe added to his Lives of the *Fathers*, to clear obſcure Paſſages, and diſtinguiſh the Genuine from the Spurious: He died in 1629, e'er the Work was begun. The Year following, *J. Bollandus*, a Jeſuit of the ſame Houſe, took up the Deſign; and whereas *Roſweide* only propoſed to collect the Lives already compoſed, *Bollandus* undertook, where there was no Life of a Saint extant, to compoſe new ones from the Authors who had mention'd 'em. In 1635, he took in *G. Henſchenius* a Partner with him; and in 1641, publiſh'd the *Saints of the Month of January*, in two large Volumes, Folio. In 1650, *F. Papebroch* became an Aſſociate; and, *Henſchenius* dying, F. *Baert*, *Janning*, *Sollier*, and *Raye* were call'd in, who are ſtill alive, and continue the Work: whereof, in 80 Years, there have appear'd 24 Volumes, for the firſt ſix Months of the *Roman* Calendar.

BOLT-HEAD, the ſame as *Matras*; a Veſſel uſed by the *Chymiſts*, ſee MATRAS.

BOLTING, a Method of Pleading, or Arguing, in uſe in the Inns of Court; inferior to *Mooting*. The Caſe is argued firſt by three *Students*, then by two *Barriſters*; a *Senior* ſitting Judge. The Word came from the *Saxon Bolt*, *an Houſe*, becauſe done privately within Doors for Inſtruction. See BENCHER, and MOOTING.

BOLTS *of Iron*, in Building, are diſtinguiſh'd into three Kinds, *Plate*, *Round*, and *Spring-Bolts*.

BOLTS, or Iron Pins in a Ship are of ſeveral ſorts: As, *Ring-Bolts*, ſerving for the bringing to of the Planks, *&c.* *Drive-Bolts*, uſed to drive out others; *Set-Bolts*, employ'd for forcing the Planks and other Works, and bringing them cloſe to one another; *Rag-Bolts*, on each ſide full of Jags or Barbs, to keep them from flying out of their Holes; *Clench-Bolts*, for the ſame end clench'd, or faſten'd at the Ends where they come thro; *Fore-Bolts*, made like Locks with an Eye at each end, whereinto a Forelock of Iron is driven to prevent ſtarting out; *Fender-Bolts*, made with long and thick Heads, ſtruck into the uttermoſt Bends or Wales of a Ship, to ſave her Sides from Bruiſes and Hurts.

BOLUS or BOLE, in Medicine, an extemporaneous Form of a Medicine, of a ſoft Conſiſtence, ſomewhat exceeding that of an Electuary, and of the Quantity of one Doſe; contrived principally for the ſake of ſuch as have an Averſion to potable Medicines; as alſo for the better Conveyance of certain Preparations of *Mercury*, *Antimony*, &c. which by their Weight would ſink to the bottom of the Glaſs, were they mix'd with Fluids. There are *Bolus's* of various kinds, made with Electuaries, Confections, Conſerves, Pulps, Pouders, Salts, Oils, Eſſences, Extracts, Syrups, *&c.* ſome of which Ingredients muſt always have Solidity or Drineſs enough, to give a Conſiſtence to thoſe that are Liquid.

BOMB, a large *Granada*, or hollow Iron Ball, or Shell fill'd with Gunpouder, and furniſh'd with a *Fuſee*, or wooden Tube full of a Combuſtible Matter; to be thrown out from a Mortar. See MORTAR.

The Method of preparing a *Bomb* is as follows: A hollow Iron Globe A B, (Tab. *Pyrotechnia*, Fig. 1.) is caſt pretty thick, having a round Aperture A, by which it may be fill'd and lighted; and circular Handles C D, for the commodious putting it into the Mortar. To prove whether it be ſtaunch, after heating it red-hot on the Coals, it is expos'd to the Air, ſo as it may cool gently: for ſince Fire dilates Iron, if there be any hidden Chinks or Perforations, they will thus be open'd and enlarg'd; and the rather, becauſe of the Spring of the included Air continually acting from within. This done, the Cavity of the Globe is fill'd with hot Water, and the Aperture well ſtopp'd; and the outer Surface waſh'd with cold Water and Soap: So that if there be the ſmalleſt Leak, the Air, rarefy'd by the Heat, will now perſpire, and form Bubbles on the Surface. If no Defect be thus found in the Globe, its Cavity is fill'd with whole Gunpouder; a little Space, or Liberty is left, that when a wooden Tube A E, of the Figure of a truncated Cone, is driven thro the Aperture, and faſten'd with a Cement made of Quick Lime, Aſhes, Brickduſt, and Steel-filings work'd together in a glutinous Water; or, of four Parts of Pitch, two of Colophony, one of Turpentine, and one of Wax; the Pouder mayn't be bruis'd. This Tube is fill'd with a Combuſtible Matter, made of two Ounces of Nitre, one of Sulphur, and three of Gunpouder-duſt, well ramm'd. This Fuſee ſet on fire, burns ſlowly till it reach the Gunpouder, which goes off at once, burſting the Shell to pieces with incredible Violence: Whence the uſe of *Bombs* in beſieging Towns. Special Care, however, muſt be taken, that the Fuſee be ſo proportion'd, as that the Gunpouder don't take Fire e'er the Shell arrives at the deſtin'd Place; to prevent which, the Fuſee is frequently wound round with a wet clammy Thread.

Bombs being made of different Magnitudes, it may be proper to exhibit ſome of their Dimenſions; as in the following Table.

Diam. of Bomb.	Thickneſs of Bomb		Diam. of Apert.	Quant. of Gunpoud.	Weight of Bomb.
17, In. 10	2 In.	2, 10	,20	48 lb.	490 lb.
11, 8	1	,18	,16	15	130
8	0, 10	,13	,10	4	40

Others

Others make the Thickneſs of the *Bomb* $\frac{1}{8}$, or $\frac{1}{4}$, or $\frac{1}{10}$ of the whole Diameter; and the Diameter of the Aperture $\frac{1}{9}$ or $\frac{1}{7}$ of the ſame.

Bombs only differ from *Hand Granadas*, in that the latter are much leſs, and inſtead of Mortars are thrown out of the Hand; ſee GRANADA. The Word BOMB comes from the Latin, *Bombus*, *crepitus*, or *ſibilus Ani*, by reaſon of the Noiſe it makes. M. *Blondel*, who has wrote the Art of throwing *Bombs*, obſerves, that the firſt *Bombs* were thoſe thrown into the City of *Wachtendouch* in *Guelderland*, in 1588; others pretend they were in uſe a Century before, *viz.* at the Siege of *Naples* by *Charles* VIII. in 1495.

BOMBARD, a Piece of Artillery antiently in uſe, exceedingly ſhort and thick, and with a very large Opening: Some alſo call it *Baſilic*. There were ſome of theſe ſaid to have carry'd Balls of 300 Pound Weight; *Froiſſart* mentions one of 50 Foot long. To load 'em, they made uſe of Cranes, &c. The *Bombard* is ſuppoſed to have been in uſe before the Invention of Cannons, ſee CANNON and ORDNANCE. Some derive the Word, by Corruption, from *Lombard*, as ſuppoſing 'em firſt us'd in *Lombardy*: *Menage*, after *Voſſius*, derives it from the *Greek* Βομβος, or the *Latin bombus*, à *bumbo & ardeo*; others from the *German Bombarden*, the plural of *Bomber*, *Baliſta*.

BOMBARDIER, an Engineer, or Perſon whoſe Buſineſs is to take care of the firing and throwing *Bombs* out of Mortars: He firſt drives the Fuſee, then fixes the Shell, loads, and fires. See BOMB.

BOMB-CHEST, is a kind of *Cheſt* fill'd with Gunpouder, *Bombs*, &c. plac'd under Ground, to tear and blow it up into the Air, with thoſe who ſtand upon it. Theſe *Bomb-Cheſts* are frequently us'd to drive Enemies from a Poſt they have ſeiz'd, or are about to take poſſeſſion of; and are ſet on fire by means of a Saucidge faſten'd at one End. See MINE.

BOMB-KETCH, is a ſmall Veſſel, ſtrengthen'd with large Beams, for the uſe of Mortars at Sea.

BONA NOTABILIA, in Law. Where a Perſon dying has Goods, or good Debts, in another Dioceſe or Juriſdiction within that Province, beſides his Goods in the Dioceſe where he dies, amounting to the Value of 5 *l.* at leaſt, he is ſaid to have *Bona notabilia*; in which Caſe, the Probat of his Will, &c. belongs to the Archbiſhop of that Province.

BONA PATRIA, a Jury or Aſſize of Countreymen, or good Neighbours, ſee JURY.

BONE, in Anatomy, a ſimilar Part of the Body, white, hard and brittle, not diſtendible, and void of Senſation; giving Support, and Form to the whole Fabrick. The *Bones* of the Body are all cover'd with a peculiar Membrane, call'd the *Perioſteum*, which is extremely ſenſible, (ſee its Deſcription and Office in its Place:) They are moſt of 'em likewiſe hollow, and fill'd with an oily Subſtance call'd Marrow; ſee MARROW. Dr. *Havers*, deſcribing the Texture of the *Bones*, obſerves, that they conſiſt of *Lamellæ*, or Plates lying one upon another; and thoſe, again, of Fibres running lengthwiſe, ſome to the Extremities of the *Bones*, others not ſo far; but none of 'em terminating there in diſtinct Ends, as they ſeem to do; but in lieu of that continu'd tranſverſly, and as it were arch'd: The Fibres of one Side, meeting and uniting with thoſe of the other; and this at each Extremity. So that the Fibres are a Continuation of each other; tho not in the ſame uniform Order, but in very long *Ellipſes*; not all of a length, however, but in each Plate, ſhorter and ſhorter than other.

Theſe *Lamellæ*, or Plates, are differently diſpoſed in different *Bones*; *v. g.* In thoſe that have a large Cavity, they are contiguous on each ſide, and very cloſely united; in thoſe again whoſe Cavities are ſmall, or which are altogether ſpongious within, many of the internal *Laminæ* are placed at a diſtance from each other, having betwixt 'em little *bony* Cells; and even in *Bones* that have a larger Cavity, ſome of theſe leſſer Cells are uſually found at each Extremity. In ſuch *Bones* as have their Plates contiguous, there are Pores thro and between the Plates, beſides thoſe made for the Paſſage of the Blood-Veſſels: The firſt penetrate the *Laminæ* tranſverſly, and look from the Cavity to the external Surface of the *Bone*; the ſecond run longitudinally between the Plates: The firſt are found in every *Lamina*; tho the nearer the Cavity, the greater the Number of Pores; but they don't lie directly over one another, ſo as to form any continu'd Paſſage from the Cavity to the Surface. The ſecond are ſeldom found but by good Glaſſes: A Medullary Oil is diffus'd, by theſe, throughout the Plates; and to thoſe, the firſt kind ſeem only ſubordinate; ſerving to bring the Oil into 'em.

The Marrow in the Cavity of the *Bones*, is inveſted with a Membrane, wherein are included little Bags, or *Lobules*; and in theſe Bags are *Veſiculæ*, or glandulous Bladders; ſerving both for the Secretion of the Medullary Oil from the Blood, and for the Reception and Conſervation of the ſame. They ſeem to have Paſſages into each other, as have alſo the Bags; whereby the Oil has a freer Courſe to the Joints and Subſtance of the *Bone*. The uſe of the Marrow, is to oil the Subſtance of the *Bone*, and to prevent its being too dry and brittle; it alſo lubricates the Articulation of the *Bones*, and hinders their Ends from being worn, or overheated with Motion; and it moiſtens the Ligaments by which they are ty'd to each other: in which it is aſſiſted by the Mucilaginous Glands, found in all the Articulations of the *Bones*; ſee MUCILAGINOUS.

The *Bones* are generally bigger at their Extremities than in the Middle; that the Articulations might be firm, and the *Bones* not ſo eaſily diſlocated: But to render the Middle of the *Bone* ſtrong withal, ſo as to ſuſtain its allotted Weight, and reſiſt Accidents, the Fibres are there more cloſely compacted together, and ſupport one another: To which it may be added, that the *Bone* being hollow, is not ſo eaſily broken, as if it had been ſolid and ſmaller: For of two *Bones* of equal Length, and of equal Numbers of Fibres, the Strength of the one to the Strength of the other, will be as their Diameters. See GIANT.

The *Bones* are join'd and connected together various Ways, according to the various Purpoſes they are to ſerve: Some being intended for Motion; others for Reſt, and the Support of the incumbent Parts only. That Jointure intended for Motion, is call'd *Arthroſis*, or *Articulation*; that for Reſt, *Symphiſis*, or *Coalition*. Articulation is divided into two Kinds, *Diarthroſis* and *Synarthroſis*; and each of theſe again ſubdivided into ſeveral others, ſee ARTICULATION, DIARTHROSIS, &c. *Symphiſis* is divided into *Sutura*, *Harmonia*, and *Gomphaſis*; which ſee. Beſides theſe, are five other Kinds of Connexion, *viz.* *Syſſarchoſis*, *Synchondroſis*, *Syneuroſis*, *Syntenoſis*, and *Synymenſis*; which ſee.

The Number of the *Bones* is various in various Subjects; ordinarily 'tis about 250; *viz.* 61 in the Head, 67 in the Trunk, 62 in the Arms and Hands, and 60 in the Legs and Feet: The Variations are in the number of the *Seſamoidea*, the *Teeth*, and the *Sternum*. See the Names of the ſeveral *Bones* in the following Table; their Figures, and Places in the Plate, *Anatomy*; and particular Deſcriptions of each under their proper Heads.

Os Frontis	1	*Vertebræ Cervicis*	7	The *Os Femoris*	2
— *Occipitis*	1	— *Dorſi*	12	*Rotula*	2
Oſſa Parietalia	2	— *Lumborum*	5	*Tibia*	2
— *Temporum*	2	— *Oſſis Sacri*	6	*Fibula*	2
Officula Auditus	8	*Os Coccygis*	3	*Oſſa Tarſi*	14
Os Ethmoides	1	*Scapulæ*	2	— *Metatarſi*	10
— *Sphænoides*	1	*Claviculæ*	2	— *Digitorum*	28
— *Mali*	2	*Coſtæ*	24		—
— *Maxillare*	2	*Sternum*	1		60
— *Unguis*	2	*Oſſa Innominata*	2		—
— *Naſi*	2		64	In all	245
— *Palati*	2		—		
Vomer	1	The *Humerus*	2		
Maxilla Inferior	1	*Ulna*	2	Beſides the *Oſſa Seſamoidea*, which are ſaid to be found to the Number of 48.	
Dentes Inciſivi	8	*Radius*	2		
— *Canini*	4	*Oſſa Carpi*	16		
— *Molares*	20	— *Metacarpi*	8		
Os Hyoides	1	— *Digitorum*	30		
	—		—		
	61		60		

Dr. *Havers* divides the Blood-Veſſels of the *Bones* into Nutritious and Medullary; the one furniſhing Matter for the Nutrition, the other for the Lubrication of the *Bones*. The Chief of the Nutritious enter the Ends of the *Bone*, *viz.* the Arteries at one End, and the Veins at the other. The Medullary commonly enter the Sides of the *Bone*, and that obliquely; but both by the ſame *Foramen*.

The Medullary Oil is diſpens'd from the Cavity where it is depoſited, throughout the whole Subſtance of the *Bone*; paſſing firſt thro the tranſverſe Pores of the firſt internal *Laminæ* into the longitudinal ones; where it proceeds till it finds other tranſverſe Pores, when it alters its Courſe again, and exſudes further: Thus it paſſes alternately thro and between the Plates, till it is diffuſed throughout. This is the Method of its Conveyance in *Bones*, the Plates whereof are contiguous: Where the Plates are at a Diſtance, as in *Bones* that have no great Cavity, the ſmall Caverns abovemention'd contain Medullary Glands; whence the Plates have the Benefit of the Marrow without the former Method of Conveyance.

Thus are all the *Bones* ſtock'd with Pores, &c. excepting the *Teeth*; which have this further Diſtinction, that they have Nerves inſerted into 'em: whereas in all the other *Bones*, the Nerves go no farther than the *Perioſteum*.

Beſides the large Cavities in the Inſide, moſt *Bones* have ſuperficial Cavities, or *Sinus*'s, which may be diſtinguiſh'd into *Sulci*, or Furrows, the longer ſort; and *Pits* the ſhorter ones. On the Outſide are alſo obſerv'd Prominences, whereof there are two Kinds; the one a continu'd Part of the *Bone*, jetting apparently above its plane Surface, for the more commodious Inſertion of the Muſcles, &c. call'd *Apophyſis*;

phyſis ; the other an additional *Bone*, growing to another by mere Contiguity, being generally more ſoft and porous than the other, and call'd an *Epiphyſis*, or Appendage. If the Protuberance be round, it is call'd the *Caput*, under which is the *Cervix* ; if flat, *Condylus* ; if ſharp, *Corone*.

The general Uſes of the *Bones*, are to ſupport and ſtrengthen the Body, like Beams and Pillars in Building ; to defend ſome of the more eſſential Parts, as the Brain, *&c.* to give Shape to the Body, and to aſſiſt in Motion.

BONONIAN STONE, a ſmall, gray, weighty, ſoft, ſulphurous *Stone*, about the bigneſs of a large Walnut ; when broken, having a kind of cryſtal or ſparry *Talc* within : found in the Neighbourhood of *Bologne*, or *Bononia* in *Italy*, (whence it takes its Name) and in other Parts of that Country, particularly at the Foot of Mount *Palermo* ; where a *Shoemaker*, one *Vincenzo Caſciarlo*, having gather'd ſome Pieces and carry'd 'em home, in hopes by the Fire to draw Silver out of 'em ; inſtead of what he expected, found that admirable Phænomenon they exhibit, which conſiſts in this, that having been expos'd to the Light, they retain it, and ſhine, for the ſpace of ſix or eight Hours, in the Dark. M. *Homberg* was the Perſon who firſt taught us the manner of preparing and calcining the *Bononian Stone*, having made a Journey to *Italy* on purpoſe to learn it. When prepar'd, 'tis a kind of *Phoſphorus*, under the Appearance of a calcin'd *Stone*. 'Tis ſaid, the Art of preparing and calcining the *Bononian Stone* is loſt ; there having been but one, an Eccleſiaſtick, who had the true Secret, and who is ſince dead, without communicating it to any Perſon ; ſee *Philoſoph. Tranſact.* N° 21. M. *Elpigni* obſerves, that one *Zagonius* had a Method of making Statues and Pictures of the *Bononian Stone*, which would ſhine variouſly in the Dark ; but he adds, The Perſon dy'd without diſcovering his Secret, *Philoſ. Tranſ.* N° 134. See PHOSPHORUS.

BONNET, in Fortification, a Work raiſed beyond the *Counterſcarp*, having two Faces, which form a ſaliant Angle, and as it were a ſmall Ravelin without any Trench : Its Height is about three Foot, and it is environ'd round with a double Row of Palliſadoes, ten or twelve Paces diſtant from each other ; hath a Parapet three Foot high, and is like a little advanced *Corps du Guard*.

BONNET *a Preſtre*, or *Prieſt's-Cap*, is an Outwork, having at the Head three ſaliant Angles, and two inwards : It differs from the *Double Tenaille* only in this, that its Sides, inſtead of being parallel, are made like a Swallow's Tail ; that is, narrowing, or drawing cloſe at the Gorge, and opening at the Head.

BONNETS, in the Sea-Language, ſmall Sails, ſet on upon the Courſes, on the Main-ſail and Fore-ſail of a Ship, when too narrow or ſhallow to clothe the Maſt ; or to make more way in calm Weather. The Words are, *Lace on the Bonnet* ; that is, faſten it to the Courſe : *Shake off the Bonnet* ; that is, take it off the Courſe.

BOOKBINDING, the Art of *binding*, or covering *Books*. No doubt, the Art of *Binding* is almoſt as antient as the Science of Compoſing *Books* ; and that both the one and the other follow'd immediately the firſt Invention of Letters ; ſee LETTER. Whatever the Matter were whereon Men firſt wrote, there was a Neceſſity for uniting the ſeveral Parts together ; as well for the making one Piece, as for the better preſerving 'em : Hence the Origin of *Binding* ; for which, in all appearance, we are indebted to the *Egyptians*, that learned People, among whom the Arts and Sciences began to flouriſh ſo early.

The Manner of binding BOOKS *in Volumes, i. e.* of ſewing the Leaves together, to roll 'em on round Pieces or Cylinders of Wood, appears the moſt Antient ; tho that of *binding* 'em ſquare, and of ſewing ſeveral Quires over one another, lays claim to good Antiquity. The firſt of the two, which we may call *Egyptian binding*, held a long time after the Age of *Auguſtus* ; but 'tis now diſus'd, excepting in the *Jewiſh* Synagogues, where they continue to write the *Books* of the Law on Velloms ſew'd together ; making, as it were, only one long Page, with two Rollers, and their Claſps of Gold or Silver at each Extremity. The Form now in uſe, is the *ſquare Binding* ; which is ſaid to have been invented by one of the *Attali*, Kings of *Pergamus* ; to whom we likewiſe owe the manner of preparing *Parchment* ; call'd in *Latin*, from the Name of his Capitol, *Pergamena*, or *Charta Pergamea* : See PARCHMENT.

Manner of binding Books. The firſt Operation is to fold the Sheets according to the Form, *viz.* into two for Folio's, four for Quarto's, eight for Octavo's, *&c.* which they do with a ſlip of Ivory or Box, call'd a *Folding-ſtick* : In this the Workman is directed by the Catch-Words and Signatures at the Bottom of the Pages ; ſee PRINTING. The Leaves thus folded, and laid over each other in the Order of the Signatures, are beaten on a Stone with a Hammer, to preſs and flatten 'em, ſo as they may take leſs Room in the *Binding* : They are then ſew'd in the *Sewing-Preſs*, with a long Needle a little crook'd. What they call *ſewing*, is the fixing to the Back certain Cords, call'd *Band*, at a proper Diſtance from each other, and in a convenient Number ; which is done by drawing a Thread thro the Middle of each Sheet, and giving it a turn round each Band, beginning with the firſt and proceeding to the laſt : They ordinarily put ſix Bands in a Folio, and five in the reſt. To cut the Edges of the *Book*, 'tis faſten'd in a *Cutting-Preſs*, between two Boards, ſomewhat longer than the *Book*, and the Knife gradually conducted over the Extremities of the Leaves, by means of a Skrew to which it is faſten'd : Of the two Cutting-Boards, that behind is higher than the other, and ſerves to ſuſtain the Edges of the *Book* ; that before, which is lower, ſerving to direct the Knife, which ſlides underneath. See PRESS.

The Edges finiſh'd, the *Book* is *put into Boards* ; that is, the Paſtboards are fitted to it, whereon the Leather, the *Book* is to be cover'd withal, is afterwards apply'd. The Paſtboard is firſt well beaten on the Stone with a Hammer, and is fitted on by means of the Bands ; the Ends whereof are paſs'd thro three Holes, punch'd on the Edge of the Paſtboard againſt each Band : The Paſtboards are then cut even with the Edges of the *Book*, by means of a long ſharp Inſtrument with a wooden Handle, which the Workman applies to his Shoulder, and conducts the other End with his Hand, by the Edge of a Ruler laid on the Paſtboard. After this, *in the French Binding*, a *Book* is put in Parchment, *i. e.* a ſlip of Parchment, the Length of the *Book*, is apply'd on the Inſide of each Paſtboard ; ſo, however, as that being cut or indented in the Places againſt the Bands, it comes out between the Edge of the Paſtboard and the Leaves of the *Book* to cover the Back : This Preparation, call'd *Indorſing*, ſeems peculiar to the *French Binders* ; who are enjoin'd by Ordonnance to back their *Books* with Parchment, on the Penalty of 30 Livres, and the *Re-binding* of the *Book* : 'Tis done in the Preſs, where the Back being grated with an Iron Inſtrument with Teeth, to make the Paſt take hold, wherewith the Parchment is firſt faſten'd ; they afterwards add ſtrong Glue to fortify it.

The Headband is now added ; which is an Ornament of Silk of ſeveral Colours, or even, ſometimes, of Gold or Silver, plac'd at each Extreme of the Back, acroſs the Leaves ; and wove, or twiſted, ſometimes about a ſingle, and ſometimes a double piece of roll'd Paper. This, beſides its being an Ornament, alſo ſerves to fix the Sheets at Top and Bottom. In this State there remains nothing but to Bevil the inner Edges of the Paſtboards ; take off the four Angles, to facilitate the opening of the *Book* ; and to blacken, gild, or marble the Edges : in order to fit the *Book* for covering. See MARBLING, *&c.*

Manner of Gilding Books on the Edges. The *Book* is put between two Boards, and very ſtiffly ſqueez'd in the Preſs ; in which State, the Edge is ſcrap'd with a little crooked Iron Inſtrument, which, being moderately ſharp, takes off any unevenneſs left in the Cutting. On the Edge thus ſcrap'd is laid a Ground for the Gold. This Ground is a Compoſition of the *Armenian* Bole, red Chalk, black Lead, and a little Tallow beaten together, and ſteep'd in hot Size, made of Parchment, much the ſame with that uſed in Gilding in Water ; ſee GILDING. The Ground being well dried, is glazed lightly with the Whites of Eggs beaten ; and over this the Gold is apply'd. The Gold here us'd, is in the Leaf, as prepar'd by the *Gold-beaters*. The Inſtrument wherewith they take it up, conſiſts of two Branches of Iron, moveable on a Rivet in the Middle ; ſomewhat like an X, or a Pair of Sciſſars without Rings. When the Workman has laid the Leaf Gold in fit order, he rubs the Ends of the Branches againſt his Cheek, which gives 'em the degree of Warmth neceſſary to make the Gold ſtick thereto : The Gold thus taken up, is apply'd on the Edge of the *Book*, and ſpread ſmooth with a Hair Bruſh : And the Edge thus cover'd with Gold, is dry'd by the Fire, without taking it out of the Preſs, and afterwards burniſh'd ; ſee BURNISHING. On the Gold thus apply'd, they antiently made Ornaments, with hot Irons of various Forms and Deviſes ; the Practice of which ſeem'd to have been retriev'd in *France* about the beginning of the XVIIIth Century, and carry'd to a good Perfection by the Abbot *de Seuil*, and others ; and call'd by a new-invented Name, *Antiquing* : But as the Modern Taſte ſeems rather inclin'd to Simplicity, 'tis probable theſe *Antiquo*-Modern Ornaments will be dropp'd again.

For the Covers ; tho the Skins us'd herein, undergo ſeveral Preparations in the Hands of other Workmen ; yet there are ſome ſtill left for the *Binder*, and peculiar to his Art : Theſe we ſhall explain, in *Calf*, as being the Leather moſt us'd ; and, as being that to which all the reſt, with a little Variation, may be referr'd. The Calfskin, then, being well ſoak'd in Water, is ſcrap'd with a kind of blunt two-handed Knife, and cut into ſquare pieces of the proper Sizes

with Shears, and in this State laid on the Stone, and the Edges pared thin on the Side to be apply'd to the Paſtboard, with a Knife for that purpoſe. It may be eaſily imagin'd, that none of theſe Preparations, except the laſt, are us'd in Morocco, Sheep, or in Vellom, Velvet, &c. wherewith *Books* are ſometimes cover'd; in regard the Water wou'd ſpoil 'em. The Cover is next ſmear'd over with Paſt made of Wheat-Flower; then ſtretch'd over the Paſtboard on the Outſide, and doubled over the Edges within-ſide: after having firſt taken off the four Angles, and indented and plaited it at the Headbands. They then *cord the Book*, or *bind* it firmly between two Boards with a kind of Whip-cord, to make the Cover ſtick the ſtronger to the Paſt-boards and the Back; as alſo to form the Bands or Nerves the more accurately: In this Operation the Workman arms his Hand with Leather, to enable him to pinch it the harder; and uſes a pair of Pinchers to bring the Thread nearer each Band. The *Book* is now ſet to dry; and when dry, uncorded and put in the Preſs between two thicker Boards; then beaten on the Flat with a Hammer; Paper glu'd on the Paſtboards within-ſide; and the Cover marbled or ſprinkled, if requir'd, with a Pencil dipp'd in a black Colour, and ſtruck againſt the Finger or a Stick for the Purpoſe, ſo as to throw off little Specks and Stains of the Colour. Some mark the Covers with Clouds, in Imitation of Marble, by means of Aqua fortis applied thereon. The Cover is now glaz'd twice with the White of an Egg beaten; and at laſt poliſh'd with a Poliſhing-Iron, paſs'd hot over the glaz'd Cover, ſee POLISHING. If the *Book* be requir'd to be Letter'd, they glue a piece of red Morocco on the Back, between the firſt and ſecond Band, to receive the Title in Gold Letters; and ſometimes a ſecond between the next Bands underneath, to receive the N° of the Volume. The *Binding*, properly ſo call'd, is now compleat; and there remains nothing but the Gilding Work on the Back and Cover; which, as it makes a Part of the *Bookbinder's* Buſineſs among us, (tho with the *French*, &c. it is a diſtinct Profeſſion) we ſhall here ſubjoin.

Manner of Gilding Books on the Backs and Covers. In ordinary *binding*, they gild little elſe but the Backs, and the outward Edges of the Cover. On the Backs are gilt the Title of the Book, &c. with Flowers, Roſes, Knots, Stars, &c. between the Bands: on the Covers are ſometimes added, Compartiments, Arms, &c. All theſe Ornaments are made with each its ſeveral Gilding-Iron, engraven in Relievo; either on the Points of Punchions, as thoſe of Letters, Roſes, Stars, &c. or around little Cylinders of Steel, as the Lines, Embroideries, &c. The Punchions make their Impreſſion by being preſs'd flat down; and the Cylinders by being roll'd along by an Iron Ruler, by means of a double Branch; in the Middle whereof, they are fitted on an Iron Stay, or Axis, that paſſes the Middle of their Diameters.

To apply the Gold, they glaze thoſe Parts of the Leather whereon the Irons are to be apply'd, lightly over with a Pencil or Sponge; and, when half dry, lay over them pieces of Leaf Gold cut out near the Size; and on theſe Stamp the Punchions, or roll the Cylinders, both the one and the other reaſonably hot. If the Figures be large, and require a great Relievo, as Arms, &c. they are beat down with a Mallet or Hammer. The Gilding thus finiſh'd, they rub off the ſuperfluous Gold with a pretty ſtiff Bruſh; leaving nothing cover'd with Gold, but the Places whereon the hot Irons had left their Impreſſions.

BOOK-KEEPING. *Books* are either kept ſingle, as among Retail Dealers; or double, as among great Merchants: For the firſt, a *Journal* or *Day-book*, and a *Ledger* or *Poſt-book* are ſufficient; for the ſecond, there are ſeveral others requir'd. All Authors agree, that it was the *Italians*, particularly thoſe of *Venice*, *Genoa* and *Florence*, who firſt introduc'd the Method of *keeping Books* double, or in two Parts: Hence, among us, 'tis call'd *The Italian Method*. In this, there are three *Books* indiſpenſibly neceſſary; *viz.* the *Waſt-book*, *Journal*, and *Ledger*: Beſides, there are others, to the Number of thirteen, call'd *Auxiliary Books*, uſed as occaſion requires; *viz.* the *Caſh-book*, *Debt-book*, *Book of Numero's*, *of Invoices*, *of Accompts-Currant*, *of Commiſſions*, *Orders*, *Advices*, *of Acceptances*, *of Remittances*, *of Expences*, *of Copies of Letters*, *of Veſſels*, and *of Workmen*.

1. The *Waſt-book*, or Memorandum-book, is the firſt, and moſt eſſential: In this, all kinds of Matters are, as it were, mix'd and jumbled together; to be afterwards ſeparated and transferr'd into the others: ſo that this may be call'd the Elements of all the reſt. It may be kept two ways; the firſt by entering things down ſimply as they happen, *v. g. Bought of ſuch a one, ſold to ſuch a one, paid ſuch a one, lent ſo much*, &c. the ſecond by entering, at once, each Article, Debtor and Creditor: This laſt is eſteem'd the beſt; in regard, forming a kind of little Journal, it ſaves the keeping any other.

2. *Journal-Book*, or Day-book, wherein the Affairs of each Day are enter'd orderly down, as they happen, from the Waſt-book. Each Article in this *Book* to conſiſt of ſeven Parts; *viz.* the Date, Debtor, Creditor, Sum, Quantity and Quality, how payable, and the Price. By an Ordonnance of the Year 1673, all Traders in *France*, whether by Wholeſale or Retail, are oblig'd to keep a Journal, containing all their Affairs; Debts active and paſſive, Bills of Exchange, &c. For want of keeping this, and ſurrendring it up, on a Failure, they are to be reputed fraudulent Bankrupts, and ſubjected to the Penalties thereof.

Model of an Article in a Journal.

			15th July, 1723.				*l.*	*s.*	*d.*
Wine *Dr. to* Caſh ——	*L.* 160 : — : —		*Bought of* Duval, *ready Money*, 16 *Pipes of*						
Burgundy, *at* ——	——		*L.* 10.	——	——	——	160	0	0

3. *Ledger*, or Great *Book*; call'd alſo *Poſt-book*, *Book of Extracts*, &c. is a huge Volume, uſually rul'd into ſix Columns: This is the Waſt-book ſtill further digeſted; and is extracted immediately from the Journal. In this all the Accompts diſpers'd in the Journal, are drawn out and ſtated in *Debtor* and *Creditor*. To form each Accompt, two Pages are requir'd, oppoſite to each other; that on the Left ſerving for Debtor, the other for Creditor: Each Article to conſiſt of five Parts, or Members; the Date, the Perſon whom we credit, or are credited by; the Subject, *i. e.* the thing credited or indebted for; the Page where it is found, and the Sum or Amount of the Article. Two Inſtances, the one of an Article of Credit, the other of Debt; will illuſtrate the Form and Uſe of this *Book*.

Model of an Article in Debtor.

1701.	Anthony Roberts *Dr.*		*l.*	*s.*	*d.*
May 14.	*To* Caſh, *paid by his Order to* Wilks	*Fo.* 16	1900	0	0

Model of an Article in Creditor.

Cr.		*l.*	*s.*	*d.*
By Caſh, *for his Remittance on* James.	*Fo.* 16	1900	0	0

To facilitate the Uſe of the *Ledger*, there is an Alphabet, to ſerve as an Index or Repertory; conſiſting of 24 Leaves, each cut on the Edge, and mark'd with one of the 24 Letters; wherein, the initial Letters of the Perſons Names with whom you have Accompts, are inſerted, with the Folio of the Ledger, where the Account is ſtated.

The *Caſh-book* is the moſt important of all the *Auxiliary* ones; 'tis ſo call'd, becauſe it contains, in Debtor and Creditor, all the Caſh that comes in or goes out of the Merchant's Stock. In this are enter'd all the Sums receiv'd and pay'd daily; thoſe receiv'd on the Left hand, with the Perſon's Name, of whom receiv'd, for what, for whom, and in what Species: Thoſe paid, on the ſide of Creditor; mentioning, likewiſe, the Species, the Reaſon why, the Perſon to whom, and for whom the Payment is made. For Inſtance;

Model of an Article in Debt.

Caſh *Dr.*

		l.	*s.*	*d.*
	June 29th, 1708.			
Recd.	*Of* Paul Simon *for* 2 *Tonn of Wax, ſold the* 6th *Inſtant*,			
	A Purſe of — *L.* 1000 : — : —			
	Pieces of Eight, L. 108 : — : —	1108	0	0
	L. 1108 : — : —			

Model of an Article in Credit.

Cr.

		l.	*s.*	*d.*
	May 14th, 1711.			
Pay'd.	*To* Tim. Hall *for* 2 *Tonn of Wax, bought the* 2d *Inſtant*,			
	A Purſe of — *L.* 1000 : — : —			
	Pieces of Eight, L. 300 : — : —	1300	0	0
	L. 1300 : — : —			

Debt-Book, or Book of Payments. A *Book* wherein is enter'd the Day whereon all Sums fall due, whether to be paid, or receiv'd by Bills of Exchange, Merchandizes, or otherwiſe: To the end, that by comparing Receipts and Payments, Proviſion may be made in Time for a Fund for Payment; by receiving Bills, &c. due, or taking other Precautions. Two Models will ſuffice for the Uſe and Form of this *Book*: it muſt only be obſerv'd, that like the Ledger it muſt be on two oppoſite Pages; Moneys to be receiv'd on the Left hand, thoſe to be paid on the Right.

Model of the Page of Receipt.

May	1708 To Receive.	*l.*	*s.*	*d.*
1	*Remittance of* John Vaſſor, *of the 10th of* March, *on* Pits.	600	0	0
	Of Cade, *for Wool ſold the 6th of* July. —— ——	150	0	0
2	*Of* Dikes *by Bond of 23d of* May *laſt.* —— ——	2000	0	0
	Remittance of Price, *of the 23d of* October *on* Page.	170	0	0

Model of the Page of Payment.

Jan.	1708 To Pay.	*l.*	*s.*	*d.*
1	*To* Charles Horn, *for a Purchaſe of the 1ſt of* July.	700	0	0
	To R. Hart, *a Note under Hand of the 5th of* Auguſt.	400	0	0
2	*Remittance of* Lucas *of 15th of* December, *to* Hall.	1700	0	0
	My own Bill of 25th of October, *to Bearer.* ——	100	0	0

Book of Numero's, or Wares, is kept for the eaſy Knowledge of all the Goods brought in, ſent out, or remaining in a Warehouſe. On the Left hand Page are enter'd the Quantity, Quality, and Number or Mark of the Goods brought in; on the Right, the Diſcharge of the Goods out of the Warehouſe, againſt the reſpective Articles of the firſt. Thus,

N° 1	*A Bale of white Pepper* ——*weighing*	400 *l.*
2	*A Piece of Crimſon Damask.* ——*Ells*	63

March 1	*Sold to* Charles Mitchell.
Apr. 10	*Sent to* Nichols *of* Briſtol.

Book of Invoices. A *Book* to ſave the Journal from the Eraſures inevitable, in taking Accompts or Invoices of the ſeveral Goods receiv'd, ſent, or ſold; where 'tis neceſſary to be very particular. The Invoices here enter'd, are to be thoſe of Goods bought, and ſet to Accompt of ſome other; thoſe of Goods ſold by Commiſſion; of Goods ſent away to be ſold on our Accompt; and thoſe of Goods in Partnerſhip, whereof we have the Direction, or whereof others have the Direction.

Book of Accompts Currant, is kept in Debtor and Creditor, like the Ledger; and ſerves for Accompts ſent to Correſpondents, to be regulated in concert with 'em, e'er they are enter'd in the Ledger: And 'tis properly a Duplicate of the Accompts Currant, kept to have recourſe to on occaſion.

Book of Commiſſions, Orders, or *Advices*. In this are enter'd all Commiſſions, Orders, &c. receiv'd from Correſpondents. The Margins hereof are to be very large; to give room againſt each Article to inſert the neceſſary Memoirs relating to their Execution. Some content themſelves with cancelling the Articles when executed.

Book of Acceptances, is deſtin'd for the regiſtring all Bills of Exchange, notify'd by Letters of Advice from Correſpondents; to be able to know, on the Bill's being preſented, whether they have Orders to accept 'em or not. When they chuſe to decline accepting a Bill, againſt the Article thereof, in the Book they put *P*, *i. e.* Proteſt; that on offering the Bill, the Bearer may be told he may proteſt it: On the contrary, if they accept it, they write againſt it an *A*; adding the Date, or Day of Acceptance. And this, upon being transferr'd to the Debt-Book, is cancell'd.

Book of Remittances. A *Book* ſerving to Regiſter Bills of Exchange, as they are remitted by Correſpondents, to require the Payment thereof. If they be proteſted for want of Acceptance, and return'd to thoſe who remitted 'em; mention is made thereof againſt each Article, by adding a *P* in the Margin, and the Date of the Day when they were return'd; then cancell'd. The *Book* of Acceptances and Remittances, have ſo near a Relation to each other, that many Merchants, &c. make but one of the two, which they keep in Debtor and Creditor; putting Acceptances of the Side of Debt, and Remittances to that of Credit.

Book of Expences. A Detail of the petty Expences, both Domeſtick and Mercantile; which, at the End of each Month are ſumm'd up, and make an Article for the Journal.

Book of Veſſels, is kept in Debtor and Creditor; a particular Accompt being kept for each Veſſel. To the Side of Debtor, are put Victualling, Fitting out, Wages, &c. To the Side of Creditor, are put every thing the Veſſel has produc'd; whether by way of Freight or otherwiſe. Laſtly, the Total of each is enter'd in the Journal; upon balancing the Accompt of each Veſſel.

Book of Workmen, is particularly in uſe among Merchants who have Manufactures or Works in their Hands. 'Tis kept Debtor and Creditor for each Workman employ'd. On the Side of Debt is put the Matters given 'em to work; and on that of Credit, the Works they return.

Theſe *Books* are kept the ſame, as to Subſtance, in moſt Trading Cities in *Europe*; but not as to Coin: Each being regulated by that Coin which has Courſe in the State where they are. See COIN.

BOOKS, in Terms of Commerce, the Regiſters wherein Merchants, &c. keep their Accompts. See BOOK-KEEPING.

BOOM, in the Sea-Language, a long Piece of Timber, with which the Clue of the Studding-ſail is ſpread out; called alſo the *Studding-ſail Boom*. It is ſometimes likewiſe uſed to ſpread, or *boom* out the Clue of the Main or Foreſail. They ſay a Ship comes *Booming*, when ſhe makes all the Sail ſhe can.— Alſo thoſe Poles with Buſhes or Baſkets on the Top, which are plac'd to direct how to ſteer into a Channel, are call'd *Booms*, and by ſome *Beacons*.

BOOT, *Brodequin*, a kind of Torture for Criminals; to extort a Confeſſion, by means of a *Boot*, or rather a Stocking, or Buſkin of Parchment; which being put on the Leg moiſt, and brought near the Fire, in ſhrinking, ſqueezes the Leg violently, and occaſions intolerable Pain. There is alſo another kind of *Boot*; conſiſting of four thick ſtrong Boards bound round with Cords: Two of theſe are put between the Criminal's Legs, and the two others plac'd, one on the Side of one Leg, and the other on t'other; then, ſqueezing the Legs againſt the Boards, by the Cords, the Criminal's Bones are broken, &c. The *Boot* is now diſus'd in *England*; but ſubſiſts ſtill in ſome other Countries, particularly *Scotland*.

BOOTES, in Aſtronomy, a Conſtellation of the Northern Hemiſphere near the Pole it ſelf; ſee CONSTELLATION.

The Stars in the Conſtellation *Bootes*, in *Ptolomy*'s Catalogue are 23; in *Tycho*'s 28; and in Mr. *Flamſtead*'s Catalogue 45. Their Longitudes, Latitudes, Magnitudes, &c. are as follow;

Stars in the Conſtellation BOOTES.

Names and Situation of the Stars.	Signs.	Longitude. ° ′ ″	Latitude Nor. ° ′ ″	Magnit.
	♑	10 51 56	28 11 26	6
		9 43 34	30 32 0	6
		9 29 51	33 59 22	6
Middle of 3 in the fore Leg		13 37 50	26 32 8	4
Southern		14 51 57	25 12 47	4
5				
		12 26 17	30 14 28	5 6
Laſt of the Tail of Urſa Major	♍	22 34 24	54 24 0	3
	♑	14 10 50	27 31 38	7
North of the Leg		14 59 00	28 6 41	3
		11 00 38	36 33 10	5
10				
Inform. before the preced. Thigh		14 27 1	31 28 30	7 6
		12 13 5	36 53 16	7 6
In the preced. Thigh		15 43 4	35 41 3	5
	♍	27 9 24	56 34 48	7
	♑	22 8 42	24 51 0	6
15				
		23 26 33	22 15 30	6
Bright one 'twixt Thighs, *Arcturus*		19 53 52	30 57 0	1
Preced. in the North Hand	♍	25 36 39	58 54 44	4
	♑	23 23 52	25 10 15	6
In the preced. Arm		2 27 32	54 39 20	4
20				
		22 11 11	28 27 0	5
Middle one in the Hand	♍	26 46 14	58 55 33	4
That following Arcturus	♑	22 38 00	31 45 14	6
Laſt of 3 in the Hand	♍	28 14 00	60 10 4	4
Small one following the N. Hand	♑	1 35 46	58 55 5	6 7
25				
Preced. againſt the Girdle		18 25 50	42 27 57	4
		22 49 58	35 6 13	7
In the preced. Shoulder		13 18 18	49 33 0	3
Subſeq. againſt the Shoulder		19 31 33	42 8 24	5
South in the following Leg		27 30 5	30 23 18	3 4
30				
In the poſterior Heel		28 4 21	27 53 42	3
	♏	0 53 28	22 41 32	4 5
	♑	29 37 33	25 59 55	6
That following the preced. Arm		9 58 2	55 27 39	6
		23 36 32	40 0 9	6
35				

Names and Situation of the Stars.	Sign.	Longitude. ° ′ ″	Latitude Nor. ° ′ ″	Magn.
North in the hind Leg		28 27 45	31 17 7	4 5
Agſt. poſterior Thigh, under the Gird.		23 44 35	40 38 21	3
In the hind Leg		29 10 33	33 47 28	4
Firſt of 3 over the Head		11 2 48	57 54 1	6
		20 6 51	52 57 48	6 7
40				
In the poſterior Hand		29 26 43	40 11 33	5
In the Head		19 53 41	54 10 38	3
In the Wriſt of the poſter. Hand		29 10 20	42 11 40	5
In the Extrem. of the Staff's Handle	♏	0 54 38	40 29 15	5
Middle over the Head	♑	13 28 53	60 33 37	6
45				
In the Staff, near the Hand	♏	0 34 22	41 54 43	6
Poſterior over the Head	♑	13 17 58	61 7 22	7
South of the middle ones in the Staff	♏	0 51 10	45 4 7	5
In the hind Shoulder	♑	28 48 8	49 0 10	3
	♏	0 55 3	49 9 16	6
50				
That follow the Staff tow^d. the Crown		2 44 45	46 49 30	5
North of the middle ones in the Staff	♑	28 11 44	53 26 56	4
South in the Extrem. of the Staff		28 21 36	57 6 25	5
More North		28 24 27	57 14 40	5 4
Another following this	♏	0 46 9	57 14 46	6
55				

BORAX, a Mineral Salt, uſed in ſoldering, brazing, and caſting Gold and other Metals; known to the Antients under the Name of *Chryſocolla*. *Pliny* divides *Borax* into Natural and Artificial: The *Natural*, according to him, is only a ſlimy Humor running in Mines of Gold, Silver, Copper, and even Lead; which being congeal'd and harden'd by the Winter's Cold, becomes of the Conſiſtence of Pumice-Stone. For *Artificial Borax*, he ſays, 'tis made by letting Water run in the Veins of the Mine, all the Winter long, till *June*; and letting the Mine dry, the reſt of the Year. So that Artificial *Borax*, according to him, is no more than the Mineral putrify'd and corrupted. The ſame Author diſtinguiſhes *Borax* into Black, Green, Yellow and White; aſſuming their ſeveral Colours, as well as Values, from the ſeveral Mines whereof they are form'd. The Natural, according to him, is heavier than the Factitious.

The Moderns, in like manner, diſtinguiſh two Kinds of *Borax*; *Natural*, call'd Crude; and *Artificial*, which is purify'd and refin'd. The Natural is a Mineral Salt, of the common Form, dug out of the Earth in ſeveral Parts of *Perſia*; and found alſo at the Bottom of a Torrent, running in the Mountains of *Purbeth*, near the *Frontiers* of *White Tartary*: When taken up, 'tis expos'd to the Air; where it acquires a kind of reddiſh Fat, which ſerves to feed it, and prevent its calcining. When in its Perfection, 'tis ſent to *Amadabat*, in the Territories of the Great *Mogol*, where the *European* Merchants buy it. There is another kind of Artificial *Borax*; drier, and of a greyiſh Colour, like *Engliſh* Copperas; only differing from the former, by its being longer expos'd to the Air.

For Artificial *Borax*, it was the *Venetians* who firſt found out the Art of preparing it; or, rather, of purifying the Natural: 'Tis done by diſſolving it in Water; then filtrating and cryſtallizing it: uſing, for that purpoſe, Cotton Matches; about which the *Borax* cryſtallizes, like Sugar candy and Verdigreaſe on Wood. The *Dutch*, after refining it, reduce it into little Pieces, like tagged Points; and 'tis thus commonly us'd.

Borax, refin'd, either in the *Dutch* or *Venetian* manner, ſhould be clear and tranſparent, almoſt inſipid to the Taſte; and above all, Care muſt be taken it have no Mixture of *Engliſh* Allom. *Borax* is of ſome uſe in Medicine, as it enters the Compoſition of the Unguent *Citrin*. 'Tis alſo uſed in the Preparation of a *Fucus* for the Ladies.

Agricola ſays, there is a foſſile Nitre, as hard as that whereof the *Venetians* make *Borax*: In which he has Reaſon; this Nitre being nothing but the *Perſian Borax* abovemention'd. What he adds, that the *Venetian Borax* is made of the Urine of young People who drink Wine, beat in a Mortar to the Conſiſtence of an Unguent; then mix'd with Iron Ruſt and Nitre: is not only falſe, but is a Miſrepreſentation of a Paſſage in *Pliny*, *Hiſt. Nat.* L. 33. c. 5.

BORDERS, among Floriſts, are ſuch Leaves as ſtand about the middle Thrum of a Flower. See FLOWER.

BORD-HALFPENNY, or *Brod-halfpenny*. Money paid in Markets, and Fairs, for ſetting up Boards, Tables, and Stalls, for the Sale of Wares.

BORD-LANDS, Lands antiently kept by the Lords in their Hands, for the Maintenance of their *Board* or Family. This was alſo antiently call'd *Bordage*.

BORD-*Service*. A Tenure of *Bord-Lands*; where the Tenants are to pay ſo much *per* Acre, in lieu of finding Proviſion for their Lord's *Board*, or Table.



BORDURE, in Heraldry, a kind of Addition on the Limb of a Shield, in Form of a Hem, or Girdle, encompaſſing it all round, and ſerving as a Difference; ſee DIFFERENCE. The *Bordure* muſt be about one ſixth Part of the Breadth of the Shield. A ſimple *Bordure*, is that which is of the ſame Colour or Metal throughout; and is the firſt Addition of younger Brothers: There are others, *Compon'd*, *Counter'd*, *Ingrail'd*, *Indented*, and *Charg'd* with other Pieces; which make different Additions for younger Brothers, in ſeveral Degrees. If the Line which conſtitutes the *Bordure* be ſtreight, and the *Bordure* Plain, as they call it in Blazoning, the Colour of the *Bordure* alone is named; He beareth Gules, a *Bordure* Or. If a *Bordure* be charg'd with any Parts of Plants or Flowers they ſay, *Verdoy* of Trefoils. If it conſiſt of Ermins, Vairy, or any of the Furs, the Term is, *Purfiew* of Ermins. If the *Bordure* be charg'd with Martlets, the Word is: *Charg'd* with an Enaluron of Martlets, *&c.*

BOREAS, a *Greek* Name, now in popular uſe, for the North Wind; tho *Pezron* obſerves, antiently, and with much greater Propriety, it ſignify'd the North-Eaſt Wind, at the Time of the Summer Solſtice: He adds, that the Word comes from the *Celtic* Word *Bore*, *Morning*; in regard their principal Light, in that Seaſon, came from that Quarter, whence alſo thoſe Winds uſually blew. The common Etymologies fetch it either from the *Greek* Βοή, *Clamour* or *Noiſe*; or Βορὰ, *Eſca*, *Food*; becauſe it occaſions an Appetite, or becauſe it is good for the Fruits of the Earth, which yeild us Food: Others from the *Hebrew*, *Birjah*, Food; or *Beri*, Calmneſs; *bor*, Purity; or *bar*, Corn. The Antients ſuppos'd *Boreas* only blew out of *Thrace*.

BOREE, or BOUREE, a kind of Dance, compos'd of three Steps join'd together with two Motions; and begun with a Crotchet, riſing. The firſt Couplet contains twice four Meaſures, and the ſecond twice eight. It conſiſts of a balance Step and a *Coupee*: 'Tis ſuppos'd to come from *Auvergne*.

BOROUGH, or BOROW, or BURGH, is frequently us'd for a Town Corporate; or a Corporation which is not a City. See CITY. In which Senſe, a *Borough* and Corporation are the ſame thing; ſee CORPORATION, *&c.*

Borough, in its Original Saxon *Borhoe*, was primarily meant of a Company conſiſting of ten Families, who were bound and combin'd together as each other's Pledge. *Bracton*, L. 3. Tr. 2. c. 19. Afterwards, as *Verſtegan* has it, *Burg*, and *Burgh*, came to ſignify a Town that had ſomething of a Wall or Incloſure about it: But, in later Times, the ſame Appellation was beſtow'd on ſeveral of the *Villæ Inſigniores*, or Country Towns of more than ordinary Note, not wall'd. See TOWN, VILLAGE, *&c.*

BOROUGH, or *Burgh*, is now particularly appropriated to ſuch Towns, and Villages as ſend *Burgeſſes*, or Repreſentatives to Parliament: See BURGESS.

Boroughs are equally ſuch, whether they be incorporated or not; there being great Numbers of our *Engliſh Boroughs* not incorporated: And, on the contrary, ſeveral Corporations that are not *Boroughs*; ex. gr. *Kingſton*, *Deal*, *Kendal*, &c.

BOROUGHS, are diſtinguiſh'd into thoſe *by Charter*, or *Statute*; or *by Preſcription*, or *Cuſtom*. See PRESCRIPTION, *&c.*

The Number of *Boroughs* in *England*, is 149; ſome whereof ſend one, ſome two Repreſentatives. See PARLIAMENT.

BOROUGH-ENGLISH, in Law, a Cuſtomary Deſcent of Lands or Tenements in ſome Places, whereby they come to the Youngeſt, inſtead of the Eldeſt Son; or, if the Owner have no Iſſue, to the Youngeſt, inſtead of the Eldeſt Brother: for that the Youngeſt is ſuppoſed, in Law, the leaſt able to ſhift for himſelf.

BOROUGH-HEAD, or *Headborough*, is the Chief Man of the Decury, or Hundred; choſe by the reſt to ſpeak and act in their behalf. In many Pariſhes it ſignifies alſo a kind of Conſtable; where many of them are choſen as his Aſſiſtants, to ſerve Warrants, *&c.*

ROYAL BOROUGHS, in *Scotland*, are Corporations made for the Advantage of Trade, by Charters, granted by ſeveral of their Kings; having the Privilege of ſending Commiſſioners to repreſent 'em in Parliament, beſides other peculiar Privileges. Theſe form a Body of themſelves, and ſend Commiſſioners, each, to an annual Convention at *Innerskeithing*; to conſult the Benefit of Trade, and the general Intereſt of the *Boroughs*.

BOSCAGE, a Place ſet with Trees, a Grove or Thicket. In a Law Sence it ſignifies Maſt, or ſuch Suſtenance as Woods and Trees yeild to Cattel: And, among Painters, a Picture repreſenting much Wood and Trees.

BOSPHORUS, in Geography, a Streight, Channel, or narrow Sea, which, it is ſuppoſed, a Bullock may ſwim over.

This Name is now confin'd to two Streights in the Mediterranean Sea; *viz.* the *Boſphorus* of *Thrace*, commonly call'd, the Streights of *Conſtantinople*, or Channel of the *Black Sea*; and the *Cymmerian Boſphorus*, now more commonly call'd the Streights of *Kaphe*, or *Kiderleri*, from two Cities ſtanding on it.

The Word is originally *Greek*, and is form'd from βὸς, *bos*, and φέρω, *I carry*; or from βὸς and πορ&, *Paſſage*. The Etymology of the Word is pretty well agreed on; but the Reaſon why it was given, is extremely controverted: *Nymphius* tells us, on the Authority of *Accarion*, that the *Phrygians*, deſiring to paſs the *Thracian* Streight, built a Veſſel, on whoſe Prow was the Figure of a Bullock. *Pliny*, *Dionyſius*, *Val. Flaccus*, *Polybius*, *Callimachus*, &c. ſay, that *Io* being transform'd into a Cow by *Juno*, paſs'd this Streight; which hence was call'd *Boſphorus*. *Arrian* tells us, that the *Phrygians* were enjoin'd by the Oracle, to follow the Rout which a Bullock ſhould mark out to 'em; and that upon ſtirring one up, it jump'd into the Sea to avoid their Purſuit, and ſwam over this Streight. Others ſay, that an Ox, tormented by a Gad-fly, threw it ſelf in and ſwam over; and others, that antiently the Inhabitants of theſe Coaſts, when they would paſs over, join'd little Boats together, and had 'em drawn over by Bullocks, &c. The *Cimmerian Boſphorus* ſeems to have been ſo call'd, from its reſemblance to the *Thracian*.

BOSSAGE, or *Boſſage*, in Architecture, is us'd for any Stone that has a Projecture, and is laid in its Place in a Building uncut; to be afterwards carv'd into Mouldings, Capitals, Arms, &c. *Boſſages*, are alſo what we otherwiſe call Ruſtick Work; conſiſting of Stones which ſeem to advance beyond the naked of a Building, by reaſon of Indentures, or Channels left in the Joinings; uſed chiefly in the Corners of Buildings, and thence call'd Ruſtick *Quoins*. The Cavity or Indenture is ſometimes round, ſometimes ſquare, ſometimes cham frain'd, or bevel'd; ſometimes in the Diamond Form: Sometimes it is inclos'd with a Cavetto, ſometimes with a Liſtel.

BOTANY, the Science of Herbs; or that part of Medicine, and Agriculture, which treats of Plants, whether Medicinal or others; their ſeveral Kinds, Forms, Virtues and Uſes. The Word comes from the *Greek* βόλάνη, *Herb*; and that from βοτὸς, *Victuals*; and βοτὸς from βοω, *I feed*; becauſe moſt Animals feed on Herbs. See MEDICINE, and GARDENING.

The moſt eminent *Botaniſts* among the Antients, were *Hippocrates*, *Paracelſus*, *Dioſcorides*, *Pliny*, *Galen*, &c. In the XVIth Century, the antient *Botany*, which had been loſt a great many Ages, was induſtriouſly reviv'd; principally by *Leonicenus*, *Braſavolus*, *Cordus*, *Fuchſius*, *Matthiolus*, *Dalechampius*, &c. In the ſame Century a Number of other Hands were added to the Oar; by whoſe Induſtry, the Art was firſt brought into a Syſtem or Body; as *Geſner*, *Dodoneus*, *Ceſalpinus*, *Cluſius*, *Lobel*, *Columna Proſper Alpinus*, the two *Bauhins*, *Plukenet*, &c. Others have come ſince, and contributed to bring it ſtill nearer Perfection; *viz.* *Moriſon*, *Malpighi*, *Herman*, *Ray*, *Magnol*, *Tournefort*, *Sloan*, &c. See HERB, PLANT, &c.

BOTE, in our old Law-Books, ſignifies Compenſation, Recompence, or Amends: Hence *Man-bote* or *Mon-bote*, amends for a Man ſlain, who was bound to another; hence alſo *Boteleſs*; where no Judgment or Favour will acquit a Man; as, *v. g.* for Sacrilege, &c. Hence alſo our common Phraſe, *To boot*. See HEDG-BOTE, PLOW-BOTE, HOUSE-BOTE, &c.

BOTTOMAGE, or BOTTOMRY, is when the Maſter of a Ship borrows Money upon the *Bottom* or Keil of it; ſo as to forfeit the Ship it ſelf to the Creditor, if the Money be not paid at the Time appointed, with the Intereſt of forty or fifty Pounds *per Cent.* at the Ship's ſafe Return: But if the Ship miſcarry, the Lender loſes his Money, and therefore the Intereſt is uſually ſo great. Others ſtate it thus; one Man lends Money to a Merchant who wants it to traffick, and is to be paid a greater Sum at the Return of the Ship; ſtanding to the Hazard of the Voyage: So that tho the Intereſt be illegal, yet it is not eſteem'd Uſury.



BOTTONY, a Term in Heraldry, for one of their Croſſes, of this Figure; Argent a Croſs *Bottony* Sable, by the Name of *Winwood*.

BOUCHE *of Court*, or vulgarly BUDGE *of Court*, is to have Meat and Drink ſcot-free there: In which Sence the *French* ſay, *Avoir Bouche a la Cour*, to be in Ordinary at Court. This Privilege is ſometimes only extended to Bread, Beer and Wine. 'Twas a Cuſtom antiently in uſe, as well in the Houſes of Noblemen, as in the King's Court. See MOUTH.

BOULDER-WALLS, a kind of *Walls* built of round Flints or Pebbles, laid in a ſtrong Mortar; uſed where the Sea has a Beach caſt up, or where there are plenty of Flints. See WALL.

BOULTINE, in Architecture, the Workman's Term for a Moulding, whoſe Convexity is juſt $\frac{1}{4}$ of a Circle; placed next below the Plinth, in the Tuſcan and Dorick Capital. See QUARTER-ROUND, and ECHINUS.

BOURGERMESTERS, or *Burgmeſters*, the Chief Magiſtrates in the Cities of *Germany*, *Holland* and *Flanders*. To them belongs the giving of Orders for the Government, Adminiſtration of Juſtice, Policy, and Finances of the Place: Tho the Authority and Office of a *Bourgermeſter* is not every where alike; each City having its Particular Laws and Statutes. The Word is form'd from the two *Flemiſh* Words, *Borger*, Burgeſs or Citizen, and *Meeſter*, Maſter. Some expreſs it in *Latin*, by *Conſul*, others by *Senator*. M. *Bruneau* obſerves, that *Bourgermeſter*, in *Holland*, anſwers to what we call Alderman and Sheriff in *England*; Attorney at *Compiegne*, Capitoul at *Tholouſe*, Conſul in *Languedoc*, &c.

BOUTANT, in Architecture. An *Arc-boutant*, is an Arch or Buttreſs, ſerving to ſuſtain a Vault; and which is it ſelf ſuſtained by ſome ſtrong Wall or Maſſive-work. A Pillar *boutant*, is a large Chain or Jaumb of Stone, made to ſupport a Wall, Terraſs, or Vault. The Word is *French*, and comes from the Verb *Bouter*, *to but*, or *a-but*.

BOUTS RIMEZ, a popular Term in the *French* Poetry; ſignifying certain *Rhimes*, diſpos'd in Order, and given to a Poet together with a Subject, to be fill'd up with Verſes ending in the ſame Word, and in the ſame Order. The Invention of the *Bouts Rimez*, is owing to one *Du Lot*, a Poet, in the Year 1649. In fixing the *Bouts*, 'tis uſual to chuſe ſuch as ſeem the wildeſt, and have the leaſt Connexion. Some good Authors fancy, that theſe *Rhimes* are of all others the leaſt perplexing; and furniſh the moſt new Matter of all others. *Sarraſin* has a Poem on the Defeat of the *Bouts Rimez*. The Academy at *Toulouſe* have contributed towards keeping in Countenance the *Bouts Rimez*; by propoſing each Year a Sett of 14, to be fill'd up on the Glories of the *Grand Monarque*: The victorious Sonnet to be rewarded with a fine Medal. An Inſtance hereof is the following one, fill'd up by *P. Commire*.

Tout eſt grand dans le Roi, l'Aſpect ſeul de ſon buſte,
Rend nos fiers Ennemis plus froids que des Glacons:
Et Guillaume n'attend que le Tems des Moiſſons,
Pour ſe voir Soccomber ſous un bras ſi robuſte.
Qu'on ne nous vante plus les Miracles d' Auguſte;
Louis de bien regnir lui feroit des Lecons:
Horace en vain l'egale aux Dieux dans ſes Chanſons.
Moins que mon Heros il etoit ſage & juſte, &c.

BOW, a Beam of Wood, or Braſs, with three long Screws, that govern or direct a Lath of Wood or Steel to any Arch: Us'd commonly to draw Draughts of Ships, Projections of the Sphere; or, wherever it is requiſite, to draw large Arches.

Bow is alſo an Inſtrument formerly us'd at Sea; conſiſting of a large Arch of 90 Degrees graduated; three Vanes, and a Shank or Staff; a Shade-Vane, a Sight-Vane, and an Horizon-Vane.

Bow *of a Ship*, is that Part of her which begins at the Looſ, and compaſſing Ends at the Stem, and ends at the Sternmoſt Part of the Fore-Caſtle. If a Ship hath a broad *Bow*, they call it *a bold Bow*; if ſhe hath a narrow thin *Bow*, they ſay ſhe hath *a lean Bow*. The Piece of Ordnance that lies in this Place, is call'd the *Bow Piece of Ordnance*; and the Anchors that hang there, are call'd, her *Great* or *Little Bower*.

BOWBEARER, an under Officer of the Foreſt, who is to obſerve and take notice of all manner of Treſpaſs to Vert or Veniſon; and to attach, or cauſe to be attach'd, the Offenders, in the next Court of Attachment.

BOWER, an Anchor carry'd at the Bow of the Ship, is call'd her *Bower*: There are uſually carry'd two there, the firſt and ſecond *Bower*; but the greateſt Anchor is carry'd in the Hold.

BOWLING, or rather BOW-LINE, a Rope faſten'd to the Leach, or middle Part of the Outſide of the Sail in a Ship, fix'd in three or four Parts of the Sail; call'd the *Bowling-bridle*: The Mizen-*Bowling* is faſten'd to the lower End of the Yard. All Sails have the *Bowling*, except the Sprit-ſail, and Sprit-ſail-top-ſail: and therefore thoſe Sails cannot be uſed cloſe by a Wind; the uſe of the *Bowling* being to make the Sails ſtand ſharp, or cloſe, or by a Wind. The Terms are, *Sharp the Bowling*, *Haul up the Bowling*, *Set faſt the Bowling*; that is, Pull it up hard, more forward on: But when they ſay, *Eaſe the Bowling*, *check*, or *run up the Bowling*; they mean, Let it more ſlack. A *Bowling-Knot*, is a Knot that will not ſlip; by which the *Bowling*-Bridle is faſten'd to the Crengles.

BOWSE,

BOWSE, a Sea Term, ſignifying as much as Hale or Pull: Thus haling upon a Tack, is call'd *bowſing* upon a Tack; and when they would have the Men pull all together, they cry, *Bowſe away.*

BOW-SPRIT, or *Bolt-ſprit*, the Maſt of a Veſſel ſtanding foremoſt on the Prow; reſting ſlopeways on the Head of the Main Stern, and having its lower End faſten'd to the Partners of the Fore-maſt, and farther ſupported by the Fore-ſtay: It carries the Sprit-ſail, Top-ſail, and Jack-ſtaff. The *Bow-ſprit* ſhould be two Thirds of the Length of the Main-maſt, and its Thickneſs equal to the Mizen-maſt: When it is twelve Fathoms five Foot long, its Yard muſt be eight Fathoms two Foot long; and the Top-maſt of the *Bow-ſprit*, three Fathoms one Foot.

BOYAR, or BOIAR, a Term us'd for a Lord or Grandee, in *Muſcovy*. According to *Becman*, *Boyars* are what in other Countries are call'd the upper Nobility: He adds, that the Czar of *Muſcovy*, in his Diploma's, names *Boyars* before *Waywodes*.

BOYAU, in Fortification, a Gut, or Branch of the Trenches: Or a Ditch cover'd with a Parapet, ſerving for a Communication between two Trenches. *Boyau* is alſo a Line, drawn winding about, in order to incloſe ſeveral Tracts of Ground, or to attack ſome Works. See DITCH, TRENCH, &c.

BOYLE'S LECTURES, a Courſe of *Sermons* or *Lectures*, ſet on foot by the Honourable *Robert Boyle* Eſq; in 1691. Their Deſign, as expreſs'd by the Inſtitutor, is to prove the Truth of the Chriſtian Religion againſt Infidels, without deſcending to any Controverſies among Chriſtians; and to anſwer new Difficulties, Scruples, &c. For the Support of this *Lecture*, he aſſign'd the Rent of his Houſe in *Crooked-Lane*, to ſome Learned Divine within the Bills of Mortality; to be elected for a Term, not exceeding three Years, by the late Archbiſhop *Tenniſon*, and others. But the Fund proving precarious, the Salary was ill pay'd: To remedy which Inconveniences, the ſaid Archbiſhop procur'd a yearly Stipend of 50 Pound, for ever, to be paid Quarterly; charg'd on a Farm in the Pariſh of *Brill*, in the County of *Bucks*.

BRACE, is commonly taken for a Couple or Pair; and apply'd by Hu[illegible]en to ſeveral Beaſts of Game; as a *Brace* of Bucks, Foxes, Hares, &c. Alſo a *Brace* of Greyhounds, is the proper Term for two.

BRACE, in Architecture, a Piece of Timber, fram'd in with Bevil Joints. Its uſe is to keep the Building from ſwerving either way. When a *Brace* is fram'd into a King-piece, or principal Rafter, it is called by ſome a *Strut*.

BRACE, *Bracchio*, or *Braſſe*, a long Meaſure, anſwering to our *Fathom*; ſee FATHOM.



BRACED, a Term in Heraldry, for the intermingling of three Chevronells, thus; Azure a Chief Or, and three Chevronells *braced* in the Baſe of the Eſcutcheon, by the Name of *Fitz-hugh*.

BRACES, are Ropes belonging to all the Yards of a Ship, except the Mizen, two to each Yard: There is a Pendant ſeized to the Yard-Arms, at whoſe other End there is a Block, through which the *Brace* is reeved. Their uſe is to *ſquare the Yard*; that is, to ſet it ſquare; *To brace the Yard*, that is, to bring it to either Side; *to traverſe the Yard*, that is, to ſet it any way overthwart; and *To right the Yard*, is, to bring it ſo as it ſhall ſtand at Right Angles with the Length of the Ship: All *Braces* come afterward on; the Main-*brace* comes to the Poop, the Main-topſail-*brace* to the Mizen-top, and thence to the Main Shrouds; the Fore and Fore-top-ſail *Braces* come down by the Main, and Main-top-ſail Stays, and ſo of the reſt: But the Mizen Bowling ſerves for a *Brace* to that Yard; and the Croſs-Jack *Braces* are brought forward to the Main Shrouds, whenever a Ship ſails cloſe by a Wind. See YARDS.

BRACHMANS, the Philoſophers, or Sages of the *Eaſt-Indies*. Theſe have been famous in all Antiquity for their Severity of Life. The *Greeks* gave 'em the Name of *Gymnoſophiſts*; tho *Clemens*, *Porphyry*, &c. make the *Brachmans* only a Branch of the *Gymnoſophiſts*; whom they divide into two Sects, the *Brachmans* and *Samanæi*. There are ſome in the *Indies* who ſtill bear the ſame Name, and live in the ſame manner as the Antients. The *Portugueze* call 'em *Brames*; we, uſually, *Bramines*. Some ſay, the *Brachmans* derive their Name from the Patriarch *Abraham*; whom, in their Language, they call *Brachme*: Others borrow it from their God *Brachma*; which ſome take to be the ſame with *Abraham*. Hence *Poſtel* gives 'em the Name of *Abrachmanes*. F. *Thomaſſin* fetches it from the *Hebrew*, *Barach*, *fugit*, *aufugit*, to fly or eſcape; becauſe the *Brachmans* retire into the Country, and live in Deſarts. The ſame Author gives us another Derivation of *Brachmans*, *viz.* from the *Hebrew Barach*, *benedicere*, *orare*, to bleſs, pray; this being their principal Occupation.

Porphyry obſerves, that the *Brachmans* ſucceeded into the Order, &c. by Right of Family; whereas the *Samanæans* were elected into it: The former therefore were all of the ſame Family, the latter of various. The *Brachmans* were perfectly at Liberty, paid no Taxes, nor were under the Command of any Perſon: They liv'd on Herbs, Pulſe and Fruits; abſtaining from all Animals, and thinking it an Impiety to touch 'em. The greateſt part of the Day and Night they ſpent, in ſinging Hymns in honour of the Deity; Praying and Faſting continually. The greateſt Part of 'em liv'd in Solitude, without marrying, or poſſeſſing any Eſtates. There was nothing they appear'd to wiſh ſo earneſtly for as Death; looking on Life as a burdenſome thing, and waiting with Impatience for the Separation of their Soul and Body. This is the Idea *Porphyry* gives of 'em. *Kircher* obſerves, that the *Brachmans* held the Opinion of *Pythagoras*, relating to the Soul and its Tranſmigration; and lead a Life in all reſpects agreeable to his: Or rather, 'twas from the *Brachmans* that *Pythagoras* borrow'd his Opinions, his manner of Living, &c. The modern *Brachmans* themſelves, fetch their Origin from the famous Philoſopher *Xaca*.

The Modern *Bramines* are the Prieſts or Divines of the Idolatrous *Indians*: Theſe are much converſant in Aſtrology and Aſtronomy. They have ſo great a Veneration for Cows, that they look on themſelves as bleſs'd, if they can but die with the Tail of one of 'em in their Hand. They ſometimes make Proceſſions of 400 Leagues, drawing after 'em whole Cities and Towns; feeding the People, when ſtopp'd at the Paſſages of Rivers overflow'd, in a manner which they take to be Miraculous; giving 'em every thing they deſire, without making any Proviſion. *A. Rogers* diſtinguiſhes ſix Sorts of 'em; the *Weiſtnorea*, the *Seivia*, the *Smaerta*, the *Schaerwaecka*, the *Paſenda*, and the *Tſectea*.

M. *Marſhall* obſerves, that whenever they write any thing, they put a Figure of one in the firſt Place; to ſhew, as they ſay, that they acknowledge but one God. They account the World the Body of God, the higheſt Heavens his Head, the Fire his Mouth, the Air his Breath, the Water his Seed, and the Earth his Legs and Feet. They maintain a pre-exiſtent State; and from that, account for the Tempers and Manners of Men in this: They alſo maintain the *Metempſychoſis*, but in a groſſer Senſe than *Pythagoras*; believing, that the Souls of all Men paſs into Reptiles, Inſects, and Vegetables, for their Puniſhment and Purgation. They compute the World to be about 3892850 Years old; and ſeem to have ſome obſcure Traditions of the *Moſaic* Paradiſe, *Adam*, *Eve*, and the Deluge. They have alſo a Notion of God's being incarnate, and living ſome time among Men. Their Religion conſiſts in leading a pure Life, waſhing away their Sins in the River *Ganges*, muttering over divers Prayers, and doing ſtrange and incredible Penances. They burn their Dead with much Ceremony; and ſtrewing his Aſhes on the Place where he firſt laid after his Death, they judge, from ſome Impreſſion they imagine made on it, into what Body his Soul was gone; *viz.* if the Impreſſion of the Foot of a Dog or Ox, &c. appear, they give out he is tranſmigrated into one of thoſe Animals; if there be no Impreſſion, he is then gone to the Starry Region. They have abundance of *Cabaliſtic* Notions; *v.g.* ſay they, the Numbers 28,35,2,7,—6,3,32,31,—34,29,8,1—4,5,30,33, written in the ſame Order in the Squares of a ſquare Figure, and your Enemy's Name written under it, while you wear it he can't hurt you, &c. See *Phil. Tranſ.* N° 268. See LIGATURE.

BRACHIÆUS, or *Brachiæi*, a Name given to two Muſcles of the Elbow, the one external, the other internal.

The *Brachiæus Externus* ariſes about the middle and poſterior Part of the *Humerus*. It joins its Fibres with the *Muſculus Longus* and *Brevis*; and being externally Tendinous, they, together, cover all the Elbow, and are inſerted into the *Olecranum*.

Brachiæus Internus, lies partly under the *Biceps*; it ariſes by a fleſhy Beginning from the middle and internal Part of the *Humerus*; and is inſerted into the upper and fore-Part of the *Cubitus*, by a very ſhort but ſtrong Tendon: It ſerves to bend the Arm.

BRACHYGRAPHY, from βραχὺς, *brevis*, ſhort, and γεάφω, *ſcribo*, to write; is the Art of Short-hand Writing.

BRADS, a kind of Nails uſed in Building, having no ſpreading Heads as other Nails have: Of theſe ſome are call'd Joiners *Brads*, and are for hard Wainſcot; others *Batten Brads* for ſoft Wainſcot; and ſome *Bill Brads* or *Quarter-Heads*, us'd when a Floor is laid in haſte, or for ſhallow Joiſts ſubject to warp. See NAILS.

BRAILS *in a Ship*, ſmall Ropes reev'd through Blocks, which are ſeized on either ſide the Ties, a little diſtance off upon the Yard, ſo that they come down before the Sails of a Ship, and are faſten'd at the Skirt of the Sail to the Crengles: Their uſe is, when the Sail is furl'd acroſs, to hale up its Bunt, that it may the more readily be taken up or let

fall: Theſe *Brails* belong only to the two Courſes and the Mizen-ſail. The Word is, *Hale up the Brails*; or, which is all one, *Brail up the Sails*; for the Meaning is, that the Sail ſhould be haled up, in order to be furl'd, or bound cloſe to the Yard.

BRAIN, in its general Senſe, that large, ſoft, whitiſh Maſs, inclos'd in the *Cranium* or Skull; wherein all the Organs of Senſe terminate, and the Soul is ſuppoſed principally to reſide. The *Brain* is encompaſs'd with two *Meninges*, or Membranes, call'd *Dura* and *Pia Mater*; ſee MENINGES. Its Figure is the ſame with that of the Bones that contain it; *viz.* roundiſh, oblong, and flat on the Sides: It is divided into three principal Parts, *viz.* the *Cerebrum*, or *Brain* ſtrictly ſo call'd, the *Cerebellum*, and the *Medulla oblongata*: The two latter of which ſee under their proper Heads, CEREBRUM and MEDULLA.

The *Cerebrum*, or *Brain*, properly ſo call'd, is that large globulous Part which fills the fore and upper Part of the Skull: It is divided by a Duplicature of the *Dura Mater*, call'd from its Figure *Falx*, into two equal Parts, call'd *Right* and *Left Hemiſpheres*: Tho the Figure of the *Brain* be pretty far from a Sphere. It is alſo ſeparated from the *Cerebellum* by another Duplicature of the ſame *Dura Mater*. The *Brain* conſiſts of two Kinds of Subſtance, the one Cineritious, or of an Aſh-colour, ſoft and moiſt; which being the Exterior, is call'd the *Cortex*, or Cortical Part of the *Brain*: the Thickneſs of this is about half an Inch, tho by reaſon of the *Sinus*'s and Sutures in the *Brain* it appears more. The other, or inner Subſtance, is white, more ſolid, as well as more dry than the Cortex, and is call'd the *Marrow* or *Medullary*, and ſometimes the *Fibrous* Part, in contra-diſtinction to the other, which is call'd the *Glandulous* Part.

The *Cortex*, according to *Malpighi*, is form'd from the minute Branches of the Carotid and Vertebral Arteries; which being woven together in the *Pia Mater*, ſend from each Point thereof, as from a Baſis, little Branches, which, being twiſted together into the Form of a Gland, incloſe the *Medulla*, ordinarily to the Thickneſs of half an Inch; but in ſome places make deeper *Sinus's* and Furrows within it. Theſe Branches make Circumvolutions like the Inteſtines; each of which may be reſolv'd into others, like, but leſs than the firſt: This Part, therefore, moſt other Authors take to be Glandulous; or, an Aſſemblage of innumerable minute Glands, contiguous to each other, deſtin'd for the Secretion of Animal Spirits from the Blood, brought hither by the Carotids, *&c.* Theſe Glandules, *Malpighi* obſerves, are of themſelves oval, but by the mutual Compreſſure become angular; they run waving within each other: Several of theſe connected, form others ſomewhat larger; and theſe again unite into others, from the Aggregate whereof are form'd Tubes, of which the outer Cortex is compos'd. Theſe little Glands conſiſt of the Branches of the Arteries which bring the Blood; of the Veins ariſing at their Extremities, which carry it back again; of Secretory Tubes ſecerning the Animal Spirits, and of Excretory Ducts for diſcharging 'em into the *Medulla*: Tho theſe are too minute to have ever been ſeen. See CORTEX.

The Inner, or Medullary Part of the *Brain*, conſiſts of infinitely fine Fibres, ariſing from the leaſt and minuteſt Branches or Filaments of the Glands of the Cortex; as is diſtinctly ſeen in the *Cerebellum*, tho ſcarce viſible in the *Cerebrum*: Theſe receive the Fluid ſeparated and ſubtiliz'd, from the Glands of the Cortex; and by means of the Nerves, which are no more than Productions of this Part, diſtribute it all over the Body. Authors, here, however, are divided; the generality, with *Malpighi*, making the Subſtance of the Cortex Glandulous, as above; others, with *Ruyſch* and *Leewenhoeck*, denying any thing like Glands in it; and allowing nothing but little *Cryptæ*, or Sinks, opening laterally to the Arteries; and thence receiving a Juice already ſecern'd from the Blood, and tranſmitting it to the *Medulla*. This Doctrine, it ſeems, is the Reſult of Anatomical Injections and Microſcopical Obſervations; but the other appearing the moſt conſiſtent with the Oeconomy of Nature in other things, is generally adher'd to.

The Cortex covers the whole Medullary Subſtance both of the *Brain* and *Cerebellum*; ſo as wherever the Cortical Subſtance ends, there the Medullary commences; and this in the Appendices, Ventricles, Interſtices, and Sinus's of the *Medulla*, as well as in the External Surface. Something Medullary, therefore, ariſing from every Point of the Cortex; at its firſt riſe, it muſt needs be exceedingly fine and ſlender: But being join'd with other Parts of the ſame kind, it gradually thickens, and at length becoming ſenſible, conſtitutes the *Medulla Cerebri*, the *Corpus Calloſum*, the *Medulla oblongata* and its Legs, the *Thalami* of the Optic Nerves, the *Medulla Cerebelli*, and its Production into the *Medulla oblongata*; which, with theſe Additions, forms the *Corpora Pyramidalia* and *Olivaria*, and is extended into the Spinal Marrow. And from the ſame Medullary Subſtance, both in the *Cranium*, and in the Caſe form'd by the Union of the *Vertebræ*, ariſe all the Nerves. See NERVES; ſee alſo CORPORA *Pyramidalia*.

Tho the primary *Fibrillæ*, or Filaments, when united, ſeem to form one compact Body or Maſs: yet *Boerhaave* ſhews, they are really diſtinct and ſeparate from each other; that thus ariſing from each Part of the Cortex, and tending as it were to the Centre of the Sphere, they firſt form the *Medulla*; that others, reflected hence and collected above, form the *Corpus Calloſum* and *Fornix*; and below, form the *Corpus Calloſum* and Legs of the *Medulla oblongata*; that the like *Fibrillæ* ariſing from the *Cerebellum*, join with 'em: the Reſult of which Juncture, is the *Medulla Spinalis*. And laſtly, that the like *Fibrillæ* ariſing from the Cortex, continued within the Cavities of the *Medulla*, join with 'em, and add freſh Conſiſtence thereto.

Hence we ſee the Reaſon of the Bulk, Figure, and Poſition of the Cortex of the *Brain*, as well as the Uſe and Neceſſity of the Cavities call'd *Ventricles of the Brain*: Of theſe Ventricles there are four, one in each Hemiſphere; ſeparated by a thin tranſparent Subſtance, running all along from the *Fornix* under the *Corpus Calloſum*, and diſtinguiſh'd by the Name of the *Septum Lucidum*: Theſe are call'd the *Lateral Ventricles*. The third is under the *Fornix*, and call'd *Rima*; the fourth between the *Cerebellum* and *Medulla oblongata*: To theſe are owing the *Callus's* or Knots found in various Parts of the *Brain*; as freſh Acceſſions of Fibres arrive from the ſeveral Places to the *Cerebellum*.

From the whole, it appears paſt doubt, that the Fibres of the *Brain* are exceedingly minute Canals; that they receive an Humor, infinitely the moſt ſubtile, fluid, moveable and ſolid of any in the whole Body; prepar'd and ſecreted by the artful Structure of the Cortex, driven into theſe Tubules by the force of the Heart, and from every Part hereof collected into the *Medulla oblongata*: And this is what ſome call *Animal Spirits*, others the *Nervous Juice*; the great Inſtrument of Senſation, muſcular Motion, *&c.* See SPIRITS, MUSCLE, SENSATION, *&c.*

In the Space between the two Hemiſpheres of the *Brain*, under the *Falx*, or rather under the *Longitudinal Sinus* of the *Dura Mater*, is a white Subſtance, of a Texture more compact than the reſt of the *Medulla* of the *Brain*; and for that reaſon call'd *Corpus Calloſum*, which runs along the whole Tract of the *Falx*, and receives from each ſide the Terminations of the *Medulla*, interſpers'd between the ſeveral Windings of the Cortex, and ſuppos'd by ſome to be a kind of Baſe or Support to it: The manner wherein this is form'd, is ſhewn above. We ſhall only add, that on occaſion hereof, ſome Authors, M. *Aſtruc* for Inſtance, inſtead of two Subſtances, *viz.* the *Cortex* and *Medulla*, divide the *Brain* into three; *viz.* the Uppermoſt, or *Cineritious*, which conſtitutes the *Cortex*; the Middle, which is whiter and denſer than the firſt, and therefore call'd the *Callous*; and the Loweſt or Inmoſt, which being intermix'd with *Radii* or *Striæ* of the White and Cineritious Subſtance, he calls the *Striated Part*: He adds, that the Fluid ſecreted in the Cortex, is convey'd into innumerable minute hollow Medullary *Fibrillæ*, of the ſame nature with the Callous Subſtance, and contiguous thereto. This middle, or callous Part, he obſerves, is not diſtinguiſh'd by any appearance of Fibres, but is uniform, homogeneous, elaſtick, and not unlike the Pith of the Eldar Tree: for which Reaſon, he thinks it a probable Conjecture, that it conſiſts of innumerable Cells, communicating with each other, divided by the Interpoſition of membranaceous, flexil, elaſtick, vibratile Parietes or Columns; which being flow'd over by the Spirits, and continually expos'd to the Shakings thereof, conſtitute the Fibres of the *Brain*.

Now the ſecreted Fluid flowing equally from each Point of the Cineritious Subſtance into the Callous, muſt equably fill and diſtend the Cells thereof: And leſt any Place ſhould want its ſhare, Proviſion is made for a ſtrict Communication; not only by the Apertures of the Cells into each other, but alſo by the Structure of the *Brain*; the upper Parts communicating with the under, by the *Septum Lucidum*; the Lateral with the Lateral, by the *Lata Commiſſura*; laſtly, the fore Parts by the hind Parts, by the *Crura*, *Brachia*, and Roots of the *Fornix*. Theſe Cells, he continues, being fill'd, the Spirits will proceed to the contiguous *Striæ* of the Medullary Subſtance; which ariſing from the Cortex, compoſe the Striated Part of the *Brain*: And theſe *Striæ* render'd narrower and ſlenderer, and paſſing without the Surface of the *Brain*, conſtitute the firſt Principles of the Nerves, *&c.*

The other Parts of the *Brain*, are the *Fornix*, a Production of the *Medulla*; which, at its Extremity next the *Cerebellum*, ſends out two Proceſſes or Legs, by whoſe Juncture is form'd a kind of Arch, thence call'd *Fornix*, which ſeparates the third Ventricle from the two upper ones: At the Bottom of the *Fornix* are two Holes, by which the third Ventricle has a Communication with the others; that before is call'd *Vulva*, and that behind *Anus*. The third Ventricle,

Ventricle, or *Rima*, which is in the *Medulla oblongata*, has likewiſe two Apertures; the one the Orifice of the *Infundibulum*, or Funnel, which is a Canal reaching to the *Glandula Pituitaria*: The other is a Duct, whereby the third Ventricle communicates with the fourth in the *Medulla oblongata*, under the *Cerebellum*. That fourth Ventricle is in the form of a Quill, whence it is ſometimes call'd *Calamus*.

In the Lateral Ventricles are found the *Plexus Choroides*, which is an Aſſemblage of minute Veins and Arteries; and four Eminences, the firſt the *Corpora Striata*, the others the *Thalami Nervorum Opticorum*.

At the Entrance of the Canal reaching from the third Ventricle to the fourth, is ſituated the *Pineal Gland*; ſo call'd from the Figure of a Pine-Apple, which it reſembles: This Gland, *Des Cartes* ſuppoſes to be the Seat of the Soul. Behind the Pineal Glands are four Eminences; two upper and greater, call'd *Nates*; and two ſmaller and lower, call'd *Teſtes*. See MEDULLA OBLONGATA, to which all theſe Parts properly belong; ſee alſo each Part under its proper Head, NATES, TESTES, THALAMI, PINEAL, PLEXUS, CALAMUS, *&c.*

The Veſſels of the *Brain*, are Nerves, Arteries, and Veins. By turning up the *Brain*, the Origin or Baſe of the Nerves proceeding from it, are diſtinctly ſeen: Theſe are in Number ten Pair, *viz.* the *Olfactory*, *Optic*, *Movers of the Eyes*, *Pathetic*; the fifth Pair, and ſixth Pair, call'd alſo the *Guſtatories*, the *Auditory Nerves*, *Par vagum*, and the ninth and tenth Pair.

The Blood-Veſſels of the *Brain*, are the two *Internal*, *Carotid*, and the *Vertebral Arteries*. The firſt piercing the *Dura Mater*, communicate with the *Cervicals*; and proceeding thence, ſend a Branch to the *Plexus Choroides*; till arriving at the *Pia Mater*, and making ſeveral Turns and Circumvolutions thereon, they terminate, at laſt, in the little Glands that conſtitute the Cortex. The Vertebral Arteries paſſing the *Dura Mater*, go along the under ſide of the *Medulla oblongata*; till giving Branches to the Spinal Arteries, they join in one Branch call'd the *Cervical Artery*, which communicates with the *Carotides* by two Branches, as before. The Veins of the *Brain* don't run along by the Sides of the Arteries, as in other Parts of the Body, but riſe from their Extremities in the Cortex; whence they diſcharge themſelves into the Sinus of the *Dura Mater*. See CAROTID, CERVICAL, *&c.*

For the great Bulk of the *Brain*, this Reaſon may be aſſign'd; *viz.* that on account of the exceeding Subtility and Fineneſs of the Animal Spirits, and the Slowneſs in which their Secretion muſt be effected; together with the great Quantity of 'em requir'd in diſcharging the animal Functions; there muſt of neceſſity be an infinite Number of Glands to ſeparate and prepare 'em. From the ſame Principle, we ſee why the *Brain* is much bigger in Men than in other Animals; and in other Animals, why, *cæteris paribus*, it is biggeſt in thoſe which diſcover the greateſt ſhare of Sagacity, *v. g.* in Monkeys, *&c.* A conſiderable Stock of Animal Spirits being to be employ'd in the Affairs of Cogitation, Memory, *&c.* Accordingly, Anatomiſts obſerve, that in Fools the *Brain* is ſmaller *(cæteris paribus)* than in Men of Senſe: This, ſome may account for, by ſuppoſing it the Cauſe of the Folly; a ſufficient Stock of Spirits being wanting to reaſon, *&c.* ſtrongly: And others from the Oeconomy of Nature, which proportion'd the Stock of Spirits to the Expence that would be requir'd.

From the Texture, Diſpoſition, and Tone of the Fibres of the *Brain*, Philoſophers ordinarily account for the Phænomena of *Senſation* and *Imagination*; which ſee. Dr. *Aſtruc* goes further, and from the Analogy between the Fibres of the *Brain*, and thoſe of Muſical Inſtruments, ſolves the Phænomena of Judgment and Reaſoning, and the Defects and Perfections of both. He lays it down as an Axiom, that every ſimple Idea is produc'd by the Oſcillation of one determinate Fibre; and every compound Idea from cotemporary Vibrations of ſeveral Fibres: That the greater or leſs degree of Evidence follows the greater or leſs Force wherewith the Fibre oſcillates. He hence proceeds to ſhew, that the Affirmation or Negation of any Propoſition, conſiſts in the equal or unequal Number of Vibrations, which the Moving Fibres, repreſenting the two Parts of the Propoſition, *viz.* the Subject, make in the ſame Time: *i. e.* If the Vibrations of the Fibre that gives the Idea of the Subject, and thoſe of the Fibre which gives the Idea of the Attribute of Propoſition, be *Iſochronal*, or make an equal Number of Vibrations in the ſame Time, we are determin'd to the Affirmation of the Propoſition; if *Eterocronical*, or their Vibrations be unequal, the Soul will be determin'd to a Negation, *&c.* Hence reſult Conſonant, Diſſonant, Harmonical Fibres, *&c.* The Evidence and Certainty of a Judgment, Affirmative or Negative, he deduces from the greater or leſs Conſonance or Diſſonance of the Fibres of the Subject and Attribute; and a right or wrong Judgment in the natural or depraved Tone of the Fibres of the *Brain*.

Hence he takes occaſion to obſerve, that the Fibres of the *Brain*, from their Analogy to thoſe of Muſical Inſtruments, may be perverted ſeveral ways; *viz.* by being render'd too dry or too moiſt, too ſtiff or too lax, *&c.* In a Phrenſy, he thinks the Fibres too dry, and too much diſtended by the Heat of the Blood, *&c.* In a Mania, theſe Fibres he thinks too rigid, as well as too dry and diſtended: In a Lethargy, they are too much ſoften'd by Phlegm; in Idiotiſm, or Fooliſhneſs, they are ſometimes too ſoft, and ſometimes too hard. Laſtly, He thinks that in a Melancholy, by the repeated ſucceſſive Vibrations which the attentive Meditation of a Thing induces, two or more Fibres, which of themſelves exhibit diſſimilar and unequal Ideas, are (the other Parts remaining ſound) ſenſibly brought to an *Iſochroniſm*: So as the Soul judging well in other reſpects, yet in this always makes a falſe Judgment.

The *Brain* does not appear abſolutely neceſſary to animal Life. We have ſeveral Inſtances in Authors, particularly in the *Philoſophical Tranſactions*, of Children brought forth alive, and ſurviving their Birth for ſome time, without any *Brain*: And we have Anatomical Inſtances, of Animals ſurviving the loſs of their *Brain*. Of the firſt kind, we have a Hiſtory from *Paris*, of a Child, deliver'd at Maturity; and living four Days, not only without a *Brain*, but even a *Head*: inſtead of both which, was a Maſs of Fleſh like Liver found. M. *Denys* gives us another Inſtance, of a Child born in 1673, which, ſetting aſide the Head, was well form'd, but without any *Brain*, *Cerebellum*, or *Medulla oblongata*: It had not any Cavity for a *Brain*, the Skull, if ſuch it might be call'd, being ſolid: Nor was this any way connected to the *Vertebræ*; ſo that the Marrow in the *Spine* had no Communication with the Head: The Optic Nerves terminated in the ſolid Bone. M. *le Duc* gives a third Inſtance, in 1695, where there was neither *Cerebrum*, *Cerebellum*, or *Medulla oblongata*, nor even *Spinal Marrow*; the Cavity that ſhould contain them being extremely ſhallow, and full of a black livid Subſtance, like congeal'd Blood: He adds, this was the third Subject of this kind he had met with. Dr. *Preſton*, indeed, tells us, that M. *du Verney* found here a Spinal Marrow, tho of much leſs Conſiſtence than ordinary; in which, however, he could diſtinguiſh all the four Tunics, and the two Subſtances; *viz.* the Cortical and Fibrous Part, as in the *Brain*. In a word, he takes this to be a *Brain* it ſelf, as much as that in the Skull; nay more ſo, being more neceſſary to Life, and more ſenſible, than either the *Brain* or *Cerebellum*: A Wound or Compreſſion in the firſt being always mortal; not ſo in the latter, as appears from the Experiments of M. *du Verney* and M. *Chirac*; the firſt of whom took out the *Brain* and *Cerebellum* of a Pigeon; notwithſtanding which, it liv'd, ſought Food, had Senſe, and perform'd the common Functions of Life: The latter took out the *Brain* from a Dog, yet it liv'd; upon taking out the *Cerebellum* it dy'd; but blowing into the Lungs, he obſerves, he could keep the Animal alive, an Hour after the Loſs of the *Cerebellum*. Upon ſeparating the *Medulla oblongata* of another Dog from the *Spinal Marrow*, and removing it with the *Brain* and *Cerebellum*, he kept the Dog alive by blowing into the Lungs. To which may be added, many Inſtances given by Mr. *Boyle*; not only of Animals living a long time after the Separation of the Head from the Body, but even of the Copulation and Impregnation of ſome Inſects under thoſe Circumſtances: Whence it appears, that the Spinal Marrow is ſufficient, on Occaſion, for the Buſineſs of Senſation, Motion, Secretion of Animal Spirits, *&c.*

BRAN, the Skins or Huſks of Corn ground, ſeparated from the *Farina*, or Flower, by a Sieve. Of *Wheat-Bran* it is the Starch-makers make their Starch; which is nothing elſe but the *Fæcula* remaining at the Bottom of the Veſſels, wherein the *Bran* has been ſteep'd in Water. See STARCH.

BRANCHES, in Architecture, the Arches of Gothic Vaults. Theſe Arches, traverſing from one Angle to another, Diagonal-wiſe; form a Croſs between the other Arches which make the Sides of the Square, whereof the Arches are Diagonals. See VAULT, OGIVE, *&c.*

BRANCHES *of a Bridle*, in the Manage, two crooked Pieces of Iron which ſupport the Mouth-bit, the Chain, and the Curb; and which are faſten'd, on one Side to the Headſtall, on the other to the Reins: ſerving to keep the Horſe's Head under Command. What way ſoever the *Branches* of the Bit incline, the Horſe's Mouth always goes to the contrary. The Duke of *Newcaſtle* is very particular on the Head of *Branches*; explaining their ſeveral Kinds, and their Effects, which are perfectly like thoſe of a *Lever*. The *Branch* is always to be accommodated to the Deſign, either of bringing in, or raiſing a Horſe's Head; and to the Degree: Accordingly, we have *ſtrong* and *hardy Branches*, *gentle Branches*, *rude Branches*, &c.

With

With regard to their Form and Structure, *Branches* are either ſtreight, in form of a Piſtol, for young Horſes, to form their Mouth; or, after the Conſtable of *France*'s Faſhion, for Horſes that already carry the Head well: Others are in form of a Gigot or Leg; others of a bent Knee; others in the *French* Faſhion, &c.

Note, Theſe are *Laws* in the Manage, 1. That the farther the *Branch* is from the Horſe's Neck, the more effect it will have. 2. That ſhort *Branches*, *cæteris paribus*, are ruder, and their Effects more ſudden than thoſe of others. 3. That the *Branch* be proportion'd to the Length of the Horſe's Neck.

BRANCH, or BOUGH, in Botany, a Jet or Arm of a Tree, emitted from its Trunk: *Quintiny* calls it, a Part of a Tree, which coming from the Trunk, helps to form the Head. The Word, according to *Salmaſius*, comes from the *Latin Branca*; in the lower *Latin*, they ſaid *Barga*: Others derive it from *Brachium*, an Arm; and others from *Branchiæ*, the Gills of Fiſhes.

The *Branches* of Trees are obſerv'd, almoſt conſtantly, to ſhoot from the Trunk at an Angle of 45 Degrees: The Reaſon is, that the whole Spreading being generally confin'd within an Angle of 90 Degrees, as the moſt becoming and uſeful Diſpoſition; that ſpace could not be well fill'd up any other way, than by forming all the Interſections which the Shoots and *Branches* make, with Angles of 45 Degrees only. A ſtrong Argument, that the Plaſtick Capacities of Matter, are under the Guidance of a wiſe Being.

Branches are diſtinguiſh'd into various Kinds: A *Wood Branch*, *Quintiny* ſays, is ſuch a one, as ſhooting out from a Cut of the preceding Year, is naturally of a conſiderable Thickneſs. A *Fruit Branch*, is that which ſhoots out of a moderate Length and Breadth from the ſame Cut: *Fruit Branches*, he adds, have large Eyes, and are very near each other. A *Branch half Wood*, is that, which being too ſlender for a *Wood Branch*, and too groſs for a *Fruit Branch*, is cut, at the Length of two or three Inches, to make it produce a better Jet, whether Wood or Fruit. Spurious *Wood Branches*, are ſuch as come contrary to the Order of Nature; or otherwiſe than from Cuts of the preceeding Year; or which coming on ſuch Cuts, are big in the Place where they ſhould be ſmall. To underſtand this Order of Nature, it muſt be obſerved, 1. That *Branches* ſhould never come, except on thoſe of the laſt Cut; ſuch, therefore, as ſhoot from other Parts are ſpurious. 2. That the Order of the new *Branches* is, if there be more than one, that the extreme *Branch* is thicker and longer than that immediately under it; and this bigger and longer, again, than the third, &c. Hence, if any be big where it ſhould be ſmall, it is call'd *Spurious*. There are, however, ſome Exceptions: In Trees that are vigorous, and yet bear a handſome Figure, there can't well be too many *Fruit Branches*; provided they make no Confuſion; but for *Wood Branches*, there ſhould not ordinarily be above one ſuffer'd to grow, of the ſeveral which ſhoot from each Cut of the preceeding Year. See PRUNING.

BRANCHIA, a Name given by the *Greek* Naturaliſts to the Gills of Fiſhes; which are Parts compos'd of Cartilages and Membranes, in form of a Leaf, and ſerving inſtead of Lungs to reſpire by. *Galen* obſerves, they are full of little Foramina, big enough to admit Air and Vapours, but too fine to give Paſſage to Water. *Pliny* held, that Fiſhes reſpir'd by their Gills; but obſerves that *Ariſtotle* was of another Opinion: To whom we may add Dr. *Needham*. The Word *Branchia*, comes from the *Greek* βραγχια, which ſignify'd the ſame thing.

BRANDY, a ſpirituous, inflammable Liquor, drawn from Wine, and other Liquors by Diſtillation; ordinarily *in Balneo Mariæ*; ſometimes alſo by the Flame of a Fire. See DISTILLATION. The Veſſels uſed herein, are uſually Copper: and ſome Diſtillers, to cool the Liquor more readily, make the Neck of the Matras, which is very long, and winding like a Serpent, paſs through a Veſſel of cold Water.

To diſtil BRANDY, they fill the Cucurbit half full of the Liquor from which it is to be drawn; and raiſe it, with a little Fire, till about one ſixth Part be diſtill'd; or till they perceive that what falls into the Receiver is not at all inflammable. The Liquor thus diſtill'd the firſt time, is call'd *Spirit of Wine* or *Brandy*; which Spirit, purify'd by another, or ſeveral more Diſtillations, is what we call *Spirit of Wine rectify'd*. The ſecond Diſtillation is made in *Balneo Mariæ*, and in a Glaſs Cucurbit; and the Liquor put therein, diſtill'd to about one half the Quantity: Which half is further rectify'd, as long as the Operator thinks fit. To abridge theſe ſeveral Diſtillations, which are long and troubleſome, they have invented a Chymical Inſtrument; whereby the Rectification of Spirit of Wine is perform'd at one ſingle Diſtillation: The Deſcription and Figure of which Inſtrument may be ſeen in *Glaſier's Chymiſtry*.

To try the Goodneſs of Rectify'd Spirit of Wine, it muſt be lighted into a Blaze: if then it conſumes wholly, without leaving any Impurity behind; or, which is ſurer ſtill; if after putting a little Gun-pouder in the Bottom of the Spirit, the Gunpouder take fire when the Spirit is conſum'd, the Liquor is good. Thoſe who deal in *Brandy*, (we ſpeak only of that made with Wine) chuſe it white, clear, of a good Taſte, and ſuch as will bear the Teſt or Proof; *i.e.* ſuch as in pouring into a Glaſs, forms, a-top of it, a little white Lather, which, as it diminiſhes, makes a Circle, call'd by the *French Brandy* Merchants, the *Chapelet*, or *Bead-Roll*: there being no *Brandy* but that well defleg-mated, and wherein there is no Humidity left, wherein the *Chapelet* is entirely form'd.

The chief uſe of *Brandy*, is as a Drink; eſpecially in the cold Northern Countries; among the *Negros* in *Guinea*, who ſell one another for a few Bottles of *Brandy*; and among the Savages of *Canada*, and other Parts of *N. America*, who are infinitely fond of it. It is of ſome uſe too in Medicine; being ſaid to ſtrengthen the Nerves: And in Dying, when rais'd into rectify'd Spirit of Wine; being accounted one of the Dyers Non-colouring Drugs.

Beſides the *Brandy* made of Wine; there is other made of Malt-Liquors, of Cyder, Syrop, Sugar and Moloſſes, of Fruits, Berries, &c.

The greateſt Part of the *Brandies* in uſe, and thoſe too, the beſt, are prepared in *France*: Of the *French Brandies*, thoſe of *Nantes* and *Poitou* are the moſt eſteem'd; as being of a better Taſte, finer and ſtronger, and enduring the Teſt of the *Chapelet* longer than any of the reſt: Thoſe of *Anjou*, *Touraine* and *Orleans*, claim the ſecond Place.

Brandy makes a very conſiderable Article in the *French* Commerce: The Number of Foreign Veſſels, wherewith all their Ports are full in Time of Peace, and which are loaden, in good meaſure, with *Brandy*, is incredible. *Nantes* alone furniſhes 174000 Gallons *per Annum*, and *Bourdeaux* above twice as much; the other Places in proportion. The *Dutch* take off their Hands almoſt as much as all the reſt of *Europe*. *Poland* and *Sweden* are the only Nations which are not their Cuſtomers; theſe preferring the *Brandies* of their own Countries, made of Grains, to the Wine-*Brandies* of *France*.

Of *Brandy*, both plain and rectify'd, are prepared various Kinds of ſtrong Liquors, with the Addition of other Ingredients, Sugars, Spices, Flowers, Fruits, &c. which are afterwards clarify'd, by paſſing 'em thro a ſtraining Bag, or filtering 'em thro Brown Paper. See CLARIFICATION. A great part of theſe are brought from *Montpellier*; where they are ſuppos'd to be better prepar'd than any where elſe. See WATER.

BRASIL, or BRAZIL, a Wood ſo call'd, becauſe firſt brought from *Braſil*, a Province of *S. America*: It is denominated variouſly, according to the Places whence it is brought. Thus we have *Braſil* of *Fernambouc*, *Braſil* of *Japon*, of *Lamon*, of St. *Martha*; and laſtly *Braſillet*, brought from the *Antilles*.

The *Braſil-Tree* ordinarily grows in dry barren Places, and in the middle of Rocks; it is very thick and large, uſually crooked and knotty: Its Flowers, which are of a beautiful red, exhale a very agreeable Smell, which ſtrengthens the Brain. Tho the Tree be very thick; it is cover'd with ſo thick a Bark, that when the Savages have taken it off the Wood, a Trunk, which before was the Thickneſs of a Man, is ſcarce left equal to that of his Leg.

Braſil Wood is very heavy, dry, crackles much in the Fire, and ſcarce raiſes any Smoak, by reaſon of its extreme Dryneſs. None of the ſeveral Kinds have any Pith, except that of *Japon*: that of *Fernambouc* is eſteem'd the beſt. It muſt be choſen in thick Pieces, cloſe, ſound, without any Bark; and ſuch as, upon ſplitting, of pale becomes reddiſh; and when chew'd has a ſugar Taſte. It is much us'd in Turned Works, and takes a good Poliſh; but its chief uſe is in Dying, where it ſerves for a red Colour: 'Tis a ſpurious Colour, however, it gives; and eaſily evaporates and fades: Nor is the *Wood* to be us'd without Allum and Tartar. From the *Braſil* of *Fernambouc*, is drawn a kind of *Carmine*, by means of Acids. There is alſo a liquid *Lacca* made of it, for Miniature. See RED.

BRASS, *Orichalcum*; or, as the *French* call it, *Yellow Copper*; a factitious Metal, compos'd of Copper, and *Lapis Calaminaris*. The Method of Preparation is as follows. The *Lapis* being calcin'd, and ground fine as Flour, is mix'd with ground Charcoal; and incorporated, by means of Water, into a Maſs: Thus prepar'd, about ſeven Pounds of the *Calamine* is put into a Melting-Pot of about a Gallon; and over it, about five Pounds of *Copper*; which is let down into a Wind-Furnace eight Foot deep, remaining there about 11 Hours; in which Time 'tis converted into *Braſs*. After melting, it is caſt into Plates, or Lumps: 45 Pounds of crude *Calamine*, produces 30 Pounds burnt, or calcin'd. They ſometimes uſe *Braſs-ſhruff* inſtead of

Copper;

Copper; but that is not always to be procur'd in Quantities ſufficient, being no more than a Collection of Pieces of old *Braſs*. Pure *Braſs* is not malleable unleſs hot; when cold it breaks: After melting twice, 'tis no longer in a Condition to bear the Hammer at all: to work it, they put 7 Pounds of Lead to 100 of *Braſs*; which renders it more ſoft and pliable. *Braſs* is us'd in the caſting of Guns: The beſt Proportion for Gun-Metal, 'tis ſaid, is for 11 or 12 thouſand Weight of Metal, to uſe ten thouſand Pound of Copper, nine hundred Pounds of Tin, and ſix hundred Pound of *Braſs*. See COPPER.

The beſt *Braſs* Guns are made of malleable Metal, not of pure Copper and *Calamine* alone; but it is neceſſary to add coarſer Metals, to make it run cloſe and ſounder, ſuch as Lead and Pot-Metal. Bell-Metal is a Compoſition of *Braſs* and Tin: and Pot-Metal of *Braſs* and Lead; 20 Pound of Lead, is uſually put into 100 Pound of Pot-Metal. The Manufacture of *Braſs*, was kept a Secret in *Germany* for many Ages.

BRASS *of Corinth*, has been famous in all Antiquity: *L. Mummius* having ſack'd and burnt that City, 146 Years before our Saviour's Time, 'tis ſaid this precious Metal was form'd from the immenſe Quantities of Gold, Silver and Copper wherewith *Corinth* abounded, thus melted and run together by the Violence of the Conflagration. The Statues, Veſſels, *&c.* form'd of this Metal were ineſtimable. Thoſe who ſpeak of it accurately, diſtinguiſh it into three Kinds; in the firſt, Gold is the prevailing Metal, in the ſecond Silver; in the third, Gold, Silver, and Copper, are equally blended.

BRAZING, the Soldering or joining of two Pieces of Iron by means of thin Plates of *Braſs*, melted between the two Pieces to be join'd. If the Work be very fine, as when the two Leaves of broken Saws are to be join'd, it is cover'd with beaten *Borax*, moiſten'd with Water that it may incorporate with the *Braſs-duſt* which is here added; and the Piece is expos'd to the Fire without touching the Coals, till the *Braſs* be obſerv'd to run. Laſtly, to *braze* with a ſtill greater degree of Delicacy; they uſe a Solder made of *Braſs*, with a tenth Part of *Tin*; or another, one third *Braſs*, and two thirds *Silver*; or *Borax* and *Roſin*: Obſerving, in all theſe manners of *brazing*, that the Pieces be join'd cloſe throughout; the *Solder* only holding in thoſe Places that touch. See SOLDERING.

The Method of *brazing* among *Farriers*, &c. is by beating the two Pieces, when hot, over one another.

BREACH, in Fortification, is the Ruins made in any Part of the Works of a Town, *&c.* either by playing Cannon, or ſpringing Mines; in order to ſtorm the Place, or take it by aſſault. They ſay, *Make good the Breach*, *Fortify the Breach*, *Make a Lodgment on the Breach*, *Clear the Breach*, &c.

BREAK-BULK, is to begin to take the Ship's Lading or Cargo out of the Hold.

BREAK-GROUND, in Fortification, ſignifies to begin Works for carrying on a Siege of a Town or Fort, *&c.*

BREAST, *Mamma*, in Anatomy, a prominent fleſhy Part of the human Body, on the Outſide of the *Thorax*; whoſe uſe is to ſeparate the Milk. The *Breaſts* are much more perfect, more conſpicuous, and of more uſe in Women than in Men: Their Magnitude is various; always biggeſt in Times of Geſtation and Lactation. Their Figure repreſents a large Section of a Globe, having in the middle a Prominence terminating in a blunt Point, call'd the *Papilla*, or Nipple; in the Extremity of which are Perforations, to which reach Lacteal Tubes: About the Nipple is a pale browniſh Circle, call'd the *Areola*.

The internal Subſtance of the BREASTS, is compos'd of a great Number of Glands, of various Sizes, and an oval Figure, intermix'd with Globules and Veſſels of Fat. Their excretory Ducts, as they approach the Nipple, join and unite together, till at laſt they form ſeven, eight, or more ſmall Pipes, called *Tubuli Lactiferi*, which have ſeveral croſs Canals, by which they communicate with one another, to obviate the Inconveniencies that might accrue from the caſual Obſtruction of one or more of 'em. Theſe Tubes are not every where of equal Capacity, but in ſome Places more, in others leſs dilated; ſo as to form Cells, which ſeem contrived to hinder the ſpontaneous Efflux, and to create a Neceſſity of Sucking to fetch out the Contents. The *Breaſts* have Arteries and Veins from the Subclavian and Intercoſtal; and Nerves from the Vertebral Pairs, and from the ſixth Pair of the Brain: Of the Concurrence of theſe *Tubuli* or Pipes, is the Subſtance of the *Papilla* in great meaſure form'd; among which is interſpers'd a glandulous Subſtance, ſerving to keep 'em from preſſing too cloſe on each other; and with it are intermix'd abundance of Fibres drawn from the external Teguments of the *Papillæ*; by means whereof, the Lacteal Tubes are conſtring'd, and the Motion of the Milk modify'd. Beſides theſe Veſſels, are abundance of fatty Globules, called *Ductus Adepoſi*, which ſome would have only to fill up the Interſtices of the Glands: but Dr. *Drake*, after *Malpighi*, thinks they contribute to the Compoſition of the Milk; which ſeems nothing elſe but Water and Oil artfully united. See MILK. In Virgins the Tubes which compoſe the Glands of the *Breaſts*, like a Sphincter-Muſcle, contract ſo cloſely, that no part of the Blood can enter them: But when the Womb grows big with a *Fœtus*, and compreſſes the deſcending Trunk of the great Artery; the Blood flows in a greater Quantity, and with a greater Force thro the Arteries of the *Breaſts*, and forces a Paſſage into their Glands; which being at firſt narrow, admits only of a thin Water: but growing wider by degrees, as the Womb grows bigger, the Glands receive a thicker Serum; and after Birth they run with a thick Milk; becauſe that Blood which before flow'd to the *Fœtus*, and for three or four Days afterwards by the *Uterus*, beginning then to ſtop, does more dilate the Mammillary Glands. In Men, the *Breaſts* are very ſmall, and chiefly for Ornament; tho Phyſical Hiſtories give Inſtances of thoſe who have had Milk in them.

BREATHING. See RESPIRATION.

BREEZE, a ſhifting Wind, blowing from the Sea and Land alternately for ſome certain Hours of the Day or Night; only ſenſible near the Coaſt. The *Sea-Breeze*, *Dampier* obſerves, commonly riſes in the Morning about nine, proceeding ſlowly in a fine ſmall black Curl on the Water towards the Shore: It increaſes gradually till 12, and dies about five. Upon its ceaſing the *Land-Breeze* commences, which increaſes till 12; and is ſucceeded in the Morning by the *Sea-Breeze* again. See WIND.

BREGMA, the ſame as *Parietalia Oſſa*; ſee CRANIUM.

BREST, in Architecture, a Term us'd by ſome, for that Member of a Column, otherwiſe called the *Thorus* or *Tore*. See TORUS.

BREST-SUMMERS, in Timber-Building; are Pieces in the outward Parts of the Building, and in the middle Floors, (not in Garrets or Ground-Floors) into which the Girders are fram'd. In the inner Parts of a Building, the Pieces into which the Girders are fram'd, are call'd *Summers*.

BREVE, in Grammar. Syllables are diſtinguiſh'd into *Longs* and *Breves*, according as they are pronounc'd quicker or more ſlow: The Time of a *Breve* is half that of a *Long*; or, as the Grammarians expreſs it, a *Breve* is one Time, and a *Long* two. See ACCENT.

BREVE, in Muſick, is a Note or Character of Time, form'd like a Square, without any Tail; and equivalent to two *Meaſures*, or *Minims*. See CHARACTERS *of Muſick*.

BREVE VAS. See VAS BREVE.

BREVIARY, an Office perform'd daily in the *Roman* Church, and which the Eccleſiaſticks are to repeat at home, when they can't attend in Publick. The *Breviary* of *Rome* is general, and may be us'd in every Place: but on the Model of this have been built various others, peculiarly appropriated to each Dioceſe, and each Order of Religious.

The *Breviary* is compos'd of Matines, Lauds, prime, third, ſixth, ninth Veſpers, and the *Completa* or *Poſt Communio*; that is, of ſeven different Hours: on account of that ſaying of *David*, *Septies in Die laudem dixi tibi*. The Obligation of reciting the *Breviary* every Day, which was at firſt univerſal, by degrees was reduc'd to the Clergy and Beneficiaries alone, who are bound to do it on Pain of mortal Sin, and of refunding their Revenues, in proportion as they are delinquent herein. In the XIVth Century, there was a particular Reſerve to Biſhops, to paſs on occaſion, three Days without rehearſing the *Breviary*.

The Inſtitution of the *Breviary* not being very antient, the Lives of the Saints were inſerted in it, agreeable to the Opinions of the Times; *i. e.* full of ridiculous ill-atteſted Facts; which gave a handle to ſeveral Reformations thereof by ſeveral of their Councils, particularly thoſe of *Trent* and *Cologne*; ſeveral Popes, as *Pius* V. *Clement* VIII. and *Urban* VIII. as alſo by ſeveral of their Cardinals and Biſhops, each of whom lopp'd off ſome of the Extravagancies, and brought it nearer the Simplicity of the Primitive Offices; as owning that in the antient Church there was nothing read but from the Scriptures. Cardinal *Quignon* carry'd the Reformation the fartheſt; leaving out the Office of the Virgin, the Verſes, Reſponſes, and a great part of the Lives of the Saints.

The *Breviaries* that now obtain, are almoſt infinite: Their difference conſiſts principally in Form and Diſpoſition, and the Number and Order of Pſalms, Hymns, Paternoſters, Ave Maries, Credo's, Magnificats, Cantemus's, Benedictus's, Canticamus's, Nunc Dimittis's, Miſereres, Allelujah's, Gloria Patri's, *&c.*

The moſt Eminent, beſides the *Roman Breviaries*, are, that of the *Benedictines*, that of the *Bernardines*, of the *Chartreux*, of the *Præmonſtrantes*, of the *Dominicans*, the *Carmelites*, the *Franciſcans*, and *Jeſuits*; that of *Cluni*, of the Church of *Lyons*, the Church of *Milan*, and the *Mozarabic Breviary*, us'd in *Spain*. But in effect, there is ſcarce a Church in the Communion of *Rome*, in *France*, *Flanders*,

Spain, *Germany*, &c. but what has ſomething particular in the Form and Manner of its *Breviary*: The Differences are generally inconſiderable.

The *Breviary* of the *Greeks*, which they call ὡρολογιον, *Horologium*, Dial, is the ſame, to a Trifle, in almoſt all the Churches and Monaſteries that follow the *Greek* Rites. The *Greeks* divide the Pſalter into 20 Parts, καθισματα; which are a kind of Reſts, Pauſes, or Stations: and each Pauſe is again ſubdivided into three Parts. In the general, the *Greek Breviary* conſiſts of two Parts; the one containing the Office for the Evening, call'd μεσονυκτιον; the other that for the Morning, conſiſting of Matines, Lauds, firſt, third, ſixth, ninth Veſpers, and *Completa*.

The *Breviary* of the *Maronites*, has ſome more conſiderable Differences. Among the People who ſpeak the *Sclavonic* Language, or any of its Dialects, the *Breviary* is rehears'd in the vulgar Tongue; as among the *Maronites* in *Syriac*, among the *Armenians* in *Armenian*. Thoſe who rehearſe the *Breviary* in the *Sclavonic*, are divided as to the Rite: ſome following the *Roman* or *Latin* Rite, as the Inhabitants of *Dalmatia*, and the neighbouring Coaſts: Thoſe who live farther within the Continent, as in *Hungary*, *Boſnia*, *Sclavonia*, &c. and in *Poland*, *Lithuania*, and *Muſcovy*, follow the *Greek* Rite. The *Breviaries* of the *Cophtæ* and *Abyſſinians*, are much alike.

Menage derives the Word *Breviary* from this; that the antient Monks, in their Journeys, &c. had little Books, wherein were collected the Pſalms, Leſſons, &c. read in the Choir out of large Volumes: And F. *Mabillon* tells us, he has ſeen two ſuch Books in the Archives of the *Bernardines*; they were not above three Fingers broad: he obſerves, their Letter was exceedingly ſmall, and conſiſted moſtly in Abbreviations; expreſſing a whole Period in a few Syllables: Whence they had a good Title to the Appellation of *Breviaries*, q. d. *Abridgments*.

BREVIATOR, an Officer under the Eaſtern Empire; whoſe Office was to write and tranſcribe *Briefs*. *Calvin* obſerves, that at *Rome* thoſe are ſtill call'd *Breviators*, who dictate and write the Pope's *Briefs*.

BREVIS *Cubiti*, is a Muſcle that riſes from the ſuperior and poſterior Part of the *Humerus*; which joining its fleſhy Fibres with the *Brachiæus Externus* and *Longus*, and becoming Tendinous, covers the Elbow, and is inſerted into the *Olecranium*, to extend the Arm.

BREVIS *Palmaris*, lies under the *Aponeuroſis* of the *Palmaris*, and ariſes from the *Bone* of the *Metacarpus*, that ſuſtains the little Finger; and from that Bone, and that of the *Carpus* which lies above the reſt, it goes tranſverſly, and is inſerted into the eighth Bone of the *Carpus*. It helps in making the Palm of the Hand concave.

BREVIS *Radii*, comes from the External and Upper-part of the *Ulna*; and paſſing round the *Radius*, is inſerted into its upper and fore-part, below the Tendon of the *Biceps*. This, with the *Longus Radii*, are call'd the *Supinatores*: their Office being to turn the Palm upwards.

BREWING, the Preparation of Ale, or Beer from Malt. The Proceſs is as follows: A Quantity of Water being boil'd, is left to cool, till the height of the Steam be over; when, ſo much is pour'd to a Quantity of Malt in the Maſhing-Tub, as makes it of a Conſiſtence ſtiff enough to be juſt well row'd up: After ſtanding thus ¼ of an Hour, a ſecond Quantity of the Water is added, and row'd up as before. Laſtly, the full Quantity of Water is added; and that in proportion as the Liquor is intended to be ſtrong or weak: This part of the Operation is call'd *Maſhing*. The whole ſtands two or three Hours, more or leſs, according to the Strength of the Wort, or the Difference of Weather, and is then drawn off into a Receiver; and the Maſhing repeated for a ſecond Wort, in the ſame manner as for the firſt; only the Water to be cooler than before, and to ſtand only half the Time. The two Worts then mix'd, the intended Quantity of Hops are added, and the Liquor cloſe cover'd up, gently boil'd in a Copper the ſpace of an Hour or two; then let into the Receiver, and the Hops ſtrain'd from it into the Coolers. When cool, the Barm or Yeſt is apply'd; and it is left to work, or ferment, till it be fit to tun up.

For Small Beer there is a third Maſhing, with the Water near cold, and not left to ſtand above ¼ of an Hour, to be hopp'd and boil'd at Diſcretion. For Double Beer or Ale, the two Liquors reſulting from the two firſt Maſhings, muſt be us'd as Liquor for a third Maſhing of freſh Malt for Fine Ale. The Liquor thus *brew'd*, is further prepar'd with Moloſſes.

For Yeſt, ſome uſe Caſtle Soap, others Flour and Eggs, others an eſſential Oil of Barley; others a Quinteſſence of Malt, others of Wine, and others the *Sal Panariſtus*.

For the Preparation of the Matter, and the Properties of the Liquors thus *brew'd*, ſee MALT and MALT-LIQUOR; ſee alſo BEER and ALE. For the *brewing* of Malt Spirits, ſee DISTILLATION.

BRIBERY, in Law, a great Miſpriſion, when any Perſon in Judicial Place, takes any Fee, Penſion, Gift, Reward, or Brocage for doing his Office, but of the King only.

BRICK, a fat reddiſh Earth, form'd into long Squares, 4 Inches in Breadth, and 8 or 9 in Length, by means of a wooden Mould; and then bak'd or burnt in a Kiln, to ſerve for the Uſes of Building.

Bricks appear to be of a very antient ſtanding; the Tower of *Babel* being built thereof, as appears both from Sacred Hiſtory, and from the Remains thereof ſtill in being. Under the firſt Kings of *Rome*, they built with maſſive ſquar'd Stones, which they learnt from the *Tuſcans*: Towards the latter Time of the Republick, they began to uſe *Brick*; borrowing the Practice from the *Greeks*: And the greateſt, as well as the moſt durable Buildings of the ſucceeding Emperors, as the *Pantheon*, &c. were built therewith. In the Time of *Gallian*, the Buildings were compos'd of an Order of *Brick* and an Order of *Toſus*, a ſoft gritty Stone, alternately. After him, they laid aſide the uſe of *Bricks*, and reſumed Flints. In the *Eaſt* they bak'd their *Bricks* in the Sun: The *Romans* us'd 'em crude; only leaving 'em to dry in the Air a long ſpace of Time, *viz.* four or five Years. The *Bricks* us'd by the *Greeks* were principally of three Kinds; the firſt call'd διπηχυν, *i. e.* of two Palms: the ſecond τετραπηχυν, of four Palms; and the third πεντεπηχυν, of five Palms. They had other *Bricks*, juſt half each of theſe, which they join'd together to render their Works more ſolid, as well as more agreeable to the Eye, by the diverſity of Figures and Sizes of the *Bricks*.

The *Bricks* among us are various; acquiring various Names, according to their various Forms, Dimenſions, Uſes, Method of making, Place, &c. The principal are, 1. *Compaſs Bricks*, of a circular Form, us'd in ſteyning of Walls. 2. *Concave*, or *hollow Bricks*, on one ſide flat, like a common *Brick*, on the other hollow'd: They are us'd to convey Water. 3. *Cegging Bricks*, are us'd to make the indented Work, under the Coping of Walls built with great *Bricks*. 4. *Coping Bricks*, which are form'd on purpoſe for coping of Walls. 5. *Dutch*, or *Flemiſh Bricks*, us'd to pave Yards and Stables, and for Soapboilers Fatts, and Ciſterns. 6. *Clinkers*, are ſuch *Bricks* as are glazed by the heat of the Fire in making. 7. *Feather-edg'd Bricks*, are like the common *Statute Bricks*, only thinner on one Edge than on the other, and are us'd to pen up the Brick Pannels in Timber Buildings. 8. *Samel* or *Sandal Bricks*, are ſuch as lie outmoſt in a Kiln or Clamp, and conſequently are ſoft and uſeleſs; as not being thoroughly burnt. 9. *Great Bricks*, are 12 Inches long, 6 broad, and 3 thick: The Weight of one is about 15 Pounds; ſo that 100 will weigh 1500, and 1000 of them 15000 Pounds Weight: Their uſe is to build Fence-Walls; together with, 10. *Pilaſter*, or *Buttreſs Bricks*, which are of the ſame Dimenſions with them, only they have a Notch at one End, of half the Breadth of the *Brick*: Their uſe is to bind the Work at the Pilaſter of Fence-Walls, which are built of *Great Bricks*. 11. *Paving Bricks*, or *Tiles*, are of ſeveral Sizes in ſeveral Countys and Places. 12. *Place Bricks*, are ſuch as are made in a Place prepared on purpoſe for them, near the Building they are to be uſed in. 13. *Statute*, or *ſmall Common Bricks*; theſe ought to be 9 Inches long, 4½ broad, and 2½ thick; 100 of theſe uſually weigh about 550 Pounds, and 1000, 5500 Pounds; and about 407 in number, are a Tonn Weight: Theſe are commonly us'd in paving Cellars, Hearths, Sinks, &c. 30 or 32, if true meaſure, will pave a Yard Square, and 330 will pave a Square of 100 Foot, laid flat; but if laid Edg-ways, there muſt be double the Number.

Barbaro, in his Comment on *Vitruvius*, recommends another Form of *Bricks*, *viz.* Triangular ones, every Side a Foot long; and ſome an Inch and half thick: Theſe, he obſerves, wou'd have many Conveniencies above the reſt; as being more commodious in the Management, of leſs Expence, and of fairer Shew; adding much Beauty and Strength to the Mural Angles, where they fall gracefully into an indented Work. And Sir *H. Wotton* wonders they have never been taken into uſe; being recommended by ſo great an Authority.

The Earth whereof *Bricks* are made, muſt not be ſandy, which will make 'em both heavy and brittle; nor muſt it be too fat, which will make 'em crack in drying. They ſhould be made either in the Spring or Autumnal Seaſon: when made, they muſt be ſhelter'd from the Sun if it be too hot, and yet be expos'd to the Air to dry. If they be made in froſty Weather, they are to be cover'd with Sand; if in hot Weather, with wet Straw. When they are well dried, they are burnt.

Bricks are burnt, either in a *Kiln* or *Clamp*: Thoſe in the firſt, being ſet in it, and the Kiln cover'd with Pieces of Bricks, they put in Wood, to dry them with a gentle Fire; and this they continue till they are pretty dry, which

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is known, by the Smoak's turning from a whitiſh dark, to a black tranſparent Smoak. They then ceaſe to put in Wood, and proceed to burn with Buſh, Furze, Straw, Heath, Brake, or Fern Faggots; having firſt damm'd up the Mouth of the Kiln with pieces of *Bricks* pil'd upon one another, and clos'd with wet *Brick-Earth*, inſtead of Mortar: They then continue to put in more Faggots, till the Kiln and its Arches look white, and the Fire appear a-top of the Kiln. Then they ſlacken the Fire for an Hour, and let all cool by degrees: 48 Hours burning is generally ſufficient. About *London*, they burn *Bricks* in Clamps, built of the *Bricks* themſelves, after the manner of Arches in Kilns; with a Vacancy between each Brick's Breadth, for the Fire to play thro; but with this Difference, that inſtead of arching, they truſs or ſpan it over, by making the *Bricks* project one over another, on both ſides the Place, for the Wood and Coals to lie in, till they meet, and are bounded by the *Bricks* at the Top, which cloſe all up. The Place for the Fuel is carry'd up ſtraight on both ſides, till about three Foot high; then they fill it almoſt with Wood, and over that lay a covering of Sea-Coal; then over-ſpan the Arch: But they ſtrew Sea-Coal alſo over the Clamp, betwixt all the Rows of *Bricks*; then they fire the Wood, and that fires the Coal: and when all is burnt out, they conclude the *Bricks* burnt enough.

Goldman obſerves, that *Bricks* will have double the Strength, if, after one burning, they be ſteep'd in Water, and burnt afreſh. If the Earth be too fat, it muſt be temper'd with Sand; and that trod out again, firſt by Cattle, then Men. *Bricks* made of common Earth, melt, nay vitrify, by too much Heat: For which Reaſon, the Kilns are made of Stones that will themſelves calcine, that the Vehemence of the Fire may be broken by 'em: Beſides which, they uſually place other *Bricks*, made of an argillous Earth which would melt, next the Fire.

Oil of BRICKS, is an Oil of Olives, imbib'd by the Subſtance of *Bricks*, and afterwards diſtill'd from it. The Pieces of *Brick* being heated red hot in live Coals, are extinguiſh'd in an Earth half ſaturated with Oil of Olives: Being then ſeparated and pounded groſsly, the *Brick* imbibes the Oil. 'Tis then put in a Retort, and plac'd in a Reverberatory Furnace; and by Fire is drawn an Oil, which the Apothecaries call *Oleum de Lateribus*; and the Chymiſts, *Oil of Philoſophers*, us'd to reſolve Tumors, in the Spleen, in Palſies, and Epilepſies.

BRIDGE, a Work of Maſonry, or Timber, built over a River, Canal, or the like, for the Convenience of croſſing the ſame. Some learned Men make *Janus* to have been the firſt Inventor of *Bridges*, Ships, and Crowns; becauſe in ſeveral *Greek*, *Sicilian*, and *Italian* Coins, there are repreſented on one ſide a *Janus* with two Faces, and on the other a *Bridge*, or a Crown, or a Ship. According to the Teſtimony given thereof by *Athenæus*, Lib. 15. one of the moſt notable Exploits of *Julius Cæſar*, was the expeditious making a *Bridge of Boats* over the *Rhine*. *Xerxes* is ſaid to have made a *Bridge of Ships* over the *Helleſpont*. See PONTON.

BRIDGE *of Communication*, is a *Bridge* made over a River; by which two Armies or Forts, ſeparated by the River, have a free Communication with one another.

Draw-BRIDGE, is ſuch a one as may be drawn, or taken up, by means of a Sweep or Counterpoiſe; and which ſhuts up againſt the Gate, *&c.* There are others with Pitfalls, and Beams, ſuſtain'd by two large Stakes 15 Foot high; one Part whereof lowers as the other riſes.

BRIDLE *of an Horſe*, is an Aſſemblage of various Members, or Parts; as the Bit or Snaffle, (ſee BIT;) the Head-ſtall, or Leathers from the Top of the Head to the Rings of the Bit; the Fillet, over the Forehead, and under the Foretop; Throat-band, which buttons from the Head-band under the Throat; Reins, the Part held in the Hand; Noſe-band, going thro Coops at the back of the Head-ſtall, and buckled under the Cheeks; the Trench, the Cavezan, Martingal, and Chaff-halter.

BRIEF, or BREVE, in Law, a Writ whereby a Man is ſummon'd or attach'd to anſwer any Action; or more largely, it is taken for any Writ in Writing, iſſued out of any of the King's Courts of Record at *Weſtminſter*, whereby any thing is commanded to be done in order to Juſtice, or the Execution of the King's Command: and 'tis call'd *Brief*, or *Breve*, *quia breviter intentionem proferentis exponit*; becauſe couch'd in a few plain Words, without Preamble, *&c.*

The Word *Brief* is alſo us'd for Letters Patent, or a Licence granted to a Subject, to make a Collection for any Publick or Private Loſs; ſee WRIT.

Apoſtolical BRIEFS, are the Letters which the Pope diſpatches to Princes, and other Magiſtrates, touching any Publick Affairs: They are ſo call'd, as being very conciſe, written on Paper, without Preface or Preamble; in which they arediſtinguiſh'd from *Bulls*, which are more ample, and always wrote on Parchment, and ſeal'd with Lead or green Wax; whereas *Briefs* are ſeal'd with red Wax, and with the Seal of the *Fiſherman*, or St. *Peter* in a Boat, in the Condition of a Fiſherman; a Seal never apply'd but in the Pope's Preſence. The *Brief* is headed with the Name of the Pope apart; and commences with *Dilecto filio ſalutem*, &c. *Apoſtolicam Benedictionem*, &c. and proceeds directly to the Matter in hand, without further Preamble. They are not ſubſcrib'd by the Pope, nor with his Name, but with that of his Secretary. Pope *Alexander* VI. inſtituted a College of Secretaries for *Briefs*; ſince which time, they have been made much longer and more ample than before. Formerly *Briefs* were only diſpatch'd about Affairs of Juſtice, but now they are likewiſe us'd for Graces and Diſpenſations.

BRIGADE, in the Military Art, a Party or Diviſion of a Body of Soldiers, whether Horſe or Foot. There are two ſorts of *Brigades*, according to the *French* way of accounting. A *Brigade* of an Army; which is a Body of Horſe of 10 or 12 Squadrons; Or of Foot, of 5 or 6 Battalions. And this way an Army is ſometimes divided into eight *Brigades*; four of Horſe, and four of Foot. A *Brigade* of a Company of Cavalry is its third Part, when it conſiſts only of 50 Officers; but its ſixth when it conſiſts of 100.

The Word *Brigade* is *French*; ſome derive it from *Brigand* or *Brigue*, a ſecret Intrigue. *Du Cange* fetches it from *Brigand*, an ill-diſciplin'd Soldier, who ſcours the Country, and plunders it of every thing, without waiting for the Enemy; as the Armies of *Arabs*, *Tartars*, &c. The Origin of the Word *Brigand* is, again, deduced from *Brigandine*; a Weapon wherewith the Army rais'd by the *Pariſians*, during the Captivity of their K. *John* in *England*, notorious for their Robberies, were arm'd.

BRIGADIER, an Officer that commands a *Brigade* of Horſe and Foot in an Army: He is very conſiderable, and goes next to the *Mareſchal de Camp*.

BRIGADE-*Major*, is an Officer appointed by the *Brigadier* to aſſiſt him in the Management and ordering his *Brigade*; and he acts there, as a Major-General does in an Army.

BRIGANDINE, a Coat of Mail, or a kind of antient defenſive Armour; conſiſting of thin jointed Scales or Plates, pliant and eaſy to the Body. Some confound it with *Haubergeon*, and ſome with a *Brigantine*, a low long Veſſel.

BRIGANTINE, is a ſmall, flat, open, light Veſſel, which goes both with Sails and Oars, and is either for Fighting or giving Chaſe. It hath uſually 10 or 12 Benches on a ſide for the Rowers, a Man and an Oar to each Bench. They are principally us'd by the *Corſairs*: All the Hands aboard being Soldiers; and each having his Muſket ready under his Oar.

BRINGERS-UP, in a Battalion, are the whole laſt Rank of Men in it, or the laſt in every File.

BROCADE, or BROCARD, in Commerce, a Stuff, or Cloth of Gold, Silver, or Silk, rais'd and enrich'd with Flowers, Foliages, or other Figures, according to the Fancy of the Manufacturer. Formerly, the Term was reſtrain'd to Cloths wove, either wholly of Gold, both Woof and Warp; or of Silver, or of both together: But by degrees, it came likewiſe to paſs for ſuch as had Silk intermix'd, to fill up, and terminate the Flowers of Gold and Silver. At preſent, any Stuff of Silk, Satin, or even ſimple Taffaty, when wrought, and enrich'd with Flowers, *&c.* obtains the Denomination of *Brocade*.

BROKERS, are of two Kinds: The firſt *Exchange-Brokers*, who deal in Matters of Money and Merchandize, between *Engliſhmen* and Strangers; by drawing the Bargain to Particulars, and the Parties to Concluſion: for which they have a Fee or Reward. Theſe, in our old Law-Books, are call'd *Broggers*; and in *Scotland*, *Broccarii*; *i. e.* according to *Skene*, Mediators or Interceſſors in any Contract, *&c.* Theſe make it their Buſineſs to know the Alteration of the Courſe of the Exchange, to inform Merchants how it goes, and to notify to thoſe, who have Money to receive or pay beyond Sea, who are proper Perſons for negotiating the Exchange with; and when the Matter is accompliſh'd, that is, when the Money is paid, thay have for *Brokerige* two Shillings *per* 100 Pounds Sterling.

In *France*, till the Middle of the XVIIth Century, their *Exchange-Brokers* were called *Courtiers de Change*; but by an Arret of Council, in 1639, the Name was chang'd for that more creditable one of *Agents de Change*, *Banque*, & *Finance*: And in the Beginning of the XVIIIth Century, to render the Office ſtill more honourable, the Title of *King's Counſellors* was added. At *Grand-Cairo*, and ſeveral Places of the *Levant*, the *Arabs* who do the Office of *Exchange-Brokers*, are call'd *Conſuls*: The manner of whoſe negotiating with the *European* Merchants, has ſomething in it ſo very particular, that we have referr'd it to a diſtinct Article: See CONSUL. The *Exchange-Brokers* at

Amſterdam, call'd *Makclaers*, are of two Kinds; the one like the *Engliſh*, call'd *Sworn Brokers*, becauſe of the Oath they take before the *Bourgermeſters*; the others negotiate without any Commiſſion, and are call'd *Walking Brokers*. The firſt are in Number 395; whereof 375 are Chriſtians, and 20 Jews: The others are near double that Number: So that in *Amſterdam* there are near 1000 *Exchange-Brokers*. The difference between the two conſiſts in this; that the Books and Perſons of the former are believ'd and own'd in the Courts of Juſtice; whereas, in Caſe of Diſpute, the latter are diſown'd, and their Bargains annull'd. The Fee of the ſworn *Exchange-Brokers* of *Amſterdam*, is fix'd by two Regulations, of 1613, and 1623, with regard to Matters of Exchange, to 18 Sols for 100 Livres, or 600 Florins; *i.e.* 3 Sols for 100 Florins, payable, half by the Drawer, and half by the Perſon who pays the Money. But Cuſtom has made conſiderable Alterations herein.

In the Eaſt, all Affairs are tranſacted by *Brokers*, whom the *Perſians* call *Delal*, *i.e.* Great Talkers. The manner of making their Markets is very ſingular: After the *Brokers* have launch'd out into long, and uſually impertinent Diſcourſes; coming towards a Concluſion, they only talk with their Fingers. The Buyer and Seller's *Broker*, each take the other by the Right Hand, which they cover with their Coat, or a Handkerchief: The Finger ſtretch'd out, ſtands for ſix; bent, for five; the Tip of the Finger for one; the whole Hand 100; and the Hand clench'd, 1000. They will expreſs even Pounds, Shillings, and Pence by their Hands. During all this myſtick Commerce, the two *Brokers* appear as cold and compos'd, as if there were nothing paſſing between 'em.

The other kind of *Brokers*, are *Pawn-Brokers*, who let out Money to neceſſitous People upon *Pawns*: Theſe are more properly call'd *Friperers*. The Word comes from the Saxon *Breacan*, to break; whence *Brokos*, a broken Dealer: None but broken Tradeſmen and Freemen of the City, being formerly allow'd to be *Brokers*.

In the Cities of *Italy*, there are Companies eſtabliſh'd by Authority, for the letting out Money on *Pawns*; call'd *Mounts of Piety*: An honourable Title, little becoming ſuch Inſtitutions; inaſmuch as the Loan is not *gratis*. In ſome Parts of *Italy*, they have likewiſe *Mounts of Piety* of another kind, wherein they only receive ready Money, and return it again with Intereſt at ſo much *per Annum*. At *Boulogne* they have ſeveral of theſe *Mounts*; which are diſtinguiſh'd into *Frank* and *Perpetual*. The Intereſt of the former is only four *per Cent.* in the latter at ſeven.

Stock BROKERS, are they who buy and ſell Shares in the Joint-Stocks of a Company or Corporation, for any Perſon that ſhall deſire them.

BRONCHIA, in Anatomy, the little Tubes into which the Bottom of the *Trachea* is branch'd, at its Entrance into the Lungs; and which are diſtributed thro every Part thereof, ſerving for the Conveyance of the Air in Reſpiration. The *Bronchia* conſiſts of Cartilages like the *Trachea*; only here the Cartilages are perfectly circular, without any membranous hard Part: They are join'd together by the Membranes that inveſt 'em, and are capable of being ſhot out lengthwiſe in Inſpiration; and of being drawn into each other in Expiration. The Word is *Greek*, where it ſignifies the ſame thing. See LUNGS.

BRONCHIAL, a particular Artery of the Lungs, call'd the *Bronchial Artery*. It ariſes from the deſcending Trunk of the *Aorta*, and diſtributes it; and embracing the *Trachea*, purſues the Courſe of the *Bronchia*, accompanying all their Branches thro their whole Progreſs. There is alſo a *Bronchial Vein*, which accompanies the Artery, and divides into the ſame Number of Branches with it: The Artery brings Blood to the *Bronchia*, for the Nutrition thereof, and of the Veſicles of the Lungs; and the Vein carries it off again to the *Cava*, where it ſoon terminates. The *Bronchial* Artery is ſometimes ſingle; but more frequently double; ſometimes triple.

BRONCHIC-*Muſcles*; ſee STERNOTHYROIDEI.

BRONCHOCELE, a Tumor, with a large round Neck, riſing on the *Bronchial* Part of the *Trachea*, very frequent in the *Alps*: The *Latins* call it *Hernia Gutturis*. The Word is form'd from the *Greek* βρόγχος, *Bronchia*, Windpipe; and κηλη, ſwelling.

BRONCHOTOMY, or *Laryngotomy*, in Chirurgery, the Operation of cutting into the Windpipe to prevent Suffocation, *&c.* in a *Squinancy*. 'Tis thus perform'd; the Body of the Patient being prepar'd, an Inciſion is made between the *Annuli*, or Rings of the *Aſpera Arteria*, an Inch below the Bottom of the *Larynx*; the Skin and Integuments divided, and the Muſcles remov'd; a Silver Tube is apply'd, and the Cauſe of the Diſeaſe remov'd; and the Wound heal'd; nouriſhing Clyſters being apply'd in the mean time, if Deglutition be impracticable. See LARYNGOTOMY. The Word comes from the *Greek* βρογχος, Windpipe; and τεμνω, *ſeco*.

BROOMING, or *Breaming of a Ship*; is burning off the Filth ſhe has contracted on her Sides, with Straw, Reeds, *&c.* when ſhe is on a Careen, or on the Ground; ſo that it is a kind of Graving.

BROTHER, a Term of Relation between two Male Children, ſprung from the ſame Father or Mother. The Antients apply'd the Term *Brother* indifferently to almoſt all who ſtood related in Collateral Lines, as Uncles and Nephews, Couſins German, *&c.* This we learn, not only from a great many Paſſages in the Old Teſtament, but alſo from profane Authors: *Cicero*, in his *Philippicks*, ſays, "*Antonia* was both Wife and Siſter of *Mark Anthony*; "becauſe ſhe was Daughter of his Brother *C. Antonius*." And as to Couſins German, *Tullus Hoſtilius*, in *Dionyſius Halicarnaſſeus*, calls the *Horatii* and *Curatii* BROTHERS; becauſe they were Siſter's Children. Among us, 'tis cuſtomary for Kings to give the Title *Brother* to each other: The Unction in Coronation being eſteem'd to ſettle a kind of *Brotherhood*. Nor is the Cuſtom modern; *Menander* mentions a Letter of *Coſroes*, King of *Perſia*, to the Emperor *Juſtinian*, beginning thus; Coſroes *King of Kings*, &c. *to the Emperor* Juſtinian *My Brother*. Kings now alſo give the ſame Appellation to the Electors of the Empire: And the like was given by the King of *France* to the preſent King of *Sardinia*, while only Duke of *Savoy*.

The *Latin* Word is *Frater*; which *Scaliger* and *Voſſius* derive from φρήτης, for φρήτωρ; which properly ſignifies a Perſon who draws Water in the ſame Well: φρέαρ, in *Greek*, ſignifying *Well*; and φρατεία, a Company of People, who have a Right to draw Water out of the ſame Well. The Word came originally from the City *Argos*, where there were only a few Wells diſtributed in certain Quarters of the City; to which thoſe of the ſame Neighbourhood alone repair'd. In the Civil Law, *Brothers*, *Fratres*, in the plural, comprehends *Siſters*; as, *Lucius & Titia*, *Fratres*, L. 38. de Famil. *Tres Fratres*, *Titius*, *Mævius*, *& Seia*, L. 35. de Pactis.

BROTHER, is particularly us'd between Monks of the ſame Convent; as, *Brother Zachary*, *Brother Bonaventure*, &c. In *Engliſh* we more uſually ſay *Friar Zachary*, &c. from the French *Frere*, *Brother*. This Appellation they borrow from the Primitive Chriſtians, who all call'd each other *Brothers*: But 'tis principally us'd for ſuch of the Religious as are not Prieſts; for thoſe in Orders are generally honour'd with the Title of *Fathers*, *Patres*, *Peres*; whereas the reſt are only ſimply *Brothers*. The Monks of St. *Dominic*, are particularly call'd *Preaching Brothers*; or, *Friars Predicants*: Thoſe of St. *Francis*, *Minor Friars*; thoſe of *Charity*, *Ignorant Friars*, &c. See FRANCISCANS, DOMINICANS, *&c.* In the Military Orders, the Knights are alſo call'd *Brothers*: In the Order of *Malta*, there is a particular Claſs, call'd *Serving Brothers*; conſiſting of ſuch as cannot give Proofs of their Nobility. In *Latin* they are call'd, *Fratres Clientes*. See MALTA.

BROTHERS *by Adoption*, ſee ADOPTION. *Fratres Conſanguinei*, are two *Brothers*, who have only the ſame Father: And *Fratres Uterini*, thoſe who are only deſcended from the ſame Mother.

BROTHERS *of the Roſy-Croſs*; ſee ROSICRUCIAN.

BROWNISTS, a Religious Sect, which ſprung out of the Church of *England*, towards the Cloſe of the XVIth Century; Their Leader, *Robert Brown*, originally of *Northampton*. The Occaſion of their Separation was not any Fault they found with the Faith, but with the Diſcipline and Form of Government of the Eſtabliſh'd Church. They equally charg'd Corruption on the Epiſcopal Form; and on that of the *Presbyterians*, by Conſiſtories, Claſſes, and Synods: Nor would they join with any other Church; becauſe they were not aſſur'd of the Converſion and Piety of the Members that compos'd 'em; on account of the Toleration of Sinners, with whom they maintain'd it an Impiety to communicate. They condemn'd the ſolemn Celebrations of Marriages in the Church; maintaining, that Matrimony being a Political Contract, the Confirmation thereof muſt come from the Civil Magiſtrate. They would not allow any Children to be baptiz'd of ſuch as were not Members of the Church, or of ſuch as did not take ſufficient Care of thoſe baptiz'd before. They rejected all Forms of Prayers; and held that the Lord's Prayer was not to be recited as a Prayer; being only given for a Rule or Model, whereon all our Prayers are to be form'd. See SEPARATIST.

BRUMALIA, a Feaſt of *Bacchus*, celebrated among the antient *Romans* for the ſpace of 30 Days; commencing on the 24th of *November*, and ending the 26th of *December*. The *Brumalia* were inſtituted by *Romulus*; who uſed, during this Time, to entertain the Senate. The Word comes from *Bruma*, Winter; in regard of the Time when the Feaſt was held: Others will have it from *Brumus*, or *Bromius*, Names of *Bacchus*.

BRYONY, the Root of a Plant of the ſame kind with the *Mechoaca*: It was formerly in great Reputation as a Purgative; but has now loſt the greateſt part thereof; yet

it

it evacuates pretty ſtrongly, ſometimes by Vomiting, but more frequently by Urine: Whence ſome Authors recommend it, as excellent for purging Seroſities; and even as a Specifick in the Dropſy. M. *Boulduc* found, by a Chymical Analyſis, that it conſiſted only of ſaline Principles, without any Reſin: Wherein it differs from *Mechoacan*, which, in other reſpects, it much reſembles. He adds, it has more virtue taken in Subſtance than in any other manner; which is common to this and other Purgatives.

BUBBLE, in Commerce, a Cant-Name, lately given to a ſort of Projects, for the raiſing of Money on imaginary Grounds; very frequent in the Years 1720,—21. See STOCKS.

The pretended Deſign of theſe Undertakings, was to raiſe a Stock, for the retrieving, ſetting on foot, or carrying on ſome promiſing and uſeful Branch of Trade, Manufacture, Machinery, or the like. In order to which, Propoſals were given out, ſhewing the Advantages of the Deſign, and inviting Perſons into it. The Sum neceſſary to carry on the Affair, together with the Profits expected from it, were divided into a certain Number of *Shares*, or *Subſcriptions*, to be purchas'd by Perſons diſpos'd to adventure therein. The real Deſign, in ſome, was to raiſe a Sum for the private Advantage of the Projectors; to be laid out by them in the *South-Sea Stock*, &c. in hopes, by the Riſe thereof, to be able to refund the Subſcribers Money, with Profit to themſelves. In others the Deſign was, abſolutely to defraud the Adventurers of their Subſcription-Money, without any View to Reſtitution. There was a third kind ſomewhat different; the Projectors of theſe, to proceed the more ſecurely, propos'd to have Books open'd, and Subſcriptions taken in at ſome time to come; and in the mean time took Money, by way of Premium, to entitle Perſons to be admitted Subſcribers, as ſoon as the Affair ſhould be ripe, for dividing into Shares. Several thouſand Shares were, thus, very frequently beſpoke in one Day; and Premiums, from one Shilling to ſome Pounds, pay'd thereupon, to the Profits of the Projectors. See SUBSCRIPTION.

The number of *Bubbles*, and their Qualities, were very extraordinary: Some of 'em too authoriz'd by Patents; and in others, the Projectors and their Proprietors form'd into Corporations: Some for Fiſheries, ſome for Inſurances, ſome for the digging of Mines, *&c.* Poſterity, doubtleſs, will be ſurpriz'd to hear of others for cleaning the Streets, others for furniſhing Shoes, others for Stockings, others for Phyſick, others for the Maintenance of Baſtard Children, others for the buying bad Titles, others for the lending of Money, *&c.*

BUBBLES, in Phyſicks, little round Drops or Veſicles of any Fluid fill'd with Air, and form'd on its Surface, upon the Addition of more of the Fluid, as in raining; or in its Subſtance, upon a vigorous inteſtine Commotion of its Parts. *Bubbles* are dilatable or compreſſible, *i.e.* take up more or leſs room, as the included Air is more or leſs heated, or more or leſs preſs'd from without; and are round, becauſe the included *Aura* acts equably from within all around. Their Coat or Cover is form'd of the minute Particles of the Fluid, retain'd either by the Velocity of the Air, or by the brisk Attraction between thoſe minute Parts and the Air. 'Tis theſe little *Bubbles*, riſing up from Fluids, or hanging on their Surface, which form the white Skum a-top; and 'tis theſe ſame *Bubbles* which form the Steam or Vapour flying up from Liquors in boiling, *&c.* the manner of which ſee under BOILING, VAPOUR, *&c.*

BUBO, in Medicine, a Tumor ariſing on the Glands of the Groin and Armpits, with Inflammation and Pain; owing to the overflowing of the Blood in thoſe Glands, mix'd with ſome peccant Humour. There are two Kinds of *Bubo*'s, the one call'd *Benign*, or Mild, the other *Malignant*. Malignant, are divided into *Peſtilential* and *Venereal*: Peſtilential ariſe on a Peſtilential Fever, *&c.* Venereal *Bubo*'s are the Product of impure Embraces; and frequently the Forerunner of the Pox. When a *Bubo* is encompaſs'd with a Circle of ſeveral Colours, 'tis a Sign it is Peſtilential, and generally Mortal. The Word comes from the *Greek* βουβών, *Inguen*; the uſual Place of ſuch Tumors.

BUBONOCELE, a Tumor ariſing in the Groin; occaſion'd by the Deſcent of the Epiploon or Inteſtines. 'Tis a Species of *Hernia* or Rupture; tho Chirurgeons call it an Incomplete one; and is common to Women as well as Men. The Word comes from the *Greek* βουβων, *Inguen*, and κήλη, Tumor.

BUCANEERS, or BOUCANEERS, a popular Term in the *Weſt Indies*, us'd properly for a kind of Savages who prepare their Meat on a Grate, or Hurdle made of *Braſil* Wood, plac'd in the Smoak at a good height from the Fire, and call'd *Boucan*: whence alſo the little Lodges rais'd for the Preparation of their Food are call'd *Boucans*; and the Action of dreſſing it *Boucaning*. Meat *boucan'd*, is ſaid to have an excellent Taſte, the vermil Colour of a Roſe, and a charming Smell; all which it retains many Months. *Oexmelin*, from whom we have this, adds, that the neighbouring People ſend their Sick hither, that by eating their *boucan'd* Meat they may be recover'd.

The Origin of the Word is referr'd to the *Caribbee Indians*, who uſing to cut their Priſoners of War in pieces, and lay 'em on Hurdles with Fire underneath; which they call'd *Boucaning*, *i. e.* Roaſting and Smoaking together: hence our *Bucaneers* took both their Name and their Cuſtom; with this Difference, that what the former did to Men, theſe did to Animals caught in Hunting. The *Spaniſh* call thoſe in their Territories *Matadores*; from *Toros*, killers of Bulls, and *Monteros*, runners in the Wood: The *Engliſh* call theirs *Cowlierdiers*, or Cow-killers. The *Bucaneers* are of two diſtinct Profeſſions; the one only hunt Bulls for their Skins, the other Boars for their Fleſh. The Art of *boucaning*, *Oexmelin* deſcribes thus; the Boar being flea'd, and the Bones ſtripp'd out, is cut into Pieces of the Length of the Arm and ſalted, and the next Day laid on the *Boucan*; which conſiſts of 20 or 30 Bars laid acroſs, half a Foot from each other: Under this they raiſe a thick Smoak, adding the Skin and Bones of the Boar to heighten it. This is found vaſtly better than any ſimple Fuel; in regard the Volatile Salts of thoſe Parts, are by this means communicated to the Fleſh, which give it ſuch a Reliſh, as that after a little of this *boucaning*, the niceſt Palate will eat it without further Preparation.

BUCCALES-GLANDULÆ, are Glands diſperſed over the inner Side of the Cheeks and Lips, which ſeparate a Spittle uſeful in Maſtication and Digeſtion. See MOUTH.

BUCCELLARII, a kind of Soldiers kept by the *Greek* Emperors, in the Provinces and Countries; ſo call'd becauſe ſubſiſted by the Emperor, or becauſe he was at the Expence of their eating; from *Buccella*, a Diminutive of *Bucca*, Mouth: Theſe being in that Country, what the *Commenſales*, or Beef-Eaters are at Court. The *Buccellarii*, in the Army where the Emperor commanded, march'd before and behind him, as his Guard. There were alſo another kind of *Buccellarii*, under the *Greek* Emperors; *viz.* the Ελληνογαλατται, *Greeks of Galatia*, who furniſh'd the Soldiery with Bread.

The firſt kind of *Buccellarii*, according to ſome Authors, were Men whom the Emperors employ'd in putting certain Perſons to Death ſecretly. The *Nomic* Gloſſes interpret the Word *Envoy*, as alſo *Stationary Soldier*; or a Perſon retain'd in the Service of any one: And the *Baſilicks* explain it in the ſame Senſe; deriving it from βύκκα, *Mouth*, *Bread*; as ſignifying a Perſon who eat the Bread of another, on account of his Service. Among the *Viſigoths*, *Buccellarius* was a general Name for all Clients or Vaſſals, who liv'd at the Expence of their Lords.

BUCCINA, an antient Military, or rather Muſical Inſtrument, uſed in War. 'Tis uſually taken for a kind of Trumpet; which Opinion *Feſtus* confirms, by defining it a crooked Horn, plaid on like a Trumpet. *Vegetius* alſo obſerves, that the *Buccina* was bent into a Circle; in which it differ'd from a Trumpet, *Tuba*. *Varro* adds, they were call'd Horns, *Cornua*, becauſe originally made of the Horns of Cattel; as is ſtill done among ſome People. *Servius* ſeems to ſay, that they were at firſt made of Goats Horns: And the Scriptures call the Inſtruments us'd, both in War and in the Temple, *Keren Jobel*, Rams Horns; and *Saphoroth Haijobelim*, *Buccinæ*, of Rams. The Muſical Inſtruments us'd in a Military March, are *Buccinæ*, Trumpets, Lituus, Clarions, Cornets, Fifes, Drums, Tymbals, *&c.* which ſee. The Marine *Buccinæ*, given by Poets and Painters to Tritons and Sea-Gods, are Shells twiſted in form of Snails. The Word comes from *Bucca*, Mouth; becauſe plaid on by the Mouth.

BUCCINATOR, or *Trumpeter*, in Anatomy, a Muſcle on each ſide the Face, common to the Lips and Cheeks; making the inner Subſtance of the latter: Its Fibres run from the *Proceſſus Coronæ* of the lower Jaw, to the Angle of the Mouth, and adhere to the upper Part of the Gums of both Jaws: Thro its middle paſs the upper *Ductus Salivales*. By this is contracted the Cavity of the Mouth, and the Meat is thruſt forward to the Teeth in Maſtication. It has its Name from *Buccina*, Trumpet; becauſe, when ſwell'd, it enlarges the Cheeks, as in ſounding a Trumpet.

BUCENTAURE, or BUCCENTAUR, the Name of a large Veſſel, us'd by the *Venetians* in the Ceremony of eſpouſing the Sea, perform'd each *Aſcenſion*-Day with much Pomp. *P. Juſtiniani*, gives a very preciſe Deſcription of the *Buccentaur*; and adds, that its Origin is carry'd up as high as the Year of Chriſt 1311; tho others carry it higher, to the Year 1177, when the Emperor *Frederick Barbaroſa* came to *Venice*, to make Peace with the Republick and the Pope: At which Time the Pope, in Conſideration of the Services the State had done him, in ſheltering him in their City when he had been driven out of his own, granted them ſeveral Privileges; and made a preſent to the *Doge* of a Gold Ring, which is the Origin of that yearly caſt by the *Doge*, from the *Buccentaur*, into the Sea. The Word comes from the *Greek*, βυκεντωρ; com-

pos'd of βοῦς, a Particle of Augmentation, us'd to denote an enormous Greatneſs; and κένταυρος, Centaur. *Juſtiniani* adds two other Etymologies of this: the firſt from *bis*, and *taurus*, or rather *Centaurus*, the name of one of *Æneas*'s Veſſels in *Virgil*: The other from *Bucentaurus*, for *Bucentaurus*, a Word forg'd to ſignify a Veſſel capable of holding 200 Men.

BUCEPHALUS, *Bullock's Head*, from the *Greek* βοῦς, *bos*, and κεφαλη, Head. It was the Cuſtom among the Antients to impreſs ſome Mark on their Horſes; the moſt common were a Σ, *Sigma*, a Κ, *Kappa*, and a *Bullock's Head*. Hence thoſe mark'd with Σ's, were call'd Συμφορεῖς; thoſe with a Κ, Κοππαλίαι; and thoſe with a *Bull's Head*, Βουκεφαλοι, *Bucephali*. This Mark was ſtamp'd on the Horſe's Buttocks, and his Harneſſes; as appears from the Scholiaſt on *Ariſtophanes*'s *Clouds*, *Heſychius*, &c.

BUCKLER, a piece of defenſive Armour, us'd by the Antients to ſkreen their Bodies from the Blows of their Enemies. See the *Buckler* of *Achilles* deſcrib'd in *Homer*, that of *Æneas* in *Virgil*, that of *Hercules* in *Heſiod*: *Ajax*'s *Buckler* was lin'd with ſeven Bulls Hides. The Shield ſucceeded the uſe of the *Buckler*: Yet the *Spaniards* ſtill retain the *Sword and Buckler* in their Night-Walks. The Word comes from *Bucularium*; on account of the Buckles wherewith the Antients adorn'd their *Bucklers*. In the Days of corrupt *Latin*, we frequently find *Buccula Clypei*, the Buckle of the *Buckler*. *Thomaſſin* derives it from *Bucca*, Mouth or Throat; becauſe it was uſual to have Heads, &c. repreſented on *Bucklers*. See SHIELD.

Bucklers on Medals, are either us'd to ſignify publick Vows render'd to the Gods for the Safety of a Prince; or that he is eſteem'd the Defender and Protector of his People: Theſe were call'd *Votive Bucklers*, and were hung at Altars, &c.

BUCOLICKS, *Paſtorals*, a Term uſed for a kind of Poems relating to Shepherds, and Flocks. *Bucolick* Poetry is the moſt ancient of all the Kinds of Poetry; and is ſuppos'd to have had its Origin in *Sicily*, amidſt the Mirth and Diverſions of the Shepherds; and to have been inſpir'd by Love and Idleneſs: By degrees, their Rural Gallantries were brought under Rules, and became an Art. The Concerns of the Flocks, the Beauties of Nature, and the Pleaſure of a Country Life, were their principal Subjects. *Moſchus* and *Bion*, were the moſt agreeable among the antient *Bucolick* Poets. *Fontenelle* obſerves, that *Theocritus*'s Stile is ſometimes a little too *Bucolick*. Some Authors attribute the Invention of *Bucolick* Poetry to a Shepherd call'd *Daphnis*; and others to *Bucolius*, Son of *Laomedon*: But this appears all Fiction. The Word is deriv'd from the *Greek* βοῦς, and κολον, *cibus*, Meat; hence βουκολεω, to feed Cattle; and βούκολος, *bubulus*, Herdſman.

BUD, is a weaned Calf of the firſt Year; ſo called, becauſe the Horns are then in the *Bud*.

BUDS, among Gardeners, the firſt Tops of moſt Sallad Plants, &c. which are preferable to all other leſs tender Parts. See CYON.

BUFF, in Commerce, a ſort of Leather prepar'd from the Skin of the *Buffelo*, a wild Beaſt reſembling an Ox, but longer and bigger; having large thick Horns, ſhort black Hair, and a very ſmall Head; common enough in the *Levant*, particularly about *Smyrna*, *Conſtantinople*, &c. where, as well as in *Italy*, they are frequently tam'd, and wrought, as we do Oxen.

The Skin of this Animal being dreſs'd in Oil, after the manner of Shammy, or *Chamois*, makes what we call *Buff*-Skin; antiently much uſed among the Military Men, for a kind of Coats or Doublets; and ſtill retain'd by ſome of our Grenadiers, as well as the *French Gend'armery*, on account of its exceeding Thickneſs and Firmneſs. 'Tis alſo uſed for Waſte-Belts, Pouches, &c. This Skin makes a very conſiderable Article in the *Engliſh*, *French*, and *Dutch* Commerce, at *Conſtantinople*, *Smyrna*, and the Coaſts of *Africa*.

The Skins of Elks, Oxen, and other like Animals, when dreſs'd in Oil, and prepar'd after the ſame manner as that of the *Buffelo*, are likewiſe denominated *Buff*; and us'd for the ſame Purpoſes. In *France*, there are a good number of conſiderable Manufacturies deſtin'd for the Preparation of ſuch Skins; particularly at *Corbeil*, *Paris*, and *Rouen*: Their firſt Inſtitution is owing to the Sieur *Jabac*, a Native of *Cologne*. The manner of Preparation ſee under the Article CHAMOIS.

BUFFET, or BUFET, was antiently a little Apartment, ſeparated from the reſt of a Room, by ſlender Wooden Columns, for the diſpoſing China and Glaſs Ware, &c. call'd a Cabinet: 'Tis now, properly, a large Table in a Dining Room, call'd alſo a Side-Board, for the Plate, Glaſſes, Bottles, Baſons, &c. to be placed, as well for the Service of the Table as for Magnificence. The *Buffet*, among the *Italians*, call'd *Credenza*, is enclos'd within a Baluſtrade, Elbow high.

BUFFOON, an Actor in Farce, or a Mimick, who diverts the Publick by his Pleaſantries and Follies. This is reputed the Talent of the *Italian* Comedians. Some Authors make the Origin of *Buffoonry* very antient, deriving it from a Feaſt inſtituted in *Attica*, by K. *Erictheus*, on occaſion of a Prieſt, call'd *Buphon*: Who after having ſacrific'd the firſt Bullock on the Altar of *Jupiter Polion*, or Guardian of the City, fled haſtily away, without any apparent Reaſon; leaving the Ax and other Inſtruments of Sacrifice on the Ground, nor cou'd either be ſtopp'd, or ever found afterwards. The Inſtruments were hereupon deliver'd up to the Judges, and ſolemnly try'd; the Ax found Guilty, and the reſt acquitted. This Sacrifice was kept up in the ſame manner the following Years: The Prieſt fled, as the firſt; and the Ax condemn'd. As the whole Ceremony was perfectly Burleſque, the Words *Buffoons* and *Buffoonries* have been ſince apply'd to all ridiculous Mummeries and Farces: This Hiſtory is related by *Rhodoginus*. *Menage*, after *Salmaſius*, derives the Word from *Buffo*; a Name given to thoſe who appear'd on the *Roman* Theater with their Cheeks blow'd up; that receiving Blows thereon, they might make the greater Noiſe, and ſet the People a laughing.

BUGGERY, Sir *Edward Coke* defines, *Carnalis Copula contra Naturam, & hoc vel per confuſionem Specierum; viz.* a Man or Woman with a brute Beaſt: *vel Sexuum*, a Man with a Man, or a Woman with a Woman: each kind is Felony, without Benefit of Clergy. In antient Times, ſuch Offenders were burnt by the Common Law. *Buggery* is generally excepted out of a General Pardon. The Practice is ſaid to have been introduc'd into *England* by the *Lombards*: It is ſuppoſed to take its Name from the antient *Bulgarians*.

BUILDING, *D'aviler* defines, any Place erected by Art, whether for Convenience, for Religion, or Magnificence. See HOUSE, TEMPLE, THEATER.

A *Regular Building*, is that whoſe Plan is Square, its oppoſite Sides equal, and the Parts diſpos'd with Symmetry. An *Irregular Building*, is that, on the contrary, whoſe Plan is not contain'd within equal or parallel Lines, either by the Nature of its Situation, or the Artifice of the *Builder*; and whoſe Parts have not any juſt Relation to one another in the Elevation. An *Inſolated Building*, is that which is not attach'd, join'd, or contiguous to any other; or is encompaſs'd with Streets, or any open Square, or the like; as St. *Paul*'s, the *Monument*, &c. A *Building* is ſaid to be *engag'd*, when it is encompaſs'd with others, and has no Front towards any Street or publick Place, nor any Communication without, but by a back Paſſage. An *interr'd*, or *ſunk Building*, is that whoſe Area is below the Level of the adjacent Street, Court, or Garden, &c. and whoſe loweſt Courſes of Stone are hid.

Felibien conſiders three Kinds of *Buildings* in Architecture; 1. *Sacred Buildings*; as the Temples of the Antients, and our Churches and Chappels. 2. *Publick Buildings*; as Baſilicks, or Courts of Juſtice, Tombs, Theaters, Amphitheaters, Triumphal Arches, Gates, Bridges, Aqueducts, &c. 3. Palaces, and private Houſes: Each of which ſee under their proper Heads, BASILIC, CHURCH, AMPHITHEATER, &c.

BUILDING is alſo us'd for the conſtructing or raiſing of an Edifice; in which Senſe it comprehends, as well the Expenſes, as the Invention and Execution of the Deſign thereof. See ARCHITECTURE.

In *Building* there are three Things in view, *viz.* Commodity, Firmneſs, and Delight: To attain theſe Ends, Sir *Henry Wotton* conſiders the whole Subject under two Heads, *viz.* the Seat or *Situation*, and the *Work*. For the Situation, either that of the *Whole* is to be conſider'd, or that of its *Parts*.

For the firſt, regard muſt be had to the Quality, Temperature, and Salubrity of the Air; the Conveniency of Water, Fuel, Carriage, &c. and the Agreeableneſs of the Proſpect. For the ſecond, the chief Rooms, Studies, Libraries, &c. to lie towards the Eaſt; Offices that require Heat, as Kitchens, Diſtillatories, Brew-houſes, &c. to the South: Thoſe that require a cool freſh Air, as Cellars, Pantries, Granaries, &c. to the North: As alſo Galleries for Painting, Muſeums, &c. which require a ſteady Light. He adds, that the antient *Greeks* and *Romans*, generally ſituated the Front of their Houſes to the South: But the modern *Italians* vary from this Rule. Indeed, in this Matter, regard muſt ſtill be had to the Country; each being oblig'd to provide againſt its reſpective Inconveniences: So that a good Parlour in *Egypt*, might make a good Cellar in *England*. See SITUATION.

For the ſecond Head, the Situation being fix'd on, the next thing to be conſider'd is the *Work*: Under this come, firſt the principal Parts, then the Acceſſories, or Ornaments.

Under the Principals, are, firſt, the *Materials*; then the *Form* or Diſpoſition. The Materials are either Stone, as

Marble, Free-ſtone, Brick, for the Walls, &c. or of Wood, as Firr, Cypreſs, Cedar, for Poſts and Pillars of upright uſe; Oak, for Beams, Summers, Crop-work, or for Joining and Connection. See STONE, BRICK, WOOD, TIMBER, &c.

For the Form or Diſpoſition of a *Building*, it muſt either be Simple or Mix'd: The ſimple Forms are either Circular or Angular; and the Circular ones either compleat, as juſt Spheres, or deficient, as Ovals.

The circular *Form* is very commodious, of the greateſt Capacity of any; ſtrong, durable beyond the reſt, and very beautiful: but then it is found of all others the moſt chargeable; much room is loſt in the bending of the Walls, when it comes to be divided; beſides an ill Diſtribution of Light, except from the Centre of the Roof: On theſe Conſiderations it was, that the Antients only us'd it in Temples and Amphitheaters, which needed no Compartition. Oval Forms have the ſame Inconveniences, without the ſame Conveniences; being of leſs Capacity.

For Angular Figures, Sir *H. Wotton* obſerves, that *Building* neither loves many nor few Angles: The Triangle, *v. g.* is condemn'd above all others, as wanting Capacity and Firmneſs; as alſo, being irreſolvable into any other Regular Figure in the inward Partitions, beſides its own. For Figures of 5, 6, 7, or more Angles, they are fitter for Fortifications than Civil Buildings. There is, indeed, a celebrated *Building* of *Vignola*, at *Caprarole*, in Form of a Pentagon; but the Architect had prodigious Difficulties to grapple with, in diſpoſing the Lights, and ſaving the Vacuities. Such *Buildings* then, ſeem rather for Curioſity than Conveniency: and for this Reaſon, Rectangles are pitch'd on, as being a Medium between the two Extremes. But again, whether the Rectangle is to be a juſt Square or an Oblong, is diſputed. Sir *Henry Wotton* prefers the latter, provided the Length don't exceed the Breadth by above one third.

Mix'd Figures, partly Circular and partly Angular, may be judg'd of from the Rules of the Simple ones; only they have this particular Defect, that they offend againſt Uniformity. Indeed Uniformity and Variety may ſeem to be oppoſite to each other: but Sir *H. Wotton* obſerves, they may be reconcil'd; and for an Inſtance, mentions the Structure of the Human Body where both meet. Thus much for the firſt grand Diviſion, *viz.* the *Whole* of a *Building*.

For the ſecond Diviſion, or the *Parts* of a Fabrick, *Baptiſta Alberti* compriſes 'em under five Heads; *viz.* the Foundation, Walls, Apertures, Compartitions, and Cover.

For the *Foundation*, to examine its Firmneſs, *Vitruvius* orders the Ground to be dug up; an apparent Solidity not to be truſted to, unleſs the whole Mold cut thro be found ſolid: He does not indeed limit the Depth of the Digging; *Palladio* limits it to a ſixth Part of the Height of the *Building*: This Sir *Henry Wotton* calls the Natural Foundation, whereon is to ſtand the Subſtruction, or Ground-work, to ſupport the Walls, which he calls the Artificial Foundation: This then is to be level; its loweſt Ledge, or Row of Stone only, cloſe laid with Mortar, and the broader the better; at the leaſt, twice as broad as the Wall: Laſtly, ſome add, that the Materials below ſhould be laid juſt as they grew in the Quarry; as ſuppoſing 'em to have the greateſt Strength in their natural Poſture. *De Lorme* enforces this, by obſerving, that the breaking or yeilding of a Stone in this Part, but the Breadth of the Back of a Knife, will make a Cleft of above half a Foot in the Fabrick above. For *Pallification*, or piling the Ground-Plot, ſo much commended by *Vitruvius*, we ſay nothing; that being requir'd only in a moiſt marſhy Ground, which ſhould never be choſen: Nor perhaps are there any Inſtances of this kind, where it was not Neceſſity that drove 'em to it. See FOUNDATION.

For the *Walls*, they are either entire and continued, or intermitted; and the Intermiſſions are either Columns or Pilaſters. Entire, or continu'd Walls, are variouſly diſtinguiſh'd; by ſome, according to the Quality of the Materials, as they are either Stone, Brick, &c. others only conſider the Poſition of the Materials; as when Brick, or ſquare Stones are laid in their Lengths, with Sides and Heads together, or their Points conjoin'd, like a Network, &c. See MASONRY. The great Laws of Muring, are, that the Walls ſtand perpendicular to the Ground-work; the Right Angle being the Cauſe of all Stability: that the maſſieſt and heavieſt Materials be loweſt, as fitter to bear than be born; that the Work diminiſh in Thickneſs, as it riſes; both for eaſe of Weight and Expence: that certain Courſes, or Ledges of more ſtrength than the reſt, be interlaid, like Bones, to ſuſtain the Fabrick from total Ruin, if the Under-parts chance to decay: And laſtly, that the Angles be firmly bound; theſe being the Nerves of the whole Fabrick, and commonly fortify'd, by the *Italians*, on each ſide the Corners, even in Brick *Buildings*, with ſquar'd Stones; which add both Beauty and Strength. See WALL.

The Intermiſſions, as before obſerv'd, are either Columns or Pilaſters; whereof there are five Orders, *viz.* *Tuſcan*, *Doric*, *Ionic*, *Corinthian*, *Compoſite*; each of which ſee diſtinctly conſider'd under its reſpective Head. Columns and Pilaſters are frequently, both for Beauty and Majeſty, form'd Archwiſe; the Doctrine of which, ſee under ARCH.

For the *Apertures*, they are either Doors, Windows, Staircaſes, Chimneys, or Conduits for the Suillage, &c. which ſee under their Heads, DOOR, WINDOW, &c. Only with regard to the laſt, it may be obſerved, that Art ſhould imitate Nature in theſe ignoble Conveyances, and ſeparate them from Sight, where a running Water is wanting, into the moſt remote, loweſt, and thickeſt Part of the Foundation; with ſecret Vents, paſſing up thro the Walls, like a Tunnel, to the open Air; which the *Italians* all commend for the Diſcharge of noiſom Vapors.

For the *Compartition*, or Diſtribution of the Groundplot into Apartments, &c. Sir *H. Wotton* lays down theſe Preliminaries; That the Architect never fix his Fancy on a Paper Draught, how exactly ſoever ſet off in Perſpective; much leſs on a mere Plan, without a Model, or Type of the whole Structure, and every Part thereof, in Paſtboard or Wood; that this Model be as plain and unadorn'd as poſſible, to prevent the Eye's being impos'd on, and that the bigger this Model, the better. In the Compartition it ſelf, there are two general Views, *viz.* the Gracefulneſs, and Uſefulneſs of the Diſtribution, for Rooms of Office and Entertainment; as far as the Capacity thereof, and the Nature of the Country will allow. The Gracefulneſs will conſiſt in a double Analogy or Correſpondency; firſt, between the Parts and the Whole, whereby a large Fabrick ſhould have large Partitions, Entrances, Doors, Columns, and, in brief, all the Members large: The ſecond, between the Parts themſelves, with regard to Length, Breadth, and Height. The Antients determin'd the Length of their Rooms, that were to be Oblongs, by double their Breadth; and their Height by half their Breadth and Length added together. When the Room was to be preciſely Square, they made the Height half as much more as the Breadth: which Rules, the Moderns take occaſion to diſpenſe with; ſometimes ſquaring the Breadth, and making the Diagonal thereof the Meaſure of the Height; and ſometimes more. This deviating from the Rules of the Antients, is aſcrib'd to *M. Angelo*.

The ſecond Conſideration in the Compartition, is the Uſefulneſs; which conſiſts in the having a ſufficient number of Rooms of all Kinds, with their proper Communications, and without Diſtraction. Here the chief Difficulty will lie in the Lights and Staircaſes. The Antients were pretty eaſy on both thoſe Heads, having generally two cloiſter'd open Courts, one for the Women's Side, the other for the Men: Thus the Reception of Light into the Body of the *Building* was eaſy; which among us muſt be ſupply'd, either by the open Form of the *Building*, or by graceful Refuges or Breaks, by terraſſing a Story in danger of Darkneſs, and by Abajours, or Sky-Lights. For caſting the Staircaſes, it may be obſerv'd, that the *Italians* frequently diſtribute the Kitchen, Bake-houſe, Buttery, &c. under Ground, next above the Foundation, and ſometimes level with the Floor of the Cellar; raiſing the firſt aſcent into the Houſe 15 Foot, or more: which, beſide the removing of Annoyances out of the Sight, and gaining ſo much room above, does, by elevating the Front, add a Majeſty to the whole. Indeed, Sir *H. Wotton* obſerves, that in *England* the natural Hoſpitality thereof, won't allow the Buttery to be ſo far out of ſight; beſides that, a more luminous Kitchen, and a ſhorter Diſtance between that and the Dining-Room, are requir'd, than that Compartition will well bear. In the Diſtribution of Lodging Rooms, 'tis a popular and antient Fault, eſpecially among the *Italians*, to caſt the Partitions ſo, as when the Doors are all open, a Man may ſee through the whole Houſe; grounded on the Ambition of ſhewing a Stranger all the Furniture at once: an intolerable Hardſhip on all the Chambers, except the Inmoſt, where none can arrive but thro all the reſt, unleſs the Walls be extreme thick for ſecret Paſſages: nor will this ſerve the Turn, without at leaſt three Doors to each Chamber; a thing inexcuſable, except in hot Countries: Beſides its being a weakning to the *Building*, and the Neceſſity it occaſions of making as many common great Rooms as there are Stories, which devours a great deal of room, better employ'd in Places of Retreat; and muſt likewiſe be dark, as running thro the Middle of the Houſe. In the Compartition, the Architect will have occaſion for frequent Shifts; thro which his own Sagacity, more than any Rules muſt conduct him. Thus he will be frequently put to ſtruggle with Scarcity of Ground; ſometimes to damn one room for the Benefit of the reſt, as to hide a Buttery under a Staircaſe, &c. at other times, to make thoſe the moſt beautiful which are moſt in Sight; and to leave the reſt, like a Painter, in the Shadow, &c.

For the *Covering* of the *Building*; this is the laſt in the Execution, but the firſt in the Intention: for who would

build,

build, but to ſhelter? In the Covering, or Roof, there are two extremes to be avoided, the making it too heavy or too light: The firſt will preſs too much on the Underwork; the latter has a more ſecret Inconvenience; for the Cover is not only a bare Defence, but a Band or Ligature to the whole *Building*; and there requires a reaſonable Weight. Indeed, of the two Extremes, a Houſe top-heavy is the worſt. Care is likewiſe to be taken, the Preſſure be equal on each Side; and *Palladio* wiſhes, that the whole Burden might not be laid on the outward Walls, but that the Inner likewiſe bear their Share. The *Italians* are very curious in the Proportion and Gracefulneſs of the Pent or Slopeneſs; dividing the whole Breadth into nine Parts, whereof two ſerve for the height of the higheſt Top or Ridge from the loweſt: But in this Point, regard muſt be had to the Quality of the Region; for, as *Palladio* inſinuates, thoſe Climates which fear the falling of much Snow, ought to have more inclining Pentices than others. See COVERING.

Thus much for the principal or eſſential Parts of a *Building*: For the Acceſſories, or Ornaments, they are fetch'd from Painting and Sculpture. The chief things to be regarded in the firſt, are, that no Room have too much, which will occaſion a Surfeit; except in Galleries, &c. that the beſt Pieces be placed where there are the feweſt Lights: Rooms with ſeveral Windows are Enemies to Painters, nor can any Pictures be ſeen in Perfection, unleſs illumin'd, like Nature, with a ſingle Light: That in the Diſpoſition regard be had to the Poſture of the Painter in working, which is the moſt natural for the Poſture of the Spectator; and that they be accommodated to the Intentions of the Room they are us'd in: See PAINTING. For Sculpture, it muſt be obſerv'd, that it ben't too abundant; eſpecially at the firſt approach of a *Building*, or at the Entrance; where a *Dorick* Ornament, is much preferable to a *Corinthian* one; that the Niches, if they contain Figures of white Stone, be not colour'd in their Concavity too black, but rather duſky; the Sight being diſpleas'd with too ſudden Departments from one extreme to another. That fine Sculptures have the Advantage of nearneſs, and coarſer of Diſtance; and that in placing of Figures aloft, they be reclin'd a little forwards: Becauſe, the viſual Ray extended to the Head of the Figure, is longer than that reaching to its Feet, which will of neceſſity make that Part appear further off; ſo that to reduce it to an erect Poſture, it muſt be made to ſtoop a little forwards. M. *le Clerc*, however, won't allow of this Reſupination, but will have every Part in its juſt Perpendicular. See STATUE.

To judge of a *Building*, Sir *H. Wotton* lays down the following Rules: 1. That before fixing any Judgment, a Perſon be inform'd of its Age; that, if the apparent Decays be found to exceed the Proportion of Time, it may be concluded, without further Inquiſition, either that the Situation is naught, or the Materials or Workmanſhip too ſlight. If it be found to bear its Years well, let him run back, from the Ornaments and Things which ſtrike the Eye firſt, to the more eſſential Members; till he be able to form a Concluſion, that the Work is commodious, firm, and delightful; the three Conditions, in a good *Building*, laid down at firſt, and agreed on by all Authors. This, he eſteems the moſt Scientifical Way of judging. *Vaſſari* propoſes another, *viz.* by paſſing a running Examination over the whole Edifice, according to the Structure of a well-made Man; as, whether the Walls ſtand upright on a clean Footing and Foundation; whether the *Building* be of a beautiful Stature; whether, for the Breadth, it appear well burniſh'd; whether the principal Entrance be on the middle Line of the Front, or Face, like our Mouths; the Windows, as our Eyes, ſet in equal Number and Diſtance on both Sides; the Offices, like the Veins, uſefully diſtributed, &c. Laſtly, *Vitruvius* gives a third Method of judging; ſumming up the whole Art under theſe ſix Heads: Ordination, or the ſettling the Model and Scale of the Work; Diſpoſition, the juſt Expreſſion of the firſt Deſign thereof; (which two, Sir *H. Wotton* thinks he might have ſpar'd, as belonging rather to the Artificer than the Cenſurer:) Eurithmy, the agreeable Harmony between the Length, Breadth, and Height of the ſeveral Rooms, &c. Symmetry, or the Agreement between the Parts and the Whole; Decor, the due Relation between the *Building* and the Inhabitant: Whence *Palladio* concludes, the principal Entrance ought never to be limited by any Rule, but the Dignity and Generoſity of the Maſter. And laſtly, Diſtribution, the uſeful caſting of the ſeveral Rooms, for Office, Entertainment, or Pleaſure. Theſe laſt four are ever to be run over, e'er a Man paſs any determinate Cenſure: And theſe alone, Sir *Henry* obſerves, are ſufficient to condemn or acquit any *Building* whatever. See EURITHMY, SYMMETRY, &c.

Dr. *Fuller* gives us two or three good Aphoriſms in *Building*; as,

1ſt, *Let not the common Rooms be ſeveral, nor the ſeveral Rooms common: i. e.* The common Rooms not to be private or retir'd, as the Hall, Galleries, &c. which are to be open, and the Chambers, &c. retir'd.

2d, *A Houſe had better be too little for a Day, than too big for a Year.* Houſes therefore to be proportion'd to ordinary Occaſions, not extraordinary.

3d, *Country Houſes muſt be Subſtantives, able to ſtand of themſelves.* Not like City *Buildings*, ſupported and ſhelter'd on each Side by their Neighbours.

4th, *Let not the Front look aſquint on a Stranger; but accoſt him right, at his Entrance.*

5th, *Let the Offices keep their due Diſtance from the Manſion Houſe; thoſe are too familiar, which are of the ſame Pile with it.*

BULB, in Botany, an oblong Root, nearly round, compoſed of ſeveral Skins, or Coats, laid one over another; and caſed, as it were, within one another; ſending forth from its lower Part a great number of Fibres. The Roots of the common Onion, the Daffodil, the Hyacinth, are of the *bulbous* Kind. The Name is alſo given to tuberous Roots, compos'd of a ſolid continued Subſtance, without any Skins laid over one another: Thus, the Roots of Saffron and Colchique are call'd *bulbous* Roots. See ROOT.

Dr. *Grew* obſerves, that in *bulbous* Plants, as well as many Perennial ones, the Root is annually renew'd, or repair'd, out of the Trunk or Stalk it ſelf: That is, the Baſis of the Stalk, continually and inſenſibly deſcends below the Surface of the Earth; and hiding it ſelf therein, is, both in Nature, Place, and Office, chang'd into a true Root. Thus, in Brownwort, the Baſe, ſinking by degrees, becomes the upper Part of the Root; the next Year the lower Part; and the next another rots away; a freſh ſupply coming.

BULIMY, or BOULIMIA, a Diſeaſe, occaſioning a diſorderly and ravenous Appetite; call'd alſo *Appetitus Caninus*. In the *Philoſophical Tranſactions*, we have an Account of a Perſon affected with a *Bulimy*, inſomuch that he wou'd eat up an ordinary Leg of Veal at a common Meal, and feed on Sow-thiſtles, &c. cur'd by giving up ſeveral Worms, of the Length and Thickneſs of a Tobacco-Pipe. The Word comes from the *Greek* βοῦς, *bos*, and λιμὸς, *Hunger*; as if the Patient had an Appetite ſufficient to eat an Ox.

BULK *of a Ship*, is her whole Content in the Hold, for ſtowage of Goods. See BREAK-BULK.

Bulk-Heads, are Partitions made acroſs a Ship, with Boards of Timber, whereby one Part is divided from another. The *Bulk-Head afore*, is the Partition between the Fore-Caſtle, and Graling in the Head, and in which are the Chaſe-Ports.

BULL, a Letter diſpatch'd from the *Roman* Chancery, ſeal'd with Lead; anſwering to the Edicts, Letters Patents, and Proviſions, of ſecular Princes. If the *Bulls* be Letters of Grace, the Lead is hung on Silk Threads; if they be Letters of Juſtice, and Executory, the Lead is hung by a Hempen Cord.

The *Bull* is the third kind of *Apoſtolical Reſcript*, and the moſt in uſe, both in Affairs of Juſtice and Grace. It is wrote on Parchment; by which it is diſtinguiſh'd from a ſimple *Signature*, which is on Paper. A *Bull* is properly a *Signature* enlarg'd: What the latter comprehends in a few Words, the former dilates and amplifies. Yet the *Bull* is not to take in more Matter than the *Signature*; being only to amplify the Stile in Clauſes of Ceremony. The *Bull*, in the Form wherein it is to be diſpatch'd, is divided into five Parts; *viz.* the Narrative of the Fact; the Conception; the Clauſe; the Date; and the Salutation, in which the Pope takes on himſelf the Quality of *Servant of Servants*, *Servus Servorum Dei*. Properly ſpeaking, 'tis the Seal, or pendant Lead alone that is the *Bull*; it being that which gives it the Title and Authority. The Seal preſents, on one Side, the Heads of St. *Peter* and St. *Paul*; on the other, the Name of the Pope, and the Year of his Pontificat. *Bulls* are wrote in an old round *Gothic* Letter.

By *Bulls*, Jubilees are granted; without 'em no Biſhops, in the *Romiſh* Church, are allow'd to be conſecrated. In *Spain*, *Bulls* are requir'd for all kinds of Benefices; but in *France*, &c. ſimple *Signatures* are ſufficient; excepting for Biſhopricks, Abbeys, Dignities, and Priories Conventual. According to the Laws of the *Roman* Chancery, no Benefice exceeding 24 Ducats *per Annum*, ſhould be conferr'd but by *Bulls*: But the *French* would never ſubmit to this Rule, except for ſuch Benefices as are tax'd in the Apoſtolical Chamber; for the reſt, they reſerve the Right of diſſembling the Value, expreſſing it in general Terms; *Cujus & illi forſan annexorum fructus 24 Ducatorum Auri, de camera ſecundum communem eſtimationem, Valorem Annuum non excedunt.* The *Bulls* brought into *France*, are limited and moderated by the Laws and Cuſtoms of the Land, before they are regiſter'd; nor is any thing admitted till it have been well examin'd, and found to contain nothing contrary to the Liberties of the *Gallican* Church: Thoſe Words, *proprio motu*, in a *Bull*, are ſufficient to make the whole be rejected. Nor do the *Spaniards* admit 'em implicitly; but, having been examin'd by the

King's Council; if there appear any Reaſons for not executing 'em, notice thereof is given to the Pope by a Supplication; and the *Bull*, by this means, remains without Effect: And the like Method of proceeding with the Court of *Rome*, is obſerv'd by the reſt of the Courts of *Europe*.

To *fulminate Bulls*, is to make the Publication thereof, by one of the three Commiſſaries to whom they are directed; whether he be Biſhop or Official. This Publication is ſometimes oppos'd; but when it is, the Fault is not charg'd on the Pope who iſſu'd it, but an Appeal is brought to him againſt the Perſon who is ſuppos'd to make it: Thus the Fault is laid, where 'tis known not to be juſt, to evade affronting the Pontiff.

The *Bull in Cæna Domini*, is a *Bull* read every Year, on *Maunday-Thurſday*, in the Pope's Preſence; containing various Excommunications and Execrations, againſt Hereticks, thoſe who diſobey the See, who diſturb or oppoſe the Exerciſe of Eccleſiaſtical Juriſdiction, &c.

After the Death of a Pope, no *Bulls* are diſpatch'd during the Vacancy of the See: To prevent any Abuſes therefore, as ſoon as the Pope is dead, the Vice-Chancellor of the *Roman* Church takes the Seal of the *Bulls*; and, in the Preſence of ſeveral Perſons, orders the Name of the deceas'd Pope to be eras'd; and covers the other Side, on which are the Faces of St. *Peter* and *Paul*, with a Linen Cloth; ſealing it up with his own Seal, and giving it thus cover'd to the Chamberlain, to be preſerv'd, ſo as no *Bulls* may be ſeal'd with it in the mean time.

The Word *Bull*, is deriv'd from *bullare*, to ſeal Letters; or from *bulla*, a Drop or Bubble: Others derive it from the *Greek* βυλὴ, Council; *Pezron* from the Celtic *Buil*, and *bul*, Bubble.

Golden BULL, is an Ordonnance, or Statute, made by the Emperor *Charles* IV. in 1356. ſaid to have been drawn up by that celebrated Lawyer *Bartoli*: This is the Fundamental Law of the Empire. Till this time, the Form and Ceremony of the Election of an Emperor, were dubious and undetermin'd; and the Number of Electors not fix'd. This ſolemn Edict regulated the Functions, Rights, Privileges, and Preeminences of the Electors. The Original, which is in *Latin*, on Vellom, is kept at *Frankfort*. On the Backſide are ſeveral Knots of black and yellow Silk; to which hangs a Seal of Gold.

'Tis call'd the *Golden Bull*, becauſe the Emperors of the Eaſt uſed, antiently, to ſeal their Edicts with a Golden Seal, call'd *Bulla*. This Ordonnance, containing 30 Articles, was approv'd of by all the Princes of the Empire, and remains ſtill in force. The Election of the Emperor was to be in the Hands of ſeven Electors; three of 'em Eccleſiaſticks, *viz.* the Archbiſhops of *Mentz*, *Treves*, and *Cologne*; and four Seculars, *viz.* the King of *Bohemia*, Prince *Palatine*, Duke of *Saxony*, and Marquis of *Brandenburg*. See ELECTOR.

Golden Bulls were in uſe among the Eaſtern Emperors for a conſiderable Time; Leaden ones being confin'd to Matters of ſmaller moment. *Spelman* mentions a *Golden Bull*, in a Treaty of Alliance between our *Henry* VIII. and *Francis* I. of *France*; and there are other Inſtances in *Du Cange* and *Altaſerra*.

BULLET, an Iron or Leaden Ball, or Shot, wherewith Fire-Arms are loaded. *Bullets* are of various Kinds, *viz.* *Red Bullets*, made hot in a Forge; intended to ſet Fire to Places where combuſtible Matters are found. *Hollow Bullets*, or Shells, made Cylindrical, with an Aperture and a Fuſee at one End, which giving Fire to the Inſide, when in the Ground it burſts, and has the ſame Effect with a Mine. *Chain Bullets*, which conſiſt of two Balls, join'd by a Chain three or four Foot apart. *Branch Bullets*, two Balls join'd by a Bar of Iron 5 or 6 Inches apart. *Two-headed Bullets*, call'd alſo *Angels*, two halves of a *Bullet* join'd by a Bar, or Chain: Theſe are chiefly us'd at Sea, for cutting of Cords, Cables, Sails, &c. Some derive the Word from the Latin *Botellus*, others from the *Greek* βάλλειν, to throw. According to *Merſenne*, a *Bullet* ſhot out of a great Gun, flies 92 Fathom in a Second of Time, which is equal to 589½ *Engliſh* Feet; and, according to *Huygens*, would be 25 Years in paſſing from the Earth to the Sun: But according to ſome very accurate Experiments of Mr. *Derham*, it flies, at its firſt Diſcharge, 510 Yards in five half Seconds; which is a Mile in a little above 17 half Seconds: Allowing therefore the Sun's Diſtance 86051398 *Engliſh* Miles, a *Bullet* would be 32 Years and a half in its Paſſage. See SOUND.

BULLION, Gold and Silver in the Maſs or Billet. It is alſo the Place where Gold and Silver is brought to be try'd and exchang'd.

BULWARK, the ſame, in the antient Fortification, with a *Baſtion* in the Modern; ſee BASTION.

BUMICILLI, a Sect of Mahometans in *Africa*. Theſe are ſaid to be great Sorcerers; they fight againſt the Devils, as they ſay; and frequently run about cover'd with Blood and Bruiſes, in a terrible Fright: They ſometimes counterfeit a Combat with 'em at noon Day; and, in the Preſence of Numbers of People, for the Space of two or three Hours, with Darts, Javelins, Scimiters, &c. laying deſperately about them, till they fall down on the Ground oppreſs'd with Blows: After reſting a Moment, they recover their Spirits and walk off. What their Rule is, is not well known; but they are ſaid to be an Order of Religious.

BUNT *of a Sail*, is the middle Part of it, which is purpoſely form'd into a kind of Bag, or Cavity, that the Sail might receive the more Wind: It is chiefly us'd in Top-ſails; for Courſes are for the moſt part cut ſquare, or at leaſt with a ſmall Allowance, for *Bunt* or Compaſs. They ſay, *the Bunt holds much Leeward Wind*; that is, the *Bunt* hangs too much to Leeward. The *Bunt-lines* are ſmall Lines made faſt to the Bottom of the Sails, in the middle Part of the Bolt-Rope, to the Crengle; and ſo are reeved thro a ſmall Block, ſeized to the Yard: Their uſe is to trice up the *Bunt* of the Sail, for the better furling it up.

BUOY, at Sea, a piece of Wood or Cork, ſometimes an empty Caſk well clos'd, ſwimming on the Water, and faſten'd by a Chain or Cord to a large Stone, piece of broken Cannon, &c. thrown into the Sea, to mark the dangerous Places near a Coaſt, as Rocks, Sholes, Wrecks of Veſſels, Anchors, &c. In lieu of theſe *Buoys*, are ſometimes placed pieces of Wood, in form of Maſts, in the conſpicuous Places. Sometimes large Trees are planted in a particular manner; in number, two at the leaſt, to be taken in a right Line, the one hiding the other; ſo as the two may appear to the Eye no more than one.

Buoy is alſo a piece of Wood, or a Barrel, at Sea, faſten'd ſo as to float directly over the Anchor; that the Men who go in the Boat to weigh the Anchor, may certainly know where it lies.

BURDEN, the Drone or Baſe in ſome Muſical Inſtruments, and the Pipe or Part that plays it; as in an Organ, a Bagpipe, &c. See DRONE. Hence the *Burden* of a Song, &c. is that Part repeated at the End of each Stanza. The Word comes from the French *Bourdon*, a Staff; or a Pipe made in form of a Staff, imitating the groſs murmurs of Bees or Drones. This is what the Antients call'd, *Proſlambanomenos*.

BURDEN *of a Ship*, is its Content, or the Number of Tonns it will carry. To determine the *Burden* of a Ship, multiply the Length of the Keel, taken within Board, by the Breadth of the Ship, within Board, taken from the Midſhip Beam from Plank to Plank, and the Product by the Depth of the Hold, taken from the Plank below the Keelſey, to the under Part of the upper Deck Plank; and divide the laſt Product by 94, and the Quotient is the Content of the Tonnage requir'd. See SHIP.

BURGAGE, is a Tenure proper to Cities, Boroughs, and Towns, whereby the Burghers, Citizens, or Townſmen, hold their Lands or Tenements of the King, or other Lords, for a certain yearly Rent. *Swinburn* ſays, it is a kind of Soccage.

BURGESSES, the Inhabitants of a Borough, or wall'd Town: tho the Word is alſo apply'd to the Magiſtrates of ſuch Towns; as the Bailiff and *Burgeſſes* of *Leominſter*. The Word *Burgeſſes* is now ordinarily us'd for the Repreſentatives of ſuch Borough-Towns in Parliament: *Filius vero* Burgenſis, *Ætatem habere tunc intelligitur cum diſerte ſciverit denarios numerare & pannos ulnare*, &c. In other Countries, *Burgeſs* and Citizen are confounded together, but with us they are diſtinguiſh'd. See BOROUGH.

BURG-GRAVE, a Judge or Governor in ſeveral Cities and Caſtles of *Germany*: The *Burg-gravate* is perpetual. The Word is form'd from *Burg*, City, and *Grave*, Judge or Count.

BURGLARY, ſignifies the robbing of an Houſe; but, in a legal Senſe, is a Felonious entering into another Man's Dwelling, wherein ſome Perſon is, or into a Church in the Night time; to the end to commit ſome Felony, or to kill ſome Perſon, or to ſteal ſomething thence, or to do ſome other felonious Act, altho he executes it not. The ſame Offence by Day, we call Houſe-breaking, &c. It ſhall not have Benefit of Clergy.

BURGMOTE, a Court of a City or Borough; ſee MOTE.

BURLESQUE, a kind of Poetry, merry, jocular, and bordering on the Ridicule. The Word, and the Thing too, ſeem to be both Modern. F. *Kavaſſor* maintains, in his Book *De ludicra Dictione*, that it was abſolutely unknown to the Antients; againſt the Opinion of others, that one *Raintovius*, in the Time of *Ptolomy Lagus*, turn'd the ſerious Subjects of Tragedy into Ridicule; which, perhaps, is a better Plea for the Antiquity of Farce than *Burleſque*. The *Italians* ſeem to have the juſteſt Claim to the Invention of *Burleſque*. The firſt in this kind was *Bernica*; he was follow'd by *Lalli*, *Caparali*, &c. From *Italy* it paſs'd into *France*, and became there ſo much the Mode, that in 1649 appear'd a Book under the Title of, *The Paſſion of our Saviour in burleſque Verſe*. Thence it came to *England*; but the good Senſe of the *Engliſh* never adopted or own'd it, notwithſtanding one or two have excell'd in it.

BURN, in a Medicinal Senſe, a Solution of the Continuity of a Part of the Body, by the Impreſſion of Fire: or a Mark remaining on the Thing *burnt*. Of *Burns*, Phyſicians make ſeveral Degrees: The firſt, when there are only a few Puſtules rais'd on the Skin, with a Redneſs, and a Separation of the *Epiderma* from the genuine Skin. The ſecond when the Skin is burnt, dried, and ſhrunk, but without any Cruſt or Scab. The third is, when the Fleſh, Veins, Nerves, *&c.* are ſhrunk, and form a Scab. *Luſitanus* recommends an Unguent, made of the Aſhes of Lawrel Leaves burnt, with Hog's Fat dropp'd on 'em, for a *Burn*; or, on occaſion, the Unguent *Populeum*, with Vine Leaves laid over it. *Panarole* obſerves, that Clay laid on a *Burn* abates the Pain; and the Brewers in *Holland*, uſe a Decoction of Ivy for the Cure of *Burns*.

Burns, however, are not only Diſeaſes, but in ſome Caſes Remedies. M. *Homberg* obſerves, that in the Iſle of *Java*, the Natives cure themſelves of a Cholick, otherwiſe Mortal, by *burning* the Soles of their Feet; and cure themſelves of a *Panaris*, by dipping their Finger in boiling Water ſeveral times. Travellers relate many other Caſes of other Diſeaſes cur'd by *burning*: And we ſee the Effects of it our ſelves, in Horſes, Hounds, Birds of Prey, *&c.* A kind of Moſs, brought from the *Indies*, has been likewiſe us'd for the Gout; apply'd, by *burning* it on the Part affected: and M. *Homberg* gives us Inſtances of two Women cur'd, the one of a violent Diſeaſe in the Head and Eyes, and the other of a Diſeaſe in the Legs and Thighs, by the accidental *burning* of thoſe Parts. He adds, that *burning* may cure in three manners; either by putting the peccant Humors into a greater Motion, and making 'em take new Routs; or by diſſolving and breaking their Viſcidity, or by deſtroying the Canals which brought them in too great Quantities. See CAUSTIC, and CAUTERY.

BURNING, the Action of Fire on ſome *Pabulum* or Fuel, whereby the minute Parts thereof are torn from each other, put into a violent Motion; and, aſſuming the Nature of Fire themſelves, fly off *in Orbem*. See FIRE.

BURNING, or BRENNING, in our antient Cuſtoms, was an infectious Diſeaſe, got in the Stews, by converſing with leud Women; ſuppos'd to be the ſame that we now call the *Venereal Diſeaſe*: Whence that Diſeaſe is argu'd to be much more antient than the common Epocha of the Siege of *Naples*. See VENEREAL DISEASE, and CLAP.

The chief Objection againſt *Burning* being the ſame with the *Venereal* Diſeaſe, is, that the Remedies preſcrib'd againſt the former, would be ineffectual in the latter: But, beſide that it is not to be expected, the Meaſures of the antient Phyſicians ſhould be calculated for the removing of any Malignity in the Maſs of Blood or other Juices, as in the Modern Practice; inaſmuch as they look'd on the Diſeaſe as merely local, and the whole of the Cure to depend on the Removal of the Symptoms: Beſides this, it is matter of frequent Obſervation, that ſome Diſeaſes grow more violent, and others more remiſs in courſe of Time: So that the Remedies which might have avail'd for the antient *Brenning*, may now fail as to the modern *Pox*.

The Proceſs for the Cure, as deliver'd by *J. Arden*, Chirurgeon to K. *Henry* IV. is thus——*Contra* Incendium *Virgæ Virilis interius ex calore & excoriatione fiat talis ſyringa* (i. e. *injectio*) *lenitiva. Accipe lac Mulieris maſculum nutrientis & parum zacarium, Oleum Violæ & Ptiſanæ: quibus commixtis per Syringam infundatur.*

In an antient MS. written about the Year 1300, is a Receipt for *Brenning of the Pyntyl yat Men clepe the Apegalle*; *Galle* being an old Word for a running Sore. And in another MS. written 50 Years after, is a Receipt for *Burning in that Part by a Woman*. *Simon Fiſh*, a zealous Promoter of the Reformation, in his *Supplication of Beggars*, preſented to K. *Henry* VIII. 1530, ſpeaking of the *Romiſh* Prieſts, ſays, *They catch the* Pocks *of one Woman, and bare 'em to another; they be* burnt *with one Woman, and bare it to another: They catch the* Lepry *of one Woman, and bare it to another.* And *Boord*, a Prieſt and Phyſician in the ſame Reign, begins one of his Chapters of his *Breviary of Health*, thus: *The 19th Chapter doth ſhew of the* burning *of an Harlotte.* The ſame Author adds, that if a Man be *burnt* with an Harlot, and do meddle with another Woman within a Day, he ſhall *burn* the Woman he ſhall meddle withal: And as an immediate Remedy againſt the *Burning*, he recommends the waſhing the *Pudenda* two or three times with Whitewine, or elſe with Sack and Water.— In another MS. of the Vocation of *John Bale* to the Biſhoprick of *Oſſory*, written by himſelf, he ſpeaks of Dr. *Hugh Weſton* (who was Dean of *Windſor* in 1556, but deprived by Cardinal *Pole* for Adultery) thus: "At this Day is leacherous *Weſton*, who is "more practis'd in the Art of *Breech-burning* than all the "Whores of the Stews.——*He not long ago* brent *a Beg-*"*gar of St.* Botolph's *Pariſh.*——" See STEWS.

BURNING-GLASS, or *Burning Mirror*, a Machine, whereby the Sun's Rays are collected into a Point; and by that means their Force and Effect extremely heighten'd, ſo as to burn Objects placed therein. *Burning Glaſſes* are of two Kinds, the firſt Convex, which tranſmit the Rays of Light, and in their Paſſage refract or incline them towards its Axis; having the Property of *Lens's*, and acting according to the Laws of Refraction: See LENS, and REFRACTION. The ſecond, which is the more uſual, are Concave; very improperly call'd *Burning Glaſſes*, being uſually made of Metal: Theſe reflect the Rays of Light, and in that Reflexion, incline them to a Point in their Axes; having the Properties of *Mirrors*, and acting according to the Laws of Reflexion: which ſee under MIRROR and REFLECTION.

The firſt, or Convex kind, Authors ſuppoſe to have been unknown to the Antients; but the latter are generally allow'd. Hiſtorians tell us, that *Archimedes*, by means hereof, burnt a whole Fleet. Now tho the Effect related be very improbable, yet does it ſufficiently prove ſuch things were then known. The Machines here us'd, no body doubts, were Metallick and Concave; and had their *Focus* by Reflexion: It being agreed, that the Antients were unacquainted with the Refracted *Foci* of Convex Glaſſes. Yet, M. *de la Hire* has diſcover'd even thoſe, in the *Clouds* of *Ariſtophanes*; where *Strepſiades* tells *Socrates*, of an Expedient he had to pay his Debts, by means of a round tranſparent Stone or Glaſs, us'd in lighting of Fires; by which he intended to melt the Obligation: which in thoſe Days was written on Wax. The Glaſs here us'd to light the Fire, and melt the Wax, M. *de la Hire* obſerves, could not be Concave; ſince a reflected *Focus* coming from below upwards, would have been exceedingly improper for that Purpoſe: And the old Scholiaſt of *Ariſtophanes*, confirms the Sentiment. *Pliny* makes mention of Globes of Glaſs and Cryſtal, which being expos'd to the Sun, burnt the Clothes and Fleſh on Peoples Backs; and *Lactantius* adds, that a glaſs Sphere, full of Water, and held in the Sun, lighted the Fire even in the coldeſt Weather: which inconteſtably proves the Effects of Convex Glaſſes. Indeed, there is ſome Difficulty in conceiving how they ſhould know they *burnt*, without knowing they *magnify'd*; which 'tis granted they did not, till towards the Cloſe of the XIIIth Century, when Spectacles and Teleſcopes were firſt thought on. For as to thoſe Paſſages in *Plautus* which ſeem to intimate the Knowledge of Spectacles, M. *de la Hire* obſerves, they don't prove any ſuch thing: And he ſolves this, by obſerving, that their *Burning Glaſſes* being Spheres, either ſolid, or full of Water, their *Foci* would be one fourth of their Diameter diſtant from 'em: If then their Diameter were ſuppos'd half a Foot, which is the moſt we can allow, an Object muſt be at an Inch and a half's Diſtance to perceive it magnify'd: Thoſe at greater Diſtances do not appear greater, but only more confus'd, thro the Glaſs than out of it. 'Tis no wonder, therefore, the magnifying Property of Convex Glaſſes was unknown, and their *burning* one known: 'Tis more wonderful there ſhould be 300 Years between the Invention of Spectacles and Teleſcopes.

Every Concave Mirror, or *Speculum*, collects the Rays diſpers'd thro its whole Concavity, after Reflexion, into a Point or *Focus*, and is therefore a *burning Mirror*.

Hence, as the *Focus* is there where the Rays are the moſt cloſely contracted, if it be a Segment of a large Sphere, its Breadth muſt not ſubtend an Arch above 18 Degrees; if it be a Segment of a ſmaller Sphere, its Breadth may be 30 Degrees. Indeed, *Kircher* obſerves, that of all *Burning* Mirrors, thoſe are the beſt, whoſe Breadth does not ſubtend an Arch of 18 Degrees; ſo that Experience and Demonſtration go together.

As the Surface of a Mirror, which is a Segment of a larger, receives more Rays than another of a leſs, if the Latitude of each ſubtend an Arch of 18 Degrees; or even more, or leſs, provided it be equal: the Effects of the greater Mirror will be greater than thoſe of the leſs.

And, as the *Focus* is contain'd between the fourth and fifth Part of the Diameter, Mirrors that are Segments of greater Spheres, burn at a greater Diſtance than thoſe which are Segments of a ſmaller.

Since, laſtly, the *Burning* depends on the Union of the Rays, and the Union of the Rays on the Concave Spherical Figure; 'tis no wonder, that even wooden Mirrors, gilt, or thoſe prepared of Alabaſter, *&c.* cover'd with Gold; nay, even that thoſe made of Paper, and cover'd with Straw, ſhould be found to *burn*.

Among the Antients, the *Burning Mirrors* of *Archimedes* and *Proculus* are eminent; by one of which, the *Roman* Ships beſieging *Syracuſe*, under the Command of *Marcellus*, according to the Relations of *Zonaras*, *Tzetzes*, *Galen*, &c. and by the other, the Navy of *Vitellian* beſieging *Byzantium*, according to *Tzetzes*, were burnt. Among the Moderns, the moſt remarkable *Burning Mirrors*, are thoſe of *Settala*, of *Villette*, and *Tſchirnhaus*. *Settala*, Canon of *Padua*, made a Parabolical Mirror, which according

cording to *Schottus*, burnt Pieces of Wood, at the Diſtance of 15 or 16 Paces.

M. *Tſchirnhaus*'s Mirror, at leaſt, equals the former, both in Bigneſs and Effect: The following Things are noted of it in the *Acta Eruditorum*. 1. Green Wood takes fire inſtantaneouſly, ſo as a ſtrong Wind can't extinguiſh it. 2. Water boils immediately, and Eggs in it are preſently edible. 3. A Mixture of Tin and Lead, three Inches thick, drops preſently: An Iron or Steel Plate becomes red-hot preſently, and a little after burns into Holes. 4. Things not capable of melting, as Stones, Bricks, &c. become ſoon red-hot, like Iron. 5. Slate becomes firſt white, then a black Glaſs. 6. Tiles are converted into a yellow Glaſs, and Shells into a blackiſh yellow one. 7. A Pumice Stone emitted from a *Volcano*, melts into a white Glaſs: And, 8. A piece of a Crucible alſo vitrifies in eight Minutes. 9. Bones are ſoon turn'd into an opake Glaſs, and Earth into a black one. The Breadth of this Mirror is near three *Leipſick* Ells, its *Focus* two Ells diſtant from it: It is made of Copper, and its Subſtance is not above double the Thickneſs of the Back of a Knife.

Villette, a *French* Artiſt of *Lyons*, made a large Mirror, bought by *Tavernier*, and preſented to the King of *Perſia*; a ſecond, bought by the King of *Denmark*; a third preſented by the *French* King to the *Royal Academy*; a fourth has been in *England*, where it was publickly expos'd. The Effects hereof, as found by Dr. *Harris* and Dr. *Deſaguliers*, are, that a Silver Sixpence is melted in 7″ and ½; a King *George*'s Halfpenny in 16″, and runs with a Hole in 34. Tin melts in 3″, Caſt Iron in 16″, Slate in 3″; a foſſile Shilling calcines in 7″; a piece of *Pompey*'s Pillar at *Alexandria*, vitrifies in the black Part in 50″, in the white in 54; Copper Ore in 8″: Bone calcines in 4″, vitrifies in 33. An Emerald melts into a Subſtance like a Turquois Stone; a Diamond weighing 4 Gr. loſes ⅞ of its Weight: The Asbeſtos vitrifies; as all other Bodies will do, if kept long enough in the *Focus*: When once vitrify'd, the Mirror can go no further with them. This Mirror is 47 Inches wide; and is ground to a Sphere of 76 Inches Radius: ſo that its *Focus* is about 38 Inches from the Vertex. Its Subſtance is a Compoſition of Tin, Copper, and Tin-Glaſs.

Every *Lens*, whether Convex, Plano Convex, or Convexo Convex, collects the Sun's Rays, diſpers'd o'er its Convexity, into a Point, by Refraction; and is therefore a *Burning Glaſs*. The moſt conſiderable of this kind known, is that made by M. *de Tſchirnhauſen*: The Diameters of his *Lenſes* are three and four Feet; the *Focus* at the Diſtance of 12 Feet, and its Diameter an Inch and half. To make the *Focus* the more vivid, 'tis collected a ſecond time by a ſecond *Lens* parallel to the firſt; and plac'd in that Place where the Diameter of the Cone of Rays form'd by the firſt *Lens*, is equal to the Diameter of the ſecond: So that it receives 'em all; and the *Focus* from an Inch and a half, is contracted into the Space of eight Lines, and its Force increas'd proportionably. Its Effects, among others, as related in the *Acta Erudit. Lipſii*, are, That it lights hard Wood, even moiſten'd with Water, into a Flame, inſtantly; that Water, in a little Veſſel, begins to boil preſently; all Metals are melted; Brick, Pumice Stone, *Delpht* Wares, and the Asbeſtos Stone, are turn'd into Glaſs; Sulphur, Pitch, &c. melted under Water: The Aſhes of Vegetables, Woods, and other Matters, tranſmuted into Glaſs. In a word, every thing apply'd to its *Focus*, is either melted, turn'd into Calx, or into Smoak; and the Colours of Jewels, and all other Bodies, Metals alone excepted, are chang'd by it. He obſerves, that it ſucceeds beſt when the Matter apply'd is laid on a hard Coal well burnt.

Tho the Force of the Solar Rays be here found ſo ſtupendous; yet the Rays of the Full Moon, collected by the ſame *Burning Glaſs*, don't exhibit the leaſt Increaſe of Heat.

Further, as the Effects of a *Burning Lens* depend wholly on its Convexity, 'tis no wonder that even thoſe prepar'd of Ice produce Fire, &c. A *Lens* of that kind is eaſily prepar'd, by putting a piece of Ice into a Skuttle, or hollow Segment of a Sphere, and melting it over the Fire, till it accommodate it ſelf to the Figure thereof.

Nor will thoſe ignorant of Dioptrics, be leſs ſurpriz'd to ſee Flame, and the Effects thereof, produced by means of the Refraction of Light in a Glaſs Bubble fill'd with Water. See LENS.

Wolfius tells us, that an Artiſt of *Dreſden* made *burning Mirrors* of Wood, bigger than thoſe of M. *Tſchirnhaus* or *Villette*, which had Effects at leaſt equal to any of 'em. *Traberus* teaches how to make *burning Mirrors* of Leaf Gold; *viz.* by turning a Concave, laying its Inſide equally with Pitch, and covering that with ſquare Pieces of the Gold, two or three Fingers broad, faſtening 'em on, if need be, by Fire. He adds, that very large Mirrors may be made, of 30, 40, or more Concave Pieces, artfully join'd in a turn'd wooden Diſh or Skuttle; the Effects of which will not be much leſs, than if the Surface was continuous.

Zahnius adds, further, that *Newman*, an Engineer at *Vienna*, in 1699, made a Mirror of Paſtboard, cover'd within ſide with Straw glu'd to it; by which all kind of Metals, &c. were melted. See MIRROR.

BURNING *of Land*, call'd alſo vulgarly *Denſhiring*, *quaſi Devonſhiring*, or *Denbyſhiring*, as being moſt uſed there: A Method of preparing and fertilizing Lands barren, ſour, heathy and ruſhy, for Corn; by paring off the Turf, and drying, and *burning* it on the Ground. The ſame Method alſo obtains for Meadows and Paſture Ground, moiſt, claiey, or ruſhy.

BURNING *Mountains*. See VULCANO, EARTHQUAKE, MOUNTAIN, &c.

BURNISHING, the Action of ſmoothening or poliſhing a Body, by a violent rubbing it with any thing. Thus Bookbinders *burniſh* the Edges of their Books, by rubbing 'em with a Dog's Tooth. Gold and Silver are *burniſh'd* with a Wolf's Tooth, a Dog's Tooth, or the bloody Stone, Tripoli, a piece of white Wood and Emery. Hence *Burniſher*, is a round poliſh'd piece of Steel, ſerving to ſmooth and give a Luſtre to Metals: Of theſe there are various Kinds, of various Figures; ſtrait, crooked, &c. Half *Burniſhers*, are us'd to ſolder Silver, as well as to give it a Luſtre.

Deer are ſaid to *burniſh* their Heads, when rubbing off a white downy Skin from their Horns againſt a Tree, they thruſt 'em into a reddiſh Earth, to give 'em a new Colour and Luſtre.

BURR, or BURR-DOCK, is an Herb, whoſe broad Leaves, Roots, and Seeds, are ſometimes us'd in Phyſick.

BURR-PUMP, or *Bildge Pump*, a kind of Pump ſo call'd, becauſe it holds much Water; ſee PUMP.

BURSARS, in *Scotland*, are Youths choſen, and ſent as Exhibitioners to the Univerſities, one each Year, by each Presbytery; by whom they are to be ſubſiſted for the Space of four Years, at the Rate of 100 *l. per Annum*, Scots.

BUSHEL, a Meaſure of Capacity for things Dry; as Grains, Pulſe, dry Fruits, &c. The *Engliſh Buſhel* contains 4 Pecks, or 8 Gallons, or ⅛ of a Quarter. See MEASURE.

At *Paris*, the *Buſhel* is divided into two *half Buſhels*; the *half Buſhel* into two Quarts; the Quart into two half Quarts; the half Quart into two Litrons; and the Litron into two half Litrons. By a Sentence of the *Provoſt* of the Merchants of *Paris*, the *Buſhel* is to be eight Inches, two Lines and a half high, and ten Inches in Diameter; the Quart four Inches nine Lines high, and ſix Inches nine Lines wide; the half Quart four Inches three Lines high, and five Inches Diameter; the Litron three Inches and a half high, and three Inches ten Lines in Diameter. Three *Buſhels* make a Minot, ſix a Mine, 12 a Septier, and 144 a Muid: See MUID. In other Parts of *France* the *Buſhel* varies: 14 ⅛ *Buſhels* of *Amboiſe* and *Tours*, make the *Paris* Septier. 20 *Buſhels* of *Avignon*, make three *Paris* Septiers; 20 *Buſhels* of *Blois*, make one *Paris* Septier; 2 *Buſhels* of *Bourdeaux*, make one *Paris* Septier; 32 *Buſhels* of *Rochel*, make 19 *Paris* Septiers. *Note*, Oats are meaſur'd in a double Proportion to other Grains; ſo that 24 *Buſhels* of Oats make a Septier, and 248 a Muid. The *Buſhel* of Oats is divided into four Picotins, the Picotin into two half Quarts, or four Litrons. For Salt, four *Buſhels* make one Minot, and ſix a Septier. For Coals, eight *Buſhels* make one Minot, 16 a Mine, and 320 a Muid. For Lime, 3 *Buſhels* make a Minot, and 48 Minots a Muid.

Du Cange derives the Word from *Buſellus*, or *Buſtellus*, or *Biſellus*, a diminutive of *Buz*, or *Buza*, us'd in the corrupt *Latin* for the ſame thing. Others derive it from *Buſſulus*, an Urn wherein Lots are caſt.

BUSKIN, *Cothurnus*, a kind of Stocking among the Antients, in manner of a little Boot, covering the Foot and Mid-leg, and ty'd beneath the Knee; very rich and fine, and us'd principally on the Stage by the Actors in Tragedy. The *Buskin* is ſaid to have been firſt introduc'd by *Sophocles*: It was of a Quadrangular Form, and might be wore indifferently on either Leg. It was ſo thick, as by means hereof, Men of ordinary Stature might be rais'd to the Pitch and Elevation of the Heroes they perſonated: In which it was diſtinguiſh'd from the *Sock*, wore in Comedy; which was a low, popular Dreſs. *Dempſter* obſerves, that it was not Actors alone who wore the *Buskin*, but Girls likewiſe us'd 'em to raiſe their Height; Travellers and Hunters to defend themſelves from the Mire, &c. As the *Buskin* was the diſtinguiſhing Mark of Tragedy on the Stage, we find it in Claſſick Authors frequently us'd to ſignify Tragedy it ſelf.

BUST, or BUSTO, in Sculpture, &c. a Term us'd for the Figure, or Portrait of a Perſon *in Relievo*; ſhewing only the Head, Shoulders, and Stomach; the Arms being lopp'd off: ordinarily placed on a Pedeſtal, or *Conſole*. *Felibien* obſerves, that tho in Painting one may ſay a Figure appears

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in Buſto; yet it is not properly call'd a *Buſt*, that Word being confined to things *in Relievo*. The *Buſt* is the ſame with what the *Latins* call'd *Herma*, from the Greek *Hermes*, *Mercury*; the Image of that God being frequently repreſented in this manner among the *Athenians*.

Bust, is alſo us'd, eſpecially by the *Italians*, for the Trunk of an human Body, from the Neck to the Hips. Some derive the Word from the German *Bruſt*, Stomach: *Menage* fetches it from *Buſque*, a piece of Wood, Ivory, Whalebone, or the like, which the Women apply to that Part of the Body; call'd by the *Italians Buſto* to keep themſelves ſtreight.

Bust, or Bustum, in Antiquity, a Pyramid or Pile of Wood, whereon were antiently plac'd the Bodies of the Deceas'd, in order to be burnt. The *Romans* borrow'd the Cuſtom of burning their Dead from the *Greeks*. The Deceas'd, crown'd with Flowers, and dreſs'd in his richeſt Habits, was laid on the *Buſtum*. The neareſt Relations lighted it with Torches; turning their Faces from it, to ſhew that it was with Reluctance that they did this laſt Office. After the *Buſtum* was conſum'd, the Women appointed to collect the Aſhes, enclos'd 'em in an Urn, which was depoſited in the Tomb. Some Authors ſay, it was only call'd *Buſtum* after the burning, *quaſi Bene uſtum*: before the Burning it was call'd *Pyra*; during it, *Rogus*; and afterwards *Buſtum*.

BUSTUARII, a kind of Gladiators, among the antient *Romans*, who fought about the *Buſtum*, or Pile of a deceas'd Perſon, in the Ceremony of his Obſequies. The Practice at firſt was, to ſacrifice Captives on the Tomb, or at the *Buſtum* of their Warriors: Inſtances of which we have in *Homer*, at the Obſequies of *Petroclus*, and among the *Greek* Tragedians. Their Blood was ſuppos'd to appeaſe the Infernal Gods; and render 'em propitious to the *Manes* of the Deceas'd. In after Ages, this Cuſtom appear'd too barbarous; and in lieu of theſe Victims, they appointed Gladiators to fight; whoſe Blood, 'twas ſuppos'd, might have the ſame Effect. According to *Val. Maximus* and *Florus*, *Marcus* and *Decius*, Sons of *Brutus*, were the firſt, at *Rome*, who honour'd the Funerals of their Father with theſe kind of Spectacles, in the Year of *Rome* 489. Some ſay, the *Romans* borrow'd this Cuſtom from the *Hetrurians*; and they from the *Greeks*. The Word comes from *Buſtum*, which ſee.

BUTCHERY, a Place ſet apart, either for the Slaughter of Cattel, or for the expoſing their Fleſh to ſale; otherwiſe call'd *Shambles*. *Nero* built a noble one at *Rome*; on which Occaſion was ſtruck that Medal, whoſe Reverſe is a Building ſupported by Columns, and enter'd by a Perron of four Steps; the Legend, MAC. AUG. S. C. *Macellum Auguſti Senatus-Conſulto*.

Among the antient *Romans* there were three Kinds of Eſtabliſh'd *Butchers*; *viz.* two Colleges, or Companies, compos'd each of a certain number of Citizens, whoſe Office was to furniſh the City with the neceſſary Cattel, and to take care of preparing and vending the Fleſh. One of theſe Communities, was at firſt confin'd to the providing of Hogs, whence they were call'd *Suarii*; and the other were charg'd with Cattel, eſpecially Oxen; whence they were call *Pecuarii*, or *Boarii*. Under each of theſe was a ſubordinate Claſs, whoſe Office was to kill, prepare, &c. call'd *Lanii*, and ſometimes *Carnifices*. *Briſſon*, *Modius*, and others, mention a pleaſant way of ſelling Meat, us'd for ſome Ages among this People: The Buyer was to ſhut his Eyes, and the Seller to hold up ſome of his Fingers; if the Buyer gueſs'd aright, how many it was the other held up, he was to fix the Price; if he miſtook, the Seller to fix it. This Cuſtom was aboliſh'd by *Apronius*, Prefect of *Rome*; who in lieu thereof introduc'd the Method of ſelling by Weight.

Menage, after *Turnebius*, derives the Word from *Buccarius*, of *Bucca*; becauſe the *Butcher* cuts Meat for the *Mouth*: Thus alſo we find, *beccarius* from *beccus*. *Lancelot* derives it from the Word βεβύτης, *Killer of Cattel*; *Labbe*, *a Bovina ſeu Bubula carne*.

BUTLERAGE *of Wines*, the Impoſition upon Sale Wine, brought into the Land; which the King's *Butler*, by virtue of his Office, may take of every Ship, *viz.* two Shillings of every Tonn imported by Strangers.

BUTMENTS, in Architecture, thoſe Supporters or Props, on, or againſt which the Feet of Arches reſt: Alſo little Places taken out of the Yard, or the Ground-plot of an Houſe, for a Buttery, Scullery, &c. are ſometimes called *Butments*. The Word comes from the French *Bouter*, to abut or terminate on any thing.

BUTT, in the Sea Language, the End of any Plank, which joins to another on the Outſide of a Ship, under Water: Hence when a Plank is looſe at one end, they call it *ſpringing a Butt*; to prevent which, Ships are uſually bolted at the *Butt-Heads*, that is, at the Plank's End.

Butt, or *Pipe of Wine*; a Meaſure containing two Hogſheads, or one hundred twenty ſix Gallons.

A *Butt* of Currants, is from fifteen to twenty two hundred Weight.

BUTTER, a fat, unctuous Subſtance, prepared, or ſeparated from Milk; which is an Aſſemblage of three different Subſtances, *Butter*, *Cheeſe*, and a *Serum*, or Whey. See Milk. The Word comes from the *Greek* βούτυρον; as ſuppoſing it prepar'd only from Cow's Milk. It was late e'er the *Greeks* appear to have had any Notion of *Butter*; *Homer*, *Theocritus*, *Euripides*, and the other Poets, make no mention of it; and yet are frequently ſpeaking of Milk and Cheeſe: And *Ariſtotle*, who has collected abundance of Curioſities relating to the other two, is perfectly ſilent on this. *Pliny* tells us, that *Butter* was a delicate Diſh among the barbarous Nations; and was that which diſtinguiſh'd the Rich from the Poor: The *Romans* us'd *Butter* no otherwiſe than as a Medicine, never as a Food. *Schookius* obſerves, that 'tis owing to the Induſtry of the *Dutch*, that there is any ſuch thing as *Butter* in the *Eaſt Indies*: that, in *Spain*, *Butter* is only us'd Medicinally, for Ulcers; and adds, that the beſt Opiate for making the Teeth white, is the rubbing 'em with *Butter*. *Cl. Alexandrinus* obſerves, that the antient Chriſtians of *Egypt* burnt *Butter* in the Lamps at their Altars, inſtead of Oil; and the *Abyſſians*, according to *Godignus*, ſtill retain a Practice much like it: *Clemens* finds a Religious Myſtery in it. In the *Roman* Churches, it was antiently allow'd, during *Chriſtmaſs* time, to uſe *Butter* inſtead of Oil; by reaſon of the great Conſumption thereof other ways. *Schookius* has a juſt Volume, *De Butyro & Averſione Caſei*; where the Origin and Phænomena of *Butter* are handled in form: He enquires whether *Butter* was known in *Abraham*'s Days, and whether it was the Diſh he entertain'd the Angels withal: He examines how it was prepar'd among the *Scythians*; whence ariſe its different Colours; teaches how to give it its natural Colour; how to churn it, ſalt it, keep it, &c.

Butter, in Chymiſtry, is us'd to expreſs ſeveral Preparations in Chymiſtry, as *Butter* of Antimony, of Arſenic, of Wax, of *Saturn*, &c. ſo call'd from their Form, Conſiſtence, &c. See Antimony, Arsenic, Wax, &c.

BUTTOCK *of a Ship*, is her full Breadth right aſtern from the Jack upwards. According as a Ship is built, broad or narrow at the Tranſom, ſhe is ſaid to have a broad or narrow *Buttock*.

BUTTONS, an Article in Dreſs, whoſe Form, and Uſe is too familiar to need a Deſcription. The Matter whereof *Buttons* are made is various; as Metal, Silk, Mohair, &c. *Metal Buttons*, again, are various; both with regard to the Matter, and Manner of making: Beſides thoſe caſt in Moulds, much in the manner of other ſmall Works, (ſee Foundery) there are now made great Quantities, with thin Plates, or Leaves of Gold, Silver, and Braſs; eſpecially of the two laſt. The Invention of theſe *Buttons* being very late, as not having been ſet on foot before the Beginning of the XVIIIth Century; and their Structure very Ingenious, tho of ill uſe, we ſhall here ſubjoin it.

Manner of making plated Buttons. The Metal to be us'd being reduc'd into thin Plates, or Leaves, of the Thickneſs intended, (either by the Goldſmith or Braſier) is cut into little round Pieces, of a Diameter proportionable to the wooden Mould they are to cover: This cutting is perform'd with a ſharp Punch, on a leaden Block or Table. Each piece of Metal thus cut, and taken off from the Plate, is reduc'd to the Form of a *Button*, by beating it ſucceſſively in ſeveral ſpherical Cavities, with a round Piece of Iron in form of a Punchion; ſtill beginning with the flatteſt Cavity, and proceeding to the more Spherical, till the Plate have got all the Relievo requir'd: And the better to manage ſo thin a Plate, they form 10 or 12 to the Cavities at once; and alſo boil the Metal to make it more ductile. The Inſide thus form'd, they give an Impreſſion to the Outſide, by working it with the ſame Iron Punchion, in a kind of Mould, like the Minter's Coins, engraven *en creux*, or indentedly; and faſten'd to a Block or Bench. The Cavity of this Mould, wherein the Impreſſion is to be made, is of a Diameter and Depth ſuitable to the ſort of *Button* to be ſtruck in it; each Kind requiring a particular Mould. Between the Punchion and the Plate is plac'd ſome Lead, which contributes to the better taking off all the Stroaks of the Graving; the Lead, by reaſon of its Softneſs, eaſily giving way to the Parts that have Relievo; and as eaſily inſinuating it ſelf into the Trace, or Engraving of the Dentures: The Plate thus prepared, makes the Upper-part, or Shell of the *Button*. The lower Part is form'd of another Plate, made after the ſame manner, but flatter, and without any Impreſſion. To this laſt, is ſolder'd a little Eye made of Wire of the ſame Metal; for the *Button* to be faſten'd by. The two Plates are ſolder'd together, with a wooden Mold, cover'd with Wax, or other Cement, between; in order to render the *Button* firm and ſolid: For the Wax entering all the Cavities form'd by the Relievo of the other ſide, ſuſtains it, pre-

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vents its flattening, and preſerves its Boſſe or Deſign. Ordinarily, indeed, they content themſelves to cover the naked Mould with the Shell; and in this Caſe, for the faſtening, paſs a Thread or Gut acroſs thro the middle of the Mould.

BUTTRESS, a kind of Butment built archwiſe; or a Maſs of Stone or Brick, ſerving to prop or ſupport the Sides of a Building, Wall, &c. on the Outſide, where it is either very high, or has any conſiderable Load to ſuſtain on the other ſide, as a Bank of Earth, &c. The Theory and Rules of *Buttreſſes*, are one of the *Deſiderata* in Architecture.

BUTTRESS, or BUTTRICE, is likewiſe a Tool, that Farriers make uſe of to pierce the Sole of an Horſe's Foot, which is overgrown; to pare the Hoof; to fit the Shoe, and to cut off the Skirts of the ſaid Sole, that overcaſt the Shoe.

BY-LAWS, or BILAWS, Orders made in Court-Leets, Court-Barons, &c. by common Conſent, for the Good of thoſe who preſcribe them; and which extend further than the Publick Law binds. In *Scotland*, they are call'd *Laws of Burlaw*, or *Birlaw*; which are made and determin'd by Conſent of Neighbours, elected by common Conſent in *Burlaw*-Courts; wherein Cognizance is taken of Complaints 'twixt Neighbour and Neighbour. The Men thus choſen are Judges or Arbitrators, and call'd *Burlaw-Men*.

CAB

C, THE third Letter of the Alphabet; form'd, according to *Scaliger*, from the κ of the *Greeks*, by retrenching the Stem or right Line: Others derive it from the כ *Caph* of the *Hebrews*, which has, in effect, the ſame Form; allowing only for this, that the *Hebrews*, reading backwards, and the *Latins*, &c. forwards, each have turn'd the Letter their own way. However, the *c* not being the ſame as to Sound with the Hebrew *Caph*; and it being certain the *Romans* did not borrow their Letters immediately from the *Hebrews*, or other Orientals, but from the *Greeks*; the Derivation from the *Greek* Κ is the more probable. F. *Montfaucon*, in his *Palæographia*, gives us ſome Forms of the *Greek* Κ, which come very near that of our *C*; this, for Inſtance, ☾: And *Suidas* calls the *C*, the Roman *Kappa*. All Grammarians agree, that the *Romans* pronounc'd *q* like our *c*, and *c* like our *k*. F. *Mabillon* adds, that *Charles* the Great was the firſt who wrote his Name with a *C*; whereas, all his Predeceſſors of the ſame Name wrote it with a *K*: The ſame Difference is obſerv'd in their Coins.

C was a Numeral Letter among the *Romans*, ſignifying an hundred: according to the Verſe,

Non plus quam centum C *litera fertur habere.*

Some add, that a Daſh over it, made it ſignify an hundred thouſand; but it wou'd be hard to find an Inſtance hereof among the Antients. In proper Names, *C.* was us'd for *Caius*; as, *C. Cæſar*, &c. Their Lawyers us'd it ſingle for *Codice* and *Conſule*, &c. double, *CC*, for *Conſulibus*. *C* was alſo us'd in their Courts, as a Letter of Condemnation, and ſtood for *condemno*; in oppoſition to *A*, which ſignify'd *abſolvo*. See A.

In Muſick, a Capital *C* denotes the higheſt Part in a thorough Baſs.

CABBALA, or CABALA, or KABBALA, a Term us'd in various Senſes, which Authors generally confound. It is originally *Hebrew*, קבלה *Kabbalah*; and, properly, ſignifies *Tradition*: whence the Verb קבל *Kibbel*, to receive by Tradition, or from Father to Son; eſpecially in the *Chaldee* and *Rabbinical Hebrew*. Hence *Cabbala* is primarily uſed for a Sentiment, Opinion, or Explication of Scripture; or a Cuſtom or Practice tranſmitted from Father to Son.

As to the Origin of the *Cabbala*: The *Jews* believe, that God gave to *Moſes* on Mount *Sinai*, not only the Law, but alſo the Explication of that Law; and that *Moſes*, after his coming down, retiring to his Tent, rehears'd to *Aaron* both the one and the other. When he had done, *Aaron* ſtanding on the Right Hand, his Sons, *Eleazer* and *Ithamar*, were introduc'd to a ſecond Rehearſal: This over, the 70 Elders that compos'd the *Sanhedrim* were admitted; and laſtly the People, as many as pleas'd: To all which, *Moſes* again repeated both the Law and Explanation, as he receiv'd 'em from God. So that *Aaron* heard it four times, his Sons thrice, the Elders twice, and the People once. Now, of the two Things which *Moſes* taught 'em, the *Laws*, and the *Explanation*, only the firſt was committed to Writing; which is what we have in *Exodus*, *Leviticus*, and *Numbers*: As to the ſecond, or the Explication of thoſe Laws, they were contented to impreſs it well in their Memory, to teach it their Children; they, to theirs, &c. Hence, the firſt Part they call ſimply the *Law*, or the *Written Law*; the ſecond, the *Oral Law*, or *Cabbala*. Such is the original Notion of the *Cabbala*.

Some Rabbins, however, pretend their Fathers receiv'd the *Cabbala* from the Prophets, who receiv'd it from the Angels. R. *Abr. ben Dior* ſays expreſsly, that the Angel *Raziel* was *Adam*'s Maſter, and taught him the *Cabbala*;

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that *Japhiel* was *Shem*'s Maſter; *Tſedekiel*, *Abraham*'s; *Raphael*, *Iſaac*'s; *Peliel*, *Jacob*'s; *Gabriel*, *Joſeph*'s; *Meratron*, *Moſes*'s; *Malathiel*, *Elias*'s, &c.

Among theſe Explications of the Law, which, in reality, are little elſe but the ſeveral Interpretations and Deciſions of the Rabbins on the Laws of *Moſes*, ſome are *Myſtical*; conſiſting of odd abſtruſe Significations given to a Word, or even to the Letters whereof it is compos'd: whence, by different Combinations, they draw Meanings from Scripture, very different from thoſe it ſeems naturally to import. The Art of interpreting Scripture, after this manner, is call'd more particularly *Cabbala*: And 'tis in this laſt Senſe the Word is more ordinarily us'd among us.

This *Cabbala*, call'd alſo *Artificial Cabbala*, (to diſtinguiſh it from the firſt Kind, or ſimple Tradition) is diſtinguiſh'd into three Sorts: The firſt, call'd *Gematria*, conſiſts in the taking Letters as Figures, or Arithmetical Numbers, and in explaining each Word by the Arithmetical Value of the Letters whereof it is compos'd; which is done various ways. See GEMATRIA.

The ſecond is call'd *Notaricon*; and conſiſts either in the taking each Letter of a Word for an entire Diction; *v. g.* בראשית the firſt Word of *Geneſis*, for תכי הומזת כרקיע שרצ שמים: Or in making one entire Diction out of the Initial Letters of many; as out of theſe, גבכזר לעולכם ארני אתה: *Thou art great in Eternity, Lord*; by only taking the Initial Letters, they form the *Cabbaliſtic* Name of God, אגלא *Agla*, mention'd by *Galatine*. See NOTARICON.

The third kind, call'd *Themura*, q. d. *changing*, conſiſts in the changing and tranſpoſing the Letters of a Word; which is done various Ways: 1. By ſeparating 'em; and thus, *v. g.* from *Breſchit*, i. e. *in Principio*, they make *Bres-chit*, i. e. *poſuit Fundamentum*; juſt as in playing with Words, we ſometimes ſeparate *Sum-mus*, *Ter-minus*, *Sus-tinea-mus*. 2. By tranſpoſing the Letters, and ranging 'em in a different manner: thus, from the ſame Word *Breſchit*, they make another Signification, 1ª *in Thiſri*; and becauſe this is taken from the firſt Word in the Hiſtory of the Creation of the World, they thence conclude, the World was created on the firſt Days of the Month of *Thiſri*. 3. By taking one Letter for another, with reſpect to the different Relations they acquire, in conſidering the Alphabet different Ways: thus, by dividing the *Hebrew* Alphabet of 22 Letters, into two Parts, and taking the firſt of either of theſe for the firſt of the other, the ſecond for the ſecond, &c. by this means, of *Tabeel*, an unknown Name mention'd in *Iſaiah*, they form *Remla*, the Name of a King of *Iſrael*. Another manner of changing the Letters, is by taking the Alphabet two ways, firſt in the common way, then backwards, and changing mutually the two firſt Letters, then the two ſecond, &c. By this means, of קכוי *the Hearts of thoſe who riſe againſt me*, they make שדים *the Chaldeans*; and thence conclude, that thoſe God here ſpake of are *Chaldeans*. Theſe two laſt Kinds are alſo call'd צירוף *Aſſociation, Combination*.

The *Cabbala* hitherto ſpoke of, may be call'd *Speculative Cabbala*; in oppoſition to the following, which may be call'd *Practical Cabbala*.

CABBALA, is alſo taken for the Uſe, or rather Abuſe, which Magicians make of ſome Paſſages of Scripture. All the Words, Terms, Magic Figures, Numbers, Letters, Charms, &c. uſed in Magic, as alſo in the Hermetical Science, are compriz'd under this Species of *Cabbala*. But 'tis only the Chriſtians that call it by this Name, on account of the Reſemblance this Art bears to the Explications of the *Jewiſh Cabbala*: For the *Jews* never uſe the Word *Cabbala*

bala in any ſuch Senſe, but ever with the utmoſt Reſpect and Veneration. 'Tis not, however, the Magic of the *Jews* alone which we call *Cabbala*, but the Word is alſo us'd for any kind of Magic: in which Senſe it is, that the Abbe *de Villars* takes it, in his *Comte de Gabalis*; where he expoſes the ridiculous Secrets of the *Sacred Cabbala*, as the *Cabaliſts* call it. Theſe ſuppoſe there are elementary People, under the Names of *Sylphs*, *Gnomes*, *Salamanders*, &c. and hold, that this Science introduces People into the *Sanctuary of Nature*. They pretend, the *Hebrews* knew theſe aerial Subſtances; that they borrow'd their *Cabaliſtic* Knowledge from the *Egyptians*; and have not yet forgot the Art of converſing with the Inhabitants of the Air. See SYMBOL.

CABBALLA, or CABBALLISTS, is alſo us'd to expreſs that Sect among the *Jews*, which follows and practiſes the *Cabballa*; or interpret Scripture according to the Art of *Cabballa*, taken in the ſecond Senſe above laid down. The *Jews* are divided into two general Sects; the *Karaites*, who refuſe to receive either Tradition, or the Thalmud, or any thing but the pure Text of Scripture. See CARAITES. And the *Rabbiniſts* or *Thalmudiſts*; who, beſide this, receive the Traditions, and follow the *Thalmud*; ſee THALMUD. And theſe latter are again divided into two other Sects; pure *Rabbiniſts*, who explain the Scripture in its natural Senſe, by Grammar, Hiſtory, and Tradition; and *Cabbaliſts*, who to diſcover hidden myſtical Senſes, which they ſuppoſe God to have couch'd therein, make uſe of the *Cabbala*, and the myſtical Rules and Methods abovemention'd. There are Viſionaries among the *Jews*, who believe that Jeſus Chriſt wrought his Miracles by virtue of the Myſteries of the *Cabbala*. Some learned Men are of Opinion, that *Pythagoras* and *Plato* learn'd the *Cabbaliſtic* Art of the *Jews* in *Egypt*; and fancy they ſee evident Footſteps thereof in their Philoſophy: Others, on the contrary, ſay, it was the Philoſophy of *Pythagoras* and *Plato*, that firſt furniſh'd the *Jews* with the *Cabbala*. Be this as it will, 'tis certain that in the firſt Ages of the Church, moſt of the Hereticks gave into the vain Notions of the *Cabbala*: Particularly the *Gnoſtics*, *Valentinians*, and *Baſilidians*. Hence aroſe the ABPAΞAΣ, and the multitude of Taliſmans, wherewith the Cabinets of the Virtuoſi are ſtock'd. See TALISMAN, &c.

The Word *Cabballa* is not only apply'd to the whole Art; but alſo to each Operation perform'd according to the Rules of that Art. R. *Jac. ben Aſcher*, ſirnam'd *Baal Hatturim*, has compil'd moſt of the *Cabbala's* invented on the Books of *Moſes* before his Time.

CABINET, the moſt retir'd Place in the fineſt Apartment of a Building; ſet apart for Writing, Studying, or preſerving any thing very precious. A compleat Apartment conſiſts of an Hall, Antichamber, Chamber, and Cabinet; with a Gallery on one ſide. See APARTMENT. Hence a *Cabinet* of Paintings, of Curioſities, Moſaic *Cabinet*, *Cabinet* of a Garden, &c.

CABINS, or CABANES, in a Ship, are little Lodges and Apartments for the Pilots and other Officers of the Ship to lie in; very narrow, and in form of Armories or Preſſes; us'd in ſeveral Parts of the Ship, particularly the Poop and the Sides. The Word comes from the *Italian Capanna*, a little Straw Hut; and that from the *Greek* καπάνη, a Stall or Manger.

CABIRIA, or CABBIRES, were Feaſts held by the antient *Greeks* of *Lemnos* and *Thebes*, in honour of ſome *Samothracian* Deities, call'd *Cabires*. Theſe Gods, according to the Scholiaſt of *Apollonius*, were four; *Axierus*, who was *Ceres*; *Axiocerſa*, *Proſerpine*; *Axiocerſus*, *Pluto*; and *Caſinilus*, *Mercury*: The Feaſt was very antient, and prior even to the Time of *Jupiter*; who is ſaid to have reſtor'd it: It was held by Night. Children above a certain Age were here conſecrated; which Conſecration was ſuppos'd to be a Preſervative againſt all Dangers of the Sea, &c. The Ceremony of Conſecration, conſiſted in placing the initiated Youth on a Throne, the Prieſts dancing round him: The Badge of the Initiated was a Girdle or Scarf. When a Perſon had committed any Murder, the *Cabiria* gave him an Aſylum. *Meurſius* is very particular in the Proof of each of theſe Points.

CABLE, a thick long Rope, ordinarily of Hemp, ſerving to hold Ships firm at Anchor, to tow Veſſels in large Rivers, &c. The Term is ſometimes alſo apply'd to the Cordage us'd to raiſe maſſy Loads, by means of Cranes, Wheels, and other like Engines: Tho, in ſtrictneſs, *Cable* is not apply'd to Ropes of leſs than three Inches Circumference. See CORDAGE, ROPE, &c.

Every *Cable*, of whatever Thickneſs it be, is compos'd of three *Hawſers*; each Hawſer of three *Strands*; each Strand of three *Twiſts*; each Twiſt of a certain Number of *Caburns*, or Threads of Rope-Yarn, more or leſs, as the Cable is to be thicker or ſmaller.

To make a *Cable*: after forming the Strands, as in the Article of ROPEMAKING, they uſe Staves; which they firſt paſs between the Strands whereof the Hawſers are compos'd; and afterwards between the Hawſers whereof the *Cable* is compos'd: that the one and the other may turn the better, and be intertwiſted the more regularly together. And to prevent any entangling, a Weight is hung at the End of each Hawſer and Strand. The *Cable* being twiſted as much as needs, is untwiſted again three or four Turns, that the reſt may the better retain its State.

The number of Threads each kind of *Cable* is to be compos'd of, is ever proportion'd to its Length and Thickneſs; and 'tis by this Number of Threads, that its Weight and Value are aſcertain'd. A *Cable* of 3 Inches Circumference, or 1 Inch Diameter, conſiſts of 48 ordinary Threads, and weighs 192 Pounds; one of 10 Inches Circumference, of 485 Threads, and weighs 1940 Pounds; a *Cable* of 20 Inches, of 1943 Threads, and weighs 7772 Pounds.

The Seamen ſay, *The Cable is well laid*, when it is well wrought, or made. *Serve the Cable*, or *plat the Cable*, *i. e.* bind it about with Ropes, Clouts, &c. to keep it from galling in the Hawſe. *To ſplice a Cable*, is to make two Pieces faſt together, by working the ſeveral Strands of the Rope one into another. *To coil the Cable*, is to roll it up round in a Ring; of which, the ſeveral Rolls one upon another are call'd *Cable Tire*. They ſay, *Pay more Cable*, that is, let it more out from the Ship; that the Boat which carries the Anchor may the more eaſily drop it into the Sea: And ſometimes they ſay, *Pay cheap the Cable*, that is, put or hand it out apace. In the ſame Senſe they ſay alſo, *Veer more Cable*; that is, let more out. When two *Cables* are ſplic'd together, it is call'd *a Shott of a Cable*.

Every Merchant Veſſel, how ſmall ſoever, has three *Cables*, *viz.* the *Main* or *Maſter Cable*, which is that of the chief Anchor; the *Common Cable*, and the *ſmall one*. The ordinary Length of theſe *Cables*, is 110 or 120 Fathoms, or Braces. Hence, at Sea,

CABLE, or CABLE's-LENGTH, is alſo us'd for a Meaſure of 120 Fathom. See FATHOM.

The Word *Cable*, comes from the Hebrew *Chebel*, Cord. *Du Cange* derives it from the Arabic, *Habl*, Cord, or *habala*, *vincire*. *Menage*, from *Capulum*, or *Cabulum*; and that from the *Greek* καμηλ☪, or the *Latin*, *Camellus*.

CABLED-FLUTES, in Architecture, ſuch *Flutes* as are fill'd up with Pieces in form of *Cables*. See FLUTING.

CABLED, in Heraldry, is when a Croſs is form'd or cover'd with Ropes, or twiſted *Cables*. See CROSS.

CABOSSED, or CABOCHED, in Heraldry, a term originally *Spaniſh*; us'd where the Head of a Beaſt is cut off behind the Ears, by a Section parallel to the Face; or by a perpendicular Section: in contra-diſtinction to *Couping*; which is done by a horizontal Line; beſides that, 'tis farther from the Ears than *Caboſing*. See COUPING.

CACAO, or COCOA, in Natural Hiſtory and Commerce, a kind of Nut, about the Size of a moderate Almond; the Seed or Fruit of a Tree of the ſame Name, growing in ſeveral Parts of the *Weſt-Indies*; chiefly in the Provinces of *Guatimala* and *Nicaragua*, and the *Antilles* Iſlands. The native *Mexicans* call the *Cacao* Tree, *Cucuhua guahuitl*; and the *Spaniards*, *Cacaotal*. It reſembles our Cherry-Tree; but is ſo very delicate, and the Soil it grows in ſo hot, that to guard it from the Sun, they always plant it in the Shade of another Tree, call'd *Mother of Cocoa*. The Fruit is enclos'd in a kind of Pod, of the Size and Figure of a Cucumber; except that it begins and ends in a Point. Within the Pod, which is half a Finger thick, is form'd a Tiſſue of white Fibres, very ſucculent, a little acid, and proper to appeaſe Thirſt. In the middle of theſe Fibres are contain'd 10, ſometimes 12, and ſometimes more, as far as forty, Grains or Seeds, of a Violet Colour, and dry as Acorns. Each Grain, which is cover'd with a little Bark or Rind, when ſtripp'd thereof, ſeparates into five or ſix unequal Pieces, in the middle whereof is a Kernel or Pippin, having a tender Bud, very difficult to preſerve. Of this Seed, with the Addition of *Vanille*, and ſome other Ingredients, the *Spaniards*, and, after their Example, the reſt of *Europe*, prepare a Kind of Conſerve, or Cake; which, diluted in hot Water, makes that delicious, wholeſom Drink, call'd *Chocolate*: *For the Preparation*, &c. *whereof*, *ſee* CHOCOLATE.

This precious Almond, the *Spaniards* make ſo conſiderable a Trade of, that there are ſome make 5000 *l.* Sterling, *per Annum*, from a ſingle Garden of *Cacoa's*. There are two Kinds of *Cacoa's*; the moſt common, which is likewiſe the beſt, is of a dark Colour, bordering on red, and round: The other, call'd *Patlaxe*, is white, larger, thicker, and flatter; its Quality is Deſiccative. Some Druggiſts, however, ſell four Kinds; *viz.* the *great* and *little Caragua*, and the *great* and *little Cacoa of the Iſlands*: which, however, may be probably reduc'd to the two Kinds above mention'd: It being only the Greatneſs and Smallneſs that multiplies the Names and Kinds.

The *Cacao* Nuts, are eſteem'd by the *Mexicans* as Anodine; and us'd, eaten raw, to aſſuage Pains of the Bowels. They alſo procure a kind of Butter or Oil from 'em, as ſweet

ſweet as that of Almonds, and drawn in the ſame manner; excellent for Burns.

In ſome Parts of *America*, the *Cacoa* Grains are us'd by the *Indians* as Money; 12 or 14, are eſteem'd equivalent to a *Spaniſh Real*, or 6$\frac{3}{4}$ Sterling. See COINS.

CACHEXIA, or CACHEXY, in Medicine, an ill Habit or Diſpoſition of Body; wherein, the Nutrition is deprav'd throughout the whole Habit, at once: frequently leading towards a Dropſy; and accompany'd with a Swelling, or Bloating of the fleſhy Parts; a paleneſs or lividneſs of Complexion, &c. It ordinarily ariſes from a Debility, or Foulneſs of the *Ventricle* or *Viſcera*; ſometimes from an Ulcer in the Reins, in Perſons that have the Stone. The external Cauſes are unwholeſom Food, frequent Drunkenneſs, exceſſive Study, much waking, ſuppreſſion of the Menſes, immoderate Loſs of Blood, Chronic Fevers, Obſtructions, &c.

Boerhaave aſcribes the Diſorder, either to the vitiated State of the nutritious Juice, to ſome Diſorder of the Veſſels that are to receive it, or to the Defect of the Faculty that ſhou'd apply it. The Juice, he obſerves, may be deprav'd, either from the Quality of the Food; as if it be farinaceous, leguminous, fat, fibrous, ſharp, aqueous, or viſcous; from the want of Motion; from the Organs vitiated by too much Weakneſs, or too much Strength: And theſe, again, may be occaſion'd by immoderate Secretions and Evacuations of any kind, the Schirroſity of ſome of the Viſcera, or the Retention of ſomething that ſhould be ſecern'd: And hence, a Diminution of the Solids, or a Repletion of the Liquids with things that can't paſs: Whence two notable ill Effects of this Evil; *viz.* a Leucophlegmatia, and an Anaſarcous Dropſy. Now, according to the various Colour, Quantity, Tenacity, Acrimony, and Fluidity of the nutritious Liquor, ariſe various Diſorders, as the Effects of the *Cachexia*; *v. g.* paleneſs, yellowneſs, lividneſs, greenneſs, blackneſs, or redneſs of the Skin; heavineſs, windineſs, palpitation of the Heart and Arteries, increas'd with the leaſt Motion; crude thin Urine; ſpontaneous watry Sweats; and, at length, a Leucophlegmatia and Dropſy. For the Veſſels that receive the nutritious Juice, there can't well be aſſign'd any univerſal Fault; unleſs their too great Contractility and Laxity, and the Diſorders accruing from 'em, may be admitted as ſuch. Laſtly, Nutrition is impeded and perverted, by a Defect in the Faculty that ſhould apply it; as when the circulating Force is either too languid or too violent. The Word comes from the *Greek* καχεξια; form'd from the *Greek* κακη, *ill*, and εξις, *Diſpoſition*. The *Cachexia* is more frequently call'd *Cacochymia*, which ſee.

CACHOU, a medicinal Aromatic Drug, rank'd among the Number of Perfumes; call'd alſo *Terra Japonica*. Notwithſtanding the great uſe of *Cachou*, before that of Coffee and Tea; and its being ſtill frequently us'd by many People, eſpecially in *France*, its Nature and Origin is yet but little known; even among the ableſt Phyſicians: Some from its being call'd *Japon Earth*, rank it among the medicinal Earths, and pretend 'tis found on the Tops of Mountains, cover'd with the Roots of Cedars, whoſe Food it is: and that being waſh'd in the River, and dry'd in the Sun, 'tis form'd into a kind of Paſte; which brought into *Europe*, ſerves as the Baſis of ſeveral Paſtels, or Fucus's, call'd *Cachou*. Others, with more Probability, range it among the Gums; and maintain it to be form'd of the inſpiſſated Decoction of a Tree in the *Eaſt Indies*, call'd *Cachous*; growing chiefly in the Kingdom of *Cochinchina*. Laſtly, others, to whoſe Opinion we rather incline, take it to be a factitious Compoſition of ſeveral other Drugs; eſpecially the Juice of Areca, Extract of Liquorice, and *Calamus Aromaticus*, and the Bark of a Tree, call'd by the *Indians Catechu*; which may probably be the ſame with that above mention'd.

Be it Earth, Gum, or Compoſition, *Cachou* is of much eſteem in Medicine: Among other Effects attributed to it, 'tis ſuppos'd to ſtop a Cough, and fortify the Stomach; beſides its ſweetening and perfuming the Breath, when taken in an impalpable Pouder, mix'd with Gum Tragacanth.

CACOCHYMIA, a deprav'd Habit of Body, conſiſting in its being replete with ill Humors, from various Cauſes; ſee CACHEXIA. When the Repletion is merely with Blood, 'tis call'd a *Plethora*; ſee PLETHORA. *Gorræus* gives the Name *Cacochymia* to the Abundance and Exceſs of any ill Humor; whether it be Bile, Pituita, &c. provided there be only one that thus offends in Quantity: *Plethora* he calls the Abundance or Exceſs of all the Humors together. The Word comes from the *Greek* κακος, *ill*, and χυμος, Juice. See PLETHORA.

CACOPHONIA, or CACOPHONY, in Grammar, the meeting of two Letters, or two Syllables, that make a harſh diſagreeable Sound. The Word is ſometimes alſo us'd in Singing; it comes from the *Greek* κακος, and φωνη, Voice.

CADARIANS, a Sect of *Mahometans*, who attribute the Actions of Men to Men alone, and not to any ſecret Power determining the Will; contrary to the reſt of the *Muſſulmen*, who are ſtrict *Predeſtinarians*. The Author of this Sect, was *Maabed ben Kalid-Al Giohni*. The Word comes from the *Arabic* קדר, *Kadara*, Power. *Ben Aun* calls the *Cadarians*, the *Magi*, or *Manichees* of the *Muſſulmen*.

CADE, a Cag, Caſk, or Barrel; us'd in the *Book of Rates* for a determinate Number of ſome ſorts of Fiſh; as a *Cade* of Herrings, is a Veſſel containing the Quantity of 500 Herrings, and of Sprats 1000. See MEASURE.

CADENCE, according to the antient Muſicians, is a Series of a certain Number of Muſical Notes, in a certain Interval, which ſtrikes the Ear agreeably; and eſpecially at the Cloſe of a Song, Stanza, &c. A *Cadence* ordinarily conſiſts of three Notes. There are three Kinds of *Cadences*: The principal, or final *Cadence*; uſually conſiſting of a fourth and a fifth to make an *Octave*, as being the moſt excellent of Conſonances: The Entry, or mediate, ſometimes call'd the attendant *Cadence*; in regard the final one is always expected: and the dominant, or prevailing *Cadence*; ſo call'd, as being higher than either of the other: as the Mediate has its Name from its being in the middle, between the Dominant and Final. The modern Muſicians make *Cadence* the Relation of two Notes ſung together, as *ut* and *re*; and when the laſt of theſe Notes is follow'd with two Crotchets, the *Cadence* is ſaid to be double.

CADENCE, in the modern Muſick, may be defin'd, a certain Concluſion of a Song, or of the Parts thereof in divers Places of a Piece; which divide it, as it were, into ſo many Members or Periods. The *Cadence* is, when the Parts fall and terminate on a Chord or Note; the Ear ſeeming naturally to expect it. A *Cadence* is either perfect or imperfect: A perfect *Cadence*, is that which conſiſts in two Notes, ſung after each other, or by Degrees conjoin'd in each of the two Parts; 'tis call'd perfect, becauſe it ſatisfies the Ear better than the other. The *Cadence* is imperfect, when its laſt Meaſure is not in Octave, nor in Uniſon, but in a Sixth or Third: As when the Baſs, in lieu of deſcending a Fifth, only deſcends a Third; or when deſcending a Fifth, or, which is the ſame thing, aſcending a Fourth, it makes an Octave with the Treble, in the firſt Meaſure, and a third Major with the Second: 'Tis call'd Imperfect, becauſe the Ear does not acquieſce in this Concluſion, but expects the Continuation of the Song. The *Cadence* is ſaid to be broke, when the Baſs, in lieu of falling a Fifth, which the Ear expects, riſes a Second, either Major or Minor. Every *Cadence* is in two Meaſures: Sometimes it is ſuſpended; in which Caſe 'tis call'd a Repoſe, and only conſiſts of one Meaſure: as when the two Parts ſtop at the Fifth, without finiſhing the *Cadence*.

M. *Rouſſeau* diſtinguiſhes two Kinds of *Cadence*, with regard to the Baſs Viol: A *Cadence* with, and without a Reſt. The *Cadence* with a Reſt, is when the Finger that ſhould ſhake the *Cadence*, ſtops a little before it ſhakes, on the Note immediately above that which requires the *Cadence*: The *Cadence* without a Reſt, is when that ſtop is omitted. There are alſo ſimple *Cadences*, and double ones; the Double ones are various: The more Double are thoſe made on a long Note; the leſs Double, thoſe on a Short Note. The final *Cadence*, ſhould always be preceded by a double one. The *Cadences* are always to be accommodated to the Character of the Air. The Word comes from *Cadencia*, fall; a *Cadence* being the Fall or Concluſion of a piece of Harmony; proper to terminate either the Whole, or a Part. Some Muſicians call a *Shake* a *Cadence*; but that is to confound Terms. From this Muſical *Cadence* ariſes,

CADENCES, in Singing, are the ſame with Points and Virgula's in Diſcourſe. The Singing-Maſters ſay, the *Cadence* is a Gift of a Maſter, proper for making the Shakes delicate. When the Voice is harſh, the two Notes whereof the *Cadence* conſiſts, muſt be ſtruck in the Throat, the one after the other; as alſo on the Harpſicol, in ſtriking the two Fingers on the two Stops that make the Shake.

CADENCE *in Dancing*, when the Steps follow the Notes and Meaſures of the Muſic.

CADENCE, in the Manage, the equal Meaſure and Time a Horſe is to keep in his Motions, Airs, &c.

CADENCE, in Oratory, when the Sounds end agreeable to the Ear.

CADENCE, in Poetry, a certain Meaſure of Verſe, varying as the Kinds of Verſe vary; differing, *v. g.* in Sapphics, from what it is in Heroics or Iambics. See METRE, QUANTITY, &c.

CADETS, the younger Brothers of a Family: a Term naturaliz'd in our Language from the *French*. At *Paris*, among the Citizens, the *Cadets* have an equal Portion with the Eldeſt: In other Places, the Eldeſt has all. According to the Cuſtom of *Spain*, one of the *Cadets*, in great Families, takes the Mother's Name. See BROTHER.

CADETS, are alſo a kind of young Volunteers, who enter into the Army without being put on the Liſt, or receiving Pay; only to learn the Art of War, and fit themſelves for Employments. Formerly there were only allow'd two

Cadets in each Company. In 1682, the King of *France* eſtabliſh'd Companies of *Cadets*, wherein the young Gentry were train'd up to War.

CADI, or KADHI, a Name given to the Judges of Civil Cauſes, among the *Turks* and *Saracens*. The Term, however, is ordinarily reſtrain'd to the Judges of Cities; thoſe in Provinces being call'd *Mollas*.

CADIL ESCHER, or CADILESCHER, a Chief Juſtice among the *Turks*. Each *Cadileſcher* has his particular Diſtrict: *Ricaut* makes but three in the Empire; that of *Europe*, *Natolia*, and *Cairo*. The Word comes from the Arabic *Kadi*, Judge; the Particle *Al*; and *Aſchar*, Army; as being at their firſt Inſtitution, Judges of the Soldiery.

CADIZADELITES, a Sect among the *Muſſulmen*. The *Cadizadelites* are a kind of *Stoic Mahometans*, who avoid all Feaſting and Diverſion, and affect an uncommon Gravity in all they do or ſay: Thoſe of 'em who inhabit the Frontiers of *Hungary*, &c. agree in many Things with the Chriſtians; and drink Wine, even in the Faſt of *Ramazan*. They read the *Sclavonic* Tranſlation of the Bible, as well as the Alcoran. *Mahomet*, according to them, is the H. S. who deſcended on the Apoſtles in the Day of Pentecoſt.

CADMIA, in Pharmacy, a Mineral, whereof there are two Kinds, *viz. Natural* and *Artificial*: the *Natural Cadmia*, again, is of two Kinds; the one containing Metallic Parts, and call'd *Cobalt*; which ſee: The other containing none, call'd *Calamine*, or *Lapis Calaminaris*; which ſee. The *Artificial Cadmia* is prepar'd from Copper, in Furnaces; of this there are five Kinds; the firſt call'd *Botrytis*, as being in form of a Bunch of Grapes; the ſecond, *Oſtracitis*, as reſembling a Sea-ſhell; the third, *Placitis*, becauſe reſembling a Cruſt; the fourth, *Capnitis*; and the fifth, *Calamitis*, which hangs round certain Iron Rods, wherewith the Matter of the Copper is ſtirr'd in the Furnace; which being ſhaken off, bears the Figure of a Quill, call'd in Latin, *Calamus*. The *Cadmia Botrytis* is found in the Middle of the Furnace; the *Oſtrytis* at the Bottom; the *Placitis* at the Top; and the *Capnitis* at the Mouth of the Furnace.

Cadmia is deſiccative and deterſive, us'd in moiſt ſtinking Ulcers; which by means hereof are brought to *cicatrize*. The *Botrytis* and *Placitis*, are alſo very good in Diſeaſes of the Eyes.

CADRITES, a kind of Religious among the *Mahometans*. Their Founder was *Abdul Cadri*, a great Philoſopher and Lawyer; whence they fetch their Name, *Cadrites*. They live in Common, and in a kind of Monaſteries; which, however, they are allow'd to quit, if they requeſt it, and to marry; on condition of their wearing black Buttons on their Garments, to diſtinguiſh 'em from the reſt of the People. In their Monaſteries, each *Friday*, they paſs the greateſt Part of the Night in running round, holding each others Hand, and crying inceſſantly *Hhai*, *living*, one of the Names of God: One of their Number plays all the Time on a Flute, to animate 'em in this extravagant Dance.

CADUCEUS, *Mercury*'s Rod; or a Wand, twiſted with two Serpents. The Poets attribute wondrous Virtues to the *Caduceus*; as that of throwing People into a Sleep, raiſing the Dead, *&c.* It was alſo us'd by the Antients as a Symbol of Peace and Concord: Thus, we read, the *Romans* ſent the *Carthaginians* a *Javelin* and a *Caduceus*, offering 'em their Choice, whether of War or Peace. The Word is deriv'd *a Cadendo*, becauſe it *laid* Contentions and Wars. Among the *Romans*, thoſe who denounc'd War were call'd *Feciales*; and thoſe who went to demand Peace, *Caduceatores*; becauſe they bore a *Caduceus* in their Hand. The *Caduceus* found on Medals, is a common Symbol, ſignifying good Conduct, Peace, and Proſperity. The Rod expreſſes Power, the two Serpents Prudence, and the two Wings Diligence.

CADUCUS MORBUS, in Medicine; ſee EPILEPSY.

CÆCUM, or rather COECUM, *Inteſtinum*, or *Blind-Gut*, is the firſt of the great Guts. It is four or five Fingers breadth long, and about the Bigneſs of a Swan's Quill; call'd *Cæcum*, becauſe only open at one end, where it is ty'd to the Beginning of the Colon, as an Appendage thereto; ſo that the Excrements come and go out at the ſame Orifice. Its other End is not tied to the Meſentery, but to the right Kidney, by means of the *Peritonæum*. The true uſe of this Part is not yet determin'd. Some account it as a ſecond Stomach; wherein the Food, after having detach'd all its Chyle thro the Lacteals, undergoes a further Digeſtion, ſo as to part with more Chyle through the Lacteals below it. Dr. *Liſter* aſſigns the uſe of the *Cæcum* to be, to keep the Excrements which paſs into its Cavity, (as moſt of thoſe of ſound Animals he thinks do) till they are ſufficiently drain'd, bak'd, and harden'd, to receive the Figure to be given 'em by the *Colon* and *Rectum*. He adds, to confirm this, that wherever there are elegantly figur'd Excrements of the firſt kind, there is a capacious *Cæcum*; and *vice verſa*. This indeed is true, that ſome Animals, which are naturally looſe, have either no *Cæcum* at all, or very little; as the *Talpa*, *Echinus Terreſtris*, *Gula*, &c. Nature's End, in thus providing for the Figuration of the Excrements, he takes to be, firſt, to prevent Diarrheas; ſecondly, to abide Hunger the better; (thus it is that Snails, in Winter, reſt with full Inteſtines:) Laſtly, to heighten the Digeſtion and Fermentation in the Stomach and ſmall Guts.

Dr. *Muſgrave* gives us an Account, in the *Philoſophical Tranſactions*, of the *Cæcum* of a Dog being cut out, without any Prejudice to the Animal. M. *Giles* gives us another, of the *Cæcum* of a Lady being diſtended ſo as to form a Tumor, that held almoſt three Chopines of a thin, greyiſh, almoſt liquid Subſtance, whereof ſhe dy'd. And Mr. *Knowles*, a third, of a Boy's *Cæcum* being vaſtly extended and ſtuff'd with Cherry-ſtones, which likewiſe prov'd Mortal.

Some ſay, the Name, *Cæcum*, is miſtaken; not allowing this to be the *Cæcum* of the Antients, which they imagine to be the thick globous Part, of the *Colon*, immediately appended to the *Ileum*; and therefore give this Part the Name of *Appendicula Vermiformis*. See INTESTINES.

CAG, or KEG, is a Barrel, or Veſſel, containing from four to five Gallons. See MEASURE.

CAIMACAM, *Lieutenant*, a Dignity in the *Ottoman* Empire. There are ordinarily three *Caimacams*; one conſtantly attending the Grand Signior, another the Grand Vizier, and a third reſiding conſtantly at *Conſtantinople*, in quality of Governor; who examines Affairs of Policy, and regulates 'em in great meaſure. The *Caimacam* that attends the Vizier, only officiates when at a diſtance from the Grand Signior; his Function ceaſing, when the Vizier is with the Sultan. The *Caimacam* of the Vizier is his Secretary of State, and the firſt Miniſter of his Council. The Word is compos'd of the two *Arabic* Words, *Caim machum*, he who holds the Place, or diſcharges the Function of another.

CAINITES, or CAINIANS, a Sect of antient Hereticks, ſo call'd from *Cain*; whom they eſteem'd as their Father. The *Cainites* were a Branch of the *Gnoſtics*: They held, that *Cain* and *Eſau*, *Lot*, and thoſe of *Sodom*, were born of a moſt eminent Celeſtial Virtue; that *Abel*, on the contrary, was born of a Virtue much leſs eminent: To *Cain*, and others of the ſame Order, who, according to them, had a mighty Knowledge of all Things, they aſſociated *Judas*; whom they held in ſo much eſteem, that they had a Book among 'em call'd the Goſpel of *Judas*. S. *Epiphanius* relates, and at the ſame time refutes their Errors.

CALAMINARIS LAPIS, *Calamine Stone*, *Calamite*, or *Cadmia*, a kind of foſſile bituminous Earth, of ſome uſe in Medicine, but of more in Foundery; being us'd to dye Copper yellow, *i. e.* to convert it into Braſs. It is either of a greyiſh Colour, as that of *Germany* and *England*; or reddiſh, as that about *Liege*, and in ſome Parts of *France*; accounted the beſt, becauſe yellow by Calcination. It is dug out of Mines, uſually in ſmall Pieces; having always Eyes, ſometimes Veins, of Lead uſually; tho not always found in Lead-Mines. We have Mines of *Calamine* at *Wrington* in *Somerſetſhire*. It is generally dug in barren rocky Ground; its Courſes running, uſually, at 6 a-Clock, as they call it, *i. e.* from Eaſt to Weſt; ſometimes at 9, and ſometimes at 12; or perpendicular, which is accounted the beſt. When dug, it is waſh'd, or *buddled*, as they call it, in a running Water, which carries off the impure and earthy Parts; leaving the Lead, *Calamine*, and other ſparry Parts at bottom: They then put it in a Sieve, and ſhaking it well in Water, the Lead mix'd with it ſinks to the bottom, the ſparry Parts get to the top, and the *Calamine* lies in the middle: Thus prepar'd, they bake it in an Oven four or five Hours; the Flame being ſo contriv'd as to paſs over, and ſo to heat and bake the *Calamine*; ſtirring and turning it all the while with Iron Rakes. This done, they beat it to Pouder; picking out of it what Stones they find; and thus it is fit for uſe. For the manner of applying it in the Preparation of Braſs. See BRASS.

Beſides the two *Natural Calamines*, there are *Artificial* ones: The beſt is that call'd *Pompholix*; which ſee.

Calamine is of ſome medicinal Virtue, being aſtringent, deſiccative, and deterſive; much us'd for taking off Films from the Eyes of Horſes, *&c.*

CALAMITA, in Pharmacy, a Term ſometimes us'd for *Styrax*, becauſe frequently put up in Quills. See STYRAX.

CALAMITES. See CADMIA, and CALAMINARIS.

CALAMUS *Aromaticus*, call'd alſo *Calamus Verus*, and *Calamus Amarus*, and *Acorus*; a kind of Ruſh, of the Thickneſs of a Gooſe's Quill, two or three Foot high, growing in the *Levant*. Its chief, and almoſt only uſe, is for Treacle: It muſt be choſen grey-whitiſh without, and reddiſh within; its Pulp white, and its Taſte inſupportably bitter.

CALAMUS *Scriptorius*, in Anatomy, is a Dilatation of the fourth Ventricle of the Brain; ſo called from its Figure, which reſembles that of a Quill.

CALATRAVA, a Military Order, inſtituted in 1158, by *Sancho* III. King of *Caſtile*, on the following Occaſion: The *Moors* going to attack the little City *Calatrava*, and the Templers, who held it, ſurrendering it up to the King, on a Suſpicion of their Inability to defend it, *Diego Velaſquez*, a *Ciſtercian* Monk, but a Man of Quality, perſuaded *Raimond* Abbat of *Fitera*, a Monaſtery of *Ciſtercians*, to beg *Calatrava* of the King. He obtain'd it; and *Raimond* and *Diego* put themſelves in it; being follow'd by a great number of People, who join'd 'em out of Zeal, for the Defence of *Calatrava*. The *Moors* abandoning the Enterprize, many of thoſe who came to the Defence of the City, enter'd the Order of the *Ciſtercians*; and that under a Habit more fit for Military than Monaſtic Exerciſes. Accordingly, they began to make Excurſions on the *Moors*; which was the Riſe of the Order of *Calatrava*. The firſt Grand Maſter was *Garcias*; under whoſe Government the Order was confirm'd by *Alexander* III. in 1164. In 1489, *Ferdinand* and *Iſabella*, with the Conſent of Pope *Innocent* VIII. remitted the Grand-Maſterſhip of *Calatrava* to the *Spaniſh* Crown: So that the Kings of *Spain* are now become perpetual Adminiſtrators thereof. The Knights bear a Croſs Gules, fleurdeliz'd with Green, *&c.* Their Rule and Habit was originally that of the *Ciſtercians*; but their Dreſs was a little ſhorten'd on account of their Exerciſes; and in proceſs of Time they were permitted a ſecular Habit.

CALCANEUS, in Anatomy, the ſame as *Os Calcis*, or the *Heel-Bone*: It lies under the *Aſtragalus*, to which it is articulated by *Ginglimus*; behind it is a large Protuberance, which makes the Heel, and into which the *Tendo Achillis* is inſerted.

CALCANTHUM, is Vitriol Rubify'd. Some maintain *Calcanthum* and *Colcothar* to be the ſame Thing: but *Pomet* is of another Sentiment, and takes *Calcanthum* to be nothing elſe but Vitriol. See VITRIOL, and CHALCITIS.

CALCINATION, the Action of *calcining* any Matter; *i. e.* of reducing it into a *Calx*, or a very ſubtile Pouder, or even only into Aſhes, by Fire; ſometimes alſo termed *Chymical Pulveriſation*. *Calcination* is the next degree of the Power of Fire beyond that of *Fuſion*: For when Fuſion is longer continu'd, not only the more ſubtile Particles of the Body it ſelf fly off, but the Particles of Fire likewiſe do inſinuate themſelves in ſuch Multitude, and are ſo diſperſed and blended throughout its whole Subſtance, that the Fluidity which was firſt caus'd by the Fire, can no longer ſubſiſt: From this Union ariſes a third kind of Body, which being very porous and brittle, is eaſily reduc'd to Pouder. For the Fire having penetrated every where into the Pores of the Body, the Particles are both hinder'd from mutual contact, and divided into minute Atoms; ſo that they are eaſily reducible into the fineſt Pouder.

Chymiſts, Goldſmiths, and Founders, diſtinguiſh two Kinds of *Calcination*; the one call'd *Actual*, the other *Potential*. Actual *Calcination*, is that effected by actual Fire, of Wood, Coals, or other Fuel, rais'd to a certain Heat, according to the Nature of the Subſtance to be *calcin'd*. Potential *Calcination*, is that procur'd by potential Fire, *viz.* by Waters, Drugs, *&c.* which have, as it were, the Force of Fire; as Strong Waters, Corroſive Spirits, *&c.* Gold is *calcin'd* in the Fire of a Reverberatory, with Mercury, and Sal Ammoniac. See GOLD. Silver with common Salt and Alkali Salt. See SILVER. Copper with Salt and Sulphur; Iron with Sal Ammoniac and Vinegar; Tin with Antimony, Lead and Sulphur; Mercury with Aqua fortis: This laſt, alſo, with moſt other Minerals, *calcines* with Fire alone, without any other Ingredient.

CALCINATION *Philoſophical*, is when Horns, Hoofs, *&c.* are hung over boiling Water, or other Liquor, till they have loſt their Mucilage, and are eaſily reducible into Pouder.

CALCULATION, the Act of computing ſeveral Sums, by adding, ſubtracting, multiplying, or dividing. See ARITHMETIC. An Error in *Calculation* is never protected or ſecur'd by any Sentence, Decree, *&c.* In ſtating Accompts there is always underſtood, *ſalvo errore calculi*. The Word *Calculus* is us'd in this Senſe, in alluſion to the Practice of the Antients, who us'd *Calculi*, or little Stones, in making Computations, in taking Suffrages, and in keeping Accompts, *&c.* as we now uſe Counters, Figures, *&c.*

CALCULATION is particularly us'd to ſignify the Computations in Aſtronomy and Geometry; for making Tables of Logarithms, Eclipſes, Ephemerides, *&c.* See ECLIPSE, *&c.*

CALCULATION *of Clock and Watch-Work*. See CLOCK and WATCH-WORK.

CALCULUS, in Medicine, the Diſeaſe of the Stone in the Bladder, or Kidneys; See STONE, LITHOTOMY, *&c.* In the Bladder 'tis uſually call'd *Lithiaſis*; and in the Kidneys *Nephritis*; which ſee. The Term is pure *Latin*, and ſignifies, literally, a little Pebble, or Flint. Whence alſo, the Term *Calculation*. See CALCULATION.

CALCULUS, or *Methodus Differentialis*, in Mathematicks, is a Method of differencing Quantities; or of finding an infinitely ſmall Quantity, which being taken infinite times, ſhall be equal to a given Quantity: or, as others define it, the Arithmetic of infinitely ſmall Differences between variable Quantities.

The Foundation, then, of this *Calculus*, is an infinitely ſmall Quantity, or an Infiniteſimal, which is a Portion of a Quantity, incomparable to that Quantity; or that is leſs than any aſſignable one, and therefore accounted as nothing: the Error accruing by omitting it being leſs than any aſſignable one, *i. e.* leſs than nothing. Hence two Quantities, only differing by an Infiniteſimal, are equal. The better to conceive the Nature of an Infiniteſimal, ſuppoſe, that in meaſuring the Height of a Mountain, while you are looking thro the Sights, the Wind blows off the ſmalleſt Grain of Duſt; the Height of the Mountain is, then, leſs by the Diameter of the Duſt than before: But as the Mountain is ſtill found the ſame Height, whether the Duſt be there or not, its Diameter has nothing to do in the preſent Caſe, and paſſes for nothing, *i. e.* is infinitely ſmall. Thus, in Aſtronomy, the Diameter of the Earth is an Infiniteſimal, in reſpect of the Diſtance of the Fix'd Stars: And the ſame holds in abſtract Quantities. The Name *Infiniteſimal*, therefore, is merely reſpective, and involves a Relation to another Quantity; not any real *Ens* or Being.

Now Infiniteſimals are call'd *Differentials*, or differential Quantities, when they are conſider'd as the Differences of two Quantities. Sir *Iſaac Newton* calls 'em *Fluxions*; conſidering them as the momentary Increments of Quantities; *v. g.* of a Line generated by the Flux of a Point; or of a Surface by the Flux of a Line, *&c.* The *differential Calculus*, therefore, and the Doctrine of *Fluxions* are the ſame thing under different Names: The former, given by M. *Leibnitz*, and the latter by Sir *Iſaac Newton*; each of whom lay claim to the Diſcovery. See FLUXIONS. There is, indeed, a Difference in the manner of expreſſing the Quantities, reſulting from the different Views wherein the two Authors conſider the Infiniteſimals; the one as Increments, the other as Differences: *Leibnitz*, and moſt Foreigners, expreſs the Differentials of Quantities by the ſame Letter as variable ones, only prefixing the Letter d; thus the Differential of x is call'd dx; and that of y, dy: Now dx is a poſitive Quantity, if x continually increaſe; negative if it decreaſe.

The *Engliſh*, with Sir *Iſaac Newton*, inſtead of dx, write $\dot{x}$ (with a Dot over it) for dy, $\dot{y}$, &c. which Foreigners object againſt, on account of that Confuſion of Points, which they imagine ariſes, when Differentials are again differenc'd; beſides, that the Printers are more apt to overlook a Point than a Letter.

Stable Quantities being always expreſs'd by the firſt Letters of the Alphabet $da = o$, $db = o$, $dc = o$; wherefore $d(x + y - a) = dx + dy$, and $d(x - y + a) dx - dy$. So that the Differencing of Quantities is eaſily perform'd, by the Addition or Subtraction of their Compounds.

To difference Quantities that mutually multiply each other; The Rule is, firſt, Multiply the Differential of one Factor into the other Factor, the Sum of the two Factors is the Differential ſought: thus, the Quantities being xy, the Differential will be $x dy + y dx$, i. e. $d(xy) = x dy + y dx$. Secondly, if there be three Quantities mutually multiplying each other, the Factum of the two muſt then be multiply'd into the Differential of the third: thus, ſuppoſe vxy, let $vx = t$, then $vxy = ty$; conſequently $d(vxy) = tdy + ydt$: But $dt = vdx + xdv$. Theſe Values, therefore, being ſubſtituted in the antecedent Differential, $tdy + ydt$, the Reſult is $d(vxy) = vxdy + vydx + xydv$. Hence 'tis eaſy to apprehend how to proceed, where the Quantities are more than three.

If one variable Quantity increaſe, while the other y decreaſes, 'tis evident $y dx - x dy$ will be the Differential of xy.

To difference Quantities that mutually divide each other: The Rule is, firſt, multiply the Differential of the Diviſor into the Dividend, and, on the contrary, the Differential of the Dividend into the Diviſor; ſubtract the laſt Product from the firſt, and divide the Remainder by the Square of the Diviſor; the Quotient is the Differential of the Quantities mutually dividing each other. See FLUXION.

CALCULUS *Exponentialis*, is a Method of differencing exponential Quantities, and ſumming up the Differentials or Fluxions of *Exponentials*. By *exponential Quantity*, is here underſtood a Power, whoſe Exponent is variable; *v. g.* x^x a^x.

To difference an exponential Quantity: There is nothing requir'd but to reduce the exponential Quantities to Logarithmic ones; which done, the differencing is manag'd as in Logarithmic Quantities: Thus, ſuppoſe the Differential of the Exponential Quantity xy requir'd, let

$$x^y = 3$$

Then will $y\,lx = l\,3$

$$l\,x\,y\,dx : x = d\,3 : 3$$

$$3\,l\,x\,dy + 3\,y\,dx : x = d\,3$$

$$y - 1$$

That is, $x^y\,l\,x\,dy + y\,x\,dx = d\,3$. See EXPONENTIAL.

CALCULUS *Integralis*, is a Method of integrating, or ſumming up Fluxions or Differential Quantities; *i. e.* from a Differential Quantity given, of finding the Quantity from whoſe differencing the given Differential reſults. The *Integral Calculus* therefore, is the Inverſe of the Differential one: whence the *Engliſh*, who uſually call *Differentials*, *Fluxions*, give this *Calculus*, which aſcends from the Fluxions, to the flowing or variable Quantities; or, as Foreigners expreſs it, from the Differences to the Sums; by the Name of the *Inverſe Method of Fluxions*. See FLUXIONS. Hence, the Integration is known to be juſtly perform'd, if the Quantity found according to the Rules of the *Differential Calculus*, being differenc'd, produce that propos'd to be ſumm'd. See SUMMATORY *Calculus*.

Suppoſe $\int$ the Sign of the Sum, or Integral Quantity; then $\int y\,dx$ will denote the Sum, or Integral of the Differential $y\,dx$.

To integrate, or ſum up a Differential Quantity. 'Tis demonſtrated, firſt, that $\int dx = x$: ſecondly, $\int (dx + dy) = x + y$; thirdly, $\int (x\,dy + y\,dx) = x\,y$; fourthly, $\int (m\,x^{m-1}\,dx) = x^m$; fifthly, $\int (n : m)\,x^{(n-m)} : m\,dx = x^n : m$; ſixthly, $\int (y\,dx - x\,dy) : y^2 = x.y$. Of theſe the fourth and fifth Caſes are the moſt frequent; wherein the differential Quantity is integrated, by adding a variable Unity to the Exponent, and dividing the Sum by the new Exponent multiply'd into the Differential of the Root; *v. g.* in the fourth Caſe, by $m - 1 + 1)\,dx$, i. e. by $m\,dx$.

If the Differential Quantity to be integrated, don't come under any of theſe Formula's, it muſt either be reduc'd to an integrable Finite; or an infinite Series, each of whoſe Terms may be ſumm'd.

It may be here obſerv'd, that, as in the Analyſis of Finites, any Quantity may be rais'd to any degree of Power; but, *vice verſa*, the Root can't be extracted out of any requir'd: So in the Analyſis of Infinites, any variable or flowing Quantity may be differenc'd; but, *vice verſa*, any Differential can't be integrated. And as in the Analyſis of Finites, we are not yet arriv'd at a Method of extracting the Roots of all Equations; ſo neither has the *Integral Calculus* arriv'd at its Perfection: And as in the former we are oblig'd to have recourſe to Approximation; ſo in the latter we have recourſe to infinite Series, where we can't attain to a perfect Integration.

CALCULUS *Literalis*, or *Literal Calculus*, is the ſame with *Specious Arithmetic*; ſo call'd, from its uſing the Letters of the Alphabet, in contra-diſtinction to *Numeral Arithmetic*, which uſes Figures. In the Literal *Calculus*, given Quantities are expreſs'd by the firſt Letters, *a b c d*; and Quantities ſought by the laſt *z y x*, &c. Equal Quantities are denoted by the ſame Letters.

CALCULUS *Situs*, is a new kind of *Calculus*, propos'd by M. *Leibnitz*, built on the Conſideration of the Situation of Quantities; not of their Magnitudes, as in the reſt. This *Calculus* he makes the Foundation of a new Analyſis, which he calls *Analyſis Situs*.

CALEFACTION, a School Term for the Action of Fire in heating a Body: 'tis us'd particularly in Philoſophy and Pharmacy; where *Calefaction* is diſtinguiſh'd from *Coction*; the firſt being apply'd, where the thing is only heated without boiling. See COCTION.

CALENDAR, a Diſtribution of Time, accommodated to the Uſes of Life; or a Table, or Almanack, containing the Order of Days, Weeks, Months, Feaſts, &c. happening throughout the Year. See TIME, YEAR, MONTH, FEAST, &c.

The *Roman Calendar*, which continues ſtill in uſe, owes its Origin to *Romulus*; but has undergone various Reformations ſince his Time. That Legiſlator diſtributed Time into ſeveral Periods, for the uſe of the People under his Command: But as he was much better vers'd in Matters of War than of Aſtronomy, he only divided the Year into ten Months; making it begin in the Spring, on the firſt of *March*: imagining, the Sun made his Courſe thro all the Seaſons in 304 Days. His *Calendar* was reform'd by *Numa*, who added two more Months, *January* and *February*, placing 'em before *March*: So that his Year conſiſted of 355 Days, and begun on the firſt of *January*. He choſe, however, in Imitation of the *Greeks*, to make an Intercalation of 45 Days, which he divided into two; intercalating a Month of 22 Days at the end of each two Years; and at the end of each two Years more, another Month of 23 Days: which Month, thus interpos'd, he call'd *Mercedonius*, or the intercalary *February*. But theſe Intercalations being ill obſerv'd by the Pontiffs, to whom *Numa* committed 'em, occaſion'd great Diſorders in the Conſtitution of the Year; which *Cæſar*, as Sovereign Pontiff, endeavour'd to remedy: To this End he made choice of *Soſigenes*, a celebrated Aſtronomer of thoſe Times; who found, that the Diſpenſation of Time in the *Calendar*, could never be ſettled on any ſure footing, without having regard to the annual Courſe of the Sun. Accordingly, as the Sun's yearly Courſe is perform'd in 365 Days ſix Hours, he reduc'd the Year to an equal number of Days: The Year of this Correction of the *Calendar*, was a Year of Confuſion; they being oblig'd, in order to ſwallow up the 65 Days that had been imprudently added, and which occaſion'd the Confuſion, to add two Months beſides the *Mercedonius*, which chanc'd to fall out that Year; ſo that it conſiſted of 15 Months, or 445 Days. This Reformation was made in the Year of *Rome* 708; 42 or 43 Years before Chriſt.

The *Roman*, call'd alſo the *Julian Calendar*, from its Reformer *Julius*, is diſpos'd into Quadriennial Periods; whereof the three firſt Years, which he call'd *Communes*, conſiſt of 365 Days; and the fourth, *Biſſextile*, of 366; by reaſon of the ſix Hours, which in four Years make a Day, or ſomewhat leſs: for in 134 Years, an Intercalary Day is to be retrench'd. On this account it was, that Pope *Gregory* XIII. with the Advice of *Clavius* and *Ciaconius*, appointed that the hundredth Year of each Century ſhould have no *Biſſextile*, excepting each IVth Century: that is, a Subtraction is made of three Biſſextile Days in the Space of four Centuries; by reaſon of the 11 Minutes wanting in the ſix Hours whereof the Biſſextile conſiſts. See BISSEXTILE.

This Reformation of the *Gregorian Calendar*, or the *New Stile*, as we call it, commenc'd on the 4th of *October*, 1582, when ten Days were thrown out at once; ſo many having crept into the Computation ſince the Time of the Council of *Nice*, in 325; by the Defect of 11 Minutes.

Julian Chriſtian CALENDAR, is that wherein the Days of the Week are determin'd by the Letters A, B, C, D, E, F, G; by means of the Solar Cycle, and the New and Full Moons, eſpecially the Paſchal Full Moon, with the Feaſt of Eaſter, and the other Moveable Feaſts depending thereon; by means of Golden Numbers, rightly diſpos'd thro the *Julian* Year. See GOLDEN *Number*.

In this *Calendar*, the Autumnal Equinox is ſuppos'd to be fix'd to the 21ſt Day of *March*; (ſee EQUINOX:) and the Cycle of 19 Years, or the Golden Numbers, conſtantly to indicate the Places of the New and Full Moons: yet both are erroneous. See CYCLE. And hence aroſe a very great Irregularity in the Time of Eaſter; See EASTER. To ſhew this Error the more apparently, let us apply it to the preſent Year: In this Year, then, the Vernal Equinox falls on the 10th of *March*; and therefore comes too early by 11 Days. The Paſchal Full Moon falls on the 7th of *April*; and therefore too late, with regard to the Cycle, by three Days: *Eaſter*, therefore, which ſhould be on the 10th of *April*, will be on the 17th. The Error, here, lies only in the poſt-Poſition of the Moon, thro the Defect of the Lunar Cycle. If the Full Moon had fell on the 11th of *March*, *Eaſter* wou'd have fallen on the 13th of *March*: and therefore the Error ariſing from the Anticipation of the Equinox, would have exceedingly augmented that ariſing from the poſt-Poſition.

Theſe Errors, in Courſe of Time, were ſo multiply'd, that the *Calendar* no longer exhibited any regular *Eaſter*. Pope *Gregory* XIII. therefore, by the Advice of *Aloyſius Lilius*, in 1582, threw 10 Days out of the Month of *October*, to reſtore the Equinox to its Place, *viz.* the 21ſt of *March*; and thus introduc'd the Form of the *Gregorian* Year, with ſuch a Proviſion, as that the Equinox ſhould be conſtantly kept to the 21ſt of *March*. The New Moons and Full Moons, by Advice of the ſame *Lilius*, were not to be indicated by Golden Numbers, but by Epacts. See EPACT. The *Calendar*, however, is ſtill retain'd in *England*, and the other Proteſtant States of the North; without this *Correction*.

Gregorian CALENDAR, is that, which by means of Epacts rightly diſpos'd thro the ſeveral Months, determines the New and Full Moons, and the Time of *Eaſter*; with the Moveable Feaſts depending thereon, in the *Gregorian* Year. The *Gregorian Calendar* therefore differs from the *Julian*, both in the Form of the Year, (ſee YEAR;) and in that Epacts are ſubſtituted in lieu of Golden Numbers: For the Uſe and Diſpoſition whereof, ſee EPACT.

Tho the *Gregorian Calendar* be preferable to the *Julian*, yet is it not without its Defects: (perhaps, as *Tycho Brahe* and *Caſſini* imagine, 'tis impoſſible ever to bring the thing to a perfect Juſtneſs.) For, firſt, the *Gregorian* Intercalation does not hinder, but that the Equinox ſometimes lags behind the 21ſt of *March*, as far as the 23d, and ſometimes anticipates it, falling on the 19th: And the Full Moon, which falls on the 20th of *March*, is ſometimes the Paſchal;

Paſchal; yet not ſo accounted by the *Gregorians*. On the other hand, the *Gregorians* account the Full Moon of the 22d of *March*, the Paſchal; which yet, falling before the Equinox, is not Paſchal. In the firſt Caſe therefore, *Eaſter* is celebrated in an Irregular Month; in the latter, there are two *Eaſters* in the ſame Eccleſiaſtical Year. In like manner, the Cyclical Computation is founded on mean Full Moons; which yet may precede or follow the true ones by ſome Hours. The Paſchal Full Moon may, alſo, fall on *Saturday*, which is yet referr'd by the Cycle to *Sunday*: Whence, in the firſt Caſe, *Eaſter* is celebrated eight Days later than it ſhould be; in the other it is celebrated on the very Day of the Full Moon, with the *Jews* and *Quartadeciman* Hereticks; contrary to the Decree of the Council of *Nice*. *Scaliger*, and *Calviſius*, ſhew other Faults in the *Gregorian Calendar*; ariſing from the Negligence and Inadvertency of the Authors. This *Calendar* is adher'd to by the *Romaniſts*, throughout *Europe*, &c. and us'd wherever the *Roman* Breviary is us'd. The Proteſtant States of *Germany* and *Holland* have likewiſe come into it. See *Reformed* CALENDAR.

Reformed, or *Corrected* CALENDAR; that which ſetting aſide all Apparatus of Golden Numbers, Epacts, and Dominical Letters, determines the Equinox, with the Paſchal Full Moon, and the Moveable Feaſts depending thereon, by Aſtronomical Computation, according to the *Rudolphine* Tables.

This *Calendar* was introduc'd among the Proteſtant States of *Germany*, in the Year 1700; when 11 Days were at once thrown out of the Month of *February*: So that in 1700, *February* had but 18 Days: By this means, the *Corrected Stile* agrees with the *Gregorian*. This Alteration in the Form of the Year they admitted for a Time; in expectation that the real Quantity of the Tropical Year being at length more accurately determin'd by Obſervation, the *Romaniſts* wou'd agree with 'em, on ſome more convenient Intercalation.

Conſtruction of a CALENDAR, or *Almanack*.

1. Compute the Sun's and Moon's place for each Day of the Year; or take 'em from *Ephemerides*. See SUN, and MOON. 2. Find the Dominical Letter, and by means thereof, diſtribute the *Calendar* into Weeks. See DOMINICAL LETTER. 3. Compute the Time of *Eaſter*, and thence fix the other Moveable Feaſts. See EASTER. 4. Add the Immoveable Feaſts, with the Names of the Martyrs. 5. To every Day add the Sun's and Moon's Place, with the Riſing and Setting of each Luminary; the Length of Day and Night; the *Crepuſcula*, and the Aſpects of the Planets. 6. Add, in the proper Places, the chief Phaſes of the Moon. See PHASES. The Sun's Entrance into the Cardinal Points; *i. e.* the Solſtices and Equinoxes: together with the Riſing and the Setting, eſpecially Heliacal, of the Planets and chief Fix'd Stars. Means for each whereof, will be found under the proper Heads in this Dictionary.

The Duration of the *Crepuſcula*, or the End of the Evening, or Beginning of the Morning Twilight; together with the Sun's Riſing and Setting, and the Length of Days, may be transferr'd from the *Calendars* of one Year, into thoſe of another: the Differences in the ſeveral Years being too ſmall to be of any Conſideration in Civil Life.

Hence it appears, that the Conſtruction of a *Calendar* has nothing in it of Myſtery or Difficulty; if Tables of the heavenly Motions be but at hand.

The *Gelalean* CALENDAR, is a Correction of the *Perſian Calendar*, made by Order of Sultan *Gelaleddan*, in the 467th Year of the Hegyra; of Chriſt 1089.

The Name *Calendar* is here given, from the Word *Calendæ*, wrote antiently in large Characters at the Head of each Month.

CALENDAR, is alſo us'd for the Catalogue, or *Faſti*, antiently kept in each Church, of the Saints; both univerſal, and thoſe particularly honour'd in each Church; with their Biſhops, Martyrs, &c.

There are ſtill ſome of theſe *Calendars* extant; particularly a very antient one of the Church of *Rome*, made about the middle of the IVth Century: comprehending alſo the Feſtivals both of the Heathens and Chriſtians, which were then very few in number. F. *Mabillon* has alſo printed the *Calendar* of the Church of *Carthage*; made about the Year 483. The *Calendar* of the Church of *Ethiopia*; and that of the *Cophtæ*, publiſh'd by *Ludolphus*, ſeem to have been made after the Year 760. The *Calendar* of the *Syrians*, printed by *Genebrard*, is very imperfect: That of the *Muſcovites*, publiſh'd by F. *Papebroch*, in moſt reſpects agrees with that of the *Greeks*, publiſh'd by *Genebrard*. The *Calendar* publiſh'd by *Dom. d'Acherry*, under the Title of *The Solar Year*, is no more than the *Calendar* of the Church of *Arras*. The *Calendar* publiſh'd in 1687, at *Ausburg*, by *Beckius*, is apparently that of the antient Church of *Ausburg*, or rather *Strasbourg*, wrote towards the Cloſe of the 10th Century. The *Moſarabique Calendar*, ſtill us'd in the five Churches of *Toledo*; the *Ambroſian* of *Milan*; and thoſe of *England*, before the Reformation; have nothing in 'em but what is found in thoſe of the other *Weſtern* Churches; *viz.* the Saints honour'd throughout, and thoſe peculiar to the Church where they are us'd.

Theſe antient *Calendars* are not to be confounded with the antient Martyrologies: For each Church had its peculiar *Calendar*; whereas the Martyrologies regarded the whole Church in general: containing the Martyrs and Confeſſors of all the Churches. From all the ſeveral *Calendars* was form'd one Martyrology: ſo that Martyrologies are poſterior to *Calendars*. See MARTYROLOGY.

CALENDS, CALENDÆ, in the *Roman* Chronology, the firſt Day of each Month. See MONTH. The *Calends* were reckon'd backwards, or in a retrograde Order: Thus, *v. g.* the firſt of *May* being the *Calends* of *May*, the laſt, or 30th of *April*, was the *Pridie Calendarum*, or ſecond of the *Calends* of *May*; the 29th of *April*, the third of the *Calends*, or before the *Calends*: and ſo back to the 13th, where the Ides commence; which are, likewiſe, number'd invertedly to the fifth, where the Nones begin; which are number'd after the ſame manner to the firſt Day of the Month, which is the *Calends* of *April*. See NONES, and IDES. The Rules of Computation by *Calends*, are included in the following Verſes.

Prima Dies Menſis cujuſque eſt dicta Calendæ:
Sex Majus Nonas, *October*, *Julius*, & *Mars*;
Quatuor at reliqui: *Dabit* Idus *quilibet Octo*.
Inde Dies reliquos omnes dic eſſe Calendas;
Quas retro numerans dices a Menſe ſequente.

To find the Day of the *Calends* we are in, ſee how many Days there are yet remaining of the Month, and to that Number add two: For Example; ſuppoſe it the 22d of *April*; 'tis then the 10th of the *Calends* of *May*. For *April* contains 30 Days; and 22 taken from 30, there remains 8; to which two being added, the Sum is 10.

The Word comes from the Latin *Calare*, to call, proclaim; becauſe on the Day of the *Calends*, or firſt of the Month, the Pontiff, with a loud Voice, proclaim'd the Day whereon the Nones were to be; whether on the fifth or ſeventh Day of the Month: Or rather, becauſe originally the inferior Pontiff had it in charge to watch when the New Moon ſhould firſt appear, in order to declare it to the People; which they call'd *Calare*, apparently from the *Greek* καλεω, *voco*. The *Calends*, according to *Varro*, were dedicated to *Juno*. On the *Calends* of *March*, the *Romans* us'd to take their Leaſes, &c. in regard the Year, as fix'd by *Romulus*, commenc'd on that Day. The *Calends* of *March* was a fatal Day to Debtors, becauſe then their Leaſes expir'd; which occaſion'd *Horace* to call them *Triſtes*.

The *Roman* Writers themſelves are at a loſs for the Reaſon of this abſurd and whimſical manner of computing the Days of the Month: yet is it ſtill kept up in the *Roman* Chancery; and by ſome Authors, out of a vain Affectation of Learning, preferr'd to the common, more natural, and eaſy manner. See YEAR, DAY, NONES, IDES.

CALENTURE, is an inflammatory Fever, frequent at Sea, attended with a Delirium; wherein the Patients imagine the Sea to be green Fields; and, if not prevented, will leap over-board: which way they are frequently loſt.

CALIDUCTS, a kind of Pipes, or Canals, diſpos'd along the Walls of Houſes and Apartments; us'd by the Antients for the Conveyance of Heat to ſeveral remote Parts of the Houſe, from one common Furnace. See STOVE, FIRE, &c.

CALIDUM *Innatum*, or Innate Heat; a Term the Antients had many vague Notions about: but Geometrical Reaſoning has taught us to affix a more diſtinct Idea hereto: For 'tis hence we know, that this *innate Heat* is no more than the Attrition of the Parts of the Blood; occaſion'd by its circulatory Motion, eſpecially in the Arteries; wherein, being propell'd from a circular Baſe, towards the Apex of an hollow Cone, with a Force begun in the Heart, it meets with a double Reſiſtance; *viz.* againſt the Sides of the Arteries, and againſt the preceding Blood. For whereas the Blood contains in it Parts that are fitted to excite Heat, whenever they can get at liberty; that is, if the Parts incloſing them can be got aſunder: and whereas the Parts incloſing ſuch Corpuſcles cannot be got aſunder, unleſs by ſome Niſus of the Parts of Blood with one another, whereby the Attrition and Abraſion of the cohering Particles is produc'd; it follows, that the Heat will be ſo much the greater, by how much ſuch a Niſus, and Attrition of the Parts among one another is increas'd. And with the ſame Reſiſtances, (that is, the Sections of the Arteries, and the Quantity of Blood remaining the ſame) and an increas'd Force of the Heart, and circular Motion of the Blood, the Niſus and Attrition of the Parts of Blood amongſt one another, muſt neceſſarily be increas'd; both by the preceding Blood being ſtruck harder upon, by the Protruſion of a ſucceeding Blood, coming on with an increas'd Velocity; and the occaſioning thereby alſo more frequent

Strokes againſt the Sides of the Arteries; by which means, an increas'd Velocity of Blood increaſes the Heat: and conſequently does its Heat depend upon its Circulation. From hence it appears, that at the ſame Diſtances from the Heart, the Heat of equal Quantities of Blood will be as their Velocities: and, that in the ſame Velocities of Blood, the Heat will be reciprocally as the Diſtances from the Heart. For ſince, in homogeneal and ſimple Bodies, nothing elſe is requir'd to diſengage the Particles exciting Heat, but a Niſus and Attrition of Parts, produc'd by the Force of the Heart; to which is always proportional the Velocity of the Blood; and the Re-action, or Reſiſtance of the Arteries and the antecedent Blood; it follows, that if the Reſiſtance or Re-action is not alter'd, which it will not be at the ſame diſtance from the Heart; then the Heat of the Blood will not be alter'd, unleſs by an Alteration of the Impetus, or Velocity impreſs'd upon the Blood from the Heart: That is, as Effects are proportional to their Cauſes, the Heat of the Blood, at the ſame Diſtances from the Heart, will be proportional to its Velocity. In the ſame manner it appears, that if the Velocities impreſs'd by the Heart be equal, there can be no change in the Heat of the Blood, but from a diverſify'd Reſiſtance, or Re-action of the Arteries and antecedent Blood. But the Reſiſtance of the preceding Blood is proportional to its Quantity; and its Quantity is reciprocally proportional to the Diſtance from the Heart; (for the nearer the Blood is to the Heart, ſo much the greater will be its Quantity between any given Place and the Extremity of the Artery.) And therefore the Reſiſtance of the Arteries will alſo be ſo much the greater, by how much nearer they are to the Heart: For in this caſe, the Reſiſtance is proportional to the Velocity; and the Velocity of the Blood is greateſt at the leaſt Diſtances from the Heart. Hence the Heat of the Blood may be conſider'd as a Rectangle, under the Velocity and the Diſtance: that is, if in two Perſons the Velocity be as three, and the Diſtances wherein we would determine the Heat, be as much more in one as in another; that is, as two to one; the Heat of one will be ſix, and the other three: that is, the Heat of the firſt will be double that of the ſecond. If the Diſtance of the firſt be as two, and the Velocity as four; but the Diſtance of the ſecond as three, and the Velocity as one; the Heat of the firſt will be as eight, and of the ſecond as three: and ſo the Heat of the firſt, will be more than double the Heat of the ſecond.

CALIPPIC PERIOD, in Chronology, a Series of 76 Years, returning perpetually round; which elapſed, the Middle of the New and Full Moons, as its Inventor *Calippus*, an *Athenian*, imagin'd, return'd to the ſame Day of the Solar Year. *Meton*, 100 Years before, had invented the Period or Cycle of 19 Years; (ſee METONIC CYCLE.) aſſuming the Quantity of the Solar Year, $365\ d.\ 6\ h.\ 18'\ 56''\ 50'''\ 31''''\ 34'''''$; and the Lunar Month $29\ d.\ 12\ h.\ 45'.\ 47''\ 26'''\ 48''''\ 30'''''$. But *Calippus* conſidering that the *Metonic* Quantity of the Solar Year was not exact, multiply'd *Meton*'s Period by 4, and thence aroſe a Period of 76 Years, call'd the *Calippic*. The *Calippic Period* therefore contains 27759 Days: And ſince the Lunar Cycle contains 235 Lunations, and the *Calippic Period* is quadruple of this, it contains 940 Lunations. See PERIOD.

It is demonſtrated, however, that the *Calippic Period* it ſelf is not accurate; that it does not bring the New and Full Moons preciſely to their Places, but brings 'em too late by a whole Day in 553 Years.

CALIPH, or CALYPH, or KALIPH, the firſt Eccleſiaſtical Dignity among the *Saracens*: or, as *d'Herbelot* defines it, the Name of a Sovereign Dignity among the *Mahometans*, veſted with abſolute Power over every thing, relating both to Religion and Policy. The Word is *Arabic*, and ſignifies Succeſſor, or Heir: And, in effect, *Abubeker*, the firſt *Caliph*, was *Mahomet*'s Succeſſor; whoſe Succeſſors, again, aſſum'd the Title of *Caliphs* of *Syria*. In a little time, however, there aroſe ſeveral other *Caliphs*, who uſurp'd the Supreme Power in *Perſia*, *Egypt*, and *Africa*. *Piſaſire*, who reign'd in 958, was the laſt *Caliph* of *Syria*: after whom, the *Turks* becoming Maſters thereof, the *Caliph* ſunk into *Sovereign Pontiff*. And the ſame happen'd in *Egypt*, where the *Caliph* has only left the Title of *Grand Prieſt of* Mahomet. *Vatier* obſerves, that they call'd themſelves *Vicars of God*; and that the Mahometan Sultans and Kings fell down before 'em, and kiſs'd their Feet: For which Reaſon, *V. de Beauvais*, calls 'em their *Popes*. The *Caliph* of *Bagdad*, tho otherwiſe little more than a Name, ſtill retains the antient Right of adopting and confirming the Kings of *Arabia* and *Syria*. *Nicod* obſerves, that the Governors of *Cairo* had formerly the Title of *Caliph*. There were alſo *Caliphs* of *Carvan*, in *Tunis*; and of *Spain*; who alſo bore the Title of King.

The Word comes from the *Arabic*, *Hhalapha*, which ſignifies not only to *ſucceed*, but alſo to be in the Place of another; not only as *Heir*, but as *Vicar*. In which Senſe, *Erpenſius* obſerves, it is, that the Emperors and Sovereign Pontiffs were call'd *Caliphs*, as being God's Vicars and Lieutenants: contrary to the more popular Opinion, that they take the Name *Caliph*, as being *Mahomet*'s Succeſſors.

CALIX, CHALICE, or CALICE, the *Cup*, or Veſſel us'd to adminiſter the Wine in, in the Euchariſt; and, by the *Romaniſts*, in the Maſs. *Bede* affirms, that the *Chalice*, us'd by Jeſus Chriſt at the Supper, had two handles, and held juſt half a Pint; which the Antients imitated. In the primitive Times the *Chalices* were of Wood: Pope *Zephyrine* firſt appointed 'em to be of Silver and Gold. Others ſay, *Urban* I. and *Leo* IV. forbad Tin and Glaſs; as did likewiſe the Council of *Calcuth* in *England*: *Horn*, *Lindanus*, and *Beatus Rhenanus*, who had ſeen ſome of the antient *Chalices* in *Germany*, obſerve, that they had a Pipe, or Tube, fitted artfully to 'em, thro which the People ſuck'd, inſtead of drinking. The Word comes from the *Greek* κύλιξ.

CALIX, in Botany, is apply'd to a Flower, whoſe Body, or even a Part of it, is form'd in manner of a Cup or *Chalice*; as the Cup or Body of a Tulip, &c.

CALIX is more particularly us'd for that outward greeniſh Cover which encompaſſes and defends the Foliage, or Leaves of a Flower. See FLOWER. The *Calix* is ſometimes of one entire Piece; as in Pinks, &c. and in ſome broke into ſeveral, as in Roſes, &c. The *Calix* is alſo call'd *Perianthium*. See PERIANTHIUM.

Saffron has no *Calix*; its Flower comes out of the Earth before its Leaves. See SAFFRON.

CALIXTINS, a Name given to thoſe among the *Lutherans*, who follow the Sentiments of *George Calixtus*, a celebrated Divine, who oppos'd the Opinions of St. *Auguſtin*, on Predeſtination, Grace, and Free Will: So that the *Calixtins* are eſteem'd a kind of *Semi-Pelagians*. *Calixtus* maintain'd, that there is in all Men a certain Power of Underſtanding and Willing; with Natural Knowledge ſufficient: And that a good uſe being made of theſe, God will give us all the Means neceſſary to arrive at the Perfection to which Revelation directs 'em.

CALIXTINS, is alſo a Term, apply'd by the *Romaniſts* to ſuch as communicate in both Kinds; as the People of *Bohemia*, &c. tho, in other Reſpects, of the ſame Faith with themſelves: Theſe they don't make Hereticks, but only Schiſmaticks: The Word is deriv'd from *Calix*, Cup.

CALKING, or CAUKING *of a Ship*, implies the driving in Oakam, or ſomewhat of that kind into the Seams, or Commiſſures of the Planks, to prevent the Ship's leaking.

CALL, (in Hunting) is a Leſſon blown upon the Horn, to comfort the Hounds. Amongſt Fowlers, *Calls* are artificial Pipes, made to catch ſeveral ſorts of Birds, by imitating their Notes.

CALLENDER, or CALANDER, a Machine us'd in the Manufactures, for preſſing certain Cloths, Stuffs of Silk or Woollen, and even Linens; and to make 'em ſmooth, even, and gloſſy: 'Tis alſo us'd for watering, or giving the Waves to Tabbies and Mohairs. It conſiſts of two large wooden Rollers, round which the Pieces of Stuff are wound: theſe are put between two large cloſe-poliſh'd Planks of Wood; the lower ſerving as a fix'd Baſe; and the upper moveable, by means of a Skrew like that of a Crane; with a Rope, faſten'd to a Spindle which makes its Axis: This upper Part is of a prodigious Weight, ſometimes 50 or 60 thouſand Pound. 'Tis this Weight that gives the Poliſh, and that makes the Waves on the Stuffs about the Rollers, by means of a ſhallow Indenture or Engraving cut in it. The Rollers are taken off, and put on again, by inclining the Machine. The Word comes from the Latin *Cylindrus*; in regard the whole Effect of the Machine depends on a Cylinder. *Borel*, indeed, derives the Name of it from that of a little Bird, of the Swallow Kind; in regard of the Agreement between the Feathers of the Bird, and the Impreſſion of the Machine.

CALLIGRAPHUS, was antiently a Copiſt or Scrivener, who tranſcrib'd fair, and at length what the Notaries had taken down in Notes, or Minutes; which comes pretty near to what we call *Ingroſſing*. The Minutes of Acts, &c. were always taken in a kind of Cypher, or Short-Hand; ſuch as the Notes of *Tiro* in *Gruter*: by which means the Notaries, as the *Latins* call'd 'em, or the Σημειόγραφοι and Ταχύγραφοι, as the *Greeks* call'd 'em, were inabled to keep pace with a Speaker, or Perſon who dictated. Theſe Notes being underſtood by few, were copy'd over fair, and at length by Perſons who had a good Hand, for ſale, &c. and theſe were call'd *Calligraphi*; a Name frequently met with in the Primitive Writers. It comes from the *Greek* κάλλος, *beauty*, and γράφω, *I write*; *q. d.* εἷς κάλλος γράφων, *who writes for Beauty or Ornament ſake.*

CALLIPER, or rather CALIBRE, the Aperture of a Piece of Artillery, or any other Fire-Arm; or the Diameter of the Mouth of a Cannon, &c. or of the Ball it carries. Hence,

CALLIPERS,

CALLIPER, or CALIBRE-*Compaſſes*, is a Rule or Inſtrument, wherein a Right Line is ſo divided, as that the firſt Part being equal to the Diameter of an Iron or Leaden Ball of one Pound Weight, the other Parts are to the firſt, as the Diameters of Balls of two, three, four, *&c.* Pounds, are to the Diameter of a Ball of one Pound. The *Calliper* is us'd by Engineers, from the Weight of the Ball given, to determine its Diameter, or *Calliper*; or *vice verſa*.

The *Calliper*, (Tab. Fortification, Fig. 2.) conſiſts of two thin pieces of Braſs, ſix Inches long; join'd by a Rivet, ſo as to move quite round each other: The Head, or one End of the Piece is cut circular; and one half of its Circumference divided into every 2d Deg. On the other Half are Diviſions from 1 to 10; each, again, ſubdivided into 4: The uſe of which Diviſions and Subdiviſions, is, that when the Diameter of a Bullet, *&c.* not exceeding 10 Inches, is taken, the Diameter of the Semicircle, will, among the Diviſions, give the Length of that Diameter taken between the Points of the *Callipers*, in Inches and fourth Parts.

The Degrees on the Head, ſerve to take the Quantity of an Angle; the Method of which is obvious. If the Angle be inward, apply the outward Edges to the Planes that form the Angle; the Degree cut by the Diameter of the Semicircle, ſhews the Quantity of the Angle ſought. For an outward Angle, open the Branches till the Points be outwards, and applying the ſtreight Edges to the Planes that form the Angle, the Degrees cut by the Diameter of the Semicircle ſhew the Angle requir'd; reckoning from 180, towards the Right Hand.

On one Branch of the *Callipers*, on the ſame Side, are, firſt, 6 Inches; and each of theſe ſubdivided into ten Parts. Secondly, a Scale of unequal Diviſions, beginning at two, and ending at 10; each ſubdivided into four Parts. Thirdly, two other Scales of Lines, ſhewing, when the Diameter of the Bore of a Piece is taken with the Points of the *Callipers* outwards, the Name of the Piece, whether Iron or Braſs; *i.e.* the Weight of the Bullet it carries; or that 'tis ſuch or ſuch a Pounder, from 1 to 42 Pounds.

On the other Branch of the *Callipers*, on the ſame Side, is a Line of Chords to about 3 Inches Radius; and a Line of Lines on both Branches, as on the Sector; with a Table of the Names of the ſeveral Pieces of Ordnance. On the ſame Face is a Hand grav'd, and a Right Line drawn from the Finger towards the Centre of the Rivet; ſhewing, by its cutting certain Diviſions made on the Circle, the Weight of Iron Shot, when the Diameter is taken with the Points of the *Callipers*. Laſtly, on the Circle, or Head, on the ſame Side, are graved ſeveral Geometrical Figures inſcrib'd in each other, with Numbers; as a Cube, whoſe Side is ſuppoſed one Foot; a Pyramid on the ſame Baſe and Altitude, and the Proportions of their Weight, *&c.* a Sphere, inſcrib'd in a Cube; a Cylinder, Cone, Circle, Square, *&c.*

In Architecture, CALLIPER, or CALIBRE, is us'd for the Bulk, Thickneſs, Volume, or Diameter of any round thing, *&c.* Thus, they ſay, theſe two Columns are of the ſame *Callibre*, *i. e.* the ſame Diameter.

The Gagers alſo ſometimes uſe *Callipers*, to embrace the two Heads of any Caſk, in order to find its Length.

CALLOSITY, a little *Callus* form'd in any part of the Skin; or a white, ſolid, dry, inſenſible Fleſh; generated by the Congeſtion of a dry, pituitous Excrement, covering the Circumference of an Ulcer, Wound, *&c.* and in the Place where good Fleſh ſhould grow. The Chirurgeon is always to take care that Ulcers cloſe without *Calloſities*. See CALLUS.

CALLUS, a kind of Nodus, or Ligature, which joins the Extremities of a fractur'd Bone. The Formation of a *Callus* may be as follows. The Juice that feeds the Bone, running along its Fibres, becomes extravaſated in the Place where thoſe Fibres are broke: So that ſtopping, and gathering together round the Extremities of the Fracture, it there dries, knits, and hardens, to a Conſiſtence like a ſtrong Glue; leaving only a little Inequality in the Place where it is form'd.

Callus's frequently grow ſo firm as to ſupply the Place of Bones. In the *Phil. Tranſact.* we have an Inſtance of a *Callus* ſupplying the Place of the *Os Humeri*; taken out, upon its being Carious, by Mr. *Fowler*; and another of a *Callus*'s ſupplying the Place of the *Os Femoris*; and the Perſon as ſtrong as ever, and walking without any Lameneſs, by Mr. *Sherman*.

CALLUS, is alſo a hard denſe Knob, or Subſtance, riſing on the Hands, Feet, *&c.* by much Friction and Preſſure againſt hard Bodies.

CALOGERI, CALOGERS, or CALOYERS, Monks, or Religious, in *Greece*, both Male and Female; inhabiting, particularly, Mount *Athos*, but diſſeminated throughout all the Churches of the Eaſt. They follow the Rule of St. *Baſil*, and make Vows like the Weſtern Religious. There has never been any Reform among 'em, but they ſtill retain their original Inſtitution, keep their former Habit, *&c.* to a Tittle. *Tavernier* obſerves, they live a very retir'd auſtere Life, eating no Fleſh; and keeping four Lents, beſides a great Number of Faſts, with great Strictneſs. They eat no Bread till they have earn'd it by the Labour of their Hands. During their Lents, ſome don't eat above once in three Days, others but twice in ſeven. Moſt of the Night they ſpend in Weeping, *&c.* Some Authors obſerve, that the Word *Caloger* is apply'd particularly to ſuch, among their Religious, as are become Venerable by Age, and the Auſterity of their Life. It may be added, that tho *Calogers*, among us, be a general Name, and comprehend all the *Greek* Monks; yet, in *Greece* it ſelf, their Prieſts, or Regulars, are call'd *Icromonaches*.

The *Turks* uſe the Word *Calogers* for their Dervices, or Religious Muſſulmen. The Word comes from the *Greek* καλόγερος; which is form'd from καλὸς and γερων, i.e. *a good old Man*.

CALOMEL, in Pharmacy, the Name ordinarily given to *Mercurius Dulcis*. It rather ſeems to have firſt belonged to the Æthiops Mineral; from καλὸς, *pulcher*, fair; and μέλας, *niger*, black: for that white or pale Bodies rubb'd herewith, become black. But ſome will have it given to *Mercurius Dulcis*, from the Authority of a whimſical Chymiſt, who employ'd a Black in his Laboratory; whoſe Complexion, as well as that of the Mercury, he alluded to in the Term: the Medicine being *fair*, and the Operator *black*. See MERCURIUS DULCIS.

CALOTTE, in Architecture, a round Cavity or Depreſſure, in form of a Cup, or Cap, lathed and plaiſter'd; us'd to diminiſh the Riſe or Elevation of a moderate Chapel, Cabinet, Alcove, *&c.* which, without ſuch an Expedient, wou'd be too high for other pieces of the Apartment. It takes its Name from

CALOTTE, a Cap or Coif of Hair, Satin, or other Stuff; uſed firſt for Neceſſity, but now become an Eccleſiaſtical Ornament, in *France*, &c. It was firſt wore by Cardinal *Richlieu*: The red *Calotte* is the Badge of a Cardinal.

CALQUING, or CALKING, a Term in Painting, *&c.* us'd where the Backſide of any Deſign is cover'd with a black or red Colour; and the Strokes or Lines trac'd thro on a wax'd Plate, Wall, or other Matter; by paſſing lightly over each Stroak of the Deſign with a Point, which leaves an Impreſſion of the Colour on the Plate or Wall.

CALTROP, *Chauſſe-trape*, an Inſtrument with four Iron Points, diſpos'd Triangular-wiſe; ſo as there are always three Points bearing on the Earth, the fourth being in the Air: *Budeus* calls it *Calciatrappa*. Several of theſe are fix'd in the Ground where the Cavalry is to paſs, to ſtick into the Horſes Feet, and embarraſs 'em.

CALVA, or CALVARIA, the Scalp, or upper Part of the Head; ſo call'd from its growing bald firſt. See HEAD.

CALVARY, a Term us'd in Catholic Countries for a kind of Chapel of Devotion, rais'd on a Hillock near a City; in Memory of the Place where Jeſus Chriſt was crucify'd near *Jeruſalem*. Such is the Church of St. *Valerian*, near *Paris*; which is accompany'd with ſeveral Chapels, in each whereof is repreſented in Sculpture one of the Myſteries of the Paſſion. The Word comes from the Latin *Calvarium*, and that from *Calvus*; in regard the Top of that Hillock was bare, and deſtitute of Verdure: which is alſo ſignify'd by the *Hebrew* Word *Golgotha*.

CALVINISM, the Doctrine and Sentiments of *Calvin* and his Followers, with regard to Matters of Religion. *Calviniſm* ſubſiſts in its greateſt Purity, in the City of *Geneva*; whence it was firſt propagated over *France*, the *United Provinces*, and *England*. In *France* it was aboliſh'd by the Revocation of the Edict of *Nants*, in 1685. It has been the prevailing Religion in the *United Provinces*, ever ſince the Year 1572. In *England* it has dwindled ſince the Time of Queen *Elizabeth*; and is now confin'd among the Diſſenters: Tho it ſtill ſubſiſts, a little allay'd, in the Articles of the Eſtabliſh'd Church; and in its Rigour in *Scotland*. Of the thirteen *Swiſs Cantons*, there are ſix who profeſs *Calviniſm*; which likewiſe obtains in the *Palatinate*. The diſtinguiſhing Tenets of *Calviniſm*, are, *1ſt*, That Predeſtination and Reprobation are prior to the Preſcience of good or evil Works. *2dly*, That Predeſtination and Reprobation depend on the mere Will of God; without any regard to the Merits or Demerits of Mankind. *3dly*, That God gives thoſe whom he has predeſtinated a Faith which they cannot loſe; a neceſſitating Grace, which takes away the Freedom of Will; and that he imputes no Sin to 'em. *4thly*, That the Righteous cannot do any good Work, by reaſon of Original Sin, which cleaves to 'em. *5thly*, That Men are juſtify'd by Faith only. The modern *Calviniſts* reject or palliate ſome of theſe Articles.

In *France*, the *Calviniſts* are diſtinguiſh'd by the Name of *Huguenots*; and, among the common People, by *Parpaillots*. In *Germany* they are confounded with the *Lutherans*, under the general Title *Proteſtants*; only ſometimes diſtinguiſh'd by the Name *Reformed*. F. *Gaultier* attributes an hundred Hereſies to 'em; but F. *Francis Feu-*

Ardent improves vaſtly on the Liſt; making 'em no leſs than one thouſand four hundred.

CALVITIES, in Medicine, Baldneſs, or a falling off of the Hair, without being able to grow again; the Moiſture of the Head, which ſhould feed it, being dry'd up by ſome Diſeaſe, by old Age, or by immoderate uſe of Pouder. See HAIR.

CALX, literally ſignifies, *Lime*; or a Stone burnt, or calcin'd in a Kiln for that Purpoſe, to be us'd in the making of Mortar, &c. See LIME, MORTAR, &c.

CALX, in Chymiſtry, is a kind of Aſhes, or fine friable Pouder, which remains of Metals, Minerals, &c. after they have undergone the Violence of a Fire for a long time; and by that means have loſt all their humid Parts. Or, CALX, is what remains of a Body after Calcination. See CALCINATION. Gold and Silver, after they have been reduc'd to a *Calx*, may be again recover'd to their former Form and Nature. *Calx of Tin*, is call'd *Putty*; of conſiderable uſe in poliſhing Steel Mirrors, &c. *Calx of Braſs*, is call'd *Æs uſtum*. See Æs USTUM. *Calx of Lead*, is call'd *Ceruſs*. See CERUSS. For *Calx of Antimony*, ſee ANTIMONIUM *Diaphoreticum*.

CALX, in Anatomy; See CALCANEUS.

CAMAIEU, a Stone, whereon are found various Figures, and Repreſentations of Landſkips, &c. form'd by a kind of *Luſus Naturæ*; ſo as to exhibit Pictures without Painting. The Word is us'd alſo for thoſe precious Stones, as Onyx's, Sardoins, and Agats, whereon the Lapidaries employ their Art to aid Nature, and perfect thoſe Repreſentations. The Word comes from *Camechuia*, a Name the Orientals give to the Onyx, when they find, in preparing it, another Colour; as who ſhould ſay, *a ſecond Stone*.

CAMAIEU is alſo us'd for a Painting, wherein there is only one Colour; and where the Lights and Shadows are manag'd on a Gold or Azure Ground: When the Ground is yellow, the *French* call it *Cirage*; when grey, *Griſaille*. This kind of Work is chiefly us'd to repreſent Baſſo Relievo's: The *Greeks* call Pieces of this Kind μονοχρώματα; the Word is borrow'd from the Stone, call'd by the Latins *Cameus*, and by us *Camayeu*; which ſee. Some derive it from the *Greek* καμαι, *low*; becauſe Bas-Relievo's are uſually expreſs'd herein.

CAMALDOLI, an Order of Religious, founded by St. *Romuald*, in 1009, in the horrible Deſart of *Camaldoli*; ſituate in the State of *Florence*, on the *Apennines*. Their Rule is that of St. *Benedict*; and their Houſes, by the Statutes, are never to be leſs than five Leagues from Cities. The *Camaldolites* han't bore that Title from the Beginning of the Order: Till the Cloſe of the XIth Century they were call'd *Romualdins*, from the Name of their Founder. Till that Time, *Camaldolite* was a particular Name for thoſe of the Deſart of *Camaldoli*; and *D. Grandis* obſerves, was not given to the whole Order, in regard it was in this Monaſtery that the Order commenc'd; but becauſe the Regulation was beſt maintain'd here.

CAMBER-BEAM, in Building, a piece of Timber cut Archwiſe, or with an Obtuſe Angle in the Middle, commonly us'd in Platforms; as Church Leads, and other Occaſions, where long and ſtrong Beams are requir'd. A *Camber-Beam* is much ſtronger than another of the ſame Size; ſince being laid with the hollow Side downwards, as they uſually are, they repreſent a kind of Arch.

CAMBRING: The Seamen ſay, *a Deck lies Cambring*, when it doth not lie level, but higher in the Middle than at either End: Alſo, if the Ship's Keel is bent in the Middle upwards, (which may happen from her lying aground on a place, where neither her Aft nor Fore-part do touch it; and from many other Reaſons taken from her Make) they ſay, *She is Camber-keeled*.

CAMELEON, in Natural Hiſtory, a little Animal, famous among Antient and Modern Writers, for a Faculty, it is ſuppos'd to have, of changing its Colour, and aſſuming thoſe of the Objects near it.

The *Cameleon*, or *Chameleon*, is of the Lizzard Kind; only its Head is ſomewhat bigger than the common Lizzard. It has four Feet, and a long flat Tail; whereby it can hang to the Branches of Trees, as well as with its Feet. In *Egypt* there are ſome a Foot long, including the Tail; but thoſe of *Arabia* ſcarce exceed half that Length. Its Snout is long, its Back ſharp; its Skin, from the Head to the laſt Joint of the Tail plaited, and rough, ſay ſome, like a Saw: Dr. *Goddard* ſays, 'tis grain'd, like a Shagreen; the biggeſt Grains, or globular Inequalities, being about the Head; the next on the Ridge of the Back. Its Head is without any Neck, as in Fiſhes: It has two little Apertures in the Head, that ſerve for Noſtrils; it has no Ears, nor does it either make or receive any Sound. Its Eyes are big, and verſatile this or that way, without moving the Head: ordinarily, it turns one of 'em quite the contrary way to the other. The Tongue is half the Length of the Animal; conſiſting of a white Fleſh, round as far as the Tip, which is flat and hollow; ſomewhat like an Elephant's Proboſcis, or Trunk; and accordingly, ſome call it *a Trunk*. This it can dart out very nimbly, and draw back again, over a Bone which reaches from the Root, half its Length; much as a Silk Stocking is drawn off and on the Leg.

'Tis a common Tradition, that the *Cameleon* lives on Air; but Experience ſhews the contrary. The great Uſe of its Tongue is to catch Flies, by ſhooting it briſkly upon 'em, and entangling 'em in its Proboſcis: Some ſay, the Tongue is tipp'd with a glutinous Matter, which the Flies ſtick to; that at the *Academy of Sciences*, they frequently obſerv'd to catch and ſwallow Flies: They found alſo the Signs of 'em in its Excrements; and, when it was diſſected, the Stomach and Inteſtines were found full of 'em. M. *Perrault* aſſures us, when at Reſt, and in the Shade, its Colour is ſomewhat various: That at *Paris*, was of a blueiſh grey; but, when expos'd to the Sun, this grey chang'd into a browner or darker grey: and its leſs illumin'd Parts into divers Colours; forming Spots, half the bigneſs of a Finger's End, ſome of 'em of an Iſabella Colour: The Grains of the Skin, not illumin'd at all, reſembled a Cloth, mix'd of divers Colours. That at *London*, deſcrib'd in the *Philoſophical Tranſactions*, by Dr. *Goddard*, was mix'd of ſeveral Colours, like a medley Cloth: The Colours diſcernable, were a Green, a ſandy Yellow, and a deeper Yellow, or Liver Colour; but one might eaſily imagine ſome Mixture of moſt, or all Colours. He adds, that upon Excitation, or Warming, it ſuddenly became full of black Spots, of the bigneſs of a great Pin's Head, equally diſpers'd on the Sides, &c. all which afterwards would vaniſh. M. *Perrault* obſerves ſomewhat like this of the *Paris Cameleon*; *viz.* that upon handling and ſtirring it, it wou'd appear ſpeckled, or ſtain'd with dark Spots, bordering on green. He adds, that wrapping it up in a Linen Cloth, for two or three Minutes, it wou'd be taken out whitiſh; tho not conſtantly ſo: Nor did it take the Colour of any other Stuff it was wrapp'd in. So that what *Theophraſtus* and *Plutarch* wrote, that it aſſumes all the Colours it comes near, excepting white, is contrary to Experience. *Monconys* aſſures us, that the *Cameleon*, when plac'd in the Sun, appears green; tho in a Place where there is no Graſs, or other green Object: that by the Candle it appears black, tho plac'd on white Paper; and that, when ſhut up in a Box, it becomes yellow and green: and he aſſerts, it never takes any other than theſe four Colours.

Naturaliſts are very little agreed, as to the Reaſon or Manner of the Change of Colour: Some, as *Seneca*, maintain 'tis done by Suffuſion; others, as *Solinus*, by Reflexion; others, as the *Carteſians*, by the different Diſpoſition of the Parts that compoſe the Skin, which give a different Modification to the Rays of Light: Others, as Dr. *Goddard*, aſcribe the Change to the Grains of the Skin; which, in the ſeveral Poſtures, he thinks, may ſhew ſeveral Colours; and, when the Creature is in full Vigour, may have, as he terms it, *rationem Speculi*; that is, the Effect of Mirrors, and reflect the Colours of Bodies adjacent.

Theſe Hypotheſes are all deficient enough, and there is ſtill room for a new one of our own: The *Cameleon*, then, is repreſented to us as an exceedingly lean ſkinny Animal; inſomuch that the *Italians* call it *a living Skin*. M. *Perrault* obſerves, of that which he diſſected in the King's Library, that one Hour it appear'd to be a mere Skin, and nothing elſe; and yet the next it would appear fat and plump. Hence we gather, that it muſt have an extraordinary Command over the Skin, as to Tenſion or Laxneſs; ſince by ſwelling its Bulk its Skin will be fill'd, the Fibres thereof ſtretch'd, and the Pores leſſen'd: and again, by withdrawing its groſſneſs, the Skin will be left lank and ſhrivell'd, one Part wrapping over another: Which is confirm'd by what we have already obſerv'd, that its Skin is uſually ſeen to be full of *Rugæ*, or little Plaits. Now, the Animal having it in its Power to fill the Skin more or leſs, has it in its Power not only to alter the Tone and Texture of the Fibres, upon which their reflexive Quality, in a great meaſure depends; but alſo to bring Parts into ſight which before lay conceal'd, or to conceal ſuch as before lay open: and 'tis more than probable, that the Parts which are ordinarily cover'd, are of a ſomewhat different Colour from thoſe conſtantly open to the Air.

On theſe Principles, we believe, all the Phænomena in the *Cameleon*'s Colour may be ſolv'd. The Animal, 'tis evident, has a Power to reflect different colour'd Rays from the ſame Parts; alſo to make certain Parts reflect, and to prevent others reflecting: and hence that variety, that medley of Colours. See RAY, COLOUR, REFLEXION, &c.

Matthiolus relates ſeveral ſuperſtitious Notions of the Antients touching the *Cameleon*; as that its Tongue torn out, while alive, help'd the Bearer to gain his Law-Suit; that burning its Head and Throat with Oaken Wood, or roaſting its Liver on a red Tile, made it thunder and rain. That its Right Eye, torn out while living, and ſteep'd in Goat's Milk, took away Pearls in the Eye; that its Tongue

ty'd about a Woman with Child, made her Delivery ſafe. That its right Jaw remov'd all Fear; that its Tail ſtopp'd the Courſe of Rivers: *Pliny* aſſures us, *Democritus* had compos'd a whole Book of ſuch Follies.

CAMELEON, in Aſtronomy, is one of the Conſtellations of the Southern Hemiſphere, added by the Moderns. See CONSTELLATION.

CAMELOT, or CAMLET, a Stuff, ſometimes of Wool, ſometimes Silk, and ſometimes Hair, eſpecially that of Goats, with Wool or Silk; in ſome, the Warp is Silk and Wool twiſted together, and the Woof Hair. *England*, *France*, *Holland*, and *Flanders*, are the chief Places of this Manufacture; *Bruxels* exceeds 'em all in the Beauty and Quality of its *Camelots*: Thoſe of *England* are reputed the ſecond.

Figured CAMELOTS, are thoſe of one Colour, whereon are ſtamp'd various Figures, Flowers, Foliages, *&c.* by means of hot Irons, which are a kind of Moulds, paſs'd, together with the Stuff, under a Preſs. Theſe are chiefly brought from *Amiens* and *Flanders*: the Commerce of theſe, was antiently much more conſiderable than at preſent.

Water CAMELOTS, thoſe which, after weaving, receive a certain Preparation with Water; and are afterwards paſs'd under a hot Preſs, which gives 'em a Smoothneſs and Luſtre.

Waved CAMELOTS, are thoſe whereon Waves are impreſs'd, as on Tabbies, by means of a *Callendar*, under which they are paſs'd and repaſs'd ſeveral times. See CALLENDAR.

The Manufacturers, *&c.* of *Camelots*, are to take care they don't acquire any falſe or needleſs Plaits; it being almoſt impoſſible to get 'em out again: This is notorious, even to a Proverb; thus we ſay, a Perſon *is like Camlet, he has taken his Plait.*

Menage derives the Word from *Zambelot*, a *Levantine* Term for Stuffs, made with a fine Hair of a *Turkiſh* Goat: whence the Word *Turkiſh Camelot*. Others call it *Capellote*, from *Capelle*, She-Goat. *Bochart* makes *Zambelot*, a Corruption of the Arabic *Giamel*, or *Camel*. Others fetch *Camelot* from the bare Latin *Camelus*: So that *Camelot* ſhould properly ſignify, a Stuff made of Camels Hair.

CAMERA OBSCURA, *Dark Chamber*, in Opticks, a Machine or Apparatus, repreſenting an Artificial Eye; whereon the Images of External Objects are exhibited diſtinctly, and in their native Colours; either inverredly or erect. See *Artificial* EYE.

The firſt Invention of the *Camera Obſcura*, is aſcrib'd to *Bap. Porta*.

The Uſe of the CAMERA OBSCURA is manifold: It ſerves to very good Purpoſes in explaining the Nature of Viſion; and hence it is that ſome call it *the Artificial Eye*. It affords very diverting Spectacles; both by exhibiting Images perfectly like their Objects, and each cloth'd with their native Colours; and by expreſſing, at the ſame time all, their Motions: which latter, no other Art can imitate. By means of this Inſtrument, eſpecially the third Contrivance under mention'd, a Perſon unacquainted with Deſigning, will be able to delineate Objects to the laſt accuracy and juſtneſs; and another well vers'd in Painting, will find many Things herein to perfect his Art.

The Theory of the CAMERA OBSCURA, is contain'd in the following Propoſition.

If an Object A B, (Tab. *Opticks*, Fig. 16.) radiate thro a ſmall Aperture C, upon a white Wall oppoſite thereto; and the Place of Radiation behind the Aperture b C a be dark: the Image of the Object will be painted on the Wall, in an inverted Situation.

Demonſt. For the Aperture C being very ſmall, the Rays iſſuing from the Point B, will fall on b; thoſe from the Points A and D, will fall on *a* and *d*: wherefore, ſince the Rays iſſuing from the ſeveral Points are not confounded; when reflected from the Wall, they will carry with 'em a certain Species of the Object, and exhibit its Appearance on the Wall. But ſince the Rays A C and B C interſect each other in the Aperture, and the Rays from the loweſt Points fall on the higheſt; the Situation of the Object will of neceſſity be inverted.

Corollary. Since the Angles at D and *d* are Right, and the Vertical ones at C are Equal; B and *b*, and A and *a*, will be alſo Equal; conſequently, if the Wall, whereon the Object is delineated, be parallel to it, *a b* : AB : : *d* C : DC. That is, the Height of the Image will be to the Height of the Object; as the Diſtance of the Object from the Aperture, is to the Diſtance of the Image from the ſame.

Conſtruction of a CAMERA OBSCURA, wherein the Images of External Objects ſhall be repreſented diſtinctly, and in their genuine Colours, either in an inverted, or an erect Situation. 1. Darken a Chamber, one of whoſe Windows looks into a Place ſet with various Objects; leaving only one little Aperture open in the Window. 2. In this Aperture fit a Lens, either Plano-convex, or Convex on both Sides; to be a Portion of a large Sphere. 3. At a due Diſtance, to be determin'd by Experience, ſpread a Paper, or a white Cloth, unleſs there be a white Wall for the Purpoſe; for on this, the Images of the deſir'd Objects will be delineated invertedly. 4. If 'tis rather deſir'd to have 'em appear erect, 'tis done either by means of a concave Lens, placed between the Centre and the Focus of the firſt Lens; or by receiving the Image on a Plane *Speculum*, inclin'd to the Horizon, under an Angle of 45°; or by means of two Lens's included in a Draw-Tube, in lieu of one. *Note*, If the Aperture don't exceed the Bigneſs of a Pea, the Objects will be repreſented, even tho there be no Lens at all us'd.

To render the Images clear and diſtinct, 'tis neceſſary the Objects be illumin'd by the Sun's Light: They will be ſtill brighter, if the Spectator firſt ſtay a quarter of an Hour in the Dark. Care muſt be likewiſe taken, that no Light eſcape thro any Chinks; and that the Wall ben't too much illumin'd. Farther, the greater Diſtance there is between the Aperture and the Wall; the larger and more diſtinct will the Images be: but the Rays becoming, thus, too much dilated, the Brightneſs of the Image is weakned, till at length it becomes inviſible.

Conſtruction of a portable CAMERA OBSCURA. 1. Provide a little Cheſt, or Box of dry Wood, (Tab. *Opticks*, Fig. 17.) of the Figure of a Parallelolipiped; its Breadth about 10 Inches, and its length two or more Feet; according to the different Magnitude of the Diameter of the Lens's. 2. In the Plane B D fit a ſliding Tube E F with two Lens's; or, to ſet the Image at a leſs Diſtance from the Tube, with three Lens's convex on both Sides: The Diameter of the two outer, or forwarder, to be $\frac{60}{100}$ of a Foot; that of the Inner leſs, *v. g.* $\frac{40}{100}$. 3. Within the Cheſt, at a proper diſtance from the Tube, ſet up an oil'd Paper, perpendicularly, G H, ſo as Images thrown upon ſo may be ſeen thro. 4. Laſtly, in I make a round Hole, it as a Perſon may look conveniently thro it with both Eyes.

If then the Tube be turn'd towards the Objects, (the Lens's being at their proper Diſtance, to be determin'd by Experiment) the Objects will be delineated on the Paper G H, erect, as before.

Another Portable CAMERA OBSCURA.

1. In the middle of a *Ciſtula*, or Cheſt, (Tab. *Opticks*, Fig. 18.) raiſe a little Turret, either round or ſquare H I, open towards the Object A B. 2. Behind the Aperture, incline a little plain Mirror *a b*, to an Angle of 45°, which may reflect the Rays, A *a* and B *b*, upon a Lens convex on both Sides G, included in a Tube G L. 3. At the Diſtance of the Focus thereof, place a Table cover'd with a white Paper E F, to receive the Image *α β*. 4. Laſtly, in N M make an oblong Aperture to look through.

CAMISADE, in the Art of War, an Attack, by ſurprize, in the Night, or at the Point of Day; when the Enemy are ſuppos'd a-bed. The Word is ſaid to have took its riſe from an Attack of this Kind; wherein, as a Badg, or Signal to know one another by, they bore a Shift, *Chemiſe*, or *Camiſe*, over their Arms.

CAMISARD, a Term whereby the *French* diſtinguiſh the *Calviniſts* of the *Cevennes*; from a League or Faction form'd by 'em againſt the *French*, in 1688, and the following Years; wherein either their Attacks were ſo ſudden, and had ſo much of the *Camiſade* in 'em; or they plunder'd Linen for Shifts, or wore Clothes that reſembled Shifts, ſo as to occaſion the Name; for Authors give all theſe Derivations: to which may be added another more probable than any, *viz.* from *Camis*, a high, or beaten Road; the Roads being infeſted by the *Camiſards*.

CAMP, a Spot of Ground, where an Army reſts, intrenches it ſelf, or plants a Piquet-Watch, to lodge ſecure in Tents or Barracks. The *Camp* is ſometimes cover'd by an Intrenchment; ſometimes only by the advantage of its Poſt: Sometimes 'tis inclos'd with *Chevaux de Friſe*, laid acroſs each other; the ordinary Practice of the old Prince of *Orange*. The chief Skill of a General lies in the Art of *Incamping* well: This the *Romans* were unacquainted with, till the War with *Pyrrhus*; from whoſe *Camp* they learn'd to model their own. Till then, they knew not how to poſt themſelves to advantage, nor with any Order in their *Camp*.

An *Incampment*, or *ſtanding Camp*, is always to have the Advantage of Water and Forrage, and the means of covering and retrenching it ſelf. *Rhoe*, deſcribing the great *Mogul's Camp*, ſays, 'tis 20 *Engliſh* Miles round, and contains more Space than the largeſt City in *Europe*: that 'tis compos'd of 800000 Men, and 40000 Elephants.

Flying-CAMP, is a ſtrong Body of Horſe or Dragoons, to which are ſometimes added Foot; commanded uſually by a Lieutenant-General. This is always in Motion; both to cover the Gariſons in Poſſeſſion, and to keep the Adverſary in continual Alarm.

CAMPAIGN, a Military Term, ſignifying the Space of Time during which Armies are maintain'd every Year in the Field. The *Germans* begin their *Campaign* very late; uſually waiting for Harveſt: The *French* are always early, and begin ſometimes in Winter.

CAMPANULOUS, or CAMPANIFORMIS, thoſe Plants whoſe Flowers reſemble the Shape of a Bell; from *Campana*, a Bell. See FLOWER, and PLANT.

CAMPECHE, a kind of Wood brought from *America*, us'd in Dying. The Heart of the Tree, which alone is us'd, is at firſt red; after it has been fell'd ſome time, it becomes black; and, if ſteep'd in Water, gives a black Tincture, ſuch as may be wrote withal. 'Tis very heavy, burns admirably, and gives a clear laſting Flame.

CAMPHOR, or CAMPHIRE, a white, ſhining, tranſparent, odoriferous, volatile Gum, or Reſin, of a bitteriſh Taſte, and very hot in the Mouth; flowing from a Tree frequent in the Iſland of *Borneo*, and the neighbouring mountainous Coaſts of *India*, reſembling a Walnut Tree. It diſtils from the Tree in manner of a Gum; and, 'tis ſaid, moſt plentifully in the Time of Earthquakes and Storms. M. *Lemery* ſays, the *Camphor* is found at the Foot of the Tree; where it thickens into little Grains of different Figures and Sizes; very dry, friable, light, of a bitteriſh Taſte, *&c.* Theſe little Grains falling on one another, adhere lightly together, and form Maſſes; which being ſqueez'd a little by the Fingers, granulate again into ſmall Corpuſcles, like Salt.

Some Authors make two different Kinds of *Camphor*, according to the different Parts of the Tree where they are found: That in the Veins of the Wood, is ſaid to be different from that which oozes out upon breaking the Bark. The *Camphor*, as is ſaid, being at firſt red, is whiten'd either by the Sun or the Fire. In effect, we have but little of the Raw Natural *Camphor* among us; the *Dutch* take care that it comes all refin'd by Sublimation; and prepar'd to our Hands.

Manner of Refining crude CAMPHOR.

The Method us'd to refine it, is to lay it to ſublime in ſubliming Pots: when the Veſſel is half full, it is ſtopp'd, and plac'd over a gentle Fire; where only the pureſt Part riſes at firſt; but, by degrees, the whole is ſublim'd, except a *Caput Mortuum*, or earthy Part ſticking at Bottom: They then melt it with a gentle Heat, and run it into Moulds to give it what Figure they pleaſe. 'Tis ſo volatile, and apt to evaporate in Smoke, that the Merchants ordinarily incloſe it in Line-ſeed, that the Viſcoſity of that Grain may keep its Particles together.

Camphor has various Uſes; as in Fireworks, in making Verniſh, *&c.* In the Courts of the Eaſtern Princes, 'tis burnt, together with Wax, to illumine the Night. 'Tis exceedingly inflameable, ſo as to burn and preſerve its Flame in Water; and in burning it conſumes wholly, leaving no Scorium behind: But its principal uſe is in Medicine. 'Tis the moſt efficacious Diaphoretic known; its great Subtilty diffuſing it ſelf thro the Subſtance of the Parts, almoſt as ſoon as the warmth of the Stomach has ſet it in Motion. 'Tis us'd in a Caries of the Bones, as a Detergent in Wounds, to reſiſt a Gangreen, *&c.* When mix'd with the ſubtile Salts of Cantharides, it prevents their injuring the Bladder; its exquiſite Fineneſs inabling it to follow them into the fine Meanders thereof, and to ſheath their Aſperities. Dr. *Quincy* obſerves, that *Camphor* begins to be mix'd, and that to good purpoſe, with Mercurials, to guard againſt their ſtimulating Properties, and to ſend 'em into the fineſt Paſſages, to operate by Fuſion, and the bare Force of Impulſe. For not only *Mercurius Dulcis* or *Calomel*, may be hereby reſtrain'd from manifeſt Operation in the Glands about the Mouth; but alſo the Mineral *Turbith*, which of it ſelf acts very ſtrongly by Stool and Vomit, when mix'd with *Camphor*, will be much leſs felt in thoſe Reſpects; and will go into the fartheſt Circuit of Motion, and promote the cutaneous Diſcharge, in a more efficacious manner than any Medicine of leſs ſpecifick Gravity.

M. *Lemery* endeavour'd at a Chymical Analyſis of *Camphor*; but either its Parts were too fine and volatile to be carry'd to any greater degree of Purity or Subtilty by any Chymical Proceſs; or it was owing to the cloſe Union of its Principles, which, in all appearance, muſt be an Oil and a volatile Salt; that they could not be ſeparated.

Camphor, he obſerves, does not diſſolve in aqueous or phlegmatic Liquors; but in ſulphurous ones it does: not in Alcalines, nor even in ſome Acids: But in Spirit of Nitre it diſſolves perfectly; and is the ſole Reſin that does ſo. This Diſſolution is ordinarily called *Oil of Camphor*; and 'tis to this the medicinal Virtue of *Camphor* in Wounds, Gangreens, and Caries are aſcrib'd. They uſe not to take it internally, for fear of its ſharpneſs and corroſiveneſs: tho M. *Lemery* has found good Effects from two or three Drops by the Mouth, in Obſtructions and Fits of the Mother: indeed, he generally mix'd it with as much Oil of Amber.

There is a common Verſe to the Diſcredit of *Camphor*, as if its Smell emaſculated:

Camphora *per Nares caſtrat odore Mares.*

But the Proverb, according to *Scaliger* and *Tulpius*, is falſe. *Camphor*, being boil'd in Aqua vitæ, in a cloſe Place, till the whole be evaporated; if a lighted Torch or Candle be introduc'd, the Air in the whole Place will immediately catch Fire, and appear in a Flame, without doing any Damage to the Place or the Spectators.

It has been found, in *Ceylon*, that the Root of the Tree which yields Cinnamon, yields, by Inciſion, a Liquor that has a ſtrong ſmell of *Camphor*, and many of its Virtues: whence Naturaliſts, by miſtake, have ſuppos'd that all *Camphor* came from that Tree. There is a ſmell of *Camphor* in ſeveral Plants, as in *Camphoreta*, *Abrotonum*, *Roſemary*, &c.

Artificial CAMPHOR, is prepar'd with Sandarach, and white Vinegar diſtill'd, kept 20 Days in Horſe-dung, and afterwards expos'd a Month to the Sun to dry; at the End of which, the *Camphor* is found, in form of the Cruſt of a white Loaf: This is alſo call'd *Juniper Gum*, *white Verniſh*, and *Maſtic*.

The Word *Camphor* comes from the Arabic *Capur*, or *Caphur*; which ſignify the ſame thing.

CAMPUS MARTII, or MAII, in our antient Cuſtoms, an anniverſary Aſſembly of our Anceſtors, on *May*-Day; where they confederated together to defend the Kingdom againſt Foreigners and all Enemies. *Leg.* Edw. Confeſſ. *Denuo in* Campo Martio *convenere*, *ubi illi qui Sacramentis inter illos pacem confirmavere*, *Regi omnem culpam impoſuere ſeni*. Dunelm.

CAMUS, a Perſon with a low, flat Noſe, hollow'd or ſunk in the Middle. The *Tartars* are great Admirers of *Camus* Beauties. *Rubruguis* obſerves, that the Wife of the great *Cinghis Kam*, a celebrated Beauty, had only two Holes for a Noſe.

CANAL, in Anatomy, a Conduit or Paſſage, through which any Juices or Fluids of the Body flow. See DUCT, and CHANNEL.

CANAL *of a Larmier*, the hollow'd Plafond or Soffit of a Cornice; which makes the Pendant Mouchette. See LARMIER and SOFFIT.

CANAL *of the Volute*, in the *Ionic* Capital, is the Face of the Circumvolutions, enclos'd by a Liſtel.

CANALES *Semicirculares*, in Anatomy, are three *Canals*, in the Labyrinth of the Ear: See EAR. They are of three different Sizes, *Major*, *Minor*, and *Minimus*. In different Subjects, they are frequently different; but are always alike in the ſame: The Reaſon, *Valſalva* ingeniouſly conjectures to be, that as a Part of the tender Auditory Nerve is lodg'd in theſe *Canals*, ſo they are of three ſeveral Sizes, the better to ſuit all the Variety of Tones; ſome of the *Canals* ſuiting ſome Tones, and others others. And tho there be ſome difference in the Form and Size of theſe *Canals* in different Perſons; yet leſt there ſhould be any Diſcord in the Auditory Organs of the ſame Man, theſe *Canals* are always in exact Conformity to one another, in the ſame Man.

CANALIS, or CANALICULUS *Arterioſus*, in Anatomy, a Veſſel, obſerv'd in *Fœtus's*, but which after Delivery, grows uſeleſs, and diſappears. It is a little Tube, which joining the Pulmonary Artery and *Aorta*, ſerves to convey the Blood out of one into t'other, without paſſing thro the Lungs. See FOETUS, and CIRCULATION.

CANCELIER, in Falconry, is when a light flown Hawk, in her ſtooping, turns two or three times upon the Wing, to recover her ſelf before ſhe ſeizes.

CANCELLING, in the Civil Law, an Act whereby a Perſon conſents, that ſome former Act be render'd null and void; this is otherwiſe call'd Reſciſſion. In the proper Senſe of the Word, *to cancel*, is to bar an Obligation, by paſſing the Pen from top to bottom, or acroſs it; which makes a kind of Chequer or Lattice, which the *Latins* call *Cancelli*. The Word comes originally from the *Greek* κίγκλιζω, to incompaſs, or pale a thing round.

CANCER, in Aſtronomy, one of the 12 Signs of the Zodiack; ordinarily repreſented on the Globe in form of a Crab, and thus mark'd, ♋. See SIGN, and CONSTELLATION.

The Stars in the Conſtellation of *Cancer*, *Ptolomy* makes 13; *Tycho* 15; but Mr. *Flamſtead* no leſs than 71. Their Order, Names, Places, Longitude, Latitude, Magnitude, *&c.* he lays down in the *Britannick Catalogue*, as follows.

Stars in the Conſtellation CANCER.

Names and Situation of the Stars.	Signs.	Longitude. ° ′ ″	Latitude ° ′ ″		Magnit.
	♋	23 49 13	4 52 46	A	6
In Extremity of preced. North Foot		22 49 38	4 43 11	B	6
		24 24 46	3 12 35	A	6
Subſequent and more Southern		23 4 11	4 27 15	B	6
		24 45 22	4 0 29	A	7

	Signs.	Longitude. ° ′ ″	Latitude. ° ′ ″		Magn.
		24 10 40	1 35 13	B	8
In the preced. and more Sothly. Foot		26 18 34	7 5 30	A	5
		24 36 38	2 16 12	B	7
In the preced. North Foot, *South*		25 9 26	1 19 13	B	5
		27 1 42	6 24 35	A	7
10					
In the second North Foot, upper		24 47 23	5 36 4	B	6 7
under		24 54 49	5 18 44	B	4
		27 22 31	5 19 31	A	6
Against the Tail, *Ptolem.* 25. ♊		27 0 22	2 17 52	A	5 6
		27 48 15	5 42 25	A	7
15					
		28 30 17	6 41 26	A	7
Agst. the Extrem. of the 2d So. Foot		29 56 19	10 19 6	A	4 3
The North of the 3d North Foot		26 38 3	7 27 32	B	6
In the Origin of the 3d North Foot		27 29 33	4 20 33	B	6
In the Back, behind the Tail		29 27 6	1 2 39	A	6
20					
	♌	1 22 2	8 30 57	A	7
The first in the 4th North Foot	♋	27 52 13	8 25 40	B	6 7
The second		28 10 35	7 30 0	B	6
In the Orig. of preced. North^n. Claw		28 44 18	5 10 36	B	7
Subsequent, and more Southerly	♌	0 20 20	2 7 51	A	7
25					
The last of three	♋	28 7 9	8 27 31	B	6
	♌	1 34 58	6 22 16	A	6
The second	♋	29 15 40	4 53 44	B	6 7
	♌	1 39 24	4 45 26	A	7
The third	♋	29 55 16	4 59 48	B	6
30					
The Preced. So. of □ of the Breast	♌	1 24 42	0 47 46	A	6 5
Fourth and Subsequent		0 15 14	5 5 16	B	7 8
Preced. North in the □ of the Breast		1 5 29	1 32 33	B	6 7
		3 38 1	8 31 50	A	6
		1 53 21	0 51 52	B	7
35					
The preced. in the 3d Southern Foot		4 48 42	8 39 1	A	6
The Subsequent		5 4 30	8 40 4	A	6
Nebulous Stars in the middle of the Breast, call'd *Præsepe*		2 50 50	1 18 18	B	7
		3 5 25	1 6 22	B	6
		3 5 9	1 18 37	B	7
40					
Subseq. No. in the □ call'd *N. Asellus*		3 13 0	3 9 41	B	4
Preced. in the 4th South Foot		5 29 18	5 20 41	A	6
		1 11 49	12 10 46	B	7
Southern Star in □ call'd *So. Asellus*		4 23 40	0 3 46	B	4
In the North Claw	♌	2 0 53	10 23 40	B	5
45					
In the Extrem. of the 4th So. Foot	♌	6 32 22	7 44 58	A	6
Subsequent in the Southern Foot		6 31 15	5 39 1	A	6
First over the Northern Claw		2 12 44	14 18 33	B	7
First of those following the N. Claw		3 23 2	10 15 12	B	6
		6 37 13	2 16 16	A	6
50					
Second		3 26 1	10 21 47	B	6
Third		3 41 1	10 24 34	B	6
Preced. in the Middle of the N. Claw		3 6 12	12 35 34	B	5 6
Fourth		4 10 51	10 8 24	B	6 5
Second		2 59 35	14 59 41	B	5 6
55					
That preced. the Southern Claw		8 46 33	5 30 32	A	7
2d and Subs. in Middle of the Claw		3 59 42	12 29 1	B	7
First in the Orig. of the South. Claw		8 2 56	1 53 16	A	6
Second and Southern		8 3 51	1 36 45	A	6
Third		3 41 0	14 40 46	B	6
60					
In the Southern Claw		9 18 40	5 6 27	A	4 3
The last of four at		4 7 20	14 37 49	B	6
Fifth of those following the N. Claw		5 30 37	10 30 5	B	6 7
In the Northern Eye		6 42 57	7 15 3	B	6
Last of those following the N. Claw		6 0 44	10 38 38	B	6 7
65					
In the Extr. of the Apert. of N. Claw		6 18 14	12 34 6	B	6 7
		7 23 58	9 46 2	B	6 7
Subsequent in the Southern Claw		11 50 44	5 36 8	A	4 5
In the Southern Eye		8 52 45	5 23 24	B	5 6
		9 7 14	5 24 49	B	8
70					
In the Aperture of the South. Claw		11 41 7	1 8 31	A	7
		12 19 48	0 58 45	A	6

Tropic of CANCER, in Astronomy, a lesser Circle of the Sphere, parallel to the Equator; and passing through the beginning of the Sign *Cancer*. See TROPICK; see also SPHERE.

CANCER, in Medicine, a hard, rugged, round, immoveable Tumor, of an Ash, Livid, or Lead Colour; incompass'd round with branch'd turgid Veins, full of black muddy Blood: so call'd, as some will have it, from the Resemblance it bears to the Crab-fish, call'd *Cancer*; or, as others say, because, like that Fish, when once it has got hold, 'tis scarce possible to drive it off. It begins without any Pain, and appears, at first, like a Chicory Pea; but grows apace, and becomes very painful. The *Cancer* arises principally on the lax glandulous Parts, as the Breasts and Emunctories: 'Tis most frequent in Women, especially such, says *Stolterfoth*, as are barren, or live in Celibacy. The Reason of its appearing in the Breast more than other Parts, is, that being full of Glands, with Lymphaticks and Blood-Vessels among 'em, the smallest Contusion, Compression, or Punction, extravasates those Liquors; which growing, by degrees, acrimonious, form the *Cancer*. Hence, the Masters of the Art say, that a *Cancer* is that in the Glands, which a Caries is in the Bones, and a Gangreen in the fleshy Parts. The *Cancer*, however, is sometimes found in other soft, spongy Parts of the Body; and there have been some found in the Teeth, Belly, Neck of the Matrix, Ureter, Lips, Nose, Cheeks, Abdomen, Thighs, and even the Shoulders, as *Stolterfoth* shews.

Cancers are divided, according to their several Stages, into Occult and Ulcerated; the first is form'd as above. Ulcerated *Cancers*, are known by their roughness and fullness of Holes, thro which oozes a filthy, stinking, glutinous Matter, frequently yellowish; by their pungent Pain, which resembles the pricking with a thousand Pins; by their blackness; the swelling of the Lips of the Ulcer; and the Veins about it, which are blackish, swell'd, various, resembling, as above, the Foot of a Cray-fish. Sometimes the Extremities of the Blood-Vessels are gnaw'd off, and the Blood issues out. In a *Cancer* of the Breast, the adjacent Flesh is sometimes so consum'd, that one may see into the Cavity of the Thorax. It occasions a slow Fever, a Loathing, oftentimes Faintings, sometimes a Dropsy, and lastly Death. The immediate Cause of a *Cancer*, seems to be a too corrosive volatile Salt, approaching to the Nature of Arsenic, form'd by the Stagnation of Humours, &c. *Stolterfoth* observes, that it has been frequently cur'd by Mercury and Salivation. A *Cancer* arising on the Legs, is call'd a *Lupus*; on the Face, or Nose, a *Noli me tangere*: Some take the ulcerous *Cancer* to be nothing else but an infinite Number of little Worms, which devour the Flesh by degrees. The *Cancer* is allow'd the most horrible Evil that befals the Body: 'Tis usually cur'd while yet a small Tumor, of the bigness of a Nut, or at most of a small Egg, by Extirpation: When it seizes the Breast, or is burst into an Ulcer, Amputation takes place.

CANDIDATE, a Person who stands for some Post, or aspires to enter any Body, or Society. The Word comes from the Latin *Candidatus*, of *Candidus*, white: Those who aspir'd to Offices in antient *Rome*, being call'd *Candidati*, from their wearing a very white shining Habit at the Assemblies, in order to distinguish themselves from the Croud. In the Time of *Gordian*, and afterwards, the Term *Candidati* was likewise given to the Soldiers who compos'd the Emperor's Guard; who were chosen out of all the Legions, and much consider'd at Court. *Cedrenus* observes, that it was the younger *Gordian* who instituted these, as also the *Protectores* and *Scholares*. The *Scholares* were chose out of the Troops, and consisted of Persons who best understood the Art of War: Out of these *Scholares* were chose the *Candidati*, who were such as appear'd the most vigorous, and had most of the Martial Air; proper to inspire Terror, says the Chronicon of *Alexandria*. The *Protectores* were a middle Order, and were properly the Emperor's Body Guards.

CANDLE, a Composition of Tallow, or Wax, around a Wick; us'd for the giving of Light. A Tallow *Candle*, to be good, must be half Sheep's Tallow, half Cows; that of Hogs making 'em gutter, give an ill smell, and a thick black Smoak. See TALLOW.

Tallow *Candles* are of two Kinds; the one *dipp'd*, the other *moulded*: The first, which are those in ordinary use, are of an old standing; the latter are said to be the Invention of the Sieur *le Brez*, at *Paris*. The Manufacture of the two Kinds is very different, excepting in what relates to the melting of the Tallow, and making the Wick, which is the same in each.

Method of making CANDLES.

The Tallows being weigh'd and mix'd in their due Proportion, are cut or hack'd into Pieces, to facilitate their melting, and thrown into a Peel or Boiler, having a Cavity of some depth running round the Top, to prevent its boiling over. Being, thus, perfectly melted, and skimm'd, a certain Quantity of Water is thrown in, proportion'd to the Quantity of Tallow, which serves to precipitate the Impurities of the Tallow, which had escap'd the Skimmer, to the Bottom of the Vessel. The Tallow, however, intended for the three first Dips, must have no Water; in regard, the dry Wick, imbibing the Water readily, makes the *Candles* spit and crackle in the burning. The melted Tallow is now empty'd thro a Sierce into a Tub, having a Tap for letting it out, as occasion requires. The Tallow thus prepar'd, may be us'd after having stood three Hours; and will continue fit for use 24 Hours in Summer, and 15 in Winter.

For the Wicks, they are made of spun Cotton, which the Chandlers buy in Skeins; and wind off three or four together, according to the intended Thickness of the Wick, into Pelotons, or Clues, whence they are cut out with an In-

ſtrument contriv'd for that Purpoſe, into Pieces of the Length of the *Candle* requir'd; then put on the Rods, or Broches, or elſe plac'd in the Moulds, as the *Candles* are intended to be dipp'd or moulded.

Making of dipp'd CANDLES.

The liquid Tallow being drawn off from the Tub abovemention'd, into a Veſſel call'd the Mould, Sink, Abyſs, *&c.* of an angular Form, perfectly like a Priſm, except that it is not equilateral; the Side on which it opens being only ten Inches high; and the others, which make its height, 15. On the Angle, form'd by the two great Sides, it is ſupported by two Feet, and is plac'd on a kind of Bench, in form of a Trough, to catch the Droppings, as the *Candles* are taken out, each Dip. At a convenient Diſtance from this, is ſeated the Workman, who takes two Rods, or Broches, at a time, ſtrung with the proper Number of Wicks; *viz.* ſixteen, if the *Candles* are to be of eight in the Pound; twelve if of ſix in the Pound, *&c.* and holding 'em equidiſtant, by means of the ſecond and third Finger of each Hand, which he puts between 'em, he immerges the Wicks two or three times for their firſt Lay; and, holding 'em ſome time over the opening of the Veſſel to let 'em drain, hangs 'em on a Rack, where they continue to drain and grow dry. When dry, they are dipp'd a ſecond time, then a third, as before; only for the third Lay they are but immerg'd twice, in all the reſt thrice. This Operation is repeated more or leſs, according to the intended Thickneſs of the *Candle*. With the laſt Dip they Neck 'em; *i. e.* plunge 'em below that part of the Wick where the other Lays ended.

It muſt be obſerv'd, that during the Operation, the Tallow is ſtirr'd from time to time, and the Stock ſupplied with freſh Tallow. When the *Candles* are finiſh'd, their piqu'd Ends, or Bottoms, are taken off; not with any cutting Inſtrument, but by paſſing them over a kind of flat brazen Plate, heated to a proper pitch by a Fire underneath; which melts down as much as is requiſite.

Method of making Mould CANDLES.

Theſe *Candles* are made in Moulds, of different Matters: Braſs, Tin, and Lead are the moſt ordinary. Tin is the beſt, and Lead the worſt. Each *Candle* has its Mold, conſiſting of three Pieces, the Neck, Shaft, and Foot: the Shaft is a hollow Metal Cylinder, of the Diameter and Length of the *Candle* propos'd: At the Extremity of this is the Neck; which is a little Metallic Cavity, in form of a Dome; having a Molding within-ſide, and pierc'd in the Middle with a Hole big enough for the Wick to paſs through. At the other Extremity is the Foot, in form of a little Tunnel, thro which the Liquid Tallow runs into the Mold. The Neck is ſolder'd to the Shaft, but the Foot is moveable, being apply'd when the Wick is to be put in, and taken off again when the *Candle* is cold. A little beneath the Place where the Foot is apply'd to the Shaft, is a kind of String of Metal, which ſerves to ſupport that part of the Mold, and to prevent the Shaft from entering too deep in the Table to be mention'd hereafter. Laſtly, in the Hook of the Foot, is a Leaf of the ſame Metal, ſolder'd within-ſide, which advancing into the Centre, ſerves to keep up the Wick; which is here hook'd on, preciſely in the Middle of the Mould. The Wick is introduc'd into the Shaft of the Mould, by a piece of Wire, which being thruſt thro the Aperture of the Hook, till it come out at the Neck, the Wick is ty'd to it; ſo that in drawing it back, the Wick comes along with it, leaving only enough a-top for the Neck; the other End is faſten'd to the Hook, which thus keeps it perpendicular. The Moulds, in this Condition, are diſpos'd in a Table pierc'd full of Holes, the Diameter of each being about an Inch: theſe Holes receive the Moulds inverted, as far as the String in the Foot. Being thus placed perpendicularly, they are fill'd with melted Tallow, (prepar'd as before) drawn out of the Tap into a Tin Pot; and thence pour'd into the Foot. After the Moulds have ſtood long enough to cool, for the Tallow to have come at its Conſiſtence, the *Candle* is taken out, by taking off the Foot, which brings the *Candle* along with it. Thoſe who aim at Perfection in their Work, bleach or whiten their *Candles*, by faſtening them on Rods or Broches, and hanging them out to the Dew, and earlieſt Rays of the Sun, for eight or ten Days: Care being taken to ſkreen 'em in the Day-time from the too intenſe Heat of the Sun; and in the Night from Rain, by wax'd Cloths.

Wax CANDLES are made of a Cotton or Flaxen Wick, ſlightly twiſted, and cover'd with white or yellow Wax: Of theſe there are ſeveral Kinds; ſome call'd *Tapers*, us'd to illumine Churches, Proceſſions, Funeral Ceremonies, *&c.* See TAPER; and others us'd on ordinary Occaſions. For the firſt Kind, their Figure is Conical, ſtill diminiſhing from the Bottom, which has a Hole to receive the Hook of the Candleſtick, to the Top which ends in a Point: The latter are Cylindrical. The firſt are either made with a Ladle, or with the Hand.

Manner of making Wax CANDLES *with the Ladle.*

The Wicks being twiſted, and cut, of the proper Length, a Dozen of 'em are ty'd by the Neck, at equal Diſtances, round an Iron Circle, ſuſpended directly over a large Baſon of Copper, tinn'd, and full of melted Wax: a large Ladle full of this Wax, is pour'd gently, by Inclination, on the Tops of the Wicks, one after another; ſo that running down, the whole Wick is thus cover'd: the Surplus returning into the Baſon; where 'tis kept warm by a Pan of Coals underneath it. They thus continue to pour on the Wax, till the *Candle* arrive at its deſtin'd Bigneſs. It muſt be obſerv'd, that the three firſt Ladles are pour'd on at the Top of the Wick, the fourth at the Height of $\frac{3}{4}$, the fifth at $\frac{1}{2}$, and the ſixth at $\frac{1}{4}$; by which means the *Candle* arrives at its pyramidal Form. The *Candles* are then taken down hot, and laid aſide of each other, in a Feather-Bed folded in two, to preſerve their Warmth, and keep the Wax ſoft: They are then taken and roll'd, one by one, on an even Table, uſually of Wallnut-tree, with a long ſquare Inſtrument of Box, ſmooth at Bottom. The *Candle* being thus roll'd and ſmooth'd, its big End is cut off, and a conical Hole made in it.

Manner of making Wax CANDLES *by the Hand.*

The Wick being diſpos'd, as in the former, they begin to ſoften the Wax, by working it ſeveral times in hot Water, contain'd in a Braſs Caldron, tinn'd, very narrow and deep. A piece of the Wax is then taken out, and diſpos'd, by little and little, around the Wick, which is hung on a Hook in the Wall, by the Extremity oppoſite to the Neck: ſo that they begin with the big End, diminiſhing ſtill, as they deſcend towards the Neck. In other reſpects, the Method is the ſame here, as in the former Caſe; only that they are not laid in the Bed, but are roll'd on the Table, juſt as they are form'd. It muſt be obſerv'd, however, that in the former Caſe, Water is always us'd to moiſten the ſeveral Inſtruments, to prevent the Wax from ſticking; and in the latter, Lard, or Oil of Olives, for the Hands, Table, *&c.*

Cylindrical Wax CANDLES, are either *for the Table*, or *Drawn*. The firſt kind are made of ſeveral Threads of Cotton, looſely ſpun, and twiſted together, cover'd with the Ladle, and roll'd, as the Conical ones, but not pierc'd.

Wax CANDLES *drawn*, are ſo call'd, becauſe actually drawn, in the Manner of Wire, by means of two large Rollers, or Cylinders of Wood, turn'd by Handles, which turning backwards and forwards ſeveral times, paſs the Wick thro melted Wax, contain'd in a Braſs Baſon; and at the ſame time thro the Holes of an Inſtrument, like that us'd for drawing Wire, faſten'd at one Side of the Baſon: ſo that, by little and little, the *Candle* acquires any Bulk, at pleaſure, according to the different Holes of the Inſtrument thro which it paſſes: By this Method, may four or five hundred Ells length be drawn, running. The Invention of this, we owe to *Pierre Bleſimare*, of *Paris*, about the Middle of the laſt Century.

The Word *Candle* comes from the Latin *Candor*, of *Candeo*; whence, the *Greek* καυδήλα. Sale, or Auction by *Inch of Candle*; is, when a Piece of *Candle* being lighted, People are allow'd to bid while it burns, but as ſoon as extinct, the Commodity is adjudg'd to the laſt Bidder. There is alſo a kind of *Excommunication by Inch of Candle*; wherein, the Time a lighted *Candle* continues burning, is allow'd the Sinner to come to Repentance, but after which, he remains excommunicated to all Intents and Purpoſes.

CANDLEMAS, a Feaſt of the Church, held on the ſecond of *February*, in honour of the Purification of the Holy Virgin. *Bede* ſays, "'Tis happy for the Church to "have chang'd the Luſtrations of the Heathens, held in "the Month of *February*, around the Fields, for the Pro-"ceſſions with *Candles*, &c." This Cuſtom was inſtituted by Pope *Gelaſius*, who abrogated the *Lupercalia*. The Feaſt takes its Name from the Number of lighted *Candles*, at the Proceſſion; antiently us'd among us, and ſtill among the *Romaniſts*.

CANDYING, properly ſignifies the turning of any thing *white*: 'Tis particularly us'd by the Confectioners, where white Sugar, us'd in their Preparations, is thicken'd and criſtalliz'd on the Surface of the Veſſel, in manner of Ice.

Sugar-CANDY, or *candied*, is a Preparation of Sugar, criſtalliz'd by melting ſix, or ſeven times. See SUGAR.

CANE, or CANNA, a Meaſure of Length, frequent in *Italy*, and the South Parts of *France*; more or leſs long, according to the Places where it is us'd. At *Naples*, the *Canna* is equal to 7 Foot $3\frac{1}{2}$ Inches, *Engliſh* Meaſure: The *Canna* of *Tholouſe*, and the upper *Languedoc*, is equal to the Varre of *Arragon*, and contains 5 Feet $8\frac{1}{3}$ Inches; at *Montpellier*, in *Provence*, *Dauphine*, and the lower *Languedoc*, to 6 *Engliſh* Feet $5\frac{1}{2}$ Inches. See MEASURE.

CANEPHORA, a young Girl, who in the antient Sacrifices bore a Baſket, wherein every thing neceſſary for the Sacrifice was contain'd. The Baſkets were uſually

crown'd

crown'd with Flowers, Myrtles, &c. The *Canephora*, in theſe Ceremonies, always march'd the firſt; the Philoſopher or Prieſt next, and the Choir of Muſic follow'd. The *Canephoræ* were always Girls of Condition; and were attended by an old Woman who carry'd 'em a Seat.

CANÉPHORIA, was a Ceremony, which made Part of a Feaſt, celebrated by the Maids the Eve of their Marriage-Day; call'd alſo *Proſelia*; which ſee. The *Canephoria*, as practis'd at *Athens*, conſiſted in this; that the Maid conducted by her Father and Mother, went to the Temple of *Minerva*; carrying with her a Baſket full of Preſents, to engage the Goddeſs to make the Marriage happy; or rather, as the Scholiaſt of *Theocritus* has it, the Baſket was intended as a kind of honourable Amends made to that Goddeſs, the Protectreſs of Virginity, for abandoning her Party; or a Ceremony to appeaſe her Wrath.

CANICULA, a Name proper to one of the Stars of the Conſtellation *Canis Minor*; call'd alſo ſimply the *Dog-ſtar*: by the *Greeks*, *Procyon*. *Canicula* is the 10th in Order in the *Britannic Catalogue*, in *Tycho*'s and *Ptolomy*'s 'tis the 2d. 'Tis ſituate in the Thigh of the Conſtellation; its Magnitude between a firſt and ſecond: Its Longitude, Latitude, &c. ſee among thoſe of the other Stars of that Conſtellation. *Canicula* riſes on the 16th of *July*: Its riſing and ſetting with the Sun, occaſions what we call

CANICULAR, or *Dog-Days*, the Time during which the Sun riſes and ſets with *Canicula*, which it does from the 24th of *July* to the 28th of *Auguſt*. Some Authors tell us from *Hippocrates* and *Pliny*, that the Day *Canicula* riſes, the Sea boils, Wine turns, Dogs begin to grow mad, the Bile increaſes and irritates, and all Animals grow languid; and that the Diſeaſes ordinarily occaſion'd in Men, are burning Fevers, Dyſenteries, and Phrenſies. The *Romans* ſacrific'd a brown Dog every Year to *Canicula* at its riſing, to appeaſe its Rage. They ſuppos'd *Canicula* to be the Occaſion of ſultry Weather, uſually felt in the Dog-Days; but by Miſtake: in five or ſix thouſand Years more, *Canicula* may chance to be charg'd with bringing Froſt and Snow; for it will riſe in *November* or *December*. The *Egyptians* and *Ethiopians* began their Year at the riſing of *Canicula*; reckoning to its riſe again the next Year, which is call'd the *Annus Canarius*.

CANINE *Appetite*, an inordinate Hunger, to the Degree of a Diſeaſe. See BULIMIA.

CANINI DENTES, in Anatomy, are two Teeth in each Jaw; one on each ſide the *Inciſores* and *Molares*. They are pretty thick and round, and end in a ſharp Point; have each one Root, which is longer than the Roots of the *Inciſores*. Their proper uſe is to pierce the Aliment; becauſe the Fore-Teeth are not only apt to be pulled outwards by the Things we hold and break with them, but likewiſe becauſe they are leſs ſubject to Blows than the *Molares*: therefore above two thirds of them are bury'd in their *Alveoli*, or Sockets; by which their Reſiſtance of all lateral Preſſures, is much greater than that of the *Molares*.

CANINUS *Muſculus*, the ſame as *Elevator Labii Superioris*; ſee ELEVATOR.

CANIS MAJOR, *the Great Dog*, in Aſtronomy, a Conſtellation of the Southern Hemiſphere. See CONSTELLATION.

The Stars in the Conſtellation *Canis Major*, *Ptolomy* makes 28; *Tycho* obſerv'd only 13; in the *Britannic Catalogue* they are 32. Their Order, Names, Places, Longitude, Latitude, Magnitude, &c. are as follows.

Stars in the Conſtellation CANIS MAJOR, *or* Great Dog.

Names and Situation of the Stars.	Sign.	Longitude. ° ′ ″	Latitude. ° ′ ″	Magnit.
Preced. of the bright *Informes*	♊	17 51 51	57 24 15	2
Subſ. before poſter. Feet of the Dog		22 7 5	59 14 20	2
In the preced. poſterior Foot		3 6 8	53 24 57	2 3
In the Extrem. of the anterior Foot	♋	2 52 58	41 17 47	2
Inform. under the poſterior Foot		4 12 39	56 44 8	5
5				
Preced. of two in the lower Knee		6 20 54	46 36 17	5
Subſeq. and South of the ſame		7 21 25	46 5 56	5
		7 16 48	41 46 23	7
South. in the upper Knee		7 25 41	42 21 25	5
North. in the ſame Knee		7 41 57	41 19 24	5
10				
Exceeding bright one in Mouth, *Sirius*		9 49 1	39 32 8	1
		9 59 38	37 19 38	5
South. and preced. in the Breaſt		10 58 50	43 52 11	6
In the lower Leg		14 3 13	55 11 25	4
In the North Ear		11 52 53	34 44 34	5
15				
Preced. of the Contig. in the Breaſt		12 55 56	42 54 49	6
Preced. of two in the Shoulder		13 50 34	46 48 52	5
South. of the Contig. in the Breaſt		13 26 56	43 2 18	7
In the Head		12 44 29	36 41 50	4
Third of thoſe following in Breaſt	♋	13 34 59	42 45 40	6
20				

Names and Situation of the Stars.	Sign.	Longitude. ° ′ ″	Latitude. ° ′ ″	Magnit.
	♋	16 48 34	10 16 12	6
In the Head		17 19 58	12 36 42	6
North in the Neck		17 51 52	13 31 30	3
South in the Neck		18 1 23	12 51 51	6
Under theſe as in the Shoulder		18 18 14	14 49 14	6
5				
Informis, over the Neck		17 56 31	9 45 18	6
North. againſt preced. poſter. Foot		20 10 40	19 37 58	6
Middle		20 14 7	18 13 51	7
South		20 28 33	18 6 22	6
In the Thigh, *Procyon*.		21 30 21	15 57 55	1 2
10				
Informis, towards the Tail of ♋		22 11 5	10 17 57	6 5
In the hind Leg		25 19 47	18 53 0	5
		26 57 30	18 6 10	6
Preced. in the △ of *Inf.*		28 39 12	23 47 56	5
followg. this to the Sou. ⎫ North		28 30 1	21 29 56	5
15				
		27 56 51	17 47 51	5
Latter in the ſaid △	♌	0 49 33	22 37 35	4

CANIS MINOR, *Caniculus*, or the *Little Dog*, in Aſtronomy, a Conſtellation of the Southern Hemiſphere; call'd by the *Greeks*, *Procyon*. See CONSTELLATION.

The Stars in the Conſtellation *Canis Minor*, in *Ptolomy*'s Catalogue are 2; in that of *Tycho Brahe* 5; in the *Britannic Catalogue* 15. Their Order, Names, Places, Longitude, Latitude, Magnitude, &c. are as follows.

Stars in the Conſtellation CANIS MINOR.

CANKER, is a Speck made by a ſharp Humour, which gnaws the Fleſh almoſt like a Cauſtic; very common to Children, in their Mouth eſpecially. It is alſo a Diſeaſe incident to Trees; proceeding chiefly from the Nature of the Soil. See DISEASES *of Plants*.

CANNON, in War, a Piece of Artillery; or a Military Machine for throwing Iron, Lead, or Stone Bullets, by force of Gun-pouder, to a Place directly oppoſite to the Axis of the Cylinder, whereof it conſiſts. See GUN, and ORDNANCE.

The Parts and Proportions of a *Cannon* about 11 Foot long, are, its Barrel, or Cavity, 9 Foot; its Fulcrum, or Support, 14; and its Axis 7; the Bore, or Diameter of the Mouth 6 Inches, and two Lines the play of the Ball: The Diameter of the Ball therefore 6 Inches; and its Weight 33 Pounds $\frac{1}{3}$. The Metal thick about the Mouth, 2 Inches; and at the Breech 6. It weighs about 5600 Pounds: Its Charge is from 18 to 20 Pounds. It carries, Point-blank, 600 Paces; and loads ten times in an Hour, ſometimes fifteen; in a Day 120. Its Bed 15 Foot broad, and 20 long, for the Rebound. It requires 20 Horſes to draw it.

For a *Battering-Piece*, whoſe Ball is 36 Pounds, there muſt be two Cannoneers, three Chargers, and 30 Pioneers.

Cannons are diſtinguiſh'd from the Diameters of the Balls they carry; but this Diſtinction is different in different Nations. The Proportion of their Length to their Diameter, depends rather on Experience, than any Reaſoning *à priori*; and has been accordingly various, in various Times and Places: The Rule is, that the Gun be of ſuch a Length, as that the whole Charge of Pouder be on Fire e'er the Ball quit the Piece. If it be made too long, the Quantity of Air to be driven out before the Ball, will give too much Reſiſtance to the Impulſe; and that Impulſe ceaſing, the Friction of the Ball againſt the Surface of the Piece, will take off ſome of its Motion. Formerly, *Cannons* were made much longer than at preſent; till ſome made by chance $2\frac{1}{2}$ Foot ſhorter than ordinary, taught 'em that the Ball moves with a greater Impetus through a leſs Space than a larger. This *Guſtavus* K. of *Sweden* prov'd by Experience in 1624: An Iron Ball, 48 Pounds Weight, being found to go farther from a new ſhort *Cannon*, than another Ball of 96 Pounds out of an old, longer Piece; whereas, in other reſpects, 'tis certain the larger the Bore and Ball, the greater the Range.

The

The Names of the ſeveral *Cannons*, their Length, their Weight, and that of their Balls, as they obtain among us, are as in the following Table.

NAMES of CANNON.	Weight of an Iron Ball.	Weight of the *Cannon*.	Length of the *Cannon*.
Cannon Royal	48 *lib.*	8000 *lib.*	12 *Feet*
Demi-Cannon large	36	6000	12
Demi-Cannon ordinary	32	5600	12
Demi-Cannon leaſt	30	5400	11
Culverin largeſt	20	4800	12
Culverin ordinary	17 *lib.* 5 *oz.*	4500	12
Culverin leaſt	15	4000	11
Demi-Culverin ordinary	10 11	2700	11
Demi-Culverin leaſt	9	2000	10
Saker ordinary	6	1500	10
Saker leaſt	4 12	1400	8
Minion largeſt	3 12	1000	8
Minion ordinary	3 4	800	7
Falcon	2 8	750	7
Falconet	1 5	400	6
Rabinet	8	300	5. 6 *Dig.*
Baſe	5	200	4. 6

The greateſt Range of a *Cannon*, is ordinarily fix'd at an Elevation of 45°. Dr. *Halley* ſhews it to be at 44½. See PROJECT. M. *S. Julien* adjuſts the Ranges of the ſeveral Pieces of *Cannon*, from the Weight of the Ball they bear: the Charge of Gun-pouder being always ſuppoſed in a ſubduple Ratio of the Weight of the Ball: Thus,

Weight of a leaden Ball.	Horizontal Range.	Greateſt Range.	Weight of a leaden Ball.	Horizontal Range.	Greateſt Range.
33 *lib.*	600 *Paces.*	6000	12	450	5000
24	700	6000	8	400	1500
16	800	8000	12	150	1500

The ſame Author adds, that a Ball thrown to the Diſtance of 600 Paces, ſinks 9, 10, 11, 12, nay, 13 Foot within Ground. For the *Method of caſting Cannons*, ſee FOUNDRY.

For the *Metal* of *Cannons*, 'tis either Iron, or, which is more uſual, a Mixture of Copper, Tin, and Braſs: the Tin is added to the Copper, to make the Metal more denſe and compact: So that the better or heavier the Copper is, the leſs Tin is requir'd. Some to 100 Pounds of Copper, add 10 of Tin, and 8 of Braſs: Others, 10 of Tin, 5 of Braſs, and 10 of Lead. *Braumius* deſcribes a Method of making *Cannon* of Leather, on occaſion: And 'tis certain the *Sweeds* made uſe of ſuch in the long War of the laſt Century; but theſe burſt too eaſily to have much effect. 'Tis found by Experience, that of two *Cannon* of equal Bore, but different Lengths; the longer requires a greater Charge of Pouder than the ſhorter, in order to reach the ſame Range. The ordinary Charge of *a Cannon*, is to have the Weight of its Gun-pouder half that of its Ball. After each thirty Diſcharges, the *Cannon* is to be cool'd, with two Pints of Vinegar, mix'd with four of Water, pour'd into the Barrel; the Touch-hole being firſt ſtopp'd.

Cannons are made Cylindrical, that the Motion of the Ball might not be retarded in its Paſſage; and that the Pouder, when on Fire, might not ſlip between the Ball and the Surface of the *Cannon*, which wou'd hinder its effect. *Wolfius* would have the *Cannon* always decreaſe, as it goes towards the Mouth or Orifice: in regard, the Force of the Pouder always decreaſes, in proportion to the Space thro which it is expanded. The new *Cannons*, after the *Spaniſh* manner, have a Cavity, or Chamber at bottom of the Barrel, which helps their Effect. A *Cannon* is found to recoil two or three Paces after Exploſion; which ſome account for from the Air's ruſhing violently into the Cavity, as ſoon as it is diſcharg'd of the Ball: but the real Cauſe, is, the Pouder's acting equally on the Breech of the *Cannon*, and the Ball. See MORTAR, GUN, BOMB-PROJECT, GUN-POUDER, &c.

Larrey makes Braſs *Cannon* the Invention of *J. Owen*; and ſays, the firſt known were in *England*, in 1335. *Cannons*, however, he owns, were known before; and obſerves, that at the Battel of *Creſſi*, in 1346, there were five Pieces of *Cannon* in the *Engliſh* Army; which were the firſt that had been ſeen in *France*: And *Mezeray* adds, that King *Edward* ſtruck Terror into the *French* Army, by five or ſix Pieces of *Cannon*; it being the firſt time they had ſeen ſuch thundering Machines. The firſt *Cannons* were call'd *Bombards*, from the Latin *bombus*; by reaſon of the Noiſe. The Word *Cannon*, *Menage* derives from the Italian *Canone*, an Augmentative of *Canna*; in regard, a *Cannon* is long, ſtreight, and hollow, like a *Cane*.

CANOE, a little Veſſel, or Boat, us'd by the *Indians*, made all of one Piece, of the Trunk of a Tree hollow'd. The Savages frequently make 'em of Bark, chiefly that of the Birch-Tree; yet big enough to hold four or five Perſons. See BOAT.

CANON, a Perſon who poſſeſſes a Prebend, or Revenue allotted for the Performance of Divine Service, in a Cathedral, or Collegiate Church. *Canons* are of no great Antiquity: *Paſquier* obſerves, that the Name *Canon* was not known before *Charlemaign*: at leaſt, the firſt we hear of, are in *Gregory de Tours*, who mentions a College of *Canons*, inſtituted by *Baudiin* XVI. Archbiſhop of that City, in the Time of *Clotharius* I. For, antiently, *Canons* were only Prieſts, or inferior Eccleſiaſticks, who liv'd in Community; reſiding by the Cathedral Church, to aſſiſt the Biſhops; depending entirely on their Will, ſupported by the Revenues of the Biſhoprick; and living in the ſame Houſe, as his Domeſticks, or Counſellors, &c. They even inherited his Moveables, till the Year 816; when this was prohibited by the Council of *Aix la Chapelle*. By degrees, theſe Communities of Prieſts, ſhaking off their Dependance, form'd ſeparate Bodies; whereof the Biſhops, however, were ſtill Heads. In the Xth Century, there were Communities or Congregations of the ſame kind, eſtabliſh'd even in Cities, where there were no Biſhops: Theſe were call'd *Collegiates*; in regard, they uſed the Terms *Congregation* or *College* indifferently: The Name *Chapter*, now given to theſe Bodies, is much more modern. Under the ſecond Race of the *French* Kings, the *Canon* or Collegiate Life, had ſpread it ſelf all over the Country; and each Cathedral had its Chapter, diſtinct from the reſt of the Clergy. But they were not yet deſtin'd to a Life ſo eaſy as now-a-days. They had the Name *Canon*, from the *Greek* κανὼν, which ſignifies three different things, *a Rule*; *a Penſion*, or *fix'd Revenue to live on*; and *a Catalogue*, or *Matricula*. Hence, ſome ſay, they were call'd *Canons*, by reaſon of the *Penſion* or Prebend; (whence ſome alſo call 'em *Sportulantes Fratres*:) Others ſay, they were call'd *Canons*, becauſe oblig'd to live according to Canonical *Rules* and Inſtitutions, which were given 'em; and others, as M. *de Marca*, becauſe their Names were inſerted in the *Matricula*, or Catalogue of the Cathedral. In time, the *Canons* freed themſelves from their Rules, the Obſervance relax'd, and, at length, they ceas'd to live in Community, yet ſtill form'd Bodies; pretending to other Functions beſides the Celebration of the Common Office in the Church, yet aſſuming the Rights of the reſt of the Clergy; making themſelves a neceſſary Council of the Biſhop; taking upon them the Adminiſtration of the See during a Vacancy, and the Election of a Biſhop to ſupply it. There are even ſome *Chapters* exempt from the Juriſdiction of the Biſhop, and owning no Head but their Dean. After the Example of Cathedral *Chapters*, Collegiate ones alſo continu'd to form Bodies, after they had abandon'd living in Community.

Antient CANONS, and thoſe ſtill ſubſiſting in the *Romiſh* Church, are of various Kinds; as, *Cardinal Canons*, which are thoſe attach'd, and, as the *Latins* call it, *Incardinati* to a Church, as a Prieſt is to a Pariſh. *Domicellary Canons*, were young *Canons*, who not being in Orders, had no Right in any particular Chapters. *Expectative Canons*, were ſuch as without having any Revenue or Prebend, had the Titles and Dignities of *Canons*, a Voice in the Chapter, and a Place in the Choir; till ſuch time as a Prebend ſhould fall. *Foreign Canons*, were ſuch as did not officiate in the *Canonries* to which they belong'd: To theſe were oppos'd *Manſionary Canons*, or *Canons Reſidentiary*. *Honorary Canons*, are the ſame with *Lay Canons*: In a Manuſcript Ordinary, at *Rouen*, is mention made of *Canons of thirteen Marks*; which, perhaps, was the Revenue of their *Canonate*. In the Church at *London*, were *Canons Minor*, or *little Canons*, who officiated for the *great* ones. At *Lucca* there are *Mitred Canons*. There were alſo *Canons of Poverty*; *Canons ad Succurrendum*, who were made *Canons* at the Point of Death, to partake of the Prayers of the Chapter. *Tertiary Canons*, or thoſe who had only the third Part of the Revenues of the *Canonate*.

Charlemaign ordain'd, that thoſe who were admitted into the Cleric, that is, into the *Canonic* Life, ſhould be oblig'd to live Canonically, and according to the Rule preſcrib'd 'em; obeying their Biſhops as Monks do their Abbat: By this Means it was, that the Spirit of Monachiſm became introduc'd into Cathedrals; for the Clerks being ty'd to certain Rules, became half Monks; and inſtead of applying themſelves to the Function of the Prieſthood, ſhut themſelves up in Cloiſters: whence the Houſes where they reſided took the Name of *Monaſteries*, and were to be kept incloſed; as appears by the Synodical Statutes of *Hincmar*, in 874. So that there were two kinds of Monaſteries; the one for Monks, the other for *Canons*. Singing, in a little time, became their chief employ; and 'tis now almoſt the whole Buſineſs they have left: the Biſhops looking on 'em as little elſe but their Chaplains.

In the VIIIth Century, S. *Chrodegand* made a Rule for the *Canons*, which was receiv'd by 'em all, and is ſtill ex-

tant, in 34 Articles, drawn chiefly from that of St. *Benedict*, but accommodated to the Cleric Life. In this were preſcrib'd their Penances, Habits, &c. There was a ſecond Rule made in 816, at the Requeſt of *Charlemaigne*, by the Biſhops then conven'd at *Aix la Chapelle*, on account of the *Roman* Indiction; compos'd of Extracts from the Fathers and Councils.

CANONS *Regular*, are *Canons* that ſtill live in Community; and who, like *Religious*, have, in proceſs of Time, to the Practice of their Rules, added the ſolemn Profeſſion of Vows: They are called *Regulars*, to diſtinguiſh them from thoſe *Canons* who abandon living in Community; and at the ſame time, the Obſervance of the *Canons* made as the Rule of the Clergy, for the Maintenance of the antient Diſcipline. See REGULAR.

Canons ſubſiſted in their Simplicity till the XIth Century, when ſome of them ſeparating from the Community, took with them the Name of *Canons*, or *acephalous Prieſts*, becauſe they declin'd to live in Community with the Biſhop; and thoſe who were left, thenceforth acquir'd the Denomination of *Canons Regular*. The *Regulars* have adopted moſt of the Profeſſions of the Rule of St. *Auguſtin*. 'Tis diſputed to which Claſs the *Canons Regular* belong, whether to the Clergy or the Religious; both the Cleric and Monaſtic State being united in 'em. The Point of Priority and Precedence is hotly conteſted, both between the *Regular Canons* and the Prieſts; and the *Regular Canons*, and ſimple Monks: The double Capacity of the *Canons*, is the Foundation of this Controverſy.

CANONS *Secular*, or *Lay Canons*, are ſuch among the Laity, as have been admitted, out of Honour and Reſpect, into ſome Chapters of *Canons*; ſuch are the Counts of *Anjou*, in the Church of St. *Martin de Tours*; the Kings of *France*, of St. *Hilary* in *Poictiers*, &c. the Emperor, of St. *Peters*, &c.

CANONESS, in the *Romiſh* Church, a Maid who enjoys a Prebend, affected, by the Foundation, to Maids; without being oblig'd to renounce the World, or make any Vows: There are few of theſe, except in *Flanders* and *Germany*: They are rather look'd upon as a Seminary and Retreat of Girls for Marriage, than an Engagement for the Service of God.

CANONESSES *of St.* Auguſtin, are a kind of Religious, who follow the Rules of St. *Auguſtin*; of which there are various Congregations. See AUGUSTINS.

CANONRY, or CANONATE, the Benefice fill'd by a *Canon*. The *Canonate* is diſtinguiſh'd from Prebend, in that the Prebend may ſubſiſt without the *Canonate*, whereas the *Canonate* is inſeparable from the Prebend: 'Tis to the *Canonate*, not the Prebend, that the Right of Suffrages and other Privileges are annex'd. See PREBEND.

CANON, in its more proper Senſe, is a Law, or Rule of Eccleſiaſtical Diſcipline; and particularly, a Decree of a Council. *Canons* are Deciſions of Matters of Religion; or Regulations of the Polity and Diſcipline of a Church, made by Councils, either General, National, or Provincial; as, the *Canons* of the Council of *Nice*, of *Trent*, &c. See COUNCIL, and CANON *Law*.

There have been various Collections of the *Canons* of the Eaſtern Councils; but four principal ones, each ampler than the preceding ones. The firſt, according to *Uſher*, *A.D.* 380, containing only thoſe of the firſt Oecumenical Council, and the five Provincial ones: They were but 164 in number. To theſe, *Dionyſius Exiguus*, in the Year 520, added the 50 *Canons* of the Apoſtles, and thoſe of the other General Councils. The *Greek Canons*, in this ſecond Collection, end with thoſe of the Council of *Calcedon*; to which are ſubjoin'd, thoſe of the Council of *Sardica*, and the *African* Councils. The fourth and laſt Collection, comes down as low as the ſecond Council of *Nice*; and 'tis on this that *Balſamon* and *Zonaras* have commented.

There is a great Diſpute about the Apoſtolical *Canons*, uſually aſcrib'd to St. *Clement*. *Bellarmin*, *Baronius*, &c. will have them to be genuine *Canons* of the Apoſtles: *Hincmar*, *de Marca*, *Beveridge*, &c. take them to be fram'd by the Biſhops, who were the Apoſtles Diſciples in the IId or IIId Century. *Daille*, &c. maintain them to have been forg'd by ſome Heretick in the VIth Century. The *Greek* Church allow 85 of them, and the *Latins* only 50.

CANON is alſo uſed for the authoriz'd Catalogue of the Sacred Writings; See SCRIPTURE, BIBLE, TESTAMENT. The antient *Canon*, or *Catalogue of the Books* of the Old Teſtament, was made by the *Jews*, and is ordinarily attributed to *Eſdras*. This is the *Canon* allow'd to have been follow'd by the Primitive Church, till the Council of *Trent*; and, according to St. *Jerom*, conſiſted of no more than 22 Books; but that Council enlarg'd the *Canon* very conſiderably, taking into it the Books which we call *Apocryphal*; and enjoining all theſe to be receiv'd as Books of Holy Scripture, upon Pain of Anathema, and being attainted of Hereſy. The *Romaniſts*, in defence of this *Canon*, ſay, that 'tis the ſame with that of the Council of *Hyppo*, held in 393, and with that of the third Council, at which were preſent 47 Biſhops, and among the reſt, St. *Auguſtin*; who declar'd they receiv'd it from their Fathers. Some of the Fathers diſtinguiſh the inſpir'd Writings into three Claſſes, *Proto-Canonical*, *Deutero-Canonical*, and *Apocryphal*. See DEUTERO-CANONICAL, and APOCRYPHAL.

Paſchal CANON, a Table of the Moveable Feaſts, ſhewing the Day of Eaſter, and the other Feaſts depending on it, for a Cycle of 19 Years. The *Paſchal Canon* is ſuppos'd to be the Calculation of *Euſebius* of *Ceſarea*, and to have been done by Order of the Council of *Nice*. See EASTER, FEAST, CYCLE, &c.

CANON is alſo us'd in ſome Orders of Religious, for the Book that contains their Rules, Conſtitutions, &c. *Canon*, again, is us'd for the Catalogue of Saints acknowledg'd and canoniz'd in the *Romiſh* Church. See SAINT, and CANONIZATION.

CANON is alſo uſed, by way of Excellence, in the *Romiſh* Church, for the ſecret Words of the Maſs, from the Preface to the *Pater*; in the Middle of which the Prieſt makes the Conſecration: The common Opinion is, that the *Canon* commences with *Te igitur*, &c. The People are to be on their Knees, hearing the *Canon*; and are to rehearſe it to themſelves, ſo as not to be heard. The *Canon* is pretended to have been put into its preſent Form by St. *Jerom*, by Order of Pope *Siricius*. The Council of *Trent* declare the *Canon of the Maſs* to have been fram'd by the Church; and to be compos'd of the Words of Jeſus Chriſt, his Apoſtles, and the firſt Popes: Some call it *Action*.

CANON, in Muſick, is a Rule, or Method of determining the Intervals of Notes. See INTERVAL.

Ptolemy, rejecting the *Ariſtoxenian* Way of meaſuring the Intervals in Muſick, by the Magnitude of a Tone, (which was ſuppos'd to be form'd by the Difference between a *Diapente* and a *Diateſſeron*) thought that muſical Intervals ſhould be diſtinguiſh'd, according to the Ratio's or Proportions which the Sounds terminating thoſe Intervals bear to one another, when conſider'd according to their degree of Acuteneſs or Gravity; which, before *Ariſtoxenus*, was the old *Pythagorean* Way. He therefore made the *Diapaſon* conſiſt in a double Ratio; the *Diapente* in a Seſquialteral; the *Diateſſaron*, in a Seſquitertian, and the Tone it ſelf in a Seſquioctave; and all the other Intervals, according to the Proportion of the Sounds that terminate them: Wherefore, taking the *Canon*, (as 'tis call'd) for a determinate Line of any length, he ſhews how this *Canon* is to be cut accordingly, ſo that it may repreſent the reſpective Intervals: and this Method anſwers exactly to Experiment, in the different Lengths of muſical Chords. From this *Canon*, *Ptolemy* and his Followers, have been call'd *Canonici*; as thoſe of *Ariſtoxenus*, were call'd *Muſici*. See MUSICK.

CANON *in Trigonometry*, and *Algebra*, a general Rule for the Solution of all Caſes, of a like Nature with the preſent Inquiry: Thus, every laſt Step of an Equation is a *Canon*; and, if turn'd into Words, becomes a Rule to ſolve all Queſtions of the ſame Nature with that propos'd. For the *Conſtruction of the Canon of Sines*; ſee SINES. For Tangents, ſee TANGENT. For Logarithms, ſee LOGARITHM, &c.

Natural CANON *of Triangles*, is the *Canon* of Sines, Tangents, and Secants taken together: So called, becauſe ſerving principally for the Solution of Triangles. See TRIANGLE.

Artificial CANON, is the *Canon* of Artificial Sines, Tangents, &c. i. e. of Coſines, Cotangents, &c. See COSINE, COTANGENT, &c.

CANON *Law*, a Collection of Eccleſiaſtical Statutes, Conſtitutions, Deciſions, and Maxims, taken from the antient Councils, the Decrees of Popes, and the Reports and Reſolutions of the Primitive Fathers. See LAW.

The *Canon Law* that obtain'd throughout the Weſt, till the XIth Century, was the Collection of *Canons* made by *Dionyſius Exiguus*, in 520; the *Capitularies* of *Charlemaigne*, and the Decrees of the Popes, from *Siricius* to *Anaſtaſius*. No regard was had to any thing not compris'd in theſe; and the *French* ſtill maintain the Rights of the *Gallican* Church, to conſiſt in their not being oblig'd to admit any thing elſe, but to be at Liberty to reject all Innovations made in the *Canonical Juriſprudence* ſince that Compilation; as well as all Papal Decrees before *Siricius*. Indeed, between the VIIIth and XIth Centuries, the *Canon Law* was mix'd and confounded with the Papal Decrees, from St. *Clement* to *Siricius*; which till then had been unknown: This gave occaſion to a new Reform, or Body of the *Canon Law*; which is the Collection ſtill extant, under the Title of *The Concordance of the diſcording Canons*, made in 1151, by *Gratian*, a Benedictin Monk, from Texts of Scripture, Councils, and Sentiments of the Fathers, in the ſeveral Points of Eccleſiaſtical Polity. This Work he divided according to the Order of Matters,

not of Times and Councils, as had been done before: So that upon the Appearance of this, all the antient Collections immediately ſunk. It is divided into three Parts: the firſt into 108 Diſtinctions; the ſecond into 36 Cauſes, and the third into five diſtinct Parts: The ſecond Part of the *Canon Law*, conſiſts of the Decrees of the Popes, from 1150, to Pope *Gregory* IX. in 1229. In 1297, Pope *Boniface* continu'd the Papal Decrees as far as his Time: This Part the *French* make particular Exception to, by reaſon of that Pope's Differences with their K. *Philip* the Fair. To theſe, Pope *John* XXII. added the *Clementines*, or the five Books of the Conſtitutions of his Predeceſſor *Clement* V. And to all theſe were after added, 20 Conſtitutions of the ſaid Pope *John*, call'd the *Extravagants*; and ſome other Conſtitutions of his Succeſſors. All theſe compoſe the *Body*, or *Corpus of the Canon Law*; which, including the *Comments*, makes three Volumes in Folio; the Rule and Meaſure of Church Government: Indeed, with us, ſince the Reformation, the *Canon Law* has been much abridg'd and reſtrain'd; only ſo much of it obtaining, as is conſiſtent with the Common and Statute Laws of the Realm, and the Doctrine of the Eſtabliſh'd Church. See COMMON LAW, STATUTE, *&c.*

CANONIZATION, a Declaration of the Pope, whereby, after a great deal of Solemnity, he enters into the Liſt of Saints, ſome Perſon who has liv'd an exemplary Life, and ſuppos'd to have wrought Miracles. See SAINT, and MIRACLES.

F. *Mabillon* obſerves, that the Term *Canonization* is not of ſo much Antiquity as the Thing: The Word being never met with before the XIIth Century; tho St. *Uldric*, Biſhop of *Ausburg*, was *canoniz'd* in 983. *Du Cange* adds, that *Canonization* was, at firſt, no more than a bare Order of the Pope, whereby thoſe who had diſtinguiſh'd themſelves by their Piety, *&c.* were appointed to be inſerted in the *Canon* of the Maſs. *Mabillon* diſtinguiſhes two Kinds of *Canonization*; a General, and Particular: The firſt made by a General Council, or a Pope; the ſecond, by a Biſhop, a particular Church, or a particular Council: And there are Inſtances likewiſe of *Canonizations*, at leaſt of ſomething very like them, by Abbots. At firſt, only Martyrs were *canoniz'd*; by degrees they came to Confeſſors. See MARTYR, *&c.*

Canonization antiently conſiſted in inſerting the Saint's Name in the Sacred *Dyptiques*, or *Canon* of Saints; in appointing a proper Office for invoking him, and erecting Churches under his Invocation, with Altars for Maſs to be celebrated on; taking up the Body from the Place of its firſt Burial, and the like Ceremonies: By degrees, other Ceremonies were added; Proceſſions made, with the Saint's Image carry'd in triumph; the Day of his Death declar'd a Feaſt. And to render the Thing ſtill more ſolemn, *Honorius* III. in 1225, added ſeveral Days Indulgence.

'Tis a great Diſpute among the Learned, when the Right of *Canonization*, which 'tis own'd was antiently common to Ordinaries, eſpecially Metropolitans and Princes, with the Pope, became firſt peculiar to the Pope: Some ſay, *Alexander* III. made this Reſerve to the Holy See. The Jeſuits of *Antwerp*, in their *Propylæum*, ſay, 'twas not eſtabliſh'd till two or three Ages ago; and then by a mere Cuſtom, which paſs'd tacitly into a Law; which appears not to have been generally receiv'd in the Xth and XIth Centuries. This, however, is pretty certain, that it was generally allow'd before Pope *Alexander* III. the Archbiſhop of *Vienne* in *France*, and his Suffragans, acknowledge it in an authentic manner in the Year 1231, by a Letter written to *Gregory* IX. deſiring him to canonize *Stephen*, Biſhop of *Die*, who dy'd in 1208. *Quia nemo*, ſay they, *quantalibet Meritorum prerogativa polleat, ab Eccleſia Dei pro ſancto habendus, aut venerandus eſt, niſi prius per ſedem Apoſtolicam ejus ſanctitas fuerit approbata.* The Term *Canonization* takes its riſe from the Cuſtom of inſerting the Names of the Saints in the Canon of the Maſs, as aboveſaid, before there were any Martyrologies in the Church. See MARTYROLOGY.

CANTALIVERS, in Building, Pieces of Wood fram'd into the Front, or other Sides of a Houſe, to ſuſtain the Moulding and Eves over it: Theſe ſeem, in effect, to be the ſame with Modillions, except that the former are plain, and the latter carv'd. They are both a kind of Cartouſes, ſet at equal Diſtances under the Corona of the Cornice of a Building. See MODILLION; ſee alſo CORNICE, and CORONA.

CANTALIVER-*Cornice*, is a *Cornice* with *Cantalivers* or Modillions under it; ſee CANTALIVERS.

CANTATA, in Muſick, a Song, or Compoſition, intermix'd with Recitatives, little Airs, and different Motions: ordinarily intended for a ſingle Voice, with a thorough Baſs; ſometimes for two Violins, or other Inſtruments. See SONG.

The *Cantata* paſſed from *Italy* into *France*, and thence to us: It has ſomething in it extremely fantaſtical and capricious, and ſeems only to pleaſe by its Novelty. The Word is *Italian*, where it ſignifies the ſame thing.

CANTHARIDES, in Medicine, a Drug much us'd for the raiſing of Bliſters. See BLISTER. *Cantharides* are the Principal of the Tribe of Epiſpaſticks, or Veſicatories. See EPISPASTIC, *&c.*

Cantharides are a kind of venomous Inſects, with Feet and Wings, like little Flies; hence alſo call'd *Spaniſh Flies*. They are form'd of a kind of little Worms, hatch'd on Wheat, the Leaves of the Poplar, *&c.* There are various Kinds of *Cantharides*: the beſt are thoſe which appear with different Colours, having yellow Lines running acroſs their Wings; thick, and freſh. They are kill'd by laying them over a very ſtrong Vinegar, which is made to boil for that purpoſe; after which they are dry'd, and may be preſerv'd two Years. *Cantharides* are very ſharp and corroſive, abounding with a ſubtile, cauſtick, volatile Salt; whereby they become exceedingly injurious to the Bladder, ſo as to ulcerate it, even when apply'd externally, if ſuffer'd to lye on too long. They are much commended in Fevers; as they raiſe and ſtrengthen a low trembling Pulſe, give Relief in delirious Ravings, ſoporiferous Stupors, Loſs of Reaſon, *&c.* (the common Symptoms of high and dangerous Fevers) reduce continual Fevers to regular and diſtinct Remiſſions; and ſo make way for the Bark: cleanſe and open the obſtructed Glands, and Lymphaticks; bring on critical Sweats, *&c.* Dr. *Morgan* accounts for theſe Effects of *Cantharides* thus: 'The ſubtile and volatile pungent 'Parts of which the *Cantharides* conſiſt, being carry'd in'to the Blood, and paſſing with the Lymph or Serum into 'the glandular Pipes, act there by diſſolving, attenuating, 'and rarifying the viſcid Coheſions of the Lymph; and 'by ſtimulating the nervous Coats of the Veſſels throw off 'their ſtagnant Viſcidities, and thus reſtore the Circulation 'and free Drain of Lymph from the Arteries to the Veins; 'cleanſe the Expurgatory Glands, and bring on critical 'Sweats, and Urines. Thus, the extremely ſubtile, ac'tive, and pungent volatile Salts, deriv'd from the *Cantha'rides*, purge the Glands and Lymphaticks univerſally; 'much after the ſame manner as common Catharticks do 'the Guts.' *Philoſop. Princip. of Medicine*, p. 304.

Cantharides are ſeldom, if ever, to be us'd internally: In the *Philoſoph. Tranſact.* indeed, we have Inſtances of their internal Application, and that with ſucceſs, by Mr. *Yonge*, in Dropſical and other Caſes; ſometimes mix'd with Camphor, and ſometimes without; only well waſh'd down with large Draughts of Poſſet, Ptiſan, Emulſions, or the like. The form wherein he tells us he uſes to adminiſter this fiery Inſect, is that of a ſoft Pill, or Bolus, compos'd of *three Cantharides præpar. Troch. e Myrrha* ʒſs. *Sem. Amei.* gr. vi. *Rob. Cynosb.* q. ſ. This, in ſtubborn Suppreſſions of the *Menſes* and *Lochia*, in difficult Childbirth, and Retention of the *Secundine*, he finds does Wonders: He adds, that the Heat or Pain it occaſions in the Neck of the Bladder, is much ſhort of what he has an hundred times ſeen, and ſometimes felt, from the Application of an Epiſpaſtick to the Back. But their principal uſe is in Veſicatories, to raiſe Bliſters on the Skin; and by that means to turn off and diſcharge ſome Flux of ill Humours. See VESICATORY.

Cantharides take their Name from *Cantharus*, an Animal, otherwiſe call'd *Scarabæus venenoſus*. *Cantharides* are ſometimes apply'd to the Temples for the Tooth-ach: The Farriers uſe them in ſeveral Diſeaſes of Horſes. They muſt be choſen new, dry, and whole: they won't keep above two Years, without mouldering into a Duſt, of no uſe.

CANTHUS, in Anatomy, the Corner, or Angle of the Eye; ſee EYE. That Corner next the Noſe, is called the *great*, *inner*, and *domeſtick Canthus*; and by ſome Phyſicians the *Fountain*: The other, towards the Temples, is call'd the *little*, or *external Canthus*. *Du Laurens* derives the Word from the *Greek* κνηθᾶσθαι, to itch.

CANTHUS, in Chymiſtry, the Lip of a Veſſel; or that Part of the Mouth of a Veſſel, which is a little hollow'd, or depreſs'd, for the eaſy pouring off a Liquor: Hence to pour by Decantation, is to pour thro that place. See DECANTATION.

CANTON, a Quarter of a City, or Country, conſider'd as ſeparated and detach'd from the reſt of that City, *&c.* Hence the *Swiſs Cantons*, or the Diviſions of *Switzerland*, thirteen in number; each a Republick in it ſelf, and together forming the *Helvetic* Body. The Word, probably, comes from the Italian *Canton*, a large Part of an angular Stone.



CANTON, in Heraldry, one of the nine honourable Ordinaries. See ORDINARY. The *Canton* is a ſquare Portion of the Eſcutcheon parted from the reſt: It has not any fix'd Proportion; tho regularly it ſhould be leſs than a Quarter: 'tis often only a ninth Part, and us'd as an Addition, or Difference, frequently, to expreſs Baſtardy. 'Tis ſometimes plac'd at the right Corner, and ſometimes at the left; in which latter Caſe, it is call'd a *Canton ſiniſter*. Its form is expreſs'd in the

the adjoining Figure: Thus, he bears *Ermin, a Canton Argent, charged with a Cheveron Gules.*

CANTON, is alſo us'd for the Spaces left between the Branches of a Croſs or Saltier.

CANTONED is us'd in Architecture, when the Corner of a Building is adorn'd with a Pilaſter, an angular Column, ruſtick Quoins, or any thing that projects beyond the naked of the Wall.

CANTONED, in Heraldry, is when the four *Cantons*, or Spaces round a Croſs, or Saltier, are filled up with any Pieces. He bears *Gules, a Croſs Argent, canton'd with four Scollop Shells.* The Word is alſo us'd when there are little Pieces in the *Cantons*, or Spaces of any principal Figure of an Eſcutcheon.

CANVAS, or CANEVAS, properly, a coarſe Cloth, uſually very open, and wove regularly in little Squares; us'd for the Ground of Tapeſtry Work, Painting, *&c.* Hence *Canvas* is us'd, eſpecially among the *French*, for the Model, or firſt Words whereon an Air, or Piece of Muſick is compos'd, and given to a Poet to regulate and finiſh. The *Canvas* of a Song, is certain Notes of the Compoſer, which ſhew the Poet the Meaſure of Verſes he is to make. Thus, *Du Lot* ſays, he has *Canvas* for ten Sonnets againſt the Muſes.

CANULA, or CANNULA, in Chirurgery, a little Tube, or Pipe, which the Chirurgeons leave in Wounds and Ulcers, that they dare not, or chuſe not to heal up; becauſe ſtill ſuppurating. The *Canula* is of Gold, Silver, or Lead; and is perforated, that the *Pus* entering within it, may fall upon a Sponge, dipp'd in Spirit of Wine, and plac'd at the Orifice, to keep the Ulcer warm, and to prevent the external Air from entering: Some of theſe *Cannulæ* have Rings, whereby to keep them faſt in the Wound; and others have Holes with Ribbons thro 'em, to bind 'em down. Some are round, others oval, others crooked.

There is a particular kind of theſe *Cannulæ*, form'd taperwiſe, with a Skrew faſten'd to one End, in manner of a Cock: Its uſe is, for the Diſcharge of the Water out of the Abdomen, after Tapping, in an *Aſcites*, or Dropſy. To this End it is inſerted into the Body, thro a Hole near the Navel; made with a pointed Inſtrument, and ſometimes a Punch; and is faſten'd in its Place by a Bandage, and guarded from any Injury of the Clothes, *&c.* by a Caſe, or Cover. It has this advantage over the common Tapping; that by means thereof, the Water is drawn out when, and in what meaſure the Patient pleaſes. See TAPPING, and DROPSY.

There are likewiſe a kind of *Cannulæ* for the Application of actual Cauteries; they are made very ſhallow, and are, in effect, little more than Hoops; thro the Aperture whereof, the actual Cautery is convey'd; which, by this means, is kept from damaging the adjacent Parts. See CAUTERY, and CAUSTIC.

CAP, a Garment ſerving to cover the Head, and made nearly of the Figure thereof: The Æra of Caps and Hats, is referr'd to the Year 1449; the firſt ſeen in theſe Parts of the World being at the Entry of *Charles* VII. into *Rouen:* From that time they began, by little and little, to take place of the Hoods, or Chaperons, that had been us'd till then. M. *le Gendre*, indeed, goes further back; they began, ſays he, under *Charles* V. to let fall the Angles of the Hood upon the Shoulders, and to cover the Head with a Cap, or Bonnet: When this Cap was of Velvet, they call'd it *Mortier*; when of Wool, ſimply *Bonnet:* the firſt was lac'd, the latter had no Ornament beſides two Horns, rais'd a moderate Height, one of which ſerv'd in covering and uncovering. None but Kings, Princes, and Knights, were allow'd the Uſe of the Mortier. See MORTIER.

The *Cap* was the Head-dreſs of the Clergy and Graduates. *Paſquier* ſays, 'that it was antiently a part of the Hood wore by the People of the Robe; the Skirts whereof being cut off, as an Incumbrance, left the round *Cap* an eaſy commodious Cover for the Head; which round *Cap* being afterwards aſſum'd by the People, thoſe of the Gown chang'd it for a ſquare one, firſt invented by a *Frenchman*, call'd *Patrouillet:* He adds, that the giving of the *Cap* to the Students in the Univerſities, was to denote that they had acquir'd full Liberty, and were no longer ſubject to the Rod of their Superiors; in Imitation of the antient *Romans*, who gave a *Pileus*, or *Cap*, to their Slaves, in the Ceremony of making them free: whence the Proverb, *Vocare ſervos ad Pileum.* Hence, alſo, on Medals, the *Cap* is the Symbol of Liberty, whom they repreſent holding a *Cap* in her right Hand, by the Point.

The *Chineſe* have not the uſe of the *Hat*, like us; but wear a *Cap* of a peculiar Structure, which the Laws of Civility will not allow them to put off; 'tis different for the different Seaſons of the Year: That us'd in Summer, is in form of a Cone, ending at top in a Point. 'Tis made of a very beautiful kind of Mat, much valu'd in that Country, and lin'd with Sattin; to this is added, at top, a large Lock of red Silk, which falls all around as low as the Bottom: ſo that, in walking, the Silk fluctuating regularly on all Sides, makes a graceful Appearance: Sometimes, inſtead of Silk, they uſe a kind of bright red Hair, the Luſtre whereof no Weather effaces. In Winter they wear a Pluſh *Cap*, bord'er'd with Martlet's or Fox's Skin; the reſt like thoſe for the Summer. Nothing can be neater than theſe *Caps*; they are frequently ſold for eight or ten Crowns: but they are ſo ſhort that the Ears are expos'd. See TURBANS; ſee alſo HATS.

Square-CAP. The *Cap*, or *Bonnet*, is a Mark, or Ornament of certain Characters: Thus Churchmen, and the Members of Univerſities, Students in Law, Phyſick, *&c.* as well as Graduates, wear *ſquare Caps.* In moſt Univerſities, Doctors are diſtinguiſh'd by peculiar *Caps*, given them in aſſuming the Doctorate. *Wickliff* calls the Canons of his Time *Biſurcati*, from their *ſquare Caps. Paſquier* obſerves, that in his Time, the *Caps* wore by the Churchmen, *&c.* were call'd *ſquare Caps*; tho, in effect, they were round, yellow *Caps.*

The *Cap* is ſometimes alſo us'd as a Mark of Infamy: In *Italy*, the *Jews* are diſtinguiſh'd by a *yellow Cap*; at *Lucca* by an *orange* one. In *France*, thoſe who had been Bankrupts, were oblig'd ever after to wear a *green Cap*; to prevent People from being impos'd on in any future Commerce. By ſeveral Arrets in 1584, 1622, 1628, 1688, it was decreed, that if they were at any time found without their *green Cap*, their Protection ſhould be null, and their Creditors impower'd to caſt them into Priſon: but the Thing is not now executed. See BANKRUPT.

CAP, in a Ship, is a ſquare Piece of Timber, put over the Head, or upper End of a Maſt, having a round Hole to receive the Maſt. By theſe *Caps*, the Top-maſts, and Top-gallant-maſts, are kept ſteady and firm in the Treſſel-trees, where their Feet ſtand; as thoſe of the lower Maſts do in the Steps. See MAST.

Prieſt's-CAP, in Fortification. See BONNET *à Pretre.*

CAPACITY, in a Logical Senſe, an Aptitude, Faculty, or Diſpoſition to retain, or hold any thing. Our Law allows the King two *Capacities*, a *Natural*, and a *Political*; in the firſt he may purchaſe Lands to him and his Heirs; in the latter to him and his Succeſſors. The Clergy have the like.

CAPARASON, or CAPARISON, the Covering, or Clothing laid over an Horſe; eſpecially a Sumpter, or Horſe of State. Antiently, *Caparaſons* were a kind of Iron Armour, wherewith Horſes were cover'd in Battel. The Word is *Spaniſh*, being an Augmentative of *Cape*, *Caput*, Head.

CAPE, or *Promontory*, in Geography, a *Head-Land*; or a piece of Land running out beyond the reſt, into the Sea. *Sicily* was call'd by the Antients *Trinacria*, by reaſon of its three *Capes*, or Promontories; repreſented on Medals, by three Mens Legs join'd together at the head of the Thigh, and bent in the Knee; which pretty nearly reſembles the Triangular Figure of that Iſland. See PROMONTORY, CHERSONESUS, *&c.*

CAPE, in Law, a Writ touching Plea of Lands and Tenements; ſo term'd, (as moſt other Writs are) from the Word which carries the chief Intention or End of it. The Writ is divided into *Cape Magnum*, and *Cape Parvum*; which in their Effect or Conſequence are alike, as to the taking hold of Things immoveable: in the following Circumſtances they differ; 1ſt, In that the *Cape Magnum*, or *grand Cape* lies before; and the *Cape Parvum*, or *petit Cape*, after. *Cape Magnum* ſummons the Defendant to anſwer to the Default; and beſides to the Demandant: *Cape Parvum* only to the Default. *Ingham* ſays, 'tis call'd *petit Cape*, not becauſe of ſmall force; but becauſe contain'd in few Words.

Cape Magnum is thus defin'd in the old *Nat. Brev.* 'Where a Man hath brought a *Precipe quod reddet* of a 'Thing that touches Plea of Land, and the Tenant makes 'default at the Day to him given in the original Writ; 'then this Writ ſhall be for the King to take the Land 'into his Hands: and if the Tenant come not at the Day 'given him by the Writ, he loſes his Land.'

Cape Parvum, or *petit Cape* is thus defin'd, *Ibid.* 'Where 'the Tenant is ſummon'd in Plea of Land, and comes at 'the Summons, and his Appearance is recorded; and at 'the Day given him, prays the View; and having it 'granted, makes default: then ſhall this Writ iſſue for the 'King, *&c.*

CAPE *ad Valentiam*, a Species of *Cape Magnum*, ſo call'd from the End to which it tends: It is thus deſcrib'd, 'Where I am impleaded of Lands, and I vouch to warrant 'another, againſt whom the Summons *ad Warrantandum* 'hath been awarded, and the Sheriff comes not at the Day 'given; then, if the Defendant recover againſt me, I ſhall 'have a Writ againſt the Vouchee; and ſhall recover ſo 'much in value of the Lands of the Vouchee, if he has 'ſo much: otherwiſe, I ſhall have Execution of ſuch 'Lands and Tenements as deſcend to him in Fee; or, if 'he purchaſe afterwards, I ſhall have a Re-ſummons

'againſt him: And if he can ſay nothing, I ſhall recover 'the Value.'

CAPELLA, in Aſtronomy, a Star of the firſt Magnitude in the preceding Shoulder of *Auriga*. In *Ptolemy*'s and *Tycho*'s Catalogues, 'tis the third in order of that Conſtellation. In the *Britannic Catalogue*, the fourteenth: Its Longitude is 17°, 31', 41"; its Latitude 22°, 51', 47". See AURIGA.

CAPER. See CAPRE.

CAPHAR, a Toll or Duty, impos'd by the *Turks* on the Chriſtian Merchants, who carry or ſend Merchandiſes from *Aleppo* to *Jeruſalem*. The Toll of *Caphar* was firſt ſettled by the Chriſtians themſelves when Maſters of the Holy Land, for the Support of Troops and Forces, poſted in the more difficult paſſes, to watch the *Arabs*, and prevent their Pillages. But the *Turks*, who have continu'd, and even rais'd the Toll, abuſe it; exacting arbitrary Sums of the Chriſtian Merchants and Travellers, on pretence of guarding them from the *Arabs*; with whom they yet frequently keep an Underſtanding, and even favour their Robberies.

CAPHORA. See CAMPHOR.

CAPI-AGA, or CAPI-AGASSI, a *Turkiſh* Officer. The *Capi-Aga* is Governor of the Gates of the Seraglio; or grand Maſter of the Seraglio: This is the firſt Dignity among the white Eunuchs. The *Capi-Aga* is always near the Perſon of the Grand Signior: He introduces Ambaſſadors to their Audience: No body enters, or goes out of the Grand Signior's Apartment but by his means. His Office gives him the Privilege of wearing the Turban in the Seraglio, and to go every where on Horſeback. He accompanies the Grand Signior to the Apartment of the Sultana's, but ſtops at the Door without entering. His Appointment is very moderate; the Grand Signior bears the Expence of his Table, and allows him at the Rate of about 60 *French* Livres *per* Day: But his Office brings him in abundance of Preſents; no Affair of Conſequence coming to the Emperor's Knowledge, without paſſing thro his Hand. The *Capi-Aga* cannot be *Baſhaw* when he quits his Poſt. See AGA.

CAPIAS, a Writ, of two ſorts; one before Judgment, call'd *Capias ad Reſpondendum*; in an Action Perſonal, when the Sheriff, upon the firſt Writ of Diſtreſs, returns, *Nihil habeat in balliva noſtra*. The other is a Writ of Execution after Judgment, which is alſo of various Kinds; as, *Capias ad ſatisfaciendum*, *Capias pro Fine*, *Capias Utlagatum*, after Judgment, &c.

CAPIAS *ad ſatisfaciendum*, is a Writ of Execution after Judgment; lying where a Man recovers in an Action Perſonal, as for Debt, Damage, &c. in which Caſes, this Writ iſſues to the Sheriff, commanding him to take the Body of him againſt whom the Debt is recover'd; who is to be kept in Priſon till he make Satisfaction.

CAPIAS *conductos ad proficiſcendum*, an original Writ, which lies, by the Common Law, againſt any Soldier who has covenanted to ſerve the King in War, and appears not at the Time and Place appointed. It is directed to two of the King's Serjeants at Arms, to arreſt and take him where-ever he may be found; and to bring him *Coram Concilio noſtro*, with a Clauſe of Aſſiſtance.

CAPIAS *pro Fine*, is where one being by Judgment fin'd to the King, upon ſome Offence againſt a Statute, does not diſcharge it according to the Judgment: By this Writ, therefore, his Body is to be taken, and committed to Priſon till he pay the Fine.

CAPIAS *Utlagatum*, a Writ which lies againſt one outlaw'd, upon any Action, Perſonal or Criminal; by which the Sheriff apprehends the Party outlaw'd, for not appearing on the Exigent, and keeps him in ſafe Cuſtody till the Day of Return; when he preſents him to the Court, to be there further order'd for his Contempt. See OUTLAWRY.

CAPIGI, a Porter, or Doorkeeper of the *Turkiſh* Seraglio. There are about 500 *Capigis*, or Porters in the Seraglio, divided into two Companies; one conſiſting of 300, under a Chief called *Capigi-Baſſa*: who has a Stipend of three Ducats *per* Day: The other conſiſts of 200, diſtinguiſh'd by the Name of *Cuccicapigi*; and their Chief *Cuccicapigi-Baſſa*, who has two Ducats. The *Capigis* have from ſeven to fifteen Aſpers *per* Day; ſome more, others leſs. Their Buſineſs is to aſſiſt the Janizaries in the Guard of the firſt and ſecond Gates of the Seraglio: Sometimes all together; as when the Turk holds a General Council, receives an Embaſſador, or goes to the Moſque: and ſometimes only in part; being rang'd on either ſide, to prevent People entering with Arms, any Tumults being made, &c. The Word, in its Original, ſignifies Gate. See SERAGLIO.

CAPILLAMENT, literally ſignifies *Hair*; being form'd of the Latin *Capillus*, of *Caput*; q. d. *Hair of the Head*. Hence the Word is figuratively apply'd to ſeveral things, which, on account of their Length and Fineneſs, reſemble Hairs: As,

CAPILLAMENTS *of the Nerves*, are the fine Fibres, or Filaments, whereof the Nerves are compos'd. 'Is not 'Viſion perform'd chiefly by the Vibrations of this Me-'dium, excited in the Bottom of the Eye by the Rays of 'Light; and propagated thro the ſolid, pellucid, and uni-'form *Capillaments* of the Optic Nerves, to the *Senſorium*?' *Newt. Opt.* p. 328. See FIBRE, and NERVE.

CAPILLAMENTS, in Botany, more uſually call'd *Stamina*, are thoſe ſmall Threads, or Hairs, which grow up in the Middle of the Flower; and are headed with little Knobs, call'd *Apices*. See STAMINA, and APICES.

CAPILLARY, of the Latin *Capillus*, a Hair; is apply'd to ſeveral Things, to intimate their exceeding Smallneſs, Fineneſs, &c. reſembling that of a Hair: As *Capillary* Veſſels, *Capillary* Fracture, &c.

CAPILLARY *Veſſels*, in Anatomy, are the leaſt, minuteſt, inſenſible Ramifications of the Veins and Arteries; which, when cut, or broke, yield but very little Blood. See VEIN, and ARTERY. The *Capillary* Veſſels ſhou'd be conceiv'd as vaſtly finer than Hairs. See INOSCULATION, CIRCULATION, &c.

CAPILLARY, or CAPILLACEOUS *Plants*, are a Species of Plants, thus denominated from their Form, and manner of growing. The *Capillaries* have no principal Stalk, or Stem, with Branches, &c. ſhooting out of the ſame; but grow from the Ground, like Hairs from the Head: They bear their Seed in little Tufts, or Prominencies, on the backſide of their Leaves. The principal of theſe, is the *Capillus Veneris*, or *Adianthum*; from which the reſt take their Name. See PLANT.

The *Capillaries* are diſtinguiſh'd into thoſe with an undivided Leaf, as the *Hæmionitis*, and the *Phyllitis*; or with a ſingly divided Leaf: and theſe have the Leaf either cut, or jagged in, but not divided into *Pinnæ*, clear home to the main Rib; as, *Polipodium*, *Lonchitis*, *Scolopendria*, *Adianthum*, *Aeroſtichon Thal.* Or elſe divided quite home to the Rib, and hanging like *Pinnæ*; as the *Chama felix Marina*, and the *Trichomanes*: Others have the Leaf doubly divided, or at leaſt once ſubdivided, the firſt Diviſion being into Branches, and the ſecond into *Pinnæ*; as the *Hemionitis Multifida*, the *Filex Mas*, *Filex Paluſtris*, *Filex Saxatilis*. The *Adianthum album*, and *nigrum*, and others, have the Leaf trebly divided, or thrice ſubdivided; firſt into Branches, then into little Twigs, and after this into *Pinnæ*; theſe are, the *Felix Scandens* of *Braſil*, the *Felix Florida*, or *Oſmunda Regalis*; the *Felix mas Ramoſa*, the *Felix Fœminæ Vulgaris*, the *Adianthum album Floridum*, and the *Dryopteſis nigra*.

All the *Capillaries* are reputed of uſe in Medicine, eſpecially in the making of Syrops; to which, wonderful Virtues are attributed. But, in effect, only the *Capillary* of *Montpellier*, *Adianthum album Monſpelienſe*, and that of *Canada*, *Adianthum album Canadenſe*, are regularly us'd for that Purpoſe: The reſt only ſerve to counterfeit 'em.

The Antients thought that the *Capillaries* were all without Seed; and ſome of the Moderns, particularly *Dodonæus*, have given into the Opinion. But *Bauhinus*, and other of the more accurate Obſervers, maintain they have all their Seed. *Cæſius* ſays, he has ſeen them with a Microſcope: Since him, Mr. *W. Cole* has obſerv'd 'em with ſtill more Curioſity; he tells us, the *Capſulæ*, or Seed Veſſels, are in ſome leſs by half than a ſmall grain of common Sand, in others much leſs; yet ſome of them contain about 100 Seeds. See SEED.

CAPILLARY *Tubes*, in Phyſicks, are little Pipes, whoſe Canals are the narroweſt poſſible; not ſuch, whoſe Diameters do not exceed that of a common *Hair*; for none ſuch can be made: The Diameter of *Capillary Tubes*, is a half, third, or fourth of a Line. See TUBE.

The Aſcent of Water, &c. *in* CAPILLARY *Tubes*, is a famous Phænomenon which has long embaraſs'd the Philoſophers: Let one End of a ſmall Tube, open at both Ends, be immerg'd in Water, and the Liquor within the Tube will riſe to ſome ſenſible Height above the external Surface: or, immerge two or more Tubes in the ſame Fluid, one of them a *Capillary* one, and the other conſiderably larger; the Water will aſcend conſiderably higher in the *Capillary Tube* than the other; and this in the reciprocal Ratio of the Diameters of the Tubes. This Effect, Authors have commonly imputed to the unequal Preſſure of the Air in unequal Tubes: The Air, ſay they, conſiſts of ramoſe, ſpongy Parts, intermingled and embaraſs'd among each other: now, a Column of ſuch Air being ſuppos'd perpendicularly incumbent on the Canal of a ſmall *Capillary Tube*; part of the Preſſure of the Column will be ſpent on the Sides, or Surface of the Tube; ſo that the Column will not act with its whole Weight on the ſubjacent Fluid, but will loſe a greater or leſs proportion of its Weight, as the Diameter of the Tube is the ſmaller. But this Solution is deſtroy'd, by the Experiment's ſucceeding *in Vacuo*, as well as in open Air.

Others, as Mr. *Hauksbee*, &c. have recourſe to the Attraction of the *Annuli* of the concave Surface of the Tube; to which Opinion the ingenious Dr. *Morgan* ſubſcribes: 'Part of the Gravity of the Water in the Tube, ſays that 'Author, being taken off, by the attractive Power of the 'internal concave Surface of the Glaſs; the Fluid within 'the Tube, by the external greater Weight or Preſſure, 'muſt aſcend ſo far, as to compenſate for this Diminution 'of Gravity by the Attraction of the Glaſs. He adds, 'that as the Power of Attraction in Tubes, is in a recipro-'cal Ratio of the Diameters; by leſſening the ſaid Dia-'meter, or by ſuppoſing the Tubes ſtill ſmaller and ſmaller, 'Water, or any other Fluid, may be thus rais'd to any aſ-'ſignable Height.' *Phil. Princ. of Medicine*, p. 88, *&c.*

But this Author is ſomewhat overſeen: For ſince in every *Capillary Tube*, the Height to which the Water will ſpontaneouſly aſcend, is reciprocally as the Diameter of the Tube; it follows, that the Surface containing the ſuſpended Water is always a given Quantity. But the Column of Water ſuſpended in every Tube, is as the Diameter of the Tube: Therefore, if the Attraction of the containing Surface be the Cauſe of the Water's Suſpenſion; it will follow, that equal Cauſes produce unequal Effects; which is abſurd. And, again, not only his Solution, but his Phænomenon alſo is ſtretch'd too far: For 'tis not in all Fluids the Phænomenon obtains; but in Mercury the very contrary is found: the Fluid in a Tube, not riſing ſo high as the Level of that in the Veſſel; and the Defect being found the greater as the Tube is ſmaller.

We muſt, therefore, recur to Dr. *Jurin*'s Solution of this Phænomenon, which is well ſupported by Experiments: 'The Suſpenſion of the Water, on that Gentleman's Syſtem, 'is owing to the Attraction of the Periphery of the concave 'Surface of the Tube, to which the upper Surface of the 'Water is contiguous and adheres:' This being the only Part of the Tube, from which the Water muſt recede upon its ſubſiding; and conſequently the only one which, by the Force of its Coheſion and Attraction, oppoſes the Deſcent of the Water. This he ſhews to be a Cauſe proportional to the Effect; in regard, the Periphery, and the ſuſpended Column, are both in the ſame Proportion as the Diameter of the Tube. The Suſpenſion thus accounted for, the ſeemingly ſpontaneous Aſcent will eaſily be ſolv'd: For ſince the Water that enters a *Capillary Tube* as ſoon as its Orifice is dipp'd therein, has its Gravity taken off by the Attraction of the Periphery, with which its upper Surface is in Contact, it muſt neceſſarily riſe higher; partly by the Preſſure of the ſtagnant Water, and partly by the Attraction of the Periphery, immediately above that which is already contiguous to it. See ASCENT.

CAPILLARY *Fracture*. See CAPILLATION.

CAPILLATION, or *Capillary Fracture*, according to ſome Writers, is a Fracture in the Skull, ſo ſmall that it can ſcarce be perceiv'd; but yet often proves mortal. See FISSURE.

CAPISTRUM, in Surgery, a Bandage for the Head. See BANDAGE.

CAPITAL, of the Latin *Caput*, is us'd on various Occaſions, to expreſs the Relation of a *Head*, Chief, or Principal: Thus,

CAPITAL *City*, intimates the principal City of a Kingdom, Province, or State: as *London* is the *Capital*, or *Capital City* of *England*; *Moſcow* of *Ruſſia*; *Conſtantinople* of the *Ottoman* Empire; *Rouen* of *Normandy*, &c. See METROPOLIS, and CITY.

CAPITAL, or CAPITAL *Stock*, in Commerce, is the Fund, or Stock of a trading Company or Corporation; or the Sum of Money they jointly furniſh, or contribute to be employ'd in Trade. See STOCK, and FUND. The *Capital* of the *Eaſt India* Company, at its firſt Erection, was 36989 *l.* Sterling, which was afterwards doubled; and is now computed at 739782 *l.* 500 Pounds in the *Capital Stock* of the Company, entitles the Perſon to a Vote in the General Courts thereof. The Power given by Parliament to the *South Sea* Company, to increaſe their *Capital*, was the Source of all the Miſchief which enſu'd. See COMPANY.

CAPITAL *Crime*, is that which ſubjects the Criminal to a *Capital* Puniſhment; *i.e.* to the Loſs of his Head, or his Life. See CRIME, and PUNISHMENT.

CAPITAL *Medicines*, in Pharmacy, are the great, or principal Preparations of the Shops; remarkable for the number of Ingredients, extraordinary Virtues, *&c.* ſuch as *Venice Treacle*, *Mithridate*, &c. See MITHRIDATE, *&c.*

CAPITAL *Lees*, are the ſtrong Lees made by the Soap-boilers, from Pot-Aſhes. See SOAP. They are alſo us'd in Surgery, as a Cauſtic; and to make the *Lapis Infernalis*.

CAPITAL *Letters*. See CAPITALS.

CAPITAL, in Architecture, the uppermoſt Part of a Column or Pilaſter, ſerving as the *Head* or Crowning thereof; plac'd immediately over the Shaft, and under the Entablature. See SHAFT, and ENTABLATURE.

CAPITAL *of a Column*, properly, is that whoſe Plan is round. See COLUMN.

CAPITAL *of a Pilaſter*, is that whoſe Plan is ſquare; or at leaſt rectilineal. See PILASTER.

The *Capital* is a principal, and eſſential Part of an Order, of Column or Pilaſter: It is made different in the different Orders; and is that which chiefly diſtinguiſhes and characterizes the Orders. See ORDER.

The Tuſcan CAPITAL, is the moſt ſimple and unadorn'd: Its Members, or Parts, are but three, *viz.* an *Abacus*; under this an *Ovolo*, or quarter Round; and under that, a *Neck*, or *Colarino*. The Neck terminates in an *Aſtragal*, or Fillet, belonging to the *Fuſt*, or Shaft.

The Character of this *Capital*, whereby it is diſtinguiſh'd from the *Doric*, &c. is that the *Abacus* is ſquare, and quite plain, and has no Ogee or other Moulding; and that there are no Annulets under the *Ovolo*. Indeed, Authors vary a little as to the Character of the *Tuſcan Capital*. *Vignola* gives the *Abacus* a Fillet, in lieu of an *Ovolo*. *Vitruvius* and *Scamozzi*, add an *Aſtragal* and Fillet, between the *Ovolo* and Neck: *Serlio* only a Fillet; *Philander* rounds the Corners of the *Abacus*. In the *Trajan* Column there is no Neck; but the *Aſtragal* of the Shaft, is confounded with that of the *Capital*. The Height of this *Capital* is the ſame with that of the Baſe, *viz.* one Module, or Semidiameter. Its Projecture is equal to that of the Cincture at the Bottom of the Column; *viz.* $\frac{8}{5}$ of the Module. See TUSCAN.

The Doric CAPITAL, beſide an Abacus, an Ovolo, and a Neck, in common with the *Tuſcan*, has three Annulets, or little ſquare Members, underneath the Ovolo, in lieu of the Aſtragal in the *Tuſcan*; and a Talon, Cima, or Ogee, with a Fillet over the Abacus. Authors vary, too, as to the Characters of this *Capital*: *Palladio*, *Vignola*, &c. put Roſes under the Corners of the *Abacus*, and in the Neck of the *Capital*. The Height of this *Capital*, *Vitruvius*, &c. makes one Module; and its Projecture 37 Minutes and an half. See DORIC.

The Ionic CAPITAL is compos'd of three Parts; an Abacus, conſiſting of an Ogee and a Fillet; under this a Rind, which produces the Volutes, or Scrolls, the moſt eſſential Part of this *Capital*; and at the Bottom, an Ovolo, or quarter Round: The Aſtragal, under that Ovolo, belongs to the Shaft; the middle Part is called a Rind, or Bark, from its ſuppos'd Reſemblance to the Bark of a Tree laid on a Vaſe, whoſe Brim is repreſented by the Ovolo; and ſeeming to have been ſhrunk up in drying, and to have twiſted into the Volutes. See VOLUTE, and SCROLL. The Ovolo is adorn'd with *Eggs*, as they are ſometimes call'd, from their oval Form: The *Greeks* call it the *Echinos*. See ECHINOS, EGG, *&c.* The Height of this *Capital*, M. *Perrault* makes 18 Minutes; its Projecture one Module, ſeven Tenths.

The Differences in the Character of this *Capital*, flow moſtly from the different Managements of the Volutes; and conſiſt in this: That in the Antique, and ſome of the Modern, the Eye of the Volute anſwers not the Aſtragal of the Top of the Shaft, as *Vitruvius*, and moſt of the Moderns make it: That the Face of the Volutes, which uſually makes a Flat, is ſometimes curv'd and convex'd, ſo as the Circumvolutions go advancing outwards; as is frequent in the Antique. That the Border, or Rim of the Scroll in the Volute, is ſometimes not only a plain Sweep, as ordinarily; but the Sweep is accompany'd with a Fillet. That the Leaves which inveſt the Balluſter, are ſometimes long and narrow; ſometimes larger and broader: That the two Faces of the Volutes, are ſometimes join'd at the outer Corner; the Balluſters meeting in the inner, to make a Regularity between the Faces on the Front and Back of the Building, with thoſe of the Sides. That among the Moderns, ſince *Scamozzi*, the *Ionic Capital* has been alter'd, and the four Faces made alike; by taking away the Balluſter, and hollowing all the Faces of the Volutes inwards, as in the *Compoſite*. That *Scamozzi*, and ſome others, make the Volutes to ſpring out from the Ovolo, as from a Vaſe; after the manner of the modern *Compoſite*: whereas, in the Antique, the Bark paſſes between the Ovolo and Abacus, quite ſtraight, only twiſting at its Extremities to form the Volute. And laſtly, that of late Years, the Sculptors have added a kind of little Feſtoons, ſpringing from the Flower, whoſe Stalk lies on the firſt Circumvolution of the Volute; and ſuppos'd to repreſent the Locks of Hair, hanging down on both ſides of the Face. See IONIC.

The Corinthian CAPITAL is much the richeſt: It has no Ovolo; and its Abacus is very different from thoſe of the *Tuſcan*, *Doric*, or *Ionic*; as having its Faces circular, hollow'd inward, with a Roſe in the middle of each Sweep. Inſtead of an Ovolo, and Annulets, here is only a Brim of a Vaſe; and the Neck is much lengthen'd and enrich'd with a double Row, of eight Leaves in each, bending their Heads downwards; and between them, ſmall Stalks ariſing: whence ſpring the Volutes; which don't reſemble thoſe of the *Ionic Capital*; and which, inſtead of the four in the

Ionic, are here 16; four on each ſide, under the four Horns of the Abacus, where the Volutes meet in a ſmall Leaf, which turns back towards the Corner of the Abacus. The Leaves are divided, each making three Ranges of leſſer Leaves, whereof they are compos'd; each leſſer Leaf is, again, generally parted into five, call'd *Olive Leaves*; ſometimes into three, and call'd *Laurel Leaves*. The middle Leaf, which bends down, is parted into Eleven. In the Middle, over the Leaves, is a Flower, ſhooting out between the Stems and Volutes, like the Roſe in the Abacus. The Height of this *Capital* is two Modules $\frac{1}{3}$, and its Projecture one $\frac{2}{3}$.

The Differences in the Character of this *Capital*, are, that in *Vitruvius*, &c. the Leaves are in form of the *Acanthus*; whereas in the Antique, they are more ordinarily Olive Leaves: That their Leaves are uſually unequal, the undermoſt being made commonly talleſt, ſometimes ſhorteſt; tho ſometimes they are all equal. Sometimes the Leaves are raffled; ſometimes quite plain: The firſt Row generally belly out towards the Bottom, but are ſometimes ſtraight: ſometimes the Horns of the Abacus are ſharp at the Corners, which ſeems agreeable to the Rules of *Vitruvius*; but they are more commonly cut off. There is ſome difference too in the Form and Size of the Roſe. Again, the Volutes are ſometimes join'd to each other; ſometimes wholly ſeparate: Sometimes the Spires of the Volutes continue twiſting even to the End in the ſame Courſe; and ſometimes turn back again near the Centre, in the form of an S. See CORINTHIAN.

The Compoſite CAPITAL, is ſo called, becauſe compos'd of Members borrow'd from the *Capitals* of other Columns. It takes a quarter Round, or Ovolo, from the *Doric*; an Aſtragal under this, together with Volutes, or Scrolls, from the *Ionic*; and a double Row of Leaves from the *Corinthian*, which it reſembles in moſt other things; conſiſting, generally, of the ſame Members and the ſame Proportions. In the Middle of the Abacus is a Flower; and under the Horns, Leaves which return upward; as in the *Corinthian*. Indeed, inſtead of Stalks in the *Corinthian*, the *Compoſite* has ſmall Flowers, lying cloſe to the Vaſe or Bell; twiſting round towards the middle of the Face of the *Capital*, and terminating in the Roſe. The Height of the *Compoſite Capital*, is two Modules $\frac{1}{3}$, and its Projecture one Module $\frac{2}{3}$, as in the *Corinthian*.

The Differences of the Character of this *Capital*, conſiſt in this; that the Volutes, which ordinarily deſcend, and touch the Leaves, are in ſome Works of the Antique ſeparated from them: That the Leaves, which are generally unequal in Height, the lower Rank being talleſt, are ſometimes equal: That the Volutes of the Moderns generally ſpring out of the Vaſe; whereas, in the Antique, they ordinarily run ſtraight the Length of the Abacus, over the Ovolo, without ſtriking into the Vaſe: That the Volutes, whoſe Thickneſs is contracted in the Middle, and enlarg'd above and below in the Antique, have their Sides parallel in the Works of the Moderns: And laſtly, that the Volutes, which have been hitherto, both by the Antients and Moderns, made as if ſolid, are now made much lighter and more airy; the Folds ſtanding hollow, and at a diſtance from each other. See COMPOSITE.

For the Proportions of the ſeveral Members of the Capitals *of Columns*, ſee COLUMN. See alſo *each Member* under its proper Head; as, ABACUS, ACANTHUS, VOLUTE, ECHINUS, &c.

Some Architects diſtinguiſh the *Tuſcan* and *Doric Capitals*, which have no Ornaments, by the Title of *Capitals of Mouldings*; and the three others, which have Leaves and Ornaments, they call *Capitals of Sculpture*.

Angular CAPITAL, is that which bears the Return of an Entablature, at the Corner of the Projecture of a Frontiſpiece.

CAPITAL *of a Balluſter*, is that Part which crowns the *Balluſter*; which ſometimes bears a Reſemblance to the *Capitals* of ſome Columns; particularly the *Ionic*. See BALUSTER.

CAPITAL *of a Triglyph*, is the Flat-band over the *Triglyph*; called by *Vitruvius Tænia*. See TRIGLYPH. 'Tis ſometimes alſo a *Triglyph* which does the Office of a *Capital* to a *Doric* Pilaſter.

CAPITAL *of a Niche*, is a kind of little Canopy over a ſhallow Niche, covering or crowning a Statue. See NICHE.

CAPITAL *of a Baſtion*, in Fortification, is a Line drawn from the Angle of the Polygon, to the Point of the Baſtion; or from the Point of the Baſtion to the Middle of the Gorge. The *Capitals* are from 35 to 40 Fathom long, from the Point of the Baſtion to the Point where the two Demigorges meet. See BASTION.

CAPITALS, in Printing, are the *Majuſculæ*, or initial Letters, wherein Titles, &c. are compos'd, and all Periods, Verſes, &c. commence; call'd alſo *uncial* Letters. See UNCIAL. All proper Names of Men, Countries, Kingdoms, Terms of Arts, Sciences, and Dignities, are to begin with *Capitals*. The *Engliſh* Printers have carried *Capitals* to a pitch of Extravagance; making it a Rule, to begin almoſt every Subſtantive with a *Capital*; which is a manifeſt Perverſion of the Deſign of *Capitals*, as well as an Offence againſt Beauty and Diſtinctneſs. Some of 'em begin now to retrench their ſuperfluous *Capitals*, and to fall into the Meaſures of the Printers of other Nations. See LETTERS, CHARACTERS, and PRINTING.

CAPITATÆ *Plantæ*, in Botany, are ſuch Plants whoſe Flowers are compos'd of many edg'd and hollow little Flowers; thus call'd by Mr. *Ray*, becauſe their ſcaly Calyx (or Cup of the Flower) moſt uſually ſwells out into a large and round Belly, containing within it the pappous Seed; as in *Carduus*, *Centaury*, *Knapweed*, *Cinera*, *Cirſium*, *Lappamai*, *Cijanus*, &c.

CAPITATION, or *Poll-Money*, a Tax, or Impoſition rais'd on each Perſon, in conſideration of his Labour, Induſtry, Office, Rank, &c. This kind of Tribute is very antient, and anſwers to what the *Greeks* call'd κεφαλιτιον. The *Latins* call it *Tributum*; by which Taxes on the Perſon, are diſtinguiſh'd from Taxes on Merchandiſe; which were called *Vectigalia*, *quia vehebantur*. *Capitations* are never practis'd amongſt us, but in Exigencies of State. See POLL, FUAGE, &c.

CAPITE, in Law, a Tenure, whereby a Perſon held of the King, immediately, as of his Crown; either by Knight's-Service, or Soccage. See TENURE, and SERVICE. But by a Statute, 12 *Car.* II. all ſuch Tenures by Knight's-Service of the King, or of any other Perſon, Knights Services *in Capite*, or Soccage, with all Rights, &c. are annull'd. See SOCCAGE, and FEE.

CAPITOL, in Antiquity, a famous Fort, or Caſtle, on the *Tarpeian* Mount at *Rome*, wherein was a Temple dedicated to *Jupiter*, thence denominated *Capitolinus*, in which the Senate antiently aſſembled; and which ſtill ſerves as the City Hall, or Town-houſe, for the meeting of the Conſervators of the *Roman* People. The firſt Foundations of the *Capitol* were laid by *Tarquin* the Elder, in the Year of *Rome* 139. His Succeſſor, *Servius*, rais'd the Walls; and *Tarquin* the Proud finiſh'd it, in the Year 221. But it was not conſecrated, till the third Year after the Expulſion of the Kings, and Eſtabliſhment of the Conſulate. The Ceremony of the Dedication of the Temple, was perform'd by the Conſul *Horatius*, in 246. The *Capitol* conſiſted of three Parts; a *Nave*, ſacred to *Jupiter*; and two Wings, or Iſles, to *Juno* and *Minerva*: It was aſcended to by Stairs; *Lipſius* reckons 100 in number, by reaſon there were ſo many in the Aſcent of the *Tarpeian* Rock. The Frontiſpiece and Sides were incompaſs'd with Galleries, wherein thoſe who had the Honour of a Triumph, entertain'd the Senate at a magnificent Banquet, after the Performance of Sacrifice to the Gods. Both inſide and outſide were inrich'd with infinite Ornaments; the Statue of *Jupiter*, with his golden Thunderbolt, his Scepter and Crown, were the moſt diſtinguiſh'd. In the ſame *Capitol* there were likewiſe a Temple to *Jupiter* the Guardian, and another to *Juno*; with the Mint: and on the Deſcent of the Hill, the Temple of *Concord*. The *Capitol* was burnt under *Vitellius*; and rebuilt under *Veſpaſian*. It was burnt a ſecond time by Lightning, under *Titus*, and reſtor'd by *Domitian*. It had its Name *Capitol*, from a Man's Head found freſh, and yet bleeding, upon digging the Foundation of the Temple, built in honour of *Jupiter*. *Arnobius* adds, that the Man's Name was *Tolus*, whence *Caput-tolium*.

Antiently, the Name *Capitol* was likewiſe affected to all the principal Temples, in moſt of the Colonies throughout the *Roman* Empire; as, at *Conſtantinople*, *Jeruſalem*, *Carthage*, *Ravenna*, *Capua*, &c. That of *Tholouſe*, has given the Name of *Capitouls* to its *Echevins*, or Sheriffs.

CAPITOLINI *Ludi*, were annual Games, or Combats inſtituted by *Camillus*, in honour of *Jupiter Capitolinus*, and in Commemoration of the *Capitol*'s not being ſurpriz'd by the *Gauls*. *Plutarch* tells us, that a part of the Ceremony conſiſted in the Publick Cryers putting up the *Hetrurians* to Sale by Auction. They alſo took an old Man, tying a Golden *Bulla* to his Neck, ſuch as were wore by their Children, and expos'd him to the publick Deriſion. *Feſtus* ſays, they dreſs'd him in a *Prætexta*, and hung a Bull at his Neck; not as accounting him a Child, but becauſe this was an Ornament of the Kings of *Hetruria*.

There was alſo another kind of *Capitoline* Games, inſtituted by *Domitian*, and celebrated each five Years; wherein there were Rewards and Crowns beſtow'd on the Poets, and put on their Heads by the Emperor himſelf. Theſe Games became ſo celebrated, that the manner of accounting Time by *Luſtres*, which had obtain'd till then, was chang'd; and they began to count by *Capitoline* Games, as the *Greeks* by *Olympiads*. The Feaſt was not for Poets alone, but alſo for Champions, Orators, Hiſtorians, Comedians, Magicians, &c.

CAPITULAR, or CAPITULARY, an Act paſs'd in a Chapter, either of Knights, Canons, or Religious. See CHAPTER.

The *Capitulars* of *Charlemaign*, *Charles* the Bald, &c. are the Laws, both Eccleſiaſtical and Civil, made by thoſe Emperors, &c. in the General Councils, or Aſſemblies of the People: which was the way the Conſtitutions of moſt of the ancient Princes, &c. were made; each Perſon preſent, tho a Plebeian, ſetting his Hand to 'em. Some diſtinguiſh theſe from Laws; and ſay, they were only Supplements to Laws. They had their Name, *Capitularies*, becauſe divided into Chapters or Sections. In theſe *Capitularies* did the whole *French Juriſprudence* antiently conſiſt. In proceſs of Time, the Name was chang'd for that of *Ordonnances*.

Some diſtinguiſh three kinds of *Capitularies*, according to the Difference of their ſubject Matter: Thoſe on Eccleſiaſtical Affairs, are real Canons, extracted from Councils; thoſe on Secular Affairs, real Laws; thoſe relating to particular Perſons, or Occaſions, private Regulations.

CAPITULATION, a Treaty made with the Gariſon, or Inhabitants of a Place beſieg'd; whereby they ſurrender themſelves up, on certain Articles, and Conditions ſtipulated between 'em. See SIEGE.

CAPITULATION, is alſo one of the Treaties of the *Pacta Conventa*, or the Contract drawn up by the Electors, before the Election of an Emperor; which the Emperor is to ratify before his Coronation, and to obſerve inviolable in the Courſe of his Reign. Theſe *Capitulations* of the Empire, have only been in uſe ſince the Time of *Charles* V. and were occaſion'd, by the Jealouſy the *German* Princes entertain'd of the too great Power of the Emperor. *Frederic*, Duke of *Saxony*, ſirnam'd *the Wiſe*, paſſes for the Author of the Imperial *Capitulations*; he declining the Empire, which was offer'd him after the Death of *Maximilian*, and adviſing the Electors to chuſe *Charles* V. under ſuch Conditions as might ſecure the Liberty of the Empire. The *Leopoldin Capitulation* contains 47 Articles.

CAPITULUM, in Botany, the Head, or flowering Top of any Plant; being compos'd of many Leaves and Threads, or *Stamina*, cloſely connected in a globous, circular, or diſcous Figure; as the Flowers of Bluebottles, Scabious, Carduus, &c. See FLOWER.

CAPNOMANCY, or CAPNOMANTIA, a kind of Divination, us'd by the Antients in their Sacrifices: the Rule was, when the Smoak was thin, and light, and roſe ſtraight up, 'twas a good Omen; if the contrary, 'twas an ill one.

There was another Species of *Capnomancy*, conſiſting in the Obſervation of the Smoak riſing from Poppy and Jeſſamin Seed, caſt upon lighted Coals. The Word comes from the *Greek* καπνὸς, Smoak; and μαντια, Divination.

CAPONNIERE, in Fortification, a cover'd Lodgment, four or five Foot broad, encompaſs'd with a little Parapet about two Foot high, ſerving to ſupport ſeveral Planks laden with Earth. The *Caponniere* is large enough to maintain 15 or 20 Soldiers; and is uſually plac'd on the Extremity of the Counterſcarp, having little Embraſures frequently made therein.

CAPRA, *She-Goat*, a Conſtellation in the Northern Hemiſphere, conſiſting of three Stars, compriz'd between the 45th and 55th Degree of Latitude. The Poets ſay, 'tis *Amalthea*'s Goat, which ſuckled *Jupiter* in his Infancy. *Horace* making mention of it, calls it, *Infana ſydera Capræ*.

CAPRE, or CAPER, the Bud, or Bloſſom of a Shrub of the ſame Name, gather'd green, e'er it expand into a Flower; dry'd in a dark Place, till wither'd, then infus'd in Vinegar; to which, at laſt, Salt is added; after which, it is put up in Barrels to be us'd as a Pickle, chiefly in Sauces; and ſometimes alſo in Medicine, as being very Apertive, and entering ſeveral Compoſitions in Pharmacy. All the *Capers* throughout *Europe*, are brought from about *Toulon*, in *France*; except ſome ſmall ſalt *Capers* from *Majorca*, and a few flat ones from about *Lyons*. The Bark of the *Caper*-Tree, when dry'd, is preſcrib'd by the *French* Phyſicians in Oppilations of the Spleen.

CAPRÆ *Saltantes*, in Meteorology, a fiery Meteor, or Exhalation, which ſometimes appears in the Atmoſphere, and is not fir'd in a ſtraight Line, but with Inflexions, and windings in and out. See METEOR.

CAPREOLUS, in Botany, the Claſper, or Tendril, by which the Vines, and ſuch-like creeping Plants, faſten themſelves to thoſe things which are deſign'd to ſupport them. See CLASPER.

CAPREOLATÆ *Plantæ*, are ſuch Plants as turn, wind, and climb along the Surface of the Earth, by means of their *Capreoli*, or Tendrils; as Gourds, Melons, Cucumbers, &c. See CLASPERS.

CAPRICORN, in Aſtronomy, one of the Signs of the Zodiack, mark'd thus ♑. See SIGN.

The Antients accounted *Capricorn* the 10th Sign; and when the Sun arriv'd thereat, it made the Winter Solſtice, with regard to our Hemiſphere: But the Stars having advanc'd a whole Sign towards the Eaſt, *Capricorn* is now the 11th Sign; and 'tis at the Sun's Entry into Sagittary, that the Solſtice happens: tho the antient manner of ſpeaking is ſtill retain'd. See SOLSTICE, and PRECESSION. This Sign is repreſented on antient Monuments, Medals, &c. as having the Fore-part of a *Goat*, and the Hind-part of a *Fiſh*; which is the Form of an *Ægypan*: ſometimes, ſimply under the Form of a *Goat*.

The Stars in the Conſtellation *Capricorn*, in *Ptolomy*'s and *Tycho*'s Catalogues, are 28; Mr. *Flamſtead*, in the *Britannic Catalogue*, makes near double that Number, *viz.* 51. The Order, Names, Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow.

Stars in the Conſtellation CAPRICORN.

	Names and Situation of the Stars.	Signs.	Longitude. ° ′ ″	Latitude. ° ′ ″		Magn.
		♑	28 6 58	7 27 4	B	7
	In the Extrem. of the preced. Horn		28 10 28	7 13 18	B	6
			29 11 41	7 15 34	B	6
			27 26 1	2 3 23	A	6
	The preced. Star in the ſubſeq. Horn		29 27 19	7 1 31	B	4
5						
	The laſt of the contiguous Stars		29 32 21	6 58 6	B	3
	That under the Eye		28 21 44	0 29 29	B	6
	The middle Star in the ſubſeq. Horn	♒	0 6 56	6 35 52	B	6
	Moſt South. of 3 in the ſubſeq. Horn	♑	29 43 57	4 37 27	B	3
	Foremoſt of 3 in the Noſe	♒	0 23 55	0 56 6	B	6
10						
	North of theſe		0 51 9	1 14 17	B	6
	South of thoſe in the Noſe		0 54 10	0 26 9	B	5 6
			3 28 57	3 19 30	B	6
	North of two in the Neck		3 58 44	3 23 26	B	6
	More South		3 20 55	0 15 46	B	6
15						
	That under the upper Knee	♒	2 50 11	6 58 23	A	5
			3 50 59	3 22 34	A	6
	In the lower and bent Knee		3 37 5	8 55 5	A	6
			6 47 24	0 28 9	A	6 7
			7 34 16	1 51 10	A	6 7
20						
			8 17 2	0 29 38	A	6
	Preced. and Nor. of 3 in Mid. of Body		8 25 55	2 57 43	A	5
	Preced. of 2 in the Back		9 31 40	0 33 0	A	5
	That in the Shoulder		7 30 46	8 3 38	A	6
	South. in the middle of the Body		8 57 52	4 31 8	A	6
25						
	Second in the middle of the Body		9 24 57	3 36 46	A	6
	Subſequent		9 22 7	3 58 9	A	6
	Laſt of 3 in the middle of the Body		10 42 44	4 29 50	A	6
			12 10 39	0 43 40	B	6
			12 2 31	2 7 23	A	6
30						
			12 16 0	1 39 3	A	7
	Subſeq. of 2 in the Back		13 21 50	1 20 13	A	5
			12 33 35	5 17 26	A	6
	1ſt of contiguous ones under Belly		12 36 49	6 57 36	A	5
			13 8 8	5 50 27	A	6
35						
	Subſeq. of the ſame		13 15 20	6 31 45	A	6
			15 10 57	5 22 15	A	6
			15 8 37	5 31 19	A	6
	Preced. in South. Fin		15 52 52	4 56 56	A	4
	Preced. in Root of the Tail		17 27 42	2 31 18	A	4 3
40						
			15 42 16	8 53 38	A	6
			18 40 49	0 9 13	A	6
	Subſeq. in South. Fin		17 19 5	4 48 36	A	5
	Preced. in North Part of the Tail		18 53 46	0 37 44	A	6
	Subſequent		19 0 0	1 1 54	A	6
45						
	North. in Extrem. of the Tail		21 5 31	4 13 51	B	6
	Another, ſubſequent		21 19 31	3 56 38	B	6
	Middle in North. Part of the Tail		20 41 4	1 57 24	B	5
	Subſeq. in Root of the Tail		19 13 14	2 32 19	A	3
			20 36 58	1 38 24	B	6
50						
	Subſeq. in North. Part of the Tail	♒	21 29 12	0 39 10	A	5

Tropic of CAPRICORN, a leſſer Circle of the Sphere, parallel to the Equator; paſſing thro the Beginning of *Capricorn*. See TROPIC.

CAPRIOLE, in Horſemanſhip, the *Goat-leap*; is when an Horſe, at the full Height of his Leap, jerks or ſtrikes out with his hind Legs as near and even together, and as far out as he can ſtretch them; in which Action, he clacks, or makes a noiſe with them. The *Capriole* is the moſt difficult of all the high Airs: There are ſeveral kinds of *Caprioles*; as, a *right Capriole*, *back Capriole*, *ſide Capriole*, *broke Capriole*, *open Capriole*, &c. The Word comes from *Capreolus*.

CAPSQUARES, in Gunnery, are thoſe ſtrong Plates of Iron, which come over the Trunnions of a Gun, and keep her in the Carriage: They are faſtned by hinges to the Paizeplate, that it may lift up and down. They form a part of an Arch in the Middle, to receive a third Part of the Thickneſs of the Trunnions; for two thirds of them are let into the Carriage, and the other End is faſten'd by two Iron Wedges, which are call'd the Forelocks, and Keys.

CAPSTAN,

CAPSTAN, or CAPSTAND *of a Ship*, a large Cylinder, or Barrel, plac'd perpendicularly on the Deck of a Ship, and turn'd by four Levers, or Bars, which croſs it; and by means of a Cable, which winds round the Cylinder, ſerves to draw up vaſt Burdens, faſtned to the End of the Cable. By the *Capſtan* it is, that Veſſels are drawn aſhoar, and hoiſted up to be refitted; the heavieſt Goods are unloaded; Anchors weigh'd, Sails hoiſted, &c. There are two *Capſtans* in a Veſſel; the *Main* plac'd behind the Mainmaſt, ſtanding on the firſt Deck, and reaching four or five Feet above the ſecond: 'Tis alſo call'd *double Capſtan*, becauſe ſerving two Decks for drawing of Anchors; and becauſe its Force may be doubled by applying Hands on each Deck. It has Bars, Whelps, a Panel, &c. for turning and ſtopping it.

The *Jeer Capſtan*, or *little Capſtan*, ſtands on the ſecond Deck, between the Mainmaſt and the Mizzen: Its uſe is, chiefly, to heave upon the jeer Rope, or to heave upon the Viol, to hold off by when the Anchor is weighing; and other Occaſions, where a leſs Force is requir'd, than to weigh the Anchors, &c. The Terms belonging to the uſe of the *Capſtans*, are, *Come up Capſtan*; that is, ſlack the Cable which you heave by; in which Senſe alſo they ſay, *Launch out the Capſtan*: *Pawl the Capſtan*, is, ſtop it from going back.

The *French* call that an *Engliſh Capſtan*, where there are only half Bars us'd; and which, for that Reaſon, is only half perforated: This is thicker than the others. There is alſo a *flying Capſtan*, which may be mov'd from place to place.

CAPSULA, a Diminutive of the Latin *Capſa*, literally ſignifying a little Box, or Caſe; particularly a Bag, or Sachel, wherein Boys carry their Books, &c. to School: Whence *Capſarius*, or *Capſularius*, among the *Romans*, was a Servant who attended the Youth of Condition to the School or Academy, and carry'd their Bag, &c.

CAPSULA, among the Botaniſts, is that part of a Fruit wherein the Seed is contain'd; as in Pears, Apples, &c. which have a little Coat, in form of a Purſe, wherein the Kernels, or Pippins are incloſ'd. See FRUIT.

CAPSULATE *Plants*, *Capſulatæ Plantæ*, are ſuch as have a tetrapetalous regular Flower, conſiſting of four diſtinct Petala in each Flower, and which bear their Seeds in ſhort *Capſulæ*; by which they are diſtinguiſh'd from the *Siliquoſæ*, which have their Seed in long Caſes, or *Capſulæ ſeminales*; and all the other Branches of this Genus of Plants.

CAPSULÆ *Atrabilares*, in Anatomy, call'd alſo *Renes ſuccenturiati*, and *Glandulæ Renales*; are two Glands ſituate near the Reins, call'd *Atrabilares* from a black Liquor found in their Cavity; and *Succenturiati* and *Renales*, from their Poſition. See SUCCENTURIATI, BILARES, and RENALES.

They are about the bigneſs of a *Nux Vomica*; their Figures are ſomewhat various; in ſome round, in others triangular, ſquare, &c. The Membrane wherewith they are cover'd is very fine: Their Cavity is pretty large for their bulk. Their uſe is very obſcure; probably 'tis to ſecrete the black Humour found in their Cavity; which being afterwards diſcharg'd by their Duct into the Emulgent, mixes with the Blood; and ſerves, according to ſome, as a Ferment; according to others, only to dilute its Thickneſs: In a *Fœtus*, they are almoſt as big as the Kidneys. See BILE.

CAPSULA *Communis*, or *of the Porta*, is a Membrane ariſing from the *Peritonæum*, and incloſing the Trunk of the *Vena Porta*, after its Entrance into the Liver, as a Caſe, or Cover; dividing it ſelf into the ſame Number of Branches; and accompanying all, even its ſmalleſt Ramifications. See PORTA. The ſame *Capſula*, or Membrane, likewiſe incloſes the *Porus Bilarius*; whence it takes the Name of *Capſula Communis*. See PORUS BILARIUS.

CAPSULA *Cordis*, a Membrane inveſting the Heart; more uſually call'd the *Pericardium*. See PERICARDIUM.

CAPSULÆ *Seminales*, are the ſame with *Veſiculæ Seminales*. See VESICULÆ *Seminales*.

CAPSULA, in Chymiſtry, is an Earthen Veſſel, in form of a Pan; wherein things are frequently plac'd, that are to undergo very violent Operations of the Fire.

CAPTAIN, a Military Officer, whereof there are various Kinds and Degrees, diſtinguiſh'd by their various Commands: As,

CAPTAIN *of a Company*, or *Troop*; the Officer who commands a Company of Foot, or Troop of Horſe, under the Colonel. See COMPANY, and TROOP.

In the like Senſe, we ſay, *A Captain of Dragoons*, of *Grenadiers*, of *Marines*, of *Invalids*, &c. See DRAGOON, GRENADIER, &c.

In the Horſe and Foot Guards, the *Captains* are ſtyl'd *Colonels*; being uſually Perſons of the prime Nobility, and General Officers of the Army. See COLONEL, and GUARDS.

In the Colonel's Company of a Regiment, *i. e.* the firſt Company, or that whereof he himſelf is *Captain*, the commanding Officer is call'd *Captain Lieutenant*. See CAPTAIN *Lieutenant*.

Lieutenant CAPTAIN, is the *Captain*'s Second; or the Officer who commands the Company under the *Captain*, and in his abſence. See LIEUTENANT. In ſome Companies, &c. he is call'd *Captain Lieutenant*.

CAPTAIN *Lieutenant*, is he who commands a Troop, or Company, in the Name and Place of ſome other Perſon, who has the Commiſſion, with the Title, Honour, and Pay thereof; but is diſpens'd withal, on account of his Quality, from performing the Functions of his Poſt. Thus, the Colonel, being uſually likewiſe *Captain* of the firſt Company of his Regiment; that Company is commanded by his Deputy, under the Title of *Captain Lieutenant*. So alſo in *England*, *France*, &c. the King, Queen, Prince, Dauphine, &c. have uſually the Titles, Dignities, &c. of *Captains of the Guard*, *Gens d'Armes*, &c. the real Duty of which Offices, is perform'd by *Captains Lieutenant*.

Reformed CAPTAIN, is one, who, upon a Reduction of the Forces, has his Commiſſion and Company ſuppreſs'd; yet is continu'd *Captain*, either as Second to another, or without any Poſt or Command at all. See REFORMED.

CAPTAIN *General*, of an Army, is the General, or Commander in chief. See GENERAL.

CAPTAIN *of Militia*, is he who commands a Company of Train'd-Bands, or Light-Horſe. See MILITIA.

CAPTAIN, in the *Turkiſh* Empire, and Army. See CAPITAN.

CAPTAIN *of a Ship*, is a Sea Officer; whereof there are two Kinds; the one of a Ship of War, the other of a trading Veſſel.

CAPTAIN *of a Man of War*, is the commanding Officer of a Ship, Galley, Fireſhip, or the like: In ſuch Veſſels, the Pilot commands the Seamen, and the *Captain* the Soldiers, or Marines. See MARINES.

CAPTAIN *of a Merchant Ship*, is the Maſter thereof; or he who has the Command or Direction of the Ship, her Crew, Lading, &c. This Officer is more ordinarily call'd the *Maſter*; eſpecially in ordinary Voyages. See MASTER *of a Ship*.

On the *Mediterranean*, he is call'd the *Patron* or *Patroon*; and in great Voyages, as to the *Eaſt Indies*, *South Sea*, &c. the *Captain*.

The Proprietor of the Veſſel appoints the *Captain*, or *Maſter*; and the *Captain* is to form the Crew, chuſe and hire the Pilots, Mates, Seamen, &c. tho when the Proprietor and Maſter reſide on the ſame Spot, this is uſually done in Concert with the Proprietor. See SHIP.

CAPTION, in Law: When a Commiſſion is executed, and the Commiſſioners Names ſubſcrib'd to a Certificate, declaring when and where the Commiſſion was executed, this is call'd *Caption*. The *Caption* uſually commences with theſe Words, *Virtute iſtius commiſſionis nos*, &c. or, *Executio iſtius commiſſionis patet in quadam ſchedula annexata*, &c.

CAPTIVE, a Slave, or Perſon taken by the Enemy; particularly the Pyrates, and *Corſairs*. See SLAVE, PYRATE, &c.

CAPTURE, a Prize, or Prey; particularly that of a Ship taken at Sea: Thus we ſay, The French *Captures*, to the Number of 25, were brought into Port; ſee PRIZE. It is alſo an Arreſt, or Seizure of a Criminal, Debtor, &c. at Land. See SEIZURE, and ARREST.

CAPUCHINS, Religious of the Order of St. *Francis*, in its ſtricteſt Obſervance. See FRANCISCAN. The *Capuchins* are thus call'd, from *Capuce*, or *Capuchon*, a ſtuff Cap, or Cope, wherewith they cover their Head. They are clothed with Brown, or Gray; always bare-footed; are never to go in a Coach, nor ever ſhave the Beard. The *Capuchins* are a Reform made from the Order of *Minors*, commonly call'd *Cordeliers*, ſet on foot in the XVIth Century, by *Matthew Baſchi*, a religious Obſervant of the Monaſtery of *Monteſiaſerne*; who, being at *Rome*, was adverti's'd ſeveral times from Heaven, to practiſe the Rule of St. *Francis* to the Letter. Upon this, he made Application to Pope *Clement*, in 1525, who gave him Permiſſion to retire into a Solitude; and not only him, but as many others as wou'd embrace the ſtrict Obſervance: which ſome did, in effect. In 1528 they obtain'd the Pope's Bull. In 1529, the Order was brought into compleat form; *Matthew* was elected General, and the Chapter made Conſtitutions. In 1543, the Right of Preaching was taken from the *Capuchins* by the Pope: but in 1545, 'twas reſtor'd to them again with Honour. In 1578, there were already 17 General Chapters in the Order of *Capuchins*.

CAPUT, a *Latin* Term, literally ſignifying *Head*; retain'd in its primitive Form and Uſe in divers Arts: As,

CAPUT *Baroniæ*, the Head of the Barony; in our Cuſtoms, is the antient, or chief Seat or Caſtle of a Nobleman: which is not to be divided among the Daughters, in caſe there be no Son to inherit; but is to deſcend entire

to the Eldeſt Daughter, *cæteris filiabus aliunde ſatisfactis.* See BARONY.

CAPUT *Draconis*, or the *Dragon's Head*, in Aſtronomy, the Name of the Moon's aſcending Node. See DRAGON's-*Head*; ſee alſo NODE.

CAPUT *Gallinaginis*, or *Galli Gallinacei*, Cock's Head, is a kind of *Septum*, or ſpongeous Border, at the Extremities or Apertures of each of the *Veſiculæ Seminales*; ſerving to prevent the Seed coming from one ſide, from ruſhing upon, and ſo ſtopping the Diſcharge of the other. Some will have its uſe to be, to prevent the Impulſe of the Seed from dilating the Orifices of the *Veſiculæ*, and ſo oozing out, except when aſſiſted by the Compreſſion of the ſurrounding Parts; as in Copulation: But this, according to Dr. *Drake*, is rather the Office of a diſtinct Caruncle plac'd at each Orifice, and acting as a Valve. See VESICULÆ *Seminales*, SEED, and GENERATION.

CAPUT *Mortuum*, in Chymiſtry, the *Fæces* remaining of any Body, after all the volatile and humid Parts, as the Phlegm, Spirit, Salt, &c. have been extracted therefrom, by Force of Fire. What remains after Diſtillation, is only properly call'd *Fæces*. See FÆCES. E'er it be *Caput Mortuum*, it muſt likewiſe have paſs'd the Retort. See DISTILLATION, and RETORT.

The *Caput Mortuum*, call'd alſo *Terra damnata*, is found in form of a friable, porous Matter, without Taſte or Smell: 'Tis rank'd among the Chymical Elements; and ſuppos'd to conſtitute the dry, fix'd, earthy, and ſolid Part of all mix'd Bodies. As an Element, it is more commonly expreſs'd by the Name *Earth*. See EARTH.

'Tis what the Chymiſts call *a paſſive Element*, or *Principle*; ſerving as the Baſis or Support of the active ones. See PRINCIPLE.

The Term is ſometimes more immediately reſtrain'd to the Remains of Vitriol, after Diſtillation; otherwiſe call'd *Calcothar Vitrioli*. See CALCOTHAR.

The *Caput Mortuum* is never pure, but there is ſtill ſome active Principle remaining in it, and particularly a fix'd Salt. See SALT. Thus the *Calcothar Vitrioli*, expos'd to the Air, is re-converted into Vitriol. See VITRIOL; ſee alſo ELEMENT.

CAR, CARR, or CARRE, a kind of rolling Throne, us'd in Triumphs, and at the ſplendid Entries of Princes. See CHARIOT.

Plutarch relates, that *Camillus* having enter'd *Rome* in Triumph, mounted on a *Car* drawn by four white Horſes, it was look'd on as too haughty an Innovation. See TRIUMPH.

CAR, is alſo us'd for a kind of light open *Chariot*. *Pontanus*, L. III. *de Stellis*, obſerves, that *Erichthonius* was the firſt that harneſs'd Horſes, and join'd 'em in a *Car*, or Chariot. See CHARIOT.

The Word is from the antient *Gauliſh*, or *Celtic*, *Carr*; mention'd by *Cæſar*, in his Commentaries, under the Name *Carrus*.

The *Car*, on Medals, drawn either by Horſes, Lions, or Elephants, uſually ſignifies, either a *Triumph*, or an *Apotheoſis*: Sometimes a Proceſſion of the Images of the Gods, at a ſolemn Supplication; and ſometimes of thoſe of ſome illuſtrious Family at a Funeral. The *Car* cover'd, and drawn by Mules, only ſignifies a *Conſecration*, and the Honour done any one of having his Image carry'd at the Games of the *Circus*. See CONSECRATION, &c.

The *Car* us'd by the Ladies, was call'd *Pilentum*, *Carpentum*, and *Baſterna*. See BASTERNA.

CARABE, or KARABE, yellow Amber reduc'd to Pouder. See AMBER.

CARABINE, a Fire-Arm, or little Harquebuſs, with a Lock; antiently us'd in the Army, but now diſus'd, by reaſon of the Time loſt in cocking it. There are ſome of theſe *Carabines* ſtill in uſe, having the inſide of the Barrel furrow'd ſpirally, which carry the Ball to a very great diſtance. The *Carabine* was formerly the Arms of the Light Horſe, who were hence alſo call'd *Carabineers*: Theſe made ſeparate Companies, and ſometimes Regiments in an Army; ſerving to guard the Officers, to ſeize Poſts, and to do other Offices requiring Expedition. There are ſtill ſome of thoſe *Carabineers* in the *French* Horſe; two in each Company.

Gaja derives the Word from the Spaniſh *Cara-* and the Latin *binus*: Intimating the *Carabineers* to be People with two Faces, from their manner of Fighting; ſometimes advancing, and ſometimes retiring.

CARACOL, in the Manage, a Motion which the Cavalier makes half round; or a half turn from Left to Right; changing Hands; that his Enemy may be uncertain on which ſide he intends to attack: whether in Front, or Flank.

CARACOL, is alſo the half turn each Horſeman in an Army makes after his Diſcharge, to paſs from the Front of the Squadron to the Rear. The Word comes from the *Arabic*, and that from the *Hebrew*, *Carac*, *involvere*. But we have it immediately from the *Spaniſh*; where it ſignifies properly *a Snail*, and figuratively the Evolution deſcrib'd above.

CARACOL is ſometimes alſo us'd in Architecture, for a Staircaſe in a Helix, or ſpiral Form. See STAIRCASE.

CARACT, CARAT, or KARAT, is properly the Name of the Weight, which expreſſes the degree of Goodneſs, Title, Perfection, or Imperfection of Gold. See GOLD.

The Coiners fix the higheſt Purity and Perfection of Gold at 24 *Carats*; and the ſeveral Degrees are eſtimated from the Diviſions hereof, which are call'd *Grains*: But 'tis obſerv'd, that what care ſoever is taken in purifying Gold, to clear it from Droſs, it can never be brought to 24 *Carats*; but ſtill comes ſhort $\frac{1}{4}$ of a *Carat*, or a Grain: this Grain they call a *Sixteenth*; and this ſixteenth they ſubdivide into two *Eighths*; and each of thoſe eighths into two *Sixteenths*: On which Calculation, they ſay, Gold may be purify'd as far as the firſt Sixteenth of the ſecond Eighth, but no further. See GRAIN.

Gold of 22 *Carats*, is that which has 22 Parts of fine Gold, and two of Silver, or other Metal; or that which in refining loſes 2 Parts in 24 of its Weight. The Goldſmiths generally work on Gold of 22 *Carats*.

The *Carat Fine*, as above, is the 24th Part of the Goodneſs of a Piece of Gold; the *Carat Price*, is the 24th Part of the Value of a Piece of Gold: as, if the Piece be 384, the *Carat Price* is 16 Pounds. We alſo ſometimes ſay, the *Carat Weight*, which is the 24th Part of the Weight of the Piece, or 192 Grains.

Menage, from *Alciat*, derives the Word *Carat* from the *Greek* κεραιον, which was a kind of ſmall Weight: But *Savot*, with more probability, from χαραγμα, a Tribute-Penny, or ſmall Coin ſtruck for that purpoſe. Others derive it ſimply from the Latin *Character*.

CARACT is alſo the Weight us'd in weighing Diamonds and precious Stones; and conſiſts of four Grains. See DIAMOND, and GRAIN.

Thus, the Great *Mogol*'s Diamond is ſaid to weigh 279 *Caracts*. Theſe Grains are ſomewhat leſs heavy than thoſe us'd in Gold, &c. In this Senſe, the Word is ſuppos'd to be deriv'd from the *Greek* κερατιον, a Fruit which the *Latins* call *Siliqua*, and we *Carab-bean*; each of which may weigh about four Grains of Wheat: whence the Latin *Siliqua* has alſo been us'd for a Weight of four Grains.

CARAITES, a Sect among the antient *Jews*; whereof there are ſtill ſome ſubſiſting in *Poland*, *Ruſſia*, *Conſtantinople*, *Cairo*, and other Places of the *Levant*: Some call them *Carraini*; others *Carræi*, and *Caraitæ*.

Leon de Modena, a Rabbin of *Venice*, obſerves, that of all the Hereſies among that People, before the Deſtruction of the Temple, there is none now left but that of the *Carraini*; a Name deriv'd from *Micra*, which ſignifies the pure Text of the Bible; becauſe of their keeping to the *Pentateuch*, obſerving it to the Letter, and rejecting all Interpretation, Paraphraſe, and Conſtitution of the Rabbins. *Aben Eſra*, and ſome other Rabbins, treat the *Caraites* as Sadducees; but *Leon de Juda* calls them, more accurately, *Sadducees reform'd*; in regard they believe the Immortality of the Soul, Paradiſe, Hell, Reſurrection, &c. which the antient Sadducees deny'd. He adds, however, that they were doubtleſs originally real Sadducees, and ſprung from among them: But M. *Simon*, with more probability, ſuppoſes them to have riſen hence, That the more knowing among the *Jews*, oppoſing the Dreams and Reveries of the Rabbins, and uſing the pure Text of Scripture to refute their groundleſs Traditions, they had the Name *Carraim* given them; which ſignifies as much as the barbarous Latin, *Scriptuarii*, *i. e.* People attach'd to the Text of Scripture. The other *Jews* give them the odious Name *Sadducees*, from their Agreement with thoſe Sectaries on the Head of Traditions. See SADDUCEES.

Scaliger, *Voſſius*, and *Spanheim*, rank the *Caraites* among the *Sabeans*, *Magi*, *Manichees*, and *Muſſulmen*, but by miſtake: *Wolfgang*, *Fabricius*, &c. ſay, the Sadducees and *Eſſeni* were call'd *Caraites*, in oppoſition to the Phariſees: others take them for the Doctors of the Law, ſo often mention'd in the Goſpel: But theſe are all Conjectures. *Joſephus* and *Philo* make no mention of them; which ſhews 'em to be more modern than either of thoſe Authors. In all probability, this Sect was not form'd till after the Collection of the ſecond Part of the Talmud, or the *Gemara*; perhaps not till after the compiling of the *Miſchna* in the IIId Century. The *Caraites* themſelves, pretend to be the Remains of the ten Tribes led captive by *Salmanaſſar*. *Wolfius*, from the *Memoirs of Mardocheus*, a *Caraite*, refers their Origin to a Maſſacre among the *Jewiſh* Doctors, under *Alexander Jannæus*, their King, about 100 Years before Chriſt: For *Simeon*, Son of *Schetach*, and the Queen's Brother, making his Eſcape into *Egypt*, there forg'd his pretended Traditions; and at his Return to *Jeruſalem*, publiſh'd his Viſions; interſperſing the Law

after his own Fancy, and ſupporting his Novelties on the Notices which God, he ſaid, had communicated by the Mouth of *Moſes*, whoſe Depoſitory he was: He gain'd many Followers; and was oppos'd by others, who maintain'd, that all which God had reveal'd to *Moſes* was written. Hence the *Jews* became divided into two Sects, the *Caraites*, and *Traditionaries*: Among the firſt, *Juda*, Son of *Tabbai*, diſtinguiſh'd himſelf; among the latter, *Hillel*. *Wolfius* reckons not only the Sadducees, but alſo the Scribes, in the Number of *Caraites*. But the Addreſs of the Phariſees prevail'd againſt 'em all; and the Number of *Caraites* decreas'd: *Anan* indeed, in the VIIIth Century, retriev'd their Credit a little; and Rabbi *Schalomon* in the IXth. Matters went pretty well with them till the XIVth, but ſince that Time they have been on the declining hand.

The *Caraites* are but little known; their Works coming only into very few Hands, even among the greateſt *Hebraiſts*. *Buxtorf* never ſaw more than one; *Selden* two; M. *Trigland* ſays, he has recover'd enough to ſpeak of them with aſſurance. He aſſerts, that ſoon after the Prophets had ceas'd, the *Jews* became divided on the Subject of Works, and Supererogation: ſome maintaining their Neceſſity from Tradition; whilſt others, keeping cloſe to the written Law, ſet 'em aſide; and it was from theſe laſt that *Caraitiſm* commenc'd. He adds, again, that after the Return from the *Babyloniſh* Captivity, the Obſervation of the Law being to be re-eſtabliſh'd, there were ſeveral Practices found proper for that End; and theſe once introduc'd, were look'd upon as eſſential, and appointed by *Moſes*; which was the Origin of *Phariſaiſm*; as a contrary Party, continuing to keep cloſe to the Letter, founded *Caraitiſm*. See PHARISEES.

The modern *Caraites*, *Leon de Modena* obſerves, have their Synagogues, and Ceremonies; pretending to be the ſole proper *Jews*, or Obſervers of the Laws of *Moſes*; calling the reſt by the Term *Rabbanim*, or *Followers of the Rabbins*: Theſe hate the *Caraites* mortally; refuſing to ally, or even converſe with them, and treating them as *Mamzerim*, or Baſtards; becauſe of their rejecting the Conſtitutions of the Rabbins in Marriages, Repudiations, Purifications of Women, &c. This Averſion is ſo great, that if a *Caraite* would become a *Rabbiniſt*, he would never be receiv'd by the other *Jews*. See RABBINS.

The *Caraites*, however, don't abſolutely reject all kind of Traditions; but only ſuch as don't appear well grounded. *Selden*, who is very expreſs on this Point, in his *Uxor Hebraica*, obſerves, that beſides the mere Text, they have certain Interpretations, which they call *Hereditary*, and which are proper Traditions. Their Theology only ſeems to differ from that of the other *Jews*, in that it is purer, and clearer of Superſtition: They give no credit to the Explications of the *Cabbaliſts*, chimerical Allegories, nor to any Conſtitutions of the Talmud, but what are conformable to the Scripture, and may be drawn from it by juſt and neceſſary Conſequences: Of theſe we ſhall give three notable Inſtances.

The firſt relating to the *Mezouzot*, or Parchments which the *Jews* tie at all the Gates thro which they uſe to paſs. The ſecond regarding the *Thephillin* or *Philacteries*, mention'd in the New Teſtament: And the third, the Prohibition of eating Milk, with Fleſh. The two firſt, the *Jews* pretend, are formally ordain'd in *Deuteronomy*, where 'tis ſaid, "Thou ſhalt bind them as a Sign on thy Hands, "and they ſhall ſerve thee as Frontlets (Headſtalls) be-"tween thy Eyes; thou ſhalt write them on the Poſts of "thy Houſe." The *Caraite Aaron*, in his Comment on theſe Words, maintains, they are not to be taken literally, as the Rabbins do, but figuratively; as intimating, that the *Jews*, whether entering or going out, ſhould be always mindful of them. For the *Thephillin*, the *Caraites* rally the *Rabbiniſts* on their praying with their *Phylacteries*, or Thongs of Leather faſten'd to their Forehead; comparing them to bridled Aſſes. This Paſſage the *Caraites* interpret figuratively; and in their Interpretation agree with S. *Jerom*, who takes notice of the Deluſion of the *Phariſees*, "in writing the Decalogue on Parchment, rolling it up, "and tying it to their Forehead with Thongs, to have it "always before their Eyes." For the third Point, the Rabbins ſay, 'tis commanded in that Text, "Thou ſhalt "not ſeeth a Kid in his Mother's Milk;" but the *Caraites* get clear of it by explaining the Paſſage by another, "Thou ſhalt not take the Mother when with young," which is natural. Nor have the *Jews* any thing to object in behalf of their Interpretation, but its being that of their Doctors. Thus the *Caraites* exempt themſelves from an infinite Number of Ceremonies and Superſtitions, which the Rabbins have eſtabliſh'd among the other *Jews*. See TRADITION.

Yet, in many Things, they retain all the Superſtition of the Rabbins. *Schupart*, in his Treatiſe *de Secta Karræorum*, treating of their *Dogmata*, obſerves, that they are in all reſpects as preciſe and ceremonious as the moſt rigid Traditionary, in what relates to the Obſervation of the Sabbath, Paſſover, Feaſt of Atonement, of Tabernacles, &c. That they obſerve Prayers and Faſtings; and wear the *Zitzit*, or pieces of Fringe, on the Corners of their Garments. They hold, that all Sin is effac'd by Repentance; in which they differ from the Rabbins, who hold, that ſome are only effac'd by Death. As for Circumciſion, they don't believe it neceſſary, with the Traditionaries, that there be Blood ſhed: Add, that when a Child dies before it be eight Days old, the *Rabbiniſts* circumciſe it after 'tis dead, that it mayn't appear uncircumcis'd at the Reſurrection; whereas the *Caraites*, when they perceive the Child in danger, chuſe rather to circumciſe it e'er the eighth Day. In Matters of Divorce, the *Caraites* agree with the other *Jews*; and obſerve the ſame Rules and Reſtrictions in the killing and dreſſing of Beaſts; but differ from 'em in the Kinds of legal Impurities and Pollutions.

Peringer obſerves of the *Caraites* in *Lithuania*, that they are very different, both in Aſpect, Language, and Manners, from the *Rabbiniſts*, wherewith that Country abounds. Their Mother Tongue is the *Turkiſh*; and this they uſe in their Schools and Synagogues. In Viſage they reſemble the Mahometan *Tartars*. Their Synagogues are poſited North and South; and the Reaſon they give for it, is, that *Salmanaſſar* brought them from the Northward: So that, in Praying, to look to *Jeruſalem*, they muſt turn to the South. He adds, that they admit all the Books of the Old Teſtament; contrary to the Opinion of many of the Learned, who hold that they reject all but the *Pentateuch*.

Caleb, a *Caraite*, reduces the Difference between them and the *Rabbiniſts* to three Points: 1ſt, In that they deny the Oral Law to come from *Moſes*, and reject the *Cabbala*. 2d, In that they abhor the *Talmud*. 3d, In that they obſerve the Feaſts, as the Sabbaths, &c. much more rigorouſly than the Rabbins do. To this may be added, that they extend the Degrees of Affinity, wherein Marriage is prohibited, almoſt to Infinity. See CABALLA.

CARANNA, is a hard, brittle, reſinous Gum, brought from ſome Parts of the *Weſt Indies*, as *Carthagena* and *New Spain*; of an aromatick Flavour, and us'd in Medicine.

CARAVAN, or CARAVANNE, in the Eaſt, is a Troop, or Company of Travellers, Merchants, and Pilgrims, who for the greater Security march in a Body, thro the Deſarts, and other dangerous Places, infeſted with *Arabs* and Robbers. See CARAVANSERA.

There is a Chief, or *Aga*, who commands each *Caravan*, and has under him a Number of Janizaries, or other Forces, ſufficient for their Defence. The *Caravans* incamp every Night near Wells or Rivulets, known to the Guides; and obſerve a Diſcipline as regular as in War. They chiefly uſe Camels for their Vehicles, by reaſon of their enduring a world of fatigue, eating little, and paſſing three or four Days without drinking.

The Grand Signior gives one fourth Part of the Revenues of *Egypt*, to defray the Expence of the *Caravan* that goes yearly to *Mecca*, to viſit *Mahomet*'s Tomb: The Devotees, in this *Caravan*, are about 40000; accompany'd with Soldiers to protect them from the Pillage of the *Arabs*, and follow'd with eight or nine thouſand Camels, laden with all neceſſary Proviſions for ſo long a Paſſage acroſs Deſarts. Days Journeys are diſtinguiſh'd in the Eaſt, into Journeys of *Horſe-Caravans*, and *Caravans of Camels*: thoſe of Horſes are equal to two of Camels. There are ſeveral *Caravans* go yearly from *Aleppo*, *Cairo*, and other Places, to *Perſia*, *Mecca*, *Thebes*, &c.

There are alſo *Sea Caravans* eſtabliſh'd on the ſame Footing, and for the ſame Purpoſes: Such is the *Caravan of Veſſels*, from *Conſtantinople* to *Alexandria*.

The Word comes from the Arabic *Cairaran*, or *Cairaan*; and that from the Perſian *Kerran*, which ſignifies the ſame thing.

The Term *Caravan* is alſo us'd for the Voyages or Campaigns, which the Knights of *Malta* are oblig'd to make at Sea, againſt the *Turks* and *Corſairs*; in order to arrive at the Commandries and Dignities of the Order. They are thus call'd, becauſe the Knights have frequently ſeiz'd the *Caravan* going from *Alexandria* to *Conſtantinople*.

CARAVANSERA, a large publick Building, or Inn, deſtin'd to receive and lodge the *Caravans*: ſee CARAVAN.

Of theſe *Caravanſera's*, or, as *Chardin* calls 'em, *Caravanſerai*, there are a great Number throughout the Eaſt; erected out of the Charity and Magnificence of the Princes, &c. of the ſeveral Countries.

Thoſe of *Schira* and *Casbin*, in *Perſia*, are ſaid to have coſt 60000 Crowns: They are open to People of all Religions and Countries, without any Queſtions aſk'd, or any Money requir'd.

The *Caravanſerai* are uſually huge ſquare Buildings, with a ſpacious Court in the middle thereof. They are encompaſs'd with Galleries and Arches, under which runs a

kind of *Banquette*, or Elevation, ſome Feet high, where Travellers reſt themſelves, and make their Lodging as well as they can; their Baggage, and the Beaſts that carry 'em, being faſten'd at the Foot of the *Banquette*. Over the Gate, there are frequently a ſort of little Chambers; which the *Caravanſerakier* lets out, at a very dear rate, to ſuch as have a mind to be to themſelves.

Tho the *Caravanſera's* ſerve in lieu of Inns; yet there is this eſſential Difference between them and our Inns, that the Traveller finds nothing at all in the *Caravanſera*, neither for himſelf nor his Cattle; but muſt carry all his Proviſions and Neceſſaries with him. They are chiefly built in dry, barren, deſart Places; and are generally furniſh'd with Water from a great Diſtance, and at a vaſt Expence: There being no *Caravanſera* without its Well of Water. There are ſeveral of 'em in Cities; where they ſerve not only as Inns, but as Shops and Warehouſes. There are few Cities in the Eaſt without their *Caravanſerai*; eſpecially within the Dominions of *Turky*, *Perſia*, and the Great *Mogul*. Thoſe of *Iſpahan* and *Agra*, *Schiras* and *Casbin*, are diſtinguiſh'd for their Magnificence and Commodiouſneſs.

In *Turky*, none but the Grand Signior's Mother and Siſter, with the Viſiers and Baſhaws who have been in three Battles againſt the Chriſtians, are allow'd to build a *Caravanſera*. The Word comes from the Turkiſh *Karwan*, or *Kerwan*, *Caravan*; and *Sarai*, Houſe, Palace, Inn.

CARAVANSERAKIER, the Director, Steward, or Intendant of a *Caravanſera*. At *Iſpahan*, there are *Caravanſera's* in manner of Halls, or Exchanges, where Goods are laid up, and expos'd to view; for which the *Caravanſerakier* is accountable, in conſideration of a certain Fee. See CARAVANSERA.

CARAWAY, or CARWAY, a Medicinal Seed, produc'd from a Plant of the ſame Name, by Botaniſts call'd *Carvi Officinarum*, or *Cuminum Pratenſe*. See SEED.

The Seed or Grain of the *Carvi* or *Caraway*, is narrow, longiſh, furrow'd on the Back, and of a briſk aromatic Taſte. It is eſteem'd Stomachic, and Diuretic; diſpels Wind, ſtrengthens Digeſtion, &c. The *Engliſh* and *Germans* make great uſe of it; particularly in Biſkets, Comfits, and other Foods and Confections.

CARBUNCLE, in Medicine, a Malignant Tumor, ariſing ſometimes on one Part, and ſometimes another; accompany'd with a painful Heat, Mortification, Lividneſs, and at laſt a Blackneſs: It begins with one or more Puſtles, under which is form'd a putrid Ulcer; ſometimes with a Scab, without any Puſtle; the Ulcer being form'd under the Scab. Round the Tumor is a Kernel, very painful; ſometimes red, and ſometimes livid, or blackiſh. The *Carbuncle* is owing to a ſharp, cauſtic, malignant, ſaline Humor, which gnaws and corrupts the Part whereon it is diſcharg'd.

The *Greeks* call it *Anthrax*, the French *Charbon*, Coal, from the Reſemblance of its Scab to a Coal. It is ſometimes peſtilential, and ſometimes not. When it ariſes without Puſtles, it is properly call'd *Pruna*; when with, *Ignis Perſicus*.

CARBUNCLE, in Natural Hiſtory, a fabulous Kind of precious Stone, whereof *Pliny* and the Antients relate Wonders. The *Carbuncle*, in reality, is only a large *Ruby*, of a deep red Colour: the Term being never apply'd, but when the Stone exceeds 20 Carats Weight. See RUBY.

The Antients, and moſt of the Moderns after them, have all along ſuppos'd the *Carbuncle* to be taken from the Dragon's Head: And we read of many a Cavalier, who went to combat with Dragons, on purpoſe to gain this invaluable Jewel. *Vartoman* aſſures us, that the King of *Pegu* us'd no other Light in the Night time, but that of his Carbuncle, which caſt a blaze like that of the Sun.

The Name is form'd of the Latin *Carbunculus*, q. d. a burning Coal: For which Reaſon the *Greeks* call it ἀνθραξ, Coal. *Pliny*, treating of the *Carbuncle*, Lib. XXXVII. cap. 7. diſtinguiſhes twelve Sorts thereof.



CARBUNCLE, in Heraldry, a Charge, or Bearing, conſiſting of eight Radii, or Spokes; four whereof make a common Croſs, and the other four a Salteer; as in the adjoining Figure. Some call theſe Radii *Battons*, or *Staves*; becauſe round, and enrich'd with Buttons, or pearl'd, like Pilgrims Staves; and frequently tipp'd, or terminated with Flower-de-Luces. Others blazon 'em, Royal Scepters, plac'd in Salteer, Pale and Feſſe.

CARBUNCULATION, is the blaſting of the new-ſprouted Buds of Trees or Plants, either by exceſſive Heat, or exceſſive Cold. See BLIGHT.

CARCASE, or CARCASS, the Corpſe, or Body of a dead Animal, whoſe Fleſh is, moſt of it, cut off, conſum'd, or dry'd. See SKELETON.

Thus, we ſay, The *Carcaſſes* of the Soldiers, Horſes, &c. were ſeen long afterwards on the Field of Battel.——The *Carcaſs* of a Fowl, Capon, Partridge, Leveret, Rabbit, &c. is what remains thereof, after the four Members, or Limbs, have been cut off, *viz.* the Legs and Wings.

CARCASE, in Architecture, is the Shell, or Ribbs of a Houſe; containing the Partitions, Floors, Rafters, &c. made by the Carpenter, &c. See HOUSE, BUILDING, and TIMBER. The *Carcaſe* is otherwiſe call'd the *Framing*, ſee FRAMING.

CARCASS, or CARCUS, in War, a kind of *Bomb*, uſually oblong, or oval, rarely circular; conſiſting of a Shell, or Caſe, ſometimes of Iron, with Holes; more commonly of a coarſe ſtrong Stuff, pitch'd over, and girt with Iron Hoops; fill'd with combuſtible Matters, as Hand Granades, Ends of Muſkets, loaden Piſtols, and Preparations of Gunpouder, &c. Its uſe is to be thrown out of a Mortar, to ſet Houſes on Fire, and do other Execution. See BOMB, and MORTAR.

For the Compoſition of a Carcaſs, to burn, *Wolfius* preſcribes ten Parts of Gunpouder pounded; two of Nitre; one of Sulphur, and one of Colophony: Or ſix of Gunpouder; four of Nitre; four of Sulphur; one of beaten Glaſs; ½ one of Antimony; ½ one of Camphor; one of Sal Armoniac; and ¼ of common Salt. For the Shell, or Caſe, he takes two Iron Rings, ſome chuſe Plates; fitting one at one Extreme, near the Aperture at which the *Carcaſs* is to be fir'd, and the other at the other: others make the Aperture in one of the Plates. Theſe he braces with Cords drawn lengthwiſe; and acroſs theſe, at right Angles, laces others; making a Knot in each Interſection: Between the Folds of the Cords, he makes Holes, and into theſe fits Copper Tubes, filling 'em half full of Pouder and leaden Bullets, ramming the whole with Tow, &c. The Shell thus prepar'd, he immerges it, the Aperture firſt ſtopt, in a liquid Matter; conſiſting of four Parts of melted Pitch, 20 of Colophony, one of Oil of Turpentine, and as much ground Gunpouder as will reduce it to the Conſiſtence of a Paſt. After Immerſion, 'tis to be cover'd over with Tow, and immerg'd afreſh, till it become of the Bigneſs proper for the Mortar.

It has the Name *Carcaſs*, becauſe the Circles which paſs from one Ring, or Plate, to the other, ſeem to repreſent the Ribs of a human *Carcaſs*.

CARCINOMA, in Medicine, a Tumor, more uſually call'd a *Cancer*. See CANCER.

The Word comes from καρκινος, *Cancer*, and νεμω, *depaſco*, to feed upon.

CARCUSS, in War, the ſame as *Carcaſs*; ſee CARCASS.

CARDAMOMUM, or CARDAMUMS, a Medicinal Seed, of the Aromatic kind, contain'd in *Capſulæ*, or Pods, brought from the *Eaſt Indies*.

This Seed is diſtinguiſh'd into three Kinds, according to the ſeveral Sizes of the Pods; *viz.* great, middle, and ſmall: but the Taſte, Smell, Colour, and Form of the Grain, is the ſame in all; being of a purple Colour, angular, of a ſharp biting Taſte, and a ſtrong penetrating Smell. The firſt kind is alſo call'd *Grains of Paradiſe*; but the laſt excells the reſt, both in Smell, Taſte, and Virtue: 'Tis this that enters the Compoſition of Venice Treacle. The *Cardamums* do warm, and deterge; they ſtrengthen the nobler Parts, diſſipate Wind, and help Digeſtion; and are us'd in Diſeaſes of the Brain, Stomach, and Womb.

The Plants of the *Cardamum* Family, afford ſomething very remarkable, as to the manner of their Propagation: When ripe, their Pods fly open, and dart out their Seed upon a ſlight touch of the Hand. Nay, what is more, Mr. *Ray* tells us, the *Cardamum Impatiens* breaks its Pod, and emits its Seed not only if touch'd, but if only the Hand be ſtretch'd out, as if about to touch it: and *Johnſton* and *Gerrard* affirm it to be true. See SEED, and SEMINATION.

CARDIAC, in Medicine, vulgarly call'd *Cordial*, a Remedy antiently ſuppos'd to exert it ſelf immediately in comforting and ſtrengthning the Heart: but the modern Phyſicians rather ſuppoſe it to produce its Effect, by putting the Blood into a gentle Fermentation, whereby the Springs, before decay'd, are repair'd and invigorated; and the Tone and Elaſticity of the Fibres of the Veſſels reſtor'd: the Conſequence of which, is a more eaſy and briſk Circulation. See CORDIAL, STRENGTHNER, &c.

The Word comes from the *Greek* καρδια, *Cor*; the Heart being reputed the immediate Seat of its Operation.

CARDIACUS *Plexus*, in Anatomy, a *Plexus*, or piece of Network, form'd of a Ramification of the *Par vagum*, or eighth Pair of Nerves. See PLEXUS *Cardiacus*, NERVE, and PAR *vagum*.

CARDIALGIA, CARDIALGY, or CARDIACUS *Dolor*, in Medicine, a violent Pain, felt towards the upper Orifice of the Stomach, accompany'd with a Palpitation of the Heart, Fainting, and a Propenſion to Vomit; better known by the Name of *Cardiac Paſſion*, or *Heart-burn*. See HEART.

'Tis

'Tis occaſion'd by ſharp Humours, which prick and vellicate that Orifice, and the adjoining Parts. The Word comes from the *Greek* καρδια, *Heart*, and αλγ, *Pain*.

Blanchard makes the Diſeaſe conſiſt in a Gnawing, and Contraction of the *Par vagum*, and the intercoſtal Nerves implanted in the Stomach; proceeding from a pungent vellicating Matter in the Stomach it ſelf: which, by reaſon of the Conſent of Parts, affects the Heart; ſtraitning and contracting it ſo, as ſometimes to occaſion ſwooning. See CONSENT *of Parts*.

CARDINAL, a Term ſerving to expreſs the Relation, or Quality of Prime, Principal, moſt Conſiderable; or, the Foundation of any thing. Thus, we ſay, the four *Cardinal* Virtues, *viz.* Prudence, Juſtice, Fortitude, and Temperance; which are the Baſis of all others. So, the *Cardinal* Points, *Cardinal* Winds, *&c.*

The Word is form'd of the Latin *Cardo*, a Hinge; it being on theſe Fundamental Points, that all the reſt of the ſame kind ſeem to turn.

CARDINAL *Points*, in Coſmography, are the four Interſections of the Horizon, with the Meridian, and the prime vertical Circle. See POINT.

Of theſe, two, *viz.* the Interſection of the Horizon and Meridian, are called *North* and *South*, with regard to the Poles they are directed to. See NORTH, and SOUTH.

To determine the Places of thoſe Points, ſee MERIDIAN *Line*. The other two, *viz.* the Interſection of the Horizon and firſt Vertical, are call'd *Eaſt* and *Weſt*. See EAST, and WEST.

The *Cardinal Points*, therefore, coincide with the four *Cardinal* Regions of the Heavens; and are 90° diſtant from each other. The intermediate Points are call'd *Collateral Points*; ſee COLLATERAL *Points*.

CARDINAL *Points of the Heaven*, or, *of a Nativity*, are the Riſing and Setting of the Sun; the Zenith and Nadir. See RISING, SETTING, ZENITH, and NADIR.

CARDINAL *Winds*, are thoſe that blow from the *Cardinal* Points. See WIND.

CARDINAL *Numbers*, in Grammar, are the Numbers one, two, three, *&c.* which are indeclinable; in oppoſition to the *Ordinal Numbers*, ſecond, third, fourth, *&c.* See NUMBER.

CARDINAL, is particularly us'd for an Eccleſiaſtick Prince, or one who has a Voice, both active and paſſive, in the *Romiſh* Conclave, at the Election of a Pope. See CONCLAVE.

The *Cardinals* compoſe the Pope's Council, or Senate: In the *Vatican* is a Conſtitution of Pope *John*, which regulates the Rights and Titles of the *Cardinals*; and which declares, that as the Pope repreſents *Moſes*, ſo the *Cardinals* repreſent the 70 Diſciples, who, under the Pontifical Authority, decide private and particular Differences.

Cardinals, in their firſt Inſtitution, were only the principal Prieſts, or Incumbents of the Pariſhes of *Rome*. In the primitive Church, the chief Prieſt of a Pariſh, who immediately follow'd the Biſhop, was call'd *Presbyter Cardinalis*; to diſtinguiſh him from the other petty Prieſts, who had no Church, nor Preferment: The Term was firſt apply'd to them in the Year 150; others ſay, under Pope *Silveſter*, in the Year 300. Theſe *Cardinal* Prieſts were alone allow'd to baptize, and adminiſter the Euchariſt. When the *Cardinal* Prieſts became Biſhops, their *Cardinalate* became vacant; they being then ſuppos'd to be rais'd to a higher Dignity. Under Pope *Gregory*, *Cardinal* Prieſts, and *Cardinal* Deacons, were only ſuch Prieſts or Deacons, as had a Church or Chapel under their Cure: And this was the original uſe of the Word. *Leo* IV. in the Council of *Rome* held in 853, calls them *Presbyteros ſui Cardinis*; and their Churches, *Parochias Cardinales*.

The *Cardinals* continu'd on this footing till the XIth Century: But as the Grandeur and State of his Holineſs became exceedingly augmented, he would have his Council of *Cardinals* make a better figure than the antient Prieſts had done. 'Tis true, they ſtill preſerv'd their antient Title; but the Thing expreſs'd by it was no more. 'Twas a good while, however, e'er they had the Precedence over Biſhops, or got the Election of the Pope into their Hands: but when they were once poſſeſs'd of thoſe Privileges, they ſoon had the red Hat and Purple; and growing ſtill in Authority, became at length ſuperior to the Biſhops, by the ſole Quality of being *Cardinals*.

Du Cange obſerves, that originally there were three Kinds of Churches: The genuine Churches were properly call'd *Pariſhes*; the ſecond *Deaconries*, which were Chapels join'd to Hoſpitals, and ſerv'd by Deacons; the third were ſimple *Oratories*, where particular Maſſes were held, and were diſcharg'd by local and reſident Chaplains. He adds, that to diſtinguiſh the Principal, or Pariſh Churches from the Chapels, and Oratories, the Name *Cardinales* was given them. Accordingly, Pariſh-Churches gave Titles to *Cardinal* Prieſts; and ſome Chapels alſo, at length, gave the Title of *Cardinal Deacons*. Others obſerve, that the Term *Cardinal* was given not only to Prieſts, but alſo to Biſhops and Deacons, who were attach'd to certain Churches; to diſtinguiſh 'em from thoſe who only ſerv'd 'em *en paſſant*, and by Commiſſion. Titulary Churches, or Benefices, were a kind of Pariſhes, *i. e.* of Churches aſſign'd each to a *Cardinal* Prieſt; with ſome ſtated Diſtrict depending on it, and a Font for adminiſtring of Baptiſm, in Caſes where the Biſhop himſelf could not adminiſter it. Theſe *Cardinals* were ſubordinate to the Biſhops; and accordingly, in Councils, particularly that held at *Rome* in 868, ſubſcrib'd after them. It was not, however, only at *Rome*, that Prieſts bore this Name; for we find there were *Cardinal* Prieſts in *France*: Thus, the Curate of the Pariſh of St. *John de Vignes*, is call'd in old Charters the *Cardinal* Prieſt of that Pariſh. The Title of *Cardinal* is alſo given to ſome Biſhops, *quatenus* Biſhops; *e. gr.* to thoſe of *Mentz* and *Milan*: The Archbiſhop of *Bourges* is alſo, in antient Writings, call'd *Cardinal*; and the Church of *Bourges* a *Cardinal* Church. The Abbot of *Vendome* calls himſelf *Cardinalis Natus*.

The *Cardinals* are divided into three Claſſes, or Orders; containing 6 Biſhops, 50 Prieſts, and 14 Deacons; making, in all, 70: which conſtitute what they call the *Sacred College*. See COLLEGE. The *Cardinal Biſhops*, who are, as it were, the Pope's Vicars, bear the Titles of the Biſhopricks affected to 'em; the reſt take ſuch Titles as are aſſign'd 'em: The Number of *Cardinal* Biſhops has been fix'd; but that of *Cardinal* Prieſts and Deacons, and conſequently the Sacred College it ſelf, is always fluctuating. Till the Yeat 1125, the College only conſiſted of 52, or 53: The Council of *Conſtance* reduc'd them to 24; but *Sixtus* IV. without any regard to that Reſtriction, rais'd them again to 53, and *Leo* to 65. Thus, as the Number of *Cardinal* Prieſts was antiently fix'd to 28, new Titles were to be eſtabliſh'd, in proportion as new *Cardinals* were created. For the *Cardinal Deacons*, they were originally no more than ſeven, for the 14 Quarters of *Rome*; but they were afterwards increas'd to 18, and again diminiſh'd.

Some ſay, the *Cardinals* were ſo call'd from the Latin *Incardinatio*, the Adoption any Church made of a Prieſt of a foreign Church, driven thence by Misfortune; and add, that the uſe of the Word commenc'd at *Rome* and *Ravenna*; the Revenues of the Churches of which Cities being very great, they became the common Refuge of the unhappy Prieſts of all other Churches. According to *Onuphrius*, it was Pope *Pius* IV. who firſt enacted, in 1562, that the Pope ſhould be choſen only by the Senate of *Cardinals*: whereas, till that Time, the Election was by all the Clergy of *Rome*. Some ſay, the Election of the Pope reſted in the *Cardinals*, excluſive of the Clergy, in the Time of *Alexander* III. in 1160. Others go higher ſtill, and ſay, that *Nicholas* II. having been elected at *Sienna*, in 1058, by the *Cardinals* alone, occaſion'd the Right of Election to be taken from the Clergy, and People of *Rome*; only leaving 'em that of confirming him by their Conſent; which was at length, however, taken from them. *P. Papebroch* conjectures, that it was *Honorius* IV. who firſt introduc'd Biſhops into the Sacred College; by admitting the Biſhops Suffragans of the Pope, to whom, of right, it belong'd to name him; and of theſe conſtituting the firſt Claſs of *Cardinals*.

The *Cardinals* began to wear the red Hat at the Council of *Lyons*, in 1243. The Decree of Pope *Urban* VII. whereby 'tis appointed that the *Cardinals* be addreſs'd under the Title of *Eminence*, is of the Year 1630: till then they were call'd *Illuſtriſſimi*. See EMINENCE.

The Term *Cardinal* has alſo been apply'd to Secular Officers: thus, the Prime Miniſters in the Court of the Emperor *Theodoſius*, are call'd *Cardinales*. And *Caſſiodorus*, L. VII. *Formul.* makes mention of the *Cardinal Prince* of the City of *Rome*. And in the Liſt of Officers of the Duke of *Bretagne*, in 1447, we meet with one *Raoul de Thorel*, *Cardinal* of *Quillart*, Chancellor, and Servant of the Vicount *de Rohan*: which ſhews it to have been an inferior Quality.

CARDING, in the Manufacturies, a Preparation of Wool, Cotton, Hair or Line, by paſſing it between the Iron Points, or Teeth, of two Inſtruments, call'd *Cards*, to comb, diſintangle, and range the Hairs or Fibres thereof; and to diſpoſe it for ſpinning, *&c.* See SPINNING, and WOOL.

Before the Wool be *carded*, 'tis oil'd, or greas'd with Oil; whereof, one fourth of the Weight of the Wool is requir'd, for Wool deſtin'd for the Woof of Stuffs; and one eighth for that of the Warp. See CLOTH, WOOF, WARP, *&c.*

CARDO, in Anatomy, the ſecond Vertebra of the Neck; ſo call'd becauſe the Head turns upon it. See EPISTROPHEUS, and VERTEBRA.

CARDS, or *Playing* CARDS, are little Pieces of fine thin Paſtboard, whereon are printed divers Points and Figures; a certain Number, or Aſſemblage of which, ſerve for the Performance of divers Games; as *Baſſet*, *Ombre*, *Picquet*, *Whisk*, &c.

The Method of making playing *Cards*, ſeems to have given the firſt Hint to the Invention of Printing; as appears from the firſt Specimens of Printing at *Haerlem*, and thoſe in the *Bodleian* Library, &c. See PRINTING; ſee alſo PASTBOARD.

The cutting of the Moulds, or Blocks, for theſe *Cards*, is preciſely the ſame as that us'd for the firſt Books; *viz.* a Sheet of wet or moiſt Paper is laid on the Form or Block, which is firſt lightly bruſh'd over with Ink, made of Lampblack mix'd with Starch and Water; and then rubb'd off with a round Liſt, in the Hand. The Court-*Cards* they colour by help of ſeveral Patterns, call'd *Stanefiles*; conſiſting of Papers cut thro with a Penknife; within the Apertures, or Inciſions of which, the ſeveral Colours, as red, &c. are ſeverally apply'd; (for at the firſt Printing, the *Card* has only a mere Out-line.) Theſe Patterns are painted with Oil Colours, to keep them from wearing out by the Bruſhes: Being laid on the Paſtboard, they ſlide a Bruſh full of Colour looſe over the Pattern; which leaving the Colour within the Apertures, forms the Face or Figure of the *Card*. This, very probably, was the way of their firſt Printing at *Haerlem*; as might have been diſcover'd long ago, if it had been conſider'd, that the great Letters in our old Manuſcripts of 900 Years ago, are apparently done by the Illuminers, after this Method of *Card-making*.

CARDS, in Commerce, and the Manufactures; ſee CARDING.

CARDUUS, in Natural Hiſtory and Botany, a Name common to divers Species of Plants, in *Engliſh* call'd *Thiſtles*. See THISTLE.

The Plants of this Claſs moſt in uſe, are the *Carduus Benedictus*, and *Carduus Fullonum*.

CARDUUS *Benedictus*, is a Medicinal Plant, of the Thiſtle kind, chiefly us'd in Infuſion, as a gentle Emetic in Fevers, and certain Nauſeas. Antiently it was much in vogue, as a Cardiac, Sudorific, and Alexipharmic; and in thoſe Qualities, was preſcrib'd in Stomachic Caſes: but it is now ſucceeded by others, leſs nauſeous, and more effectual; tho ſtill retain'd in ſome of the officinal Compoſitions, with thoſe Intentions. Some diſtil a Water from it, which they uſe in cordial and ſudorific Potions. Its Salt has much the ſame Virtues.

CARDUUS *Fullonum*, is alſo call'd the *Fuller's Weed*, or *Teazle*. See TEAZLE.

CAREENING, a Term, in the Sea Language, us'd for the laying a Veſſel on one ſide, to caulk, ſtop up Leeks, or refit her. The Word is form'd of the Latin *Carina*, the Bulk or Body of a Ship.

A Ship is ſaid to be brought to a *Careen*, when the greateſt Part of her Lading, &c. being taken out, and another Veſſel lower than her ſelf laid by her ſide, ſhe is haled down to it as low as occaſion requires, *v. g.* a fourth or fifth Strake; and there kept, by the Weight of Ballaſt, Ordnance, &c. as well as by Ropes, leſt it ſhould ſtrain her Maſts too much. This is done with deſign to trim her Sides, or Bottom, to caulk her Seams, or to mend any Fault ſhe has under the Water: Hence, if a Ship lie on one Side in ſailing, ſhe is ſaid to *ſail on the Careen*. Ships of War are generally *careen'd* every three Years.

The *Half Careen*, is when they can only *careen* half the Ship; not being able to reach ſo low as the bottom of the Keel.

CARET, in Grammar, a Character of this Form, (∧) denoting that there is ſomething inſerted, or interlin'd, which ſhould regularly have come in where the Character is plac'd. See CHARACTER.

CARGO, the Lading or Freight of a Ship: See FREIGHT, and LADING.

The *Cargo* of this Veſſel is of ſuch or ſuch a Commodity. This is the proper Seaſon for a *Cargo* of Codfiſh, of Wines, &c.

Cargo is ſometimes alſo us'd for an Invoice of the Goods wherewith a Ship is laden. See INVOICE.

CARIATIDES, or CARIATES, in Architecture; ſee CARYATIDES.

CARICOUS *Tumor*, is a Swelling reſembling the Figure of a Fig; ſuch, frequently, are the *Piles*. See FICUS, and HEMORRHOIDS.

The Word comes from *Carica*, a Fig; or from *Caria*, a Country where they are frequent, or from whence they are ſometimes ſaid to be brought.

CARIES, in Chirurgery, &c. a kind of Rottenneſs, peculiar to a Bone; ariſing, either from a conſtant Afflux of vicious Humours, or from their Acrimony; or from a Bruiſe, Compound Fracture, Luxation, Venereal Diſorders, corroſive Medicines, being ſtripp'd, or laid bare of their Fleſh, and long expos'd to the Air, &c. 'Tis a common Obſervation, that nothing is more difficult to cure than an Ulcer, when the adjacent Bone is become *carious*. See ULCER.

The Word in the original *Latin*, ſignifies *Rottenneſs*.

The uſual Medicines in a *Caries*, are Tinctures of Euphorbium, Myrrh, and Aloes; or Pouders of the ſame, with the Addition of Iris, Birthwort of either kind, Gentian, &c. and particularly the Pouder of Diapente. After uſing the Tinctures, the Pouders are apply'd on Lint, in form of a Pledget. An Actual Cautery, apply'd to the *carious* Part through a Canula, &c. is frequently found ſucceſsful. See CAUTERY.

Anatomiſts, in diſſecting of Bodies, ſometimes find *carious* Bones; particularly thoſe of the Jaws, Legs, &c. where nothing of that Kind was ſuſpected during the Perſon's Life-time; nor any Diſorder felt therefrom: Whence Mr. *Cheſelden* conjectures, that the Cure of a *carious* Bone might be directly attempted, without waiting, as our Chirurgeons uſually do, for an *Exfoliation*.

CARINA, a *Latin* Term, properly ſignifying the *Keel* of a Ship; or the long piece of Timber running along the Bottom of the Ship, from Head to Stern; upon which the whole Structure is built, or fram'd. See KEEL.

CARINA, is alſo frequently us'd for the whole Capacity or Bulk of a Ship; containing the *Hull*, or all the Space below the Deck. See HULL. Hence, the Word is alſo us'd, by a Figure, for the whole Ship. See SHIP.

CARINA, among Anatomiſts, is us'd for the firſt Rudiments, or Embryo of a Chick, when in the Shell; ſee EMBRYO.

The *Carina* conſiſts of the entire *Vertebræ*, as they appear after ten or twelve Days Incubation. See EGG.

'Tis thus call'd, becauſe crooked, in form of the *Keel* of a Ship. See GENERATION. Botaniſts, for the ſame Reaſon, uſe the Word *Carina*, to expreſs the lower *Petalum* of a papillinaceous Flower. The Leaves alſo of the *Aſphadelus*, they ſay, are *carinated*.

CARINA, is alſo us'd in the antient Architecture. The *Romans* gave the Name *Carina* to all Buildings in form of a *Ship*; as we ſtill call *Nave*, from *Navis* Ship, the middle or principal Vault of our *Gothic* Churches; becauſe it has that Figure.

CARINÆ, were alſo Weepers; or Women hir'd, among the antient *Romans*, to weep at Funerals: They were thus call'd from *Caria*, the Country whence moſt of 'em came. See FUNERAL.

CARIPI, a kind of Horſe-Guards among the *Turks*. The *Caripi*, to the Number of about 1000, are not Slaves, nor bred up in Seraglios or Seminaries, like the reſt; but are generally Moors, or renegado Chriſtians, who having follow'd Adventures, and being poor, and their Fortune to ſeek, by their Dexterity and Courage have arriv'd at the Rank of Horſe Guards to the Grand Signior. They march with the *Uluſagi* on the Left hand, behind him; their pay 12 Aſpers *per* Day.

The Word *Caripi* ſignifies *Poor*, and *Stranger*.

CARISTIA, or rather CHARISTIA, a kind of Feaſt, among the old *Romans*, held on the 19th of *February*, in honour of the Goddeſs *Concord*. The *Cariſtia* were inſtituted to re-eſtabliſh Peace and Amity, in Families embroil'd, or at variance in themſelves. It conſiſted in a great Entertainment made in each Family, to which no Strangers were admitted, but only Relations and Kindred. The Joy and Freedom inſpir'd by the Repaſt, was look'd upon as a proper means to reunite divided Minds; to which the good Offices of ſo many Friends wou'd greatly contribute. The Word comes from the *Greek* χαρις, Grace, Union, Peace. This Feaſt was alſo called *Dies Caræ Cognationis*. *Vigenere* calls it the *Good Cheer*.

CARLINE, or CAROLINE, a Plant, of the Thiſtle kind, ſaid to have been diſcover'd by an Angel to *Charlemaign*, to cure his Army of the Plague: whence its Denomination. Its Root is of ſervice as a Diuretic and Sudorific, in all peſtilential Diſorders.

CARLINGS, in a Ship, two pieces of Timber lying fore and aft, along from one Beam to another, directly over the Keel; ſerving as a Foundation for the whole Body of a Ship: on theſe the Ledges reſt, whereon the Planks of the Deck, and other Matters of Carpentry are made faſt. The *Carlings* have their Ends let into the Beams call'd *Culvertail*. The *great Carlings*, is that whereon the Mainmaſt ſtands: we alſo ſay, *Carling of the Capſtan*, *Botts*, &c.

CARLING *Knees*, are Timbers going athwart the Ship, from the Sides to the Hatch-way, ſerving to ſuſtain the Deck on both Sides.

CARMELITES, an Order of Religious, making one of the four Orders of *Mendicants*, or begging Friars; and taking both its Name, and Origin from *Carmel*, a Mountain of *Syria*, formerly inhabited by the Prophets *Elias* and *Eliſha*, and by the Children of the Prophets; from whom this Order pretends to deſcend in an uninterrupted Succeſſion. The manner in which they make out their Antiquity, has ſomething in it too ridiculous to be rehears'd. Some among 'em pretend they are Nephews to J. C. Others go further, and make *Pythagoras* a *Carmelite*, and the antient *Druids* regular Branches of their Order.

Phocas, a *Greek* Monk, ſpeaks the moſt reaſonably; he ſays, that in his Time, *viz.* in 1185, *Elias*'s Cave was ſtill extant on the Mountain; near which were the Remains of

a Building, which intimated there had been antiently a Monaſtery; that ſome Years before, an old Monk, a Prieſt of *Calabria*, by Revelation, as he pretended, from the Prophet *Elias*, fix'd there, and aſſembled ten Brothers. In 1209, *Albert*, Patriarch of *Jeruſalem*, gave the Solitaries a rigid Rule; which *Papebroch* has ſince printed. In 1217, or, according to others, 1226, Pope *Honorius* III. approv'd and confirm'd it; tho it was after mitigated by *Innocent* IV. S. *Louis* brought ſome of theſe *Carmelites* with him from the Holy Land into *France*. Many of the *Popes* give them the Titles of *Brothers of the Bleſſed Virgin*. This Order is eminent for the Devotion of the *Scapulary*, for its Miſſions, and for the great Number of Saints it has ſtock'd the *Romiſh* Church withal. In the laſt Century, there were four Canonizations in this Order, *viz.* of S. *Thereſa*, S. *Andrew Corſin*, S. *Mag. de Pazzi*, and S. *J. de le Croix*.

The Order of the *Carmelites* is divided into two Branches, *viz. Carmelites of the antient Obſervance*, call'd the *mitigated*, or *moderate*; and thoſe of the *ſtrict Obſervance*, call'd *Bare-footed Carmelites*. The antient Obſervance has only one General, under whom are 40 Provinces; and the Congregation of *Mantua*, which has a Vicar-General. The ſtrict Obſervance has two Generals; one in *Spain*, having ſix Provinces under his Command; and another in *Italy*, with 12 in ſeveral Parts of *Europe*.

Bare-footed CARMELITES, are a Reform of the antient *Carmelites*, ſet on foot in 1540, by S. *Thereſa*; ſo call'd from their going *barefooted*. She began with the Convents of Nuns, whom ſhe reſtor'd to the primitive Auſterity of the Order, which had been mitigated by *Innocent* IV. in 1245; and at length carry'd the ſame Reform among the Friars. *Pius* V. approv'd the Deſign, and *Gregory* III. confirm'd the Reform in 1580. There are two Congregations of *bare-footed Carmelites*, which have each their General, and their ſeveral Conſtitutions: The one the Congregation of *Spain*, divided into ſix Provinces; the other call'd the Congregation of *Italy*, comprehending all the reſt, not depending on *Spain*.

Knights of Mount CARMEL, are a Military Order of Knights *Hoſpitallers*, inſtituted in 1607, by *Henry* IV. of *France*, under the Title, Habit, and Rule of our Lady of *Mount Carmel*; and in conſequence of the Bull of Pope *Paul* V. in 1608, united to the Order of St. *Lazarus* of *Jeruſalem*, with all its Commandaries, Priories, and other Goods, for its Endowment.

The Founder propos'd it to conſiſt of 100 *French* Gentlemen, who ſhould be oblig'd, in Times of War, to march cloſe to the Kings of *France*, as their Guard. Authors are much divided, whether to call this a new Inſtitution, or a Reſtauration of that of S. *Lazarus*; tho 'tis generally carry'd from the former. See LAZARUS.

CARMEN, an antient Term among the *Latins*, us'd, in its general Senſe, to ſignify a *Verſe*; but in its proper Senſe a *Spell*, or *Charm*, form of Expiation, Execration, *&c.* couch'd in a few Words, plac'd in a myſtic Order, on which its efficacy depended. See VERSE, CHARM, *&c.*

Some fetch the Origin of the poetical *Carmina* hence; and ſay, they took that Name from their Reſemblance to theſe Spells: Others, on the contrary, ſay, that the Spells had their Origin from the Poetical Verſes, and took their Name from their reſemblance thereto.

Vigenere derives *Carmen* from *Carmenta*, becauſe that Propheteſs couch'd her Predictions in Verſes, or ſhort Periods: but others ſay, the Propheteſs took the Name *Carmenta*, from *Carmen*, on the ſame account. See CARMENTALIA.

Pezron fetches the Original of *Carmen*, from the Celtic *Carm*, the Shout of Joy, or the Verſes which the antient Bards ſung, to encourage the Soldiers before the Combat: adding, that the *Greek* χαρμη, ſignifies *Combat* and *Joy*, which is true; but then it does not come from the Celtic *Carm*, but from χαιρω, *gaudeo*.

CARMENTALIA, a Feaſt among the old *Romans*, celebrated annually on the 15th of *January*, in honour of *Carmenta*, or *Carmentis*, a Propheteſs of *Arcadia*, Mother of *Evander*, with whom ſhe came into *Italy* 60 Years before the *Trojan* War. This Feaſt was eſtabliſh'd on occaſion of a great Fecundity among the *Roman* Dames, after a general Reconciliation with their Husbands, with whom they had been at variance, in regard of the uſe of Coaches being prohibited them by an Edict of the Senate. 'Twas the Women who celebrated this Feaſt: He who offer'd the Sacrifices, was call'd *Sacerdos Carmentalis*.

Authors are divided about the Origin of the Word *Carmenta*; *Vigenere* ſays, the Propheteſs was ſo call'd *Quaſi Carens Mente*, out of her Senſes, or out of her ſelf; by reaſon of the Enthuſiaſm ſhe frequently fell into. Others ſay, ſhe took her Name from *Carmen*, Verſe; becauſe her Propheſies were couch'd in Verſes: but *Vigenere*, on the contrary, maintains *Carmen* to be deriv'd from *Carmenta*. See CARMEN.

CARMINATIVES, in Medicine, are Remedies, whether Simple or Compound, us'd in a Cholic, or other flatulent Diſtemper; to diſpel the Wind.

The four *Carminative Flowers*, are thoſe of Camomile, Melilot, Motherwort, and Dill.

The Word comes from the Latin *Carminare*, to card, cleanſe, purge; tho Dr. *Quincy* makes its Origin more myſterious: he ſays, it comes from the Word *Carmen*, taking it in the Senſe of an Invocation, or Charm; and makes it to have been a general Name for all Medicines which operated like Charms, *i. e.* in an extraordinary manner. Hence, as the moſt violent Pains were frequently thoſe ariſing from pent-up Wind, which immediately ceaſe upon Diſperſion; the Term *Carminative* became in a peculiar Senſe apply'd to Medicines which gave Relief in windy Caſes, as if they cur'd by Inchantment. But this Derivation appears a little too much ſtrain'd.

CARMINE, a red Colour, very vivid, bordering ſomewhat on the Purple, us'd by Painters in Miniature; and ſometimes Painters in Oil, tho rarely, by reaſon of its exceſſive Price. *Carmine* is the moſt valuable Product of the Cochineal Meſtique; which is a Fecula or Sediment, reſiding at the botom of the Water, wherein is ſteep'd Cochineal Couan, and Autour: Some add Rocou, but this gives the *Carmine* too much of the Orange caſt. To be good, it muſt be almoſt in an impalpable Pouder. See RED, MINIATURE, *&c.*

Some make *Carmine* with Braſile Wood, Fernambouc, and Gold Leaf, beat in a Mortar, and ſteep'd in Whitewine Vinegar; the Scum ariſing from this Mixture, upon boiling, when dry'd, makes *Carmine*: But this Kind is vaſtly inferior to the former.

CARNATION, *Fleſh-Colour*, in Painting, is underſtood of all the Parts of a Picture in general which repreſent Fleſh; or which are naked and without Drapery. *Titian* and *Corregio*, in *Italy*, and *Rubens* and *Van Dyke* in *Flanders*, excell'd in *Carnations*. See COLOURING.

It muſt be here obſerv'd, that the Word *Carnation* is not properly us'd for any particular Part of the Perſon painted; but for the whole Nudity of the Piece.

CARNAVAL, or CARNIVAL, a Seaſon of Mirth and Rejoicing, obſerv'd with great Solemnity by the *Italians*, and particularly at *Venice*. The *Carnaval* Time commences from Twelfth Day, and holds till Lent.

Feaſts, Balls, Operas, Concerts of Muſic, Intrigues, Marriages, *&c.* are chiefly held in *Carnaval* Time. The Word is form'd of the Italian *Carnavale*; which M. *Du Cange* derives from *Carn-a-val*, by reaſon the Fleſh then goes to Pot, to make amends for the Seaſon of Abſtinence enſuing. Accordingly, in the corrupt *Latin*, he obſerves, it was call'd *Carnelævamen*, and *Carniſprivium*; as the *Spaniards* ſtill denominate it *Carnes tollendas*.

CARNEL. The building of Ships firſt with their Timber and Beams, and after bringing on their Planks, is call'd *Carnel*-work, to diſtinguiſh it from *Clinch*-work.

Thoſe Veſſels alſo which go with Mizen-ſails inſtead of Main-ſails, are by ſome call'd *Carnels*.

CARNIVOROUS, an Epithet apply'd to thoſe Animals which naturally ſeek, and feed on Fleſh. See ANIMAL, and FOOD.

'Tis a Diſpute among Naturaliſts, whether or no Man be naturally *Carnivorous*; ſome contending that the Fruits of the Earth were intended as his ſole Food, and that 'twas Neceſſity in ſome Places, and Luxury in others, that firſt prompted them to feed upon their Fellow-Animals. *Pythagoras* and his Followers look'd on it as a great Impiety; and ſtrictly abſtain'd from all Fleſh, from the Notion of a *Metempſychoſis*: and their Succeſſors, the *Brachmans*, continue the ſame to this Day. See PYTHAGORIANS, and BRACHMANS.

The Conſideration *Gaſſendus* chiefly inſiſts on, why Man ſhould not be *Carnivorous*, is the Structure and Conformation of our Teeth; moſt of 'em being either *Inciſores* or *Molitores*; not ſuch as *Carnivorous* Animals are furniſh'd withal, proper to tear Fleſh; except the four *Canini*: As if Nature had rather prepar'd us for cutting Herbs, Roots, *&c.* than for tearing Fleſh. See TEETH. To which may be added, that when we do feed on Fleſh, 'tis not without a preparatory Coction, by boiling, roaſting, *&c.* And even then, as Dr. *Drake* obſerves, they are the hardeſt of Digeſtion of all other Foods, and are prohibited in Fevers, and many other Diſtempers: And laſtly, that Children are rather averſe to all Animal Foods, till their Palates become vitiated by Cuſtom; and the breeding of Worms in them, is generally aſcrib'd to the too haſty eating of Fleſh.

To theſe Arguments Dr. *Wallis*, in the *Philoſophical Tranſactions*, ſubjoins another; which is, that all Quadrupeds which feed on Herbs or Plants, have a long *Colon*, with a *Cæcum* at the upper End of it, or ſomewhat equivalent, which conveys the Food, by a long and large Progreſs, from the Stomach downwards, in order to a ſlower Paſſage and

longer

nger Stay in the Inteſtines; but that in *Carnivorous* Animals ſuch *Cæcum* is wanting, and inſtead thereof there is a more ſhort and ſlender Gut, and a quicker Paſſage thro the Inteſtines. Now, in Man, the *Cæcum* is very viſible; a ſtrong Preſumption that Nature, who is ſtill conſiſtent with her ſelf, did not intend him for a *Carnivorous* Animal: 'Tis true, the *Cæcum* is but ſmall in Adults, and ſeems of little or no uſe; but in a *Fœtus* 'tis much larger in Proportion: and 'tis probable, our cuſtomary Change of Diet, as we grow up, may occaſion this ſhrinking. See Cæcum, and Colon.

CARNOSA *Membrana*, CARNOSUS *Panniculus*, } in Anatomy; ſee Panniculus *Carnoſus*.

CARNOSITY, is us'd by ſome Authors for a little *fleſhy* Excreſcence, Tubercle, or Wen, form'd in the Urethra, Neck of the Bladder, or Yard, which ſtops the Paſſage of the Urine. *Carnoſities* are very difficult of cure: They are not eaſily known, but by introducing a Probe into the Paſſage, which there meets with reſiſtance. They uſually ariſe from ſome Venereal Malady ill manag'd.

CARO, *Fleſh*, in Anatomy, *&c.* is properly underſtood of ſuch Parts of the Body, where the Blood-Veſſels are ſo ſmall, as only to retain Blood enough to preſerve their Colour red. Anatomiſts uſually define *Fleſh*, a ſimilar, fibrous, and thick Part; and diſtinguiſh it into five Kinds, *viz.* 1. *Muſcular*, *Similar*, or *Fibrous*; ſuch as is the Subſtance of the Heart, and other Muſcles. See Muscle. 2. *Parenchymous*, as the Lungs, Liver, and Spleen were antiently ſuppos'd to be; but ſince the uſe of Glaſſes, it's now known, that all the Viſcera and other Parts are Vaſcular, and nothing but a Plexus, or Congeries of ſmall Veſſels and Canals. 3. *Viſcerous*, as that of the Stomach and Guts. 4. *Glandulous*, as that of the Pancreas, Breaſts, Tonſils, *&c.* 5. *Spurious*, as the Fleſh of the Lips, Gums, Glands of the Penis, *&c.*

Caro, is alſo us'd, in Botany, for the Pulp, Fleſh, or ſoft Subſtance contain'd within any Plant, or its Fruit; ſuch as the Pulp of Caſſia, Tamarinds, Prunes, *&c.*

Caro *Muſculoſa quadrata*, in Anatomy, a Muſcle ſo call'd by *Fallopius* and *Spigelius*, but more popularly *Palmaris brevis*. See Palmaris.

CAROLINES, an Epithet given to the four Books compos'd by Order of *Charlemaign*, to refute the IId Council of *Nice*.

The *Carolines* contain 120 Heads of Accuſation againſt that Council, and are couch'd in very harſh, reproachful Terms. Some Authors doubt of the Antiquity and Genuineneſs of theſe Books: They are attributed by ſome to *Angibran*, Biſhop of *Metz*; by others to *Alcuin*: but others, with more Reaſon, aſcribe 'em to the Biſhops of *France*; alledging, that Pope *Adrian* having ſent *Charlemaign* the Acts of the Council in 790, he gave them to be examin'd by the *French* Biſhops; and that the *Carolines* was the Anſwer they return'd. The *Carolines* were ſent to the Pope about the Time of the Council of *Frankfort*; and were firſt printed in 1549, by M. *Du Tillet*, Biſhop of *Meaux*, under the Name of *Eriphele*.

CAROLUS, an antient Gold Coin, ſtruck in the Reign of K. *Charles* I. Its Value, *&c.* ſee under Coin.

CAROTIDS, in Anatomy, two Arteries of the Neck, one on each Side, ſerving to convey the Blood from the Aorta, to the Brain. See Artery, Blood, and Brain.

The *right Carotid* ariſes from the Subclavian, juſt where that ſprings out of the Porta; but the *left* immediately out of the Aorta. They both lie pretty deep, and being defended by the *Aſpera Arteria*, paſs free from any Compreſſure, and without ſending out almoſt any Branches, ſtraight to the *Cranium*. Juſt before their Arrival there, they ſend forth the *external Carotid*; and paſſing the *Os Petroſum*, proceed on with ſome Circumvolutions; till laying aſide their muſcular Membrane, and giving Branches to the *Dura Mater*, they paſs along the *Cranium*, defended by the Sides of the *Sella Turcica*, and *Dura Mater*: and ſending Branches to the outer Parts of the *Pia Mater*, and the Nerves, they at laſt reach the *Cerebrum*; where dividing into infinite Ramifications, they are loſt in the cortical Part; or perhaps proceed even into the medullary Part thereof. See Cortex, Medulla, *&c.*

The Antients plac'd the Seat of Drouſineſs in theſe Arteries, whence they had the Name *Carotids*, καρῶ ſignifying Drouſineſs: for the ſame Reaſon they were call'd *Lethargic* and *Apoplectic*.

CARP-*Fiſhing*. See *Carp*-Fishing.

CARPÆA, a kind of Dance, or Military Exerciſe, in uſe among the *Athenians* and *Magneſians*, perform'd by two Perſons; the one acting a Labourer, the other a Robber. The Labourer, laying by his Arms, goes to ſowing and ploughing; ſtill looking warily about him, as if afraid of being ſurpriz'd: The Robber at length appears, and the Labourer, quitting his Plough, betakes himſelf to his Arms, and fights in defence of his Oxen. The Whole perform'd to the Sound of Flutes, and in Cadence.

Sometimes the Robber was overcome, and ſometimes the Labourer; the Victor's Reward being the Oxen and Plough. The Deſign of the Exerciſe, was to teach and accuſtom the Peaſants, to defend themſelves againſt the Attacks of Ruffians.

CARPENTERS-*Work*, in a Building, includes the *Framing*, *Flooring*, *Roofing*; the *Foundation*, *Carcaſs*, *Doors*, *Windows*, &c. See Framing, Flooring, Roofing, Foundation, Carcass, Door, Window, *&c.*

Carpenter's *Joint-Rule*. See Rule.

CARPENTRY, the Art of cutting, framing, and joining large Pieces of Wood, for the Uſes of Building; ſee Building.

Carpentry is one of the Arts ſubſervient to Architecture, and is divided into two Branches, *Houſe Carpentry*, and *Ship Carpentry*: The firſt employ'd in Raiſing, Roofing, Flooring, *&c.* of Houſes, *&c.* See House.

The ſecond in the Conſtruction of Veſſels for Sea; as Ships, Barks, Barges, Boats, *&c.* See Ship, *&c.*

The Rules and Practices in *Carpentry*, as to *Planing*, *Sawing*, *Morteſſing*, *Tenanting*, *Scribing*, *Paring*, *Moulding*, &c. are much the ſame as thoſe in Joinery; ſo likewiſe are the *Tools*, or Inſtruments, and the *Stuff*, the ſame in both: All the Difference between the two Arts conſiſting in this, that Joinery is us'd in the ſmaller and more curious Works; ſee Joinery: and *Carpentry* in the larger, ſtronger, and coarſer. See Sawing, Scribing, Moulding, Planing, *&c.* ſee alſo Saw, Chissel, Plane, *&c.*

Fr. Pyrard aſſures us, that the Art of *Carpentry* is in its greateſt Perfection in the *Maldives* Iſlands: Their Works, there, he obſerves, are ſo artfully manag'd, that they will hold tight and firm without either Nails or Pins. He adds, they are ſo curiouſly put together, that no body can take 'em aſunder, but thoſe acquainted with the Myſtery.

The Word is deriv'd from the Latin *Carpentum*, a Car, or Cart.

CARPET *Tapis*, a ſort of Covering, work'd either with the Needle, or on a Loom; to be ſpread on a Table, Trunk, an Eſtrade, or even a Paſſage, or Floor. *Perſian* and *Turky Carpets* are thoſe moſt priz'd; eſpecially the former. *Carpets* that had a Hair or Shag on one ſide only, were call'd by the Antients *Tapetes*; ſuch as had a Shag on both ſides, were call'd *Amphitapetes*.

Among Jockeys, to *ſhave the Carpet*, is to Gallop very cloſe, or near the Ground; a Fault Foreigners charge on the *Engliſh* Horſes. See Gallop.

An Affair, Propoſal, *&c.* are ſaid to be brought on the *Carpet*, when they are under Conſideration, *&c.*

CARPOBALSAM, or CARPOBALSAMUM, is the Fruit of the Balm, or Balſam Tree; very much reſembling, both in Figure, Size, and Colour, that of Turpentine. See Balm.

'Tis much doubted, whether the *Carpobalſam* ſold in the Shops be the ſame with that of the Antients; as not having the ſame Marks. The Apothecaries uſe to ſubſtitute *Cubebes* in lieu of it, as having the ſame Qualities. The Word comes from the *Greek* καρπῶ, *Fruit*, and βαλσαμῶ, *Balm*.

CARPOCRATIANS, a Branch of the antient *Gnoſtics*, ſo call'd from *Carpocras*, who in the IId Century reviv'd, and improv'd upon the Errors of *Simon Magus*, *Menander*, *Saturnine*, and other *Gnoſtics*. He own'd, with them, one ſole Principle and Father of all Things, whoſe Name, as well as Nature, was unknown. The World, he taught, was created by Angels, vaſtly inferior to the firſt Principle. He oppos'd the Divinity of Jeſus Chriſt; making him a mere Man, tho poſſeſs'd of uncommon Gifts, which ſet him above other Creatures. He inculcated a Community of Women; and taught, that the Soul could not be purify'd, till it had committed all kinds of Abominations; making that a neceſſary Condition of Perfection. See Gnostics, and Cerinthians.

CARPUS, in Anatomy, the *Wriſt*; or that Part between the Palm of the Hand, and the Arm. See Hand.

The Wriſt conſiſts of eight Bones of different Figures and Bulks, plac'd in two Ranks, four in each: The firſt Rank is articulated with the two *Foſſils*; the ſecond with the Bones of the *Metacarpus*. They are ſtrongly ty'd together by the Ligaments which come from the Radius, and by the annular Ligament, through which the Tendons which move the Fingers paſs: Altho this Ligament be thought but one, yet it gives a particular Caſe to every Tendon which paſſes through it. The Word comes from the *Greek* καρπῶ. The *Arabians* call it *Raſetta*; the *Latins Carpiſmus*.

CARRIAGE, a Vehicle for the Conveyance of Perſons, Baggage, Merchandizes, *&c.* from one Place to another. See Vehicle.

Carriage *of a Cannon*, is the Frame, or Timber-work whereon it is mounted; ſerving to point and direct it for ſhooting, and to convey it from place to place. See Cannon.

The CARRIAGE *of a Ship Gun*, consists of two Wheels, without Spokes.

The CARRIAGE *of a Field-Piece*, consists of two Wheels, which carry long and strong wooden Beams, or Cheeks, between which the Cannon is as it were fram'd, moving on its Trunnions as on a Center: When 'tis requir'd to move them, they add a Vant-Train, compos'd of two smaller Wheels.

The ordinary Proportion, is for the *Carriage* to have $1\frac{1}{2}$ of the Length of the Gun; the Wheels to be half the Length of the Piece in height: four times the Diameter, or Calliber, gives the Depth of the Planks at the fore End; in the Middle $3\frac{1}{2}$.

In Agriculture, *Carriage* is a Furrow cut for the Conveyance of Water, or the Draining of the plow'd Ground, &c.

CARRIERE, or CARRIER, or CAREER, in the Manage, a Place inclos'd with a Barrier, wherein they run the Ring. See BARRIER.

The Word is also us'd for the Horse-course it self, provided it don't exceed 200 Paces.

In the antient *Circus*, the *Carrier* was the Space the *Bigæ*, or *Quadrigæ*, were to run at full speed, to gain the Prize. See CIRCUS.

CARRIER, in Falconry, is a flight or tour of the Bird, about 120 Yards: If it mount more, it's call'd a *double Carrier*; if less, a *semi-Carrier*.

CARROUSAL, or CAROUSAL, a Course, or Contest of Chariots and Horses: or a magnificent Entertainment, on occasion of some publick Rejoicing: consisting in a Cavalcade of several Persons, richly dress'd, and equipp'd after the manner of the antient Cavaliers, divided into Squadrons, meeting in some publick Place, and practising Justs, Tournaments, and other noble Exercises. See JUST, and TOURNAMENT.

The *Moors* introduc'd Cyphers, Liveries, and other Ornaments of their Arms, with Trappings, &c. for their Horses. The *Goths* added Crests, Plumes, &c.

The Word comes from the Italian *Carosello*, a Diminutive of *Carro*, Chariot. *Tertullian* ascribes the Invention of *Carrousals* to *Circe*; and will have 'em instituted in honour of the Sun, her Father: whence some derive the Word from *Carrus*, or *Currus Solis*.

CARR-TAKERS, are Officers of the King's Houshold, who, when the Court travels, have charge to provide Waggons, Carts, &c. to transport the King's Furniture and Baggage.

CARTE BLANCHE, a *French* Term, seldom us'd but in this Phrase, To give, or send any one the *Carte blanche*; *i. e.* to send him a *blank Paper*, sign'd, for him to fill up with what Conditions he pleases.

CARTESIAN *Philosophy*, or CARTESIANISM, the System of Philosophy advanc'd by *Des Cartes*, and maintain'd by his Followers, the *Cartesians*. See PHILOSOPHY; see also CARTESIANS.

The *Cartesian Philosophy* is founded on two great Principles, the one *Metaphysical*, the other *Physical*. His Metaphysical Principle is this, *I think, therefore I am*. This Principle has been attack'd and defended, with a world of Spirit; and a world of Zeal and Partiality on either side: For, tho it be true, that we are as sure by an inward Perception or Consciousness that we exist, as that we think; yet 'tis true, too, that the Conclusion of this Reasoning *I am*, is drawn from the Antecedent *I think*: since *to think*, supposes *to be*, or *exist*; and the Mind sees clearly, the necessary Connection between *thinking* and *being*.

But this Principle *Des Cartes* should not have propos'd as a new Discovery: The World knew e'er he taught it, that in order to *think*, 'tis requir'd to *be*; and that he who actually *thinks*, actually *exists*. See EXISTENCE, and THINKING.

The Physical Principle of *Cartesianism* is this, that *there is nothing but Substances*: which appears a dangerous Principle to the Divines; and is accordingly controverted every Day in the Schools of the Catholicks; who undertake to prove, that there are absolute Accidents. See ACCIDENT.

Substance he makes of two Kinds; the one a Substance that thinks; the other, a Substance extended. Actual Thought, therefore, and actual Extension, are the Essences of Substance: So that the thinking Substance cannot be without some actual Thought; nor can any thing be retrench'd from the Extension of a Thing, without taking away so much of its Substance.

The first Article of this is refuted by Mr. *Locke*, who shews, that *thinking* is not essential to the Soul, or that its Essence does not consist in Thought; but that there are various Occasions wherein it does not think at all. See IDEA. The latter is stiffly oppos'd by the Jesuits, &c. as inconsistent with the Doctrine of Transubstantiation; but is much better confuted by the modern Writers, from the Principles of the *Newtonian* Philosophy. See MATTER, EXTENSION, &c.

The Essence of Matter thus fix'd in Extension, *Des Cartes* naturally concludes there is no Vacuum, nor any possibility thereof in Nature; but that the World is absolutely full: For mere Space is precluded, by his Principle; in regard, Extension being imply'd in the Idea of Space, Matter is so too. If there were any such thing as a Vacuum, says he, it might be measur'd: The Vacuum, therefore, is extended, and of consequence is Matter; every thing extended being Matter. See VACUUM, and PLENUM.

These Principles of Physicks once suppos'd, *Des Cartes* explains mechanically, and according to the Laws of Motion, how the World was form'd; and whence the present Appearances of Nature. He supposes, that God created Matter of an indefinite Extension; that he divided this Matter into little square Portions, or Masses full of Angles; that he impress'd two Motions on this Matter; one, whereby each Part revolv'd round its Centre; another, whereby an Assemblage, or System of 'em, turn'd round a common Centre: Whence arose as many different Vortices, or Eddies, as there were different Masses of Matter, thus moving round common Centers.

These things, thus set a-going, the Consequences, according to *Des Cartes*, in each Vortex, will be as follows: The Parts of Matter cou'd not move and revolve among each other, without having their Angles gradually broke; and this continual Friction of Parts and Angles, must produce three Elements: the first, an infinitely fine Dust, form'd of the Angles broke off; the second, the Spheres remaining, after all the angular Irregularities are thus remov'd: these two make the Matter of his *first* and *second Element*. And those Particles not yet render'd smooth and spherical, and which still retain some of their Angles and hamous Parts, make the *third Element*. See ELEMENT.

Now the first, or *subtilest* Element, according to the Laws of Motion, must take up the Center of each System, or Vortex, by reason of the Smallness of its Parts: And this is the Matter which constitutes the *Sun*, and the *Fix'd Stars* above, and the *Fire* below. See SUN, FIRE, &c. The second Element, compos'd of Spheres, makes the Atmosphere, and all the Matter between the Earth and the Fix'd Stars; in such manner, as that the largest Spheres are always next the Circumference of the Vortex, and the smallest next its Center. See AIR, and ÆTHER. The third Element, or the hooked Particles, is the Matter that composes the Earth, all terrestrial Bodies, Comets, Spots in the Sun, &c. See EARTH, COMET, SPOTS, &c.

This System, tho very artfully concerted, yet carries with it more of the Air of a Romance, than of a just Philosophy. Accordingly, both Divines and Philosophers cry out on it: the first, that it leads to Atheism, by furnishing the Maintainers of an Eternal Matter, with means how, from the Laws of Motion, to account for the Production of the World: Tho, 'tis certain, *Des Cartes* suppos'd a Deity; and so must all who admit his Philosophy; else whence will they derive that Motion of Matter, which of it self is destitute of any such Principle?

But the Philosophers have much better Pleas against it; and the Elements, subtile Matter, hooked Atoms, Vortices, and other Machines, are now nearly on the same footing with the *occult Qualities* of the antient *Peripateticks*. See SUBTILE *Matter*, VORTICES, HOOKED *Particles*, &c.

Indeed, *Des Cartes*, by introducing Geometry into Physicks, and accounting for Natural Phænomena from the Laws of Mechanicks, did infinite service to Philosophy; and contributed, both by his Practice and Example, to purge it from that venerable Rust, which in a long Succession of Ages it had contracted: Accordingly, to him, in some measure, is owing the present System of Mechanical, or *Newtonian* Philosophy; see NEWTONIAN *Philosophy*.

Cartesianism was ready to be prohibited by an Arret of the Parliament of *Paris*; and had been so, in effect, but for a Burlesque Address presented to the First President.

CARTESIANS, a Sect of Philosophers, who hold or assert *Cartesian* Principles. See CARTESIAN *Philosophy*.

Monsieur *Rene des Cartes*, the noble Founder of this Sect, was of *Bretagne*, born in the Year 1596. His Monument informs us, "That having master'd all the Learning "of the Schools, which prov'd short of his Expectation, "he betook himself to the Army, in *Germany* and *Hun-* "*gary*; and there spent his vacant Winter Hours, in com- "paring the Mysteries and Phænomena of Nature, with "the Laws of Mathematicks; daring to hope, that these "might unlock the other. Quitting, therefore, all other "Pursuits, he retir'd to a little Village near *Egmond*, in "*Holland*; where spending 25 Years in continual Read- "ing and Meditation, he effected his Design."

He was a Person of the greatest Genius, Penetration, and Judgment, both as to the Invention, and orderly ranging and disposing of Things. He begun a new Method of Philosophy, and finish'd it, on his own Foundation. The History of his Life, is best learnt from his own incomparable

Treatiſe *de Methodo*. His Reputation in Foreign Nations, appears from his Monument; which conſiſts of four Faces, inſcrib'd with ſo many Encomiums. It was erected in *Sweden*, where he dy'd, in the Year 1650, by Monſieur *Chamont*, the King of *France*'s Reſident in that Court. But his Bones were afterwards remov'd to *Paris*, by Order of *Louis* XIV. and a ſtately Mauſoleum built over 'em, in the Church of St. *Genevieve*.

CARTHUSIANS, an Order of Religious inſtituted by S. *Bruno*, about the Year 1086. The Rule given them by their Founder is exceedingly rigorous; their Houſes were uſually built in Deſarts, their Fare coarſe, and their Diſcipline ſevere. 'Tis obſerv'd, that the monaſtical Piety is better preſerv'd in this, than in any of the other Orders. M. *l'Abbe de la Trape* endeavours to ſhew, that the *Carthuſians* don't live up to the Auſterity enjoin'd by the antient Statutes of *Guigues* their fifth General. M. *Maſſon*, at preſent General of the Order, anſwers the Abbat; and ſhews, that what he calls the Statutes, or Conſtitutions of *Guigues*, are, in reality, only Cuſtoms compil'd by Father *Guigues*; and that they did not become Laws till long after. The *French* call the *Carthuſians*, *Chartreux*; and their Houſes *Chartreuſe*. See CHARTREUX.

CARTILAGE, in Anatomy, a ſmooth, ſolid, uniform, elaſtic Part of an Animal; ſofter than a Bone, but harder than any other Part.

Cartilages ſeem to be nearly of the ſame Nature with Bones, and only to differ as more or leſs hard. See BONE. There are ſome very hard, and which even become bony with Time; as thoſe, *v. g.* which form the *Sternum*; ſee STERNUM. Others are ſofter, and ſerve to compoſe entire Parts; as thoſe of the Noſe, Ears, *&c.* where an eaſy gentle Motion is requir'd; their natural Elaſticity ſerving them for Antagoniſt Muſcles. See NOSE, *&c.* There are others ſofter ſtill, partaking of the Nature of Ligaments, and thence call'd *Ligamentous Cartilages*. See LIGAMENT.

There are *Cartilages* of various Figures, acquiring various Names from the Things they reſemble: One is call'd *Annularis*, becauſe it reſembles a Ring; another *Xyphoides*, from its reſembling the Point of a Dagger; a third *Scutiformis*, becauſe made like a Buckler; and ſo of the reſt. See each under its proper Head, ANNULAR, SCUTIFORM, *&c.*

Cartilages have no Cavities for Marrow; nor any Membranes, or Nerves, for Senſation. Their Uſes are to prevent the Bones from being damag'd or wounded by a continual Friction; to join 'em together by a *Synchondroſis*; and to contribute, in great meaſure, to the well forming of ſeveral Parts; as the *Noſe*, *Ears*, *Trachea*, *Eyelids*, &c.

CARTON, or, as we pronounce it, CARTOON, in Painting, a Deſign, made on ſtrong Paper, to be afterwards calqued thro, and transferr'd on the freſh Plaiſter of a Wall, to be painted *in Freſco*. See DESIGN, CALQUING, and FRESCO.

CARTON is alſo us'd for a Deſign colour'd, for working in Moſaic, Tapeſtry, *&c.* The *Cartoons* preſerv'd at *Hampton-Court*, are Deſigns of *Raphael Urbin*; intended for Tapeſtry, but uncolour'd. The Word, in the original *French*, ſignifies *thick Paper*, or *Paſtboard*.

CARTOUCH, an Ornament in Architecture, Sculpture, *&c.* repreſenting a Scroll of Paper. It is uſually a Table, or flat Member, with Wavings; whereon is ſome Inſcription, or Deviſe, Ornament of Armory, Cypher, or the like.

Cartouches are ſometimes drawn on Paper, as in the Titles of Maps, *&c.* and ſometimes made of Stone, Brick, Plaiſter, Wood, *&c.* for Buildings. The Word comes from the Italian *Cartoccio*, which ſignifies the ſame thing.

CARTOUCHE, or CARTRIDGE, in War, the Charge or Load of a Fire-Arm, wrapp'd up in a thick Paper, Paſtboard, or Parchment; to be the more readily charg'd, or convey'd into the Piece.

Thoſe of Cannon, or Mortars, are uſually in Caſes of Paſtboard, or Tin, ſometimes of Wood, half a Foot long; taking up the Place of the Bullet in the Piece, to whoſe Calliber the Diameter is proportion'd. Theſe *Cartouches* are fill'd occaſionally with Muſket-Balls, Nails, Chains, *&c.* which, upon Exploſion, ſpread far and wide. The Cannon hid in the retir'd Flanks, is uſually charg'd with theſe *Cartouches*, to make the greater havock among the Beſiegers. Thoſe of Muſkets, Piſtols, and ſmall Arms, only contain the Charge of Pouder, with a Ball wrapp'd up in thick Paper.

CARVING. See SCULPTURE.

CARUNCULA, a Term in Anatomy, properly ſignifying a little piece of *Fleſh*; being a Diminutive of the Latin *Caro*, Fleſh. The Name *Caruncula*, is apply'd to ſeveral different Parts of the Body: As,

CARUNCULÆ *Cuticulares*, a Name which ſome Anatomiſts give the *Nymphæ*. See NYMPHÆ.

CARUNCULÆ *Lacrymales*, are two little Eminences, one on each great *Canthus*, or corner of the Eyes; ſeparating the two *Puncta Lacrymalia*. See CANTHUS.

Bartholine, and ſome other Anatomiſts, miſtake the *Carunculæ* for Lacrymal Glands; which they ſuppoſe plac'd on the *Punctum Lacrymale*, to prevent the continual ſhedding of Tears. But *Dionis* ſhews the Miſtake, and maintains 'em to be no Glands, but only the Reunion or Duplicature of the inner Membrane of the Eyelids. Some Anatomiſts ſay, they help to keep the two *Puncta* open, when the Eyes are ſhut. See LACRYMALIA *Puncta*.

CARUNCULÆ *Myrtiformes*, in Anatomy, are four little *Caruncles*, or fleſhy Knobs, about the ſize of Mulberries, whence their Name; found adjoining to, or rather in the Place of the *Hymen*, in the Parts of Generation in Women. Some ſuppoſe 'em to be largeſt in Maids, and to grow leſs and leſs by the uſe of Venery; but others, with more probability, make them the Conſequences of Venery in the firſt Copulation; deriving 'em from the broken Membrane of the *Hymen*, whoſe Fragments ſhrunk up they appear to be. See HYMEN.

CARUNCULÆ *Papillares*, or *Mamillares*, are little Protuberances on the inſide of the Pelvis of the Kidneys, made by the Extremities of the Tubes which bring the Serum from the Glands in the exterior Parts, to the Pelvis. They were firſt diſcover'd by *Carpus*; and thus call'd, from their reſembling a little Teat, or Pap. They are in form of Acorns heads, and leſs red than the Fleſh: They are about the bigneſs of a Pea, but larger at top than at bottom; ending as it were in a Point, in the Place where they are perforated, to let the Urine fall into the Baſon. See KIDNEYS, PELVIS, *&c.*

CARUS, in Medicine, a Species of an Apoplexy, conſiſting in a profound Sleep, with a ſudden Deprivation of Senſation, and Motion, and an acute Fever.

The *Carus* differs from a *Coma* in this, that the Patient, in the latter, anſwers when interrogated; but not in the former; See COMA: From a Lethargy it is diſtinguiſh'd by the Fever which attends it, which the Lethargy is free from; and by the return of Senſation, which the lethargic Perſon finds when agitated or prick'd; See LETHARGY: From a proper Apoplexy, by the freedom of Reſpiration, which is always hurt in an Apoplexy; ſee APOPLEXY: From an Epilepſy, in that there is no Motion or Froth at the Mouth in the *Carus*: From a Syncope, by the Pulſe, which is high, and the Face ruddy; whereas the Pulſe is low, and the Face cadaverous in the Syncope: From an hyſteric Suffocation, in that the Patient hears and remembers things in the latter, not in the former. See SYNCOPE, EPILEPSY, *&c.*

The Cauſe of the *Carus* is uſually referr'd to an Interruption of the Motion of the Animal Spirits; occaſion'd either by their being exhauſted, or obſtructed by ſome cold, heavy, pituitous Humour; or by a Contuſion, from ſome external Force. The Word comes from the *Greek* κάρος, Drouſineſs, heavineſs of the Head.

CARYATIDES, or CARIATES, in Architecture, a kind of Order of Columns, or Pilaſters, under the Figures of Women, dreſs'd in long Robes. See ORDER *of Columns*.

The Origin of the *Caryatides* is related by *Vitruvius*: The *Greeks*, he obſerves, having taken the City of *Caria*, led away their Women Captives; and to perpetuate their Servitude, repreſented them in their Buildings, as charg'd with Burdens, ſuch as thoſe ſupported by Columns.

The *Caryatides*, M. *le Clerc* obſerves, are not now repreſented as among the Antients, *viz.* as Symbols of Slavery, with Hands ty'd before and behind; thoſe Characters being ſuppos'd injurious to the Fair Sex. Among us, they are repreſented as Images of Juſtice, Prudence, Temperance, *&c.* Their Legs are always to be cloſe to each other, and even acroſs; their Arms laid flat to the Body, or to the Head, or at leaſt as little ſpread as poſſible; that as they do the Office of Columns, they may have, as near as poſſible, the Figure thereof. Sometimes their Arms are cut off, for the greater Delicacy; as in the Hall of the *Swiſs* Guards in the *Louvre*: but M. *le Clerc* does not approve of ſuch Mutilations.

When inſulated, they ſhould never have any great Weight to ſupport; and their Entablature and Pedeſtal are ordinarily to be *Ionic*.—— When they join to a Wall, *&c.* 'tis adviſable to put a Conſole over them, which may appear to ſuſtain the Weight of their Entablature; otherwiſe, as they repreſent Women, they don't ſeem ſo proper to ſuſtain great Loads.—— When they are made in form of Angels, he would have them ſupport the Entablature, which in that Caſe is to be *Corinthian*, with their Hands.

The Antients made the *Caryatides* frequently to ſupport Baſkets, or Corbels of Flowers; and theſe they call'd *Caniferæ*, or *Ciſtiferæ*.

CASCADE, a Cataract, or Fall of Water; either natural, as that of *Tivoli*, &c. or artificial, as thoſe of *Verſailles*, &c. and that, either falling with a gentle Deſcent, as thoſe of the *Sceaux*; in form of a Buffet, as at *Trianon*; or by degrees, in form of a Perron, as at *St. Clou*; or from Baſon to Baſon, *&c.* The Word comes from the Italian

Caſcata, of *Caſcare*; and that of *Cado*, to fall. See CATARACT.

CASCANS, or CASCANES, in Fortification, are Holes or Cavities in form of Wells, made in the Terreplein, near a Rampart; from whence a Gallery, dug in like manner under Ground, is convey'd, to give Air to the Enemy's Mine.

CASE, in Grammar, is underſtood of the different Inflections, or Terminations of Nouns; ſerving to expreſs the different States, or Relations they bear to each other, and to the things they repreſent. See NOUN.

There is a great Diverſity in Grammarians, with regard to the Nature and Number of *Caſes*: They generally find ſix *Caſes*, even in moſt of the modern Languages, which they call the *Nominative*, *Genitive*, *Dative*, *Accuſative*, *Vocative*, and *Ablative*: But this ſeems only in compliance with their own Ideas, which are form'd on the *Greek* or *Latin*, and which they transfer to other Languages.

The Truth is, if by *Caſe* be only meant an occaſional Change in the Termination of a Noun, or Name, which ſeems to be the juſt Idea of *Caſe*, (regard being had either to the Reaſon of the Thing, or the Sound of the Word *Caſus*, from *Cadere*, to *fall*; and πτωσις, *Caſus*, Fall) there will in this Senſe be juſt as many *Caſes* as there are different Terminations of Nouns in the ſame Number, *i. e.* in ſome Languages more, in others leſs, and in others none at all. Indeed, Authors either han't any preciſe Notion of *Caſes* at all, or they wander ſtrangely from that Notion: for they always reckon five *Caſes* of Nouns in the *Greek*, and ſix in the *Latin*: Tho ſeveral of theſe *Caſes* be frequently alike, as the *Genitive* and *Dative ſingular*, of the firſt Declenſion of the *Latin*; the *Dative* and *Ablative plural* of the ſecond, &c. the *Genitive* and *Dative dual* of the *Greek*, &c. So that the Termination is not the ſole Meaſure of the *Caſe*.

'Tis, however, much more agreeable to the Principles of Grammar, which only conſiders Words materially, to make as many different *Caſes*, as there are Changes in the Terminations of a Name; which wou'd free the *Engliſh*, and other modern Tongues, from the Embaraſs of *Caſes*; moſt of 'em expreſſing the various Relations, not by Changes in Termination, as the Antients, but by the Appoſition of Articles. 'Tis certainly wrong to ſay, *v. g.* that *of a Father*, is the Genitive *Caſe of Father*; and *to a Father* the Dative; for *of* and *to* are no part of the Name *Father*: They are no Cloſes or Terminations, but Articles, or Modificatives, which ſhew the different Relation of the Word *Father*. And the ſame may be ſaid of the *Caſes* of Nouns, in the *French*, *Italian*, *Spaniſh*, *Portugueſe* Tongues, &c.

But the Caſe is otherwiſe in the *Greek* Name πατρὸς, or the *Latin Patris*; which are real *Caſes* of the Words πατὴρ, and *Pater*, and different from them: And ſomewhat like this may be ſaid of the *Hebrew*, *Arabic*, *Armenian*, *Poliſh*, and *German* Languages; which in the ſame Number admit of Changes in the Terminations of Words: And yet in theſe Languages, *Caſes* are pretty different from what they are in the *Greek* and *Latin*. The *Hebrew* Names, for Inſtance, are not properly declin'd by *Caſes*: The Relation expreſs'd by the Genitive *Caſe*, 'tis true, occaſions an Alteration in them; but then this Alteration, inſtead of being in the Noun governed, as in the *Latin*, in the *Hebrew* is in that which governs; as דְּבַר שֶׁקֶר *Verbum falſitatis*; where the Change is not in שֶׁקֶר *falſitas*, but in דְּבַר for דָּבָר *Verbum*.

F. *Galanus* makes ten *Caſes* in the *Armenian*; obſerving, that beſides the ſix ordinary *Caſes*, there is one ſerving to expreſs the *Inſtrument* wherewith any thing is done; another for *Narration*, to expreſs the Subject; a third to ſhew that one thing is in another; and a fourth, to ſhew a Relation between one thing and another. Authors make but three Caſes in the *Arabic*, as having only three Terminations, *en*, *in*, and *an*.

It muſt be obſerv'd, however, that tho many of the Languages have not properly any Caſes of Nouns, yet moſt, if not all of them, have a kind of *Caſes* in their Pronouns, without which, it wou'd be hard to conceive the Connection, or Syntax of a Diſcourſe; and which, therefore, makes a neceſſary part of Grammar. See the Relations expreſs'd by each *Caſe* under its proper Head, NOMINATIVE, GENITIVE, DATIVE, &c.

CASE-HARDENING, a Method of preparing Iron, ſo as to render its outer Surface hard, and capable of reſiſting the File, or any edg'd Tool. It is us'd by File-cutters for coarſe Files; by Gunſmiths, to harden the Barrels of Guns; and by others, on other Occaſions. See IRON; ſee alſo FILE, &c.

The Proceſs of *Caſe-hardening* is thus: They take Hoofs, or Horns of Kine, dry them in an Oven, and pouder 'em; then put an equal Quantity of Bay Salt to it, and mingle both together with ſtale Urine, or Whitewine Vinegar: Some of this Mixture they lay upon Loam, and wrap it about the Iron, putting alſo more Loam over all. Then they lay it on the Hearth of a Forge to dry and harden; and when it's dry and hard, they put it into the Fire, and blow till they give the Lump a blood red Heat, but no greater: Then it is taken out and quench'd, and the *Caſe-harden'd* Iron is taken out of the *Caſe*. See STEEL, and HARDENING.

CASEMATE, or CASEMENT, in Building, is a hollow Moulding, which ſome Architects make ⅝ of a Circle; and others ¾. See MOULDING.

CASEMATE, or CASEMENT *of a Window*. See WINDOW.

CASEMATE, in Fortification, a kind of Vault of Maſonswork, in that part of the Flank of a Baſtion next the Curtain; ſerving as a Battery, to defend the Face of the oppoſite Baſtion, and the Moat, or Ditch. See BASTION.

The *Caſemate*, ſometimes, conſiſts of three Platforms, one above another; the higheſt being on the Rampart: But they commonly content themſelves to withdraw the higheſt within the Baſtion. The *Caſemate* is alſo call'd the *low Place*, *low Flank*, and ſometimes *retir'd Flank*; as being that Part of the Flank neareſt the Courtine, and the Centre of the Baſtion: It was formerly cover'd with an Epaulement, or a maſſive Body of round or ſquare Stone, which prevented thoſe without from ſeeing within the Batteries. 'Tis now rarely us'd, by reaſon the Enemy's Batteries are apt to bury the Artillery of the *Caſemate*, in the Ruins of the Vault.

The Name comes from a Vault, formerly made to ſeparate the Platforms of the upper and lower Batteries; each of which was call'd in Italian *Caſa Armata*, and in the Spaniſh *Caſamata*. Tho others derive the Word from *Caſa à Matti*, Houſe of Tools: *Covarruvias*, from *Caſa*, and *mata*, low Houſe.

CASEMATE, is alſo us'd for a Well, with ſeveral ſubterraneous Branches, dug in the Paſſage of the Baſtion, till the Miner is heard at work, and the Air given to the Mine.

CASE, in Printing, a Frame, plac'd aſlope, divided into ſeveral Compartments, or little ſquare Cells, in each of which are lodg'd a number of Types, or Letters of the ſame Kind; whence the Compoſitor takes them out, each as he needs it, to compoſe, and make a Page, or Form. See PRINTING, LETTER, &c.

Thus, they ſay, *a Caſe*, or rather *Pair of Caſes*, of *Greek*, of *Hebrew*, of *Pica*, &c. *Menage*, after *Salmaſius*, derives the Word from *Caſſa*, or *Capſa*; and that from the *Greek* καλὰ, which ſignifies the ſame thing.

CASE-SHOT, are Muſket-Bullets, Stones, old pieces of Iron, or the like, put up into *Caſes*, and ſo ſhot out of great Guns. See SHOT.

Caſe-ſhot is chiefly us'd at Sea, to clear the Enemies Decks when they are full of Men.

CASERNS, or CAZERNS, in Fortification, little Rooms, Lodgments, or Apartments, erected between the Ramparts, and the Houſes of fortify'd Towns, or even on the Ramparts themſelves; to ſerve as Lodgings for the Soldiers of the Gariſon, to eaſe the Gariſon. See GARISON.

There are uſually two Beds in each *Caſern*, for ſix Soldiers to ly, who mount the Guard alternately; the third Part being always on Duty.

CASES *Reſerv'd*, in the *Romiſh* Polity, are conſiderable Sins, the Abſolution of which is *reſerv'd* by the Superiors to themſelves, or their Vicars. There are ſome *Caſes reſerv'd* by the Pope, and others by the Biſhops: In Convents, ſome are *reſerv'd* by the Chapter, &c. None but theſe, or their Vicars, can abſolve in theſe *Caſes*; except at the Article of Death, when all *reſerv'd Caſes* are abſolvable by the Ordinary. See ABSOLUTION.

CASH, in Commerce, the Stock of Money, which a Merchant, or other Perſon has in his Diſpoſal, to negotiate; ſo call'd from the *French* Term *Caiſſe*, i. e. *Cheſt*, or *Cofer*, for the keeping of Money. M. *Savery* ſhews, that the Management of the *Caſh* of a Company, is the moſt conſiderable Article; and that whereon its good or ill Succeſs chiefly depends. See COMPANY.

CASHIER, the *Caſh-keeper*, is he who is charg'd with the receiving and paying of the Debts of a Society: See CASH.

In the generality of Foundations, the *Caſhier* is call'd *Treaſurer*; ſee TREASURER.

CASING *of Timber-work*, is the Plaiſtering a Houſe all over on the Outſide with Mortar; and ſtriking it, yet wet, by a Ruler, with the Corner of a Trowel, or the like Inſtrument, to make it reſemble the Joints of Free-ſtone; by which means, the whole Houſe appears as if built thereof.

CASK, or CASQUE, a piece of defenſive Armour, to cover the Cavalier's Head and Neck; otherwiſe call'd *Helmet*. See HELMET.

Le Gendre obſerves, that antiently, in *France*, the *Gens d'Armes* all wore *Casks*. The King wore a *Cask*, gilt; the Dukes and Counts, ſilver'd; Gentlemen of Extraction, poliſh'd Steel; and the reſt plain Iron. The Word comes from *Caſſicum*, or *Caſſicus*, a Diminutive of *Caſſis*, Shield.

The *Cask* is frequently ſeen on antient Medals; where we may obſerve great Varieties in the Form and Faſhion thereof:

thereof: As the *Greek* Faſhion, the *Roman* Faſhion, &c. F. *Joubert* makes it the moſt antient of all Coverings of the Head, as well as the moſt univerſal. Kings, Emperors, and even Gods themſelves are ſeen therein. That which covers the Head of *Rome*, has uſually two Wings, like thoſe of *Mercury*: And that of ſome Kings, is furniſh'd with Horns, like thoſe of *Jupiter Ammon*; and ſometimes barely Bulls, or Rams Horns, to expreſs uncommon Force.

CASK, in Heraldry. See HELMET.

CASK, is alſo us'd as a common Name for Veſſels of divers Kinds, in contra-diſtinction from the Liquor, or other Matter contain'd therein. Thus, a Hogſhead of Spirits, &c. is ſaid to weigh 4 *C.* ½ and 22 *L. Cask* and Liquor; a Punchion, 6 *C.* ¼ and 2 *L. Cask* and Liquor.

A CASK *of Sugar*, is a Barrel of that Commodity, containing from 8 to 11 Hundred; a *Cask* of Almonds, is about 3 Hundred weight.

CASSATION, in the Civil Law, the Abrogation, or annulling of any Act or Proceedure. The Occaſions of *Caſſation* are, 1ſt, When a Decree is directly contrary to another Decree; and both againſt the ſame Party. 2dly, When Decrees are directly contrary to the expreſs Deciſion of Statutes, or Cuſtoms. 3dly, When the Formalities preſcrib'd by the Laws have not been follow'd. The Word comes from the Latin *Quaſſare*.

CASSIA, a medicinal Drug, in frequent uſe as a gentle Purgative. There are four Kinds of *Caſſia*, alike in Properties, and nearly in Figure; being all in long black Pods; but very different, if conſider'd with regard to the Trees that produce them. Theſe *Caſſias* are, *Caſſia of the Levant*, that *of Egypt*, that *of Braſil*, and of the *Antilles* Iſlands.

Caſſia of the Levant, is the Fruit of a very high Tree, whoſe Bark is Aſh-colour'd, its Wood very ſolid, and its Grain cloſe; towards the Center, the Wood is of an Ebony black, towards the Circumference yelloviſh: Its Flowers are yelloviſh, and produce a Fruit in form of a long Pod, round and maſſive; of a reddiſh Colour, bordering on black. When ripe, it is full of a black, ſweetiſh Pulp, divided by little woody Cells: In this Pulp are found little hard Grains, in manner of Stones, ſhap'd like Hearts, which are the Seed of the Tree. This *Caſſia* muſt be choſe new, in large Pods, heavy, and of a tan Colour; the Bark, when broke, fine and white within, full of a black ſoft Pulp of a ſweetiſh Taſte.

Caſſia of Egypt, is like that of the *Levant*, except that the Tree is higher, and the Leaves narrower; the Fruit ſmaller, and the Bark ſofter.

Caſſia of Braſil, is the largeſt of all: Some of the Pods are found four or five Inches in Circumference. This Kind is not very common in the Shops.

Caſſia of the Iſlands, is that now chiefly us'd; tho heretofore the popular *Caſſia* was the *Levantine*. It is ſent from the *Antilles*; where 'tis produc'd in ſuch abundance, that the Veſſels, in their home Voyages, uſe it as Ballaſt: whence it is, that we find it ſo often foul and dirty: The Tree that yields it reſembles a Peach-Tree. Its Flowers, which are yellow, grow in Cluſters; and, as they decay, leave behind them a Fruit or Pod an Inch thick, and a Foot (ſometimes two) long. The Fruit, while in its growth, is green; when ripe, it becomes a dark Violet. 'Tis choſen in the ſame manner as that of the *Levant*.

When the Pod is entire, and the Pulp not yet taken out, 'tis called *Caſſia Fiſtula*, or *Caſſia in the Cane*. For uſe, the Pulp is taken out, and pulp'd thro a Hair Sieve. The Apothecaries put off little of this better Kind, but what is old, and boil'd up with Sugar to make it keep.

Caſſia, when green, as alſo the Flowers of the *Caſſia* Tree, are comfited in the *Levant* and the *Iſlands*; and have almoſt the ſame Effects with the common *Caſſia*, the Baſis of moſt purgative Electuaries.

The *Tincture of* CASSIA, is a ſlight Infuſion of the Pulp with the Seed.

The *Extract of* CASSIA, is nothing but the Pulp ſeparated from the Shell and the Seeds; with the Addition of a certain Quantity of Sugar to preſerve it from turning ſour.

CASSIA *Lignea*, is the Bark of a Tree much like that which bears the Cinnamon; growing promiſcuouſly with it in the Iſland of *Ceylon*. The two Barks are gather'd and dry'd in the ſame manner; their Smell and Taſte are nearly alike; they are equally ſweet, poignant and agreeable; and their Colour, Form, and Thickneſs ſcarce differ at all. But the *Caſſia* is the fatter, and more mucilaginous; and in chewing diſſolves in the Mouth, without leaving any thing woody behind; whereas the woody Part of Cinnamon ſtill ſticks, tho ever ſo well chew'd. Some Authors will have the Tree which bears Cinnamon bear the *Caſſia* too; and make the only Difference between them to conſiſt in this, that the firſt comes from *Ceylon*, and the latter from the Coaſt of *Coromandel*. See CINNAMON.

CASSIOPEIA, in Aſtronomy, one of the Conſtellations of the Northern Hemiſphere. See CONSTELLATION.

In 1572, there appear'd a new Star in this Conſtellation, which at firſt ſurpaſs'd in Magnitude and Brightneſs *Jupiter* himſelf; but it diminiſh'd by degrees, and at laſt diſappear'd, at the End of 18 Months. It alarm'd all the Aſtronomers of that Age, many of whom wrote Diſſertations on it; among the reſt, *Tycho Brahe*, *Kepler*, *Maurolycus*, *Licetus*, *Gramineus*, &c. *Beza* the Landgrave of *Heſſe*, *Roſa*, &c. wrote to prove it the ſame Star which appear'd to the *Magi* at the Birth of Jeſus Chriſt, and that it came to declare his ſecond coming: They were anſwer'd by *Tycho*. See STAR.

The Stars in the Conſtellation *Caſſiopeia*, in *Ptolomy*'s Catalogue, are 13; in *Tycho*'s 28; in the *Britannic Catalogue*, Mr. *Flamſtead* makes them 56. The Order, Names, Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow.

Stars in the Conſtellation CASSIOPEIA.

Names and Situation of the Stars.	Signs.	Longitude. ° ′ ″	Latitude. North. ° ′ ″	Magn.
	♈	21 6 44	56 46 0	6
		21 28 46	56 26 16	6
		27 43 32	57 10 23	5
		23 53 29	54 3 47	5 6
North, in the top of the Chair-back		26 46 31	52 39 52	7
5				
	♉	1 9 41	55 7 46	6
South. in the top of the Chair-back	♈	26 46 25	51 9 16	6
In the preced. Arm of the Chair		25 52 31	49 22 58	6
	♉	3 28 57	53 57 9	6
		6 4 6	55 10 10	6
10				
In the middle of the Chair-back, the *Lucida Cathedræ*)		0 48 7	51 13 50	3 2
		5 59 21	52 1 25	7
		12 9 23	55 1 42	7
A ſmall one againſt the Hair		0 22 24	45 38 49	6
In the bottom of the Chair-back, o-		8 20 18	52 14 40	4
15 ver the Seat)				
		12 47 48	54 59 49	6 7
In the Head		0 47 7	44 41 44	4
In the Breaſt		3 30 21	46 35 54	3 2
Preced. of the North. in the Rod	♈	29 9 55	41 25 41	6
South. in the Rod		27 6 12	38 18 52	6
20				
	♉	25 15 51	59 53 44	6
Middle in the Rod	♈	28 10 27	39 17 45	6
	♉	25 14 26	59 41 9	6
In the Girdle		5 52 56	47 4 17	4
In the Rod, the laſt of the North.		0 41 51	41 16 2	5
25				
Preced. againſt the Navel		7 52 45	47 29 25	6
Over the Seat of the Chair		9 38 44	48 47 35	3
Laſt of contig. ones agſt. the Navel		8 19 23	47 32 19	5 6
In the hind Arm		6 36 54	43 23 18	5
Preced. in South. Part of the Frame		19 31 31	54 13 8	5 6
30				
		14 57 40	50 36 12	6
		15 46 12	51 13 51	6
That under the hind Arm		7 28 30	43 5 16	4
That preced. the Knee to the South.		11 13 15	45 4 6	6
Prec. of the Midd. in S. Part of Seat		20 39 40	52 49 54	6
35				
That againſt the Knee		13 37 15	46 23 26	3
Preced. in North. Part of the Frame		23 28 45	54 11 22	6
That following the Knee		14 8 14	44 58 53	6
North. in the Frame		27 23 40	55 58 20	6 5
Midd. in North. Part of the Frame		25 12 29	53 52 38	5 6
40				
Laſt of the Midd. in S. Part of Frame		22 34 51	51 50 16	6 5
		16 31 53	45 30 18	6 5
That in the Leg		20 26 48	47 31 50	3
Laſt of 4 in South. Part of the Frame		24 51 16	51 38 41	6 5
	♊	4 49 8	58 6 56	6 5
45				
South. of the following, in North. Part of the Frame)	♉	27 37 23	53 11 18	4 5
	♊	3 28 14	57 11 9	5
North. of the ſame	♉	29 15 46	54 21 3	4 5
	♊	1 51 14	55 56 47	6
	♉	22 13 42	47 44 14	6
50				
		22 36 18	48 5 2	7
		29 0 45	53 24 16	7
		25 21 29	48 53 9	6
In the Extremity of the Foot		27 53 53	48 57 31	4
	♊	3 23 39	53 12 19	6
55				
		8 4 50	53 28 17	5 6

CASSOCK, or CASULA, a kind of Gown, or Robe, wore over the reſt of the Habit; particularly by the Clergy. The Word *Caſſock* comes from the French *Caſſaque*, a Horſeman's Coat; ſome derive that again, by Corruption, from a Garment of the *Coſſaques*: *Covarruvia*, from the Hebrew *Caſah*, to cover; whence the Latin *Caſa*, Cottage; and *Caſula*, a Diminutive of *Caſa*, another Name of the *Caſſock*.

CASTANETS, CASTAGNETTES, or CASTANETTAS, a kind of Muſical Inſtrument, wherewith the *Moors*, *Spaniards*,

Spaniards, and *Bohemians*, accompany their Dances, Sarrabands, and Guittarres. It conſiſts of two little round Pieces of Wood dried, and hollow'd in manner of a Spoon, the Concavities whereof are placed on one another faſtned to the Thumb, and beat from to time with the Middle Finger, to direct their Motions and Cadences. The *Caſtagnettes* may beat eight or nine times in the Space of one Meaſure, or Second of a Minute.

CASTALDUS, } See GASTALDUS.
CASTALDY. }

CASTELLAN, the Name of a Dignity or Charge in *Poland*: The *Caſtellans* are Senators of the Kingdom, but Senators of the lower Claſs, and, in Diets, ſit on low Seats, behind the Palatines or great Senators. They are a kind of Lieutenants of Provinces, and command a Part of a Palatinate under the Palatine. See PALATINE.

CASTING, in Foundery, is the running of a melted Metal into a Mould prepar'd for that Purpoſe. See FOUNDERY, and MOULD.

CASTING *of Gold, Silver*, or *Copper in Plates*. See COINING.

CASTING *of Lead on Cloth*, is the uſing a Frame or Mould cover'd with Woollen-Cloth and Linen over it, to caſt the Lead into very fine Sheets. See PLUMBERY.

CASTING *of Metals*, of Letters, *&c.* See FOUNDERY.

CASTING *in Sand* or *Earth*, is the Running of a Metal between two Frames or Moulds fill'd with Sand or Earth, wherein the Figure the Metal is to take, has been impreſs'd, *in creux*, by means of the Pattern. See FOUNDERY.

The Goldſmiths alſo uſe the Bone of the *Cuttle-Fiſh*, to mould and caſt their leſſer Works of Gold and Silver; that Bone, when dried, being reducible to a kind of a fine Pumice, very ſuſceptible of all Impreſſions. See CUTTLE-FISH.

CASTING *in Stone* or *Plaiſter*, is the filling a Mould with fine liquid Plaiſter, that had been taken in pieces from off a Statue or other Piece of Sculpture, and run together again. There are two Things to be obſerv'd with regard to the Mould: The firſt, that it be well ſoak'd with Oil before the Plaiſter be run, to prevent its ſticking: The ſecond, that each Piece whereof it conſiſts, have a Pack-thread, to draw it off the more eaſily when the Work is dry. See STATUE, and FOUNDERY.

CASTING *of Candles*, is the filling the Moulds with Tallow; ſee CANDLES.

CASTING, in Falconry, is any thing given an Hawk to purge and cleanſe his Gorge: Of theſe there are two Kinds, *viz.* Plumage, *i. e.* Feathers; and Cotton: the latter whereof is generally in Pellets about the bigneſs of Hazel-Nuts, made of ſoft fine Cotton, and convey'd into her Gorge after Supper. In the Mo ning ſhe will have *caſt* them out; at which time they are to be obſerv'd, and from the Colour and Condition they are found in, the State of its Body is conjectured. If they be *caſt* out round, white, not ſtinking, nor very moiſt, 'tis an Indication all is well; if otherwiſe, particularly if black, green, ſlimy, or the like, 'tis otherwiſe. The *Caſting* of Plumage is obſerv'd after the ſame manner as the former.

CASTING, in Joinery, *&c.* Wood is ſaid to *caſt* or *warp*, when, either by its own Drought or Moiſture, or the Drought or Moiſture of the Air, or other Accident, it ſhoots or ſhrinks; in prejudice to its Flatneſs and Straightneſs. See WARPING.

CASTLE, a Place fortified by Nature or Art, either in City or Country, to keep the People in their Duty, or reſiſt an Enemy. See FORTRESS, and FORTIFIED *Place*.

A CASTLE, is a little *Cittadel*; ſee CITTADEL.

CASTLE is alſo uſed, in the Sea-Language, for a part in large Veſſels.

The *Fore-Caſtle*, or *Prow-Caſtle*, is the Riſe or Elevation at the Prow, over the uppermoſt Deck, towards the Mizzen; the Place where the Kitchens are.

The *Hind-Caſtle*, or *Stern-Caſtle*, is the whole Elevation which reigns on the Stern over the laſt Deck; where the Officers Cabbins, and Places of Aſſembly are. See FORE-*Caſtle*, *&c.*

CASTLE-*Ward*, or *Caſtle-Guard*, an Impoſition laid on ſuch as dwell within a certain Compaſs about any *Caſtle*, towards the Maintenance of ſuch as watch and ward the *Caſtle*. The Word is alſo ſometimes us'd for the Circuit it ſelf, inhabited by ſuch as are ſubject to this Service.

CASTOR, in *Aſtronomy*, a Moiety of the Conſtellation *Gemini*. See GEMINI.

CASTOR and *Pollux*, in *Meteorology*, a Meteor; which in Storms at Sea appears ſometimes ſticking to part of the Ship, in form of one, two, or even three or four Fire-Balls: When one is ſeen alone, 'tis call'd *Helena*; two are call'd *Caſtor* and *Pollux*, and ſometimes *Tyndarides*. See METEOR.

Caſtor and *Pollux*, are commonly judg'd to portend a Ceſſation of the Storm, and a future Calm; being rarely ſeen till the Tempeſt is nigh ſpent. *Helena* portends ill, and witneſſes the ſevereſt part of the Storm yet behind.

CASTOREUM, in *Pharmacy*, a liquid Matter, incloſ'd in Bags or Purſes near the *Anus* of the *Caſtor* or *Bever*; falſly taken for that Animal's Stones.

Theſe Purſes are about the bigneſs of a Gooſe-Egg, and found indifferently in Males and Females; the Liquor incloſed, ſerves to give the *Caſtor* an Appetite, being preſs'd out of its Receptacles, on occaſion, by the Foot: When taken off, the Matter dries and condenſes, ſo as it may be reduced to a Pouder; by hanging in the Chimney it becomes of the Conſiſtence of Wax. 'Tis oily, of a ſharp, bitter Taſte, and a ſtrong diſagreeable ſmell. 'Tis us'd to fortify the Head and nervous Parts, it excites the languiſhing Spirits, reſiſts Poiſons, and provokes the *Menſes* in Women. 'Tis uſed in *Lethargies*, *Apoplexies*, *Vertigo's*, *Tremblings*, *Suffocations of Women*, and other Occaſions. *Bartholine*, and other Authors, aſcribe to it a wonderful Property of precipitating things to the bottom of the Water.

For the Choice of *Caſtoreum*; the beſt is that of *Dantzic*, that of *Canada* is much inferior; the largeſt Lumps, and thoſe that ſmell ſtrongeſt, are the moſt eſteem'd, eſpecially when heavy and well fleſhed. Care is to be taken that it han't been adulterated with Honey or other Drugs, to increaſe its weight, which is known by ſqueezing it; the ſophiſticated being ſoftiſh, and yielding a liquid, ſtinking Honey; and the natural, hard and heavy, of a briſk Smell, and full of Filaments.

Caſtoreum is uſed in the Compoſition of *Venice* Treacle and Mithridate, beſides various other Hyſterick and Cephalick Medicines. They draw an Oil from it call'd *Oil of Caſtor*; and it is alſo uſed, while in its liquid State, to make ſeveral Kinds of Unguents.

The *Ruſſian* Way of curing *Caſtoreum*, is deſcrib'd in the *Philoſophical Tranſactions* thus: 'To get the Milk out of 'the Bever's *Stones*, (the *Bags* it ſhou'd be) put a proper 'Quantity of Water, with half a Shovel full of Wood-'Aſhes, tie the Bags in Couples, and put them in the 'boiling Water for half a quarter of an Hour. Lay Birch-'Bark on the Fire, and ſmoke the Bags well over it for 'an Hour, till they be well dried; hang them up for a 'Week or more, till perfectly dry and hard, they may then 'be pack'd up for Uſe or Exportation.'

CASTOR *Skin*, the Fur or Skin of an amphibious Animal called *Caſtor* or Bever, ſometimes found in *England*, *France*, *Germany*, and *Poland*, but moſt abundantly in the Province of *Canada* in *North-America*. See FUR, SKIN, *&c.*

Its chief Uſe is in the Compoſition of Hats, and Furs. See HAT, *&c.* Beſide this, in 1669, an Attempt was made to employ it in other Merchandizes; accordingly a Manufactury was ſettled in the *Fauxbourg S. Antoine* near *Paris*, where they made Cloths, Flannels, Stockings, *&c.* of *Caſtor*, with a mixture of Wool. The Manufacture flouriſh'd for awhile, but ſoon decay'd, it being found by Experience that the Stuffs loſt their Dye when wet, and that when dry again they were harſh, and ſtiff as Felts.

The Merchants diſtinguiſh three Kinds of *Caſtor*, tho all equally the Spoils of the ſame Animal; theſe are *New Caſtor*, *Dry Caſtor*, and *Fat Caſtor*: *New Caſtor*, called alſo *Winter Caſtor*, and *Muſcovite Caſtor*, becauſe ordinarily reſerv'd to ſend into *Muſcovy*, is that taken in the Winter-Huntings. This is the beſt, and moſt eſteem'd for rich Furs, as having loſt none of its Hair by Moulting. *Dry Caſtor* or *lean Caſtor*, is the Reſult of the Summer-Huntings; when the Beaſt is moulted, and has loſt part of its Hair: This being much inferior to the former, is little uſed in Furs; but moſtly in Hats. *Fat Caſtor*, is that which has contracted a certain fat, unctuous Humour, by Sweat exhaled from the Bodies of the Savages, who have wore it for ſome time: This, tho better than the *dry*, is yet only uſed for Hats.

After the Hair is cut off the Skin to be uſed in Hats, the Pelt or Skin it ſelf, is us'd in various Works, *viz.* in the covering of Mails and Trunks, in Slippers, *&c.* See COMPANY *of Canada*.

CASTRAMETATION, the Art of Incamping, *i. e.* of placing and diſpoſing a Camp or Army. See CAMP.

The Word is more us'd for the Incampments of the Antients, than thoſe of the Moderns. It comes from the *Latin Caſtrum*, Camp; and *Metire*, to meaſure.

CASTRATION, in Chirurgery, the Operation of Gelding, *i. e.* of cutting off the Teſticles, and of putting an Animal out of a Capacity of Generation. See TESTICLES.

Caſtration is much in Uſe in *Aſia*, eſpecially among the *Turks*, who practiſe it on their Slaves, to prevent any commerce with their Women. The *Turks caſtrate* to the Purpoſe, making a general Amputation both of Teſticles and Yard. *Caſtration* alſo obtains in *Italy*, where 'tis us'd with a View to preſerve the Voice for ſinging. See EUNUCH.

Caſtration is ſometimes found neceſſary on medicinal Conſiderations, as in Diſeaſes of the Teſticles, eſpecially the *Sarcocele* and *Varicocele*. See SARCOCELE, *&c.*

Caſtration is alſo practis'd on Women: *Athenæus* mentions, that King *Andramaris* was the firſt who *caſtrated*

Women. *Heſychius* and *Suidas* ſay, *Gyges* did the ſame Thing. *Galen* obſerves, that Women may be *caſtrated* without Danger of Life. *Dalechampius*, on the forementioned Paſſage of *Athenæus*, holds, that it is only to be underſtood of ſimple Pad-locking.

Caſtration is alſo us'd, tho figuratively, for the Retrenching any part of a Thing: Thus we ſay, a *caſtrated* Book, *i. e.* an imperfect Book, *&c.*

CASU *conſimili*, a Writ of Entry, where a Tenant by Courteſy, or for Life, aliens in Fee or in Tail, or for another's Life: It takes its Name hence, That Authority being given by Stat. *Weſt.* 2. to the Clerks in *Chancery*, to make new Forms, as often as any new Caſe ſhould ſtart up, not under any of the old Forms; they fram'd this Writ to the likeneſs of the other call'd *Caſu proviſo*; which ſee.

CASU *Proviſo*, a Writ of Entry, given by the Statute of *Gloceſter*, in Caſe where a Tenant in Dower aliens in Fee, or for Term of Life; or in Tail: and lies for him in Reverſion againſt the Alien.

CATABAPTIST, a Perſon averſe from Baptiſm; particularly from that of Infants. See BAPTISM.

The Word is compounded of the Prepoſition κατα, which, in Compoſition, ſignifies *againſt*, *contrary*, *thro*, *of*, *in*; alſo *according to*, *towards*, *for*, *with*, &c. and βαπλω, *I waſh*.

CATABIBAZON, in Aſtronomy, the Moon's deſcending Node; call'd alſo *Dragon's Tail*. See DRAGON'S TAIL.

CATACAUSTIC *Curves*, in the higher Geometry, the Species of *Cauſtic Curves* form'd by Reflection; ſee CAUSTIC *Curve*.

CATACHRESIS, in Grammar, a kind of Figure, making the firſt Species of *Metaphora*. See METAPHORA.

The *Catachreſis* is, when for want of a Word proper to expreſs a Thought, we uſe, or rather abuſe a Word that comes ſomewhat near it; as when we call a Perſon who has kill'd his Mother, Maſter, or Prince, *Parricide*; which Word, in Propriety, is only applicable to him who has murther'd his Father. See PARRICIDE. Thus, *to ride on Horſeback on a Switch*, contains a *Catachreſis*; ſo, *a Silver Inkhorn*, &c. There are *Catachreſes* allow'd in all Styles, and all Manners of Writing. The Word comes from the *Greek* καταχεαωμαι, *Abutor*, I abuſe.

CATACLYSMUS, a *Greek* Name for a Deluge, or Inundation of Waters; ſee DELUGE, and INUNDATION.

CATACOMBS, Grottos, or ſubterraneous Places for the Burial of the Dead.

The Term is particularly us'd in *Italy*, for a vaſt Aſſemblage of ſubterraneous Sepulchres, three Leagues from *Rome*, in the *Via Appia*; ſuppos'd to be the Sepulchres of the Martyrs: Accordingly, they are viſited out of Devotion, and Reliques thence taken, and diſpers'd throughout the Catholick Countries; after having been firſt baptiz'd by the Pope, under the Name of ſome Saint. See RELICKS.

Theſe *Catacombs*, are ſaid by many to be Caves, or Cells, wherein the Primitive Chriſtians hid, and aſſembled themſelves together; and where they interr'd ſuch among them as were martyr'd. Each *Catacomb* is three Foot broad, and eight or ten high; running in form of an Alley, or Gallery, and communicating with each other: In many Places, they extend within a League of *Rome*. There is no Maſonry or Vaulting therein, but each ſupports it ſelf: The two Sides, which we may look on as the *Parietes*, or Walls, were the Places where the Dead were depoſited; which were laid lengthwiſe, three or four Rows over one another, in the ſame *Catacomb*, parallel to the Alley. They were commonly clos'd with large thick Tiles, and ſometimes pieces of Marble, cemented in a manner inimitable by the Moderns. Sometimes, tho very rarely, the Name of the Deceaſed is found on the Tile: Frequently, a Palm is ſeen, painted, or engraven; or the Cypher Xp, which is commonly read *pro Chriſto*. See SAINTS.

Some Authors will have the *Catacombs* to be the ſame with the *Puticuli* mention'd by *Feſtus Pompeius*; maintaining, that whereas it was the Practice of the antient *Romans* to burn their Dead, the Cuſtom was, to avoid Expence, to throw the Bodies of their Slaves to rot in Holes of the Ground: and that the *Roman* Chriſtians, obſerving, at length, the great Veneration paid to Reliques, reſolv'd to have a Stock of their own: Entering, therefore, the *Catacombs*, they added what Cyphers and Inſcriptions they pleas'd, and then ſhut them up again, to be open'd on a favourable Occaſion. Thoſe in the Secret, add they, dying, or removing, the Contrivance was forgot, till Chance open'd them at laſt. But this Opinion has even leſs of probability than the former. Mr. *Monro*, in the *Philoſophical Tranſactions*, gives it as his Opinion, that the *Catacombs* were the Burial Places of the firſt *Romans*, and dug in conſequence of theſe two Opinions; that Shades hate the Light; and that they love to hover about the Places where the Bodies are laid.

Laying up the Bodies in Caves, is certainly the original way of diſpoſing of the Dead; and appears to have been propagated by the *Phœnicians*, throughout the Countries to which they ſent Colonies: The interring as we now do, in the open Air, or in Temples, was firſt introduc'd by the Chriſtians. When an antient Hero dy'd, or was kill'd in a Foreign Expedition, as his Body was liable to Corruption, and for that Reaſon unfit to be tranſported intire, they fell on the Expedient of burning, in order to bring home the Aſhes, to oblige the Manes to follow; that ſo his Country might not be deſtitute of the Benefit of his Tutelage. 'Twas thus Burning ſeems to have had its original; and by degrees it became common to all who could bear the Expences of it, and took place of the antient Burying: Thus *Catacombs* became diſus'd among the *Romans*, after they had borrow'd the manner of Burning from the *Greeks*; and now, none but Slaves were laid in the Ground. See BURIAL.

Places thus prepar'd, might afford convenient Reſortments for the primitive Chriſtians; but could never be built by them. When the Empire became Chriſtian, they were again diſus'd; till the reading of I know not what Author, who mentions them, occaſion'd 'em to be again look'd into. As to the fam'd Cypher Xp, 'tis obſerv'd to have been in uſe among the Antients, long before Chriſtianity aroſe. The Abbot *Bencini* ſays, it was compos'd of the two *Greek* Letters X P, under which ſomething myſtical was comprehended; but no Author gives any account what that Myſtery was.

Antiently, the Word *Catacomb* was only underſtood of the Tomb of St. *Peter* and St. *Paul*; and M. *Chaſtellan* obſerves, that among the more knowing of the People of *Rome*, the Word *Catacomb* is never apply'd to the ſubterraneous Burying-Places abovemention'd, but only to a Chapel in St. *Sebaſtian*, one of the ſeven ſtational Churches; where the antient *Roman* Calendars ſay, the Body of St. *Peter* was depoſited, under the Conſulate of *Tuſcus* and *Baſſus*, in 258.

Some derive the Word *Catacomb* from the Places where Ships are laid up; which the modern *Latins* and *Greeks* call *Combes*. Others ſay, that *Cata* was us'd for *ad*, and *Catacumbas* for *ad-tumbas*: Accordingly, *Dadin* ſays, they antiently wrote *Catatumbas*. Others fetch it from the *Greek* κατα, and κυμβ&, *Cavus*, *Receſſus*.

CATACOUSTICS, call'd alſo *Cataphonics*, the Science of reflected Sounds; or that Part of Acouſtics which conſiders the Properties of *Echoes*. See ACOUSTICS; ſee alſo ECHO, and SOUND.

CATADIOPTRIC. See CATOPTRIC.

CATADUPA, a Cataract, or Water-fall; ſee CATARACT.

Hence the Antients gave the Term *Catadupæ*, to People inhabiting near Cataracts; and theſe they ſuppos'd to be deaf with the conſtant Din. The Word comes from the *Greek* καταδυπέω, of the Prepoſition κατα, which in Compoſition ſignifies tendency, or inclintaion downwards; and δυπεω, to make a Noiſe.

CATAFALCO, an *Italian* Term, literally ſignifying *Scaffold*. It is chiefly us'd for a Decoration of Architecture, Sculpture, and Painting; rais'd on a Timber Scaffold, to ſhew a Coffin, or Tomb, in a Funeral Solemnity.

CATAGMATICS, Medicines proper to ſolder, and unite broken Bones, by promoting the Formation of a *Callus*; ſee CALLUS, and BONE.

The principal *Catagmatics*, are the *Armenian* Bole, Gum Tragacanth, Oſteocolla, *Cyprus* Nuts, Frankincenſe, Aloes, and Acacia. The Word comes from the *Greek* καταγμα, *Fracture*.

CATALECTIC, a Term in Poetry. The Antients call'd *Catalectic Verſes*, thoſe which wanted either Feet or Syllables; in oppoſition to *Acatalectics*, which are compleat Verſes, wanting nothing. The Word comes from the *Greek* κατα, and λεγω, *deſino*, I end.

CATALEPSIS, CATOCHE, or CATOCHIS, in Medicine, a kind of Apoplexy; or a Diſeaſe, wherein the Patient is taken ſpeechleſs, ſenſeleſs, and fix'd in the ſame Poſture wherein the Diſeaſe firſt ſeiz'd him; his Eyes open, without ſeeing, or underſtanding. See APOPLEXY.

This Diſeaſe is very rare, nor is its Cauſe eaſy to aſſign. *Boerhaave* takes the immediate Cauſe to be an Immobility of the common Senſory, in the Situation of the firſt Acceſs; whence an abſolute Reſt of the Blood in the Brain, and a Ceſſation of all the Functions of the Brain, as well as thoſe depending thereon; the Muſcles alone remaining in their firſt Tenſion; and Reſpiration, and the Pulſe preſerv'd, tho generally weak. It is uſually preceded by a long intermitting Fever, a melancholic dry Temperature, a Suppreſſion of the Menſes, or Hemorrhoids, great Frights, and intenſe, continu'd Meditation on one Object. Upon Diſſection, the Arteries and Veins of the *Cerebrum* are found very turgid, and the Blood cloſe ramm'd in them: 'Tis frequently cur'd by copious Hemorrhages of the Noſe; Sternutatories, Vomitives, and Veſicatories, are likewiſe apply'd to good purpoſe. It ſeldom paſſes into any other Diſeaſe; ſometimes indeed into an Epilepſy, Convulſions, Madneſs, or Atrophy; but it commonly ends in Death. The Word is *Greek*, καταλεψις, which ſignifies the ſame thing.

CATALOGUE, a Liſt, or Enumeration of the proper Names of ſeveral Books, Men, or other Things; diſpos'd according to a certain Order. The Jeſuits of *Antwerp* have given us a *Catalogue* of the Popes; which makes what they call their *Propylæum*, &c. See PROPYLÆUM.

CATALOGUE *of the Stars*, is a Liſt of the Fix'd Stars, diſpos'd in their ſeveral Conſtellations; with the Longitudes, Latitudes, &c. of each. See STAR.

The firſt who undertook to reduce the Fix'd Stars into a *Catalogue*, was *Hipparchus Rhodius*, about 120 Years before Chriſt; in which he made uſe of the Obſervations of *Tymocharis* and *Ariſtyllus*, for about 180 Years before him. *Ptolemy* retain'd *Hipparchus*'s *Catalogue*; tho he himſelf made abundance of Obſervations, with a View to a new *Catalogue*, about the Year of Chriſt 880. *Albategnius*, a *Syrian*, brought down the ſame to his Time. *Anno* 1437, *Ulugh Beigh*, King of *Parthia* and *India*, made a new *Catalogue* of the Fix'd Stars; ſince tranſlated out of *Arabic* into *Latin*, by Dr. *Hyde*. The third who made a *Catalogue* from his own Obſervations, was *Tycho Brahe*; who determin'd the Places of 777 Stars, for the Year 1600: which *Kepler*, from other Obſervations of *Tycho*, afterwards increas'd to the Number of 1000, in the *Rudolphine* Tables. At the ſame time, *William*, Landgrave of *Heſſe*, with his Mathematicians, *Chriſtopher Rothmannus*, and *Juſtus Byrgius*, determin'd the Places of 400 Fix'd Stars, by his own Obſervations; which *Hevelius* prefers to thoſe of *Tycho*'s. *Ricciolus*, in his *Aſtronomia reformata*, determin'd the Places of 101 Stars, for the Year 1700; from his own Obſervations: for the reſt, he follow'd *Tycho*'s *Catalogue*; altering it where he thought fit. *Anno* 1677, Dr. *Halley*, in the Iſland of *St. Helena*, obſerv'd 350 Southern Stars, not viſible in our Horizon. The ſame Work was repeated by F. *Noel*, in 1710, who publiſh'd a new *Catalogue* of the ſame Stars conſtructed for the Year 1687. The next was *J. Hevelius*, who made a *Catalogue* of 1888 Fix'd Stars: whereof 950 had likewiſe been obſerv'd by the Antients; 355 by Dr. *Halley*; and only 603 by himſelf.

The laſt, and greateſt, is the *Britannic Catalogue*, compil'd from the Obſervations of the accurate Mr. *Flamſtead*; who for a long Series of Years devoted himſelf wholly thereto. As there was nothing wanting either in the Obſerver, or Apparatus, we may look on this as a perfect Work, ſo far as it goes 'Tis pity the Impreſſion had not paſs'd thro his own Hands: That now extant, was publiſh'd by Authority, but without the Author's Conſent: it contains 2734 Stars. There is another publiſh'd this preſent Year, 1725, purſuant to his Teſtament: And Dr. *Halley*, his Succeſſor in the *Obſervatory Royal*, is now engag'd in ſupplying the Omiſſions of either, by his own Obſervations. See OBSERVATORY.

CATAMENIA. See MENSES.

CATAMITE, a *Ganymede*, or Boy kept for Sodomy; ſee SODOMY. The Word is form'd of κατα, and μισθος, *hir'd*.

CATAPAN, or CATIPAN, a Name the later *Greeks*, about the XIIth Century, gave the Governor of their Dominions in *Italy*. *Ughel*, and others, ſay, *Catipan* was the ſame with *Capitaneus*; form'd therefrom by *Metatheſis*, or Tranſpoſition. Others derive it from κατα, *juxta*, and παν, *omne*: In which Senſe, *Catapan* was Governor General, or Magiſtrate, who had the Direction of all: Others will have it deriv'd from κατα παντοκρατορα, after the Emperor. In which Senſe, *Catapan* was a ſecond Maſter, *Secundus Dominus*. *Du Cange* derives it from καταπαυω; which the *Greeks* apply'd to every Governor, and even every Man of Quality.

CATAPASM, a Mixture of Pouders, either Odoriferous, as for the perfuming of Clothes; or Fortifying, and apply'd to the Stomach, Heart, or Head; or Eſcharrotic, for eating off dead Fleſh. The Word comes from the *Greek* καταπασσειν, *to water*.

CATAPELTA, an Inſtrument of Puniſhment, in uſe among the Antients. It conſiſted in a kind of Preſs, compos'd of Planks, between which the Criminal was cruſh'd.

CATAPHORA, in Medicine, a Diſeaſe, the ſame with *Coma*. See COMA.

According to *Blanchard*, there is this Difference between the two, that *Cataphora* is the Genus to all Kinds of Stupors, unattended with Fevers. See LETHARGY, and CARUS.

CATAPHRYGIANS, antient Hereticks; ſo call'd, as being *Phrygians*. They were Orthodox in every thing, ſetting aſide this, that they took *Montanus* for a Prophet, and *Priſcilla* and *Maximilla* for true Propheteſſes, to be conſulted on every thing relating to Religion; as ſuppoſing the Holy Spirit had abandon'd the Church.

CATAPLASM, popularly call'd *Poultice*, an external Medicine, in form of a Pulp; of a ſoft Conſiſtence, like an Unguent, or Cerat; compos'd of various Liquors, Parts of Plants, Oils, Unguents, &c. according to the Variety of Intentions. Its ordinary Effects are, to aſſuage Pain, ſofter, reſolve, diſcuſs, or ſuppurate Matter collected in the external Parts of the Body. The ordinary *Cataplaſm* for theſe Intentions, is compos'd of white Bread, Milk, Yolks of Eggs, Saffron, and Oil of Roſes. The Word comes from the *Greek* καταπλασσω, *illino*, I ſmear, or apply outwardly.

CATAPULTA, a Military Machine, us'd among the Antients for the throwing large Darts and Javelins, 12 or 15 Foot long, on the Enemy. The *Catapulta* is ſaid to be the Invention of the *Syrians*. Some Authors make it the ſame with the *Baliſta*; others different. The firſt derive it απο της παλης, a Shaft, or Dart; the laſt from καταπαλτης. See BALISTA.

CATAPUTIA, a Medicinal Plant, commonly call'd the *leſſer Spurge*. It purges with ſuch a Violence, both upwards and downwards, that few Perſons of any Credit venture to preſcribe it.

CATARACT *of Water*, a Fall, or Precipice, in the Channel, or Bed of a River; caus'd by Rocks, or other Obſtacles, ſtopping the Courſe of its Stream; from whence the Water falls with a great Noiſe and Impetuoſity: Such are the *Cataracts* of *Nile*, the *Danube*, *Rhine*, &c. *Strabo* calls that a *Cataract*, which we call a *Caſcade*; and what we call a *Cataract*, the Antients uſually call'd a *Catadupa*.

Herminius has an expreſs Diſſertation, *De admirandis Mundi Cataractis ſupra & ſubterraneis*; where he uſes the Word in a new Senſe; ſignifying, by *Cataract*, any violent Motion of the Elements. The Word comes from the *Greek* καταῤῥεγνυω, *cum impetu decido*.

CATARACT, in Medicine, a *Suffuſion* of Sight, ariſing from a little Film, or Speck, which ſwimming in the aqueous Humour of the Eye, and getting before the Pupil, intercepts the Rays of Light. See SIGHT.

The *Cataract* is ſuppos'd to be form'd from a Condenſation of the more viſcous Parts of the aqueous Humour, between the Uvea and the Cryſtalline: tho ſome take it to be a Pellicle, detach'd from the Cryſtalline it ſelf; which is only an Aſſemblage of ſeveral little Pellicles, laid over one another. See CRYSTALLINE.

There are two Kinds of *Cataracts*, the *Genuine* and *Spurious*; the firſt owing to a Humour amaſs'd in the Eye, coagulated and fix'd therein, and deſtroying its uſe: the latter ariſes from Fumes or Vapours, carry'd to the Eye by ſome Accident; as by a Fever, &c. The Genuine *Cataract* has ſeveral Degrees and ſeveral Names: At firſt the Patient ſees, as it were, Clouds, Motes, Flies, &c. diffus'd over the Objects in view: Thus far the *Cataract* is call'd *Imaginary*; there being nothing yet appearing to the Eye of another Perſon. As the *Suffuſion* increaſes, the Pupil begins to appear of a Sea-green Colour; ſometimes like the Air, full of Clouds; and then the *Cataract* is call'd *Water*, or *Water-fall*. When the Evil is arriv'd at its height, and the Matter ſufficiently coagulated, the Patient loſes all Sight; the Pupil ceaſes to be tranſparent, but becomes white, or brown, or ſome other Colour; which laſt is what we properly denominate a *Cataract*.

Couching of CATARACTS. For the Cure of a *Cataract*, recourſe is had to the Operation of *Couching*; which is perform'd by running a Steel Needle into the Eye, thro the *Adnata*, by the Edge of the *Cornea*, on the Side of the little *Canthus*, till it arrive at the Middle of the *Cataract*; then, turning the Needle round, they twiſt the *Cataract* about its Point, till being thus reduc'd into a little compaſs, 'tis brought down beneath the Pupil, and *couch'd*, or lodg'd in the Bottom of the Eye, and there left: Thus, the Impediment being remov'd, the Light gets admiſſion. To render the Operation effectual, care muſt be taken, that the Pellicle or *Cataract* be ripe, or arriv'd at its Conſiſtence, ſo as it may be eaſily roll'd up; that its Parts be cruſh'd, or broke in rolling up, and lodg'd ſo ſecure, as not to riſe up again by its Elaſticity; and perhaps alſo, that it diſſolve and conſume at the Bottom of the Eye.

This is the popular Theory of *Cataracts*, which ſome modern Phyſicians oppoſe, and ſubſtitute a new one in its place: Their Opinion is, that inſtead of *Couching*, or laying a little Membrane, or Pellicle, 'tis the Cryſtalline it ſelf that is thus *couch'd*, and lodg'd in the Bottom of the vitreous Humour. This they ſuppoſe to have been condens'd, and to have loſt its Tranſparence; whence, inſtead of being an Inſtrument of Viſion, it proves an Obſtacle to it, by ſhutting out the Rays from the *Retina*. This Alteration of its Tranſparence, is accompany'd with a Change of Colour; it becomes greeniſh; and on this account is call'd by the Greeks *Glaucoma*. The *Glaucoma* and *Cataract* therefore, in their Opinion, are the ſame Things: tho in the other Hypotheſis they are very different; the firſt being reputed incurable, but not the latter. See GLAUCOMA.

The chief Reaſon urg'd in behalf of this latter Hypotheſis, in the *French* Academy Royal, where it was propos'd, is, that after the Operation of *Couching*, the Perſon can't ſee without a convex Lens. Now if no more were done, than the taking away a Pellicle from before the Cryſtalline, it wou'd be in the ſame Condition as before, and wou'd make the ſame Refractions; nor wou'd any Lens be neceſſary: Whereas, ſuppoſing the Cryſtalline *couch'd*, 'tis evident the

Lens will be requir'd to ſupply its Place. To this it is anſwer'd, that there have been Inſtances of Perſons who have ſeen, after *Couching*, without any Lens; at leaſt, 'tis granted, that immediately after the Operation, ſeveral Perſons have ſeen very diſtinctly: And tho Lens's ſoon become neceſſary, yet the firſt Moment wherein they ſaw without, ſeems to be a Proof that the Cryſtalline was not *couch'd*.

M. *de la Hire*, in Confirmation of the antient Syſtem, aſſigns this Reaſon for the Neceſſity of a Lens, after the Operation, *viz.* that the Vice which produc'd the *Cataract* is ſtill ſubſiſting in the aqueous Humour; which being too thick and muddy, lets too few Rays paſs: a Failing to be repair'd by a Lens, which throws a greater Quantity of Rays on the Retina. He adds ſome Experiments made on the Eyes of Oxen; the Reſult of which was, that the Cryſtalline could never be laid perfectly in the Bottom of the Eye, but there ſtill ſtuck up, ſo as to ſtop up part of the Paſſage of the Rays; partly on account of its Bulk, and partly on that of its being ſuſtain'd by the aqueous and vitreous Humour: He adds, that in the Operation of Couching, the Needle is apt to ſcratch the anterior Surface of the Cryſtalline, and open the Membrane wherewith it is involop'd; the Conſequence of which will be Wrinkles, which will render the Refractions irregular, and change the Direction of the Rays which ſhould all meet in the ſame Point; ſo as to ſpoil the Repreſentation of Objects. Laſtly, 'tis inſiſted, that if the Cryſtalline be couch'd, the Patient wou'd not ſee at all, for want of the neceſſary Refractions. See CRYSTALLINE.

M. *Antoine*, on the other hand, relates, that upon opening a Perſon whom he had *couch'd* on both Eyes, he found the two Cryſtallines actually *couch'd*, and lodg'd at the Bottom, between the vitreous Humour and the Uvea, where they were left by the Needle; and yet the Perſon ſaw without either: which ſhews, both that the Operation of *Couching* the Cryſtalline is practicable, and that Viſion may be perform'd without it. In effect, the vitreous and aqueous Humour, upon removing the Cryſtalline, may be ſuppos'd to run into the Cavity, to aſſume the Figure of its Mould, and perform the Refractions and Offices of the Cryſtalline; it being found, by Experiment, that the Refraction is the ſame in each Humour. See EYE.

To ſhew, however, that there are *Cataracts* diſtinct from *Glaucomas*, M. *Litire* produc'd before the Society an Eye of a Man blind 22 Years; wherein was a diſtinct *Cataract*, or Pellicle, which clos'd the Aperture of the Pupil. See PUPIL, VISION, *&c.*

CATARRH, in Medicine, a Flux, or Defluxion of a ſharp ſerous Humour from the Glands about the Head and Throat, upon the Parts adjacent. See FLUXION.

Catarrhs are, generally, occaſion'd by a Diminution of inſenſible Perſpiration on taking cold; the Effect whereof is, that the Lymph, that ſhould paſs by the Skin, ouzes out upon thoſe Glands; and being thus extravaſated, occaſions Iritations, Coughs, and all the uſual Symptoms. See TUSSIS. *Degory* deduces all Diſeaſes from *Catarrhs*; which he looks upon as the Seminary of moſt Diſorders of the Body. *Etmuller* diſtinguiſhes a *hot* and a *cold Catarrh*; the firſt attended with an unnatural Heat and Pain, and a Phlogoſis of the whole Body; the excreted Lymph being exceeding thin and ſharp: In the *cold*, all the Symptoms are more remiſs.

There is alſo a *ſuffocative Catarrh*, ſeated in the Larynx, and Epiglottis, which it conſtringes; and thus, obſtructing Reſpiration, endangers Strangling.

Catarrhs are cured by ſoftning the Seroſities, and augmenting Tranſpiration, by means of Diaphoreticks, ſoporiferous Medicines, and Diureticks. Smoaking of Tobacco is recommended as excellent in all *catarrhal* Affections: In *obſtinate Catarrhs*, recourſe is ſometimes had to Iſſues and Bliſters.

Catarrhs don't ariſe from the Head only, but ſometimes alſo from other Parts of the Body; the lymphatic Veſſels, wherein the Seroſities are contain'd, as well as the Glands that ſeparate them, being diſtibuted all over the Body.

The Word comes from the *Greek* Καταῤῥεω, *defluo*, I flow down.

CATASTASIS, in Poetry, the third part of the antient Drama; being that wherein the Intrigue, or Action ſet on foot in the Epitaſis, is ſupported, carried on, and heightned, till it be ripe for the unravelling in the Cataſtrophe. See EPITASIS and CATASTROPHE.

The Word comes from the *Greek* Κατασασις, *Conſtitution*, this being as it were, the Mean, Tenor, State, or Conſtitution of the Piece. See DRAMA and TRAGEDY.

CATASTROPHE, in Poetry, the Change or Revolution of a dramatic Poem, or the Turn which unravels the Intrigue, and terminates the Piece. See DRAMA, TRAGEDY, *&c.*

The *Cataſtrophe* is either Simple or Implex; whence alſo the Fable and Action are denominated. See FABLE.

In the firſt there is no change in the State of the principal Perſons, nor any diſcovery or unravelling; the Plot being only a mere Paſſage out of Agitation, to Quiet and Repoſe. This *Cataſtrophe* is rather accommodated to the Nature of the Epopea, than of Tragedy. Indeed we meet with it in ſome of the Antients, but it is out of doors among the Moderns. In the ſecond, the principal Perſon undergoes a Change of Fortune; ſometimes by means of a Diſcovery, and ſometimes without.

The Qualifications of this Change are, that it be probable, and neceſſary: in order to be probable 'tis requir'd it be the natural Reſult or Effect of the foregoing Actions, *i. e.* it muſt ſpring from the Subject it ſelf, or take its Riſe from the Incidents; and not be introduc'd merely to ſerve a Turn. The Diſcovery in the *Cataſtrophe*, muſt have the ſame Qualifications as the Cataſtrophe it ſelf, whereof it is a principal Part: It muſt be both probable and neceſſary. To be probable, it muſt ſpring out of the Subject it ſelf; not effected by means of Marks or Tokens, Rings, Bracelets, or by a mere Recollection, as is frequently done both by the Antients and Moderns. To be neceſſary, it muſt never leave the Perſons it concerns in the ſame Sentiments they had before, but ſtill produce either Love or Hatred, *&c.* Sometimes the Change conſiſts in the Diſcovery; ſometimes it follows at a diſtance, and ſometimes reſults immediately from it, which is the moſt beautiful Kind: and thus it is in *OEdipus*. See DISCOVERY.

Mr. *Dryden* thinks a *Cataſtrophe* reſulting from a mere Change in the Sentiments and Reſolutions of a Perſon, without any further Machinery, may be ſo manag'd as to become exceedingly beautiful, nay preferable to any other. 'Tis a Diſpute among the Criticks, Whether the *Cataſtrophe* ſhould always fall out happily, and favourably on the ſide of Virtue, or not? *i. e.* Whether Virtue is always to be rewarded, and Vice puniſh'd, in the *Cataſtrophe*: But the Reaſons on the Negative ſide ſeem the ſtrongeſt. *Ariſtotle* prefers a ſhocking *Cataſtrophe*, to a happy one; in regard, the moving of Terror and Pity, which is the Aim of Tragedy, is better effected by the former than the latter.

Boſſu divides the *Cataſtrophe*, at leaſt, with regard to the *Epopea*, into the Unravelling, or *Denouément*, and the *Achevement*, or Finiſhing; the laſt of which he makes the Reſult of the firſt, and to conſiſt in the Hero's Paſſage out of a State of Trouble and Agitation, to Reſt and Quiet. This Period is but a Point, without Extent, or Duration; in which it differs from the firſt, which comprehends every thing after the Knot, or Plot laid. He adds, that there are ſeveral Unravellings in the Piece, in regard there are ſeveral Knots, which beget one another: The *Finiſhing*, is the End of the laſt Unravelling. See KNOT, TRAGEDY, COMEDY, FABLE, *&c.*

The *Cataſtrophe* made the fourth and laſt Part in the antient *Drama*; or that immediately ſucceeding the *Cataſtaſis*. See CATASTASIS.

CATCH-*Land*, is ſuch *Land*, particularly in *Norfolk*, which is not certainly known to what Pariſh it belongs; ſo that the Parſon who firſt gets the Tithes there, enjoys it for that Year.

CATCH-POL, a Term now us'd, by way of Reproach, for a Bailiff's Follower, or Aſſiſtant; ſee BAILIFF. Antiently, it was a Term of Credit, apply'd to thoſe we now call *Serjeants of the Mace*, *Bailiffs*, or any other that uſe to arreſt Men on any Action. See SERGEANT, *&c.*

CATECHU, in Medicine, a ſort of medicinal Earth, call'd alſo *Cachou*, and *Japan Earth*. See CACHOU, and JAPAN *Earth*.

CATECHUMEN, a Candidate of Baptiſm; or a Perſon who prepares himſelf for the receiving thereof: See BAPTISM.

Authors diſtinguiſh three Kinds of *Catechumens*, among the Antients, *viz.* thoſe who were only Hearers, diſtinguiſh'd by the Name *Audientes*; thoſe who bowed, *Genu flectentes*; and thoſe qualify'd for Baptiſm, call'd *Competentes*; who were alſo *Genu flectentes*, becauſe of their bowing at the Rehearſal of certain Prayers over them. Others make but two Orders, *viz.* the *Genu flectentes* as the firſt; and the *Audientes*, or Hearers, call'd *Imperfecti*: The *Imperfecti* were thoſe of the Heathens, who preſented themſelves for Baptiſm. *Perfecti*, were thoſe ſufficiently inſtructed in the Faith. Some add another Kind of *Catechumens*, call'd *Electi*; as being choſen and nominated for that End: Others, laſtly, diſtinguiſh the three Orders into *Audientes*, or thoſe admitted to the hearing the Catechiſm, and other Inſtructions; the *Electi*, thoſe ſufficiently inſtructed, and choſen to receive Baptiſm; and *Competentes*, who were in a State and Diſpoſition for its Reception.

The *Catechumens* were not only diſtinguiſh'd by Name, but alſo by Place: They were diſpos'd, with the Penitents, in the *Portico*, at the Extremity of the Church, oppoſite to the Choir. They were not allow'd to aſſiſt at the Celebration of the Euchariſt; but after Sermon, the Deacon diſmiſs'd them with this Form, *Ite Catechumeni, miſſa eſt.*

The

The Word comes from the *Greek* κατηχέωμαι, *I am inſtructed*: Whence, *Catechumenium*, the Gallery, or upper Part of the Church; which was thus call'd, either becauſe the *Catechumens* ſat here, or were here inſtructed.

CATEGOREMA, in Logic, *&c.* the ſame with *Category*, or *Predicament*. See CATEGORY.

CATEGORY, or *Predicament*, in Logic, a Syſtem, or Aſſemblage, of all the Beings contain'd under any Genus, or Kind; rang'd in order: See GENUS. The School Philoſophers diſtribute all Beings, all the Objects of our Thoughts or Ideas into certain *Genera*, or Claſſes, in order to get a more diſtinct and preciſe Notion thereof; which Claſſes they call *Categories*, or *Predicaments*. See PREDICAMENT.

The Antients, after *Ariſtotle*, generally make ten *Categories*: Under the firſt, all Subſtances are compris'd; and all Accidents under the nine laſt, *viz.* Quantity, Quality, Relation, Action, Paſſion, Time, Place, Situation, and Habitude; which are uſually expreſs'd, or ſignify'd, by the following Technical Diſtich.

Arbor, Sex, Servos, Ardore, refrigerat, uſtos
Ruri, cras, ſtabo, nec tunicatus Ero.

Theſe ten *Categories* of *Ariſtotle*, which Logicians make ſuch Myſteries of, are now almoſt out of Doors; and, in effect, are of little uſe: the leſs, as being Things purely arbitrary, without any Foundation, but in the Imagination of a Man, who had no Authority to preſcribe Laws for ranging the Objects of other Peoples Ideas. Accordingly, Some Philoſophers think all Nature may be better conſider'd under theſe ſeven Things, Spirit, Matter, Quantity, Subſtance, Figure, Motion, and Reſt: And others make but two *Categories*, Subſtance and Accident.

The Word *Category*, was borrow'd by the Schools from the *Forum*, or Courts of Juſtice: For as, in a Trial, the Plaintiff, or Proſecutor, in accuſing the Criminal, or Priſoner, muſt charge him expreſsly, or affirm that he did this or that, in poſitive Terms; whence the Word *Category*, viz. κατηγορεῖσθαι, *to aver*, or *declare*: So in the Doctrine of *Categories*, every higher may be expreſsly, and abſolutely predicated, or affirm'd of every lower.

CATENA, in Anatomy, a Muſcle, otherwiſe call'd *Tibialis Anticus*; which ſee.

CATENARIA, in the higher Geometry, a Curve Line which a *Chain*, or Rope forms it ſelf into, when hung freely between two Points of Suſpenſion. See CURVE.

To conceive the general Nature or Character of this Curve, ſuppoſe, 1ſt, a Line heavy and flexible, (ſee Tab. *Geom.* Fig. 25.) the two Extremes of which, F and D, are firmly fix'd in thoſe Points; by its weight it is bent into a certain Curve F A D, which is call'd the *Catenaria*. 2dly, Let B D and *b d* be parallel to the Horizon, A B perpendicular to B D, and D ♪ parallel to A B; and the Points B *b* infinitely near to each other. From the Laws of Mechanicks, any three Powers, *in Æquilibrio*, are to one another, as the Lines parallel to the Lines of their Direction, (or inclin'd in any given Angle) and terminated by their mutual Concourſes: Hence, if D *d* expreſſes the abſolute Gravity of the Particle D *d*, (as it will, if we allow the *Chain* to be every way uniform) then D ♪ will expreſs that Part of the Gravity, that acts perpendicularly upon D *d*; and by the means of which, this Particle endeavours to reduce it ſelf to a vertical Poſition: So that if this Lineola *d* ♪ be conſtant, the perpendicular Action of Gravity upon the Parts of the *Chain* will be conſtant too; and may therefore be expreſs'd by any given right Line *a*. Farther, the Lineola D ♪, will expreſs the Force which acts againſt that Conatus of the Particle D *d* (by which it endeavours to reſtore it ſelf into a Poſition perpendicular to the Horizon) and hinders it from doing ſo. This Force proceeds from the ponderous Line D A, drawing according to the Direction D *d*; and is, *cæteris paribus*, proportional to the Line D A, which is the Cauſe of it. Suppoſing the Curve FAD, therefore, as before, whoſe Vertex (the loweſt Point of the *Catena*) is A, Axis A B, Ordinate B D; Fluxion of the Axis D ♪ = B *b*, Fluxion of the Ordinate *d* ♪; the Relation of theſe two Fluxions is thus, *viz.* *d* ♪ : D *d* :: *a* : D A Curve; which is the fundamental Property of the Curve, and may be thus expreſs'd (putting A B = *x*, and BD = *y*, and A D = *c*) $y = \frac{ax}{c}$. For more on this Subject, ſee *Philoſophical Tranſactions*, N° 231, where it is enlarg'd upon by Dr. *Gregory*.

CATERER. See PURVEYOR.

CATHARTICS, *Purgative Medicines*, or Remedies that promote Evacuation by Stool; ſee PURGATIVES.

Some uſe the Word *Cathartic* in a more general Senſe, comprehending under it Emetics, or Vomitives; but this ſeems an Abuſe: See EMETICS.

Cathartics, in the proper Senſe of the Word, are of ſeveral Kinds, *mild*, *moderate*, and *violent*. The firſt purge gently, as *Caſſia*, *Manna*, *Tamarinds*, *Rhubarb*, *Sena*, &c. the ſecond pretty briſkly, as *Jallop*, and *Scamony*, &c. the third ſeverely, as *Colacinth*, *Hellebore*, *Laureola*, &c. See each under its proper Article, CASSIA, MANNA, RHUBARB, *&c.*

Cathartics are likewiſe divided into *Chologogues*, *Phlegmagogues*, *Melanogogues*, and *Hydrogogues*; the firſt ſuppos'd to purge the Bile, the ſecond Pituita, the third Melancholy, and the fourth Seroſities. See CHOLOGOGUES, PHLEGMAGOGUES, *&c.* The Word comes from the *Greek* καθαίρω, *purgo*, I purge.

For the Theory of *Cathartics*, and the manner wherein they operate, ſee PURGATIVES.

CATHEDRAL, a Church wherein is a Biſhop's See, or Seat; ſee BISHOP.

The Word ſeems to take its riſe from the manner of ſitting in the antient Churches, or Aſſemblies of primitive Chriſtians: In theſe, the Council, *i. e.* the Elders and Prieſts, was call'd *Presbyterium*; at their head was the *Biſhop*, who held the Place of Chairman, *Cathedralis*; and the *Presbyters*, who ſate on either ſide, were alſo call'd by the antient Fathers, *Aſſeſſores Epiſcoporum*. The Epiſcopal Authority did not reſide in the Biſhop alone, but in all the Presbyters, whereof the Biſhop was Preſident. See PRESBYTER.

A *Cathedral* therefore, originally, was different from what it is now; the Chriſtians, till the Time of *Conſtantine*, having no liberty to build any Temple: by their Churches they only meant their Aſſemblies; and by *Cathedrals*, nothing more than *Conſiſtories*. Whence appears the Vanity of ſome Authors, eſpecially the *Spaniards*, who pretend their *Cathedrals* to have been built in the Times of the Apoſtles. The Word comes from the *Greek* καθέδρα, *Chair*, of καθίζω, *ſedeo*.

CATHERETIC *Medicines*, ſuch as conſume and carry off Carnoſities, proud Fleſh, and Excreſcences ariſing in Wounds, *&c.* ſuch are the *red Precipitate*, *burnt Alom*, *blue Vitriol*, *Stone*, &c.

The Word is form'd from the *Greek* κατα, and αἴρω, *I take away*, *carry off*.

Some call theſe Medicines *Sarcophages*, Fleſh-eaters. See CAUSTIC.

S. CATHERINE *of Mount* Sinai, a Military Order, inſtituted in 1603, on occaſion of finding the Body of *S. Catherine* on *Mount Sinai*; which drawing a great Concourſe of Pilgrims from all Quarters, an Order of Knights was eſtabliſh'd, on the Foot of that of the *Holy Sepulchre*, to render the Journey more ſafe among the *Arabs*. See SEPULCHRE.

They receiv'd the Rule of St. *Baſil*, and own'd *St. Catherine* for their Patroneſs: Their Vows were, to follow their Rule, guard the Body of their Patroneſs, ſecure the Roads in favour of Pilgrims, defend the Catholick Church, and obey their Grand Maſter. The Order is now extinct, as well as that of the *Holy Sepulchre*.

CATHETER, among Chirurgeons, a hollow Probe, or Inſtrument, ſomewhat crooked, to thruſt up the Yard into the Bladder; in order to aſſiſt in making Urine, when the Paſſage is ſtopp'd by the Stone, Gravel, Caruncles, *&c.*

The Word comes from the *Greek* καθημι, *immitto*, to ſend in.

Hence, *Catheteriſm* is the Operation of drawing the Urine out of the Bladder with a *Catheter*.

CATHETUS, in Geometry, a Perpendicular; or a Line, or Radius, falling perpendicularly on another Line, or Surface: See PERPENDICULAR.

Thus, the *Catheti of a rectangled Triangle*, are the two Sides that include the right Angle. See RECTANGLE.

CATHETUS *of Incidence*, in Catoptrics, is a right Line drawn from a radiant Point, perpendicular to the Plane of the *Speculum*, or Mirror. See INCIDENCE.

CATHETUS *of Reflection*, or *of the Eye*, a right Line drawn from any Point of a reflected Ray, perpendicular to the Plane of Reflection, or of the *Speculum*. See REFLECTION.

CATHETUS *of Obliquation*, a right Line, drawn perpendicular to the *Speculum*, in the Point of Incidence or Reflection.

CATHETUS, in Architecture, is a perpendicular Line, paſſing along thro the middle of a Column: or that thro the Eye of the Volute, in the *Ionic* Capital; call'd alſo *Axis*. See AXIS, and VOLUTE.

CATHOLICK, is us'd in the Senſe of *Univerſal*, or *General*; ſee GENERAL, *&c.*

Theodoſius the Great, firſt introduc'd the Term *Catholick* into the Church; appointing by an Edict, that the Title ſhould be apply'd, by way of Pre-eminence, to thoſe Churches who adher'd to the Council of *Nice*, in Excluſion of the *Arians*, &c. *Catholiciſm*, however, ſoon chang'd Hands; for under the Emperor *Conſtantius*, *Arianiſm* became ſo predominant, that the *Arians* were call'd the *Catholicks*. See ARIAN, *&c.*

The Title of *Catholick King*, has been hereditary to the King of *Spain*, ever ſince the Time of *Ferdinand* and *Iſabella*. *Colombiere* ſays, it was given on occaſion of the

Expulsion of the *Moors*. The *Bollandists* pretend, the Title was bore by their Predecessors, the *Visigoth* Kings of *Spain*; and that *Alexander* VI. only renew'd it to *Ferdinand* and *Isabella*. Others say, that *Philip de Valois* first bore the Title; which was given him after his Death by the Ecclesiasticks, on account of his favouring their Interests.

In some Epistles of the antient Popes, the Title *Catholick* is given to the Kings of *France*, and of *Jerusalem*, as well as to several Patriarchs and Primates. The Word is form'd from the *Greek* καθ' ὅλε, *universally*; whence καθολικὸς, *universal*.

Catholic *Furnace*, is a little Furnace, so contriv'd, as to be fit for all kinds of Operations, which do not require an intense Fire. See Furnace.

CATHOLICON *of Spain*. See Menippean *Satyr*.

Catholicon, in Pharmacy, a kind of soft Electuary; so call'd, as being suppos'd *universal*; or a Purger of all Humours. See Electuary.

Different Authors give different Recipes for it: That call'd *Catholicon Nicholai* is most in use; it consists of 16 Ingredients, the chief whereof are Tamarinds, Cassia, Sena, and Rhubarb. It is said to be *double*, when there is a double Portion of Sena and Rhubarb.

The *Catholicon for Clysters*, only differs from this, in that it has no Rhubarb, and that Honey is us'd instead of Sugar. See Clyster.

CATKINS, in Natural History, a Substance growing on Nut-Trees, Birch-Trees, &c. in Winter time. See Plants.

CATLIN, among Surgeons, is a Dismembring Knife, for cutting off any corrupted Part of a Body.

CATOPSIS, in Medicine, a Disorder of the Sight; more usually call'd *Myopia*. See Myopia.

CATOPTRICS, the Science of *Reflex Vision*; or that Branch of Optics, which delivers the Laws of Light, reflected from Mirrors, or *Specula*. See Mirror, and Reflection; see also Vision, Light, and Optics. Under which Heads, the Doctrine and Laws of *Catoptrics* are laid down.

The Word comes from the *Greek* κατοπτρον, *Speculum*; of κατα, and οφθαμαι, *video*, I see.

Catoptrical *Dial*, a Dial which exhibits Objects by reflected Rays. See Reflecting *Dial*.

Catoptric *Telescope*, a Telescope that exhibits Objects by Reflection; see Reflecting *Telescope*.

Catoptric *Cistula*, a Machine, or Apparatus, whereby little Bodies are represented extremely large; and near ones extreamly wide, and diffus'd thro a vast Space; and other agreeable Phænomena, by means of Mirrors, dispos'd by the Laws of *Catoptrics*, in the Concavity of a kind of Chest.

Of these there are various Kinds, accommodated to the various Intentions of the Artificer: Some multiply the Objects; some deform 'em; some magnify, &c. The Structure of one or two of 'em, will suffice to shew how infinite more may be made.

To make a Catoptric *Cistula, to represent several distinct Scenes of Objects, when look'd in at several* Foramina, *or Holes.*

Provide a polygonous *Cistula*, or Chest, of the Figure of the Multilateral Prism A B C D E F, (Plate *Optics*, Fig. 19.) and divide its Cavity by Diagonal Planes E B, F C, D A, intersecting each other in the Centre G, into as many triangular Locules, or Cells, as the Chest has Sides. Line the Diagonal Planes with plane Mirrors: In the lateral Planes make round Holes, thro which the Eye may peep within the Locules of the Chest. The Holes are to be cover'd with plain Glasses, ground within-side, but not polish'd, to prevent the Objects in the Locules from appearing too distinctly. In each Locule are plac'd the different Objects, whose Images are to be exhibited; then covering up the Top of the Chest with a thin transparent Membrane, or Parchment, to admit the Light, the Machine is compleat.

For, from the Laws of Reflection, it follows, that the Images of Objects, plac'd within the Angles of Mirrors, are multiply'd, and appear some more remote than others; whence the Objects in one Locule, will appear to take up more room than is contain'd in the whole Chest. By looking, therefore, thro one Hole only, the Objects in one Locule will be seen; but those multiply'd, and diffus'd thro a Space much larger than the whole Chest: thus every new Hole will afford a new Scene: According to the different Angles the Mirrors make with each other, the Representations will be different; if they be at an Angle greater than a right one, the Images will be monstrous, &c. See Anamorphosis.

The Parchment that covers the Machine, may be made pellucid, by washing it several times in a very clear Lye, then in fair Water, and bracing it tight, and exposing it to the Air to dry. If 'tis desir'd to throw any Colour on the Objects, it may be done by colouring the Parchment. *Zahnius* recommends Verdigrease, ground in Vinegar, for green; Decoction of *Brasil* Wood, for red, &c. He adds, it ought to be varnish'd, to make it shine.

To make a Catoptric *Cistula, to represent the Objects within it prodigiously multiply'd, and diffus'd thro a vast Space.*

Make a polygonous *Cistula*, or Chest, as before, but without dividing the inner Cavity into any Apartments or Locules; (Plate *Optics*, Fig. 20.) line the lateral Planes C B H I, B H L A, A L M F, &c. with plane Mirrors, and at the *Foramina*, or Apertures, pare off the Tin and Quicksilver, that the Eye may see thro: Place any Objects in the Bottom M I, *v. g.* a Bird in a Cage, &c.

Here, the Eye looking thro the Aperture *h i*, will see each Object plac'd at bottom, vastly multiply'd, and the Images remov'd at equal Distances from one another. Hence, were a large multangular Room, in a Prince's Palace, lin'd with large Mirrors, over which were plain pellucid Glasses to admit the Light; 'tis evident the Effects would be very surprising and magnificent. See Mirror, Reflection, &c.

CATOPTROMANCY, a kind of Divination, among the Antients; so called, because consisting in the Application of a *Mirror*; from κατοπτρον, *Speculum*, and μαντεια, *Divinatio*. See Divination.

Pausanias says, it was in use among the *Achaians*, where those who were sick, and in danger of Death, let down a Mirror, fasten'd by a Thread, into a Fountain before the Temple of *Ceres*; then, looking in the Glass, if they saw a gastly disfigur'd Face, they took it as a sure Sign of Death: on the contrary, if the Face appear'd fresh and healthy, 'twas a Sign of Recovery.

CAVA, in Anatomy, the Name of a Vein, the largest in the Body, terminating in the right Ventricle of the Heart; where it opens with a large Mouth, to convey to it the Blood brought from all the Parts of the Body, by the Branches of the other Veins, which all terminate in the *Cava*. See Vein.

At its Entrance into the right Ventricle, it has three membranous Valves, call'd *Tricuspides*, or *Triglochines*, from their triangular Figure; so accommodated, as to allow the Blood's passage from the *Cava* to the Heart, and to prevent its return. See Heart, and Valves.

The *Cava* is divided into the *ascending* and *descending* Parts: The *ascending Cava*, is that which arises from the lower Parts; so call'd, because the Blood hereby convey'd to the Heart, mounts, or *ascends*. The *descending Cava* comes from the upper Parts, and is so called, because the Blood hereby brought from the Brain, and other Parts, *descends*. See Blood, and Circulation.

CAVALCADE, a formal, pompous March, or Procession of Horsemen, Carriages, &c. by way of Parade, or Ceremony. See Carrousal, Tilt, Quadril, &c.

CAVALEER, or CAVALIER, a Horseman, or Person mounted on Horseback. Antiently, the Word was restrain'd to a *Knight*, or *Miles*. See Knight, and Miles. The *French* still use *Chevalier* in the same Sense. See Chevalier.

Cavalier, in Fortification, a Terrace, or Platform, commanding all around the Place. 'Tis rais'd 18, or 29 Foot high, atop of a Rampart, for placing the Cannon on, and securing the Country about. 'Tis sometimes also made in the Country, to play in upon the Town; and as much above the other Works, as a Man *on Horseback* is above a Footman; whence the Denomination.

In form, the *Cavalier* is sometimes round, and sometimes square; having always a Parapet to cover the Cannon: Its Breadth depends on the Number of Pieces to be lodg'd on it; there being always allow'd an Interval of 10 or 12 Foot between each two, for the Conveniency of loading and firing.

The *Cavalier* is also sometimes call'd a *double Bastion*.

Cavaliers, or Cavaleers, consider'd as a Faction; see Tory.

CAVALRY, a Body of Soldiers, who fight, or march on Horseback. See Soldiers; see also Guards.

The English *Cavalry* is divided into *Horse*, and *Dragoons*; the *French* into *Companies of Ordnance*, as the *Gardes du Corps*, *Gens d'Armes*, *Light-Horse*, &c. and into *Regiments*, commanded by *Mestres de Camp*. The Dragoons, among the *English*, and the Regiments among the *French*, form what they call the *light Cavalry*. When an Army is rang'd in order of Battel, the *Cavalry* is posted on the Wings.

Bodies of *Cavalry*, rang'd in form of Battel, are call'd *Squadrons*. See Squadron.

The *Romans*, in their first Wars, were unacquainted with the use of *Cavalry*, and made their whole Force consist in *Infantry*; insomuch, that even in the Engagement they made their Horse dismount, and fight on Foot; never resuming their Horses, but to pursue the Enemy the better when routed. It was the *Cavalry* of *Pyrrhus*, that first occasion'd them to alter their Sentiments; but especially that of *Hannibal*, which struck them with such a Terror, that the invincible *Roman* Legions durst not attack them on even Ground.

The Word comes from the corrupt Latin *Caballus*, a Horſe; whence *Caballarius*, and *Cavallarius*, in the later *Latin*, and καβαλλαρ, in the *Greek*.

CAUDA *Draconis*, the *Dragon's Tail*, in Aſtronomy, the Name of the Moon's deſcending Node; ſee NODE.

CAVEAT, in Law, a Bill enter'd, in the Eccleſiaſtical Court, to ſtop the Proceedings of one who would prove a Will to the Prejudice of another.

CAVERNOSA *Corpora*, in Anatomy, call'd alſo *Corpora nervoſa*, and *ſpongioſa*, are two cavernous Bodies, of an indeterminate Length and Thickneſs, whereof the *Penis* is principally compos'd. See PENIS.

Their internal Subſtance is rare, and ſpongy; and when fill'd with Blood and Spirits, dilates and ſwells: in which, the Tenſion, or Erection of the Yard conſiſts. See ERECTION.

They have two diſtinct Beginnings from the lower Side of the *Oſſa Pubis*; whence they increaſe in bulk, till their meeting with the *Corpus Cavernoſum Urethræ*, where they join into one, and are retain'd by means of a *Septum* compos'd of their outer Tunics: Their other Extremities are capp'd with the Glans; ſee GLANS.

CAVERNOSUM *Corpus Urethræ*, a third ſpongious Body of the Penis; ſo called, becauſe the *Urethra*, or urinary Paſſage of the Penis is inclos'd therewith. See URETHRA.

Its Figure, contrary to that of the two *Corpora Cavernoſa*, is largeſt at its Extremities, and leaſt in the Middle; its upper Part is in the *Perinæum*, and is call'd its *Bulb*, from its Figure. Its external Membrane is thin, and divided lengthwiſe by a *Septum*. The middle Part of the *Corpus* is nearly cylindrical; but the Paſſage for the Urine is not along the Centre, but inclines to its upper Part, next the Body of the Penis; its lower Extremity dilating it ſelf, forms the *Glans*. See GLANS.

CAVERNOSA *Corpora of the Clitoris*, are two nervous or ſpongy Bodies, like thoſe of the Penis; having their Origin from the lower Part of the *Os Pubis*, on each ſide; and uniting together, conſtitute the Body of the *Clitoris*, as thoſe do that of the Penis. See CLITORIS.

Indeed, they have no Perforation analogous to that of the Penis; but they have a *Septum*, or membranous Partition, running all along between 'em, and dividing 'em from the *Glans*, to its Devarication at the *Os Pubis*, where they are call'd *Crura Clitoridis*: See CRURA *Clitoridis*.

CAVERNOSUM *Corpus of the Pudendum*. See RETICULARE *Corpus*.

CAVESON, in the Manage, a kind of Bridle, or Muſroll, put on the Horſe's Noſe, which binds or locks him in, and ſerves in breaking, managing, and tutoring him.

The *Caveſons* for breaking young Horſes, are uſually of Iron, made ſemicircularly, of two or three Pieces turning on Joints; others are twiſted, others flat, others hollow in the Middle, and indented like Saws, call'd *Mordants*: tho theſe laſt are now baniſh'd the Academies. The Rope and Leathern *Caveſons*, ſerve for paſſing the Horſe between two Pillars. The Word comes from the Spaniſh *Caveſa*, Head.

CAVETTO, in Architecture, a hollow Member, or Moulding, containing a Quadrant of a Circle, and having an Effect juſt contrary to that of a Quarter-round: It is us'd as an Ornament in Cornices.

M. *Felibien* obſerves, that the Workmen confound the *Cavetto* with a *Scotia*, but to ill Purpoſe; the *Cavetto* being in effect only half a *Scotia*: yet he himſelf is chargeable with the ſame Overſight. See SCOTIA.

When in its natural Situation, the Workmen frequently call it *Gula*, or *Gueule*; and when inverted, *Gorge*. See GULA, and GORGE.

The Word is *Italian*, and no more than a Diminutive of *Cavus*, hollow.

CAVIA, or KAVIA, call'd alſo *Cavial*, *Caviac*, and *Caviar*, a kind of Food, or Ragout, in mighty uſe and repute throughout *Muſcovy*; and lately introduc'd upon the *Engliſh* Table.

The *Cavia*, or *Kavia*, is the Roe, or Eggs of the Fiſh Sturgeon, taken out, ſalted, and dry'd at the Sun, or by the Fire. The *Italian* Merchants ſettled at *Moſcow*, drive an incredible Trade with *Cavia*; the Fiſh being caught in prodigious Quantities at the Mouth of the *Volga*, and other Rivers which empty themſelves into the *Caſpian Sea*. They cure, or prepare the Roes on the Spot, and thence ſend it up the *Volga* to *Moſcow*, to be there diſtributed throughout that vaſt Empire; where it is of wonderful ſervice to the People, on account of the three Lents there obſerv'd with great Severity. See *Sturgeon* FISHERY.

The *Engliſh* import conſiderable Quantities of this Commodity from *Archangel*; tho not ſo much for home Conſumption, as to ſupply the *French* and *Italians*. To be good, it ſhould be of a reddiſh brown Colour, and very dry. 'Tis eat with Oil and Lemon; ſometimes with Vinegar: Some eat it alone with Bread; and others only as a Sauce, or Pickle, like Anchovies.

CAVIN, in Fortification, is a hollow Place, proper to favour the Approaches to a Fortreſs; ſo that one may advance therein, under Covert, towards the Enemy, as it were in a Trench. If it be within Muſket-ſhot, 'tis a Place of Arms, ready made to hand; and a Convenience for opening the Trenches, out of fear of the Enemy's Shot.

CAVITIES, among Anatomiſts. See VENTER, and REGION.

CAUL, in Anatomy, a Membrane in the Abdomen, covering the greateſt part of the Guts; called, from its Structure, *Reticulum*, but moſt popularly *Omentum*. See OMENTUM.

CAUL is likewiſe a little Membrane, found on ſome Children encompaſſing the Head, when born.

Drelincourt takes the *Caul* to be only a Fragment of the Membranes of the *Fœtus*; which ordinarily break at the Birth of the Child: See FOETUS.

Lampridius tells us, that the Midwiſes ſold this *Caul* at a good price to the Advocates and Pleaders of his Time; it being an Opinion, that while they had this about them, they ſhou'd carry with 'em a Force of Perſuaſion which no Judge could withſtand: The Canons forbid the Uſe of it; becauſe ſome Witches and Sorcerers, it ſeems, had abus'd it.

CAULICOLES, CAULICULI, in Architecture, are eight leſſer Branches, or Stalks, in the *Corinthian* Capital, ſpringing out from the four greater or principal *Caules*, or Stalks. See *Corinthian* CAPITAL.

The eight Volutes of this Order, are ſuſtain'd by four *Caules*, or primary Branches of Leaves; and from which ariſe theſe *Caulicoles*, or leſſer Foliages. See VOLUTE, and LEAVES.

Some Authors confound theſe with the *Volutes* themſelves; ſome with the *Helices* in the Middle, and ſome with the principal *Stalks* whence they ariſe.

The Word comes from the Latin *Caulis*, the Stalk, or Stem of a Plant, whence the Leaves and Branches ariſe.

CAULIFEROUS *Herbs*, are ſuch as have a true *Caulis*, Stalk, or Trunk, which a great many have not; as the *Capillaries*, &c. See STEM, STOCK, CAPILLARIES, *&c.*

CAUSALITY, in Metaphyſics, is the Power, or Action of a Cauſe in producing its Effect. See CAUSE.

'Tis a Diſpute, among the School Philoſophers, whether, and how the *Cauſality* is diſtinguiſh'd from the *Cauſe* and *Effect*: Some hold it a Mode, or Modal Entity, ſuperadded to the Cauſe, *&c.* others contend for its being the Cauſe it ſelf, only conſider'd *principiativè* and *terminativè*, &c.

CAUSE, that whence any thing is; or by virtue whereof a thing is done: Thus a Wound is the *Cauſe* of Death, Crudity of a Diſeaſe, *&c.* *Cauſe* is a Term of a Relation to *Effect*; ſee EFFECT.

Firſt CAUSE, is that which acts of it ſelf, and from its own proper Force, or Virtue; in which Senſe, God is the only *Firſt Cauſe*. See GOD.

Second CAUSES, are thoſe which derive the Power, and Faculty of acting, from a Firſt *Cauſe*. Such *Cauſes* don't properly act at all; but are acted on: and therefore are improperly call'd *Cauſes*: of which Kind are all thoſe that we call *Natural Cauſes*. See NATURE.

F. *Malebranch* denies *Second*, or *Natural Cauſes*, to have any Force, Power, or Efficacy to produce any Effect; and thinks the Notion in it ſelf inconceivable. 'Tis certain the Philoſophers are ſtrangely puzzled, and divided about the manner of their Agency: Some maintain 'em to act by their *Matter*, *Figure*, and *Motion*; ſee CORPUSCULAR: others by a *ſubſtantial Form*; ſee *Subſtantial* FORM: many by *Accidents*, or *Qualities*; ſome by *Matter* and *Form*; others by certain *Faculties* different from all theſe: See FACULTY, FORM, QUALITY, *&c.*

Some maintain, that the ſubſtantial Form produces Forms; and the accidental, Accidents; others, that Forms produce other Forms and Accidents; others, laſtly, that Accidents alone are capable of producing Accidents, and even Forms. Again, thoſe, for Inſtance, who ſay that Accidents may produce Forms, by the Virtue they have receiv'd from the Form to which they are join'd, don't all mean the ſame thing: Some will have it, that theſe Accidents are only the Force or Virtue of the ſubſtantial Form; others, that they receive the Influence of the Form, and only act by virtue thereof: others, laſtly, that they are only *Inſtrumental Cauſes*.

Again, the Philoſophers are divided as to the Action whereby *Second Cauſes* produce their Effects: Some maintain, that the *Cauſality* cannot be produc'd, ſince 'tis that produces; others will have 'em to act truly by their Action; but they are ſtill at a loſs about that Action.

Such Variety is there in the Sentiments even of modern Philoſophers; and thoſe too our Neighbours: nor are the Antients, and thoſe at a Diſtance from us, better agreed: *Avicenna*, *v. g.* does not allow that corporeal Subſtances can produce any thing but Accidents. His Syſtem, according to *Ruvio*, is this: God produces, immediately, a moſt perfect ſpiritual Subſtance; this produces another leſs perfect;

fect; that a third: and thus to the laſt; which laſt produces all the corporeal Subſtances; and thoſe corporeal Subſtances Accidents. But *Avicenna*, not being able to conceive how corporeal Subſtances, which cannot penetrate one another, ſhould be capable of altering one another, will have it, that only Spirits are capable of acting on Bodies; becauſe nothing elſe can penetrate 'em. See *Occaſional* CAUSE.

CAUSES, in the School Philoſophy, are diſtinguiſh'd into, *Efficient* CAUSES, which are the Agents that produce any thing. See EFFICIENT *Cauſe*.

Material CAUSES, the Subjects whereon the Agent works, or whereof the Thing is form'd: thus, Marble is the *Matter* or *Material Cauſe* of the Statue. See MATERIAL *Cauſe*.

Formal CAUSES, the Changes reſulting from the Action, or that which determines a Thing to be this, and diſtinguiſhes it from every thing elſe: Thus, the Soul is the *Form*, or *Formal Cauſe* of Man, &c. See FORMAL *Cauſe*.

Final CAUSES, the Motives which induc'd a Man to act; or the End for which the Thing is done: thus, Victory and Peace are the *Final Cauſes* of War. See FINAL *Cauſe*.

Some add the *Exemplary* CAUSE, which is the Model the Agent forms, or propoſes, and by which he conducts himſelf in the Action; but this is not properly any *Cauſe* at all. See EXEMPLARY *Cauſe*.

CAUSES, again, are diſtinguiſh'd into *Phyſical*, or *Natural*, and *Moral*.

A *Phyſical* CAUSE, is that which produces a ſenſible corporeal Effect: thus, the Sun is the *Phyſical Cauſe* of Heat.

A *Moral Cauſe*, is that which produces a real Effect, but in Things immaterial: thus, Repentance is the *Cauſe* of Forgiveneſs.

Others define a *Phyſical Cauſe* to be that which produces its Effect by a *Phyſical* Virtue; and a *Moral Cauſe*, that which determines the *Phyſical Cauſe*, tho not neceſſarily, to produce the Effect: in which Senſe, 'tis alſo call'd a *Diſpoſitive*, *Excitative*, and *Imputative Cauſe*.

Thus, the Sun is the *Phyſical Cauſe* of Light; a Stone that breaks the Skull, a *Phyſical Cauſe* of Death: and thus the Advice, Intreaty, Commands, or Menaces which determine us, tho not neceſſarily, to do, or not to do any thing, are *Moral Cauſes*.

In this Senſe, a *Moral Cauſe* is only applicable to a free intelligent Agent; and 'tis this Notion of a *Moral* or *Phyſical Cauſe*, that is the moſt juſt, clear, and diſtinct. See MORAL *Cauſe*.

CAUSES, again, are conſider'd, either as *Univerſal*, or *Particular*; *Principal*, or *Inſtrumental*; *Total*, or *Partial*; *Univocal*, *Equivocal*, &c.

An *Univerſal* CAUSE, is that which by the Extent of its Power may produce all Effects. See UNIVERSAL.

A *Particular* CAUSE, is that which can only produce a ſingle Effect, or a certain kind of Effects.

A *Principal* CAUSE, is that which gives Motion to the Inſtrument, or which does not operate beyond its own natural Efficacy.

An *Inſtrumental* CAUSE, is that us'd by the Principal to produce its Effect; or which is excited to produce an Effect, beyond the Meaſure of its own Perfection.

A *Total* CAUSE, is that which produces the whole Effect.

A *Partial* CAUSE, that which concurs with ſome other in producing the Effect.

An *Univocal* CAUSE, is that which is of the ſame Kind and Denomination with its Effect; as a Man the *Cauſe* of a Man. See UNIVOCAL.

An *Equivocal* CAUSE, is that which is of a different Kind and Denomination from its Effect; as the Sun is the *Cauſe* of the Animals it produces. See EQUIVOCAL.

The *Carteſians* reſolve all *Phyſical Cauſes* into *Occaſional* ones.

Occaſional CAUSES, are only the *Occaſions*, not the direct *Cauſes* of their Effects. See OCCASION.

The Soul, ſay thoſe Philoſophers, is not able to act on the Body; nor the Body reciprocally on the Soul: to keep up an Intercourſe between 'em, God, on *occaſion* of the Motion of the Body, impreſſes a Senſation on the Soul; and, on *occaſion* of a Sentiment of the Soul, impreſſes a Motion on the Body. The Motions, therefore, of the Soul and Body, are only *Occaſional Cauſes* of what paſſes in the one or the other: thus, ſay they, the Stroke or Percuſſion, is only the *Occaſional Cauſe* of the Motion produc'd in the Body ſtruck: 'Tis God is the direct *Efficient Cauſe*. And thus the Action of Objects on our Organs, is not the *Efficient Cauſe* of our Ideas and Perceptions, but merely the *Occaſional Cauſe*, which determines God to act on the Mind, according to the Laws of the Union of Soul and Body. But the Conſequences that follow from this fine Reaſoning are very unlucky, not to ſay ridiculous: Thus, 'tis not the Cannon-Ball that kills the Man, or beats down the Wall, but 'tis God that does it: the Motion of the Cannoneer, whoſe Arm, mov'd by the Power of God, apply'd Fire to the Pouder, determin'd God to inflame that Pouder; the Pouder inflam'd, determin'd God to drive out the Ball; and the Ball driven, with an incon[illegible] exterior Surface of the Body of a [illegible] mines God to break the Bones of [illegible] the Wall, &c. A Coward, who r[illegible] away at all; but the Motion of his [illegible] by the Impreſſion of a Squadron of [illegible] him, with Bayonets at the Ends of t[illegible] mines God to move the Coward's L[illegible] from them.

It has been often ſaid, in a moral Senſe, [illegible] the World is a Comedy, and that each Man only acts h[illegible] Part; but it may be here ſaid, in a ſtrict Phyſical one, that the Univerſe is a Puppet-Show, and each Man a Punchinello, making a great deal of Noiſe without ſpeaking, and buſtling without moving.

CAUSTICS, in Medicine, &c. are ſuch Things as have the Virtue of *Burning*, or are *Corroſive*; particularly thoſe Medicines which by their violent Activity, and the Heat thence occaſion'd, deſtroy the Texture of the Parts to which they are apply'd.

Cauſtics are us'd to eat off proud fungous Fleſh; they alſo penetrate within hard callous Bodies, and liquefy the Humours; and are particularly apply'd in Abſceſſes and Impoſthumations, to eat thro to the ſuppurated Matter, and give it vent.

The principal Medicines of this Claſs, are *burnt Alum*, *Sponge*, *Cantharides*, and other *Veſicatories*; as alſo *Orpiment*, *Calx viva*, *Vitriol*, *Aſhes of the Fig-Tree*, *the Aſh*, and *Wine Lees*; the *Salt* of the *Lixivium*, whereof Soap is made; *Sublimate*, *Mercury*, *red Precipitate*, &c. See each deſcrib'd under its proper Article, ALUM, VITRIOL, CANTHARIDES, ORPIMENT, MERCURY, SUBLIMATE, PRECIPITATE, &c.

Cryſtals of the Moon, and *Lapis Infernalis*, made of Silver and Spirit of Nitre, become *Cauſtics* by that Mixture. See CRYSTALS, &c.

Thoſe *Cauſtics* which burn thro the Part, and leave a Scar, are particularly call'd *Cauteries*; tho Dr. *Quincy* confounds the two together. See CAUTERY.

The Word comes from καυστικὸς, *urens*; of καιω, *uro*, I burn.

CAUSTIC-*Glaſſes*. See BURNING-*Glaſſes*.

CAUSTIC *Curve*, in the higher Geometry, a *Curve* form'd by the Concourſe, or Coincidence of the Rays of Light reflected, or refracted from ſome other Curve. See CURVE.

Accordingly, *Cauſtics* are divided into *Catacauſtic*, and *Diacauſtic*; the one form'd by Reflection, the other by Refraction. See CATACAUSTIC, and DIACAUSTIC.

Cauſtic Curves, are the Invention of M. *Tſchirnhauſen*, who firſt propos'd 'em to the Academy of Sciences, in 1682. They have this remarkable Property, that when the Curves that produce them are Geometrical, they are equal to known right Lines.

Thus, the *Cauſtic* form'd in a Quadrant of a Circle by reflected Rays, which came at firſt parallel to the Diameter, is equal to $\frac{3}{4}$ of the Diameter: which is a ſort of Rectification of Curves that preceded the Invention of the new Doctrine of Infinites; on which moſt of our other Rectifications are built. See RECTIFICATION.

The Academy appointed a Committee to examine the new Curves, *viz.* Meſſ. *Caſſini*, *Mariotte*, and *de la Hire*, which laſt doubted much of the Deſcription, or Generation, M. *de Tſchirnhauſen* gave of the *Cauſtic* by Reflection, from a Quadrant of a Circle. The Author refus'd to diſcover all his Method; and M. *de la Hire* perſiſted in holding the Generation ſuſpicious. M. *Tſchirnhauſen*, however, was ſo confident of it, that he ſent it to the *Leipſic* Journaliſts, tho without any Demonſtration.

CAUTERY, in Chirurgery, a burning Medicine, or a Compoſition of ſeveral Things, which gnaw, burn off, eat thro, and ſear the Parts; us'd, principally, in Abſceſſes, Impoſthumations, Ulcers, and Caries of the Bones, to open a Paſſage for the Diſcharge of ill Humours, &c.

Cauteries are of two Kinds, *Actual*, and *Potential*.

Actual CAUTERIES, are thoſe which produce an inſtantaneous Effect, as *Fire*, or *a red-hot Iron*, which are apply'd in the *Fiſtula Lachrymalis*, after Extirpations of Cancers, Amputations of Legs, or Arms, &c. in order to ſtop the Hemorrhages, and produce a laudable Suppuration. The Irons us'd on theſe Occaſions, are ſometimes crooked at the Extremity, and that variouſly, according to the various Occaſions: Whence ſome are called *Cultellary*, others *Punctual*, others *Olivary*, &c.

M. *Homberg* aſſures us, that a great Part of the Medicine of the People of *Java*, and other Parts of the *Eaſt Indies*, conſiſts in *Burning*, or the Application of actual *Cauteries*; and that there is ſcarce any Diſeaſe but they will happily cure thereby. See BURNING.

Potential CAUTERIES, are Compoſitions of *Cauſtic* Medicines, uſually of Quick-lime, Soap, and Chimney Soot. See CAUSTICS.

The *Actual Cautery*, or hot Iron, is frequently apply'd for the making of Iſſues, in Parts where cutting is difficult

…kes a little round Hole, which is …an Ivy Berry, to keep it open for …ro. See ISSUE. *Pareus* deſcribes …*Velvet Cauteries*; ſo call'd becauſe …

…ly apply'd to the Nape of the Neck, betw… …nd ſecond Vertebra, the exterior Part of th…

The … …es from the *Greek* καίω, *uro*.

CAUS… , a maſſive Conſtruction of Stone, Stakes, Faſcines; or … an Elevation of fat, viſcous Earth, well beaten; ſerving either as a *Road*, in wet marſhy Places, or as a Mole to retain the Waters of a Pond, or prevent a River from overflowing the lower Grounds. See ROAD.

The Word comes from the French *Chauſſee*, antiently wrote *Chaulſee*; and that from the Latin *Calcata*; according to *Somner* and *Spelman*, *à calceando, aut a calce quia hujuſmodi viæ calce muniuntur*. *Berger* rather takes the Word to have its Riſe *à peditum calceis, quibus teruntur*.

CAXA, a little leaden Coin, mix'd with a little Copper Skum, ſtruck in *China*, but current chiefly at *Bantam*, in the reſt of the Iſland of *Java*, and in ſome of the neighbouring Iſlands. See C…N.

'Tis ſomewhat ſmaller than the French *Double*, and has a ſquare Hole through the Middle; by means whereof, ſeveral of 'em are hung on the ſame String: This String, which they call *Santa*, contains 200 *Caxas*, equivalent to nine French *Deniers*, or ſomewhat leſs than three Farthings Sterling. Five *Santas* ty'd together, *i. e.* a thouſand *Caxas*, make a *Sapacou*. Nothing can exceed the Brittleneſs of the *Caxa*; a String never falls to the Ground, without breaking at leaſt 10 or 12 Pieces. Leaving 'em a Night ſteep'd in ſalt Water, they cling ſo firm to one another, that they are not to be ſeparated without breaking one half of 'em. The *Malais* call 'em *Cas*, and the *Javeſe*, *Pitis*.

The *Caxas* are of two Kinds, *great* and *ſmall*: The *ſmall* are thoſe we have been ſpeaking of; 300000 whereof, are equal to 56 Livres 5 Sols, *Dutch* Money. The *large* are old *Caxas*; 6000 whereof are equal to the Piece of Eight, or 4*s*. 6*d*. Sterling. Theſe are nearly the ſame with the *Caches* of *China*, and the *Caſſies* of *Japan*.

CEILING, in Architecture, the upper Part, or Roof of a lower Room; or a Lay, or Covering of Plaiſter over Laths, nail'd on the Bottom of the Joiſts that bear the Floor of the upper Room; or on Joiſts for that purpoſe. See HOUSE, and ROOF.

The Word *Ceiling*, anſwers pretty accurately to the Latin *Lacunar*, every thing over Head.

Plaiſter'd *Ceilings* are much us'd in *England*, more than any other Country: Nor are they without their Advantages, as they make the Room lightſome; are good in Caſe of Fire; ſtop the Paſſage of the Duſt; leſſen the Noiſe over Head; and, in Summer, make the Air cooler. See

CELANDINE. See CHELIDONIA.

CELARENT, in Logic, a Syllogiſm whoſe ſecond Propoſition is an univerſal Affirmative; and the reſt univerſal Negatives. See SYLLOGISM.

CELATURA, the Art of *Engraving*. See ENGRAVING.

CELERES, in Antiquity, a Body, or Regiment of Guards of the antient *Roman* Kings, eſtabliſh'd by *Romulus*; conſiſting of 300 Youths choſen from the beſt Families of *Rome*, and approv'd by the Suffrages of the *Curiæ* of the People, each of which furniſh'd ten. See CURIÆ.

The *Celeres* always attended near the King's Perſon, to guard him, and to be ready to carry his Orders, and execute them. In War, they made the Vant-Guard in the Engagement, which they always begun firſt: In Retreats, they made the Rear-Guard.

Tho the *Celeres* were a Body of Horſe, yet they uſually diſmounted, and fought on Foot: Their Commander was call'd *Tribune of the Celeres*. They were divided into three Troops, of 100 each, commanded by a Captain call'd *Centurio*. Their Tribune was the ſecond Perſon in the Kingdom. See TRIBUNE, CENTURIO, *&c.*

Plutarch ſays, *Numa* broke the *Celeres*: If this be true, they were ſoon re-eſtabliſh'd; for we find them under moſt of the ſucceeding Kings: Witneſs the great *Brutus*, who expell'd the *Tarquins*, and who was *Tribune of the Celeres*.

The Word comes from *Celer*, *quick*, *ready*; and was given them, becauſe of their promptneſs to obey the King; or, as ſome will have it, from the Name of their firſt Tribune: Others ſay, from one *Celer*, a Comerade of *Romulus*, who aſſiſted him in the Combat with his Brother *Remus*, and is ſaid to have ſlain that Prince.

Some ſay, the *Celeres* were the ſame with thoſe afterwards call'd *Troſſuli*, on account of their taking the City *Troſſulum* in *Hetruria*, alone, without the Aſſiſtance of any Infantry.

CELERITY, in Mechanicks, is the *Velocity* of a moving Body; or that Affection of a Body in Motion, whereby it is enabled to paſs over a certain Space, in a certain Time. See VELOCITY; ſee alſo MOTION.

CELESTINS, an Order of Religious, reform'd from the *Bernardines*, in 1224, by Pope *Celeſtin* V. then only *Peter de Mourchon*, or *Morron*, of *Iſernia* in *Naples*; and eſtabliſh'd in 1264, by Pope *Urban* IV. and confirm'd by *Gregory* X. in 1274.

They were introduc'd into *France*, by *Philip* the Fair, who requeſted a Dozen of them from the General of their Order, by his Ambaſſador at *Naples*, in 1300. 'Tis a kind of Proverb with them, *Voila un plaiſant Celeſtin*.

CELIAC *Paſſion*, or CÆLIACA *Paſſio*, in Medicine, a kind of Flux of the Belly, wherein the Food does not indeed paſs perfectly crude, as in the *Lientery*, but half digeſted; ſo that the two only differ from each other, as more or leſs. See LIENTERY.

In the *Celiac* the Food is ſometimes digeſted, without the Chyle's being ſeparated from the Excrements.

The Cauſes of the *Celiac* are either the Weakneſs of the Ferment of the Stomach, the ſhort ſtay the Food there makes, the Obſtruction of the Lacteals, or the want of Acrity in the Bile. See FLUX.

The Word comes from the *Greek* κοιλία, *Venter*; whence κοιλιακός, a Perſon ſubject to ſuch Inconveniences. See COLIC.

CELIBATE, or CELIBACY, the State of a Perſon who lives out of Marriage. See MARRIAGE.

The *Celibate* of the Clergy, which is ſtill rigorouſly kept up among the *Romaniſts*, is of a pretty antient ſtanding: It was firſt propos'd by the Council of *Nice*, but without paſſing; it was, however, in ſome meaſure admitted by the Weſtern Councils of *Elvira*, *Arles*, *Tours*, &c. Such among the Prieſts as piqu'd themſelves on the Faculty of Continence, took the Hint; inſomuch, as towards the Cloſe of the IVth Century, there were few but made a Profeſſion of a voluntary *Celibate*. In 441, the Council of *Orange* order'd thoſe to be depos'd who did not abſtain from their Wives: But it was *Gregory* VII. who firſt brought Eccleſiaſticks to admit the *Celibate* as a Law. In the Council of *Trent*, it was propos'd, to ſet the Clergy at liberty again from the Yoke of *Celibate*; and this was even made an Article of the Interim of *Charles* V. but the Pope could not be brought into it.

St. *Jerom*, and *Epiphanius* obſerve, that in their Time none were admitted into the Prieſthood, but thoſe who were unmarry'd, or who abſtain'd from their Wives. See PRIEST, and CLERGY.

Scaliger derives the Word from the *Greek* κοίτη, *Bed*, and λείπω, *linquo*, I leave: Others ſay, it is form'd from *Cæli beatitudo*.

CELLITES, an Order of Religious, founded by *Alexius*, a *Roman*: In *Italy* they are call'd *Alexians*; but in *Germany* and the Low-Countries, where they have Monaſteries, *Cellites*, *i. e.* People inhabiting in Cells.

CELLS, *Cellæ*, *Cellulæ*, are little Houſes, Apartments, or Chambers; particularly thoſe wherein the antient Monks, Solitaries, and Hermits liv'd in Retirement. See MONK, SOLITARY, HERMIT, *&c.*

The ſame Name is ſtill retain'd in divers Monaſteries. The Dormitory is frequently divided into ſo many *Cells*, or Lodges. See DORMITORY.

The *Carthuſians* have each a ſeveral Houſe, which ſerves 'em as *Cells*. See CARTHUSIANS.

The Hall wherein the *Roman* Conclave is held, is divided by Partitions into divers *Cells*, for the ſeveral Cardinals to lodge in. See CONCLAVE.

Some derive the Word from the *Hebrew* בלא, *i. e.* a Priſon, or Place where any thing is ſhut up.

CELLS, in Anatomy, are little Bags, or Bladders, where Fluids or other Matters are lodg'd; call'd alſo *Loculi*, *Cellulæ*, &c. See CELLULÆ.

The Name is alſo given by Botaniſts to the Partitions in the Huſks, or Pods where the Seed lies.

CELLS, are alſo the little Diviſions, or Apartments in Honey-Combs, where the Honey, young Bees, *&c.* are diſtributed: theſe are always regular Hexagons. See HIVE, HONEY, COMB, *&c.*

CELLULÆ *Adepoſæ*, in Anatomy, the *Loculi*, or little Cells wherein the Fat of Bodies in good habit is contain'd. See ADEPS.

Theſe are co-extended with the Skin it ſelf, except on the Forehead, the Eyelids, Penis, and *Scrotum*. In emaciated Bodies, theſe *Cells* being unfurniſh'd of their Fat, appear like a kind of flaccid, tranſparent Membrane. See FAT.

CEMENT, CÆMENT, or CIMENT, in the general Senſe of the Word, is any Compoſition of a glutinous or tenacious Nature, proper to bind, unite, or keep things in Coheſion.

In this Senſe, Mortar, Solder, Glue, *&c.* are *Cements*. See MORTAR, SOLDER, GLUE, *&c.*

The Bitumen brought from the *Levant*, is ſaid to have been the *Cement* us'd in the Walls of *Babylon*. See BITUMEN.

The Word is form'd of the Latin *Cæmentum*, of *cædo*, I beat. Tho M. *Felibien* obſerves, that what the antient Architects call'd *Cæmentum*, was a very different thing from our *Cement:* The Name *Cement*, with them, ſtood for a kind of Maſonry, or manner of laying the Stones; and even for the Quality of the Stones; as when the Walls were fill'd up with little Pebbles, Rubbiſh, &c. See MASONRY.

CEMENT, is particularly us'd in Architecture, for a ſtrong, binding ſort of Mortar, us'd to bind, or unite Bricks or Stones together, for ſome kinds of Mouldings; or to make a block of Bricks, for the Carving of Scrolls, Capitals, &c.

It is of two Sorts: The *hot Cement*, which is the moſt common, is made of Roſin, Bees-Wax, Brickduſt, and Chalk, boil'd together. The Bricks to be *cemented* are heated, and rubb'd one upon another, with *Cement* between.

The *cold Cement* is leſs us'd: 'tis made of Cheſhire Cheeſe, Milk, Quick-lime, and Whites of Eggs.

CEMENT, is alſo us'd among Goldſmiths, Engravers, Jewellers, &c. for a Compoſition of fine Brickduſt, well ſifted, Roſin, and Bees-Wax, in uſe among thoſe Artificers to keep the Metals to be engraven, or wrought on, firm to the Block, &c. as alſo to fill up what is to be chiſſel'd.

CEMENT, in Chymiſtry, is a Compound, us'd for the purifying of Gold; ſee GOLD, and PURIFICATION.

There are two Kinds of this *Cement*, *Common*, and *Royal*. The firſt made of Brickduſt, Nitre, and Verdigreaſe; the ſecond of Sal Gemmæ, and Armoniac, each one Part; two Parts of common Salt, and four of Bole: the whole reduc'd into a Paſte with Urine. Hence,

CEMENTATION, or CÆMENTATION; a manner of purifying Gold, by means of *Cement*.

'Tis perform'd thus: Thin Plates, or *Laminæ*, are ſtratify'd in a Crucible with *Royal Cement*; the Crucible is cover'd up, and encompaſs'd with Fire for 10 or 12 Hours, till being thus calcin'd, the Salts have imbib'd and conſum'd the Impurities of the Gold.

This Method of *Refining*, is much inferior to that by means of Antimony; in regard, the Salts ſometimes leave other Metals remaining with the Gold; and beſides, frequently eat away the Gold it ſelf. See REFINING.

CENOBITE, or COENOBITE, a Religious who lives in a Convent, or in Community, under a certain Rule; in oppoſition to *Anchorite*, or *Hermit*, who lives in Solitude. See HERMIT, &c.

Caſſian makes this Difference between a *Convent* and a *Monaſtery*, that the latter may be apply'd to a ſingle Religious, or Recluſe; whereas the *Convent* implies *Cenobites*, or Numbers of Religious living in common. See CONVENT, and MONASTERY.

Fleury ſpeaks of three Kinds of Monks in *Egypt*; *Anchorites*, who live in Solitude; *Cenobites*, who continue to live in Community; and *Sarabaites*, who are a kind of Monks Errant, that ſtroll from Place to Place.

He refers the Inſtitution of *Cenobites* to the Times of the Apoſtles; and makes it a kind of Imitation of the ordinary Life of the Faithful at *Jeruſalem*. Tho St. *Pacome* is ordinarily own'd the Inſtitutor of the *Cenobitic* Life; as being the firſt who gave a Rule to any Community.

The Word comes from the *Greek* κοινὸς, *communis*, and βιῶ, *Vita*, Life.

CENSOR, in Antiquity, one of the prime Magiſtrates in antient *Rome*; ſo call'd *à cenſendo*, becauſe he aſſeſs'd and valu'd every Man's Eſtate, regiſtring their Names, and placing 'em in a proper Century; that the *Romans* might know their own ſtrength. See CENSUS.

Others ſay, the *Cenſors* were ſo call'd, as being Controllers, or Correctors of Manners and Policy.

They were firſt created in the Year of *Rome* 311, upon the Senate's obſerving, that the Conſuls were too much taken up with Matters of War, to be at leiſure for looking near enough into private Affairs. The two firſt were *Papirius* and *Sempronius:* Their Authority extended over every Perſon; and they had a Right to reprehend the higheſt. At firſt they were taken out of the Senate; but after the Plebeians had got the Conſulate open to 'em, they ſoon arriv'd at the *Cenſorſhip: M. Rutilius* was the firſt; who having been twice Conſul, and Dictator, in the Year 402 demanded the Office of *Cenſor*. The Cuſtom was, to elect two; the one of a Patrician Family, the other a Plebeian: and upon the Death of either, the other was diſcharg'd from his Office, and two new ones elected. In the Year 414, a Law was made, appointing one of the *Cenſors* to be always elected out of the Plebeians; which held in force till the Year 622, when both *Cenſors* were choſen from among the People: after which time, it was ſhar'd between the Senate and People.

This Office was ſo conſiderable, that none aſpir'd to it till they had paſs'd all the reſt: So that it was look'd on as ſurpriſing, that *Craſſus* ſhould be admitted *Cenſor*, without having been either Conſul or Pretor. The Term of this Office was at firſt eſtabliſh'd for five Years; but that Inſtitution only laſted nine: *Mamercinus* the Dictator, made a Law, reſtraining the *Cenſure* to a Year and an half; which was afterwards obſerv'd very ſtrictly.

The Buſineſs of the *Cenſors*, was to regiſter the Effects, &c. of the *Roman* Citizens; to impoſe Taxes, in proportion to what each Perſon poſſeſs'd. *Cicero* reduces their Functions to, the numbering of the People; the correction and reformation of Manners; the eſtimating the Effects of each Citizen; the proportioning of Taxes; the ſuperintendance of Tribute; the excluſion from the Temples; and the Care of the publick Places. They had alſo a Right to exclude from the Senate, ſuch of the Senators as they judg'd unworthy of the Dignity; as well as to break and caſhier the Knights who fail'd in their Duty, by taking from 'em the publick Horſe. See SENATOR, KNIGHT, &c.

The Republic of *Venice*, has at this Day a *Cenſor* of the Manners of their People, whoſe Office laſts ſix Months.

CENSORS *of Books*, are a Body of Doctors, or other Officers, eſtabliſh'd in divers Countries, to examine and give their Judgment of all Books, e'er they go to the Preſs; and to ſee they contain nothing contrary to the Faith, and good Manners. In *England* we had formerly an Officer of this kind, under the Title of *Licenſer of the Preſs*; but ſince the Revolution the Preſs has been open.

M. *Bayle* compares Authors ſolliciting the Approbation of *Cenſors*, or Licenſers, to thoſe Shades wandering on the Banks of *Styx*, and waiting with Impatience for a Paſſage to the other Shore. He applies to 'em theſe two Verſes of *Virgil:*

Tendenteſque Manus, Ripæ ulterioris amore:
Navita ſed triſtis nunc hos nunc accipit illos.

At *Paris*, the *Faculty of Theology* claim the Privilege of *Cenſors*, as granted to them by the Pope; and 'tis certain they had been in poſſeſſion of it for many Ages: but in the Year 1624, a new Commiſſion of four Doctors were created, by Letters Patent, the ſole *Cenſors* and Examiners of all Books; and anſwerable for every thing contain'd therein. The Faculty, however, ſtill maintain their Claim, by taking occaſion, now and then, to give their Approbations to Books.

CENSURE, *Cenſura*, is popularly us'd for a Judgment, whereby any Action, Book, or other thing is condemn'd; or a Correction, or Reprimand made by a Superior, or Perſon in Authority. Hence,

Eccleſiaſtical CENSURES, are the publick Menaces which the Church makes, of the Pains and Penalties incurr'd by diſobeying what ſhe enjoins; or rather, the Pains and Puniſhments themſelves; as *Interdiction*, *Excommunication*, &c. See INTERDICTION, SUSPENSION, DEGRADATION, &c.

Till the Time of the Reformation, the Kings of *England* were ſubject to the *Cenſures* of the Church of *Rome*; but the Kings of *France* have always maintain'd themſelves exempt from them. In effect, there is no Inſtance of Excommunication of any of their firſt Race of Kings, till *Lotharius*'s Excommunication by Pope *Nicholas* I. for putting away his Wife *Tetberge*; which is reckon'd the firſt Breach of the Liberties of the *Gallican* Church: Yet the Pope durſt not hazard his Excommunication on his own Authority, but took care to have it confirm'd by the Aſſembly of the Biſhops of *France*; and the ſame Precaution was afterwards obſerv'd by the other Popes. But in after Times the *French* Kings aſſerted their Rights to better purpoſe; for Pope *Benedict* XIII. having *cenſur'd Charles* VI. laid the Nation under an Interdict: upon which, the Parliament of *Paris*, by an Arret, order'd the Bull to be torn: And *Julius* II. having excommunicated *Louis* XII. the Aſſembly General at *Tours cenſur'd* the Pope's *Cenſure*.

The Canoniſts diſtinguiſh two Kinds of *Cenſures*; the one *de Jure*, the other *de Facto*, or by Sentence.

CENSURE, is alſo a Cuſtom in ſeveral Manors in *Cornwal* and *Devon*, whereby all the Reſiants above the Age of 16, are call'd to ſwear Fealty to the Lord, to pay two Pence *per* Poll, and a Penny *per Annum*, ever after, as *Cert-Money*, or common Fine. See CERT-*Money*.

CENSUS, among the *Romans*, was an authentic Declaration made by the ſeveral Subjects of the Empire, of their reſpective Names, and Places of abode, before proper Magiſtrates, in the City of *Rome*, call'd *Cenſors*; and in the Provinces *Cenſitors*, by whom the ſame were regiſter'd. See CENSOR.

This Declaration was accompany'd with a Catalogue, or Enumeration in writing, of all the Eſtates, Lands, and Heritages they poſſeſs'd; their Quantity, Quality, Place, Tenants, Domeſticks, Slaves, &c.

Hence, alſo, *Cenſus* came to ſignify a Perſon who had made ſuch a Declaration: In which Senſe it was oppos'd to *Incenſus*, a Perſon who had not render'd his Eſtate or Name to be regiſter'd.

The *Cenſus* was inſtituted by King *Servius*; and was held every five Years. It went thro all the Ranks of

People, tho under different Names: that of the common People was call'd *Census*, or *Lustrum*; that of the Knights *Census*, *Recensio*, *Recognitio*; that of the Senators, *Lectio*, *Relectio*.

In the *Voconian* Law, *Census* is us'd for a Man, whose Estate, in the *Censor*'s Books, is valu'd at 100000 *Sesterces*.

CENTAUR, in Astronomy, a Part, or Moiety of a Southern Constellation, in form, half Man, half Horse, usually join'd with the *Wolf*. See CENTAURUS *cum Lupo*.

The Word comes from the *Greek* κεντευς; form'd of κεντεω, *pungo*, and ταυρος, *taurus*.

CENTAURUS *cum Lupo*, *Centaur with the Wolf*, in Astronomy, a Constellation of the Southern Hemisphere. See CONSTELLATION.

The Stars in the Constellation *Centaurus cum Lupo*, in *Ptolomy*'s Catalogue, are 19; in *Tycho*'s 4; in the *Britannic Catalogue*, they are 13. The Order, Names, Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow.

Stars in the Constellation CENTAURUS cum LUPO.

Names and Situation of the Stars.	Signs.	Longitude. °	′	″	Latitude. °	′	″	Magn.
Inform. before the Head	♏	25	42	40	21	33	13	5
Preced. in the Head of the Centaur	♏	2	22	1	20	33	3	4 5
South. in the Head		3	41	36	21	34	24	4 5
Middle		3	35	20	20	2	20	4 5
Subseq. and North. in the Head		3	26	53	18	56	15	4 5
In hind Shoulder of the Centaur		8	0	18	21	59	0	2 3
South. of 2 in anterior Foot of Wolf		20	21	34	12	57	45	5 6
Subseq. and North. of the same		20	39	49	11	28	1	5
Prec. of cont. before Neck of *Lupus*		23	10	26	17	6	56	4
Subsequent		23	37	3	17	37	52	6
Preced. of 2 in the Wolf's Nose		26	21	24	14	25	38	5 6
Contiguous to that		27	2	37	14	34	8	5 6
Subseq. in the Nose	♏	28	30	10	13	7	23	5

CENTRE, or CENTER, *Centrum*, in Geometry, or CENTRE *of a Circle*, is a Point in the Middle of a Circle, or circular Figure, from which all Lines drawn to the Circumference are equal. See CIRCLE.

Euclid demonstrates, that the Angle at the *Centre* is double to that of the Circumference; *i. e.* the Angle made by two Lines drawn from the Extremes of an Arch to the *Centre*, is double that made by two Lines drawn from these Extremes to a Point in the Circumference. See CIRCUMFERENCE, and ANGLE.

CENTRE *of a Parallelogram*, or *Polygon*, the Point wherein its Diagonals intersect. See PARALLELOGRAM, and POLYGON.

CENTRE *of Magnitude*, is a Point equally remote from the extreme Parts of a Line, Figure, or Body; or the Middle of a Line, or Plane, by which a Figure or Body is divided into two equal Parts. See MAGNITUDE.

CENTRE *of a Sphere*, is a Point from which all the Lines drawn to the Surface, are equal. See SPHERE.

The *Centre of the Semicircle*, by whose Revolution the Sphere is generated, is also that of the Sphere. See SEMICIRCLE.

CENTRE *of a Bastion*, is a Point in the middle of the Gorge of the Bastion, whence the Capital Line commences; and which is ordinarily at the Angle of the inner Polygon of the Figure. See BASTION, &c.

CENTRE *of a Battalion*, the Middle of a Battalion; where is usually left a large square Space, for lodging the Clothes and Baggage. See BATTALION.

CENTRE *of a Dial*, is that Point where its Gnomen or Style, which is plac'd parallel to the Axis of the Earth, intersects the Plane of the Dial; and from thence, in those Dials which have *Centres*, all the Hour-Lines are drawn. If the Plane of the Dial be parallel to the Axis of the Earth, it can have no *Centre* at all, but all the Hour-Lines will be parallel to the Style, and to one another. See DIAL.

CENTRE *of a Conic Section*, is the Point wherein all the Diameters concur. See DIAMETER; see also CONIC *Section*.

This Point, in the *Ellipsis*, is within the Figure; and, in the *Hyperbola*, without. See CENTRE *of an Ellipsis*, &c.

CENTRE *of an Ellipsis*, is that Point where the two Diameters, the Transverse and the Conjugate, intersect each other. See ELLIPSIS.

CENTRE *of an Hyperbola*, is a Point in the Middle of the Transverse Axis. See HYPERBOLA; and TRANSVERSE *Axis*.

CENTRE *of a Curve*, of the higher Kind, is the Point where two Diameters concur. See DIAMETER.

Where all the Diameters concur in the same Point, Sir *Isaac Newton* calls it, the *general Centre*. See CURVE.

CENTRE *of Gravitation*, or *Attraction*, in Physicks, is that Point to which a revolving Planet, or Comet, is impell'd, or attracted by the Force, or Impetus of Gravity. See GRAVITATION, and ATTRACTION.

CENTRE *of Gravity*, in Mechanicks, is a Point within a Body, thro which if a Plane pass, the Segments on each side will equi-ponderate, *i. e.* neither of them can move the other. See GRAVITY.

Hence, if the Descent of the *Centre* of Gravity be prevented, or if the Body be suspended by its *Centre* of Gravity, it will continue at rest. See MOTION, and REST.

The whole Gravity of a Body may be conceiv'd united in its *Centre*; and therefore, in Demonstrations, 'tis usual, for the Body, to substitute the *Centre*.

Thro the *Centre* of Gravity passes a right Line, call'd *the Diameter of Gravity*: the Intersection, therefore, of two such Diameters, determines the *Centre*.

The Plane whereon the *Centre* of Gravity is plac'd, is call'd *the Plane of Gravity*: so that the common Intersection of two such Planes, determines the Diameter of Gravity.

In homogeneal Bodies, which may be divided lengthwise into similar and equal Parts, the *Centre* of Gravity is the same with the *Centre* of Magnitude. If, therefore, a Line, *v. g.* or a Cylinder be bissected, the Point of Section will be the *Centre* of Gravity.

Common CENTRE *of Gravity of two Bodies*, is a Point so situated, in the right Line, joining the *Centres* of the two Bodies, as that, if the Point be suspended, the two Bodies will equi-ponderate, and rest in any Situation: Thus, the Point of Suspension in a common Balance, or in a *Roman* Steelyard, where the two Weights equi-ponderate, is the common *Centre* of Gravity of the two Weights.

Laws of the CENTRE *of Gravity.*

1. *If the* Centres *of Gravity of two Bodies* A *and* B, (Tab. *Mechanicks*, Fig. 13.) *be join'd by the right Line* AB, *the Distances* BC *and* CA, *of the common* Centre *of Gravity* C, *from the particular* Centres *of Gravity* B *and* A, *are reciprocally as the Weights* A *and* B: See this demonstrated under BALANCE.

Hence, if the Gravities of the Bodies A and B be equal, the common *Centre* of Gravity C, will be in the Middle of the right Line AB. Again, since A : B :: BC : AC; A will be to AC :: B : BC; whence, it appears, that the Powers of equi-ponderating Bodies, are to be estimated by the *Factum* of the Mass, multiply'd into its Distance from the *Centre* of Gravity; which *Factum* is usually call'd the *Momentum* of the Weights. See MOMENT.

Further, since A : B :: BC : AC, A + B : A :: BC + AC : BC.

The common *Centre* of Gravity, therefore C, of two Bodies, will be found, if the *Factum* of one Weight A, into the Distance of the separate *Centres* of Gravity AB, be divided by the Sum of the Weights A and B. Suppose, *v.g.* A = 12, B = 4, AB = 24; therefore, BC = 24, 12 : 16 = 18. If the Weight A be given, and the Distance of the particular *Centres* of Gravity AB, together with the common *Centre* of Gravity C; the Weight of B will be found = to A. AC : BC; that is, dividing the *Moment* of the given Weight, by the Distance of the Weight requir'd. Suppose, A = 12, BC = 18, AC = 6; then B = 6. 12 : 18 :: 12 : 3 = 4.

2. *To determine the common* Centre *of Gravity of several given Bodies a, b, c, d,* (Fig. 13.) in the right Line AB. Find the common *Centre* of Gravity of the two Bodies *a* and *b*, which suppose in F; conceive a Weight *a* + *b*, apply'd in F; and in the Line FE, find the common *Centre* of the Weights *a* + *b* and *c*; which suppose in G. Lastly, in BG, suppose a Weight *a* + *b* + *c* apply'd, equal to the two *a* + *b* and *c*; and find the common *Centre* of Gravity between this and the Weight *d*, which suppose in H; this H will be the common *Centre* of Gravity of the Bodies *a*, *b*, *c*, *d*. And in the same manner might the common *Centre* of Gravity of any greater number of Bodies be found.

3. *Two Weights* D *and* E, (Fig. 14.) *being suspended without their common* Centre *of Gravity in* C, *to determine which of them preponderates, and how much.* Multiply each into its Distances, from the *Centre* of Suspension; that Side on which the *Factum* is greatest, will preponderate; and the Difference between the two, will be the Weight wherewith it preponderates.

Hence, the *Momentum* of the Weights D and E, suspended without the *Centre* of Gravity, are in a Ratio compounded of the Weights D and E, and the Distances from the Point of Suspension. Hence also the *Momentum* of a Weight suspended in the very Point C, will have no effect at all in respect of the rest DE.

4. *To determine the Preponderation where several Bodies a, b, c, d,* (Fig. 15.) *are suspended without the common* Centre *of Gravity in* C. Multiply the Weights *c* and *d* into their Distances from the Point of Suspension CE and EB; the Sum will be the *Momentum* of their Weights, or their Ponderation towards the right: Then multiply the Weights *a* and *b* into their Distances, AC and CD, the Sum will be the Ponderation towards the left: Subtracting, therefore, the one from the other, the Remainder will be the Preponderation requir'd.

5. *Any Number of Weights a, b, c, d, being suspended without the common* Centre *of Gravity in* C, *and preponderating*

derating towards the right; to determine the Point F, *from whence the Sum of all the Weights being ſuſpended, the Preponderation ſhall continue the ſame as in their former Situation.*

Find the *Momentum* wherewith the Weights *c* and *d* preponderate towards the right; ſince the *Momentum* of the Sum of the Weights to be ſuſpended in F, is to be equal to it, the *Momentum* now found, will be the *Factum* of C F into the Sum of the Weights: This, therefore, being divided by the Sum of the Weights, the Quotient will be the Diſtance C F, at which the Sum of the Weights is to be ſuſpended, that the Preponderation may continue the ſame as before.

6. *To find the* Centre *of Gravity in a Parallelogram and Parallelepiped.* Draw the Diagonals A D and E G, (Fig. 16.) likewiſe C B and H E; ſince each Diagonal, A B and C B, divides the Parallelogram into two equal Parts, each paſſes thro the *Centre* of Gravity; conſequently, the Point of Interſection I, is the *Centre* of Gravity of the Parallelogram. In like manner, ſince both the Plane C B F H and A D G E, divide the Parallelepiped into two equal Parts, each paſſes thro its *Centre* of Gravity; ſo that the common Interſection I K, is the Diameter of Gravity, the Middle whereof is the *Centre*.

After the ſame manner may the *Centre* of Gravity be found in Priſms and Cylinders; it being the middle Point of the right Line that joins the *Centres* of Gravity of their oppoſite Baſes.

7. In *regular Polygons*, the *Centre* of Gravity is the ſame with the *Centre* of the circumſcrib'd Parallelogram.

8. *To find the* Centre *of Gravity of a Cone and a Pyramid.* The *Centre* of Gravity of a Cone, is in its Axis A C, (Fig. 17.) If then A P $= x$, P $p = dx$, the Weight in the ſame Cone is $prx^2\,dx : 2a^2$; and therefore its *Momentum* $prx^3\,dx . 2a^2$. Hence the Sum of the *Momenta* $prx^4 : 8a^2$; which divided by the Sum of the Weights $prx^3 : 6a^2$, gives the Diſtance of the *Centre* of Gravity of the Portion A M N, from the Vertex A $= 6a^2\,prx^4 : 8a^2\,prx^3 = \frac{3}{4}x = \frac{3}{4}$ A p: wherefore, the *Centre* of Gravity of the entire Cone, is diſtant from the Vertex, $\frac{1}{4}$ of A C. And in the ſame manner is found the Diſtance of the *Centre* of Gravity from the Vertex of the Pyramid $\frac{3}{4}$ A C.

9. *To determine the* Centre *of Gravity in a Triangle* B A C, (Fig. 18.) Draw the right Line A D, biſſecting the Baſe B C in D; ſince $\triangle$ B A D $=\triangle$ D A C, each may be divided into the ſame Number of Weights, apply'd in the ſame manner on each ſide to the common Axis A D: So that the *Centre* of Gravity of the $\triangle$ B A C, will be in A D. To determine the preciſe Point in that, let A D $= a$, B C $= b$, P $= x$, M N $= y$; then will

A P : M N = A D : B C

$x : y = a : b$.

Hence, $y = bx : a$. Draw A E $= c$ perpendicular to B C; then A D : A E = A P : A Q; and therefore, A Q $= cx : a$, and Q $q = c\,dx : a$. Whence, the *Momentum* $yx\,dx = cbx^2\,dx : a^2$, and $\int yx\,dx = cbx^3 : 3a^2$; which Sum divided by the Area of the Triangle A M N $= cbx^2 : 2a^2$, gives the Diſtance of the *Centre* of Gravity from the Vertex $= 2abx^3 : 3abx^2 = \frac{2}{3}x$. If then for x, be ſubſtituted a, the Diſtance of the *Centre* of Gravity of the $\triangle$, from the Vertex, will be found $\frac{2}{3}a$.

10. *For the* Centre *of Gravity in a Parabola*, (Fig. 19.) Its Diſtance from the Vertex A, is found the Space A F. In a cubical Paraboloid, the Diſtance of the *Centre* from the Vertex, is $= \frac{4}{5}$ A P. In a Biquadratic Paraboloid, $\frac{5}{9}$ A P. In a Surdeſolid Paraboloid, $\frac{6}{11}$ A P. In the Exterior Parabola A S T, the *Centre* of Gravity is at the Diſtance A L. In the Cubical Paraboloid, 4 A Q. In a Biquadratic Paraboloid, $\frac{5}{8}$ A Q. In a Surdeſolidal Paraboloid, $\frac{6}{7}$ A Q.

11. *The* Centre *of Gravity in the Arch of a Circle*, is diſtant from the *Centre* of the Arch by a Line, which is a third Proportional to the Quadrant and the Radius. In a Sector of a Circle, the Diſtance of the *Centre* of Gravity from the *Centre* of the Circle, is to the Diſtance of the *Centre* of Gravity of the Arch, as 2 to 3.

For the Centre *of Gravity of Segments, Lines, Parabolic Conoids, Spheroids, truncated Cones*, &c. as being Caſes more operoſe, and at the ſame time more out of the way; we refer to *Wolfius*'s *Elem. Matheſ.* Tom. I.

12. *To determine the* Centre *of Gravity in any Body mechanically.* Lay the given Body H I, (Fig. 20.) on an extended Rope, or the Edge of a triangular Priſm F G, bringing it this and that way, till the Parts on either Side are *in Æquilibrio*; the Plane whoſe Side is K L, paſſes thro the *Centre* of Gravity. Balance it again on the ſame, only changing its Situation: then will the Cord M N, paſs thro the *Centre* of Gravity; ſo that the Interſection of the two Lines M N and K L, determines the Point O in the Surface of the Body requir'd.

The ſame may be done by laying the Body on a horizontal Table, (as near the Edge as is poſſible, without its falling) in two Poſitions, lengthwiſe and breadthwiſe: the common Interſection of the two Lines contiguous to the Edge, will be its *Centre* of Gravity. Or, it may be done by laying the Body on the Point of a Style, &c. till it reſt *in Æquilibrio*. 'Twas by this Method, *Borelli* found the *Centre* of Gravity in an human Body, to be between the *Nates* and *Pubis*; ſo that the whole Gravity of the Body is there collected, where Nature has plac'd the Genitals: An Inſtance of the Wiſdom of the Creator, in placing the *Membrum Virile* in that Place, which of all others is the moſt convenient for the Affair of Copulation.

13. 'Every Figure, whether ſuperficial or ſolid, generated 'by the Motion of a Line, or Figure, is equal to the *Fac*-'*tum* of the generating Magnitude, multiply'd into the 'Way of its *Centre* of Gravity, or the Line its *Centre* of 'Gravity deſcribes.' See the Demonſtration hereof, under the Article Centro *Baric Method.*

The preceding elegant Theorem, is look'd on as one of the nobleſt Geometrical Diſcoveries made in the laſt Age; and is the Foundation of the *Methodus Centro-barica. Pappus*, indeed, gave the firſt Hint long ago; but it was the Jeſuit *Guldinus* that brought it to Maturity. *Leibnitz* ſhews it will hold, if the Axis, or *Centre*, be continually chang'd during the generating Motion: The Corollaries are too numerous to be here detail'd.

Centre *of Motion*, is a Point round which one or more heavy Bodies, that have one common *Centre* of Gravity, revolve. *v. g.* If the Weights P and Q (Tab. *Mechanicks*, Fig. 21.) revolve about the Point N, ſo as when P deſcends, Q aſcends, N is ſaid to be the *Centre of Motion.* See Motion.

'Tis demonſtrated in Mechanicks, that the Diſtance I N, of the *Centre* of Gravity of any particular Weight, from the common *Centre* of Gravity, or the *Centre* of Motion N, is perpendicular to the Line of Direction I *p*.

Centre *of Oſcillation*, a Point wherein, if the whole Gravity of a compound Pendulum be collected, the ſeveral Oſcillations will be perform'd in the ſame Time as before: See Oscillation.

Hence, its Diſtance from the Point of Suſpenſion, is equal to the Length of a ſimple Pendulum, whoſe Oſcillations are Iſochronal with thoſe of the compound one. See Pendulum.

Laws of the Centre *of Oſcillation.*

1. *If ſeveral Weights* D F H B, (Tab. *Mechanicks*, Fig. 22.) *whoſe Gravity is ſuppos'd collected in the Points* DEHB, *conſtantly retain the ſame Diſtance between themſelves and the Point of Suſpenſion* A; *and the Pendulum thus compounded, perform its Oſcillations about* A; *the Diſtance of the* Centre *of Oſcillation* O, *from the Point of Suſpenſion* O A, *will be had by multiplying the ſeveral Weights into the Squares of the Diſtances, and dividing the Aggregate by the Sum of the* Momenta *of their Weight.*

2. *To determine the* Centre *of Oſcillation in a right Line* A B, (Fig. 23.) Let A B $= a$, A D $= x$, then will the infinitely ſmall Particle D P $= dx$, the *Momentum* of its Weight $x\,dx$; conſequently the Diſtance of the *Centre* of Oſcillation in the Part A D, from the Point of Suſpenſion A $= \int x^2\,dx : \int x\,dx = \frac{1}{3}x^3 : \frac{1}{2}x^2 = \frac{2}{3}x$. If then for x be ſubſtituted a, the Diſtance of the *Centre* of Oſcillation in the right Line A B $= \frac{2}{3}a$. In this manner is found the *Centre* of Oſcillation of a Wire, oſcillating about one of its Extremes.

3. *To determine the* Centre *of Oſcillation of the Rectangle* R I H S, (Fig. 24.) *ſuſpended in the middle Point* A, *of the Side* R I, *and oſcillating about its Axis* R I. Let R I $=$ S H $= a$, A P, then will P $p = dx$, and the Element of the Area; conſequently one Weight $= a\,dx$, and its *Momentum* $a\,x\,dx$. Wherefore, $\int ax^2\,dx : \int ax\,dx = \frac{1}{3}ax^3 : \frac{1}{2}ax^2 = \frac{2}{3}x$, indefinitely expreſſes the Diſtance of the *Centre* of Oſcillation, from the Axis of Oſcillation in the Segment R C D I. If then for x be ſubſtituted the Altitude of the whole Rectangle R S $= b$, we ſhall have the Diſtance of the *Centre* of Oſcillation from the Axis $= \frac{2}{3}b$.

For the Centre *of Oſcillation in an Equicrural Triangle*, oſcillating about its Axis, parallel to its Baſe, its Diſtance from the Vertex, is found $= \frac{3}{4}$ of the Altitude of the Triangle.

Of an Equicrural Triangle oſcillating about its Baſe, its Diſtance from the Vertex is found $= \frac{1}{2}$ the Altitude of the Triangle.

For the Centre *of Oſcillation in an Equicrural Triangle, ſuſpended by an inflexible Thread*, void of Gravity, and oſcillating about its Axis parallel to its Baſe; its Diſtance from the Vertex, is found $= \frac{1}{2}$ the Altitude of the Triangle.

For the Centres *of Oſcillation of Parabolas, and Curves of the like kind*, oſcillating about their Axis, parallel to their Baſes, they are found as follows.

In the *Apollonian* Parabola, the Diſtance of the *Centre* from the Axis, $= \frac{5}{7}$ of its Diameter.

In a *Cubical* Paraboloid, the Diſtance of the *Centre* of Oſcillation from the Axis, $= \frac{7}{10}$ of the Diameter.

In a *Biquadratic* Paraboloid, the Diſtance of the *Centre* from the Axis, $= \frac{9}{13}$ of the Diameter.

In

In ſolid and plane Figures agitated laterally, *i. e.* about the Axis of Oſcillation, perpendicular to the Plane of the Figure, the Inveſtigation of the *Centre* of Oſcillation is ſomewhat difficult; in regard, all the Parts of the Weight, by reaſon of their unequal Diſtance from the Point of Suſpenſion, don't move with the ſame Velocity; as is ſhewn by *Huygens*, in his *Horol. Oſcill.* He found, in this Caſe, the Diſtance of the *Centre* of Oſcillation, from the Axis in a Circle, to be $\frac{3}{4}$ of the Diameter: In a Rectangle, ſuſpended by one of its Angles, $\frac{2}{3}$ of the Diagonal: In a Parabola, ſuſpended by its Vertex, $\frac{5}{7}$ of its Axis, and $\frac{1}{3}$ of the Parameter; ſuſpended from a Point in the Middle of the Baſis, $\frac{4}{7}$ of the Axis, and $\frac{1}{2}$ the Parameter: In the Sector of a Circle, $\frac{3}{4}$ of a right Line; which is to the Radius, as the Arch to the Subtenſe: In a Cone, $\frac{4}{5}$ of the Axis, and $\frac{1}{5}$ of the third proportional to the Axis, and the Semidiameter of the Baſe: In a Sphere, ſuſpended from a Point in the Surface, $\frac{7}{10}$ of the Diameter: in the ſame, ſuſpended from a Point without the Sphere, (as is uſually the Caſe in Pendulums) $\frac{2}{5}$ of a third proportional to that compos'd of the Semidiameter and length of the Thread, and the Semidiameter it ſelf: In a Cylinder, $\frac{2}{3}$ of the Altitude, and $\frac{1}{2}$ the Line, which is to the Semidiameter of the Baſe, as that is to the Altitude.

CENTRE *of Percuſſion*, in a moving Body, is that Point wherein the Percuſſion is the greateſt, wherein the whole percutient Force of the Body is ſuppos'd to be collected; or about which the Impetus of the Parts is balanc'd on every ſide. See PERCUSSION.

Laws of the CENTRE *of Percuſſion.*

1. The *Centre of Percuſſion, is the ſame with the Centre of Oſcillation*, where the percutient Body revolves round a fix'd Point; and is determin'd in the ſame manner, *viz.* by conſidering the Impetus of the Parts, as ſo many Weights apply'd to an inflexible right Line, void of Gravity; *i. e.* by dividing the Sum of the *Factums* of the Impetus's of the Parts, multiply'd by their Diſtances from the Point of Suſpenſion, by the Sum of the Impetus's. What, therefore, has been above ſhewn of the *Centre of Oſcillation*, will hold of the *Centre of Percuſſion*, where the percutient Body moves round a fix'd Point. See CENTRE *of Oſcillation.*

2. *The* Centre *of Percuſſion is the ſame with the* Centre *of Gravity*, if all the Parts of the percutient Body be carry'd with a parallel Motion, or with the ſame Celerity: for the *Momenta* are the *Facta* of the Weights into the Celerities. Wherefore, to multiply equi-ponderating Bodies by the ſame Velocity, is the ſame thing as to take equi-multiples: But the equi-multiples of equi-ponderating Bodies, themſelves equi-ponderate; therefore, equivalent *Momenta* are diſpos'd about the *Centre* of Gravity: conſequently the *Centre* of Percuſſion in this Caſe, coincides with that of Gravity; and what is ſhewn of the one, will hold of the other. See CENTRE *of Gravity.*

CENTRE *of Converſion*, in Mechanicks, a Term firſt us'd by M. *Parent*. Its Signification is thus conceiv'd: If a Stick be laid on a ſtagnant Water, and drawn by a Thread faſten'd to it, ſo that the Thread always makes the ſame Angle with the Stick; always, *v. g.* a right Angle; the Stick will be found to turn on one of its Points, which will be immoveable; which Point is term'd the *Centre of Converſion*. For the greater eaſe, the Thread may be conceiv'd faſten'd to one End of the Stick.

This Effect ariſes from the Reſiſtance of the Fluid, and the manner wherein it divides: for, imagine the firſt Moment of Traction; 'tis certain, here, the Reſiſtance of the Parts of the Fluid to be diſplac'd, tends to turn the Stick around the Point to which the Thread is faſten'd, as on a *Centre*: So that in the preſent Inſtance, the Staff wou'd deſcribe preciſely the Quadrant of a Circle: after which, the Fluid wou'd no longer bear the Stick lengthwiſe; but in a circular Motion, in ſuch manner, as that the free End of the Stick, and the Parts neareſt it, wou'd deſcribe larger Arches of Circles than the reſt, and have a greater Velocity. The Reſiſtance, therefore, of the Fluid, which tends to impreſs a circular Motion on the Stick, around the Point to which the Thread is faſten'd, tends to impreſs a greater Velocity on the Parts next the other Extremity; or, which is the ſame thing, thoſe Parts require a greater Velocity to ſurmount the Reſiſtance of the Fluid: So that the Stick will not have that circular Motion around the Point to which the Thread is faſten'd; or, the Reſiſtance of the Fluid is greater towards the free Extreme of the Stick, and ſtill leſſens towards the other Extreme. Now, all the Columns, or Threads of Water which reſiſt the Stick, muſt be ſuppos'd of the ſame Length, or the ſame Maſs. One may therefore find on the Stick ſuch a Point, as that taking a great number of thoſe Threads on that Side which reſiſts the leaſt, and a leſs number on that Side where they reſiſt the moſt; there will be an exact Compenſation, and the Forces be equal on each Side: 'Tis this Point is the *Centre of Converſion*. And as the ſame Reaſoning has place in all Motions of Traction made in the ſame manner, this *Centre* is always the ſame Point.

The grand Queſtion here ariſing, is to know preciſely in what Point the *Centre* of Converſion is found: This M. *Parent* has determin'd by an infinite deal of Calculation. If the Stick drawn by one Extremity be a ſtrait Line divided into 20 Parts, reckoning from the Thread, the *Centre* of Converſion, he finds, will be nearly on the 13th. If it ben't a Line, but a Surface or a Solid, there will be ſome change in the Situation of the *Centre* of Converſion, according to the Surface or the Solid.

If in lieu of a Body ſwimming in a Fluid, we ſuppoſe it laid on a rough uneven Plane; the Reſiſtance of this Plane to the Motion of the Body, will always be divided in the ſame manner, and determine the ſame *Centre* of Converſion. This Reſiſtance is, preciſely, what we call Friction, ſo prejudicial to the Effects of Machines. See FRICTION.

CENTO, in Poetry, a Work wholly compos'd of Verſes, or Paſſages promiſcuouſly taken from other Authors; only diſpos'd in a new Form, or Order. *Proba Falconia* has wrote the Life of Jeſus Chriſt, in *Centos* taken from *Virgil*. *Alex. Roſſe* has done the like in his *Chriſtiados*; and *Stephen de Pleurre* the ſame: An Inſtance of whoſe *Centos* on the Adoration of the *Magi*, is as follows.

Adoratio Magorum, *Matt.* 2.

6, &c. Æn. 255.	*Ecce autem primi ſub lumina ſolis, & ortus,*	
2, Æ. 694.	*Stella facem ducens multa cum luce cucurrit:*	
5, Æ. 526.	*Signavitque Viam * cœli in regione ſerena.*	8, Æ. 528.
8, Æ. 330.	*Tum Reges * (credo quia ſit divinitus illis*	1, 9, 415.
1, 91, 416.	*Ingenium, & rerum fato prudentia major)*	
7, Æ. 98.	*Externi veniunt * qua cuique eſt copia lati*	5, Æ. 100.
11, Æ. 333.	*Munera portantes: * molles ſua thura Sabæi*	1, 9, 57.
3, Æ. 464.	*Dona dehinc auro gravia, * myrrhaque madentes*	12, Æ. 100.
9, Æ. 659.	*Agnovere Deum Regem, * Regumque Parentem.*	6, Æ. 548.
1, 9. 418.	*Mutavere vias, * perfectis ordine votis:*	10, Æ. 548.
6, Æ. 16.	*Inſuetum per iter, * ſpatia in ſua quiſq; receſſit.*	12, Æ. 126.

Auſonius has laid down the Rules to be obſerv'd in compoſing *Centos*. The Pieces, he ſays, may be taken either from the ſame Poet, or from ſeveral; and the Verſes may be either taken entire, or divided into two; one half to be connected, with another half taken elſewhere: but two Verſes never to be us'd running, nor much leſs than half a Verſe to be taken. Agreeable to theſe Rules, he has made a pleaſant *Cento* from *Virgil*.

The *Politicks of Lipſius* are only *Centos*; there being nothing of his own but Conjunctions and Particles.

The Word comes from the Latin *Cento*, a Cloak made of Patches; and that from the *Greek* κεντλιον. The *Roman* Soldiers us'd theſe *Centos*, or old Stuffs patch'd over each other, to guard themſelves from the Strokes of their Enemies.

Others ſay, that *Centos* were properly us'd for the patches of Leather, *&c.* wherewith their Galleries or Skreens, called *Vineæ*, were cover'd; under which the Beſiegers made their Approaches towards any Place.

Hence *Centonarii*, the Perſons whoſe Buſineſs was to prepare theſe *Centos*.

CENTRAL, ſomething relating to a *Centre*; ſee CENTRE.

Thus, we ſay, *Central Eclipſe*, *Central Fire*, *Central Forces*, *Central Rule*, &c. See CENTRAL *Forces*, CENTRAL *Rule*, &c. See alſo FIRE, ECLIPSE, *&c.*

CENTRAL *Forces*, the *Vires*, or Powers whereby a moving Body either tends towards the Centre of Motion, or recedes from it. See CENTRE *of Motion*; ſee alſo FORCE, and VIS.

Central Forces are divided into two Kinds, with regard to their different Relations to the Centre, *viz. Centripetal*, and *Centrifugal*.

CENTRIFUGAL *Force*, is that whereby a Body revolving round a Centre, endeavours to recede from it.

'Tis one of the eſtabliſh'd Laws of Nature, That all Motion is of it ſelf rectilinear; (ſee MOTION) and that the moving Body never recedes from its firſt right Line, till ſome new Impulſe be ſuperadded in a different Direction: After that new Impulſe, the Motion becomes compounded, but continues ſtill rectilinear; tho the Direction of the Line be alter'd. See COMPOUND *Motion*. To move in a Curve, it muſt receive a new Impulſe, and that in a different Direction, every Moment; a Curve not being reducible to right Lines, unleſs infinitely ſmall ones. If then a Body continually driven towards a Centre, be projected in a Line that does not go thro that Centre, it will deſcribe a Curve; in each Point whereof, A (Tab. *Mechanicks*, Fig. 25.) it will endeavour to recede from the Curve, and proceed in the Tangent A D: and, if nothing hinder'd, wou'd actually proceed; ſo as in the ſame Time wherein it deſcribes the Arch A E, it wou'd recede the length of the Line D E, perpendicular to A D, by its *Centrifugal Force*. The *Centrifugal Force*, therefore, is as the right Line D E, perpendicular to A D; ſuppoſing the Arch A E infinitely ſmall. See INFINITE.

The Effect of the *Centrifugal Force* is ſuch, that a Body, oblig'd to deſcribe a Circle, deſcribes the largeſt it poſſibly can: a greater Circle being as it were leſs circular, and leſs diſtant from a right Line than a ſmall one. A Body therefore ſuffers more violence, and exerts its *Centrifugal Force* more when it deſcribes a little Circle, than when a large one.

'Tis the ſame in other Curves as in Circles; for a Curve, whatever it be, may be eſteem'd as compos'd of an infinity of Arches of infinitely ſmall Circles, all deſcrib'd on different Radii; ſo that 'tis thoſe Places where the Curve has the greateſt Curvity, that the little Arches are moſt circular: Thus, in the ſame Curve, the *Centrifugal* Force of the Body that deſcribes it, varies according to the ſeveral Points wherein it is found.

CENTRIPETAL *Force*, is that Power whereby a moveable Body, impell'd in the right Line A G, (Fig. 24.) is drawn out of its rectilinear Motion, to proceed in a Curve: The *Centripetal Force*, therefore, is as the right Line D E to A B; ſuppoſing the Arch A E infinitely ſmall. Hence, the *Centripetal* and *Centrifugal Forces* are equal.

Laws of CENTRAL *Forces.*

1. The following Rule, for which we are oblig'd to the Marquis *de l' Hôpital*, opens at once all the Myſteries of *Central Forces:* Suppoſe a Body of any determinate Weight to move uniformly round a *Centre* with any certain Velocity; find from what height it muſt have fallen to acquire that Velocity: then, as the Radius of the Circle it deſcribes, is to double that Height, ſo is its Weight to its *Centrifugal* Force. Hence, 'tis eaſy to infer, that,

2. If two Bodies, equal in weight, deſcribe Peripheries of unequal Circles in equal Times, their *Central* Forces are as their Diameters AB, and HL. And hence, if the *Central* Forces of two Bodies, deſcribing Peripheries of two unequal Circles, be as their Diameters, they paſs over the ſame in equal Times.

3. The *Central Force* of a Body moving in the Periphery of a Circle, is as the Square of the infinitely ſmall Arch A E, divided by the Diameter A B. Since then a Body, by an equable Motion in equal Times, deſcribes equal Arches A E; the *Central* Force wherewith the Body is impell'd in the Periphery of the Circle, is conſtantly the ſame.

4. If two Bodies deſcribe different Peripheries by an equable Motion, their *Central* Forces are in a Ratio, compounded of the duplicate Ratio of their Celerities, and the reciprocal one of their Diameters. Hence, if the Celerities be equal, the *Central* Forces will be reciprocally as their Diameters; and if the Diameters A B and H L be equal, *i. e.* if each Moveable proceed in the ſame Periphery, but with unequal Celerities, the *Central* Forces will be in a duplicate Ratio of the Velocities.

If the *Central* Forces of the two Bodies moving in different Peripheries be equal, the Diameters of the Circle A B, and H L, will be in a duplicate Ratio of the Celerities.

5. If two Bodies, moving in unequal Peripheries, be acted on by the ſame *Central* Force, the Time in the larger is to that in the ſmaller, in a ſubduplicate Ratio of the greater Diameter A B, to the leſs H L; wherefore, $T^2 : t^2 = D : d$: That is, the Diameters of the Circles in whoſe Peripheries thoſe Bodies are acted on by the ſame *Central* Force, are in a duplicate Ratio of the Times. Hence alſo the Times wherein like Peripheries or Arches are run over by Bodies impell'd by the ſame *Central* Force, are in proportion to their Velocities.

The *Central* Forces are in a Ratio, compounded of the direct Ratio of the Diameters, and the reciprocal one of the Squares of the Times, by the entire Peripheries.

6. If the Times wherein the Bodies are carry'd thro the ſame entire Peripheries, or ſimilar Arches, be as the Diameters of the Circles, the *Central* Forces are reciprocally as the ſame Diameters.

7. If a Body move uniformly in the Periphery of a Circle, with the Velocity it acquires by falling the Height A L; the *Central* Force will be to the Gravity, as double the Altitude A L, to the Radius C A. If therefore the Gravity of the Body be call'd G, the *Centrifugal Force* will be 2 A L. G : C A.

8. If a heavy Body move equably in the Periphery of a Circle, and with the Velocity which it acquires by falling the height A L, equal to half the Radius; the *Central* Force will be equal to the Gravity. And again, if the *Central* Force be equal to the Gravity, 'tis carry'd in the Periphery of the Circle, with the ſame Gravity which it acquires in falling a height equal to half the Radius.

9. If the *Central* Force be equal to the Gravity, the Time it takes up in the entire Periphery, is to the Time of the Deſcent thro half the Radius, as the Periphery to the Radius.

10. If two Bodies move in unequal Peripheries, and with an unequal Velocity, which is reciprocally in a ſubduplicate Ratio of the Diameters; the *Central* Forces are in a Duplicate Ratio of the Diſtances from the Centre of the Forces, taken reciprocally.

11. If two Bodies move in unequal Peripheries, with Celerities that are reciprocally as the Diameters; their *Central* Forces will be reciprocally as the Cubes of their Diſtances from the *Centre* of the Forces.

12. If the Velocities of two Bodies moving in unequal Peripheries, be reciprocally in a ſubduplicate Ratio of the Diameters; the Times wherein they paſs the whole Periphery, or ſimilar Arches, are reciprocally in a triplicate Ratio of the Diſtances from the Centre of the Forces: Wherefore, if the *Central* Forces be reciprocally in a duplicate Ratio of the Diſtances from the *Centre*, the Times wherein the entire Peripheries, or ſimilar Arches, are paſs'd over, are reciprocally in a triplicate Ratio of the Diſtances.

13. If a Body move in a Curve Line, in ſuch manner as that the Radius C B, *Fig.* drawn from it to the fix'd Point C, plac'd in the ſame Plane, deſcribes Areas B A C, B C E, *&c.* proportional to the Times, or equal in any given Time, it is ſollicited towards the Point C by a *Centripetal* Force.

14. If a Body proceed according to the Direction of the right Line A D, and be ſollicited by a *Centripetal* Force towards a fix'd Point C, plac'd in the ſame Plane; it deſcribes a Curve, whoſe Cavity is towards C, and whoſe ſeveral Areæ, thoſe comprehended between the two Radii A B and C B, are proportional to the Times.

15. However the *Central* Forces differ from one another, they may be compar'd together; for they are always in a Ratio compounded of the Ratio of the Quantities of Matter in the revolving Bodies, and the Ratio of the Diſtances from the Centre; and alſo in an inverſe Ratio of the Squares of the periodical Times. If then you multiply the Quantity of Matter in each Body by its Diſtance from the Centre, and divide the Product by the Square of the periodical Time, the Quotients of the Diviſion will be to one another in the ſaid compound Ratio, that is, as the *Central* Forces.

16. When the Quantities of Matter are equal, the Diſtances themſelves muſt be divided by the Squares of the periodical Times, to determine the Proportion of the *Central* Forces: In that Caſe, if the Squares of the periodical Times are to one another, as the Cubes of the Diſtances, the Quotients of the Diviſions, as well as the *Central* Forces, will be in an inverſe Ratio of the Squares of the Diſtances.

17. When the Force by which a Body is carry'd towards a Point is not every where the ſame, but is either increas'd or diminiſh'd, in proportion to the Diſtance from the Centre; ſeveral Curves will thence ariſe in a certain proportion. If the Force decreaſes, in an inverſe Ratio of the Squares of the Diſtances from that Point, the Body will deſcribe an *Ellipſis*; which is an oval Curve, in which there are two Points call'd the *Foci*, and the Point towards which the Force is directed falls into one of them: So that in every Revolution, the Body once approaches to, and once recedes from it. The Circle alſo belongs to that ſort of Curves, and ſo in that Caſe the Body may alſo deſcribe a Circle. The Body may alſo (by ſuppoſing a greater Celerity in it) deſcribe the two remaining Conic Sections, *viz.* the *Parabola* and *Hyperbola-Curves*, which do not return into themſelves: On the contrary, if the Force increaſes with the Diſtance, and that in a Ratio of the Diſtance it ſelf, the Body will again deſcribe an *Ellipſis*; but the Point to which the Force is directed is the Centre of the Ellipſe; and the Body, in each Revolution, will twice approach to, and again twice recede from that Point. In this Caſe alſo, a Body may move in a Circle, for the Reaſon abovemention'd. See ORBIT, PLANET, and PROJECTILE.

CENTRAL *Rule*, is a Rule, or Method diſcover'd by our Countryman, Mr. *Thomas Baker*, Rector of *Nympton* in *Devon*, whereby to find the *Centre* of a Circle; deſign'd to cut the Parabola in as many Points, as an Equation to be conſtructed hath real Roots.

Its principal Uſe is in the Conſtruction of Equations; and he has apply'd it with good Succeſs as far as Biquadratics. See CONSTRUCTION, and EQUATION.

The Rules are theſe,

1. $\frac{L}{2} + \frac{q}{8L} = b = CD.$

2. $\frac{p}{4} + \frac{ppp}{6LL} \pm \frac{pq}{4LL} \pm \frac{r}{2LL} = d = DE.$

Or by Contraction, becauſe L = 1, as is ſuppoſed, to avoid Fractions.

1. $\frac{1}{2} + \frac{pp}{8} \pm \frac{q}{2} = b = CD.$

2. $\frac{1}{2}p + \frac{1}{8}ppp \pm \frac{1}{4}pq \pm \frac{1}{4}r = d = ED.$

CENTRO-*Baryc Method of* Guldinus, in Mechanicks, is a Method of meaſuring, or determining the Quantity

of a Surface, or a Solid, by means of its Centre of Gravity.

The Doctrine is compris'd in the following Theorem, with its *Corollaries*.

Every Figure, whether ſuperficial or ſolid, generated by the Motion of a Line or a Figure, is equal to the Factum *of the generating Magnitude into the way of its Centre of Gravity, or the Line which its Centre of Gravity deſcribes.* See *Centre of* Gravity.

Demonſt. For ſuppoſe the Weight of the whole generating Magnitude collected in the Centre of Gravity; the whole Weight produc'd by its Motion, will be equal to the *Factum*, of the Weight mov'd, into the Centre of Gravity. But when Lines and Figures are conſider'd like homogeneous heavy Bodies, their Weights are as their Bulks: and therefore, the Weight mov'd is the generating Magnitude; and the Weight produced, that generated. The Figure generated, therefore, is equal to the *Factum* of the Magnitude, into the Way of its Centre of Gravity. *Q. E. D.*

Corol. I. Since a Parallelogram A B C D (Tab. *Mechanicks*, Fig. 26.) is deſcrib'd, if the right Line A B, proceed according to the Direction of another A C, with a Motion ſtill parallel to it ſelf; and the Way of the Centre of Gravity E, is equal to the right Line E F, perpendicular to C D; that is, to the Altitude of the Parallelogram: Its Area is equal to the *Factum* of the Baſe C D, or the deſcribent Line into the Altitude E F. See Parallelogram.

Corol. II. In the ſame manner it appears, that the Solidity of all Bodies, which proceed according to the Direction of any right Line A C, is had by multiplying the deſcribing Plane by the Altitude. See Prism, and Cylinder.

Corol. III. Since a Circle is deſcrib'd, if the Radius C L (Fig. 27.) revolve round a Centre C, and the Centre of Gravity of the Radius C L, be in the Middle F; the Way of the Centre of Gravity is a Periphery of a Circle x, deſcrib'd by a ſubduple Radius: Conſequently the Area of the Circle, is equal to the *Factum* of the Radius C L, into the Periphery deſcrib'd by the ſubduple Radius C F. See Circle.

Corol. IV. If a Rectangle A B C D, (Tab. *Mechanicks*, Fig. 28.) revolve about its Axis A D; the Rectangle will deſcribe a Cylinder, and the Side B C the Superficies of a Cylinder. But the Centre of Gravity of the right Line B C, is in the Middle F; and the Centre of Gravity of the generating Plane in the Middle G, of the right Line E G F. The way of this latter, therefore, is the Periphery of a Circle deſcrib'd by the Radius E G; that of the former, the Periphery of a Circle deſcrib'd by the Radius E F. Wherefore, the Superficies of the Cylinder is the *Factum* of the Altitude B C, into the Periphery of a Circle deſcrib'd by the Radius E F, or the Baſe. But the Solidity of the Cylinder, is the *Factum* of the generating Rectangle A B C D, into the Periphery of a Circle deſcrib'd by the Radius E G, which is ſubduple of E F, or of the Semidiameter of the Cylinder.

Suppoſe, *v. g.* the Altitude of the deſcribing Plane, and therefore of the Cylinder B C $= a$; the Semidiameter of the Baſe D C $= r$; then will E G $= \frac{1}{2} r$: And ſuppoſing the Ratio of the Semidiameter to the Periphery $= 1 : m$, the Periphery deſcrib'd by the Radius of $\frac{1}{2} r = \frac{1}{2} mar$. therefore, multiplying $\frac{1}{2} mr$ by the Area of the Rectangle A C $= ar$; the Solidity of the Cylinder will be $= \frac{1}{2} mar^2$. But $\frac{1}{2} mar^2 = \frac{1}{2} r . mr$ the Area of the Circle deſcrib'd by the Radius D G. 'Tis evident, therefore, the Cylinder is equal to the *Factum* of the Baſe into the Altitude. See Cylinder.

Corol. V. In like manner, ſince the Centre of Gravity of the right Line A B, (Tab. *Mechanicks*, Fig. 17.) is in the middle M, and the Surface of a Cone is deſcrib'd, if the Triangle A B C revolve about its Axis; if P M $= \frac{1}{2}$ C; the Superficies of the Cone will be equal to the *Factum* of its Side A B, into the Periphery deſcrib'd by the Radius P M; or the Subduple of the Semidiameter of the Baſe B C.

Suppoſe *v. g.* B C $= r$, A B $= a$; the Ratio of the Radius to the Periphery $1 : m$; then will P M $= \frac{1}{2} r$, and the Periphery deſcrib'd by this Radius $= \frac{1}{2} mr$. Therefore, multiplying $\frac{1}{2} mr$ into the Side of the Cone A B, the Product is the Superficies of $\frac{1}{2} amr$. But $\frac{1}{2} amr$ is alſo the *Factum* of $\frac{1}{2} a$ and mr: therefore, the Surface of the Cone is the Product of the Periphery, into half the Side. See Cone.

Corol. VI. If the Triangle A C B (Tab. *Mechanicks*, Fig. 29.) revolve about an Axis; it deſcribes a Cone; but if C B divided into two M D, and the right Line A D be drawn, and A O $= \frac{2}{3}$ A D; the Centre of Gravity will be mO. The Solidity of the Cone, therefore, is equal to the *Factum* of the Triangle C A B, into the Periphery deſcrib'd by the Radius P O; but A D : A O :: B D : O P. and A O $= \frac{2}{3}$ A D and D B $= \frac{1}{2}$ C B. Therefore, O P $= \frac{2}{3}$ D B $= \frac{1}{3}$ C B.

Suppoſe *v. g.* C B $= r$, A B $= a$; the Ratio of the Radius to the Periphery $= 1 : m$. Then will O P $= \frac{1}{3} r$ the Periphery deſcrib'd by this Radius $\frac{1}{3} mr$; the Triangle A C B $= \frac{1}{2} r$; and therefore, the Solidity of the Cone $\frac{1}{3} mr \frac{1}{2}$ A $r = \frac{1}{6} amr^2$. But $\frac{1}{6} amr^2 = \frac{1}{2} r . mr . \frac{1}{3}$ a. Or, the *Factum* of the Baſe of the Cone into the third Part of the Altitude. See Triangle.

This elegant Theorem, which may be rank'd among the chief Inventions in Geometry of the laſt Age, was taken notice of long ago by *Pappus*; but the Jeſuit *Guldinus* was the firſt who ſet it in its full Light, and exhibited its Uſe in a variety of Examples. Several other Geometers, after *Guldinus* and *Pappus*, alſo us'd it in meaſuring Solids, and Surfaces generated by a Rotation round a fix'd Axis; eſpecially before the late Invention of the *Calculus Summatorius*: and it may ſtill take place in ſome Caſes, where the ſummatory *Calculus* wou'd be more difficult. M. *Leibnitz* has obſerv'd, that the Method will hold, tho the Axis or Centre be continually chang'd during the generative Motion.

CENTRUM, in Geometry, Mechanicks, *&c.* See Centre.

Centrum *Phonicum*, in Acouſtics, is the Place where the Speaker ſtands in the Polyſyllabical and articulate Echoes. See Echo.

Centrum *Phonocampticum*, is the Place, or Object that returns the Voice in an Echo. See Echo.

Centrum *Tendinoſum*, in Anatomy, a Point, or Centre, wherein the Tails of the Muſcles of the Diaphragm meet. This *Centre* is perforated towards the right Side, for the *Vena Cava*; towards the left backward: Its fleſhy Part gives way to the Gula. The deſcending Trunk of the great Artery, Thoracic Duct, and *Vena Azygos*, paſs between its two inferior Proceſſes. See Diaphragm.

CENTRY *Box*, a wooden Cell, or Lodge, made to ſhelter the *Centry*, or *Sentry*, from the Injuries of the Weather.

In a Fortification, they are uſually plac'd on the flanked Angles of the Baſtions, on thoſe of the Shoulder, and ſometimes in the middle of the Curtain.

CENTUMVIRI, among the *Romans*, a Court compos'd of 100 Magiſtrates, or Judges, appointed to decide Differences between the People. See Decemviri, Quindecemviri, *&c.*

CENTURION, *Centurio*, among the *Romans*, an Officer in the Infantry, who commanded a *Century*, or an hundred Men. See Century.

The *Centurion* of the firſt Cohort of each Legion, was call'd *Primipilus*: he was not under the Command of any Tribune, as all the reſt were; and had four *Centuries* under his Direction. He guarded the Standard, and the Eagle of the Legion. See Primipilus.

CENTURY, a thing divided, or rang'd into an hundred Parts.

At the Time when the *Roman* People were aſſembled for creating of Magiſtrates, eſtabliſhing of Laws, or deliberating of publick Affairs, they were divided into *Centuries*; and to the end their Suffrages might be more eaſily collected, they voted by *Centuries*: This was done in the *Campus Martius*; and theſe Aſſemblies were hence call'd *Comitia Centuriata*.

The *Roman* Cohorts were diſtributed into Decus, commanded by Decurions; and *Centuries*, by *Centurions*. Each Cohort conſiſted of ſix *Centuries*, and a Legion of ſixty. See Cohort.

Century, in Chronology, is the Space of 100 Years. Church Hiſtory is computed chiefly by *Centuries*, commencing from our Saviour's Incarnation: In this Senſe, we ſay, The firſt *Century*; the Fathers of the ſecond *Century*; the Councils of the third *Century*, &c. See Council, Fathers, *&c.*

Centuries *of Madgeburg*, a celebrated Eccleſiaſtical Hiſtory, divided into thirteen *Centuries*, containing thirteen hundred Years, ending at 1298; compil'd by ſeveral learned Proteſtants of *Magdeburg*. The chief of the *Centuriators*, was *Matthias Flacius Illyricus*. 'Tis ſaid *Baronius* undertook his Annals, purely to oppoſe the *Madgeburg Centuriators*.

Century, or Centaury *the leſſer*, in Medicine, an Herb, chiefly noted for a Stomachic, and reſtoring decay'd Appetites: It is ſeldom preſcrib'd otherwiſe than by Infuſion or Decoction; it is an Ingredient in the Venice Treacle; and, as a Stomachic, it enters as one of the Ingredients in the Officinal Bitter Draught; and is for the ſame Purpoſe order'd in extemporaneous Preſcriptions, with others of the ſame Nature, for the making of bitter Wines, *&c.*

A ſtrong Decoction hereof is ſaid to be of ſervice, drank for ſome time, in Obſtructions of the Menſes, and alſo to deſtroy Worms; a Property attributed to moſt Bitters. It is often preſcrib'd externally in diſcutient Fomentations. The Tops, or Flowers, are only us'd.

The *greater Century* is never preſcrib'd.

CEPHALIC, in Medicine, is apply'd to any thing belonging to the Head, or its Parts. See Head. The Word is form'd of the *Greek* κηφαλε, *Caput*.

CEPHALICS, or CEPHALIC *Medicines*, are ſuch as are proper for Diſorders of the Head: Theſe are generally of a volatile, ſpirituous, or aromatic Nature, or at leaſt join'd with ſuch; and are ſuppos'd to be of ſervice, by the Volatility of their Particles, inſinuating into the Nerves, and mixing with the Animal Spirits directly, as well as by the common Circulation.

Thus, Spirit of Lavender is ſuppos'd directly to act upon the Nerves of the Palate, *&c.* upon which account, it's frequently taken dropp'd on Sugar, or Bread: and Sal Volatile, by ſmelling to, is ſuppos'd to be aſſiſtant to the Head, by its volatile Particles entering the Olfactory Nerves. As to Aromatic *Cephalics*, as the Species of Diambra, Pouder of Degutetu, Nutmeg, *&c.* they act chiefly by their aromatic Parts warming the nervous Syſtem, and increaſing their Vibrations, by which the nervous Fluid circulates more freely.

CEPHALIC *Vein*, in Anatomy, is a Vein of the Arm between the Skin and the Muſcles, divided into two Branches, *External* and *Internal*. The *External* goes down to the Wriſt, where it joins the *Baſilica*, and turns up to the Back of the Hand: The *Internal* Branch, together with a Sprig of the *Baſilica*, makes the *Mediana*. See VEIN.

'Tis thus call'd, in regard the Antients us'd to open it in Diſorders of the Head.

CEPHALOPHARINGÆI, in Anatomy, two Muſcles of the Orifice of the *Oeſophagus*, call'd the *Pharynx*. See PHARYNX.

They have their Orifice in the Articulation of the Head with the firſt Vertebra; and are inſerted into the upper Part of the Pharynx, ſerving to draw it upwards and backwards.

CEPHALALGIA, in Medicine, is underſtood, in the general, of any *Head-ach*; but properly ſignifies, only a freſh one: When it becomes inveterate, 'tis call'd *Cephalia*; and, when it only poſſeſſes half the Head, *Megrim*.

CEPHEUS, in Aſtronomy, a Conſtellation of the Northern Hemiſphere. See CONSTELLATION.

The Stars in the Conſtellation *Cepheus*, in *Ptolemy*'s Catalogue are 13; in *Tycho*'s 11; in the *Britannic Catalogue* 35. The Order, Names, Longitudes, Latitudes, Magnitudes, *&c.* whereof, are as follow.

Stars in the Conſtellation CEPHEUS.

Names and Situation of the Stars.	Sign.	Longitude. °	′	″	Latitude. °	′	″	Magnit.
In the preced. Foot	♉	28	50	35	75	27	46	4 5
In the preced. Arm	♈	0	39	5	73	56	57	4 5
In the bend of the preced. Arm		0	14	30	71	45	45	4
		14	58	25	74	5	20	6
In the preced. Shoulder		8	31	3	68	56	8	3
5								
		14	18	55	69	59	15	6
		20	30	19	70	2	57	6
In the Girdle, agſt. the preced. Side	♉	1	18	35	71	8	15	3
	♈	10	42	11	66	47	28	6
		10	5	8	65	29	2	5
10								
	♉	4	14	37	70	15	33	5
	♈	9	35	24	65	2	27	7
	♉	7	16	41	70	22	40	6
That preced. of the *Tiara*	♈	4	7	6	61	39	14	6
		7	41	48	61	52	51	6
15								
In *Cepheus*'s Neck		10	58	16	62	54	22	7
	♉	10	27	45	69	22	27	5 6
In the Breaſt	♈	19	55	16	65	45	41	5
		15	33	22	64	18	27	6
		16	29	2	64	36	41	6
20								
Middle of 3 in the *Tiara*		9	40	7	61	9	27	4 5
North. and ſmall. of the ſame		11	41	33	61	54	25	6
South. in the *Tiara*		8	42	5	59	58	31	4
	♉	8	40	54	68	25	29	5
	♈	18	32	2	63	24	27	7
25								
		24	5	28	63	57	16	6
That following the *Tiara*		13	20	14	59	32	50	4 5
	♉	26	30	10	68	31	58	6
Between the Feet, double		26	37	31	68	23	7	5 6
	♈	22	54	40	62	2	10	6
30								
	♉ ♉	13	24	51	66	59	34	6
Preced. in the following Arm	♈	28	58	46	62	36	40	4
In the following Leg	♉	19	16	3	65	31	44	5
Latter in the hind Arm		5	42	36	61	25	20	5
In the hind Foot	♉	25	48	15	64	36	47	3
35								

CEPI *Corpus*, in Law, a Return made by the Sheriff, upon a *Capias*, or other Proceſs to the like purpoſe; ſignifying, that he hath taken the Body of the Party.

CERATE, in Medicine, a kind of Unguent, or Liniment, made of Oil and Wax; us'd in ſeveral Diſeaſes, eſpecially thoſe of the Skin. It takes its Name from its capital Ingredient, Wax, call'd in Latin *Cera*.

Its Conſiſtence is thicker than that of a Liniment; the laſt having uſually two Ounces of Wax to two of Oil; but the firſt four of Wax to two of Oil; ſee LINIMENT: yet 'tis thinner than a Plaſter. See EMPLASTER.

There are *Cerates* of various kinds, Refrigerative, Stomachic, *&c.* *Cerate of Sulphur*, *of Santal*, reſtringent *Cerate of Bricks*, *Divine Cerate*, &c.

There is a particular one, call'd the *refrigerative Cerate of* Galen, made of white Wax and Oil of Roſes Omphacin.

CERATION, in Chymiſtry, the Preparation of any Matter, to render it fit and diſpos'd to liquify, or melt, which of it ſelf it was not.

This is frequently done, to enable things to penetrate into Metals, or other ſolid Bodies. The Word comes from *Cera*, Wax.

CERATOGLOSSUM, in Anatomy, a Pair of Muſcles of the Tongue, thus deſcrib'd by Mr. *Cowper*: 'The *Ceratogloſſum* has a broad fleſhy Origination, at the ſuperior Part of the *Os Hyoides*, laterally; whence it aſcends to its Inſertion at the Root of the Tongue. This, with its Partner, acting, draw the Tongue into the Mouth directly: If only one of them act, it moves the Tongue on one ſide.

The Word is deriv'd from the *Greek* κερας *Cornu*, and γλοσσα, *Lingua*; its Form bearing ſome reſemblance to a Horn.

CERCELEE', in Heraldry. A *Croſs Cercelée*, is a Croſs which, opening at the Ends, turns round both ways, like a Ram's Horns. See CROSS.

CERDONIANS, antient Hereticks, who maintain'd moſt of the Errors of *Simon Magus*, *Saturnil*, and other *Gnoſtics*. See GNOSTICS.

They took their Name from their Leader *Cerdon*, a *Syrian*, who came to *Rome* in the Time of Pope *Hyginus*; and there abjur'd his Errors: but in appearance only; for he was afterwards convicted of perſiſting in them, and accordingly caſt out of the Church again.

Cerdon aſſerted two Principles, the one Good, and the other Evil: This laſt, according to him, was Creator of the World, and the God that appear'd under the old Law. The firſt, whom he call'd *unknown*, was the Father of Jeſus Chriſt; who, he taught, was only Incarnate in appearance, and was not born of a Virgin; nor did he ſuffer Death but in appearance. He deny'd the Reſurrection, and rejected all the Books of the Old Teſtament, as coming from an evil Principle. *Marcion*, his Diſciple, ſucceeded him in his Errors. See MARCIONITES.

CEREALIA, in Antiquity, Feaſts of *Ceres*, inſtituted by *Triptolemus*, of *Eleuſis* in *Attica*, Son of *Celeus* King of that Place, in gratitude for his having been inſtructed by *Ceres*, who was ſuppos'd to have been his Nurſe, in the Art of cultivating Corn, and making Bread: ſo that the *Cerealia* took their Riſe from *Greece*.

There were two Feaſts of this Kind at *Athens*; the one call'd *Eleuſinia*, the other *Theſmophoria*. See ELEUSINIA, and THESMOPHORIA.

What both agreed in, and was common to all the *Cerealia*, was, that they were celebrated with a world of Religion and Purity; ſo that it was eſteem'd a great Pollution to meddle, on thoſe Days, in conjugal Matters.

'Twas not *Ceres* alone that was honour'd here, but alſo *Bacchus*. The Victims offer'd were Hogs, by reaſon of the waſte they make in the Products of the Earth: whether there was any Wine offer'd, or not, is Matter of much debate among the Criticks. *Plautus* and *Macrobius* ſeem to countenance the negative ſide; *Cato* and *Virgil* the poſitive. *Macrobius* ſays, indeed, they did not offer Wine to *Ceres*; but *Mulſum*, ſweet Wine: and that the Sacrifices made the 21ſt of *September* to that Goddeſs and *Hercules*, was a Sow full of Cakes and ſweet Wine; and that this is what *Virgil* means by *Miti Baccho*. Vid. *Salmaſius*, *Lambin*, &c.

The *Cerealia* paſs'd from the *Greeks* to the *Romans*, who held 'em for eight Days ſucceſſively; commencing on the 12th of *April*. It was the Women alone who were concern'd in the Celebration, all dreſs'd in white: the Men, likewiſe in white, were only Spectators. They eat nothing till after Sun-ſet; in memory of *Ceres*, who in her ſearch after her Daughter, took no repaſt but in the Evening.

There were alſo exhibited Combats on Horſeback; tho theſe were afterwards chang'd into Combats of Gladiators: which was look'd on as an ill Omen for the Republic. The People became Sharers in this Feaſt, by the Largeſſes, Pears, Nuts, *&c.* diſtributed among them. The *Ædiles* ordinarily preſided over the *Cerealia*; yet ſometimes the *Dictator*, and ſometimes the *Maſter of the Horſe* were by a *Senatus-Conſultum* appointed to preſide. It was held in the *Circus*, and began on the Day whereon the *Ludi Circenſes* ended.

After

After the Battle of *Cannæ*, the Deſolation was ſo great at *Rome*, that there were no Women to celebrate the Feaſt, by reaſon they were all in mourning; ſo that it was omitted that Year.

In the *Cerealia* they exhibited the Grief of *Ceres* for the Loſs of her Daughter *Proſerpine*; bearing the Statues of the Gods in Proceſſion. 'Tis ſaid, they likewiſe carry'd an Egg in pomp; apparently, ſay ſome, as being the Figure of the World, which, like the Egg, contains a vital Power, which it communicates to Seeds: tho others will have it done as a Repreſentation of the Egg whereof *Caſtor* and *Pollux* were born.

CEREBRUM, in Anatomy, the *Brain*, properly ſo call'd; in contra-diſtinction from the *Cerebellum*. See BRAIN.

CEREBELLUM, or CEREBEL, in Anatomy, the hind Part of the *Brain*. See BRAIN.

The *Cerebellum* is eſteem'd a kind of little *Brain* by it ſelf, as the Word it ſelf imports. It is plac'd in the hinder and lower Part of the Skull, underneath the hind Part of the Brain, or *Cerebrum*: It lies open to the *Cerebrum* at bottom; but at top is ſeparated from it by a Duplicature of the *Dura Mater*. Its Figure ſomewhat reſembles a flat Bowl, broader than long.

Its Subſtance is harder and more ſolid than that of the Brain, but of the ſame Nature and Kind; being compos'd like it, of a *Cortical*, or *Glandulous*; and a *Medullary* Part: the Branches of which laſt, when open'd, reſemble thoſe of a Tree, meeting in the Middle, and forming a kind of Stem, which runs quite thro it.

Its Surface is unequal, and furrow'd, but not ſo much as that of the *Cerebrum*; appearing rather as if laminated, like ſome Shell; the middle Circles being the largeſt and deepeſt: between the *Laminæ* are Duplicatures of the *Pia Mater*. The fore and hind Parts of the *Cerebellum* are terminated by *Apophyſes*; call'd *Vermiformes*, from the reſemblance they bear to Worms: it is join'd to the *Medulla oblongata* by two Proceſſes, call'd by *Willis Pedunculi*. See PEDUNCULI.

Beſides theſe, are two or three other medullary Proceſſes, which paſſing acroſs the *Medulla Oblongata*, form an Arch; from the Diſcoverer call'd *Pons Varolii*. See VAROLII.

The Blood-Veſſels of the *Cerebellum* are the ſame with thoſe of the *Cerebrum*; and its uſe the ſame, *viz.* to ſeparate the nervous Juice from the Blood, and convey it thro the ſeveral Parts of the Body.

Dr. *Willis*, however, diſtinguiſhes between the Functions of the *Cerebrum*, and *Cerebellum*; making the firſt the Principle of voluntary Motions, and Actions; and the laſt the Principle of involuntary ones, *viz.* that of Reſpiration, the Motion of the Heart, &c.

'Tis commonly aſſerted, that a Wound either in the *Cortex*, or *Medulla* of the *Cerebellum*, is mortal; which it is not in the *Brain*, from which there have been entire Parts taken away without harm. The truth is, we have Inſtances of People living, not only without any *Cerebrum*, but alſo without any *Cerebellum*. See BRAIN.

CEREMONY, an Aſſemblage of ſeveral Actions, Forms, and Circumſtances, ſerving to render a thing more magnificent and ſolemn.

The Word comes from the Latin *Ceremonia*, quaſi *Cereris munia*, on account of the great Number of Ceremonies us'd in making the Offerings to *Ceres*.

Valerius Maximus derives it *à Cere* and *Munia*: *Cere* was a little Town near *Rome*, where the *Romans* made Offerings unto the Gods, with uncommon Ardor and Officiouſneſs, on occaſion of the Fear they were in of the *Gauls*, who then lay before *Rome*.

CERINTHIANS, antient Hereticks, who took their Name from *Cerinthus*, Cotemporary with St. *John*.

Cerinthus was a zealous Defender of the Circumciſion, as well as the *Nazareans* and *Ebionites*. St. *Epiphanius* ſays, he was the Head of a Faction which roſe at *Jeruſalem* againſt St. *Peter*, on account of ſome uncircumcis'd Perſons with whom that Apoſtle had eat. He believ'd that Jeſus Chriſt was a mere Man, born of *Joſeph* and *Mary*; but that in his Baptiſm, a celeſtial Virtue deſcended on him in form of a Dove; by means whereof he was conſecrated by the Holy Spirit, and made Chriſt. 'Twas by means of this celeſtial Virtue, therefore, that he wrought ſo many Miracles; which, as he receiv'd it from Heaven, quitted him after his Paſſion, and return'd to the Place whence it came: So that Jeſus, whom he call'd *a pure Man*, really dy'd and roſe again; but that Chriſt, who was diſtinguiſh'd from Jeſus, did not ſuffer at all.

Some Authors aſcribe the Book of the *Apocalypſe* to *Cerinthus*; adding, that he put it off under the Name of St. *John*, the better to authorize his Reveries touching Chriſt's Reign in the Fleſh: And 'tis even certain he publiſh'd ſome Works of this kind, under the Title of *Apocalypſes*. See APOCALYPSE.

St. *Epiphanius* obſerves, that when a *Cerinthian* dy'd without Baptiſm, another Perſon was baptiz'd in his ſtead. They receiv'd the Goſpel of St. *Matthew*, to countenance their Doctrine of Circumciſion, from Chriſt's being circumcis'd; but they omitted the Genealogy. They diſcarded the Epiſtles of St. *Paul*, becauſe that Apoſtle held Circumciſion aboliſh'd.

CEROMA, a Mixture of Oil and Wax; or, a *Searcloth* with which the Wreſtlers rubb'd themſelves, not only to make their Limbs more ſleek, and leſs capable of being laid hold of, but more pliable and fit for Exerciſe. See SEARCLOTH.

CERTIFICATE, a Teſtimony given in Writing, to aſſure and notify the Truth of any thing to a Court of Juſtice, &c.

CERTITUDE, is properly a Quality of the Judgment of the Mind, importing an Adheſion of the Mind to the Propoſition we affirm; or the Strength wherewith we adhere to it.

Certitude is of the ſame Nature with the Evidence that produces it: the Evidence is in the Things that the Mind ſees and conſiders, *i. e.* in the *Ideas*: *Certitude* is in the Judgment the Mind makes of thoſe Ideas. See EVIDENCE.

The Schoolmen diſtinguiſh two Kinds of *Certitude*: the one of *Speculation*, ariſing from the Evidence of the Thing; the other of *Adheſion*, which ariſes from the Importance thereof: This laſt they apply to Matters of Faith.

Further, the Schools diſtinguiſh three other Kinds of *Certitude*, with regard to the three different Kinds of Evidence whence they ariſe.

Metaphyſical Certitude, is that ariſing from a Metaphyſical Evidence: ſuch is that a Geometrician has of the Truth of this Propoſition, 'That the three Angles of a 'Triangle are equal to two right ones.'

Phyſical Certitude, is that ariſing from Phyſical Evidence: ſuch is that a Man has that there is Fire on his Hand, when he ſees it blaze, and feels it burn.

Moral Certitude, is that founded on Moral Evidence; ſuch is that a Perſon has, that he has got, or loſt a Cauſe, when his Attorney and Friends ſend him expreſs Notice of it, or a Copy of the Judgment, &c. with regard to which, it may be obſerv'd, that Moral *Certitude* is frequenly equivalent to Metaphyſical *Certitude*. Thus, a Criminal who hears the Sentence read, frequently makes no doubt either of his Condemnation or Execution; and yet has nothing, here, beyond a Moral *Certitude*; the Phyſical *Certitude* only relating to the reading of the Sentence, and the Actions of the Executioner when he takes him into his Poſſeſſion.

In the *Philoſophical Tranſactions*, we have an Algebraic Calculation of the Degrees of *Moral Certainty*, ariſing from human Teſtimony in all its Caſes; whether Immediate, Mediate, Concurring, Oral, or Written.

The Author thereof ſhews, that if the Report paſs thro ſeveral Reporters Hands e'er it arrive, each conveying $\frac{5}{6}$ of *Certitude*; after 12 Tranſmiſſions, it will only be as $\frac{1}{2}$, or an equal Lay whether it be true or not: If the Proportion of *Certitude* be fix'd at $\frac{100}{108}$, it will come to half from the 70th Hand; if at $\frac{1000}{1001}$, from the 695th Hand.

For concurring Evidences, if two Reporters have each $\frac{5}{6}$ of *Certainty*, they will both give an Aſſurance of $\frac{35}{36}$, or 35 to 1; if three, of $\frac{215}{216}$: and the Co-atteſtation of 10 would give $\frac{1023}{1024}$ of *Certainty*; that of a 20th, $\frac{2999999}{3000000}$. He ſhews, farther, that if there be ſix Particulars in a Narrative, all equally remarkable; and that he to whom the Report is given has $\frac{5}{6}$ of *Certitude* for the whole; there is 35 to 1 againſt the Failure in any one certain particular.

He proceeds to compute the *Certainty* of Tradition, both Oral and Written, in Whole and in Part; ſucceſſively tranſmitted, and alſo co-atteſted by ſeveral Succeſſions of Tranſmittents. See TRADITION.

CERT-MONEY, *Head-Money*, or a common Fine, paid yearly by the Reſiants of ſeveral Manors to the Lords thereof; and ſometimes to the Hundred; *pro Certo Letæ*, for the certain keeping of the Leet. This, in antient Records, is call'd *Certum Letæ*.

CERVICAL *Veſſels*, among Anatomiſts, are the Arteries, Veins, &c. which paſs thro the *Vertebræ* and Muſcles of the Neck, up to the Skull.

They are thus call'd from the Latin *Cervix*, Neck. See CERVIX.

CERVICAL *Nerves*, are ſeven Pair of Nerves, ſo call'd, as having their Origin in the *Cervix*, or Neck. See NERVE.

The firſt Pair ariſes between the firſt and ſecond *Vertebræ* of the Neck; and contrary to the reſt, come out before and behind: whereas the other ſix Pair come out laterally from the Jointures of the *Vertebræ*, thro particular Perforations: This firſt Pair goes to the Muſcles of the Head and Ear. The ſecond Pair, according to Dr. *Willis*, contributes the main Branch towards the Formation of the *Diaphragmatic* Nerves; which, according to *Vieuſſens*, ſpring only from the fourth and ſixth Pair. The three

laſt Pair, joining with the two firſt of the *Dorſum*, or Thorax, make the *Brachial* Nerves. All the *Cervical Nerves* ſend innumerable Branches to the Muſcles, and other parts of the Head, Neck, and Shoulders.

CERVICALES *Deſcendentes*, a Pair of Muſcles, Antagoniſts to the *Sacro-Lumbares*; coming from the third, fourth, fifth, and ſixth *Vertebra* of the Neck.

Moſt Authors reckon theſe, tho improperly, a Production and Part of the *Sacro-lumbus*.

CERVIX, in Anatomy, the hind Part of the Neck; the fore Part being diſtinguiſh'd by the Name of *Collum*. See NECK.

CERVIX *of the Uterus*, the Neck of the *Uterus*, or Womb. See UTERUS.

The *Cervix*, in Maids, is very narrow, except in the Time of the *Menſes*; ſcarce wide enough to admit a Gooſe's Quill: Its Extremity is call'd the *Oſculum Internum*, which is kept ſeal'd up with a kind of glutinous Matter, iſſuing from the Glands about it. See MATRIX.

CERUMEN *Aurium*, Ear-Wax; a thick, viſcous, bitter Matter, or Humor, ſeparated from the Blood by proper Glands, plac'd in the outer Paſſages of the Ear. See EAR-*Wax*.

CERUSSE, a Preparation of Lead, popularly call'd *White Lead*; and, by the Chymiſts, *Calx of Lead*. See LEAD.

Ceruſſe is made of very thin *Laminæ*, or Plates of Lead, ſo laid, as to receive and imbibe the Fumes of Vinegar, plac'd in a Veſſel over a moderate Fire. The *Laminæ* are, by means hereof, converted into a white Ruſt; which they gather together, and grinding it up with Water, form into little Cakes. *Cardan* ſhews how to make it of Urine.

Ceruſſe makes a beautiful white Colour, and is much us'd by the Painters, both in Oil and Water Colours. It makes the principal Ingredient in the Fucus us'd by the Ladies for the Complexion. Taken inwardly, it is a dangerous Poiſon; and ſoon ſhews its Malignity on the Outſide; ſpoiling the Breath and Teeth, and haſtning Wrinkles, and the Symptoms of old Age.

The beſt *Ceruſſe*, is that of *Venice*; but this is rare: that chiefly us'd, is either *Engliſh* or *Dutch*, both of which have more Marl in 'em than White Lead; the latter, however, is the better of the two. *Fallopius* ſpeaks of a Mineral *Ceruſſe*, but every body elſe takes it to be factitious.

The Word comes from the *Greek* κηρὸς, *Wax*; *Ceruſſe* bearing a reſemblance to Wax.

CESAR, or CÆSAR, among the *Romans*, was a long time us'd for the Heir intended, or preſumptive of the Empire; as *King of the Romans* is now us'd for that of the *German* Empire.

From the Time of *Marcus Aurelius*, to that of the Emperor *Valens*, none had the Title of *Auguſti* given them, till they had been firſt created *Ceſars*. *Spartian* ſays, *Lucius Verus* was the firſt that was called *Ceſar*, before he was made Emperor. The *Ceſars* were a kind of Adjuncts to the Empire, *Principes Imperii*: See AUGUSTUS.

Ceſar was the ſecond Dignity, till the Time of *Alexis Comnenius*: that Emperor created a new Dignity, in favour of his Brother *Iſaac Comnenius*, which he call'd *Leboſtocrator*, and to which he gave the Precedence over the *Ceſars*. *Codin* deſcribes the Creation of a *Ceſar*, his Crown, Rights, Habit, &c.

The Term took its riſe from the Names of the firſt *Roman* Emperors; and that ſome derive from *Cæſaries*, Head of Hair; urging, that the firſt who bore it, *viz. Caius Julius Ceſar*, was diſtinguiſh'd by his fine Head of Hair, which occaſion'd the Title. The more common Opinion is, that the Word *Ceſar* comes *à cæſo matris Utero*; becauſe his Mother's Womb was cut open to give him paſſage.

J. Bircherodius ſays, it comes from this, that the firſt who bore the Name kill'd an Elephant in Battel; *à Cæſo Elephante*: This Opinion he ſupports on the Credit of a Medal, on which is an Elephant with the Word CÆSAR.

CESAREAN *Section*, or *Cæſareus Partus*, an Operation whereby the Child is drawn from the Mother by violent means, with Inciſion. See BIRTH.

It appears from Experience, that Wounds in the Muſcles of the *Epigaſtrium*, or *Peritonæum*, and thoſe in the Matrix, are not mortal; ſo that the Belly of the Mother may be ſometimes open'd to give paſſage for the Child; but then 'tis not without great Danger; on which account, this Operation is very rarely practis'd: Thoſe brought into the World in this manner, are call'd *Cæſars*, and *Cæſones*, *à cæſo matris Utero*; as was *C. Julius Cæſar*, *Scipio Africanus*, and *Manlius*. See CESAR.

F. *Rouſſel* has a Treatiſe expreſsly on the Subject of the *Ceſarean Section*.

CESSAVIT, a Writ that lies in divers Caſes; upon this general Ground, that he againſt whom it is brought, has for two Years neglected to perform ſuch Service, or pay ſuch Rent, as he is oblig'd to by his Tenure; and has not upon his Lands or Tenements ſufficient Goods or Chattels to be diſtrain'd. It only lies for annual Service, Rent, and ſuch-like, not for Homage or Fealty. The Forms and Species of this Writ are various; as, *Ceſſavit de Cantaria*, *Ceſſavit de Feodifirma*, *Ceſſavit per Biennium*.

CESSION, in a Legal Senſe, an Act whereby a Perſon ſurrenders up, and tranſmits to another Perſon, a Right which belong'd to himſelf.

Ceſſion is a general Term, the Species whereof are, a *Surrender*, *Relinquiſhment*, *Tranſfer*, and *Subrogation*; which ſee.

CESSION is particularly us'd in the Civil Law, for a voluntary and legal Surrender of a Perſon's Effects to his Creditors, to avoid Impriſonment.

This Practice ſtill obtains in *France*, and other Countries; and is done by virtue of Letters Patent granted in favour of the Poor and Honeſt. The *Ceſſion* carry'd with it a Mark of Infamy, and oblig'd the Perſon to wear a green Cap, or Bonnet; at *Lucca* an orange one: to neglect this, was to forfeit the Privileges of the *Ceſſion*. This was originally intended to ſignify, that the *Ceſſionary* was become poor thro his own Folly.

The *Italian* Lawyers deſcribe the Ceremony of *Ceſſion* to conſiſt in ſtriking the bare Breech three times againſt a Stone, call'd *Lapis Vituperii*, in the Preſence of the Judge. Formerly it conſiſted in giving up the Girdles and Keys in Court; the Antients uſing to carry at their Girdles the chief Utenſils wherewith they got their living; as the Scrivener his Eſcritoire, the Merchant his Bag, &c.

The Form of *Ceſſion* among the antient *Romans* and *Gauls* was as follows. The *Ceſſionary* gather'd up Duſt in his left Hand, from the four Corners of the Houſe, and ſtanding on the Threſhold, holding up the Door-Poſt in his right Hand, threw the Duſt back over his Shoulders: then ſtripping into his Shirt, and quitting his Girdle and Sacks, he jump'd with a Pole over a Hedge; hereby letting the World know, that he had nothing left, and that when he jump'd, all he was worth was in the Air with him.

This was the *Ceſſion* in Criminal Matters: In Civil Caſes, it was ſufficient to lay a Switch, Fetch, or broken Straw on the Threſhold. This was called *Chrenecruda per Durpillum & Feſtucam*. See INVESTITURE.

CESSION, in the Eccleſiaſtical Law, is one manner of vacating or voiding an Eccleſiaſtical Benefice. See VACATION, and BENEFICE.

By the Canon Law, if a Clerk has one Living, of 8 *l. per Annum* Value, or upwards, and takes a ſecond, of what Value ſoever, the former is void without a Diſpenſation: that is, it is void *de Jure*, but not *de Facto*.

By the Statute, if a Clerk have one Benefice of 18 *l. per Annum*, or upwards, and takes another, of what Value ſoever, with Cure of Souls, and without Diſpenſation, the former Living is, *ipſo facto*, void: And this kind of Voidance of a Living is call'd *Ceſſion*.

What is call'd *Ceſſion* in other Benefices, is call'd *Creation* in relation to a Biſhoprick; for if an Incumbent be made a Biſhop, his Benefice is ſaid to be *void by Creation*. See BISHOP.

CESSIONARY, a *Bankrupt*. See BANKRUPT, and CESSION.

CESSOR, in Law, one dilatory, negligent, and delinquent in his Duty or Service, and who thereby incurs the Danger of the Law, and is liable to have the Writ *Ceſſavit* brought againſt him. See CESSAVIT.

Where 'tis ſaid *the Tenant ceſſeth*, 'tis meant he ceaſeth to do his Duty, or Service to which he is bound.

CESTUI, a *French* Term, literally ſignifying *He*, or *Him*; frequently us'd in our old Law-Writings. Thus,

CESTUI *qui Truſt*, is he who has Lands in Truſt, &c. committed to him for the Benefit of another.

CESTUI *qui Vie*, one for whoſe Life any Lands or Tenements are granted.

CESTUI *qui Uſe*, he to whoſe Uſe another Man is infeoffed in Lands or Tenements.

CESTUS, a Term us'd by Poets and Painters, for the Girdle which they attribute to *Venus* and *Juno*.

Among the Antients, *Ceſtus* properly ſignify'd the Maid's Girdle, which the Bridegroom unty'd when he led her into the Houſe.

The Word comes from the *Greek* κεστὸς, *Girdle*: whence alſo *Inceſtus*; a Term us'd at firſt for any Naughtineſs by undoing the Girdle, &c. but now reſtrain'd to that between Perſons near akin. See INCEST.

CESTUS was alſo a large Leathern Gantlet, garniſh'd with Lead, us'd in the Combats or Exerciſes of the antient *Athletæ*. See ATHLETÆ.

Calepin ſays, it was a kind of a Club with leaden Balls hanging from it, ſuſpended by Leathern Thongs: but he was miſtaken, it being only a Leathern Thong ſtudded with Nails of Lead, or Iron; part of it twiſted round the Hand and part of the Arm, to prevent their being broke or diſlocated.

It was called *Ceſtus*, *à cedendo*, to ſtrike, or beat.

CESURE, or CÆSURA, in the *Latin* Poetry, a Syllable remaining at the End of a Foot, and seeming as it were detach'd from it, to begin the following Foot; as in this Verse,

Arma Virumque cano Trojæ qui primus ab oris :

where the Syllables *no* and *jæ* are *Ceſures*.

In the modern Poetry, *Ceſure* is properly a Reſt, form'd in the middle of long Verſes. In *Alexandrine* Verſes, of 12 or 13 Syllables, the *Ceſure* muſt always be the ſixth; in Verſes of 10 on the fourth; and in thoſe of 12 on the ſixth : Verſes of eight Syllables muſt not have any *Ceſure*. See VERSE.

The *Ceſure*, by affording a Reſt in the middle of a long Verſe, to aid the Voice and Pronunciation, divides the Verſe, as it were, into two Hemiſticks. See REST, and PAUSE.

CETACEOUS, in Natural Hiſtory, a Term apply'd to all large Fiſhes, and Sea Monſters, which bear a reſemblance to the *Whale*. See WHALE.

The Word is form'd of the Latin *Cetus*, Whale. See FISH.

The Horn uſually call'd the *Unicorn's Horn*, is found to be the Tooth of a *Cetaceous* Fiſh in the Icy Sea, call'd *Narval*. See UNICORN.

CETERIS, or CÆTERIS *Paribus*, a *Latin* Term, or Phraſe, in frequent uſe among Mathematical and Phyſical Writers.

The Words literally ſignify, *the reſt*, or *the other things being alike, or equal*; which expreſſes pretty nearly their Meaning as a Term.

Thus, we ſay, *The heavier the Bullet*, ceteris paribus, *the greater the Range*; *i. e.* by how much the Bullet is heavier, if the Length and Diameter of the Piece, and the Quantity and Strength of the Pouder be the ſame, by ſo much will the utmoſt Range or Diſtance of a Piece of Ordnance be.

Thus alſo, in a Phyſical way, we ſay, *The Velocity and Quantity of Blood circulating in a given Time, thro any Section of an Artery, will*, ceteris paribus, *be according to its Diameter, and nearneſs to, or diſtance from the Heart.*

CETUS, in Aſtronomy, the *Whale*; a Conſtellation of the Southern Hemiſphere. See CONSTELLATION.

The Stars in the Conſtellation *Cetus*, in *Ptolemy*'s Catalogue are 22; in *Tycho*'s 21; in the *Britannic Catalogue* 78. The Order, Names, Longitudes, Latitudes Magnitudes, &c. whereof, are as follow.

Stars in the Conſtellation CETUS.

Names and Situation of the Stars.	Sign.	Longitude. ° ′ ″	Latitude. South. ° ′ ″	Magnit.
		13 33 32	32 3 28	6
South. in the Middle of the Body	♈	15 8 32	30 47 52	6
40				
	♈	23 3 55	13 32 34	6
Another, and more South		15 4 15	31 2 29	4 5
		24 22 44	11 39 53	6
		24 21 32	12 9 13	7
		24 56 2	14 29 13	7
45				
		25 28 16	14 8 3	6 7
Preced. in the Creſt		29 42 33	4 17 15	4
		25 45 20	14 50 5	6
		25 20 13	18 58 51	6
New one in the Neck of *Cetus*		27 11 15	15 56 38	2 3
50				
		28 59 42	13 0 56	6
		28 36 4	14 14 1	6
In the hind Part of the Head	♉	3 2 33	3 34 25	6
	♈	28 37 36	16 15 12	6
Prec. South. in the □ of the Breaſt		25 22 10	25 15 50	4
55				
Subſeq. of two in the Creſt	♉	3 7 35	5 53 7	4
	♈	21 37 0	34 14 5	6
	♉	0 59 19	15 12 15	5 6
South. prec. in the □ of the Breaſt	♈	25 46 2	28 32 48	4
		29 13 58	21 50 36	6
60				
Againſt the Eyebrow	♉	4 3 9	9 12 26	4 5
		0 55 37	17 49 1	6
	♈	29 34 34	21 55 44	6
	♉	1 32 55	17 52 43	6
Prec. in the Mouth agſt. the Cheek		3 14 26	14 29 57	3
65				
N. of thoſe following in the Square of the Breaſt)	♈	29 0 15	26 0 25	3
	♉	3 18 39	15 35 39	6
In the middle of the Mouth		5 7 3	12 1 26	3
That againſt the Forehead		7 34 50	5 35 33	4
South. of thoſe that follow in the	♈	29 24 53	28 16 32	4 3
70 Square of the Breaſt)				
		27 44 30	32 46 20	8
That againſt the Noſtrils	♉	10 45 6	7 49 12	4
Bright Star of the Jaw		9 59 15	12 36 59	2
		10 5 8	12 22 55	6
		11 2 13	18 25 42	6
75				
		12 31 35	18 33 42	6
Inform. following the bright Star		13 57 58	14 29 21	4
of the Jaw)	♉	14 30 25	14 18 25	5

Names and Situation of the Stars.	Sign.	Longitude. ° ′ ″	Latitude. South. ° ′ ″	Magnit.
	♓	18 36 40	14 14 15	6
Of thoſe in Triangle preced. Mid.		19 25 37	16 14 22	4 5
the Tail, by *Ptolemy* rank'd		22 28 40	10 5 0	6
among the Informes of *Aquarius*. No		21 57 12	15 16 3	5
So.		21 12 12	18 45 54	5
5				
North. in the Extrem. of the Tail		26 35 0	10 0 41	4 3
		22 56 22	13 27 15	6
	♈	1 45 50	2 42 0	6 7
		0 59 31	6 36 23	6
		2 18 26	6 47 28	6 5
10				
		4 13 26	4 15 16	6
Bright, and South. of the Tail	♓	28 13 2	20 46 52	3
N. of thoſe prec. in the □	♈	1 33 31	14 7 45	5
in Root of the Tail South.		0 54 30	16 18 39	6
N. of the following Side of the □		2 57 0	14 44 14	5
15				
		7 25 18	6 17 50	6
		4 40 46	13 24 8	6
South. of the ſame Side		4 2 32	15 53 50	6
		4 37 39	16 16 11	6
		8 18 33	10 40 10	6
20				
		6 49 9	15 38 59	6
		6 58 49	15 34 29	6
		7 23 22	15 41 10	6
Prec. in the poſter. Part of the Body		7 25 42	16 6 23	3
		8 20 10	15 6 47	6
25				
		9 48 3	13 24 58	6
		9 42 4	14 37 59	5
		10 35 59	14 41 38	6
		11 55 6	15 35 44	6
Subſ. in the poſter. Part of the Body		11 53 52	15 46 30	3
30				
		9 36 36	21 50 7	5
		10 34 17	20 32 40	6
		7 21 44	28 37 56	6 5
		11 17 50	23 41 24	6
		11 45 30	23 33 56	6
35				
Mid. of 3 in the middle of the Body		13 35 48	24 57 32	4 3
Contig. to the North. in the Body		17 0 46	20 30 12	5
North. in the middle of the Body		17 36 47	20 21 19	3

CHACE, CHACING, See CHASE. CHASING.

CHACE *of a Gun*, is the whole Bore, or Length of a Piece of Ordnance on the Inſide. See GUN, CANNON, ORDNANCE, &c.

CHACE, in the Sea Language, ſignifies *Purſuit* : Thus, *to give Chace to a Ship*, is to follow, and fetch her up.

CHACE-*Guns*, or CHACE-*Pieces*, are thoſe lying in the Head and Stern of the Ship.

CHACOON, or CHACONDE, a kind of Dance, in the Air of a Saraband, deriv'd from the *Moors*. The Baſs always conſiſts of four Notes, which proceed in conjunct Degrees; and whereon they make divers Concords and Couplets with the ſame Burden.

The Word is form'd of the Italian *Ciacona*, of *Cecone*, a blind Man; this Air being ſaid to be the Invention of a blind Man.

CHAFE-*Wax*, or CHAUFFE-*Wax*, an Officer in Chancery, whoſe Buſineſs is to fit the Wax for the ſealing of Writs, Patents, and other Inſtruments iſſu'd thence. See CHANCERY.

CHAGRIN, CHAGRAIN, or, as it's vulgarly call'd, SHAGREEN; a kind of grain'd Leather, chiefly us'd in the Covers of Caſes, Books, &c. It is very cloſe and ſolid, and cover'd over with little roundiſh Grains, or *Papillæ*. It is brought from *Conſtantinople*, *Tauris*, *Tripoli*, *Algiers*, and ſome Parts of *Poland*.

There is a Diſpute among Authors what the Animal is whence the *Chagrin* is prepar'd : Some ſay 'tis a Horſe, others a Mule, and ſome an Aſs; and that only the hard Part of the Skin is us'd for this purpoſe. *Borel* ſays 'tis a *Sea-Calf*; others a kind of Fiſh, call'd by the Turks *Chagrain*, whoſe Skin is cover'd with Grains; and thoſe ſo hard that they will raſp and poliſh Wood.

The manner of preparing the CHAGRIN.

The Skin being juſt flea'd off, is ſtretch'd out, cover'd over with Muſtard-ſeed, and the Seed bruis'd on it; and thus expos'd to the Weather for ſome Days; then tann'd.

The beſt is that brought from *Conſtantinople*, of a greyiſh Colour; the white is the worſt. 'Tis extremely hard, yet, when ſteep'd in Water, becomes very ſoft and pliable; whence it becomes of great Uſe among Caſemakers. It takes any Colour that is given it; red, green, yellow, black. It is frequently counterfeited by Maroquin form'd like *Chagrin*;

Chagrin; but this laſt is diſtinguiſh'd by its peeling off, which the firſt does not.

CHAIN, *Catena*, a Series of ſeveral Rings, or *Links*, fitted into one another. See LINK.

There are *Chains* of divers Matters, Sizes, Forms, and for divers Uſes. Ports, Rivers, Streets, &c. are clos'd with Iron *Chains*: Rebellious Cities are puniſh'd by taking away their *Chains* and Barriers.

The Arms of the Kingdom of *Navarre* are *Chains Or, in a Field Gules*. The Occaſion hereof is referr'd to the Kings of *Spain* leagu'd againſt the *Moors*; who having gain'd a celebrated Victory againſt 'em in 1212, in the Diſtribution of the Spoils, the magnificent Tent of *Miralmumin* fell to the King of *Navarre*; as being the firſt that broke and forc'd the *Chains* thereof.

A Gold CHAIN, is one of the Ornaments or Badges of the Dignity of a Lord-Mayor of *London*; and remains to the Perſon, after his being diveſted of that Magiſtrature, as a Mark he has paſs'd the Chair. See MAYOR, and ALDERMAN.

Something like this, *Chorier* obſerves, obtain'd among the antient *Gauls*: The principal Ornament of their Perſons in Power and Authority was a *Gold Chain*, which they wore on all Occaſions; and even in Battel, to diſtinguiſh 'em from the common Soldiers. *Hiſt. de Dauph.* Lib. III. p. 130.

CHAIN is alſo a kind of little Tiſſue, ſerving to hang Watches, Tweezer-Caſes, and other valuable Toys upon. See WATCH.

The Invention of this piece of curious Work is owing to the *Engliſh*; whence, in foreign Countries, it is denominated the *Engliſh Chain*. 'Tis but of very late Years that Foreigners have undertook to imitate 'em, and yet with no extraordinary Succeſs: thoſe of *Paris* have come neareſt. Theſe *Chains* are uſually either of Silver or Gold, ſome of gilt Copper; the Thread or Wire of each Kind to be very fine.

For the Fabrick, or Making of theſe CHAINS; a Part of the Wire is folded into little Links of an oval Form; the longeſt Diameter about three Lines, the ſhorteſt one. Theſe, after they have been exactly ſolder'd, are again folded into two; and then bound together, or interwove, by means of ſeveral other little Threads of the ſame thickneſs; ſome whereof, which paſs from one end to the other, imitate the Warp of a Stuff; and the others, which paſs tranſverſe, the Woof. There are at leaſt four thouſand little Links in a *Chain* of four Pendants; which are, by this means, bound ſo equally, and withal ſo firmly together, that the Eye is deceiv'd, and takes the whole to conſiſt of one entire Piece.

CHAIN-*Shot*, in War, two Bullets, or rather half-Bullets, link'd together by a Chain: their uſe at Sea is to ſhoot down Yards, or Maſts; or to cut the Shrouds, or any other Rigging of a Ship.

CHAIN-*Pump*. See PUMP, and BUR-*Pump*.

CHAIN, in Surveying, is a Meaſure conſiſting of a certain Number of Links of Iron Wire, uſually 100; ſerving to take the Dimenſions of Fields, &c. by: See MEASURE, and SURVEYING.

This F. *Merſenne* takes to be the *Arvipendium* of the Antients. See ACRE.

The *Chain* is of various Dimenſions, as the Length or Number of Links varies: That commonly us'd in meaſuring Land, call'd *Gunter's Chain*, is in Length four Poles, or Perches; or 66 Yards, or 100 Links; each Link being ſeven Inches $\frac{72}{100}$. See PERCH, LINK, YARD, &c.

That ordinarily us'd for large Diſtances, is in length 100 Feet; each Link one Foot.

For ſmall Parcels, as Gardens, &c. is ſometimes us'd a ſmall *Chain* of one Pole, or 16 Foot and a half length; each Link one Inch $\frac{98}{100}$.

Some, in lieu of *Chains*, uſe Ropes; but theſe are liable to ſeveral Irregularities; both from the different Degrees of Moiſture, and of the Force which ſtretches them. *Schwenterus*, in his Practical Geometry, tells us, he has obſerv'd a Rope 16 Foot long, reduc'd to 15 in an Hour's time, by the mere falling of a Hoar Froſt. To obviate theſe Inconveniencies, *Wolfius* directs, that the little Twiſts whereof the Rope conſiſts, be twiſted contrary ways, and the Rope dipp'd in boiling hot Oil, and when dry, drawn thro melted Wax. A Rope thus prepar'd, will not get or loſe any thing in Length, even tho kept under Water all Day.

Uſe of the CHAIN *in Surveying.*

The manner of applying the *Chain* in meaſuring Lengths is too popular to need Deſcription. In entering down the Dimenſions taken by the *Chain*, the *Chains* and *Links* are ſeparated by a Dot: Thus a Line 63 *Chains* 55 Links long, is wrote 63.55. If the Links be ſhort of 10, a Cypher is prefix'd; thus 10 *Chains*, 8 Links, are wrote 10.08.

To find the Area of a Field, &c. *the Dimenſions whereof are given in* Chains *and Links*. 1ſt, Multiply the Lines by one another, according to the Rules given under AREA; and from the Product cut off five Figures towards the Right: ſo thoſe remaining on the Left will be *Acres*. See ACRE. 2dly, Multiply the five Figures cut off by 4; and cutting off five again from the Product on the Right, thoſe remaining on the Left will be *Roods*. See ROOD. Laſtly, Multiply the five thus cut off by 40; and cutting off five, as before, on the Right, thoſe remaining on the Left are ſquare *Perches*. See PERCH.

To take an Angle DAE, (Tab. *Surveying*, Fig. 1.) *by the* Chain: Meaſure a ſmall Diſtance from the Vertex A along each Leg, *v. g.* to *d* and *c*; then meaſure the Diſtance *d c*: To lay this down, draw AE at pleaſure, and from your Scale ſet off the Diſtance meaſur'd on it. See SCALE.

Then, taking in your Compaſſes the Length meaſur'd on the other Side, on the Vertex A, as a Centre, deſcribe an Arch *d c*; and on the Point *c*, as a Centre, with the meaſur'd Diſtance of *c d*, deſcribe another Arch *a b*. Thro the Point where this interſects the former Arch, draw a Line AD. So is the Angle plotted; and its Quantity, if requir'd, may be meaſur'd on a Line of Chords. See CHORD.

To take the Plan or Plot of any Place, as ABCDE, (Fig. 2.) *by the* Chain. Draw a rough Sketch of the Place by Eye; and meaſuring the ſeveral Sides AB, BC, CD, DE, enter down the Length on the reſpective Lines: then if the Plan be to be taken within ſide of the Place, inſtead of meaſuring the Angles, as before, meaſure the Diagonals AB, BD. Thus will the Figure be reduc'd into three Triangles, whoſe Sides are all known, as in the former Caſe; and may be laid down on Paper, according to the Method above.

If the Plan be to be taken without ſide the Place, the Angles muſt be taken thus; *v. g.* for the Angle BCD, produce the Lines BC and CD to any certain equal Diſtance, *v. g.* to *a* and *b*, five *Chains* meaſure the Diſtance of *a b*. Thus have you an Iſoſceles Triangle C *a b*, wherein the Angle *a* C *b* = BCD its oppoſite one is had: thus is the Quantity of BCD found, and the Angle laid down as before.

By the Chain *to find the Diſtance between two Objects inacceſſible* in reſpect of each other. From ſome Place, as C, (Fig. 3.) whence the common Diſtance to each Object A and B, is acceſſible in a right Line; meaſure the Diſtance CA, which ſuppoſe 50 *Chains*; and continue the Line to D, *viz.* 50 more: Meaſure alſo BC, which ſuppoſe 30 *Chains*; and produce the Line to E, *viz.* 30 more. Thus will be form'd the Triangle CDE, equal and ſimilar to the Triangle ABC; conſequently the Diſtance DE, being meaſur'd, will give the inacceſſible Diſtance requir'd.

By the Chain *to find the Diſtance of an inacceſſible Object, v. g.* the Breadth of a River. On one ſide place a Pole, four or five Foot high, perpendicularly, having a Slit a-top, with a ſtrait Piece of Wire, or the like, two or three Inches long, put thro the ſame. This is to be ſlipp'd up or down, till, looking along it, you find it point full on the other Side of the River; then turning the Pole with the Wire in the ſame Direction, obſerve the Point on the dry Land, to which it points when look'd along as before: meaſure the Diſtance from the Pole to this laſt Point; 'tis the ſame with that of the firſt requir'd. See SURVEYING, PROTRACTING, PLOTTING, THEODOLITE, &c.

CHAIR, *Cathedra*, was antiently us'd for the Pulpit, or *Suggeſtum*, whence the Prieſt ſpoke to the People. See PULPIT, and CATHEDRA.

It is ſtill apply'd to the Place whence Profeſſors and Regents in Univerſities deliver their Lectures, and teach the Sciences to their Pupils: Thus, we ſay, *The Profeſſor's Chair, the Doctor's Chair*, &c. See PROFESSOR, &c.

Curule CHAIR, was an Ivory Seat plac'd on a Car, wherein were ſeated the firſt Magiſtrates of *Rome*, and thoſe to whom the Honour of a Triumph was granted. See CURULE.

CHAIR is alſo us'd among the *Romaniſts* for ſome Feaſts, held antiently in Commemoration of the Tranſlation of the See or Seat of the Church, by St. *Peter*.

The *perforated* CHAIR, wherein the new-elected Pope is plac'd, F. *Mabillon* obſerves, is ſtill to be ſeen at *Rome*: but the Origin thereof he does not attribute, as is commonly done, to the Adventure of Pope *Joan*; but ſays there is a Myſtery in it; and 'tis intended, forſooth, to explain to the Pope thoſe Words of Scripture, that *God draws the Poor from out of the Duſt and Mire*.

CHAIR-*Man*, the Preſident, or Speaker of an Aſſembly, Company, &c. See PRESIDENT, &c.

The CHAIR-*Man of a Committee*, &c. See COMMITTEE, &c.

CHAISE, a ſort of light open *Chariot*, or *Calaſh*. See COACH, and CHARIOT.

CHALASTIC *Medicines*, are ſuch as have the Faculty of ſoftening, and relaxing the Parts; when, on account of their extraor-

extraordinary Tenſion, or Swelling, they occaſion Pain.

Of this Kind are Butter, and many Oils, &c. See EMOLLIENT.

The Word comes from the *Greek* χαλάω, *I ſoften.*

CHALAZA, among Naturaliſts, the *Treddle* of an Egg, or that flat, dented Part at each End; ſo call'd, as being antiently ſuppos'd to be the Sperm of the Cock. See EGG.

Its Uſe, according to *Harvey*, is to be as it were the Poles of this Microcoſm, and the Connections of all the Membranes twiſted and knit together; whereby the Liquors are not only conſerv'd, each in its Place, but alſo in its due Poſition to the reſt.

Mr. *Derham* adds, that they alſo ſerve to keep one and the ſame Part of the Yolk uppermoſt, let the Egg be turn'd which way it will; which is done by the following Mechaniſm: The *Chalazæ* are ſpecifically heavier than the Whites wherein they ſwim; and being brac'd to the Membrane of the Yolk, a little out of the Axis, cauſe one ſide of the Yolk to be heavier than the other. The Yolk being thus by the *Chalazæ* made buoyant, and kept ſwimming in the midſt of two Whites, is by its own heavy ſide kept with the ſame Side always uppermoſt: which uppermoſt ſide he imagines to be that whereon the *Cicatricula* lies. See CICATRICULA.

CHALCANTHUM. See CALCANTHUM.

CHALCEDONY, or CALCEDONY, a precious Stone of a blueiſh or yellowiſh Colour, rank'd among the Kinds of *Agate*. 'Tis ſuppos'd to be the *white Agate* of the Antients; tho we ſometimes find Pieces of it blackiſh. See AGATE.

It is very fit for the Graver; and much us'd, either to engrave Arms, &c. upon, as being harder and preferable to Cryſtal, if good; or to paint them on the backſide. In ſome Parts, Vaſes, Cups, Religious Beads, &c. are made thereof. The cleareſt and beſt is that with a pale caſt of blue.

Belon ſays, 'tis ſo common among the *Turks*, that it ſerves them for threſhing their Corn: but he miſtakes. Hence,

CHALCEDONIUS is a Term us'd by the Jewellers, for a Defect found in ſome precious Stones; when, in turning them, they find white Spots, or Stains, like thoſe of the *Chalcedony*: This Defect is frequent in *Grenates* and *Rubies*. The Lapidaries remedy it by hollowing the Bottom of the Stone. See GRENATE, and RUBY.

CHALCIDIC, CHALDICUS, CHALCIDICUM, or, as *Feſtus* calls it CHALCEDONIUM, in the antient Architecture, a large magnificent Hall belonging to a Tribunal, or Court of Juſtice.

In *Vitruvius*, it is us'd for the Auditory of a *Baſilica*: In other of the antient Writers, for a Hall, or Apartment, where the Heathens imagin'd their Gods to eat.

Feſtus ſays, it took its Name from the City *Chalcis*; but does not give the Reaſon. *Philander* will have it to be the Court, or Tribunal, where Affairs of Money and Coinage were regulated; from χαλκὸς, *Braſs*, and δίκη, *Juſtice*. Others ſay, the Money was ſtruck in it; and derive the Word from χαλκὸς, and οἶκος, *Houſe*.

CHALCITIS, ſometimes call'd *Colcothar*, is a kind of Mineral; or, as ſome call it, a Vitriol; reddiſh, like Copper; friable, not very hard, and having yellow ſhining Veins within. See COLCOTHAR.

It has the Taſte of a Vitriol, melts alone in a Crucible, and diſſolves very eaſily in watry Liquors. There are two other Minerals, call'd *Miſi*, and *Sory*, very much like the *Chalcitis*. In effect, the Antients confounded them together; and not only the *Miſi* and *Sory*, but alſo the *Melanteria*; or rather, they imagin'd a ſucceſſive Tranſmutation of the four Minerals, which began with *Chalcitis*, became *Miſi*, then *Melanteria*, and laſtly *Sory*, where it fix'd.

The Moderns make theſe four diſtinct Matters; tho the chief Difference between them, is ſuppos'd to lie in the different Tenuity or Groſſneſs of their Subſtance.

Some ſay, the *Miſi* is form'd on the *Chalcitis*, as Verdegreaſe on Copper, being properly its Ruſt; and that *Chalcitis* is form'd in the ſame manner on the *Sory*.

This is certain, they are all found in Copper Mines: But the modern Druggiſts know little of any of them but *Chalcitis*.

This is brought from *Germany*: It is very Cauſtic and Eſcharotic. Its chief uſe is in the Compoſition of Venice-Treacle: in lieu of it are frequently ſubſtituted *Calcanthum* rubefy'd, or *Copperas*, or *Calamites*.

CHALCOGRAPHY, the Art of Engraving on Copper and Braſs. See ENGRAVING.

CHALDEE, or CALDEE *Language*, that ſpoke by the *Chaldæans*, or People of *Chaldea*. See LANGUAGE.

The *Chaldee* is a Dialect of the *Hebrew*. See HEBREW.

CHALDEE *Paraphraſe*, in the Rabbinical Style, is call'd *Targum*. See TARGUM.

There are three *Chaldee* Paraphraſes in *Walton*'s Polyglot; *viz.* that of *Onkelos*, that of *Jonathan* Son of *Uziel*, and that of *Jeruſalem*. See PARAPHRASE, and POLYGLOT.

CHALDEE *Paraphraſt*. See PENTATEUCH.

CHALDRON, CHALDER, or CHAWDREN *of Coals*, a dry *Engliſh* Meaſure, conſiſting of 36 Buſhels heap'd up, according to the ſealed Buſhel kept at *Guildhall, London*. See MEASURE.

The *Chaldron* ſhould weigh 2000 Pounds. On Shipboard, 21 *Chaldrons of Coals* are allow'd to the Score. See COALS.

CHALICE, or *Cup*. See CALIX.

CHALK, a white Subſtance uſually reckon'd as a Stone; but Dr. *Slare* thinks, without Reaſon; ſince, when examin'd by the Hydroſtatical Ballance, it is found to want much of the Weight and Conſiſtence of a real Stone: ſo that he thinks it more juſtly rank'd among the *Boles* than Stones. See BOLE.

This he obſerves to be the Caſe, not only in *Chalk*, but various other Bodies, taken for granted to be Stones; ſome whereof are nearer Earth than Stones; others nothing but Earth, Sulphur, Metal, &c. See STONE, EARTH, &c.

Chalk is of two ſorts; the hard, dry, ſtrong *Chalk*, us'd for making of *Lime*: See LIME. The other a ſoft, unctuous *Chalk*, us'd to manure Lands; as eaſily diſſolving with Rain and Froſt: It is beſt for cold, ſour Lands, and promotes the yielding of Corn; it ſweetens Graſs ſo as to cauſe Cattel to fatten ſpeedily, and Cows to give thick Milk. See MANURE, and SOIL.

Chalk is us'd in Medicine, as an Aſtringent, an Abſorbent, and a Sweetner; and is celebrated for curing the Heartburn, beyond any thing whatſoever.

CHALLENGE, a Cartel, Defiance, or Invitation to Duel, or other Combat. See CARTEL, DUEL, and COMBAT.

CHALLENGE, in Law, is an Exception taken either againſt *Perſons*, or *Things*: Againſt Perſons; as in an Aſſize, to the Jurors, when any one, or more of them are excepted againſt, in Caſe of Felony, by the Priſoner at the Bar.

Againſt Things, as a Declaration. See DECLARATION.

Challenge to the Jurors, is either made to the *Array*, or to the *Polls*: To the Array, as when the whole Number is excepted againſt, as partially empanell'd. To the Poll, as when Particulars are excepted againſt, as not indifferent.

Challenge to the Jurors, is alſo divided into *Challenge Principal*, and *Challenge per Cauſe*; *i. e.* upon Cauſe or Reaſon alledg'd.

Challenge Principal, otherwiſe called *Challenge Peremptory*, is what the Law allows without Cauſe alledg'd, or further Examination; as a Priſoner at the Bar, arraign'd on Felony, may peremptorily challenge twenty, one after another, alledging no Cauſe but his own Diſlike; and they ſhall be ſet aſide, and new ones choſen in their room. In Caſe of High-Treaſon, no *Challenge Peremptory* was formerly allow'd; but by *Stat.* 7. *Gul.* III. liberty is given *peremptorily* to *challenge* 35.

Yet there ſeems to be a Difference between *Challenge Principal* and *Challenge Peremptory*; the latter being only in Matters Criminal, and without any Cauſe alledg'd; the former moſtly in Civil Caſes, and with aſſigning ſome ſuch Cauſe, as being found true, the Law allows; *v. g.* if either Party alledges, that one of the Jurors is the Son, Brother, Couſin, or Tenant of the other, the Exception is good. Alſo in the Plea of the Death of a Man, or in any Action Real or Perſonal, where the Debt or Damages amount to 40 Shillings; It is a good *Challenge* to a Juror, that he cannot diſpend 40 Shillings *per Annum* of Freehold.

Challenge upon Reaſon or Cauſe, is when the Party does alledge ſome ſuch Exception as is ſufficient upon acknowledgment of the Truth of it; *v. g.* If the Son of the Juror have marry'd the Daughter of the other Party.

The Word *Challenge* was antiently latin'd *Calumnia*.

CHALLENGE is alſo a Hunting Term: for when Hounds at firſt finding the Scent of their Game, preſently open, and cry, the Huntſmen ſay, *they Challenge*.

CHALYBEAT, in Medicine, ſomething that partakes of the Nature of *Steel*, or *Iron*; or that is impregnated with Particles of thoſe Metals. See IRON; ſee alſo MARS, and STEEL.

Chalybeats act chiefly as Abſorbents, and Deobſtruents. Iron, M. *Lemery* obſerves, is a Mixture of an oily Subſtance with a metallic Matter; but the Oil is the Predominant in the Mixture: and between the Parts mix'd are large Pores. Hence, Iron becomes eaſily diſſolvable; and its Oil eaſily diſengages it ſelf: But when once decompounded, *i. e.* when once the Oil is ſeparated from the pure, ferruginous, or metallic Part, no Diſſolvent has any Effect on that *Caput Mortuum*. Hence appears the Abſurdity of that common Practice, of calcining Iron to ſuch a degree, as to convert it into what the Chymiſts call a *Crocus*, or Saffron. This Operation muſt of neceſſity take away all, or moſt of the oily Subſtance, and have left nothing but the indiſſoluble *Caput Mortuum*. Which Oil here ſeparated, ſhould properly have been ſeparated by the

Heat of the Stomach; whence, according to M. *Lemery*, it wou'd have carry'd into the Blood a new ſpirituous, ſalutary Juice: He obſerves alſo, that Iron acts as an Abſorbent, from the Largeneſs of its Pores; and the Eaſe wherewith all Kinds of Salts, even groſs ones, inſinuate themſelves therein: even ſcorbutic Acids are abſorb'd thereby.

Further, 'tis not enough that peccant Acids enter Iron; but in entering they alſo expel and expreſs that ſalutary Juice, which is alſo put in Motion, and diſpos'd to be evacuated by the natural Heat. Thus is Iron doubly advantageous, both by the Oil it furniſhes the Blood withal, and by the Salts it frees it from. The Action of the Particles of a *Chalybeat*, by their Elaſticity, together with the *Momentum* they give the Blood by their Ponderoſity, makes them not only preferable to moſt other Deobſtruents, but alſo proper in other Caſes; eſpecially where there is a Viſcidity of the Juices, the Blood depauperated, and where the Circulation is languid; as in moſt Hyſteric and Hypochondriac Caſes, &c.

CHAM, or KAN, the Title given to the ſovereign Princes of *Tartary*.

The Word, in the *Sclavonic* Language, ſignifies *Emperor*.

Sperlingius, in his Diſſertation on the *Daniſh* Term of Majeſty, *Koning*, King, thinks the Tartarian *Cham* may be well deriv'd from it; adding, that in the North they ſay *Kan*, *Konnen*, *Konge*, *Kenning*.

The Term *Cham* is us'd among the *Perſians*, for the great Lords of the Court, and the Governors of Provinces.

CHAMADE, in War, a certain Beat of a Drum, or Sound of a Trumpet, which is given the Enemy as a kind of Signal, to inform them of ſome Propoſition to be made to the Commander; either to capitulate, to have leave to bury their Dead, make a Truce, or the like.

Menage derives the Word from the Italian *Chiamate*, of *Clamare*, to cry.

CHAMBER, in Building, a Member of a Lodging, or Piece of an Apartment, ordinarily intended for ſleeping in; and call'd by the Latins *Cubiculum*.

A compleat Apartment is to conſiſt of a *Hall*, *Antichamber*, *Chamber*, and *Cabinet*. See APARTMENT, &c.

The Word comes from the Latin *Camera*; and that, according to *Nicod*, from the *Greek* καμάρα, *Vault*, or *Curve*; the Term *Chamber* being originally confin'd to Places arch'd over. The *Spaniards* call it *Camera*; whence *Camerade*.

Bed-CHAMBER. See BED-*Chamber*.

Privy-CHAMBER. The Gentlemen of the *Privy-Chamber* are Servants of the King, who are to wait and attend on him and the Queen at Court, in their Diverſions, Progreſſes, &c.

Six of theſe are appointed by the Lord Chamberlain, together with a Peer, and the Maſter of the Ceremonies, to attend all Ambaſſadors from crown'd Heads in their publick Entries. Their Number is 48.

Their Inſtitution is owing to King *Henry* VII. As a ſingular Mark of Favour, they are impower'd to execute the King's verbal Command, and without producing any written Order; their Perſon and Character being deem'd ſufficient Authority.

Preſence CHAMBER, *Council* CHAMBER, See PRESENCE *Chamber*. COUNCIL *Chamber*.

CHAMBER *in Policy*, is us'd for the Places where certain Aſſemblies are held, as alſo for the Aſſemblies themſelves.

Of theſe there are various Kinds; ſome eſtabliſh'd for the Adminiſtration of Juſtice, others for Matters of Commerce, &c. Of the firſt Kind among us are the

Star-CHAMBER, *Camera Stellata*, or *Chamber de Eſtoiels*; ſo called, becauſe the Roof was originally painted with Stars. It is of an antient ſtanding, but its Authority was very much heightned by *Henry* VII. and *Henry* VIII. who appointed, by two ſeveral Statutes, that the Chancellor, aſſiſted by others there nam'd, ſhould have Power to hear Complaints againſt Retainers, Embracers, Miſdemeanors of Officers, and other like Offences; which thro the Power and Authority of thoſe who committed them, did lift up the Head above other Faults; and for which inferior Judges were not ſo meet to give Correction, and the common Law had not ſufficiently provided.

By the Statute 17 *Car.* I. the Court call'd *Star Chamber*, and all Juriſdiction, Power, and Authority thereto belonging, are, from *Auguſt* the firſt, 1641, abſolutely diſſolv'd.

Painted CHAMBER. See PAINTED *Chamber*.

Imperial CHAMBER, is a Juriſdiction held antiently at *Spires*, but ſince transferr'd to *Veſlar*. In this are determin'd the Differences among the Princes and Cities of the Empire. See EMPIRE.

It was at firſt ambulatory: In 1473 it was fix'd to *Augſburg*, then remov'd to *Frankfort*; and thence to *Worms*, in 1497: afterwards it was remov'd to *Nuremberg* and *Ratisbon*; again to *Worms* and *Nuremberg*; and from this laſt to *Eſſengen*; thence, in 1527, to *Spires*; where *Charles* V. render'd it ſedentary, in 1530.

At its firſt Inſtitution it conſiſted of 16 Aſſeſſors; but the Reformation enſuing, occaſion'd the Number to be increas'd: By the Treaty of *Oſnaburg*, in 1648, there were appointed 50 Aſſeſſors; whereof 24 to be Proteſtants, and 26 Catholicks; beſides five Preſidents, two of 'em Proteſtants, the reſt Catholicks.

As the Princes, or Circles of the Empire are not always exact in filling up the Vacancies in this *Chamber*, the Number of Aſſeſſors is now reduc'd to 16. See IMPERIAL.

This *Chamber* has a Right of judging by Appeal, and the laſt Reſort, of all Civil Affairs of all the Subjects of the Empire, in the ſame manner as the *Aulic* Council reſiding at *Vienna*. See AULIC.

Proceſſes are here almoſt Immortal, by reaſon of the infinite number of Ceremonies and Formalities wherewith they are embaraſs'd.

The *Imperial Chamber* is frequently afraid to pronounce Sentence, for fear of expoſing its Awards to ſome Diſgrace; the Princes ſometimes not permitting ſuch to be executed as diſpleaſe them.

Apoſtolical CHAMBER, at *Rome*, is that wherein Affairs relating to the Revenues and Domains of the Church and the Pope are tranſacted. See APOSTOLICAL.

CHAMBER *of Audiences*, or *grand* CHAMBER; a Juriſdiction in each Parliament of *France*. See PARLIAMENT.

At the firſt Inſtitution of their Parliaments, there were two *Chambers*, and two Kinds of Counſellors; the one the *grand Chamber* for Audiences, the Counſellors whereof were call'd *Iugeurs*, who only judg'd: the other the *Chamber of Inqueſts*; the Counſellors whereof were called *Rapporteurs*; who only reported Proceſſes by writing.

CHAMBER *of the Edict*, or *Mi-partre*, was a Court eſtabliſh'd by virtue of the Edicts of Pacification, in favour of thoſe of the Reform'd Religion: wherein the Number of Judges of either Religion were the ſame; and to which recourſe was had in all Affairs wherein any of the Proteſtants were concern'd. This *Chamber* is now ſuppreſs'd.

CHAMBER *of Accompts*, is a ſovereign Court, where Accompts are render'd of all the *Deniers Royaux*; Inventories, and Avenues given to the King, Oaths of Fidelity taken, and other Things relating to the Finances tranſacted. The *French* have alſo,

Eccleſiaſtical CHAMBERS, which judge, by Appeal, of Differences ariſing on the raiſing of Tithes: Of theſe *Eccleſiaſtical Chambers* there are nine; *viz.* at *Paris*, *Bourdeaux*, *Rouen*, *Lyons*, *Tours*, *Toulouſe*, *Bourges*, *Pau*, and *Aix*: they uſually conſiſt of the Archbiſhop of the Place, as Preſident; other Archbiſhops and Biſhops, a Deputy of each of the Dioceſſes, and three Counſellors of Parliament. The *Chamber* chuſes as many Counſellors out of the Clergy as it thinks proper; as alſo a Promoter.

CHAMBER *of London*. See CHAMBERLAIN.

CHAMBERS *of Commerce*, are Aſſemblies of Merchants and Dealers, where they treat about Matters relating to Commerce: Of theſe there are ſeveral, eſtabliſh'd in moſt of the chief Cities of *France*, by Virtue of an Arret of the 30th of *Auguſt* 1701. Indeed there were ſome before this general Eſtabliſhment, particularly one at *Marſeilles*, and another at *Dunkirk*.

CHAMBER *in War*, is us'd for the Place where the Pouder of a Mine is lodg'd. See MINE.

The *Chamber of a Mine* is a Cavity of five or ſix cubick Feet.

CHAMBER *of a Mortar*, or *Cannon* of the new Make, is a Cell, or Cavity at the bottom of the Barrel, or Chaſe, where the Charge of Pouder is lodg'd. See MORTAR.

The different Form of the *Chamber*, is found by Experiment to have an Influence on the Range of the Piece. A Cubical *Chamber* carries the Ball a leſs Diſtance than a Circular one; and that leſs than a Cylindrical one.

CHAMBERLAIN, an Officer who has the Management, or Direction of a *Chamber*. See CHAMBER.

The Word *Chamberlain*, according to *Ragueau*, originally ſignify'd, a Gentleman who was to ſleep in the King's Bed-Chamber, at his Bed's Feet, in the Abſence of the Queen.

There are almoſt as many Kinds of *Chamberlains* as *Chambers*: The principal are as follow.

Lord Great CHAMBERLAIN *of England*; an Officer of great Antiquity and Honour; being rank'd the ſixth great Officer of the Crown: A conſiderable part of his Function is at the Coronation of a King; when he dreſſes him, carries the Coif, Sword, and Gloves to be us'd on that Occaſion; the Gold Sword and Scabbard to be offer'd by the King; the Robe Royal and Crown: He alſo undreſſes him, and waits on him at Dinner; having for his Fee the King's Bed, and all the Furniture of his Chamber, the Night-Apparel, and the Silver Baſon wherein the King waſhes, with the Towels. See CORONATION.

To him likewiſe belongs the Proviſion of every thing in the Houſe of Lords, in time of Parliament; to which End he has an Apartment near the Lords Houſe. He has the Government of the Palace of *Weſtminſter*; iſſues out War-

rants for preparing, fitting out, and furniſhing *Weſtminſter-Hall*, againſt Coronations, Trials of Peers, &c.

He diſpoſes of the Sword of State, to be carry'd by whom he pleaſes; and when he goes to Parliament, is on the right Hand of the Sword, the Lord Marſhal being on the left. On all ſolemn Occaſions, the Keys of *Weſtminſter-Hall*, of the *Court of Wards*, and *Court of Requeſts*, are deliver'd him.

To him belong Livery and Lodging in the King's Court; and he has certain Fees from every Biſhop at his doing Homage to the King, and from every Peer at his Creation. Under his Command are, the *Gentleman-Uſher of the Black Rod*, the *Yeoman-Uſher*, and *Door-keepers*.

This Honour was long held by the Earls of *Oxford*; *viz.* from the Time of *Henry* I. by an Eſtate Tail, or Inheritance; but in the three laſt Coronations by the Marquis of *Lindſey*, now Duke of *Ancaſter*, by an Eſtate or Inheritance from a Daughter and Heir General, claim'd, but controverted.

Lord CHAMBERLAIN *of the Houſhold*, an Officer who has the Overſight and Direction of all Officers belonging to the King's *Chamber*, except the Precinct of the *Bed-Chamber*; which is abſolutely under the *Groom of the Stole*. See BED-*Chamber*.

He has the Overſight of the Officers of the Wardrobe, of the removing of Wardrobes, Beds, Tents, Revels, Muſick, Comedians, Hunting, Meſſengers, Trumpeters, Drummers, Handicrafts, and other Tradeſmen retain'd in the King's Service: As alſo of all Serjeants at Arms, Phyſicians, Apothecaries, Surgeons, Barbers, the King's Chaplains, &c. and adminiſters the Oath to all Officers above Stairs, &c.

There are alſo CHAMBERLAINS of the King's Courts, of the *Exchequer*, of *North Wales*, of *Cheſter*, of the City of *London*, &c. in all which Caſes, this Officer is commonly the Receiver of all Rents and Revenues belonging to the Place whereof he is *Chamberlain*.

When there is no Prince of *Wales*, and Earl of *Cheſter*, the *Chamberlain* of *Cheſter* hath the Receipt and Return of all Writs coming thither out of any of the King's Courts.

In the *Exchequer*, there are two Officers of this Name, who were wont to keep a Controulment of the Pells of Receipt and Exitus; and kept certain Keys of the Treaſury and Records: They kept alſo the Keys of that Treaſury where the Leagues of the King's Predeceſſors, and divers antient Books, as Dooms-day Book, and the Black-Book of the Exchequer remain. See EXCHEQUER.

The CHAMBERLAIN of *London* keeps the City Money, which is laid up in the *Chamber of London*, an Apartment in *Guild-Hall*: He alſo preſides over the Affairs of Maſters and Apprentices; and makes free of the City, &c.

His Office laſts but for a Year, being choſen annually on *Midſummer*-Day: but the Cuſtom uſually obtains, to rechuſe the ſame Perſon; unleſs he have been chargeable with any Miſdemeanor in his Office.

Vice-CHAMBEERLAIN. See VICE-*Chamberlain*.

CHAMBRANLE, in Architecture and Joinery, the Border, Frame, or Ornament of Stone or Wood, us'd in the three Sides round Chamber-Doors, large Windows, and Chimneys.

The *Chambranle* is different in the different Orders: when 'tis plain and without Mouldings, 'tis call'd ſimply and properly, *Band*, *Caſe*, or *Frame*.

The *Chambranle* conſiſts of three Parts; the two Sides, called *Montants*, or *Ports*; and the Top, called the *Traverſe*, or *Supercilium*.

The *Chambranle* of an ordinary Door, is frequently call'd *Door-Caſe*; of a Window, *Window-Frame*; of a Chimney, *Mantle-Tree*. See DOOR, WINDOW, MANTLE.

CHAMFER, or CHAMFRET, in Architecture, an Ornament conſiſting of half a *Scotia*; being a kind of ſmall Furrow, or Gutter on a Column, call'd alſo *Scapus*, *Stria*, &c. See STRIA.

Chamfering, or *Chamfraining*, is particularly us'd for the cutting of the Edge, or End of any thing a-ſlope, or bevel. See BEVEL.

CHAMELOT, in Commerce. See CAMELOT.

CHAMPAIN. See CAMPAIGN, and CHAMPION.

A Point CHAMPAIN, in Heraldry, is a Mark of Diſhonour in the Coat of Arms of him who kills a Priſoner of War after he has cry'd Quarter. See POINT.

CHAMPARTORS, in the Words of the Statute 33 *Edw.* I. are 'They who move Pleas or Suits, or cauſe 'them to be moved, either by their own Procurement 'or others; and ſue them at their proper Coſts, to have 'part of the Land in Variance, or part of the Gains; 'againſt whom lies a Writ of *Champarty*.

CHAMPARTY, or CHAMPERTY, in Law, a Maintenance of any Man in his Suit, upon Condition of having part of the Thing, be it Lands or Goods; in caſe it be recover'd. See MAINTENANCE.

The Word comes from the French *Champ*, Field, and *parti*, divided; the Field, or Thing conteſted for, being ſuppos'd to be divided between the *Champartor*, or Maintainer, and the Perſon in whoſe Right he ſues.

This ſeems to have been an antient Grievance; for notwithſtanding ſeveral Statutes againſt it, and a Form of Writ accommodated to 'em, in the Time of *Edward* I. yet in that of *Edward* III. it was enacted, That whereas redreſs on the former Statute was only to be had in the King's-Bench, which then follow'd the Court; for the future it ſhould likewiſe be cognizable by the Juſtices of the *Common Pleas*, and *Judges of Aſſize*.

CHAMPION, properly ſignifies, a Perſon who undertakes a Combat, in the Place or Quarrel of another: tho the Word is alſo ſometimes us'd for him who fights in his own Cauſe. See COMBAT.

Hottoman defines *Champion*, *Certator pro Alio datus in Duello, à Campo dictus, qui Circus erat decertantibus definitus*: Hence it is alſo called *Camfight*.

Du Cange obſerves, that *Champions*, in the juſt Senſe of the Word, were Perſons who fought in lieu of thoſe who were oblig'd by Cuſtom to accept the Duel; but had yet a juſt Excuſe for diſpenſing with it, as being too old, infirm, Eccleſiaſticks, &c. He adds, that the *Champions* were uſually retain'd or hir'd for ſo much Money, and were held infamous.

There were alſo ſome Vaſſals, who by the Faith and Homage ſwore to their Lords, were oblig'd to fight for 'em in caſe of need.

Some Authors hold, any Perſon was allow'd the Benefit of a *Champion*, excepting Parricides, and thoſe accus'd of very heinous Offences.

This Cuſtom of deciding Differences by Combat, was deriv'd from the North; whence it paſs'd into *Germany*, and, with the *Saxons*, into *England*, and inſenſibly thro the reſt of *Europe*.

When two *Champions* were choſe to maintain the Pro and the Con, 'twas always requir'd there ſhould be a Sentence of the Judge to authorize the Combat: When the Judge had pronounc'd Sentence, the Accuſed threw a Gage, or Pledge, ordinarily a Glove, or Gantlet; which being taken up by the Accuſer, they were both taken into ſafe Cuſtody till the Day of Battel, appointed by the Judge. See GAGE.

If either of them fled after this, he was declar'd infamous, and deem'd to have committed the Crime imputed to him. Nor were the Accuſer and Accuſed now allow'd to make up the Matter; at leaſt, not without the Conſent of the Judge; which was never granted, without making the Lord Satisfaction for the Right of Succeſſion to the Effects of the Vanquiſhed.

Before the *Champions* took the Field, their Heads were ſhav'd, and they made Oath, 'They believ'd the Perſon 'who retain'd them was in the right; and that they 'wou'd defend his Cauſe to the utmoſt of their Power.' The Weapons they us'd when the Combat was on Foot, were a Sword and Buckler; ſome ſay, in *England*, only a Club and Buckler: when on Horſeback, they were arm'd at all Points. Their Weapons were bleſſed in the Field by the Prieſt, with a world of Ceremony; and each took an Oath he had no Charm upon him.

The Action began with railing, and giving each other ill Language; at the Sound of a Trumpet they were to go to Blows: After the Number of Blows or Rencounters expreſs'd in the *Cartel*, the Judges of the Combat threw a Rod into the Air, to advertiſe the *Champions* that the Combat was ended. If it laſted till Night, or ended with equal Advantage on either ſide, the Accus'd was reputed Victor.

The Puniſhment of the Vanquiſh'd, was that which the Crime merited whereof he was accus'd: If it were a Capital Crime, the Vanquiſh'd was diſarm'd, led out of the Field, and immediately executed, together with the Party whoſe Cauſe he maintain'd. If the conquer'd *Champion* fought in the Cauſe of a Woman, ſhe was burnt. See DUEL.

CHAMPION *of the King*, is an Officer whoſe Buſineſs is, at the Coronation of a King of *England*, to ride into *Weſtminſter-Hall*, arm'd Cap-a-pe, when the King is at Dinner, and throw down his Gantlet by way of Challenge; pronouncing, by a Herald, 'That if any Man ſhall deny, or 'gainſay the King's Title to the Crown, he is there 'ready to defend it in ſingle Combat, &c.' Which done, the King drinks to him, ſending him a gilt Cup with a Cover, full of Wine; which the *Champion* drinks, and has the Cup for his Fee.

This Office, ever ſince the Coronation of *Richard* II. has been continu'd in the Family of *Dymocke*, who held the Mannor of *Scrivelsby* in *Lincolnſhire*, Hereditary from the Family of the *Marmions*, who had it before, by grand Serjeanty; *i. e.* that the Lord thereof ſhall be the King's *Champion*. See SERJEANTY.

CHAMPION- or rather CHAMPAIN-*Lands*, are Lands not inclos'd; or large Fields, Downs, or Places, without Woods or Hedges. See DOWNS.

CHAMOIS *Leather*, popularly call'd SHAMMY, or CHAMMY; a kind of Leather, either dreſs'd in Oil, or tann'd; much eſteem'd for its ſoftneſs, pliancy, &c. See LEATHER.

It is prepar'd from the Skin of the *Chamois*, a kind of *Rupi-Capra*, or wild Goat, called alſo *Iſard*; inhabiting the Mountains of *Dauphine*, *Savoy*, *Piemont*, and the *Pyreneans*.

Beſides the Softneſs and Warmneſs of the Leather, it has the Faculty of bearing Soap without damage, which renders it very uſeful on many Accounts.

In *France*, &c. ſome wear the Skin crude, without any Preparation: It is alſo us'd for the purifying of Mercury; which is done by paſſing it thro the Pores of this Skin, which are very cloſe. See MERCURY.

The true *Chamoiſe Leather* is counterfeited with common Goat, Kid, and even Sheep Skin; the Practice of which makes a particular Profeſſion, call'd by the French *Chamoiſure*. The laſt, tho the leaſt eſteem'd, is yet ſo popular, and ſuch vaſt Quantities prepar'd, eſpecially about *Orleans*, *Marſeilles*, and *Tholouſe*, that it may not be amiſs to give the Method of Preparation.

The manner of CHAMOISING, or *of preparing Sheep, Goat, or Kid-skins in Oil, in Imitation of* CHAMOIS.

The Skins being waſh'd, drain'd, and ſmear'd over with Quick-lime on the fleſhy ſide, are folded in two, lengthwiſe, the Wool outwards, and laid on Heaps, and ſo left to ferment eight Days; or, if they had been left to dry after fleaing, 15 Days.

Then they are waſh'd out, drain'd, and half-dry'd; laid on a wooden Leg, or Horſe, the Wool ſtripp'd off with a round Staff for the Purpoſe, and laid in a weak Pit, the Lime whereof had been us'd before, and had loſt the greateſt Part of its force.

After 24 Hours they are taken out, and left to drain 24 more; then put in another ſtronger Pit. This done, they are taken out, drain'd, and put in again, by turns; which begins to diſpoſe them to take Oil: And this Practice they continue for 6 Weeks in Summer, or three Months in Winter; at the end whereof they are waſh'd out, laid on the wooden Leg, and the Surface of the Skin on the Wool ſide peel'd off, to render them the ſofter; then, made into Parcels, ſteep'd a Night in the River, in Winter more; ſtretch'd, ſix or ſeven over one another, on the wooden Leg; and the Knife paſs'd ſtrongly on the Fleſh ſide, to take off any thing ſuperfluous, and render the Skin ſmooth.

Then they are ſtretch'd, as before, in the River; and the ſame Operation repeated on the Wool ſide; then thrown into a Tub of Water with Bran in it, which is brew'd among the Skins till the greateſt Part ſtick to them; and then ſeparated into diſtinct Tubs, till they ſwell, and riſe of themſelves above the Water.

By this means, the Remains of the Lime are clear'd out: They are then wrung out, hung up to dry on Ropes, and ſent to the Mill, with the Quantity of Oil neceſſary to full them: The beſt Oil is that of Stock-Fiſh.

Here, they are firſt thrown in Bundles into the River for 12 Hours, then laid in the Mill-Trough and full'd without Oil till they be well ſoftned; then oil'd with the hand, one by one, and thus form'd into Parcels of four Skins each, which are mill'd and dry'd on Cords a ſecond time, then a third; then oil'd again and dry'd.

This Proceſs is repeated as often as Neceſſity requires: when done, if there be any Moiſture remaining, they are dry'd in a Stove, and made up into Parcels wrapp'd up in Wool: after ſome time they are open'd to the Air, but wrapp'd up again as before, till ſuch time as the Oil ſeems to have loſt all its force, which it ordinarily does in 24 Hours.

The Skins are then return'd from the Mill to the *Chamoiſer*, to be ſcour'd; which is done by putting them in a Lixivium of Wood-Aſhes, working and beating them in it with Poles, and leaving 'em to ſteep till the Lye have had its Effect; then wrung out, ſteep'd in another Lixivium, wrung again, and this repeated till all the Greaſe and Oil be purg'd out. They are then half dry'd, and paſs'd over a ſharp-edg'd Iron Inſtrument, plac'd perpendicular in a Block, which opens, ſoftens, and makes them gentle: laſtly, they are thoroughly dry'd, and paſs'd over the ſame Inſtrument again, which finiſhes the Preparation, and leaves em in form of *Chamois*.

Kid, and Goat-ſkins are *chamois'd* in the ſame manner as thoſe of *Sheep*; excepting that the Hair is taken off, without the uſe of any Lime; and that when brought from the Mill, they undergo a particular Preparation, call'd *Ramalling*; the moſt delicate and difficult of all the others.

It conſiſts in this, that as ſoon as brought from the Mill, they are ſteep'd in a fit Lixivium; taken out, ſtretch'd on a round wooden Leg, and the Hair ſcrap'd off with the Knife; this makes them ſmooth, and, in working, caſt a kind of fine Nap. The Difficulty is in ſcraping them evenly.

CHANCE, a Term we apply to Events, to denote that they happen without any neceſſary Cauſe. See CAUSE.

Our Aim is, to aſcribe thoſe Things to *Chance*, which are not neceſſarily produc'd as the Natural Effects of any proper Cauſe: but our Ignorance and Precipitancy lead us to attribute Effects to *Chance*, which have a neceſſary and determinate Cauſe.

When we ſay a Thing happens *by Chance*, we really mean no more, than that its Cauſe is unknown to us: not, as ſome vainly imagine, that *Chance* it ſelf can be the Cauſe of any Thing. From this Conſideration, Dr. *Bentley* takes occaſion to expoſe the Folly of that old Tenet, *The World was made by Chance*.

The Caſe of the Painter, who unable to expreſs the Foam at the Mouth of a Horſe he had painted, threw his Sponge in Deſpair at the Piece, and, *by Chance*, did that which he could not before do by Deſign, is an eminent Inſtance of the Force of *Chance*: Yet, 'tis obvious, all we here mean by *Chance*, is, that the Painter was not aware of the Effect; or that he did not throw the Sponge with ſuch a View: not but that he actually did every thing neceſſary to produce the Effect; inſomuch, that conſidering the Direction wherein he threw the Sponge, together with its Form, ſpecifick Gravity, the Colours wherewith it was ſmeer'd, and the Diſtance of the Hand from the Piece, it was impoſſible, on the preſent Syſtem of Things, the Effect ſhould not follow.

Chance is frequently perſonify'd, and erected into a chimerical Being, whom we conceive as acting arbitrarily, and producing all the Effects, whoſe real Cauſes do not appear to us; in which Senſe, the Word coincides with the מזל, *Fortuna* of the Antients. See FORTUNE.

CHANCE is alſo confounded with *Fate*, and *Deſtiny*. See FATE, and DESTINY; ſee alſo NATURE, GOD, &c.

CHANCE is alſo us'd for the manner of deciding Things, the Conduct or Direction whereof, is left at large, and not reducible to any determinate Rules or Meaſures; or where there is no ground for preference, as at Cards, Dice, Lotteries, &c.

For the Laws of CHANCE, *or the Proportion of Hazard in Gaming*; ſee GAME.

The antient *Sors*, or *Chance*, M. *Placette* obſerves, was inſtituted by God himſelf; and in the Old Teſtament, we find ſeveral ſtanding Laws and expreſs Commands which preſcrib'd its uſe on certain Occaſions: Hence, the Scripture ſays, *The Lot*, or Chance, *fell on St.* Matthias; when it was in queſtion who ſhould fill *Judas*'s Place in the Apoſtolate.

Hence alſo aroſe the *ſortes Sanctorum*; or Method of determining Things among the antient Chriſtians, by opening ſome of the Sacred Books, and pitching on the firſt Verſe they caſt their Eye on, as a ſure Prognoſtick of what was to befall them. The *ſortes Homericæ*, *Virgilianæ*, *Præneſtinæ*, &c. us'd by the Heathens, were with the ſame View, and in the ſame manner. See SORTES.

St. *Auguſtin* ſeems to approve of this Method of determining Things future, and owns that he had practis'd it himſelf; grounded on this Suppoſition, that God preſides over *Chance*, and on *Proverbs* 16. *v.* 33.

Many among the modern Divines, hold *Chance* to be conducted in a particular manner by Providence, and eſteem it an extraordinary Way which God uſes to declare his Will, and a kind of immediate Revelation. See PURGATION, *Judicium Dei*, COMBAT, CHAMPION, &c.

CHANCE-MEDLEY, in Law, the accidental killing of a Man, not altogether without the Killer's Fault, tho without any evil Intent.

Staumford calls it, *Homicide by Miſadventure*: *Weſt* calls it *Homicide mix'd*; and ſays, it is when the Killer's Ignorance or Negligence is join'd with the *Chance*: as ſuppoſing a Man lopping Trees by the Highway, and a Bough falling chance to kill a Paſſenger; the Party here offends in not having given warning, whereby the Slain might have been induc'd to take more heed. See HOMICIDE.

CHANCEL, part of the Choir of a Church, between the Altar, or Communion Table, and the Baluſtrade, or Rails that incloſe it; where the Miniſter is plac'd at the Celebration of the Communion. See CHURCH, COMMUNION, ALTAR, &c.

The Right of a Seat and a Sepulchre in the *Chancel*, is eſteem'd very honourable. See SEPULCHRE.

The Word comes from the Latin *Cancellum*, which in the lower *Latin* is us'd in the ſame Senſe, from *Cancelli Latices*, or Croſs Bars, wherewith the *Chancels* were antiently incompaſs'd, as they now are with Rails.

CHANCELLOR, an Officer, ſuppos'd originally to have been a *Notary*, or *Scribe*, under the Emperors, and named *Cancellarius*, becauſe he ſat behind a Lattice, call'd by the Latins *Cancelli*, to avoid being crouded by the People. See NOTARY, &c.

Naudæ

Nauda says, it was the Emperor himself who sat and render'd Justice within the Lattice; the *Chancellor* attending at the Door thereof, whence he took his Title.

Others say, he had it from this, that all Letters, Addresses, Petitions, *&c.* to the King, being first examin'd by him, were *cancell'd* where amiss: Others, because all Patents, Commissions, and Warrants coming from the King, were examin'd and *cancell'd* by him. Others, because he *cancell'd* and annull'd the Sentences of other Courts.

Du Cange, from *Joannes de Janua*, fetches the Original of *Chancellor* from *Palestine*, where the Houses being flat, and made in form of a Terrace, with Parapets or Pallisadoes call'd *Cancelli*; those who mounted these Houses to rehearse any Harangue, were call'd *Cancellarii*: whence the Name pass'd to those who pleaded at the Bar, whom he calls *Cancelli forenses*, and at length to the Judge who presided; and lastly to the King's Secretaries.

This Officer is now in great Authority in all Countries: the Person who bears it with us, is the

Lord High CHANCELLOR *of England*, the first Person of the Realm, next after the King and Princes of the Blood, in all Civil Affairs. He is the chief Administrator of Justice next the Sovereign; being the Judge of the Court of Chancery. See CHANCERY.

All other Justices are ty'd to the strict Law, but the *Chancellor* has the King's absolute Power to moderate the Rigour of the Written Law, to govern his Judgment by the Law of Nature and Conscience, and to order all things *secundum æquum & bonum*. Accordingly, *Staumford* says, the *Chancellor* has two Powers, the one Absolute, the other ordinary; meaning, that tho by his ordinary Power he must observe the same Form of Procedure as other Judges, yet in his absolute Power he is not limited by any written Law, but by Conscience and Equity. See EQUITY.

The Offices of *Lord Chancellor* and *Lord Keeper*, are by the Statute 5 *Eliz.* made the same thing; till that time they were different; and frequently subsisted at the same Time in different Persons: Sometimes the Lord *Chancellor* had a *Vice-Chancellor*, who was Keeper of the Seal. See KEEPER.

The Keeper was created *per traditionem magni Sigilli*, but the Lord *Chancellor* by Patent; tho now that he has the Keeper's Office, he is created in like manner by giving him the Seal. The *Chancellor* is likewise Speaker of the House of Lords. See PARLIAMENT.

Tho he be sole Judge of the Court of Chancery, yet in Matters of much difficulty he sometimes consults the other Judges; so that this Office may be discharg'd by one who is no profess'd Lawyer, as antiently it commonly was. He has twelve Assistants, or Coadjutors, antiently call'd *Clerici*, as being in Holy Orders, now *Masters in Chancery*, the first whereof is the *Master of the Rolls*. See MASTER *of the Rolls*, MASTERS *in Chancery*, &c.

CHANCELLOR *of a Cathedral*, is the Judge of the Bishop's Court, held in the Cathedral of each Dioceſs. See BISHOP'S *Court*, and CATHEDRAL.

He was antiently call'd *Eccleſiaſticus*, and *Epiſcopi Ecdicus*, the Church-Lawyer. See ECCLESIASTICUS, ADVOCATE, *&c.*

In the *Monaſticon* his Office is thus deſcrib'd, *viz.* to hear the Leſſons and Lectures read in the Church, either by himself or his Vicar; to correct and set right the Reader when he reads amiss; to inspect Schools, to hear Causes, apply the Seal, write and dispatch the Letters of the Chapter, keep the Books, to take care there be frequent Preachings, both in the Church and out of it, and to assign the Office of Preaching to whom he lists.

CHANCELLOR *of the Dutchy of Lancaster*, is an Officer, the Head of that Court; his Business is to judge and determine all Controversies between the King, and his Tenants of the Dutchy Land; and otherwise to direct all the King's Affairs relating to that Court. See DUTCHY *Court*.

CHANCELLOR *of the Exchequer*, is an Officer, suppos'd by some to have been created for qualifying Extremities in the Exchequer. See EXCHEQUER.

He sits in that Court and the Exchequer Chamber, and, with the rest of the Court, orders Things to the King's best benefit. He is always in Commission with the Lord Treasurer for letting Lands accruing to the Crown by Dissolution of Abbeys, and otherwise: He has Power, with others, to compound for Forfeitures on Penal Statutes, Bonds, and Recognizances enter'd into by the King.

He has a great Authority in managing the Royal Revenue, and in Matters of First-Fruits. See REVENUES.

The Court of Equity, in the Exchequer Chamber, is held before the Lord Treasurer, *Chancellor*, and Barons, as that of Common Law before the Barons only. See BARON, *&c.*

CHANCELLOR *of an University*, is he who Seals the *Diplomas* or Letters of Degrees, Provision, *&c.* given in the University. See UNIVERSITY.

The *Chancellor* of *Oxford* is their Chief Magistrate, elected by the Students themselves: His Office is *durante Vita*, to govern the University, preserve and defend its Rights and Privileges, convoke Assemblies, and do Justice among the Members under his Jurisdiction.

Under the *Chancellor* is the *Vice-Chancellor*, who is chosen annually; being nominated by the *Chancellor*, and elected by the University in Convocation. His Business is to supply the *Chancellor*'s Absence.

At his Entrance upon his Office, he chuses four *pro Vice-Chancellors*, out of the Heads of Colleges, to one of whom he deputes his Power in his absence.

The *Chancellor* of *Cambridge*, is in most respects the same with that of *Oxford*, only he does not hold his Office *durante Vita*, but may be elected every three Years.

He has under him a Commissary, who holds a Court of Record of Civil Causes, for all Persons of the University under the Degree of Masters of Arts.

The *Vice-Chancellor* of *Cambridge* is chosen annually by the Senate, out of two Persons nominated by the Heads of the several Colleges and Halls.

CHANCELLOR *of the Order of the Garter*, and other Military Orders, is an Officer who seals the Commissions, and Mandates of the Chapter and Assembly of the Knights, keeps the Register of their Deliberations, and delivers Acts thereof under the Seal of the Order. See GARTER, *&c.*

CHANCERY, the grand Court of Equity and Conscience, instituted to moderate the Rigour of the other Courts, that are ty'd to the strict Letter of the Law. See COURT, LAW, and EQUITY.

The Judge of this Court is the Lord High *Chancellor*, whose Function see under CHANCELLOR.

The Proceedings of this Court are either *Ordinary*, like other Courts, according to the Laws, Statutes, and Customs of the Nation, and in *Latin*, by granting out Writs Remedial and Mandatory, Writs of Grace, *&c.* see WRIT, *&c.* Or *Extraordinary*, according to Equity and Conscience, and in *English*, by Bills, Answers, and Decrees, to examine Frauds, Combinations, Trusts, secret Uses, *&c.* to soften the Severity of Common Law, and rescue Men from Oppression; to relieve 'em against Cheats, unfortunate Accidents, Breaches of Trust, *&c.*

Out of the Court of *Chancery*, are issu'd Writs or Summons's for Parliaments and Convocations, Edicts, Proclamations, Charters, Protections, Patents, Safe Conducts, Writs of *Moderata*, *Miſericordia*, &c. See WRIT, SUMMONS, CONVOCATION, EDICT, PROCLAMAION, CHARTER, *&c.*

Here are also seal'd and enroll'd Letters Patent, Treaties and Leagues, Deeds, Writs, Commissions, *&c.* See PATENT, DEED, *&c.*

The Officers of this Court, beside the Lord *Chancellor*, who is supreme Judge, are, the *Master of the Rolls*, who, in the *Chancellor*'s Absence, hears Causes and gives Orders; and twelve *Masters of Chancery*, who are Assistants, and sit by turns on the Bench; see MASTERS, *&c.*

For the *English* Part of this Court are *Six Clerks*, who have each under him about fifteen more, in the Nature of Attorneys of the Court: Two chief *Examiners*, for examining Witnesses, who have each five or six Clerks apiece: One principal *Register*, who has four or five Deputies: *Clerk of the Crown*, who makes Writs, Commissions, *&c.* *Warden of the Fleet*: *Serjeant at Arms*, who bears the Mace before the *Chancellor*; and the *Usher* and *Crier* of the Court. See SIX CLERKS, REGISTER, WARDEN, SERJEANT, *&c.*

To the *Latin* Part belong the twenty four *Curſitors*, and their Clerks, who make out original Writs; *Clerks of the petty Bag*; *Clerks of the Hanaper*; *Controller of the Hanaper*; *Clerk of Appeal*; *Clerk of the Faculties*; *Sealer Chafe Wax*; *Clerk of the Patents*, *of Preſentations*, *Diſmiſſions*, *Licences to alienate*, *Enrollments*, *Protections*, *Subpœnas*, *Affidavits*, &c. See each under its proper Article, CURSITOR, CLERK, CHAFE-*Wax*, &c.

CHANDELIERS, in Fortification, are wooden Stakes six Foot high, and six or seven apart, between which are plac'd Fascines, to cover the Workmen on Approaches. See FASCINES.

These are sometimes made to prevent the Enemy from seeing what passes within.

The Difference between *Chandeliers* and *Blinds* consists in this, that the former serve to cover the Pioneers before, and the latter also cover them over Head. See BLINDS.

CHANGE, in Commerce, *&c.* See EXCHANGE.

CHANGER, an Officer belonging to the Mint, who changes Money for Gold or Silver Bullion. See MINT.

Money-CHANGER, is a Banker, who deals in the Exchange, Receipt, and Payment of Monies. See BANK.

CHANGES, in Arithmetic, *&c.* the Permutations or Variations of any Number of Quantities; with regard to their Position, Order, *&c.* See COMBINATION.

To find all the poſſible Changes of any Number of Quantities, or how oft their Order may be vary'd.

Suppoſe

Suppoſe two Quantities *a* and *b*. Since they may be either wrote *a b* or *b a*; 'tis evident their *Changes* are 2 = 2. 1. Suppoſe the Quantities *a b c*: their *Changes* will be as in the Margin; as is evident by combining *c* firſt with *a b*, then with *b a*; and hence the Number of *Changes* ariſes 3. 2. 1 = 6. If the Quantities be 4, each may be combin'd four ways with each Order of three; whence their Number of *Changes* ariſes 6. 4 = 4. 3 2 1. = 24. Wherefore, the Number of Quantities ſuppos'd in the Number of *Changes*, will be *n n*—1. 12—2. *n*—3. *n*—4 &c.

c a b	
a c b	
a b c	
——	
c b a	
b c a	
a c	

If the ſame Quantity occur twice, the *Change* of 2 will be found *b b*, of 3 *b a b*, *a b b*, *b b c*; of 4 *c b a b*, *b c a b*, *b a b c*. And thus the Number of *Changes* in the firſt Caſe will be 1 =, 2. 1, : 2. 1. in the ſecond, 3 =, 3. 2. 1, : 2. 1 ; in the third 1 2 =, 4. 3. 2. 1 : 2. 1.

If a fifth Letter be added, in each Series of four Quantities, it will beget five Changes, whence the Number of all the *Changes* will be 60 =, 5. 4, 3. 2. 1, : 2. 1. Hence *Changes* will be *n*. *n*—1. *n*—2. *n*—3. *n*—4 &c.

From theſe ſpecial *Formulæ* may be collected a general one, *viz.* if *n* be the Number of Quantities, and *m* the Number which ſhews how oft the ſame Quantity occurs; we ſhall have (*n*, *n*—1. *n*—2. *n*—3. *n*—4. *n*—5. *n*—6. *n*—7. *n*—8. *n*—9. &c.) : *m*—1. *m*—2. *m*—3. *m*—4. &c.) The Series being to be continu'd, till the continual Subſtraction of Unity from *n* and *m* leave 0. After the ſame manner we may proceed further, till putting *n* for the Number of Quantities, and *l*, *m*, *r*, &c. for the Number that ſhews how oft any of them is repeated, we arrive at an univerſal Form, (*n.n*—1. *n*—2. *n*—3. *n*—4. *n*—5. *n*—6. *n*—7. *n*—8. &c.) : *l*. *l*—1. *l*—2. *l*—3. *l*—4. *l*—5. &c.

Suppoſe, for Inſtance, *n* = 6, *l* = 3, *r* = 0. The Number of *Changes* will be (6. 5. 4. 3. 2. 1) : 3. 2. 1. 3 2 1) = (6. 5. 4) : 3. 2 (= 2. 5. 2 = 20.

Hence, ſuppoſe thirteen Perſons at a Table, if it be requir'd how oft they may *change* Places, we ſhall find the Number 13.12.11.10.9.8.7.6.5.4.3.2.1. = 6227020800.

In this manner may all the poſſible Anagrams of any Word be found in all Languages, and that without any Study: ſuppoſe, *v. g.* it were requir'd to find the Anagrams of the Word *Amor*, the Number of *Changes* will be

a	*o a m*	*r m o a*	*m a r o*	*a r o m*
——	*a o m*	*m r o a*	*m a o r*	*a o r m*
m a	*a m o*	*m o r a*	——	*a o m r*
a m	——	*m o a r*	*r a o m*	——
——	*r o m a*	——	*o r a m*	*r a m o*
o m a	*o r m a*	*r m a o*	*o a r m*	*a r m o*
m o a	*o m r a*	*m r a o*	*o a m r*	*a m r o*
m a o	*o m a r*		——	*a m o r*
			r a o m	

The Anagrams therefore of the Word *Amor*, in the *Latin* Tongue, are *Roma*, *Mora*, *Maro*, *Ramo*, *Armo*.

Whether this new Method of Anagrammatizing be like to prove of much ſervice to that Art, is left to the Poets.

CHANNEL, in Anatomy, Chirurgery, &c. See CANAL.

CHANNEL, or *Bed of a River*. See RIVER.

CHANNEL is alſo us'd for divers Arms of the Sea, where the Water runs within the Land; as alſo for certain narrow Seas, confin'd between two adjacent Continents, or an Iſland and Continent, &c. See SEA.

In this Senſe, we ſay, *St.* George's *Channel*; *the* Britiſh *Channel*; *the Channel of the Black Sea*, *of* Conſtantinople, &c.

CHANNEL, in Building. See GUTTER, PIPE, PLUMBERY, &c.

CHANNEL is particularly us'd in Architecture, for a Part of the *Ionic* Capital, a little hollow'd, in form of a *Canal*; lying under the Abacus, and running the whole length of the Circumvolution of the Volute; inclos'd by a Liſtel. See *Ionic* CAPITAL.

CHANNEL *of the Larmier*, is the Soffit of a Cornice; which makes the pendant *Mouchette*. See LARMIER, and SOFFIT.

CHANNEL *of the Volute*, in the *Ionic* Capital, is the Face of its Circumvolution; inclos'd by a Liſtel. See VOLUTE.

CHANNELINGS. See FLUTINGS.

CHANT, or CHAUNT. See SONG.

CHANT, *Cantus*, is particularly us'd for the Vocal Muſick of Churches.

In Church Hiſtory we meet with divers Kinds of *Chant*, or *Song*: The firſt is the *Ambroſian*, eſtabliſh'd by St. *Ambroſe*. See AMBROSIAN *Chant*.

The ſecond the *Gregorian Chant*, introduc'd by Pope *Gregory* the Great, who eſtabliſh'd Schools of *Chantors*, and corrected the Church Song.

This is ſtill retain'd in the Church under the Name of *Plain Song*: At firſt it was call'd the *Roman Song*.

The *Plain*, or *Gregorian Chant*, is where the Choir and the People ſing in Uniſon, or all together in the ſame manner. See GREGORIAN *Chant*.

CHANT-*Royal*. See COMEDY.

CHANTLATE, in Building, a piece of Wood faſten'd near the Ends of the Rafters, and projecting beyond the Wall, to ſupport two or three Rows of Tiles, ſo plac'd to prevent the Rain-Water from trickling down the Sides of the Wall.

CHANTER, or CHAUNTOR, a Perſon who ſings in the Choir of a Cathedral. See CHOIR, &c.

All great Chapters have *Chantors* and Chaplains to eaſe and aſſiſt the Canons, and officiate in their Abſence. See CHAPTER, CANON, &c.

St. *Gregory* firſt inſtituted the Office of *Chantors*, erecting them into a Body, call'd *Schola Cantorum*: tho *Anaſtaſius* ſeems to attribute their Riſe to Pope *Hilary*, who liv'd an hundred Years before *Gregory*.

But the Word grows obſolete in this Senſe, and inſtead thereof we uſe the Word *Choriſter*, or Singing-Man. See CHORISTER.

CHANTOR is us'd, by way of Excellence, for the *Præcentor*, or Maſter of the Choir; which is one of the firſt Dignities of the Chapter.

The *Chantor* bears the Cope and the Staff at ſolemn Feſtivals; and gives Tune to the reſt at the beginning of Pſalms and Anthems. See PRÆCENTOR.

The Antients call'd the *Chantor Primicerius*. See PRIMICERIUS.

To him formerly belong'd the Direction of the Deacons, and other inferior Miniſters.

CHANTRY, a Chapel endow'd for the maintaining a Prieſt, or Prieſts, to ſing Maſs for the Souls of the Founders.

CHAOLOGY, the Hiſtory or Deſcription of the *Chaos*. See CHAOS.

Orpheus, in his *Chaology*, ſets forth the different Alterations, Secretions, and divers Forms Matter went thro till it became inhabitable; which amounts to the ſame with what we otherwiſe call *Coſmogony*. See COSMOGONY.

Dr. *Burnet* likewiſe gives us a *Chaology*, in his Theory of the Earth. He repreſents the *Chaos*, as it was at firſt, entire, undivided, and univerſally rude, and deform'd; or the *Tohu Bohu*: then ſhews how it came divided into its reſpective Regions; how the homogeneous Matter gather'd it ſelf apart from all of a contrary Principle; and laſtly, how it harden'd and became a ſolid habitable Globe. See ELEMENT.

CHAOS, among the antient Philoſophers, was deſcrib'd a dark, turbulent Atmoſphere; or a diſorderly Syſtem, or Mixture of all ſorts of Particles together, without any Form or Regularity: out of which the World was form'd See WORLD.

Chaos is every where repreſented as the firſt Principle, Ovum, or Seed of Nature and the World. All the antient Sophiſts, Sages, Naturaliſts, Philoſophers, Theologues, and Poets, hold that *Chaos* was the Eldeſt and Firſt Principle, τὸ Αρχαῖον χάος.

The *Barbarians*, *Phenicians*, *Egyptians*, *Perſians*, &c. all refer the Origin of the World to a rude, mix'd, confus'd Maſs of Matter. The *Greeks*, *Orpheus*, *Heſiod*, *Menander*, *Ariſtophanes*, *Euripides*, and the Writers of Cyclic Poems, ſpeak of the firſt *Chaos*: The *Ionic*, and *Platonic* Philoſophers build the World out of it. The *Stoics* hold, that as the World was firſt made of a *Chaos*, it ſhall at laſt be reduc'd to a *Chaos*; and that all its Periods and Revolutions in the mean time, are only Tranſitions from one *Chaos* to another. Laſtly, the *Latins*, as *Ennius*, *Varro*, *Ovid*, *Lucretius*, *Statius*, &c. are all of the ſame Opinion. Nor is there any Sect or Nation whatever, that does not derive their Διακόσμεσιν, the Structure of their World, from a *Chaos*.

The Opinion aroſe among the *Barbarians*, whence it ſpread to the *Greeks*, and from the *Greeks* to the *Romans* and other Nations.

Dr. *Burnet* obſerves, that beſides *Ariſtotle* and a few other *pſeudo-Pythagoreans*, no body ever aſſerted, that our World was always, from Eternity, of the ſame Nature, Form, and Structure as at preſent: but that it had been the ſtanding Opinion of the wiſe Men of all Ages, that what we now call the Terreſtrial Globe, was an uninform'd, indigeſted Maſs of heterogeneous Matter, call'd *Chaos*; and no more than the Rudiments and Materials of the preſent World.

It does not appear who firſt broach'd the Notion of a *Chaos*. *Moſes*, the Eldeſt of all Writers, derives the Origin of his World, from a Confuſion of Matter, dark, void, deep, without form, which he calls *Tohu Bohu*; which is preciſely the *Chaos* of the *Greek* and *Barbarian* Philoſophers. And hence, poſſibly, might thoſe Philoſophers derive their *Chaos*, with ſome Alteration and Interpolation.

Moſes goes no further than the *Chaos*; nor tells us whence it took its Origin, or whence its confus'd State; and where *Moſes* ſtops, there, preciſely, do all the reſt. See ABYSS.

Dr. *Burnet* endeavours to ſhew, that as the antient Philoſophers, &c. who wrote of the Coſmogony, acknowledg'd a *Chaos* for the Principle of their World; ſo do the Divines, or Writers of the Theogony derive the Origin or Generation of their Gods from the ſame Principle. See COSMOGONY, and THEOGONY; ſee alſo GOD.

Mr. *Whiſton* ſuppoſes the antient *Chaos*, the Origin of our Earth, to have been the Atmoſphere of a Comet; which, tho new, yet, all things conſider'd, is not an improbable Aſſertion. He endeavours to make it out by many Arguments, drawn from the Agreement which appears to be between them.

So that, according to him, every Planet is a Comet, form'd into a regular and laſting Conſtitution; and plac'd at a proper Diſtance from the Sun, revolving in a nearly circular Orbit: and a Comet is a Planet either beginning to be deſtroy'd, or re-made; that is, a *Chaos* or Planet unform'd, or in its primæval State, and plac'd, as yet, in an Orbit very eccentrical. See COMET.

CHAPEAU, or CHAPPEAU, *Hat*, in Heraldry, is us'd as a Mark of Eccleſiaſtical Dignity, eſpecially of that of Cardinals, which is call'd abſolutely the *red Chapeau*.

It is flat, and very narrow atop, but broad-brim'd, adorn'd with long ſilken Strings interlac'd; ſuſpended from within with five Rows of Taſſels, call'd by the Italians *Fiocci*, increaſing in Number as they come lower. The Hat was given them by *Innocent* IV. in 1250, but was not us'd in Arms till the Year 1300. See CARDINAL.

Till that time, the Cardinals were repreſented with Mitres. See MITRE.

Archbiſhops and Patriarchs bear the green Hat, with four Rows of Taſſels; Biſhops wear it of the ſame Colour with three; Abbots and Apoſtolical Protonotaries with two.

The *Chapeau* is wore over the Shield by way of Creſt, as Mitres and Coronets are. See CREST.

CHAPEAU is ſometimes alſo us'd as a Mark of Secular Dignity, particularly for the Cap, or Coronet arm'd with Ermin, born by Dukes, *&c.* See CORONET.

The Creſt is born on the *Chapeau*; and by the *Chapeau* the Creſt and Coat are ſeparated; it being a Rule, that no Creſt muſt touch the Shield immediately. See CREST, *&c.*

CHAPEL, or CHAPPEL, a kind of little Church, ſerv'd by an Incumbent under the Denomination of a *Chaplain*. See CHURCH, CHAPLAIN, *&c.*

There are two Kinds of *Chapels*, the one *Conſecrated*, and held as *Benefices*; ſee BENEFICE: the other *Secular*, being of the Nature of *Oratories*. See ORATORY.

The firſt are built apart and at a diſtance from the Pariſh-Church; being neither Pariſhes, Cathedrals, nor Priories, but ſubſiſting of themſelves.

Theſe are call'd by the Canoniſts *Sub-Dio*, and by us *Chapels of Eaſe*; as being erected at a diſtance from the Mother Church, where the Pariſh is large and wide, for the Eaſe and Conveniency of ſome of the Pariſhioners who reſide far off.

They are ſerv'd by ſome inferior Curate, provided either by the Rector of the Pariſh, or by thoſe for whoſe Eaſe and Benefit they are intended.

The ſecond Kind are frequently built in, or adjoining to a Church, as a Part thereof; having only a Deſk, *&c.* to read Prayers in; and, in the *Romiſh* Churches, an Altar, *&c.* to celebrate Maſs on: but without any Baptiſtery, or Font.

Theſe the Canoniſts call *Sub Tecto*. They are generally erected by ſome conſiderable Perſon, for the Uſe of their own Families; *Ut ibidem Familiaria Sepulchra ſibi conſtituant.*

The twenty firſt Canon of the Council of *Agda*, held in 506, allows private Perſons the uſe of *Chapels*; but with Prohibition to all Clerks to officiate in them without leave from the Biſhop.

Free CHAPELS, are thoſe *Chapels of Eaſe* which have a ſettled Revenue for perpetual Maintenance of the Curate, *&c.* by charitable Donatives of Lands, or Rents beſtow'd on 'em; ſo as not to be any Charge either to the Rector, or the Pariſhioners.

There are ſeveral Collegiate Churches in *France*, which they call *Saintes Chapelles*, Holy Chapels; as thoſe of *Paris*, *Dijon*, *Bourges*, *Bourbon*, &c. ſo call'd, by reaſon there are Relicks in them. See CHAPLAIN.

The Word *Chapel*, according to ſome, comes from the *Greek* καπελα, little Tents, or Booths, ſet up by Traders in Fairs to ſhelter them from the Weather. *Papias* fetches it both from the *Greek* and *Latin*, *quaſi capiens* λαον, or, *populum* vel *laudem*: Others derive it from the *Chape*, or Cope which ſerv'd to cover the Body: Others, *à pellibus Caprarum*; becauſe theſe Places were antiently cover'd with Goatſkins. *Rebuff* derives it *de Cappa*, St. *Martin*'s *Cope*, which the Kings of *France* carry'd to War with them as their Standard, and preſerv'd very carefully in particular Tents, thence call'd *Chapels*.

Hence, all thoſe Places where Relicks were preſerv'd came to be call'd *Chapels*; and the Perſons who had the Care of them, *Chaplains*. See RELICKS.

CHAPEL is alſo a Name given to a Printing Workhouſe; by reaſon, ſay ſome Authors, Printing was firſt actually perform'd in *Chapels*.

In this Senſe, we ſay, *The Orders*, or Laws *of the Chapel*, *the Secrets of the Chapel*, &c. See PRINTING.

Knights of the CHAPEL, was an Order of Knights inſtituted by King *Henry* VIII. in his Teſtament, to the Number of 13; tho theſe have been ſince increas'd to the Number of 26, call'd alſo *Poor Knights*.

They are not really Knights of the Order of the Garter; but are, as it were, their Aſſiſtants or Deputies, ſerving to diſcharge all their Offices in the Funeral Services of the Kings of *England*. See GARTER.

They are ſubject to the Office of the *Canons of Windſor*, and live on Penſions which the Order aſſigns them.

They bear the blue or red Cloke, with the Arms of St. *George* on the left Shoulder; but the Cloke is only Cloth, and they wear no Garter: which diſtinguiſhes them from the Knights of the Garter.

CHAPERON, CHAPERONNE, or CHAPEROON, properly ſignifies a ſort of Hood, or Covering of the Head, antiently wore both by Men and Women, the Nobles, and the Populace, and afterwards particularly affected to the Doctors and Licentiates in Colleges, *&c.*

Hence, the Name paſs'd to certain little Shields, and other Funeral Devices, plac'd on the Foreheads of the Horſes that drew the Hearſes to pompous Funerals, and which are ſtill call'd *Chaperoons*, or *Shafferoons*; by reaſon ſuch Devices were originally faſten'd on the *Chaperonnes*, or Hoods, wore by thoſe Horſes with their other Coverings of State.

CHAPITERS, in Law, were antiently a Summary, or Content of ſuch Matters as are to be inquir'd of, or preſented before Juſtices in Eyre, Juſtices of Aſſize, or of Peace, in their Seſſions.

Chapiters are now more uſually taken for Articles deliver'd by the Mouth of the Juſtice in his Charge to the Inqueſt: Tho it appears from *Bracton* and *Briton*, they were formerly Exhortations given by the Juſtices, for the good Obſervation of the Laws, and the King's Peace; firſt read in open Court, then deliver'd in Writing to the Grand Inqueſt: which the Grand Jury, or Inqueſt, were likewiſe to anſwer upon their Oaths, either affirmatively or negatively.

CHAPLAIN, properly ſignifies, a Perſon provided of a *Chapel*; or who diſcharges the Offices thereof. See CHAPEL.

CHAPLAIN is alſo us'd for an Eccleſiaſtical Perſon, in the Houſe of a Prince, or a Perſon of Quality, who officiates in their *Chapels*, &c.

There are 48 *Chaplains* to the King, who wait four each Month, preach in the Chapel, read the Service to the Family, and to the King in his private Oratory, and ſay Grace in the Abſence of the Clerk of the Cloſet.

While in waiting, they have a Table and Attendance, but no Salary.

The firſt *Chaplains* are ſaid to have been thoſe inſtituted by the former Kings of *France*, for preſerving the *Chape*, or *Cape*, with the other Relicks of St. *Martin*, which the Kings kept in their Palace, and carry'd out with them to War. The firſt *Chaplain* is ſaid to be *Gul. de Meſmes*, *Chaplain* to S. *Louis*.

Antiently, the King's Almoners were call'd *Chaplains*. See ALMONER.

CHAPLAIN *in the Order of Malta*, is us'd for the ſecond Rank, or Claſs, in that Order; otherwiſe call'd *Diaco*.

The *Knights* make the firſt Claſs, and the *Chaplains* the ſecond. See MALTA.

CHAPLAINS *of the Pope*, are the Auditors, or Judges of Cauſes in the ſacred Palace; ſo call'd, becauſe the Pope antiently gave Audience in his *Chapel*, to judge of Caſes ſent from the ſeveral Parts of Chriſtendom.

He hither ſummon'd, as Aſſeſſors, the moſt known Lawyers of his Time, who hence acquir'd the Appellation of *Capellani*, *Chaplains*.

'Tis from the Decrees formerly given by theſe, that the Body of *Decretals* is compos'd: Their Number Pope *Sixtus* IV. reduc'd to twelve. See DECRETAL.

If it be true, that the Word *Chaplain* was firſt apply'd to thoſe who preſerv'd St. *Martin*'s *Chape*, as above, the Word muſt be deriv'd from *Capa*, *Chape*; not *Capella*, of *Capſula*, or *Capſa*, a Caſe, as others imagine.

Some ſay, the Shrines of Relicks were cover'd with a kind of *Tent*, *Cape*, or *Capella*, *i. e.* little Cape; and that hence the Prieſts who had the Care of them, were call'd *Chapelains*. In time, theſe Relicks were repoſited in a little Church, either contiguous to a larger, or ſeparate from it; and the ſame Name, *Capella*, which was given the Cover, was alſo given to the Place where it was lodg'd: and hence, the Prieſt who look'd to it came to be call'd *Chaplain*. See COPE.

CHAPLET, a String of Beads, us'd in the *Romiſh* Church, to keep account of the Number of *Pater-Noſters*, and *Ave-Marys* to be rehears'd in Honour of God and the Holy Virgin.

Chaplets are otherwiſe call'd *Pater-Noſters*. There are *Chaplets* of Coral, of Diamonds, of *Callumbou*, of Wood from St. *Lucia*, &c.

A *Roſary* is a *Chaplet* of fifteen Decads of *Ave-Marys*. See ROSARY.

Menage derives the Origin of the Word from the Reſemblance the Thing bears to a Hat, *Chapeau*; which is call'd by the *Italians* and modern *Latins*, *Capellina*; the firſt more frequently call it *Corona*.

Larrey and *P. Viret* aſcribe the firſt Invention of the *Chaplet* to *Peter* the Hermit, well known in the Hiſtory of the *Croiſades*.

There is a *Chaplet* of our Saviour, conſiſting of 33 Beads, in honour of his 33 Years living on Earth, inſtituted by F. *Michael*, the *Camaldulan*.

The Orientals have a kind of *Chapelets*, which they call *Chains*, and which they uſe in their Prayers, rehearſing one of the Perfections of God on each Link, or Bead. The Great *Mogul* is ſaid to have eighteen of theſe Chains, all precious Stones; ſome Diamonds, others Rubies, Pearls, *&c.*

The *Turks* have likewiſe *Chaplets*, which they bear in the Hand, or hang at the Girdle: But, F. *Dandini* obſerves, they differ from thoſe us'd by the *Romaniſts*, in that they are all of the ſame Bigneſs, and have not that Diſtinction into Decads; tho they conſiſt of ſix Decads, or 60 Beads. He adds, that they have preſently run over the *Chapelet*, the Prayers being extremely ſhort; having only theſe Words, *Praiſe to God*; or theſe, *Glory to God*, for each Bead.

Beſides the common *Chapelet*, they have likewiſe a larger one, conſiſting of 100 Beads, which has ſome Diſtinction, being divided by little Threads into three Parts, on one of which they repeat thirty times *Soubhan lallah*, i.e. *God is to be praiſed*; on another, *Ellamd lallah*, *Glory to God*; and on the third, *Alla echer*, *God is Great*. Theſe thrice 30 times making only 90; to complete the Number 100, they add a Number of other Prayers for the Beginning of the *Chaplet*.

He adds, that the *Mahometan Chapelet* appears to have had its riſe from the *Mea beracoth*, or *hundred Benedictions*; which the *Jews* are oblig'd to repeat daily, and which we find in their Prayer-Books: The *Jews* and *Mahometans* having this in common, that they ſcarce do any thing without pronouncing ſome Laud, or Benediction.

CHAPLET, in Architecture, is a little Ornament cut or carv'd into round Beads, Pearls, Olives, and Pater-Noſters; as is frequently done in *Baguettes*.

A *Chaplet*, in effect, is little elſe but a *Baguette* enrich'd with Sculpture. See BAGUETTE.

CHAPPAR, a Courier of the King of *Perſia*, who carries Diſpatches from Court to the Provinces, and from the Provinces to Court. See COURIER.

The Poſts, M. *Tavernier* tells us, are not eſtabliſh'd and regulated in *Perſia* as among us: When the Court ſends out a *Chappar*, the Sophi's Maſter of the Horſe furniſhes him with a ſingle Horſe, how long ſoever his Journey be, and a Man to run after him: when his Horſe is weary, he takes that of the firſt Horſeman he meets with, who dares not make the leaſt Refuſal, and ſends his own home by the Man who follows him.

For the Maſter of the new Horſe he has taken, he muſt run, or at leaſt ſend after the *Chappar* to re-take him, when the *Chappar* diſmounts ſome other Horſeman to change him.

The Word, in the original *Perſian*, ſignifies *Courier*.



CHAPPE, in Heraldry, the Partition of an Eſcutcheon, by Lines drawn from the Centre of the upper Edge to the Angles below, as in the Figure adjoining, which they blazon, *Chappe Or, and Vert.*

The Sections of the Sides are to be of a different Colour from the reſt. *Mackenzy* calls it, *A Chief Party per bend dexter*, or *ſiniſter*, or both. See CHAPPEAU, or CHAPEAU.

CHAPPEL, or CHAPEL. See CHAPEL.

CHAPTER, *Capitulum*, a Community of Eccleſiaſticks, who ſerve a Cathedral or Collegiate Church. See CATHEDRAL, and COLLEGIATE.

The Chief, or Head of the *Chapter*, is the *Dean*: The Body conſiſts of *Canons*, or *Prebendaries*, &c. See DEAN; ſee alſo CANON, and PREBENDARY.

The *Chapter* has now no longer any Share in the Adminiſtration of the Dioceſs, during the Life of the Biſhop; but ſucceeds to the whole Epiſcopal Juriſdiction during the Vacancy of the See.

The Origin of *Chapters* is deriv'd from hence, that antiently the Biſhops had their Clergy reſiding with them in their Cathedrals, to aſſiſt them in the Performance of Sacred Offices, and in the Government of the Church; and even after Parochial Settlements were made, there were ſtill a Body of Clerks who continu'd with the Biſhop, and were indeed his Family, maintain'd out of his Income.

After the Monaſtick Life grew into requeſt, many Biſhops choſe Monks rather than Seculars.

Theſe Bodies, either of Monaſticks or Seculars, had the ſame Privilege of chuſing the Biſhop, and being his Council; which the whole Clergy of the Dioceſs had before: But, by degrees, their Dependance on the Biſhop grew leſs and leſs; and then they had diſtinct Parcels of the Biſhop's Eſtate aſſign'd them for their Maintenance; till at laſt, the Biſhop had little more left than the Power of viſiting them. See BISHOP.

On the other hand, theſe *Capitular* Bodies by degrees alſo loſt their Privileges; particularly that of chuſing the Biſhop, for which the Kings of *England* had a long ſtruggle with the Pope: but at laſt, *Henry* VIII. got this Power veſted in the Crown; and now the Deans and *Chapters* have only the Shadow of it.

The ſame Prince likewiſe expell'd the Monks from the Cathedrals, and plac'd Secular Canons in their room; thoſe he thus regulated, are call'd *Deans and Chapters of the new Foundation*; ſuch are *Canterbury*, *Wincheſter*, *Worceſter*, *Ely*, *Carliſle*, *Durham*, *Rocheſter*, and *Norwich*: ſuch alſo are the *Chapters* of the four new Sees, of *Peterborough*, *Oxford*, *Gloceſter*, and *Briſtol*. See DEAN.

CHAPTER, is alſo us'd for the Aſſemblies held by Religious and Military Orders, for deliberating on their Affairs, and regulating their Diſcipline.

Papias ſays, they are ſo call'd, *quod Capitula ibi legantur*.

The Eſtabliſhment of General *Chapters* of Religious Orders, is owing to the *Ciſtercians*, who held the firſt in 1116, and were ſoon follow'd by the other Orders.

CHAPTER is alſo us'd for a Diviſion of a Book; contriv'd for keeping Matters more clear and diſtinct.

The Antients were unacquainted with the Diviſion of Books into *Chapters* and *Articles*. *Papias* ſays, the Name was given it, *quod ſit alterius ſententiæ* Caput, or *quod* Capiat *totam ſummam*. St. *Auguſtine* compares *Chapters* to Inns; which refreſh the Reader, as thoſe the Traveller.

The three CHAPTERS, is a Phraſe famous in Eccleſiaſtical Hiſtory, ſignifying a Volume publiſh'd by *Theodoret*, an Adherent of *Neſtorius*, againſt St. *Cyril*; conſiſting of a Letter of *Ibas*, Prieſt of *Edeſſa*, to *Marius*, a Biſhop in *Perſia*; of Extracts from the Works of *Diodorus* of *Tarſus*, and *Theodorus* of *Mopſueſtis*, wherein the ſame Doctrines were taught, that were contended for by *Neſtorius*: and of two Pieces of *Theodoret*, the one againſt the Council of *Epheſus*, the other againſt the Anathemas of St. *Cyril*.

Theſe make the *three Chapters*; which have been, ſince, condemn'd by various Councils and many Popes.

CHAPTREL. See IMPOST.

CHARACTER, or CARACTER, in its general Senſe, ſignifies a Mark, or Figure drawn on Paper, Metal, Stone, or other Matter, with a Pen, Graver, Chiſſel, or other inſtrument, to ſignify, or denote any thing.

The Word is *Greek*, χαρακτὴρ, form'd from the Verb χαράσσειν, *inſculpere*, *to ingrave*, *impreſs*, &c.

The various Kinds of *Characters* may be reduc'd to three Heads, *viz. Literal Characters*, *Numeral Characters*, and *Abbreviations*.

LITERAL CHARACTER, is a Letter of the Alphabet, ſerving to indicate ſome articulate Sound, expreſſive of ſome Idea, or Conception of the Mind. See ALPHABET.

Theſe may be divided, with regard to their Nature and Uſe, into *Nominal*, *Real*, and *Emblematical*.

Nominal CHARACTERS are thoſe we properly call *Letters*; which ſerve to expreſs the Names of Things. See LETTER.

Real CHARACTERS, are thoſe that inſtead of Names, expreſs Things, and Ideas. See IDEA, *&c.*

Emblematical, or *ſymbolical* CHARACTERS, have this in common with *real* ones, that they expreſs the Things themſelves; but have this further, that they in ſome meaſure perſonate them, and exhibit their Form: Such are the Hieroglyphics of the antient *Egyptians*. See HIEROGLYPHIC.

Literal Characters may be again divided, with regard to their Invention and Uſe, into *Particular* and *General*.

Particular CHARACTERS, are thoſe peculiar to this, or that Nation; or that have been ſo: Such are *Roman*, *Italic*, *Greek*, *Hebrew*, *Arabic*, *Gothic*, *Chineſe*, &c. *Characters*. See ROMAN, ITALIC, GREEK, HEBREW, GOTHIC, CHINESE, *&c.*

Univerſal CHARACTERS, are alſo *real Characters*, and make what ſome Authors call a Philoſophical Language.

That Diverſity of *Characters* us'd by the ſeveral Nations to expreſs the ſame Idea, is found the chief Obſtacle to the Advancement of Learning; to remove this, ſeveral Authors have taken occaſion to propoſe Plans of *Characters* that ſhould be Univerſal, and which each People ſhould read in its own Language. The *Character* here to be Real, not Nominal: to expreſs Things, and Notions; not, as the common ones, Letters, or Sounds: yet to be mute, like Letters, and Arbitrary; not Emblematical, like Hieroglyphics.

Thus, every one ſhould retain their own Language, yet every one underſtand that of each other, without learning it; only by ſeeing a Real or Univerſal *Character*, which ſhould ſignify the ſame to all People; by what Sounds ſoever each expreſs it in his particular Idiom. For Inſtance, by ſeeing the

the *Character* deſtin'd to ſignify *to drink*, an *Engliſhman* ſhould read *to drink*; a Frenchman *boire*; a Latin *bibere*; a *Greek* πινειν, a *Jew* שְׁתֹה; a German *trincken*; and ſo of the reſt: In the ſame manner as ſeeing a Horſe, each People expreſſes it after their own manner; but all mean the ſame Animal.

This Real *Character* is no Chimera; the *Chineſe* and *Japoneſe* have already ſomewhat like it. They have a common *Character*, which each of thoſe Nations underſtand alike in their ſeveral Languages; though they pronounce them with ſuch different Sounds, that they don't underſtand a Tittle of one another in ſpeaking.

The firſt, and moſt conſiderable Attempts for a Real *Character*, or Philoſophical Language in *Europe*, are thoſe of Biſhop *Wilkins*, and *Dalgarme*: But theſe, with how much Art ſoever they were contriv'd, have yet prov'd ineffectual.

M. *Leibnitz* had ſome Thoughts the ſame way; he thinks thoſe great Men did not hit the right Method. 'Twas probable, indeed, that by their means, People, who don't underſtand one another, might eaſily have a Commerce together; but they han't hit on true, *Real Characters*.

According to him, the *Characters* ſhould reſemble thoſe us'd in Algebra; which, in effect, are very ſimple, yet very expreſſive; without any thing ſuperfluous or equivocal; and contain all the Varieties reaſonable.

The Real *Character* of Biſhop *Wilkins* has its real Applauſe: Dr. *Hook* recommends it on his own Knowledge and Experience, as a moſt excellent Scheme; and to engage the World to the Study thereof, publiſhes ſome fine Inventions of his own therein.

M. *Leibnitz* tells us, he had under Conſideration an *Alphabet of Human Thoughts*; in order to a new Philoſophical Language, on his own Scheme: but his Death prevented its being brought to Maturity.

M. *Lodwic*, in the *Philoſophical Tranſactions*, gives us a Plan of *an Univerſal Alphabet*, or CHARACTER of another Kind: This was to contain an Enumeration of all ſuch ſingle Sounds, or Letters, as are us'd in any Language; by means whereof, People ſhould be enabled to pronounce truly and readily any Language; to deſcribe the Pronunciation of any Language that ſhall be pronounc'd in their hearing; ſo, as others accuſtom'd to this Language, tho they had never heard the Language pronounc'd, ſhall at firſt be able truly to pronounce it: And, laſtly, this *Character* to ſerve as a Standard to perpetuate the Sounds of any Language.

In the *Journal Literaire*, *Anno* 1720, we have a very ingenious Project for an Univerſal *Character*: The Author, after obviating the Objections that might be made againſt the Feaſibleneſs of ſuch Schemes in the general, propoſes his own: His *Characters* are to be the common *Arabic*, or numeral Figures. The Combinations of theſe nine are ſufficient to expreſs diſtinctly an incredible Quantity of Numbers, much more than we ſhall need Terms to ſignify our Actions, Goods, Evils, Duties, Paſſions, &c. Thus is all the Trouble of framing and learning any new *Character* at once ſav'd: the *Arabic* Figures having already all the Univerſality requir'd.

The Advantages are immenſe: for 1°, We have here a ſtable, faithful Interpreter; never to be corrupted or chang'd, as the popular Languages continually are. 2°, Whereas the Difficulty of pronouncing a foreign Language, is ſuch as uſually gives the Learner the greateſt Trouble, and there are even ſome Sounds which Foreigners never attain to; in the *Character* here propos'd this Difficulty has no place: Every Nation is to pronounce them according to the particular Pronunciation that already obtains among them. All the Difficulty is, the accuſtoming the Pen and the Eye to affix certain Notions to *Characters*, that don't, at firſt ſight, exhibit 'em. But this Trouble is no more than we find in the Study of any Language whatever.

The Inflections of Words, to be expreſs'd by the common Letters: for Inſtance, the ſame *Character* ſhall expreſs a *Filly*, or a *Colt*, a *Horſe* or a *Mare*, an *old Horſe*, or an *old Mare*, as accompany'd with this or that diſtinctive Letter, which ſhall ſhew the Sex, Youth, Maturity, or old Age: a Letter alſo to expreſs the Bigneſs or Size of Things; thus, *v. g.* a Man with this or that Letter, to ſignify a *great Man*, or a *little Man*, &c.

The Effect of theſe Letters belongs to the Grammar which once well underſtood, would abridge the Vocabulary exceedingly. An Advantage of this Grammar, is, that it would only have one Declenſion and one Conjugation: Thoſe numerous Anomalies of Grammarians are exceeding troubleſome, and ariſe hence, That the common Languages are conducted by the People, who never reaſon on what is beſt: but in the *Character* here propos'd, Men of Reaſon having the Introduction of it, would have a new ground, whereon to build regularly.

But the Difficulty is not in inventing the moſt ſimple, eaſy, and commodious *Character*, but in engaging the ſeveral Nations to uſe it; there being nothing they agree leſs in, than the underſtanding and purſuing their common Intereſt.

Literal Characters, again, may be divided with reſpect to the Nations among whom they have been invented and us'd, into *Greek Characters*, *Roman Characters*, *Hebrew Characters*, &c.

The *Character* now ordinarily us'd throughout *Europe*, is the *Latin Character* of the Antients.

The *Latin Character* was form'd from the *Greek*, and that from the *Phenician*, which *Cadmus* brought into *Greece*.

The *Phenician Character* was the ſame with that of the antient *Hebrew*, which ſubſiſted to the Time of the *Babyloniſh* Captivity; after which they us'd that of the *Aſſyrians*, which is the ſquare *Hebrew*, now in uſe; the antient being only found on ſome *Hebrew* Medals, commonly call'd *Samaritan Medals*. See SAMARITAN.

Poſtellus and others ſhew, that beſide the *Phenician*; the *Chaldee*, *Syriac*, and *Arabic Characters* were likewiſe form'd from the antient *Hebrew*.

The *French* were the firſt who, with the *Latin* Office of St. *Gregory*, admitted the Form of the *Latin Characters*. In a Provincial Synod, held in 1091, at *Leon* in *Spain*, the uſe of the *Gothic Characters* invented by *Ulfilas*, was aboliſh'd, and the *Latin* ones eſtabliſh'd.

Medalliſts obſerve, that the *Greek Character*, conſiſting only of majuſcule Letters, has preſerv'd its Uniformity on all Medals, as low as the Time of *Gallian*; there being no Alteration found in the Turn of the *Character*, notwithſtanding the many conſiderable ones both in the Uſe and Pronunciation. From the Time of *Gallian*, it appears ſomewhat weaker and rounder: From the Time of *Conſtantine* to *Michael*, the ſpace of 500 Years, we find only *Latin Characters*; and after *Michael*, the *Greek Characters* re-commence: but from that Time they begin to alter with the Language, which was then a Mixture of *Greek* and *Latin*. See GREEK.

The *Latin* Medals preſerve both their *Character* and Language, as low as the Tranſlation of the Seat of the Empire to *Conſtantinople*. Towards the Time of *Decius* the *Character* began to alter, and to loſe of its Roundneſs and Beauty: Some time after it retriev'd it ſelf, and ſubſiſted tolerably to the Time of *Juſtin*; when it fell into the laſt Barbarity mention'd, under *Michael*; tho it afterwards grew worſe, and degenerated into the *Gothic*: So that the rounder and better form'd the *Character*, the greater Pretence it has to Antiquity.

NUMERAL CHARACTERS, are thoſe us'd to expreſs Numbers. See NUMBER.

There are two Kinds of Figures, or *Numeral Characters*, chiefly in uſe; the common *Characters*, and the *Roman*; to which may be added a third, call'd the *French Characters*.

The *common* CHARACTER is that ordinarily call'd the *Arabic*, as ſuppos'd to have been invented by the *Arab* Aſtronomers: tho the *Arabs* themſelves call it the *Indian Character*; as if they had borrow'd it from the People of *India*. This indeed is pretty certain, that the Orientals are the Authors of it: which is confirm'd, as by other Circumſtances, ſo from the manner of writing them, from left to right; which has been confeſſedly the manner of writing in all Ages in the Eaſt.

The *Arabic Characters* are ten, *viz.* 1,2,3,4,5,6,7,8,9,0; the laſt call'd *Cypher*. See CYPHER.

The *Arabic Character* is us'd almoſt throughout *Europe*, and that on almoſt all Occaſions; in Commerce, in Meaſuring, in Aſtronomical Calculations, &c.

Roman CHARACTERS conſiſt of the Uncial or Majuſcule Letters of the *Roman* Alphabet; whence probably its Name: or, perhaps, from its being us'd by the antient *Romans* on their Coins, and in the Inſcriptions of their publick Monuments, erected in honour of their Gods and great Men; on their Sepulchres, &c.

The Numeral Letters that compoſe the *Roman Character* are in Number ſeven, *viz.* I,V,X,L,C,D,M.

The I denotes one, V five, X ten, L fifty, C a hundred, D five hundred, and M a thouſand.

The I repeated twice, makes two, II; thrice, three, III; four is expreſs'd thus, IV. I before V or X, taking an Unit from the Number expreſs'd by each of thoſe Letters.

To expreſs ſix, an I is added to a V, VI; for ſeven, two, VII; and for eight, three VIII: nine is expreſs'd by an I before X, IX. agreeable to the preceding Remark.

The like Remark may be made of the X before L or C, except that the Diminution is by Tens, not Units: thus, XL ſignifies forty, and XC ninety; an L follow'd with an X ſixty, LX, &c. The C before D or M, diminiſhes each by a hundred.

Beſides the Letter D, which expreſſes five hundred, the Number may alſo be expreſs'd by an I before a C inverted, thus IↃ; and thus, in lieu of the M, which ſignifies a thouſand,

thouſand, is ſometimes us'd an I between two C's, the one erect, the other inverted, thus, CIↃ: Agreeable to this, ſix hundred may be expreſs'd IↃC; and ſeven hundred, IↃCC, *&c.*

The *Roman Character* is now ſeldom us'd, but in Inſcriptions of publick Monuments, on Medals, Coins, *&c.* in the Dates, Chapters, *&c.* of Books, *&c.*

The *French Character*, ſo call'd, becauſe invented and chiefly us'd by the *French*, is more uſually denoted, *Character of Accompt, or Finance.*

It conſiſts of ſix Figures; part taken from the Letters of the uſual current Hand, and partly imagin'd by the Inventor: The ſix *Characters* are *j*, *b*, *x*, L, C, *y*. The *j* conſonant ſtanding for one, the *b* for five, the *x* for ten, the L for fifty, the C for an hundred, and the laſt *Character y* for a thouſand.

This *Character* is only an Imitation of the *Roman Character*; and its uſe is in moſt reſpects the ſame, particularly in what relates to the Combination of certain Letters, which plac'd before or after others, diminiſh or increaſe their Value. Indeed it has theſe Things peculiar in it, that when ſeveral Units occur ſucceſſively, only the laſt is expreſs'd: 2dly, That ninety, and the following Numbers to one hundred, are expreſs'd thus, $jjjj^{xxx}$ ninety; $jjjj^{xxxj}$ ninety one; $jjjj^{xxxjj}$, &c.

It is principally us'd in the Chambers of Accompts; in the Accompts given in by Treaſurers, Receivers, Farmers, and other Perſons concern'd in the Management of the Revenue.

A Specimen of each of theſe *Characters* follows.

	Arabic Characters.	*Roman Characters.*	*French Characters.*
Ninety	90	LXXXX, or XC	$jjjj^{xxx}$
Ninety one	91	LXXXXI, or XCI	$jjjj^{xxxj}$
Ninety two	92	LXXXXII, or XCII	$jjjj^{xxxjj}$
Ninety three	93	LXXXXIII, or XCIII	$jjjj^{xxxjjj}$
Ninety four	94	LXXXXIV, or XCIV	$jjjj^{xxxjjjj}$
Ninety five	95	LXXXXV, or XCV	$jjjj^{xxxb}$
Ninety ſix	96	LXXXXVI, or XCVI	$jjjj^{xxxbj}$
Ninety ſeven	97	LXXXXVII, or XCVII	$jjjj^{xxxbjj}$
Ninety eight	98	LXXXXVIII, or XCVIII	$jjjj^{xxxbjjj}$
Ninety nine	99	LXXXXIX, or XCIX	$jjjj^{xxxjx}$
One hundred	100	C	c
Two hundred	200	CC	jj^{c}
Three hundred	300	CCC	jjj^{c}
Four hundred	400	CCCC, or CD	$jjjj^{c}$
Five hundred	500	D, or IↃ	b^{c}
Six hundred	600	DC, or IↃC	bj^{c}
Seven hundred	700	DCC, or IↃCC	bjj^{c}
Eight hundred	800	DCCC, or IↃCCC	$bjjj^{c}$
Nine hundred	900	DCCCC or IↃCCCC, or CM	jx^{c}
One thouſand	1000	M, or CIↃ	y.

CHARACTERS, in Printing, are the Letters or Types, by the various Arrangement whereof, are compos'd Forms; whence Impreſſions are taken, by means of a Preſs, on Paper. See LETTER, TYPE; ſee alſo FORM, PRINTING, *&c.*

For *the Method of caſting theſe Characters*, ſee *Letter*-FOUNDERY.

CHARACTER is alſo us'd in ſeveral of the Arts, for Abbreviatures, and Symbols, contriv'd for the more conciſe, immediate, and artful conveyance of the Knowledge of Things. See ABBREVIATURE, and SYMBOL.

In this Senſe of the Word, *Paulus Diaconus* refers the Invention of *Characters* to *Ennius*; who, he ſays, contriv'd the firſt eleven hundred. To theſe were many more added, by *Tullius Tyro*, *Cicero*'s freed Man; and *Philargyrus*, *Fannius*, and *Aquila*, Freedmen of *Mecænas*.

Laſtly, *L. Annæus Seneca* made a Collection of them, reduc'd them into order, and increas'd their Number to five thouſand. *Tyro*'s Notes may be ſeen at the End of *Gruter*'s Inſcriptions.

Valerius Probus, a Grammarian, in the Time of *Nero*, labour'd to good purpoſe in explaining the Notes of the Antients. *Diaconus* wrote an ample Treatiſe of the Explication of the *Characters* in Law, under the Reign of the Emperor *Conrad* I. and *Goltzius* another for thoſe of Medals.

Characters, or *Symbols*, are now chiefly affected in the ſeveral Parts of Mathematicks; particularly Algebra, Geometry, Trigonometry, and Aſtronomy: as alſo in Medicine, Chymiſtry, Muſick, *&c.* The principal of each Kind we ſhall here ſubjoin.

CHARACTERS *us'd in Arithmetic and Algebra.*

a, *b*, *c*, and *d*, the firſt Letters of the Alphabet, are the Signs or *Characters* that denote the *given* Quantities; and *z*, *y*, *x*, &c. the laſt Letters, are the *Characters* of the Quantities *ſought*. See QUANTITY.

Note, Equal Quantities are denoted by the ſame *Character*.

m, *n*, *r*, *s*, *t*, &c. are *Characters* of *indeterminate* Exponents, both of Ratios and Powers; thus x^m, y^m, z^r, &c. denote indeterminate Powers of different Kinds; $m\,x$, $n\,y$, $r\,z$, different *Multiples*, or *Submultiples* of the Quantities *x*, *y*, *z*, according as *m*, *n*, *r*, are either whole Numbers or Fractions.

$+$ Is the Sign of real Exiſtence, and is call'd the *affirmative* or *poſitive* Sign; importing the Quantities to which it is prefix'd, to be of a real and poſitive Nature. See POSITIVE.

It is alſo the Sign of Addition, and is read *Plus*, or *more*; thus $9 + 3$, is read 9 *plus* 3; or 9 more 3: that is, nine added to 3, or the Sum of 9 and 3, equal to 12. See ADDITION.

$-$ Before a ſingle Quantity, is the Sign of *Negation*, or *negative* Exiſtence; ſhewing the Quantity to which it is prefix'd to be leſs than Nothing. See NEGATIVE.

Between Quantities, it is alſo the Sign of Subtraction, and is read *Minus*, or *leſs*; thus, $14 - 2$, is read, 14 *minus*, or abating 2: that is, the Remainder of 14, 2 after has been ſubtracted, *viz.* 12. See SUBTRACTION.

$=$ Is the Sign of *Equality*: thus, $9 + 3 = 14 - 2$; ſignifies, 9 *plus* 3, to be *equal* to 14, *minus* 2. See EQUALITY.

This *Character* was firſt introduc'd by *Harriot*: *Des Cartes* in lieu of it uſes ∞. Before *Harriot* there was no Sign of Equality at all.

Wolfius, and ſome other Authors, uſe the *Character* $=$ for the Identity of Ratios; or to ſhew the Terms to be in a Geometrical Proportion; which moſt Authors expreſs thus :: See *that Character*.

$\times$ Is the Sign of *Multiplication*, denoting the Quantities on either ſide to be multiply'd into one another: thus, 4×6, is read 4 multiply'd by 6; or the *Factum*, or Product of 4 and $6 = 24$; or the Rectangle between 4 and 6.

Ordinarily, however, in Algebra, the Sign is omitted, and the two Quantities put together: Thus, *b d* expreſſes the Product of the two Numbers denoted by *b* and *d*, which ſuppoſe 2 and 4, the Product whereof is 8, ſignify'd by *b d*.

Wolfius and others, make the Sign of Multiplication a Dot (.) between the two Factors: Thus 6.2 ſignifies, the Product of 6 and $2 = 12$. See MULTIPLICATION.

Where one or both the Factors are compounded of ſeveral Letters, they are diſtinguiſh'd by a Line drawn over 'em: thus, the *Factum* of $a + b - c$ into *d*, is wrote $d \times \overline{a + b - c}$.

Guido Grandio, and after him *Leibnitz*, *Wolfius*, and others, to avoid the Perplexity of Lines, in lieu thereof diſtinguiſh the Compound Factors, by including 'em in a Parentheſis, thus $(a + b - c)\,d$.

$\div$ Is the *Character* of *Diviſion*: thus $a \div$ denotes the Quantity *a* to be divided by *b*.

Indeed, ordinarily in Algebra, the Quotient is expreſs'd Fraction-wiſe; thus $\frac{a}{b}$ denotes the Quotient of *a* divided by *b*.

Wolfius, &c. make the Sign of Diviſion (:) thus, 8:4 denotes the Quotient of 8 divided by $4 = 2$.

If either the Diviſor or Dividend, or both, be compos'd of ſeveral Letters; *v. g.* $a+b$, divided by *c*; inſtead of writing the Quotient Fraction-wiſe thus $\frac{a+b}{c}$ *Wolfius*, &c. include the compound Quantities in a Parentheſis; thus, $(a + b) : c$. See DIVISION.

$\circledcirc$ Is the *Character* of *Involution*, or of producing the Square of any Quantity by multiplying it by it ſelf. See INVOLUTION.

ω The *Character* of *Evolution*; or of extracting the Roots out of the ſeveral Powers; the Reverſe of $\circledcirc$. See EVOLUTION.

$\succ$ Is the Sign of *Majority*, or of the Exceſs of one Quantity beyond another: Some uſe this $\sqsubset$, or this $\urcorner$.

$\prec$ Is the Sign of *Minority*: theſe two *Characters* were firſt introduc'd by *Harriot*, and us'd ſince by *Wallis* and *Lamy*.

Other Authors uſe others; ſome this, $\sqsupset$; but the generality none at all. See MINORITY.

$\backsim$ The Sign of *Similitude*, commended in the *Miſcellanea Berolinenſia*, and us'd by *Leibnitz*, *Wolfius*, and others; tho the generality of Authors uſe none. See SIMILITUDE.

The ſame *Character* is us'd in other Authors for the *Difference* between two Quantities, while 'tis yet unknown which is the greater. See DIFFERENCE.

$\surd$ Is the *Character* of *Radicality*, and ſhews the Root of the Quantity, to which it is prefix'd, is extracted, or to be extracted: Thus, $\surd$ 25, or $\surd^{2}$ 25, denotes the Square Root of 25, *viz.* 5. and $\surd^{3}$ 25, the Cube Root of 25. See ROOT.

This *Character* ſometimes affects ſeveral Quantities diſtinguiſh'd by a Line drawn over them, thus $\sqrt{b+d}$, denotes the Sum of the Square Roots of b and d.

Wolfius, &c. in lieu hereof, include the Roots compos'd of ſeveral Quantities in a Parentheſis, adding its Index: thus $(a+b-c)^2$ denotes the Square of $a+b-c$, ordinarily written $\overline{a+b-c}^2$.

: The *Character* of Arithmetical Proportion disjunct; thus 7.3:13.9. intimates 3 to be exceeded by 7, as much as 13 by 9; *viz.* by 4. See PROGRESSION.

:: This is the *Character* of Identity of Ratio, and Geometrical Proportion disjunct; thus, 8:4::30:15. expreſſes the Ratio of 30 to 15, to be the ſame with that of 8 to 4; or that the four Terms are in Geometrical Proportion, *viz.* 8 to 4 as 30 to 15. See PROPORTION.

Wolfius, in lieu hereof, uſes the *Character* of Equality =; which he prefers to the former, as more ſcientifical and expreſſive.

÷ The *Character* of Geometrical Proportion continu'd implying the Ratio to be carry'd on without Interruption: Thus, 2, 4, 8, 16, 32, ÷ are in the ſame uninterrupted Proportion.

CHARACTERS *in Geometry and Trigonometry.*

‖ Is the *Character* of *Parallelism*; implying two Lines or Planes to be equi-diſtant from each other. See PARALLEL.

△ *Character* of a *Triangle*. See TRIANGLE, &c.

□ *Character* of a *Square*.

▯ *Character* of a *Rectangle*.

⊙ *Character* of a *Circle*.

$\overset{v}{=}$ *Character* of *Equality of Angles*.

$\overset{s}{=}$ *Character* of *Equality of Sides*.

∠ *Character* of an *Angle*.

∟ *Character* of a *right Angle*.

⊥ *Character* of a *Perpendicular*.

° The *Character* of a *Degree*; thus, 75° implies 75 Degrees.

′ The *Character* of a *Minute*, or *Prime*; thus, 50′ implies 50 Minutes.

″ ‴ ⁗, &c. The *Characters* of *Seconds*, *Thirds*, *Fourths*, &c. of a Degree: thus, 5″, 6‴, 18⁗, 20⁗′, denotes 5 Seconds, 6 Thirds, 18 Fourths, and 20 Fifths.

Note, The ſame *Characters* are ſometimes us'd, where the Progreſſion is by Tens; as 'tis here by Sixties. See DECIMAL, SEXAGESIMAL, &c.

CHARACTERS *us'd in the Arithmetic of Infinites.*

· The *Character* of an *Infiniteſimal*, or *Fluxion*: thus, $\dot{x}$, $\dot{y}$, &c. expreſs the Fluxions, or Differentials of the variable Quantities x and y; two, three, or more Dots, denote ſecond, third, or higher Fluxions.

This Method of denoting the Fluxions, we owe to Sir *Iſaac Newton*, the Inventor of Fluxions: 'tis adher'd to by the *Engliſh*; but Foreigners generally follow M. *Leibnitz*, and in lieu of a Dot prefix the Letter *d* to the variable Quantity; on pretence of avoiding the Confuſion ariſing from the multiplication of Dots, in the differencing of Differentials. See FLUXIONS.

d The *Character* of a *Differential* of a variable Quantity; thus, $d\,x$ is the Differential of x; $d\,y$ the Differential of y.

The *Character* was firſt introduc'd by M. *Leibnitz*; and is follow'd by all but the *Engliſh*, who, after Sir *Iſaac Newton*, expreſs the Differential by a Dot over the Quantity. See CALCULUS *Differentialis*.

CHARACTERS *us'd in Aſtronomy.*

Characters of the Planets; ſee PLANET.

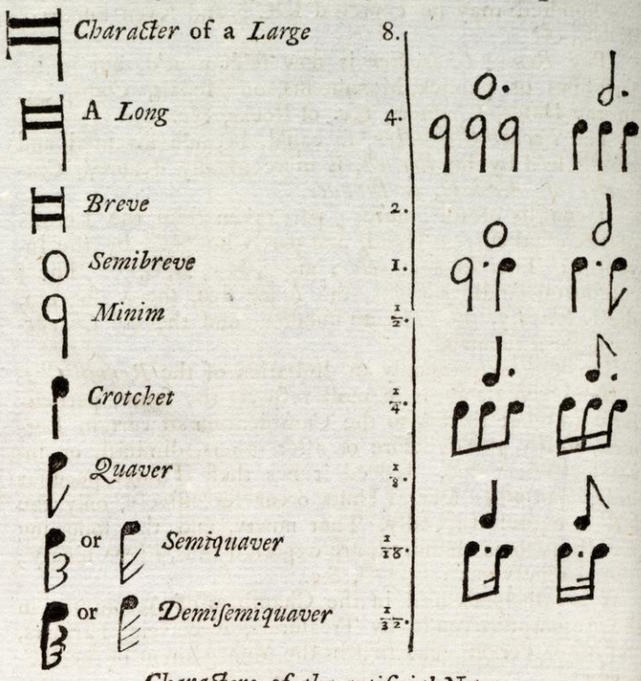
♄ *Character* of *Saturn*.
♃ *Character* of *Jupiter*.
♂ *Character* of *Mars*.
♀ *Character* of *Venus*.
☿ *Character* of *Mercury*.
☉ *Character* of the *Sun*.
☽ *Character* of the *Moon*.
♁ *Character* of the *Earth*.

Characters of the Signs; ſee SIGN.

♈ *Character* of *Aries*.
♉ *Character* of *Taurus*.
♊ *Character* of *Gemini*.
♋ *Character* of *Cancer*.
♌ *Character* of *Leo*.
♍ *Character* of *Virgo*.
♎ *Character* of *Libra*.
♏ *Character* of *Scorpio*.
♐ *Character* of *Sagittarius*.
♑ *Character* of *Capricornus*.
♒ *Character* of *Aquarius*.
♓ *Character* of *Piſces*.

CHARACTERS *us'd in Muſick.*

Characters of the Muſical Notes, with their Proportions.



Characters of the artificial Notes.

♯ *Character* of a *ſharp Note*: This *Character* at the beginning of a Line, or Space, denotes all the Notes in that Line, or Space, to be taken a Semitone higher than in the natural Series. And the ſame affects all their Octaves, above and below, tho not mark'd. See SHARP.

When the *Character* is prefix'd to any particular Note, it ſhews that Note alone to be a Semitone higher than it would be without ſuch *Character*.

♭ *Character* of a *flat Note*: This *Character*, at the beginning of a Line, or Space, ſhews, that all the Notes in that Line, or Space, are to be taken a Semitone lower than in the natural Series; affecting, in like manner, all the Octaves, both above and below. See FLAT.

When prefix'd to any Note, it ſhews that Note alone to be a Semitone lower than it wou'd otherwiſe be.

♮ *Character* of a *natural Note*. Where, in a Line or Series of artificial Notes, mark'd at the Beginning for either Sharps or Flats, the natural Note happens to be required, it is denoted by this *Character*.

Characters of Sign'd Clefs.

Character of *Treble Clef*.

Mean Clef.

Baſs Clef.

Characters of Time. See TIME.

2, or $\frac{2}{4}$, or $\frac{4}{8}$; *Characters* of *Common*, or *Duple Time*; ſignifying the Meaſure of two Crotchets to be equal to two Notes, whereof four make a Semibreve.

C ¢ ⌽ *Characters* that diſtinguiſh the Movements in *Common Time*: The firſt implying *ſlow*; the ſecond *brisk*; the third *very quick*.

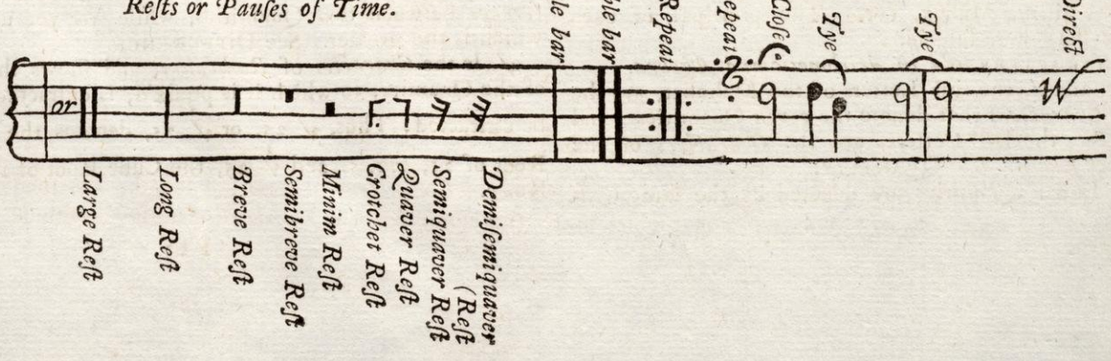
$\frac{2}{1}$, $\frac{3}{2}$, $\frac{3}{4}$, $\frac{3}{8}$, $\frac{3}{16}$; *Characters* of the *ſimple Triple Time*; whoſe Meaſure is equal either to three Semibreves, or to three Minims, &c. See TRIPLE.

$\frac{6}{4}$, or $\frac{6}{8}$, or $\frac{6}{16}$; *Characters* of *mix'd Triple Time*; where the meaſure is equal to ſix Crotchets, or ſix Quavers, &c.

$\frac{9}{4}$, or $\frac{9}{8}$, or $\frac{9}{16}$; or $\frac{9}{1}$, or $\frac{9}{2}$; *Characters* of *compound Triple Time*.

$\frac{12}{4}$, or $\frac{12}{8}$, or $\frac{12}{16}$; or $\frac{12}{1}$, or $\frac{12}{2}$; *Characters* of the fourth Species of *Triple Time*; call'd, *The Meaſure of twelve Times*.

Reſts or Pauſes of Time.



CHARACTERS *us'd in Medicine, Pharmacy, and Chymiſtry.*

Authors are very redundant, and even fanciful in Pharmaceutical *Characters*: the moſt uſual are theſe that follow.

℞ Recipe.
ana. Of each alike.
♁ Antimony.
Æ Aqua Fortis.
Æ Aqua Regia.
MB Balneum Mariæ.
Ψ Calx Viva.
⊖ Caput Mortuum.
♀ Copper.
⊖ Common Salt.
ᵔ Diſtil.
☉ Gold.
CC Harts-Horn.
CCC Harts-Horn calcin'd.
♂ Iron.
aaa. Amalgamate.
ſſſ. Stratum ſuper ſtratum.
♃ Jupiter, Tin.
♄ Lead.
☿ Mercury.
☿̲ ——Sublimate.
☿̲ ——Precipitate.
♁ Nitre.
✳ Sal Armoniac.
♁ Vitriol.
♃ Sulphur.
℣ Spirit of Wine.
℣℞ or S,V,R, Spirit of Wine rectify'd.
☾ Silver.
♉ Tartar.
℔ A Pound, or a Pint.
℥ An Ounce.
ʒ A Drachm.
℈ A Scruple.
gr. Grains.
ſs. Half of any thing.
Cong. A Gallon.
Cochl. A Spoonful.
M. A Handful.
P. A Pugil.
P.E. Equal Quantities.
S.A. According to Art.
q.ſ. A ſufficient Quantity.

N. B.

℥i. contains ʒviii.
ʒi. ℈iii.
℈i. gr. xx.
Cong. i. ℔ viii.
Cochl. i. is about ʒ ſs. and A Pugil is the eighth Part of an Handful.

CHARACTERS *among the antient Lawyers, and in antient Inſcriptions.*

§ *Paragrapho.*
ff. *Digeſtis.*
E. *extra.*
S.P.Q.R. *Senatus Populuſque Romanus.*
Scto. *Senatuſconſulto.*
P.P. *Pater Patriæ.*
C. *Code.*
CC. *Conſules.*
T. *Titulus*, &c.

Characters on Medals; ſee MEDAL.

S.V. *Siſte Viator*, Stay Traveller.
M.S. *Memoriæ Sacrum*, Sacred to Memory.
D.M. *Diis Manibus.*
IHS. *Jeſus.*
☧P. A *Character* found on antient Monuments, about the meaning whereof Authors are not agreed. See CATACOMB.

CHARACTERS *in Grammar, Rhetoric, Poetry*, &c.

, *Character* of a *Comma.*
; *Semicolon.*
: *Colon.*
. *Period.*
! *Exclamation.*
? *Interrogation.*
( ) *Parentheſis.*
- *Hyphen.*
' *Apoſtrophe.*
` *Emphaſis*, or Accent.
˘ *Breve.*
¨ *Dialyſis.*
^ *Caret*, and *Circumflex.*
" *Quotation.*
† and * *References.*
§ *Section*, or Diviſion. See COMMA, SEMICOLON, COLON, PERIOD.

L.L.D. *Doctor of Laws*, or, *of the Law of Laws*, i. e. the Civil Law.

S.S.T.D. *Sacro Sanctæ Theologiæ Doctor*, i. e. Doctor of Divinity.

M.D. *Doctor of Phyſic.*
V.D.M. *Verbi Dei Miniſter*, Miniſter of the Word.
A.M. *Artium Magiſter*, Maſter of Arts.
A.B. *Artium Baccalaureus*, Batchelor of Arts.
F.R.S. *Fellow of the Royal Society.*

CHARACTERS *in Commerce.*

D° *Ditto*, the ſame.
N° *Numero*, or Number.
F° *Folio*, or Page.
R° *Recto.*
V° *Verto.*
£ *Sterling*, or ℔ Pounds Sterling.
ſ Shillings.
d Pence, or *Deniers.*
℔ Pound weight.
C. or ℄ Hundred weight, or 112 Pound.
qrs Quarters.
℔ *Per*, or By.
Rx. *Rixdollar.*
Dd. *Ducat.*
P.S. *Poſtſcript*, &c.

CHARACTER is alſo us'd for a certain Manner, Air, or Aſſemblage of Qualities, reſulting from ſeveral particular Marks, which diſtinguiſh a Thing from any other, ſo as it may be known thereby. See MANNER, &c.

Thus, we ſay, *The* Character *of* Achilles; *Generoſity and greatneſs of Mind was the* Character *of the* Romans; Cicero *had a* Character *of Politeneſs, which is wanting in* Demoſthenes; *Every Paſſion has its peculiar* Character.

The Writers of *Characters* are *Theophraſtus*, whoſe Fragments are ſtill extant; *Du Moulin*, in his *Exemplar Morum*; *Paſchal*, in *Characteres Virtutum & Vitiorum*; M. *de la Chambre*, in his *Characters of the Paſſions*; and *de la Bruyere*, in his *Characters and Manners of the Age.*

CHARACTER, in Poetry, eſpecially the Epopea and Drama, is the Reſult of the Manners, or that which each Perſon has proper, and ſingular in his Manners, whereby he is diſtinguiſh'd from others. See MANNERS.

The Poetical *Character*, *Boſſu* obſerves, is not properly any Virtue or Quality in particular; but a Compoſition of ſeveral, mix'd, and combin'd in various Degrees, according to the Occaſions of the Fable, and the Unity of the Action. All the ſimple Qualities that enter this Compound, muſt not have the ſame Rank, nor be equal to each other: ſince, in that Caſe, one prevailing on one Occaſion, and another on another, the *Character* will appear changing; and the Poem, as well as the Hero, animated with ſeveral Souls.

There muſt, therefore, be one to reign over all the reſt; and this muſt be found in every Part: juſt as the ſame Hero, in ſeveral Paintings, ſhould have the ſame Lines and Features, how different ſoever his Poſtures and Paſſions may be. See HERO.

This firſt Quality, in *Homer*'s *Achilles*, is Wrath; in *Ulyſſes*, Diſſimulation; and in *Virgil*'s *Æneas*, Mildneſs: Each of which may, by way of eminence, be call'd the *Character* of thoſe Heroes.

Theſe are never to go alone, but always to be accompany'd with others, to give them the greater Luſtre; either by hiding their Defects, as in *Achilles*, whoſe Anger is palliated by a world of Courage: or by making them centre in ſome ſolid Virtue, as in *Ulyſſes*, whoſe Diſſimulation makes a Part of his Prudence; and *Æneas*, whoſe Mildneſs is chiefly employ'd in a Submiſſion to the Will of the Gods.

Theſe ſecondary Qualities of Courage, Prudence, and Submiſſion, make the goodneſs of the *Characters* of thoſe Heroes, and even of the Poems.

Boſſu adds, that the Quality of Courage muſt always have a ſhare in the *Character* of a Hero, to ſerve as a Support to the reſt: The *Heroic Character*, therefore, he makes a Compound of three Kinds of Qualities. Thoſe of the firſt kind are neceſſary and eſſential to the Fable; thoſe of the ſecond are the Supplements, or Embelliſhments of the firſt; and Courage, which ſuſtains the other two, make the third.

The firſt, which is the chief, is to be ſome univerſal Quality, to have place on all Occcaſions, and to diſtinguiſh the Hero wherever he is found.

For *the Unity of Character*, we have *Horace*'s expreſs Command, *Sit quodvis ſimplex duntaxat & unum. Boſſu* adds, that the *Character* is not leſs the Soul of the Hero and the whole Action, than the Fable is of the Poem; and of conſequence the Unity muſt be as exact in the one as the other: which accordingly we find obſerv'd both by *Homer* and *Virgil.*

The Unity of *Character* is ſomewhat different from that of the *Manners*: in the latter, the Unity or Equality conſiſts in the not giving contrary Sentiments to the ſame Perſon, which is not ſufficient to the Unity of *Character*; but to this muſt be added, that the ſame Spirit muſt always appear on all Occaſions, whether contrary or otherwiſe: Thus, *Æneas*, ſhewing a deal of Goodneſs in the firſt Part of the Poem, and a world of Valour in the ſecond, but without diſcovering any of his former Piety and Gentleneſs; there had been no Offence againſt the Evenneſs of the Manners, but to the Unity of the *Character* there had.

So that beſides the Qualities which have their particular Place on different Occaſions, there muſt be one to have place throughout, and to reign over all the others. Without this there is no *Character*: as would be the Caſe, ſhould a Poet give his Hero the Piety of *Æneas*, and the Courage of *Achilles*, without conſidering the Severity of the one, and the Mildneſs of the other.

A Hero, 'tis true, may be made as brave as *Achilles*, as mild or pious as *Æneas*, and, if one will, as prudent as *Ulyſſes*; but 'twould be a mere Chimera to imagine a Hero with the particular Courage of *Achilles*, the Piety of *Æneas*, and the Prudence of *Ulyſſes* at the ſame time. See UNITY.

The Unity of *Character* is not only to be kept in the Hero, and the ſeveral other Perſons of the Piece; but alſo in that of the Poem it ſelf: that is, all the *Characters*, how oppoſite ſoever, muſt center and re-unite in that of the Hero; and be ſo ſway'd by it, as that this alone may ſeem to govern throughout the whole. Thus *Homer* makes Wrath prevail throughout the whole *Iliad*; and Artifice and Diſſimulation throughout the *Odyſſee*: The Hero's *Character* is perceiv'd every where, has its full ſwing, and is favour'd by the Similitude of the *Characters* of ſome of the other Perſons. *Virgil* had a great Difficulty to grapple with to preſerve this Unity; in regard of the direct Oppoſition between the Humours of his Hero, and thoſe of ſome other of his Perſons, as *Turnus*, *Mezentius*, *Dido*, &c. He therefore takes care not to carry thoſe oppoſite *Characters* to their full length, but moderates and reſtrains 'em: And as that Moderation could not flow naturally

turally from the Perſons themſelves; 'tis produc'd either by ſome Paſſion, as in *Dido*, or ſome Dependance, as in *Turnus* and *Mezentius*. To this Artifice he adds Epiſodes, accommodated to the general *Character*, by which he interrupts the particular Actions which require an oppoſite *Character*.

Claudian's Conduct, in this reſpect, is unpardonable; from the horrible *Characters* of *Pluto* and the Furies, with all the Terrors of Hell, he paſſes to the Gaiety and Pleaſures of the Graces, gilded Palaces, flowery Fields, &c. He has as many different prevailing *Characters* in his three Books, as *Homer* and *Virgil* in their ſixty. See EPIC, &c.

CHARACTER is alſo us'd for certain viſible Qualities, which claim Reſpect, or Reverence to thoſe veſted therewith.

The Majeſty of Kings gives 'em a *Character*, which procures Reſpect from the People. A Biſhop ſhould ſuſtain his *Character* by Learning and ſolid Piety, rather than by worldly Luſtre, &c. The Law of Nations ſecures the *Character* of an Embaſſador from all Inſults.

CHARACTER is alſo us'd, among Divines, eſpecially thoſe of the *Romiſh* Church, for a certain indelible Mark, or Impreſſion, which certain Sacraments leave behind 'em in thoſe who receive 'em. See SACRAMENT.

The Sacraments that leave this *Character*, are incapable of being repeated. The *Character* is generally ſuppos'd to be ſomething Phyſical.

'Tis the Sacraments of Baptiſm, Confirmation, and Ordination, which leave ſuch indelible *Character*.

CHARACTER *of a Plant*. See GENUS, CHARACTERISTIC, &c.

CHARACTERISTIC, in the general, is that which *characterizes* a Thing, or Perſon, *i.e.* conſtitutes its *Character*, whereby it is diſtinguiſh'd. See CHARACTER.

CHARACTERISTIC, is peculiarly us'd in Grammar, for the principal Letter of a Word; which is preſerv'd in moſt of its Tenſes and Moods, its Derivatives and Compounds.

The *Characteriſtic* frequently ſhews its Etymology; and ought conſtantly to be retain'd in its Orthography: Such is the Letter *r* in *Courſe*, *Fort*, &c.

The *Characteriſtics* are of great uſe in the *Greek* Grammar, eſpecially in the Formation of the Tenſes; as being the ſame, in the ſame Tenſes of all Verbs of the ſame Conjugation, excepting in the Preſent Tenſe, which has ſeveral *Characteriſtics*; and the Future, the *Aoriſtus primus*, the *Preterit perfect*, and the *Pluſquam perfect* Tenſe of the fourth Conjugation, which have two *Characteriſtics*. See TENSE, VERB, MOOD, &c.

CHARACTERISTIC *of a Logarithm*, is its *Index*, or *Exponent*. See INDEX, &c.

CHARACTERISTIC *Triangle of a Curve*, in the higher Geometry, is a rectilinear right-angled Triangle, whoſe Hypothenuſe is a part of the Curve, not ſenſibly different from a right Line. 'Tis ſo call'd, becauſe Curve Lines are us'd to be diſtinguiſh'd hereby. See CURVE.

Suppoſe, *e. gr.* the Semiordinate *p m*, (Tab. *Analyſis*, Fig. 7.) infinitely near another P M; then will P *p* be the Differential of the Abſciſſe: and letting fall a Perpendicular, M R = P *p*, R *m* will be the Differential of the Semiordinate. Draw, therefore, a Tangent T M; and the infinitely ſmall Arch M *m*, will not differ from a right Line: conſequently M *m* R is a rectilinear right-angled Triangle; and conſtitutes the *Characteriſtic Triangle of that Curve*. See TRIANGLE.

CHARAG, the Tribute which Chriſtians and Jews pay to the Grand Signior.

It conſiſts of 10, 12, or 15 Francs *per Ann.* according to the Eſtate of the Party. Men begin to pay it at 9 or 16 Years old; Women are diſpens'd with, as alſo Prieſts, Rabbins, and Religious.

CHARCOAL, a ſort of artificial *Coal*, or Fuel, conſiſting of Wood half burnt; chiefly us'd where a clear ſtrong Fire, without Smoke, is requir'd; the Humidity of the Wood being here moſtly diſſipated, and exhal'd in the Fire wherein it is prepar'd. See FUEL, and COAL.

The Microſcope diſcovers a ſurpriſing Number of Pores in *Charcoal*: They are diſpos'd in order, and traverſe it lengthwiſe; ſo that there's no piece of *Charcoal*, how long ſoever, but may be eaſily blown thorow. If a Piece be broke pretty ſhort, it may be ſeen thro' with a Microſcope. In a Range, the 18th Part of an Inch long, Dr. *Hook* reckon'd 150 Pores; whence he concludes, that in a *Charcoal* of an Inch Diameter, there are not leſs than 5 Millions, 7 hundred 24 thouſand Pores.

'Tis to this prodigious Number of Pores, that the Blackneſs of *Charcoal* is owing: for the Rays of Light ſtriking on the *Charcoal*, are receiv'd and abſorb'd in its Pores, inſtead of being reflected; whence the Body muſt of neceſſity appear black: blackneſs in a Body being no more than a want of Reflexion.

Charcoal was antiently us'd to diſtinguiſh the Bounds of Eſtates and Inheritances; as being incorruptible, when let very deep within Ground. In effect, it preſerves it ſelf ſo long, that there are many Pieces found entire in the antient Tombs of the Northern Nations.

M. *Dodart* ſays, there is *Charcoal* made of Corn, probably as old as the Days of *Cæſar*: he adds, that it has kept ſo well, that the Wheat may be ſtill diſtinguiſh'd from the Rye; which he looks on as a Proof of its Incorruptibility.

The Method of making CHARCOAL.

The beſt is that made of Oak, cut into Lengths of about three Foot. The Ground whereon the Operation is to be perform'd, is bar'd of all the Turf, and other combuſtible Matter; and is in form Circular, a Stake being driven in the Centre. This Area is fill'd up with Wood, eight Foot high, plac'd alternately lengthwiſe, and perpendicularly; then cop'd atop into the Form of a Sugarloaf, and all Inequalities fill'd up with ſmall Wood, till it lie very cloſe: the whole to be cover'd over moderately thick with Turf, and other Rubbiſh.

A moveable Skreen being then ſet up againſt the Wind; the Stake is pull'd up, and Fire ſet to the Pile, by pouring into the Cavity ſome *Charcoal* and other Coal fully kindled; the Vent, or Tunnel a-top, is then cover'd with Turf, and Vent-Holes made thro' the Stuff that covers the Pile, two or three Foot apart, quite round, a Foot from the Top. The next Day a new Range of Holes is made, a Foot and a half below the firſt; and thus on to the Bottom: obſerving, that as the Pile cools, and ſinks to the Centre, it muſt be continually fed with ſhort Wood, that no Part remain unfir'd; and that if any Part *chars* faſter than other, the Vent-Holes there are to be ſtopp'd up.

A Pit is thus burnt in five or ſix Days: As it cools, the Smoke grows thinner and bluer. The Heap requires two or three Days to cool; which is promoted by ſtopping the Vents, and ſtripping off the Covering by degrees, about a Yard at a time: at firſt only taking off the coarſeſt Part and leaving the reſt; that the Pile may neither cool too faſt, nor endanger the Reduction of the whole into Aſhes. Laſtly, the Coals are taken out from around the Bottom, by which means the whole Maſs, Coals and Rubbiſh, ſinks down, and extinguiſhes the Fire at once.

Charcoal for Pouder-Mills, is uſually made of Eldar-Wood; the Proceſs the ſame, but finiſh'd in two Days.

CHARDS, in Gardening. The *Chards* of Artichokes, are the Leaves of fair Artichoke Plants, ty'd and wrapp'd up, all over but the Top in Straw, during the Autumn and Winter: this makes 'em grow white, and loſe ſome of their Bitterneſs.

CHARDS *of Beets*, are white Beets, cover'd with dry Dung, during the Winter Seaſon, when they produce large Tops, with a downy Cotton Shoot; which is the true *Chard*, to be us'd in Pottages, Intermeſſes, &c.

CHARGE, in Gunnery, the Load of a Piece; or the Quantity of Pouder and Ball, or Shot, wherewith it is prepar'd for Execution. See GUNPOUDER, BALL, SHOT, &c.

The Rules for *charging* large Pieces in War, are, That the Piece be firſt clean'd or ſcour'd within ſide; that the proper Quantity of Gunpouder be next driven in and ramm'd down; care, however, being taken, that the Pouder ben't bruis'd in ramming, which weakens its Effect; that a little Quantity of Paper, Hay, or the like, be ramm'd over it, and that then the Ball, or Shot be intruded.

If the Ball be redhot, a Tampion, or Trencher of green Wood, to be driven in before it.

The Weight of Gunpouder neceſſary for a *Charge*, is commonly in a ſubduple proportion to that of the Ball. See CANNON, and BULLET.

CHARGE, in Heraldry, is apply'd to any Figure, or Thing, bore, or repreſented in an Eſcutcheon, or Coat of Arms; whether it be Animal, Vegetable, or other Matter. See BEARING, ESCUTCHEON, &c.

Too many *Charges* are not deem'd ſo honourable as fewer. See CHARGED.

Charges peculiar to the Art and Uſage of Armory, as the *Croſs*, *Chief*, *Pale Feſſe*, &c. are call'd *proper Charges*; and frequently *Ordinaries*. See ORDINARY.

Bloom reſtrains the Term *Charges* to thoſe Additions, or Rewards of Honours frequently plac'd on Eſcutcheons; as *Cantons*, *Quarters*, *Gyrons*, *Flaſques*, &c.

CHARGE, in the Manage, a Cataplaſm, Apparatus, or Unguent, made of Oil, Honey, Greaſe, Turpentine, and ſometimes of Lees of Wine, and other Matters, apply'd externally to a Horſe, &c. for the cure of Strains, Bruiſes, Swellings, &c.

CHARGE, or *Overcharge*, in Painting, is an exaggerated Repreſentation of any Perſon; wherein the Likeneſs is preſerv'd, but, withal, ridicul'd.

Few Painters have the Genius neceſſary to ſucceed in theſe *Charges*: The Method is, to pick out and heighten ſomething already amiſs in the Face, whether by way of Defect

Defect, or Redundancy: thus, *v. g.* if Nature have given a Man a Nose a little larger than ordinary, the Painter falls in with her, and makes the Nose extravagantly long; or if the Nose be naturally too short, in the Painting it shall be a mere Stump; and thus of the other Parts.

CHARGED, in Heraldry, a Shield, carrying on it some Figure or Impress, is said to be *charged* therewith.

So, also, when one Bearing, or *Charge*, has some other Figure added upon, it is properly said to be *charged*.

CHARGE *of Lead*, is 36 Pigs; See LEAD, *&c.*

CHARIENTISMUS, in Rhetoric, a Figure wherein a taunting Expression is soften'd by a Jest. See SARCASM.

CHAR. } See { CAR.
CHARIOT. } See { COACH.

CHARISTIA, a Feast celebrated by the *Romans*, on the 11th of the Calends of *March*; *i.e.* on the 19th of *February*.

On this Day each Family made a Feast, to which none were admitted but those of the Family, and Relations: Its Design was, to put an end to all Differences, or Broils, if there were any, among Friends.

The Word comes from the *Greek* χαρις, *Grace*, *Favour*; *q. d.* a Day of Reconciliation, or of restoring into Favour.

It was also call'd *Dies charæ cognationis*. *Vigenere*, on *Livy*, calls it the *Day of good Cheer*.

CHARISTICARY, *Commendatory*, or *Donatory*, a Person to whom is given the Enjoyment of the Revenues of a Monastery, Hospital, or Benefice.

The *Charisticarics* among the *Greeks*, were a kind of Donatories, or Commendatories, who enjoy'd all the Revenues of Hospitals and Monasteries, without giving an Account thereof to any Person. The original of this Abuse is referr'd to the *Iconoclastes*, particularly *Constantine Copronimus*, the avow'd Enemy of the Monks, whose Monasteries he gave away to Strangers.

In after Times, the Emperors and Patriarchs gave many to People of Quality, not by way of Gift, to reap any Temporal Advantage from; but to repair, beautify, and patronize 'em.

At length Avarice crept in, and those in good Condition were given, especially such as were rich; and at last they were all given away, rich and poor, those of Men and of Women; and that to Laymen and marry'd Men.

M. *Coutelier*, in his *Ecclesiæ Græcæ Monumenta*, gives us the form of these Donations: they were given for Life, sometimes for two Lives.

CHARITATIVE, in the Canon Law, a *charitative Aid*, or *Subsidy*, is a moderate Allowance which a Council grants a Bishop upon any urgent Occasion; *e. gr.* when his Revenues will not bear his Expences to a Council, *&c.*

CHARITY, one of the three grand Theological Virtues, consisting in the Love of God, and our Neighbour. See VIRTUE.

Charity is the Habit, or Disposition of loving God with all our Heart, and our Neighbour as our selves. It has two material Objects, therefore, as the Schools express it, *viz.* God, and our Neighbour.

Charity is peculiarly us'd for the Effect of a Moral Virtue, which consists in supplying the Necessities of others, whether with Money, Counsel, Assistance, or the like. See BENEVOLENCE.

CHARITY *Schools*, are Schools erected and maintain'd in various Parishes, by the voluntary Contributions of the Inhabitants, for teaching poor Children to read, write, and other necessary Parts of Education. See SCHOOL.

In most *Charity Schools*, the Children are likewise cloth'd and put out to Trades, Services, *&c.* on the same *charitable* Foundation.

Charity Schools are but of a few Years standing: They were began in *London*; and have since spread throughout most of the considerable Towns of *England* and *Wales*. In the Year 1710, the Account of the *Charity Schools* in and about *London* stood thus.

Number of Schools 88. of Boys taught therein 2181. of Girls 1221.

Boys cloth'd	1863.	In all	2977.
Girls	1114.		
Boys not cloth'd	373.	In all	501.
Girls	128.		

Note, Out of the whole, 967 Boys, and 407 Girls, had been put out Apprentices.

In *London* we have likewise a CHARITABLE *Corporation* for the Relief of the industrious Poor, erected by the late Queen; for enabling indigent Manufacturers and Traders to take up Money at common and legal Interest; there being a Fund of 30000 *l.* rais'd for that End.

Order of CHARITY. There are several Religious Orders which bear this Title: one instituted by S. *John de Dieu*, for the Assistance of the Sick: This Institute was approv'd of in 1520, by *Leo* X. and confirm'd by *Paul* V. in 1617. The Religious of this Order apply themselves wholly to the Service of the Diseas'd.

CHARITY *of the Holy Virgin*, is a Religious Order established in the Dioceses of *Chalons*, by *Guy* Lord *Joinville*, &c. towards the Close of the XIIIth Century, approv'd under the Rule of St. *Augustin*, by the Popes *Boniface* VIII. and *Clement* VI.

In each Parish of *Paris*, is a Society of Women, who apply themselves to find out and relieve the Wants of the Poor of the Parish; and on this Account call'd, *Dames de la Charite*, and *Sœurs de la Charite*.

CHARKING, or CHARRING, the burning of Wood to make Charcoal. See CHARCOAL.

CHARKS, Pit-Coal *charked*, or *charr'd*. See COAL.

CHARLES'S-WAIN, in Astronomy, seven Stars in the Constellation *Ursa Major*; call'd also *Pleiades*. See PLEIADES; see also URSA *Major*.

CHARLATAN, or CHARLETAN, an Empiric, or Quack, who retails his Medicines on a publick Stage, and draws the People about him with his Buffooneries, Feats of Activity, *&c.* See EMPIRIC.

The Word, according to *Calepine*, comes from the Italian *Ceretano*; of *Ceretum*, a Town near *Spoletto* in *Italy*, where these Impostors are said to have first risen. *Menage* derives it from *Circulatarius*, of *Circulator*.

CHARM, a Magic Power, or Spell, by which, with the Assistance of the Devil, Sorcerers and Witches are suppos'd to do wondrous Things, far surpassing the Powers of Nature. See MAGIC.

Phylacteries, Ligatures, *&c.* are kinds of *Charms*. See PHYLACTERY, LIGATURE, *&c.*

The Word comes from the Latin *Carmen*, Verse. See CARMEN.

We have the History of a notable *Charm*, wherewith great Things are pretended to have been done in the way of Poisoning, and Tormenting; describ'd by a famous Sorcerer, one *Bras de Forthen*, under Sentence of Death in *France*, as follows.

It consists of a new Earthen Pot, varnish'd, not bought nor bargain'd for; wherein is put Sheep's Blood, Wool, Hair of several Beasts, with poisonous Herbs, mix'd together with a great deal of Grimace, and superstitious Ceremonies, uttering certain Words, and invoking Devils. This Pot is laid in a secret Place in the Neighbourhood where the Mischief is to be done, and sprinkled with Vinegar, according to the Effect it is to produce. The *Charm* holds a certain time, and cannot be taken away, but either by the Party that lodg'd it, or some superior Power which overcomes it.

CHARNEL, a Portico, or Gallery, ordinarily about the Church-Yard; over which were antiently dispos'd the Bones of the Dead, when the Flesh was consum'd.

The *Charnels*, or *Charnel*-Houses, are now usually contiguous to the Church.

CHART, or *Sea*-CHART, a Hydrographical *Map*; or a Projection of some Part of the Sea, *in Plano*; for the Use of Navigation. See MAP, and PROJECTION.

The Invention of *Sea Charts*, *Fournier* refers to *Henry* Son of *John* King of *Lusitania*. They differ very considerably from Geographical, or Land Maps, which are of no use in Navigation. Nor are *Sea Charts* all of the same Kind; some being what we call *Plain Charts*, others *Reduced*, or *Mercator's Chart*, and others *Globular Charts*.

Plain CHARTS, are those wherein the Meridians and Parallels, are exhibited by right Lines parallel to each other.

These *Ptolemy*, in his Geography, rejects for the following Faults; tho their Inventor judg'd 'em of good use, and Experience has confirm'd his Judgment; especially in short Voyages.

Their Defects are, 1. That since in reality all the Meridians meet in the Poles; 'tis absurd to represent 'em, especially in large *Charts*, by parallel right Lines. 2. That *Plain Charts* exhibit the Degrees of the several Parallels, equal to those of the Equator; and of consequence the Distances of Places lying East and West, much larger than they should be. And, 3. In a *Plain Chart*, while the same Rhumb is kept, the Vessel appears to be carry'd in a great Circle; which yet is false.

But notwithstanding these Defects in the *Plain Chart*, yet the Easiness of its Application has so reconcil'd it to the Mariners, that 'tis us'd almost alone; in exclusion of the more accurate ones.

Construction of a Plain CHART.

1. Draw a right Line, as A B, (Tab. *Hydrography*, Fig. 9.) and divide it into as many equal Parts, as there are Degrees of Latitude in the Portion of the Sea to be represented. 2. Add another to it at right Angles B C, divided into as many Parts, and those equal to one another and to the former, as there are Degrees of Longitude in the Portion of the Sea to be represented. 3. Compleat the Parallelogram A B C D, and resolve its Area into little Squares; then right Lines, parallel to A B and C D, will be Meridians; and those parallel to A D and B C Parallels. 4. The Coasts, Islands, Bays, Sands, Rocks, *&c.* insert from a Ta-

ble of Longitudes and Latitudes, in the ſame manner as is laid down under MAP.

Hence, 1. the Latitude and Longitude of a Ship being given, her Place is eaſily exhibited in the *Chart*. 2. The Places F and G, to and from which the Ship ſails, being given in a Map, the right Line F G, drawn from the one to the other, makes, with the Meridian A B, an Angle A F G, equal to the Inclination of the Rhumb: And ſince the Parts F 1, 1 2, 2 G, intercepted between equidiſtant Parallels, are equal; and the Inclination of the right Line F G, to all the Meridians or right Lines parallel to A B, is the ſame; the right Line F G truly repreſents the Rhumb. After the ſame manner it may be ſhewn, that they exhibit the *Latus Mecodynamicum*, or Miles of Longitude truly.

Coroll. Plain Charts, therefore, may be us'd to very good purpoſe in directing a Ship; provided care be taken there eſcape no Error in the Diſtance of the Places F and G.

Conſtruction of a Scale to correct the Errors of the Diſtances in Plain CHARTS.

1. Upon the right Line A B, (Tab. Fig. 10.) from the Map transfer five Degrees, and divide 'em into 300 equal Parts, or Geographical Miles. 2. On this deſcribe a ſmall Circle A C B, to be divided into 90 equal Parts: If then 'tis deſir'd to know how many Miles make five Degrees in the Parallel 50; in the Compaſſes take the Interval 50, and transfer it on to the Diameter A B; the number of Miles requir'd will here be ſhewn.

Coroll. If then a Ship ſail on an Eaſtern or Weſtern Rhumb, out of the Equator; the Miles anſwering to the Degrees of Longitude, will be found as in the preceding Article. If it ſail on any Collateral Rhumb, ſtill the ſailing is ſuppos'd to be an Eaſtern or Weſtern Rhumb, in an intermediate Parallel, between the Parallel of the Place whence the Ship proceeds, and the Parallel of the Place at which ſhe arrives.

'Tis true, this Reduction, by an arithmetically mean Parallel, is not accurate; yet is it frequently us'd in Practice, as being accommodated to the Apprehenſions of the generality of Mariners. In effect, it does not err any thing conſiderable, if the whole Courſe be divided into Parts, whereof each does not exceed one Degree; whence it appears adviſable, not to take the Diameter of the Semicircle A B above one Degree, and to divide it almoſt into Geographical Miles.

For the Application of the Plain CHART *in ſailing*. See *Plain* SAILING.

Reduced CHART, or CHART *of Reduction*, is that wherein the Meridians are repreſented by right Lines converging towards the Poles; and the Parallels by right Lines parallel to one another, but unequal.

Theſe, therefore, it appears by their Conſtruction, muſt correct the Errors of the *Plain Charts*.

But ſince the Parallels ſhould cut the Meridians at right Angles; theſe *Charts* are defective, inaſmuch as they exhibit the Parallels inclin'd to the Meridians.

Hence another kind of *Reduced Charts* has been invented, wherein the Meridians are parallel, but the Degrees thereof unequal; call'd *Mercator's Charts*.

Mercator's CHART, is that wherein the Meridians and Parallels are repreſented by parallel right Lines; but the Degrees on the Meridians are unequal; ſtill increaſing, as they approach the Pole, in the ſame proportion as thoſe of the Parallels decreaſe: by means whereof, the ſame Proportion is preſerv'd between 'em as on the Globe.

This *Chart* has its Name from that of the Author who firſt propos'd it for uſe, and made the firſt *Chart* of this Projection, *N. Mercator*: but neither was the Thought originally his own, as having been hinted by *Ptolemy* near 2000 Years ago: Nor is the Perfection of it owing to him; our Countryman Mr. *Wright* being the firſt who demonſtrated it, and ſhew'd a ready way of conſtructing it, by enlarging the Meridian Line by the continual Addition of Secants.

Conſtruction of Mercator's CHART.

1. Draw a right Line, and divide it into equal Parts, repreſenting Degrees of Longitude either in the Equator, or in the Parallel wherein the *Chart* is to terminate. From the ſeveral Points of Diviſion erect Perpendiculars to repreſent Meridians; ſo as right Lines may cut 'em all under the ſame Angle, and therefore repreſent Rhumbs: Thus far as in the *Plain Chart*.

That the Degrees of the Meridians may have their juſt proportion to thoſe of the Parallels, the former are to be increas'd; in regard the latter continue the ſame, by reaſon of the Parallelism of the Meridians. See DEGREE.

With the Interval therefore of one Degree in the Equator C D, (Tab. *Hydrog.* Fig. 11.) deſcribe the Quadrant C D E, and in D erect a Perpendicular D G; make the Arch D L equal to the Parallel of Latitude, and thro' L draw C G: this C G will be the enlarg'd Degree of the Meridian, to be transferr'd to the Meridian of the *Chart*: The reſt as in *Plain Charts*.

In Practice, ſuppoſe it requir'd to draw a *Mercator's Chart* from the 40th Degree of North Latitude to the 50th, and from the 6th Degree of Longitude to the 18th. Firſt draw a right Line repreſenting the 40th Parallel of the Equator; which divide into 12 equal Parts, for the 12 Degrees of Longitude the *Chart* is to contain. Then take a Line of equal Parts, on a Scale whereof 100 Parts are equal to each of theſe Degrees of Longitude; and at each extreme of the Line raiſe two Perpendiculars, to repreſent two parallel Meridians to be divided, by the continual Addition of Secants, which are prov'd to increaſe in the ſame Proportion, as the Degrees of Longitude ſhould decreaſe. See SECANT.

Thus, for the Diſtance from 40 Deg. of Latitude, take 131½ equal Parts, from the Scale which is the Secant of 40 Deg. 30 Min. For the Diſtance from 41 Deg. to 42 Deg. take 133½ equal Parts, from the Scale which is the Secant of 41 Deg. 30 Min. and ſo on to the laſt Degree of your *Chart*, which will be 154 equal Parts, *viz.* the Secant of 49 Deg. 30 Min. and will give the Diſtance from 49 Deg. of Latitude to 50 Deg. By this means, the Degrees of Latitude will be augmented, in the ſame Proportion as the Degrees of Longitude on the Globe decreaſe.

The Meridians being divided, add the Card, or Compaſs; chuſing ſome convenient Place near the Middle thereof: From this draw a Line parallel to the divided Meridians, which will be the North Rhumb; and from this the other 31 Points of the Compaſs are to be ſet off. See COMPASS.

Laſtly, lay down the Towns, Ports, Iſlands, Coaſts, *&c.* from a Table of Longitudes and Latitudes; and the *Chart* is compleat.

In *Mercator's Charts*, the Scale changes as the Latitude is chang'd: If then, *v. g.* a Ship ſails between the 40th and 50th Parallels of Latitude, the Degrees of the Meridians between thoſe two Parallels, are to be the Scale for meaſuring the Ship's Way: Whence it follows, that tho the Degrees of Longitude be equal in extent on the *Chart*, yet they muſt contain unequal Numbers of Miles, or Leagues; and that they will decreaſe as they approach nearer the Pole, becauſe meaſur'd by a Magnitude continually increaſing.]

This *Chart* is demonſtratively true; tho to appearance falſe: it is found by Experience very accurate, and withal eaſy of Application. In effect, it has all the Qualifications requir'd to render it of ſervice in Navigation; yet do the generality of Mariners decline the uſe of it, and rather chuſe to keep the old erroneous *Plain Chart*.

For *the Uſe of* Mercator's CHART *in ſailing*. See *Mercator's* SAILING.

Globular CHART, is a Projection ſo call'd, from the Conformity it bears to the *Globe* it ſelf; lately propos'd to the World by Meſſrs. *Senex*, *Wilſon*, and *Harris*; wherein the Meridians are inclin'd; the Parallels equidiſtant both, and curvelinear; and the Rhumbs real Spirals, as on the Surface of the Globe.

This Projection is yet in its Infancy; and the Secret thereof in a few Hands: We have but little to ſay therefore as to its Merits or Failings; e'er long its Conſtruction and Uſe will be made publick. In the mean time, we may be allow'd to expect great Matters from it, as it comes out under the Protection of his Majeſty's Patent, and with the Recommendations of ſeveral able Navigators, and among others that of Dr. *Halley*; and as it has already ſtood the Teſt of a pretty ſevere Inquiſition. The Cavillings of Mr. *Haſleden*, who has thought fit to cenſure it e'er he knows what it is, will weigh but little; and the leſs, as 'tis no longer a Secret what are the Motives that have inflam'd his Zeal. We ſhall only add, that the Projection is perfectly agreeable to Nature, and therefore eaſily conceivable; and that it has been found to anſwer very exactly, even in very large Diſtances; where its failure, if it have any, muſt needs be moſt conſpicuous. See GLOBULAR *Sailing*.

CHARTS *compos'd by Rhumbs and Diſtances*, are thoſe wherein there are no Meridians or Parallels; but all is effected by the Rhumbs, and the Scale of Miles.

Theſe are chiefly us'd by the *French*, eſpecially in the *Mediterranean*.

They are patch'd up, without any great Art, from the Obſervations of the Mariners; any regular Account therefore how to make them would be needleſs. They are only us'd in ſhort Voyages.

CHARTA primarily ſignifies a ſort of thick Paper, not unlike our Cap-Paper. See PAPER; ſee alſo CHARTER.

CHARTA *Emporetica*, in Pharmacy, *&c.* a kind of Paper made very ſoft and porous, us'd to filtre withal. See EMPORETICA, FILTER, *&c.*

CHARTA is alſo us'd in our antient Cuſtoms for a *Charter*, or Deed in Writing. See CHARTER.

CHARTA *Magna*, the Great *Charter*, is an antient Inſtrument, containing ſeveral Privileges and Liberties granted to the Church and State, by *Edward* the Confeſſor; together

ther with others relating to the Feudal Laws of *William* the Conqueror, granted by *Henry* I. all confirm'd by the ſucceeding Princes above thirty times. See MAGNA *Charta*.

CHARTA *de Foreſta*. See CHARTER *of the Foreſt*.

CHARTA *Simplex*, is a ſingle Deed, or Deed-Poll. See DEED.

CHARTA *Pardonationis ſe defendendo*, is the form of a Pardon for killing another Man in his own defence. See MANSLAUGHTER.

CHARTA *Pardonationis Utlagariæ*, is the form of Pardon of a Man who is outlaw'd. See OUTLAWRY.

CHARTEL, or CARTEL, a Letter of Defiance, or a Challenge to ſingle Combat; much in uſe when thoſe Combats were practis'd, for the deciding of difficult, and not otherwiſe to be determin'd Controverſies at Law. See COMBAT, DUEL, CHAMPION, &c.

CHARTER, or CHARTA, an Inſtrument, or written Evidence of a thing under the Seal of a Prince, Lord, Church, Chapter, or Community.

Bracton ſays, Donations are ſometimes made in *Charters*, *in perpetuam rei Memoriam*. He adds, that of *Charters* ſome are *Royal*, others of private Perſons.

Of *Royal*, ſome are Private, ſome Common, ſome Univerſal.

Of *private Charters*, ſome are *de puro Feoffamento*, others *de conditionali Feoffamento*, others of *Recognition*, *pure* or *conditional*, others of *Confirmation*, &c.

CHARTERS *of the King*, are thoſe whereby a King makes a Grant to a Perſon, or Community; *v. g.* a *Charter of Exemption*, that a Perſon ſhall not be impanell'd on a Jury, &c.

CHARTER *of Pardon*, is that whereby a Perſon is forgiven a Felony, or other Offence againſt the King's Crown and Dignity. See PARDON.

CHARTER *of the Foreſt*, is that wherein the Laws of the Foreſt are compriz'd and eſtabliſh'd, together with the *Magna Charta*, or *Great Charter*. See FOREST.

Great CHARTER, or *Magna Charta*. See MAGNA *Charta*.

The Word *Charter* comes from the Latin *Charta*, antiently us'd for a publick or authentick Act, a Donation, Contract, &c. from the *Greek* χάρτης, *thick Paper*, or *Paſtboard*, whereon publick Acts were uſed to be wrote.

CHARTER-*Houſe*. See CHARTREUSE.

CHARTER-*Land*, in Law, is ſuch as a Man holds by *Charter*, that is, by Evidence in writing; otherwiſe call'd *Freehold*. See FREEHOLD.

This the *Saxons* call'd *Bockland*: which *Lambard* renders, *Terra ex ſcripto*. See BOCKLAND.

It was held on more eaſy Conditions than the *Folkland*; or *Terra ſine ſcripto*, held without writing: the former being *hæreditaria*, *libera & immunis*; whereas the latter *cenſum penſitabat annuum atque officiorum quadam ſervitute erat obligatus*. See FOLKLAND.

CHARTERPARTY, in Commerce, the Inſtrument of Freightage; or Articles of Agreement for the Hire of a Veſſel; or the Invoice or Cargo of a Veſſel. See FREIGHT, &c.

The *Charterparty* is to be in writing; and to be ſign'd both by the Proprietor, or the Maſter of the Ship; and the Merchant who freights it.

The *Charterparty* is to contain the Name and the Burden of the Veſſel; thoſe of the Maſter and the Freighter; the Price or Rate of Freight; the Time of loading and unloading; and the other Conditions agreed on.

'Tis properly a Deed, or Policy, whereby the Maſter or Proprietor of the Veſſel engages to furniſh immediately a tight ſound Veſſel, well equipp'd, caulk'd and ſtopp'd, provided with Anchors, Sails, Cordage, and all other Furniture to make the Voyage requir'd, as Equipage, Hands, Victuals, and other Munitions; in conſideration of a certain Sum to be paid by the Merchant for the Freight. Laſtly, the Ship, with all its Furniture, and the Cargo, are reſpectively ſubjected to the Conditions of the *Charterparty*.

The *Charterparty* differs from a *Bill of Lading*, in that the firſt is for the entire Freight, or Lading, and that both for going and returning; whereas the latter is only for a Part of the Freight, or at moſt only for the Voyage one way.

The Preſident *Boyer* ſays, the Word comes from hence, that *per medium Charta incidebatur*, *& ſic fiebat Charta partita*; becauſe in the Time when Notaries were leſs common, there was only an *Act of Convention* for both Parties: this they cut in two, and gave each his Portion, and join'd them together at their Return, to know if each had done his Part. This he obſerves to have ſeen practis'd in his Time; agreeable to the Method of the *Romans*, who, in their Stipulations, us'd to break a Staff, each Party retaining a Moiety thereof as a Mark.

CHARTIS *Reddendis*, a Writ which lies againſt him that has *Charters* of Feoffment intruſted to his keeping, and refuſeth to deliver them to the Owner.

CHARTOPHYLAX, an Officer in the Church of *Conſtantinople*.

Codin calls the *grand Chartophylax* the Judge of all Cauſes, and the right Arm of the Patriarch. He adds, that he was the Depoſitory or Keeper of all the *Charters* relating to the Eccleſiaſtical Rights; that he preſided over Matrimonial Cauſes, and was Judge of all the Clergy. He drew up all Sentences and Deciſions of the Patriarch, who ſign'd and ſeal'd them; preſided in the grand Council of the Patriarch, took cognizance of all Matters and Cauſes Eccleſiaſtical and Civil, whether among the Clergy, the Monks, or the People.

He took place of all the Biſhops; tho himſelf only a Deacon; and, on occaſion, diſcharg'd the Functions of the Prieſts: He had twelve Notaries under him.

The *Chartophylax* was the ſame at *Conſtantinople* with the *Chartulary* at *Rome*. See CHARTULARY.

There were, in reality, two Officers who bore this Title; the one for the Court, the other for the Patriarch; the firſt call'd alſo *Regiſtrator*, and the latter *Scrinarius*: tho the two are uſually confounded together. *Leunclavius*, and others, confound *Chartophylax* with *Chartulary*.

The Word is form'd from χάρτα, and φυλατ∫ω, *Cuſtodio*; and ſignifies *Charter-keeper*.

CHARTREUSE, a Monaſtery of *Carthuſians*; ſo call'd from the Name of a ſteep rocky Place, in a frightful Deſart five Leagues from *Grenoble* in *France*; where S. *Bruno* retir'd from the World, and firſt inſtituted the Order of *Carthuſians*. See CARTHUSIAN.

The Name has ſince paſs'd to all Houſes of *Carthuſians*; and that near *Grenoble*, is now diſtinguiſh'd by the Name of the *great Chartreuſe*.

That of *London*, corruptly call'd *Charterhouſe*, is now converted into a College, call'd from its Founder *Sutton*'s *Hoſpital*; firſt endow'd, with 4000 *l. per Annum*, ſince improv'd to 6000.

It is to conſiſt of decay'd Gentlemen, Soldiers, and Merchants; eighty of whom have a plentiful Maintenance of Diet, Lodging, Clothes, Phyſick, &c. living together in a Collegiate manner; and of Scholars, or Youths, 44 of whom are taught, and ſupply'd with Neceſſaries, and ſuch of them as are fit for the Univerſity ſent thither, with an Exhibition of 20 *l. per Annum*, for eight Years; the reſt put to Trades.

For the Superintendency of this Hoſpital, there are 13 Overſeers, or Regulators, appointed by the King's Letters Patent under the Great Seal; and thoſe of the prime Quality. The ordinary Officers are, a Maſter, Preacher, Regiſter, Treaſurer, School-Maſter, &c.

CHARTREUX, Religious of the Order of S. *Bruno*, call'd alſo *Carthuſians*. See CARTHUSIANS.

CHARTULARY, CHARTULARIUS, a Title given to an antient Officer in the *Latin* Church, who had the Care of *Charters* and Papers relating to publick Affairs.

The *Chartulary* preſided in Eccleſiaſtical Judgments, in lieu of the Pope.

In the *Greek* Church, the *Chartulary* was call'd *Chartophylax*; but his Office was there much more conſiderable; and ſome even diſtinguiſh the *Chartulary* from the *Chartophylax* in the *Greek* Church. See CHARTOPHYLAX.

CHASE, in Law, is us'd for a driving of Cattel to or from any Place; as to a Diſtreſs, a Fortlet, &c.

CHASE, or CHACE, is alſo a Place of Retreat for Deer and wild Beaſts; of a middle kind, between a *Foreſt* and a *Park*; being uſually leſs than a Foreſt, and not poſſeſs'd of ſo many Privileges; but wanting, *v.g.* Courts of *Attachment*, *Swanimote*, and *Juſtice Seat*. See FOREST.

Yet is it of a larger Extent, and ſtock'd both with a greater Diverſity of wild Beaſts, or Game, and more Keepers than a Park. See PARK.

Crompton obſerves, that a Foreſt cannot be in the Hands of a Subject, but it forthwith loſes its Name, and becomes a *Chaſe*; in regard, all thoſe Courts loſe their Nature when they come into the Hands of a Subject; and that none but the King can make a Lord Chief Juſtice in Eyre of the Foreſt. See JUSTICE *in Eyre*.

Yet the ſame Author adds, that a Foreſt may be granted by the King to a Subject, in ſo ample a manner, as that there may be a Court of *Attachment*, *Swanimote*, and a Court equivalent to a *Juſtice Seat*.

CHASE, in the Sea Language, is to purſue a Ship; which is call'd alſo *giving Chaſe*.

A *ſtern* CHASE, is when the *Chaſer* follows the *Chaſed* a-ſtern, directly upon the ſame Point of the Compaſs. To lie with a Ship's Fore-foot *in a Chaſe*, is to ſail, and meet with her by the neareſt Diſtance, and ſo to croſs her in her Way, or to come a-croſs her Fore-foot.

A Ship is ſaid to have *a good Chaſe*, when ſhe is ſo built forward on, or a-ſtern, that ſhe can carry many Guns to ſhoot forwards or backwards; and ſo hath either *a good forward*, or *good ſtern Chaſe*.

CHASE-*Guns*, are ſuch whoſe Ports are either in the Head (and then they are uſed in *chaſing* of others) or in the Stern, which are only uſeful when they are purſu'd or *chas'd* by any other Ship. See GUN.

CHASE *of a Gun*, is the whole Bore, or Length of a Piece taken within ſide. See GUN.

CHASING, a Method of working, or enriching Gold, Silver, &c. properly call'd *Enchaſing*. See ENCHASING.

CHASM. See HIATUS.

CHATELET, antiently ſignify'd a little Caſtle, or Fortreſs, wherein the *Chatelain*, or Governour lodg'd. See CASTLE.

At preſent, the Term is us'd for certain Courts of Juſtice eſtabliſh'd in ſeveral Cities in *France*: The *grand Chatelet* in *Paris*, *v. g.* is the Place where the Preſidial, or ordinary Court of Juſtice of the Prevot of *Paris* is kept; conſiſting of a Preſidial, a Civil Chamber, criminal Chamber, and a Chamber of Policy. The Term ſignifies the ſame at *Montpelier*, *Orleans*, &c.

The little *Chatelet* at *Paris*, is an antient Fort, now ſerving as a Priſon.

The Word is a Diminutive of *Chateau*, form'd from *Caſtellum*, a Diminutive of *Caſtrum*; or from *Caſtelletum*, a Diminutive of *Caſtellum*.

CHATTELS, *Catals*, *Catalla*, a *Norman* Term, under which were antiently comprehended all moveable Goods; thoſe immoveable being term'd *Fief*, or, as we now ſay, *Fee*.

But in the modern Senſe of the Word, *Chattels* are all ſorts of Goods, moveable or immoveable, except ſuch as are in the Nature of Freehold, or Parcel thereof.

Chattels are either *Perſonal*, or *Real*.

CHATTELS *Perſonal*, are ſuch as do either belong immediately to the Perſon of a Man, as his Horſe, Sword, &c. or ſuch Things as being injuriouſly with-held from him, a Man has no way to recover but by Perſonal Action.

CHATTELS *Real*, are either ſuch as do not appertain immediately to the Perſon, but to ſome other thing, by way of Dependance; as Charters of Land, Apples upon a Tree, &c. or ſuch as neceſſarily iſſue out of ſome immoveable Thing to a Perſon; as a Leaſe, or Rent for Years.

Spelman defines *Chattels* to be *Bona quæcunque mobilia & immobilia; propriè tamen ea bonorum pars, quæ in animalibus conſiſtat, à quorum* capitibus *res ipſæ*, *alias* capita, *alias* capitalia *dictæ ſunt*.

CHAUNTRY, or CHANTRY, was antiently a Church, or Chapel endow'd with Lands, or other yearly Revenue, for the Maintenance, formerly, of one or more Prieſts, daily ſaying or ſinging Maſs for the Souls of the Donors, and ſuch others as they appointed.

Hence, CHAUNTRY *Rents*, are Rents paid to the Crown by the Servants, or Purchaſers of *Chauntry Lands*.

CHAUF-WAX. } See { CHAFE-WAX.
CHAUSSE-TRAPE. } { CALTROP.

CHAZINZARIANS, a Sect of Hereticks, who roſe in *Armenia* in the VIIth Century.

They are alſo call'd *Staurolatræ*, which, in *Greek*, ſignifies the ſame as *Chazinzarian* in *Armenian*, viz. *Adorer of the Croſs*; they being charg'd with adoring the Croſs alone.

In other Reſpects they were *Neſtorians*; and admitted two Perſons in Jeſus Chriſt. Tho they had further Singularities, recounted by *Nicephorus*, L. xviii. c. 54. particularly their holding an annual Feaſt, in Memory of the Dog of their falſe Prophet *Sergius*; which they call'd *Artzibartzes*.

The Word is form'd of the *Armenian Chazus*, Croſs. In the *Greek* Text of *Nicephorus*, they are call'd *Chatzintzarians*, χατζιντζάριοι.

CHECK *Roll*, a Book containing the Names of ſuch as are Attendants, and in pay to the King, or other great Perſons; as their Houſhold Servants.

It is otherwiſe call'd the *Chequer Roll*. See ROLL.

Clerk of the CHECK, is an Officer in the King's Houſhold, who has the *Check* and Controulment of the Yeomen of the Guard, and all the Uſhers belonging to the Royal Family. See YEOMAN, &c.

CHECK, in Falconry, is where a Hawk forſakes her natural Flight, to follow Rooks, Pies, or other Birds that come in ſight.

CHECKER. See EXCHEQUER.

CHECKY, in Heraldry, is where the Shield, or a part thereof, as a *Bordure*, &c. is *checquer'd*, or divided into *Checquers*, or Squares.

Where there is but one Row of Squares, it is not properly call'd *Checky*, but *Countercomponed*. See COUNTER-COMPONED.

Checky, according to *Colombiere*, is one of the moſt noble and antient Figures in all Armory; and ought never to be given, but to Perſons who have diſtinguiſh'd themſelves in War: for it repreſents a Cheſs-Board, which it ſelf is a Repreſentation of a Field of Battel. The Pawns and Men, plac'd on both Sides, repreſent the Soldiers of the two Armies; which move, attack, advance, or retire, according to the Will of the two Gameſters, who are the Generals. See CHESS.

Checky is always compos'd of Metal, and Colour. Some Authors would have it rank'd among the Sorts of Furs.

When the whole Eſcutcheon is *chequer'd*, it ſhould ordinarily contain ſix Ranges: There is no need of blazoning to expreſs 'em; only it muſt be obſerv'd, to begin to blazon by the firſt Square, which is in Chief on the Dexter ſide. So that if that be *Or*, and the next *Gules*, the Houſe or Family is ſaid to bear *Checky Or and Gules*. When the whole Shield is not *checquer'd*, but only the Chief, a Bend, Croſs, or the like, the Number of Ranges ſhould be expreſs'd.

CHEEKS, a general Name, among Mechanicks, for almoſt all thoſe Pieces of their Machines and Inſtruments, that are double, and perfectly alike.

The *Cheeks* of a Printing Preſs, are its two principal Pieces: they are plac'd perpendicular and parallel to each other; ſerving to ſuſtain the three Sommers, *viz.* the Head, Till, and Winter, which bear the Nut, Spindle, and other Pieces of the Machine. See PRINTING *Preſs*.

The *Cheeks of a Lathe*, are two long pieces of Wood, between which are plac'd the *Puppets*, which are either pointed, or otherwiſe; ſerving to ſupport the Work, and the Mandrils of the Workman. Theſe two Pieces are plac'd parallel to the Horizon, ſeparated from one another by the Thickneſs of the Tail of the Puppets, and join'd with Tenons to two other Pieces of Wood, plac'd perpendicularly; call'd the *Legs of the Lathe*. See LATHE.

Cheeks of the Glaſier's Vice, are two pieces of Iron, join'd parallel at top and bottom; in which are the Axis, or Spindles, little Wheel, Cuſhions, &c. whereof the Machine is compos'd. See VICE.

CHEESE, a popular Food; being a Preparation of Milk curdled by means of Rennet, dry'd, and harden'd. See MILK, RENNET, &c.

Cheeſe is nothing but Milk purg'd of its Serum, or Whey; and ſometimes too of the Cream, or butyrous Part of the Milk. See BUTTER.

Cheeſe, when new, is found to load the Stomach, by reaſon of its Moiſture and Viſcidity; and when too old, heats and inflames it by its Salts. The Phyſicians adviſe it to be eat in ſmall Quantities; hence that *Latin* Verſe,

Caſeus ille bonus quem dat avara manus.

Dr. *Quincy* ſays, it cannot be too old: 'Tis certain, the more it abounds with Salts, the more will it contribute to Digeſtion, and the clearing of the Stomach of other Food.

Indeed ſome condemn all uſe of *Cheeſe*; ſheltering themſelves under that antient Maxim, *Caſeus eſt nequam quod omnia concoquit ſe-quam*.

CHEF. See CHIEF.

CHEF *d'Oeuvre*. See MASTERPIECE.

CHEG, CHERIF, the Prince, or High-Prieſt of *Mecca*, and the ſovereign Pontiff of all the Muſſulmans; being own'd as ſuch by all the ſeveral Sects into which they are divided.

The Grand Signior, Sophies, Mogols, Kans of *Tartary*, &c. ſend him yearly Preſents; eſpecially Tapeſtry, to cover *Mahomet*'s Tomb withal, and Tents for himſelf: for the *Cheg* has a Tent near the Moſque of *Mecca*, wherein he lives during the 17 Days of Devotion in the Pilgrimage to *Mecca*. The Tapeſtry and Tent are chang'd each Year, and Pieces thereof ſent to the Princes who furniſh new ones.

His Revenue is very conſiderable, conſiſting of Preſents made by the *Mahometan* Princes, and Pilgrims, to the Moſque of *Mecca* and *Medina*.

The *Cheg* ſubſiſts all the Pilgrims during the 17 Days of Devotion; on which account, he is every Year furniſh'd with a very conſiderable Sum of Money from the Grand Signior: The better to obtain this, he makes him believe, that there are conſtantly, during this Time, 70 thouſand Pilgrims; and that ſhould the Number fall ſhort, the Angels, in form of Men, would make it up.

CHELONITES, in Natural Hiſtory, a Stone found in the Bellies of young Swallows; much eſteem'd by ſome for the falling Sickneſs.

There is alſo a Stone bearing the ſame Name found in the *Indian* Tortoiſes, which is ſaid to have the Faculty of reſiſting Poiſon. Some confound it with the *Crapaudin*, or *Toadſtone*.

The Stone takes its Name from χελιδὼν, a *Swallow*.

CHELSEY-*College*, or *Hoſpital*. See HOSPITAL.

CHEMISE, in Fortification, is a Wall wherewith a Baſtion, or any other Bulwark of Earth, is lin'd; for its greater Support and Strength.

Or it is the Solidity of the Wall, from the *Talus* to the Row. See WALL, &c.

Fire CHEMISE, is a piece of Linen Cloth, ſteep'd in a Compoſition of Oil of Petreola, Camphor, and other combuſtible Matters; us'd at Sea, to ſet fire to the Enemy's Veſſel.

CHERRY *Brandy*, a Drink made of Plain *Brandy*, with the Addition of *Cherries*. See BRANDY.

The *Cherries* commonly us'd therein are of the black Kind; with theſe, a Bottle being half fill'd, is fill'd up with *Brandy*, or Spirits. The whole to be ſhaken up now and

and then; and in a Month's time it becomes fit for uſe.

To ſweeten it, and improve the Flavour, ſome chuſe to put in Sugar, with a Quantity of Rasberries.

CHERSONESUS, in Geography, a *Peninſula*; or a Continent almoſt incompaſs'd round with the Sea, only joining to the main Land by a narrow Neck, or *Iſthmus*. See PENINSULA.

This Term is us'd by the Moderns, in Complaiſance to the Antients, who call'd all their Peninſulas by this Name: Accordingly, ſuch Places as were hereby diſtinguiſh'd among them, retain the Name among us; as the *Cherſoneſus of Peloponneſus*, *of Thrace*, *Cherſoneſus Cimbrica*, *Aurea*, &c.

The Word is *Greek*, χερσονεσος, which ſignifies the ſame thing.

CHERUB, or CHERUBIN, a Celeſtial Spirit, which, in the Hierarchy, is plac'd next in order to the *Seraphim*. See HIERARCHY.

They are painted red, to ſignify that they are inflam'd with the Love of God.

The Word is form'd of the *Hebrew* כרוב *Cherub*; the Plural whereof is *Cherubim*.

CHERUB is alſo the Name of an antient Military Order in *Sweden*, otherwiſe call'd the Order of *Seraphim*. It was inſtituted by *Magnus* IV. in 1334; and aboliſh'd by *Charles* IX. It took its Denomination from the golden Figures of *Cherubim*, whereof the Collar of the Order was compos'd.

CHESS, a faſhionable Game, perform'd with little round Pieces of Wood, on a Board divided into 64 Squares; where Art and Addreſs are ſo indiſpenſibly requiſite, that Chance ſeems to have no place; and a Perſon never loſes but by his own Fault.

On each ſide are eight Men, and as many Pawns, which are to be mov'd and ſhifted, according to certain Rules and Laws of the Game.

Donatus, on *Terence*'s *Eunuch*, obſerves, that *Pyrrhus*, the moſt knowing and expert Prince of his Age, ranging a Battle, made uſe of the Men at *Cheſs* to form his Deſigns; and to ſhew the Secrets thereof to others. *Vopiſcus*, in his Life of *Proculus*, informs us, that one of the *Roman* Emperors had the Title *Auguſtus* given him, becauſe of his gaining ten Games at *Cheſs* ſucceſſively. *Tamerlane* is recorded as a very expert Gameſter at *Cheſs*.

Cheſs is doubtleſs a moſt antient and univerſal Game: The common Opinion is, that it was invented by *Palamedes* at the Siege of *Troy*. Others attribute the Invention to *Diomedes*, who liv'd in the Time of *Alexander*: The Romance of the Roſe aſcribes it to one *Attalus*; but the Truth is, the Game is ſo very antient, there is no traceing its Author.

In *China* it makes a conſiderable Part of the Education of their Maids, and ſeems to take the Place of the Dancing among us. In *Spain*, whole Cities challenge each other at *Cheſs*.

John of *Salisbury* relates, that in a Battel between the *French* and *Engliſh*, in 1117, an *Engliſh* Knight ſeizing the Bridle of *Louis le Gros*, and crying to his Comrades *The King is taken*, that Prince ſtruck him to the Ground with his Sword, ſaying, *Ne ſcais tu pas qu aux echecs on ne prend pas le Roy*?

Cardinal *Cajetan*, and other Caſuiſts, rank *Cheſs* in the Number of prohibited Games; as requiring too much Application: And *Montaign* blames it as too ſerious for a Game.

Sarraſin has a preciſe Treatiſe on the different Opinions of the Origin of the Latin *Schacchi*; whence the French *Echecs*, and our *Cheſs*, is form'd. *Menage* is alſo very full on the ſame Head. *Leunclavius* takes it to come from *Uſcoques*, a famous *Turkiſh* Robber: *P. Sirmond* from the German *Schach*, Thief; and that from *Calculus*. He takes *Cheſs* to be the ſame with the *Ludus Latrunculorum* of the *Romans*, but miſtakenly. This Opinion is countenanc'd by *Voſſius* and *Salmaſius*, who derive the Word from *Calculus*, as us'd for *Latrunculus*. *G. Toloſanus* derives it from the Hebrew *Schach*, *vallavit & mat*, *mortuus*; whence *Cheſs* and *Cheſs-mate*.

Fabricius ſays, a celebrated *Perſian* Aſtronomer, one *Scatrenſca*, invented the Game of *Cheſs*; and gave it his own Name, which it ſtill bears in that Country. *Nicod* derives it from *Scheque*, or *Xeque*, a *Mooriſh* Word for Lord, King, and Prince: *Bochart* adds, that *Scach* is originally *Perſian*, and that *Scachmat*, in that Language, ſignifies the King is dead. The Opinion of *Nicod* and *Bochart*, which is likewiſe that of *Scriverius*, appears the moſt probable.

CHEST, in Commerce, a kind of Meaſure, containing an uncertain Quantity of ſeveral Commodities. See MEASURE.

A *Cheſt of Sugar*, *v. g.* contains from 10 to 15 hundred Weight: A *Cheſt of Glaſs*, from 200 to 300 Foot; *of Caſtle Soap*, from 2½ to 3 hundred Weight; *of Indigo*, from 1½ to 2 hundred Weight; five Score to the hundred.

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CHEVAGE, or CHIEFAGE, according to *Bracton*, ſignifies a Tribute by the Head; or a kind of Poll-Money antiently paid by ſuch as held Lands in Villanage, or otherwiſe, to their Lords, in acknowledgment. See POLL.

The Word ſeems alſo to have been us'd for a Sum of Money yearly given to a Man of Power, for his Patronage and Protection, as to their *Cheif*.

In the firſt Senſe, *Coke* obſerves, there is ſtill a kind of *Chevage* ſubſiſting in *Wales*, call'd *Amabyr*; paid to the Prince of *Wales* for the Marriage of his Daughters; antiently by all, now only by ſome. *Lambard* writes it *Chivage*. The *Jews*, while allow'd to live in *England*, paid *Chevage*, or Poll-Money; *viz.* three Pence *per* Head, paid at *Eaſter*.

The Word is form'd of the French *Chef*, Head.

CHEVAL *de Friſe*, a large piece of Timber pierc'd, and travers'd with wooden Spikes, arm'd or pointed with Iron, five or ſix Foot long.

Its Uſe is to defend a Paſſage, ſtop a Breach, or make a Retrenchment to ſtop the Cavalry.

'Tis ſometimes alſo mounted on Wheels, with Artificial Fires, to roll down in an Aſſault.

Errard obſerves, that the Prince of *Orange* us'd to incloſe his Camp with *Chevaux de Friſe*, laying them over one another.

The Term properly ſignifies a *Friſeland Horſe*; as having been firſt invented in that Country.

In a Medal of *Licinius*, is found a kind of *Cheval de Friſe*, made with Spikes interpos'd; ſerving to expreſs a fortify'd Camp.

CHEVALIER, a *French* Term, ordinarily ſignifying a *Knight*. See KNIGHT.

It is us'd, in Heraldry, to ſignify any *Cavalier*, or Horſeman arm'd at all Points; by the *Romans* call'd *Cataphractus Eques*, now out of uſe, and only to be ſeen in Coat-Armour. See EQUES, MILES, CATAPHRACTUS, &c.

The Word is form'd of the French *Cheval*, Horſe; and that of the Latin *Cavallus*.

CHEVELEE, a Term us'd by the *French* Heralds, to expreſs what we commonly call *Streaming*; *i.e.* the Stream of Light darting from a Comet, by Aſtronomers call'd its *Beard*.



CHEVERON, or CHEVRON, in Heraldry, one of the honourable Ordinaries of a Shield; repreſenting two Rafters of a Houſe join'd together, without any Diviſion. See ORDINARY, &c.

It deſcends from the *Chief* towards the Extremities of the Coat, in form of a Pair of Compaſſes half open: Thus, he bears *Gules*, *a Chevron Argent*.

The *Cheveron* is the Symbol of Protection, ſay ſome, or of Conſtancy, according to others: Some ſay it repreſents the Knight's Spurs; others the Head-Attire of Prieſteſſes; others a piece of the Liſt, or the Barrier or Fence of a Park.

When it is alone, it ſhould take up the third Part of the Coat: When 'tis accompany'd with any other Bearings, its Breadth muſt be adjuſted thereby.

It is bore divers ways; ſometimes in *Chief*, ſometimes in *Baſe*, ſometimes *enarch'd*, ſometimes *revers'd*, &c.

The *Cheveron* is ſometimes charg'd with another *Cheveron*, ⅓ of its Height.

Two *Cheverons* are allow'd in the ſame Field, but not more; when they exceed that Number, they are call'd *Cheveronwiſe*, or *Cheveronels*. There are *Cheverons* of ſeveral Pieces.

A *Cheveron* is ſaid to be *abaiſs'd*, when its Point does not approach the Head of the Chief, nor reach farther than the Middle of the Coat; *mutilated*, when it does not touch the Extremes of the Coat; or *cloven*, when the upper Point is taken off, ſo that the Pieces only touch at one of the Angles; *broke*, when one Branch is ſeparated into two Pieces; *couched*, when the Point is turn'd towards one ſide of the Eſcutcheon; *divided*, when the Branches are of ſeveral Metals, or when Metal is oppos'd to Colour; *inverted*, when the Point is towards the Point of the Coat, and its Branches towards the Chief.

A Coat is ſaid to be *Cheveroned*, when it is fill'd with an equal Number of *Cheverons*, of Colour and Metal.

Countercheveron'd, is when it is ſo divided, as that Colour is oppos'd to Metal, and *vice verſa*.

Per CHEVERON, or *Party per* CHEVERON, is when the Field is divided by only two ſingle Lines, riſing from the two Baſe Points, and meeting in a Point above, as the *Cheveron* does.

CHEVERONEL, is a Diminutive of *Cheveron*; and as ſuch only contains half a *Cheveron*.

CHEVRONEE, or CHEVRONNY, ſignifies the Parting of the Shield ſeveral times *Cheveronwiſe*. *Gibbon* ſays, *Cheveronne of ſix*.

CHIAOUS, an Officer in the Grand Signior's Court, doing the Buſineſs of an Uſher.

He bears Arms offenſive and defenſive; and has the Care of Priſoners of Diſtinction. His Badge is a Staff cover'd with Silver, and he is arm'd with a Scimiter, Bow, and Arrow.

The Emperor uſually chuſes one of this Rank to ſend as Embaſſador to other Princes.

The Word, in the original *Turkiſh*, ſignifies Envoy.

The *Chiaous* are under the Direction of the *Chiaous-Baſchi*, an Officer who aſſiſts at the *Divan*, and introduces thoſe who have Buſineſs there.

CHICANE, or *Chicanry*, in Law, an Abuſe of Judiciary Proceeding, tending to delay the Cauſe, and deceive or impoſe on the Judge or the Parties.

The *French* call Sollicitors, Attornies, &c. the *Gens de Chicane*.

CHICANE is alſo us'd in the Schools, for vain Sophiſms, Diſtinctions, and Subtilties, which immortalize Diſputes, and obſcure the Truth; as the *Chicane* of Courts does Juſtice.

Menage derives the Word from *Cicum*, the Skin of a Pomegranate; whence the *Spaniards* have form'd their *Chico*, little, ſlender; *Chicane* being converſant about Trifles.

CHIEF, a Term denoting Head; or a principal Thing, or Perſon.

The Word is form'd of the French *Chef*, Head; of the *Greek* κεφαλὴ, *Caput*, Head: tho *Menage* derives it of *Capo*, form'd of the Latin *Caput*.

Thus, we ſay, the *Chief of a Party*; the *Chief of a Family*, &c. Agamemnon *was the Chief of the* Greeks *who beſieg'd* Troy: *The* Romans *ſometimes refus'd Triumphs to their victorious Generals; by reaſon the Conduct of the* Chief *was not anſwerable to his Succeſs*. See TRIUMPH. *The Abbeys that are* Chiefs *of their Order are all Regular; and 'tis here the general Chapters are held*. See ABBEY.

CHIEF-*Juſtice*. See JUSTICE.

CHIEF *Lord*, is the Feudal Lord, or Lord of an Honour, on whom others depend. See LORD; ſee alſo HONOUR.

Holding in CHIEF. See CAPITE.

CHIEF, *Chef*, in Heraldry, is the upper Part of the Eſcutcheon, reaching quite acroſs from ſide to ſide. See ESCUTCHEON.

Thus, we ſay, *The Arms of* France *are* three golden Flower de Lys's, in a Field Azure; two in *Chief*, and one in Point.

Chief is more particularly us'd for one of the honourable Ordinaries, bore in the Coat. See ORDINARY.

'Tis plac'd athwart the Top of the Coat, and is to contain one third Part of its Height. When the Eſcutcheon is cut in Stone, or in Relievo, the *Chief* ſtands out prominent beyond the reſt; and is ſuppos'd to repreſent the Diadem of the antient Kings and Prelates; or the Caſk of the Knights.

It is frequently without any Ornament: ſometimes 'tis charg'd with other Bearings; ſometimes 'tis of a Colour or Metal different from that of the Coat.

The Line that bounds it at Bottom is ſometimes *ſtrait*, ſometimes *indented*, *engrail'd*, *embattel'd*, *lozenged*, &c. Thus, ſay they, *The Field is Gules, a* Chief *Argent*, &c. again, *He bears Gules, a* Chief *Crencle, or embattel'd Argent*.

Sometimes one *Chief* is born on another; expreſs'd by a Line drawn along the upper Part of the *Chief*: When the Line is along the under Part, 'tis call'd a *Fillet*. The firſt is an Addition of Honour, the ſecond a Diminution. See DIFFERENCE, &c.

The *Chief* is ſaid to be *abaiſs'd*, when 'tis detach'd from the upper Edge of the Coat, by the Colour of the Field which is over it; and which retrenches from it one third of its Height. We alſo ſay, *a Chief is cheveron'd, paled*, or *bended*, when it has a Cheveron, Pale, or Bend contiguous to it, and of the ſame Colour with it ſelf. A *Chief* is ſaid to be *ſupported*, when the two thirds at top are of the Colour of the Field, and that at bottom of a different Colour.

In CHIEF. By this is underſtood any thing born in the *Chief part*, or top of the Eſcutcheon.

CHIEF-*Pledge*, the ſame as *Headborough*. See HEADBOROUGH.

CHIEF-*Point*. See POINT.

CHIEFTAIN, the *Chief*, Leader, or General of an Army, &c. See CHIEF, and GENERAL.

CHILBLAIN, in Medicine, a Tumor afflicting the Feet and Hands; accompany'd with an Inflammation, Pain, and ſometimes an Ulcer, or Solution of Continuity. See TUMOR.

Chilblains, by Phyſicians call'd *Perniones*, are occaſion'd by exceſſive Cold ſtopping the Motion of the Blood in the Capillary Arteries. See PERNIO.

The Tumor, from white, generally inclines to blueneſs. Petroleum laid on the Part, either prevents *Chilblains*, or cures 'em.

CHILD, a Term of Relation to *Parent*. See PARENT; ſee alſo MALE, and FEMALE.

We ſay, *Natural Child*, *Legitimate Child*, *Putative Child*, *Baſtard Child*, *Adoptive Child*, *Poſthumous Child*. See NATURAL, PUTATIVE, BASTARD, ADOPTIVE, POSTHUMOUS, &c.

Mr. *Derham* computes, that Marriages, one with another, produce four *Children*; not only in *England*, but in other Parts alſo. See MARRIAGE.

In the Genealogical Hiſtory of *Tuſcany*, wrote by *Gamarini*, mention is made of a Nobleman of *Sienna*, named *Pichi*, who of three Wives had 150 *Children*; and that, being ſent Embaſſador to the Pope and the Emperor, he had 48 of his Sons in his Retinue.

In a Monument in the Church-yard of St. *Innocent*, at *Paris*, erected to a Woman who dy'd at 88 Years of Age, it is recorded, that ſhe might have ſeen 288 *Children* directly iſſu'd from her. But this is far ſhort of what *Hakewill* relates of Mrs. *Honeywood*, a Gentlewoman of *Kent*, born in the Year 1527, and marry'd at 16 to her only Huſband *R. Honeywood* of *Charing*, Eſq; and dy'd in her 93d Year.

She had 16 *Children* of her own Body; of which three dy'd young, and a fourth had no Iſſue: yet her *Grandchildren*, in the ſecond Generation, amounted to 114; in the third to 228, and in the fourth to 900, all in her Lifetime: So that ſhe could ſay the ſame as the Diſtich does of one of the *Dalburg*'s Family at *Baſil*.

Mater[1] *ait Natæ*[2] *dic Natæ*[3] *filia Natam*[4],
Ut moneat, Natæ[5], *plangere filiolam*[6].

Dr. *Harris* has an expreſs Treatiſe *of the Diſeaſes of Children*, *De Morbis acutis Infantum*. He takes 'em all to ariſe from the Humours in the *primæ Viæ* growing ſour, and degenerating into Acidities: which is confirm'd from their ſour Belches and Dejections. All that is requir'd to cure them, is to combat this Acidity; which is to be effected two ways; by diſpoſing it to be evacuated, and by actual Evacuation by Rhubarb, and other gentle Purgatives.

To diſpoſe the peccant Acid for Evacuation, no Sudorificks or Cordials to be us'd, thoſe Remedies being too violent; but Crabs Eyes and Claws, Oyſter-ſhells, Cuttlefiſh-bones, Egg-ſhells, Chalk, Coral, Pearls, Bezoar, burnt Ivory, Scrapings of the Unicorn's Horn, *Armenian* Bole, *Terra Sigillata*, and *Lapis Hæmatites*; the Goa Stone, and a ſort of Confection of Hyacinth. But of all theſe, he prefers old Shells that have lain long on the Edge of the Sea, expos'd to the Sun; which is better than any Chymical Furnace.

CHILD-*Bed*. } See PARTURITION, and DELIVERY.
CHILD-*Birth*. }

CHILD-*Wit*, a Power to take a Fine of a Bond-Woman unlawfully gotten with *Child*.

Every reputed Father of a baſe *Child*, got within the Mannor of *Writtel* in *Eſſex*, pays to the Lord for a Fine 3 *s.* 4 *d.* where, it ſeems, *Child-wit* extends to Free, as well as Bond-Women; *Quicunque fecerit* Child-wit, *Archiepiſcopus aut totam, aut dimidiam Emendationis partem habebit, quietum eſſe de* Child-wit. *Du Cange*.

CHILDERMASS-*Day*, call'd alſo *Innocents Day*, an anniverſary Feaſt of the Church, held on the 28th of *December*, in memory of the *Children* of *Bethlehem*, maſſacred by order of *Herod*. See FEAST.

Charity-CHILDREN. See CHARITY-*School*, HOSPITAL, &c.

CHILIAD, an Aſſemblage of ſeveral Things rang'd by *thouſands*.

The Word is form'd of the *Greek* χίλιος, *Mille*, a thouſand.

CHILIARCUS, an Officer in the Armies of the Antients, who had the Command of a thouſand Men.

The Word comes from the *Greek* χίλιος, *thouſand*, and ἀρχὴ, *command*.

CHILIASTS, a Sect of Religious. See MILLENARIES.

CHILMINAR, CHELMINAR, or *Tchelminar*, the nobleſt and moſt beautiful Piece of Architecture remaining of all Antiquity; being the Ruins of the famous Palace of *Perſepolis*, to which *Alexander* the Great, being drunk, ſet fire, at the Perſuaſion of the Courteſan *Thais*. See RUINS.

Authors and Travellers are exceedingly minute in their Deſcriptions of the *Chilminar*; particularly *Garcios de Silva Figueroa*, *Pietro de la Valle*, *Chardin*, and *Le Brun*.

A general Idea thereof, may be conceiv'd as follows.

There appear the Remains of near fourſcore Columns; the Fragments whereof are at leaſt ſix Foot high: but there are only nineteen that can be call'd entire; with a twentieth all alone, 150 Paces from the reſt.

A Rock of black hard Marble, ſerves for the Foundation of the Edifice.

The firſt Plan of the Building is aſcended to by fourſcore and fifteen Steps cut in the Rock. The Gate of the Palace is twenty Foot wide; on one ſide is the Figure of an Elephant, and on the other of a Rhinoceros, each thirty

Foot high, and of ſhining Marble. Near theſe Animals are two Columns; and not far off the Figure of a Pegaſus.

After this Gate is paſs'd, are found a great Number of Columns of white Marble; the Remains whereof ſhew the Magnificence of the Work: the ſmalleſt of theſe Columns is fifteen Cubits high, the largeſt eighteen; each has forty Flutings, three large Inches broad; whence the highneſs of the whole may be gueſs'd at, with the other Proportions. Near the Gate is an Inſcription on a ſquare piece of Marble, ſmooth as Glaſs, containing about twelve Lines: The Characters are of a very extraordinary Figure, reſembling Triangles and Pyramids.

Theſe noble Ruins are now the Shelter of Beaſts and Birds of Prey. Beſides the Inſcription abovemention'd, there are others in *Arabic*, *Perſian*, and *Greek*. Dr. *Hide* obſerves, that the Inſcriptions are very rude and unartful; and that ſome, if not all of them, are in praiſe of *Alexander* the Great, and therefore later than that Conqueror.

M. *Le Brun* tells us, that he took his Voyage to the *Eaſt-Indies* merely for the ſake of viewing the *Chilminar*.

The Word comes from the Perſian *Tchehelminar*, forty Towers, or Columns; on account of the forty Columns of an enormous ſize ſeen there.

CHIMERA, a fabulous Monſter, which the Poets feign'd to have the Head of a Lion, the Belly of a Goat, and the Tail of a Serpent; and to have been kill'd by *Bellerophon*, mounted on the Horſe *Pegaſus*.

The Foundation of the Fable is this; that antiently in *Lycia* there was a *Vulcano*, or burning Mountain of this Name; the top whereof, which was deſart, only inhabited by Lions; the middle, having good Paſtures, by Goats; and the foot, being marſhy, by Serpents. Thus *Ovid*,

——Mediis in partibus Hircum
Pectus, & ora Leæ, caudam Serpentis habebit.

Bellerophon being the firſt who caus'd this Mountain to be inhabited, 'twas feign'd he ſlew the *Chimera*. *Pliny* ſays, the Fire thereof would kindle with Water, and extinguiſh with nothing but Earth or Dung.

CHIMES *of a Clock*, a kind of periodical Muſick, produc'd at certain Seaſons of the Day, by a particular Apparatus added to a *Clock*. See CLOCK.

To calculate Numbers for the *Chimes*, and to fit and divide the *Chime*-Barrel, it muſt be obſerv'd, That the Barrel muſt be as long in turning round, as you are in ſinging the Tune it is to play.

As for the *Chime*-Barrel, it may be made up of certain Bars which run athwart it, with a convenient Number of Holes punch'd in them, to put in the Pins that are to draw each Hammer: by this means, the Tune may be chang'd, without changing the Barrel: Such is the *Royal Exchange* Clock in *London*, and others. In this caſe, the Pins, or Nuts, which draw the Hammers, muſt hang down from the Bar, ſome more, ſome leſs; and ſome ſtanding upright in the Bar: The reaſon whereof is to play the Time of the Tune rightly: for the Diſtance of each of theſe Bars may be a Semibreve; but the uſual way, is to have the Pins which draw the Hammers fix'd on the Barrel.

For the placing of theſe Pins, you may proceed by the way of Changes on Bells, *viz.* 1, 2, 3, 4, *&c.* or rather, make uſe of the Muſical Notes: where it muſt be obſerv'd, what is the Compaſs of the Tune, or how many Notes, or Bells, there are from the higheſt to the loweſt; and accordingly, the Barrel muſt be divided from end to end.

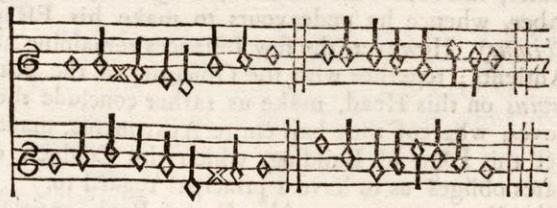
Thus, in the following Examples, each of thoſe Tunes are eight Notes in compaſs; and accordingly, the Barrel is divided into eight Parts. Theſe Diviſions are ſtruck round the Barrel; oppoſite to which are the Hammer-Tails.

We ſpeak here as if there was only one Hammer to each Bell, that it may be more clearly apprehended: but when two Notes of the ſame Sound come together in a Tune, there muſt be two Hammers to the Bell to ſtrike it: So that if in all the Tunes you intend to *chime* of eight Notes compaſs, there ſhould happen to be ſuch double Notes on every Bell; inſtead of eight you muſt have ſixteen Hammers; and accordingly you muſt divide the Barrel, and ſtrike ſixteen Strokes round it, oppoſite to each Hammer-Tail: Then you are to divide it round about, into as many Diviſions as there are Muſical Bars, Semibreves, Minims, *&c.* in the Tune.

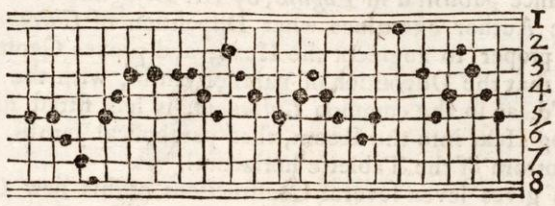
Thus, the hundredth Pſalm-Tune has twenty Semibreves, and each Diviſion of it is a Semibreve: the firſt Note of it alſo is a Semibreve; and therefore on the *Chime*-Barrel muſt be a whole Diviſion, from 5 to 5; as you may underſtand plainly, if you conceive the Surface of a *Chime*-Barrel to be repreſented by the following Tables; as if the cylindrical Superficies of the Barrel were ſtretch'd out at length, or extended on a Plane: and then ſuch a Table, ſo divided, if it were to be wrapp'd round the Barrel, would ſhew the Places where all the Pins are to ſtand in the Barrel: For the Dots running about the Table, are the Places of the Pins that play the Tune.

Indeed, if the *Chimes* are to be compleat, you ought to have a ſet of Bells to the Gamut Notes; ſo as that each Bell having the true Sound of *ſol*, *la*, *mi*, *fa*, you may play any Tune with its Flats and Sharps; nay, you may by this means play both the Baſs and Treble with one Barrel: and by ſetting the Names of your Bells at the head of any Tune, that Tune may eaſily be transferr'd to the *Chime*-Barrel, without any Skill in Muſick: But it muſt be obſerv'd, that each Line in the Muſick is three Notes diſtant; that is, there is a Note between each Line, as well as upon it.

The Notes of the 100 *Pſalm.*



A Table for dividing the Chime-*Barrel of the* 100 *Pſalm.*



CHIMIN, or CHEMIN, in Law, a Road, or Way. See ROAD. Hence,

CHIMINAGE, a Toll for Wayfarage thro' a Foreſt. The Feudiſts call it *Pedagium*. See PEDAGE.

CHIMNEY, in Architecture, a part of an Apartment, wherein the Fire is made. See FIRE.

The Parts of a *Chimney* are the *Jambs*, or Sides, coming out perpendicularly, ſometimes circularly, *&c.* from the Back; the *Mantle-Tree* reſts on the Jambs: The *Tube*, or *Funnel*, which conveys away the Smoke; the *Chimney-piece*, or Moulding, on the foreſide of the Jambs over the Mantle-Tree; and the *Hearth*, or Fireplace.

Palladio ſettles the Proportions of a Chamber *Chimney* thus; Breadth on the Inſide, $5\frac{1}{2}$, 6, or 7 Foot; Height to the Mantle-Tree, 4 or $4\frac{1}{2}$; Depth, 2 or $2\frac{1}{2}$ Foot.

According to *Wolfius*, the Breadth of the Aperture at bottom to be to the Height, as 3 to 2, to the Depth as 4 to 2. In ſmall Apartments the Breadth is 3 Foot, in larger 5; in Bed-Chambers 4; in ſmall Banquetting Rooms $5\frac{1}{2}$, in large 6. But the Height never to exceed $2\frac{1}{2}$, leſt there being too much room for the Air and Wind, the Smoke be driven down into the Room. Nor muſt the Height be too little, leſt the Smoke miſs its way, and be check'd at firſt ſetting out. The ſame Author adviſes to have an Aperture, thro' which the external Air may, on occaſion, be let into the Flame, to drive up the Smoke; which the internal Air would otherwiſe be unable to do. See STOVE.

The Mouth of the Tube, or that part join'd to the *Chimney*-Back, *Felibien* orders to be a little narrower than the reſt; that the Smoke coming to be repell'd downwards, meeting with this Obſtacle, may be prevented from getting into the Room.

Some make the Funnel twiſted, to prevent the Smoke's deſcending too eaſily: but the better Expedient is to make the Funnel narrower at bottom than at top; the Fire impelling it upward more eaſily when contracted at bottom; and in mounting, it finds more ſpace to diſengage it ſelf, and therefore has leſs occaſion to return into the Chamber.

To prevent ſmoaking CHIMNEYS, M. *Lucar* adviſes two Holes, or two Pipes, one over the other, to be left in each ſide of the *Chimney*; one ſloping upwards, the other downwards: thro' one of theſe, ſays he, the Smoke will paſs in any poſition.

De l'Orme orders a Braſs Ball full of Water, with one ſmall Aperture, to be hung up in the *Chimney*, at a Height a little above the greateſt Flame: here, as the Water grows hot, 'twill rarefy and drive thro' the Aperture in a vapoury Stream, which will drive up the Smoke that wou'd otherwiſe linger in the Funnel.

Others place a kind of moveable Vane, or Weathercock a-top of the *Chimney*: ſo that what way ſoever the Wind comes, the Aperture of the *Chimney* will be ſkreen'd, and the Smoke have free egreſs. Indeed, the beſt prevention of a ſmoking *Chimney*, ſeems to lie in the proper Situation of the Doors of the Room, and the apt falling back of the Back, and convenient gathering of the Wings and Breaſt of the *Chimney*.

'Tis a Rule, in Building, that no Timber be laid within 12 Inches of the Foreſide of the *Chimney* Jambs; that all Joiſts on the Back of the *Chimney* be laid with a Trimmer,

mer, at 6 Inches distance from the Back; and that no Timber be laid within the Funnel.

Chimneys are usually suppos'd a modern Invention; the Antients only making use of Stoves: But *Octavius Ferrareus* endeavours to prove *Chimneys* in use among the Antients. To this End he cites the Authority of *Virgil*: *Et jam summa procul villarum culmina fumant.* And that of *Appian*, who says, 'That of those Persons proscrib'd by 'the Triumvirate, some hid themselves in Wells, and *Clo-* 'aca, *Common-Shores*; some in the Tops of Houses, and 'Chimneys:' for so he understands καπνωδείς ὑποσφίας, *Fumaria sub tecto posita.* Add, that *Aristophanes*, in one of his Comedies, introduces his old Man, *Polycleon*, shut up in a Chamber, whence he endeavours to make his Escape by the *Chimney*. However, the few Instances remaining among the Antients; together with the Obscurity of the Rules of *Vitruvius* on this Head, make us rather conclude the Use of Stoves, whereof they had entire Apartments, made 'em neglect this Point of Building, which the Coldness of our Climates obliges us to have a principal regard to.

In the Year 1713, appear'd a *French* Book, entitled, *La Mechanique du Feu*, or The Art of augmenting the Effects, and diminishing the Expence of Fire, by M. *Gauger*; since publish'd in *English*, by Dr. *Desaguliers*: wherein the Author examines what Disposition of *Chimneys* is most proper to augment the Heat; and proves Geometrically, that the Disposition of parallel Jambs, with the Back inclin'd, as in the common *Chimneys*, is less fitted for reflecting Heat into the Room, than parabolical Jambs, with the bottom of the Tablette horizontal.

He gives seven several Constructions of his new *Chimneys*, and the manner of executing them. See FIRE.

M. *Gauger*, however, does not appear to be the first Inventor of the *Chimney* he describes; the Description of a like Kind being found in a *German* Book, printed at *Leipsick*, in 1699.

The Word *Chimney* comes from the French *Cheminee*; and that from the Latin *Caminata*, a Chamber wherein is a *Chimney*: *Caminata*, again, comes from *Caminus*, and that from the *Greek* καμινος, *a Chimney*; of καιω, *uro*, I burn.

CHIMNEY-*Jambs*, are the Sides of a *Chimney*, usually standing out perpendicularly, sometimes circularly, from the Back; on the Extremities whereof the Mantle-Tree rests. See JAMB.

CHIMNEY-*Piece*, in Building, a Composition of certain Mouldings, of Wood or Stone, standing on the Foreside of the Jambs, and coming over the Mantle-Tree. See MANTLE-*Tree*.

CHIMNEY-*Money*, or *Hearth-Money*, a Tax impos'd by a Stat. 24 *Car.* II. expressing, that every Fire-Hearth and Stove of every Dwelling, and other Houses within *England* and *Wales*, except such as pay not to Church and Poor, shall be chargeable with two Shillings *per Annum*, payable at *Michaelmas* and *Lady-Day*, to the King and his Heirs. See SMOAK, CHIMNEY, and FUAGE.

CHINA, or CHINA-*Ware*, a fine sort of Earthen Ware, properly call'd *Porcelain*. See PORCELAIN.

CHINA-CHINA, a Name sometimes given to the *Quinquina*, or *Peruvian Bark*. See QUINQUINA.

CHINA-*Root*, a Medicinal Root, brought from the *East-Indies*.

It is of a ruddy brown Colour, bordering on black, without side; and white, or reddish, within. It grows chiefly in fenny Places, usually cover'd with the Sea; which, upon its withdrawing, leaves great Quantities thereof on the Shore: the best is that which is firm, ruddy, and fresh.

It is esteem'd a sweetner of the Blood; and us'd as such in Decoction, in Venereal and Scorbutick Cases.

CHINESE, or *Chinese Tongue*, the Language of the People of *China*. See LANGUAGE.

F. *le Comte* observes, that the *Chinese* has no analogy with any other Language in the World: It only contains 330 Words, which are all Monosyllables; at least, they are pronounc'd so close, that there is no distinguishing above one Syllable, or Sound, in them. But the same Word, as pronounc'd with a stronger or weaker Tone, has different Significations: Accordingly, when 'tis accurately spoke, it makes a sort of Musick, which has a real Melody, that constitutes the Essence and distinguishing Character of that Language.

As to *Chinese Characters*, they are as singular as the Language: the *Chinese* have not, like us, any Alphabet, containing the Elements, or as it were the Principles of their Words: In lieu of an Alphabet, they use a kind of Hieroglyphicks; whereof they have above 8000. See LETTER.

CHIN-COUGH, a Disease Children are chiefly subject to. It consists in a violent and immoderate *coughing*, to a Danger of Suffocation. Letting of Blood, and Balsamicks, are the usual Cure.

CHIRAGRA, in Medicine, the Gout in the Hands. See GOUT.

The *Chiragra* has its Seat in the *Carpus*, or extreme Part of the Hand, or the Ligaments and Junctures of the Fingers.

The Word comes from the *Greek* χειρ, *manus*, Hand, and ἄγρα.

CHIROGRAPH, was antiently a Deed, which requiring a counterpart, was engross'd twice on the same piece of Parchment, counterwise; leaving a Space between, wherein was wrote *CHIROGRAPH*; thro' the middle whereof the Parchment was cut, sometimes strait, sometimes indentedly; and a Moiety given to each of the Parties.

This was afterwards call'd *Dividenda*, and *Chartæ divisæ*; and was the same with what we now call *Charter-Party*. See CHARTER-*Party*.

The first use of these *Chirographs* with us, was in the Time of K. *Henry* III. See INDENTURE.

According to some, a Deed was properly a *Chirograph*, when it was subscrib'd by the Hand-writing of the Vender, or Debtor, and deliver'd to the Buyer, or Creditor. These Authors make the *Chirograph* differ from a *Syngraph*, in this; that in the latter the Word *Syngraph* was wrote in the middle, and cut thro', in the manner just observ'd of *Chirograph*. These Authors therefore make the *Syngraph* the *Chirograph*; and the *Chirograph* a different thing.

The Word is compounded of the *Greek* χειρ, Hand; and γραφω, *scribo*, I write.

Chirograph was also antiently us'd for a Fine; and the manner of engrossing the Fines, and cutting the Parchment in two pieces, is still retain'd in the Office, call'd the *Chirographer's Office*. See CHIROGRAPHER.

CHIROGRAPHER *of Fines*, an Officer in the Common Pleas, who engrosses Fines in that Court, acknowledg'd into a perpetual Record (after they have been examin'd and pass'd by other Officers;) and who writes and delivers the Indentures thereof to the Party. He makes two Indentures, one for the Buyer, the other for the Seller; and a third indented Piece, containing the Effect of the Fine, and call'd *the Foot of the Fine*; and delivers it to the *Custos Brevium*. The same Officer also, or his Deputy, proclaims all Fines in Court every Term, and endorses the Proclamations on the backside of the Foot; keeping, withal, the Writ of Covenant and the Note of the Fine. See TABLING *of Fines*.

CHIROMANCY, the Art of divining the Fate, Temperament, and Disposition of a Person, by the Lines and Lineaments of the Hand; otherwise call'd *Palmistry*.

We have a Number of Authors on this vain and trifling Art; as *Artemidorus*, *Fludd*, and *John de Indagine*: *Taisnerus*, and M. *de le Chambre* have done the best.

This last insists on it, that the Inclinations may be known from inspecting the Hand; there being a very near Relation between the Parts of the Hand, and the internal Parts of the Body, the Heart, Liver, &c. whereon the Passions and Inclinations much depend. He adds, however, that the Rules and Precepts of *Chiromancy* are not sufficiently warranted, the Experiments whereon they stand not being well verify'd. He concludes, that there must be a new Set of Observations, made with Justness and Exactitude; in order to give *Chiromancy* the Form and Solidity which an Art or Science demands.

The Word comes from the *Greek* χειρ, *Hand*, and μαντεία, *Divination*.

CHIROTONIA, the Imposition of Hands, in conferring any Priestly Orders. See IMPOSITION.

The Word comes from the *Greek* χειροτονια, the Action of stretching out the Hands. And because the Antients gave their Suffrages by stretching out the Hands, they gave the Name *Chirotonia* to the Election of Magistrates. See PLEBISCITA, ORDINANCES, &c.

This Custom was first establish'd in *Greece*; as appears from an Oration of *Demosthenes* against *Neæra*, and that of *Æschines* against *Ctesiphon*: thence it pass'd to the *Romans*. From profane Authors it pass'd to Ecclesiastical ones; and was us'd by them, not only in Elections, but also in Ordinations.

CHIRURGERY, popularly call'd *Surgery*, the third Branch of Medicine; consisting in Operations perform'd by the Hand, for the Cure of Wounds, and other Disorders. See MEDICINE.

Chirurgery is the Art of curing Wounds, and various Diseases, by the opening of Veins, application of Topics, Incisions, and Amputations of several Parts of the Body, &c. See OPERATION.

Chirurgery is divided into *Speculative*, and *Practical*; one whereof does that in effect, which the other teaches to do.

All the Operations of *Chirurgery* are reduc'd under four Kinds: the first whereof re-joins what has been separated; and is call'd *Synthesis*.

The second divides, with Discernment, those Parts whose Union is prejudicial to Health; and is call'd *Diæresis*.

The third extracts with Art foreign Bodies; call'd *Exeresis*.

And the fourth, call'd *Prothesis*, adds and applies what is wanting. See each Branch under its proper Head.

The

The principal Things that come under the Conſideration of *Chirurgery*, are *Tumors*, *Ulcers*, *Wounds*, *Diſlocations*, and *Fractures*. See WOUND, ULCER, TUMOR, DISLOCATION, and FRACTURE.

Chirurgery has the advantage of Medicine in the Solidity of its Foundation, the Certainty of its Operations, and the Senſibleneſs of its Effects; inſomuch, that thoſe who deny Medicine to be of any ſignificancy, yet allow the Uſefulneſs of *Chirurgery*.

Chirurgery is very antient; and even much more ſo than Medicine, whereof it now makes a Branch. It was, in effect, the ſole Medicine of the firſt Ages: they betaking themſelves to the Cure of external Diſorders, e'er they came to examine or diſcover what related to the Cure of internal ones.

Apis, King of *Egypt*, is ſaid to be the firſt Inventor of *Chirurgery*; after him, *Æſculapius* compos'd a Treatiſe of Wounds and Ulcers. He was ſucceeded by the Philoſophers of the following Ages, in whoſe Hands *Chirurgery* wholly lay; *Pythagoras*, *Empedocles*, *Parmenides*, *Democritus*, *Chiron*, *Peon*, *Cleobruntus*, who cur'd K. *Antiochus*'s Eye, *&c.*

Chirurgery was cultivated with much more Earneſtneſs by *Hippocrates*, than by any of the preceding Phyſicians: It is ſaid to have been perfected in *Egypt*, by *Phyloxenus*, who wrote ſeveral Volumes on that ſubject. Among the *Greeks*, *Gorgias*, *Soſtrates*, *Heron*, the two *Apollonius*'s, *Ammonius* of *Alexandria*; and at *Rome*, *Trypho* the Father, *Evelpiſtus*, and *Meges*, made it flouriſh, each in their Time.

Arcabuto was the firſt *Chirurgeon* the *Romans* receiv'd into their Commonalty; but him they ſoon after ſton'd to Death in the *Campus Martius*, on account of his Cruelty in cutting off Limbs.

The more modern Authors, who have contributed moſt to the Perfection of *Chirurgery*, are *Paræus*, *Fab. ab Aquipendente*, *Harvey*, *Wharton*, *Gliſſon*, *Du Laurents*, *Diemerbroeck*, *Vieuſſens*, *Barbett*, *Dionis*, *Charriere*, &c.

Sculterus has publiſh'd a Deſcription of all the Inſtruments us'd in *Chirurgery*, under the Title of *Armamenterium Chirurgicum*; and our Countryman, Mr. *Wiſeman*, Serjeant-*Chirurgeon* to King *Charles* II. a Folio Volume of *Chirurgical* Treatiſes, containing practical Obſervations, both in reſpect to the Internals and Externals, of a Number of Caſes in each Branch of the Art, from his own Experience; under the Title of *Several Chirurgical Treatiſes*. This Work has been made uſe of ever ſince, by the moſt knowing of our *Engliſh Chirurgeons*; and has been the Foundation of moſt *Chirurgical* Treatiſes ſince its Publication, *Anno* 1676.

The *French Chirurgeons* being refus'd to be admitted into the Univerſities, notwithſtanding that their Art makes a Branch of Medicine, one of the four Faculties; on pretence of its bordering a little on Butchery, or Cruelty; aſſociated themſelves into a Brotherhood, under the Protection of S. *Coſmus* and S. *Damian*: on which account, according to the Laws of their Inſtitution, they are oblig'd to dreſs and look to Wounds *gratis*, the firſt Monday of each Month.

They diſtinguiſh between a *Chirurgeon of the long Robe*, and a *Barber Chirurgeon*: The firſt has ſtudy'd Phyſick, and is allow'd to wear a Gown.

The Skill of the other, beſide what relates to the Management of the Beard, is ſuppos'd to be confin'd to the more ſimple and eaſy Operations in *Chirurgery*; as Bleeding, Toothdrawing, *&c.* They were formerly diſtinguiſh'd by Badges; thoſe of the Gown bore a Caſe of Inſtruments; the Barber a Baſon.

The Word *Chirurgery* is form'd from the *Greek* χὲὶς, *manus*, Hand; and ἔϱϝον, *opus*, Operation.

CHISSEL, an Inſtrument much us'd in Sculpture, Maſonry, Joinery, Carpentry, *&c.*

There are *Chiſſels* of different Kinds; tho their chief difference lies in their different Size and Strength, as being all made of Steel well ſharpen'd and temper'd: but they have different Names, according to the different uſes to which they are apply'd.

The *Chiſſels* us'd in Carpentry and Joinery, are, 1. The *Former*, which is us'd firſt of all before the Paring-*Chiſſel*, and juſt after the Work is ſcrib'd. 2. The *Paring-Chiſſel*, which has a fine ſmooth Edge, and is us'd to pare off, or ſmooth the Irregularities which the former makes. This is not ſtruck with a Mallet, as the former is, but preſs'd with the Shoulder of the Workman. 3. *Skew-former*, us'd for cleanſing acute Angles with the Point, or Corner of its narrow Edge. 4. The *Mortice-Chiſſel*, which is narrow, but very thick and ſtrong, to endure hard Blows; and 'tis cut to a very broad Baſil: its uſe is to cut deep ſquare Holes in the Wood, for Mortices. 5. The *Gouge*, which is a *Chiſſel* with a round Edge; one ſide whereof ſerves to prepare the way for an Augre, and the other to cut ſuch Wood as is to be rounded, hollow'd, *&c.* 6. *Socket-Chiſſels*, which are chiefly us'd by Carpenters, *&c.* have their Shank made with a hollow Socket at top, to receive a ſtrong wooden Sprig, fitted into it with a Shoulder. Theſe *Chiſſels* are diſtinguiſh'd, according to the Breadth of the Blade, into half Inch *Chiſſels*, three quarters of an Inch *Chiſſels*, &c. 7. *Ripping Chiſſel*, which is a Socket *Chiſſel* an Inch broad; having a blunt Edge, with no Baſil to it: Its uſe is to rip, or tear two pieces of Wood aſunder, by forcing in the blunt Edge between 'em.

CHITTING, in Gardening. A Seed is ſaid to *chit*, when it firſt ſhoots its ſmall Roots into the Earth. See ROOT.

CHIVALRY, or CHEVALRY, in Law, a Tenure of Land by Knight-Service; whereby the Tenant was antiently bound to perform a Service in War; to the King, or the meſn Lord of whom he held by that Tenure. See SERVICE.

By a Statute of 12 *Car.* II. all Tenures by *Chivalry*, *in Capite*, &c. are aboliſh'd. See TENURE, KNIGHT, and KNIGHTHOOD.

CHIVES, or CHIEVES, a Term in Botany, which Mr. *Ray* renders in Latin *Apices*, *i. e.* the ſmall Knobs growing on the Ends of the fine Threads, or *Stamina* of Flowers. See APICES.

But Dr. *Grew* calls the *Stamina*, or Threads themſelves, on which the *Apices* are fix'd, the *Chives*. See STAMINA.

CHLAMYS, or CLAMYS, in Antiquity, a Military Habit, worn by the Antients over the *Tunica*. See TUNICA.

Chlamys was the ſame, in Time of War, that the *Toga* was in Time of Peace: Each belong'd to the Patricians. See TOGA.

There were four or five kinds of *Chlamys*; that of Children, of Women, and that of Men; which was divided into that of the People, and that of the Emperor.

CHLOROSIS, in Medicine, a Diſeaſe vulgarly call'd the *Green-Sickneſs*, *White-Jaundice*, &c.

Its uſual Subjects are Girls, Maids, and Widows; or even Wives, whoſe Husbands are deficient, *&c.* It gives a pale, ſallow, or livid Tincture to the Complexion, with a Circle of Violet under the Eyes. The Patient is melancholy and uneaſy; has frequently a low wandring Fever, with an unequal Pulſe, Vomiting, Heavineſs, Liſtleſſneſs, Drouſineſs, Difficulty of Breathing, Longing for abſurd Foods, *&c.*

It comes on, commonly, antecedent to, or about the Time of the Eruption of the Menſes.

The Stoppage of the Menſes is not always the Cauſe of this Diſtemper; for they ſometimes flow regularly, tho but ſeldom, in the Progreſs thereof.

According to *Etmuller*, the Suppreſſion of the Menſes is rather the Effect than the Cauſe.

The Cure is chiefly to be attempted by Chalybeats and Bitters. In the colder Conſtitutions, Decoctions of *Guaiacum* are found of uſe.

The Word *Chloroſis* ſignifies *Greenneſs*, *Verdure*; from χλοη, *Herba*, Graſs.

CHOCOLATE, a Confection, or Paſte, prepar'd of certain Drugs; the Baſis, or Principal whereof, is the *Cacao* Nut. See CACAO.

The Name *Chocolate* is alſo given to a drink, prepar'd from this Paſte, of a duſky Colour, ſoft, and oily; uſually drank hot: and eſteem'd not only an excellent Food, as being very nouriſhing, but alſo a good Medicine; at leaſt a Diet, for keeping up the warmth of the Stomach, and aſſiſting Digeſtion.

The *Spaniards* were the firſt who brought *Chocolate* into uſe in *Europe*; and that, perhaps, as much out of Intereſt, to have the better Market for their *Cacao* Nuts, *Achiott*, *Vanilla*, and other Drugs which their *Weſt-Indies* furniſh, and which enter the Compoſition of *Chocolate*; as out of regard to thoſe extraordinary Virtues, which their Authors ſo amply enumerate. The Qualities above mention'd, are what the generality of Phyſicians and others allow of it.

The Manner of making CHOCOLATE.

The Method firſt us'd by the *Spaniards* was very ſimple, and the ſame with that us'd by the *Indians*: They only us'd *Cacao*-Nut, Maiſe, and raw Sugar, as expreſs'd from the Canes, with a little *Achiott*, or *Rocou*, to give it a Colour. Of theſe four Drugs, ground between two Stones, and mix'd together in a certain Proportion, thoſe Barbarians made a kind of Bread, which ſerv'd 'em equally for ſolid Food and for Drink: eating it dry when hungry, and ſteeping it in hot Water when a-thirſt.

This Drink the *Mexicans* call'd *Chocolate*, from *Chocao*, Sound, and *alte*, or *atte*, Water; *q. d.* Water that makes a noiſe: from the Noiſe the Inſtrument us'd to agitate and prepare the Liquor, made in the Water.

But the *Spaniards*, and other Nations, have ſince added a great Number of other Ingredients to the Compoſition of *Chocolate*; all of which, *Vanilla* alone excepted, ſpoil, rather than mend it.

Method of making CHOCOLATE, *now in uſe among the* Spaniards *of* Mexico.

The Fruit being gather'd from the *Cacao* Tree, is dry'd in the Sun, and the Kernel taken out, and roaſted at the Fire, in Iron Peels pierc'd full of Holes; then pounded in a Mortar; then ground on a Marble Stone, with a Grinder of the ſame Matter, till it be brought into the Conſiſtence of a Paſte; mixing with it more or leſs Sugar, as it is to be more or leſs ſweet. In proportion as the Paſte advances, they add ſome long Pepper, a little *Achiot*, and laſtly *Vanilla*: Some add Cinnamon, Cloves, and Anis; and thoſe who love Perfumes, Muſk and Ambergris.

There is alſo a kind of *Mexican Chocolate* in the Compoſition whereof there enter Almonds and Filberts; but 'tis rather to ſpare the *Cacao*, than to render the *Chocolate* better: and accordingly, this is look'd on as ſophiſticated *Chocolate*.

The CHOCOLATE *made in Spain*, differs ſomewhat from that made in *Mexico*: For beſides the Drugs us'd in this laſt, they add two or three Kinds of Flowers, Pods of Campeche, and generally Almonds and Hazle Nuts. The uſual proportion, at *Madrid*, is to a hundred Kernels of *Cacao*, to add two Grains of *Chilé*, or *Mexican* Pepper, or in lieu thereof *Indian* Pepper; a handful of *Anis*; as many Flowers, call'd by the Natives *Vinacaxtlides*, or little Ears; ſix white Roſes in pouder; a little *Machuſia*; a Pod of Campeche; two Drachms of Cinnamon; a dozen Almonds, and as many Hazle Nuts; with *Achiott* enough to give it a reddiſh Tincture. The Sugar and *Vanilla* are mix'd at Diſcretion; as alſo the Muſk and Ambergrieſe. They frequently work their Paſte with Orange-Water, which they think gives it a greater conſiſtence and firmneſs.

The Paſte is uſually made up into Cakes, ſometimes into large Rolls.

Sometimes the Cakes are made up of pure *Chocolate*, without any Admixture; thoſe who uſe it being to add what Quantity they pleaſe of Sugar, Cinnamon, and *Vanilla*, when in the Water.

Among us, in *England*, the *Chocolate* is chiefly made thus ſimple and unmix'd, (tho perhaps not unadulterated) of the Kernel of the *Cacao*; excepting that ſometimes Sugar, and ſometimes *Vanilla* is added: any other Ingredients are ſcarce known among us.

The neweſt *Chocolate* is eſteem'd the beſt; the Drug never keeping well above two Years; but uſually degenerating much before that time.

'Tis kept in brown Paper, diſpos'd in a Box; and that in another, in a dry Place.

The Manner of preparing the Maſs into a Liquor, with the Proportions, are various: Ordinarily, the *Chocolate* is boil'd in Water, ſometimes in Milk; and ſometimes, by good Oeconomiſts, in Water-Gruel: when boil'd, 'tis mill'd, or agitated with a wooden Machine for the purpoſe, and boil'd again, till it be of the proper Conſiſtence for drinking; then ſugar'd, if the Maſs were pure; mill'd afreſh; and pour'd off.

Note, the beſt *Chocolate* is that which diſſolves entirely in the Water, leaving no Grounds, or Sediment at the bottom of the Pot.

There is a Diſpute among the Caſuiſts, whether or no *Chocolate* break the Faſt? The Negative is very ſtiffly aſſerted by *Car. Brancaccio*, who has wrote expreſsly on the Subject: tho *Stabe*, an *Engliſh* Phyſician, has endeavour'd to ſhew, that there is more nutritious Juice in an Ounce of *Cacao*, than in a Pound of Beef or Mutton.

The Quantity of *Chocolate* made in *New Spain* is ſuch, that there are annually us'd twelve Millions of Pounds of Sugar in the Preparation thereof. The *Spaniards* eſteem it the laſt Misfortune that can befall a Man, to be reduc'd to want *Chocolate*: They are never known to quit it, excepting for ſome other Liquor that will fuddle.

CHOIR, that part of a Church, Cathedral, *&c.* where the Prieſts, and *Choriſters*, or Singers, are diſpos'd. See CHURCH.

The *Choir* is diſtinguiſh'd from the *Chancel*, or *Sanctuary*, where the Communion is celebrated; as alſo from the *Nave*, or Body of the Church, where the People aſſiſt.

The Patron is ſaid to be oblig'd to repair the *Choir* of a Church; and the Pariſhioners the Nave.

The *Choir* was not ſeparated from the Nave, till the Time of *Conſtantine*: From that Time the *Choir* was rail'd in with a Balluſtrade, with Curtains drawn over; not to be open'd till after the Conſecration.

In the XIIth Century they began to encloſe the *Choir* with Walls: But the antient Balluſtrades have been ſince reſtor'd; out of a View to the Beauty of the Architecture. The Chantor is Maſter of the *Choir*. See CHANTOR.

In Nunneries, the *Choir* is a large Hall, adjoining to the Body of the Church; ſeparated by a Grate, where the Religious ſing the Office.

The Word, according to *Iſidore*, is derived *à Coronis circumſtantium*; becauſe, antiently, the *Choriſters* were diſpos'd round the Altar to ſing: which is ſtill the manner of building Altars among the *Greeks*.

CHOLAGOGUE, a Medicine which purges the Bile downward. See BILE, PURGATIVE, *&c.*

Of theſe ſome are *ſimple*, others *compound*; and both the one and the other diſtinguiſh'd into three Kinds, with regard to their Activity; the benign, the moderate, and the violent.

Of the firſt kind are Manna, Caſſia, Roſes, Tamarinds, *&c.*

Of the ſecond, Sena, Rhubarb, Aloes, *&c.*

Of the third, Jalop, Scammony, *&c.* See each under its Article, MANNA, CASSIA, SENA, *&c.*

The Word comes from χολὴ, *Bile*, and ἀγειν, *to lead*.

CHOLER. See BILE.

CHOLERA-*Morbus*, a ſudden overflowing of the Bile, both upwards and downwards. See BILE.

It is ſuppos'd to have its riſe from the great Abundance of bilious Humours, which being very acrimonious, vellicate the Membranes of the Stomach and Inteſtines; and by that means occaſion unuſual and violent Contractions.

'Tis very dangerous: Whence the *French* antiently call'd it *Trouſſe-Galand*.

It has its Name, either from the great Quantity of *Choler* it evacuates; or becauſe the Matter is inceſſantly expell'd at the Inteſtines, which they antiently call'd *Cholades*.

Dr. *Sydenham* obſerves, it generally attacks about the latter end of Summer; and proceeds, not unfrequently, from Surfeits: That the Cure depends upon large Quantities of Chicken-Broth, drank ſo as to excite Vomiting plentifully; and that the Broth is alſo to be injected Clyſterwiſe: after which, he ſays, the Cure is to be compleated by *Laudanum*, given at proper Intervals, and in proper Doſes.

The Remedy in the *Indies* for the *Cholera Morbus*, or *Mandechin*, is to keep the Patient from drinking; and to burn the Soals of his Feet.

CHOLIDOCHUS, in Anatomy, a Term apply'd to a Canal, or Duct, called alſo *Ductus Communis*; form'd of the Union of the *Porus Bilarius*, and *Ductus Cyſticus*. See DUCT.

The *Cholidocus Ductus*, paſſing obliquely to the lower End of the *Duodenum*, ſerves to convey the Bile from the Liver to the Inteſtines.

Some have imagin'd, that it convey'd the Bile from the Liver to the Gall-Bladder: but it being obſerv'd, that 'tis the *Duodenum*, not the Gall-Bladder, that ſwells upon blowing thro' this Duct; 'tis evident the Bile contain'd therein, is convey'd no where elſe but to the *Duodenum*. See BILE, LIVER, GALL-*Bladder*, &c.

The Word comes from the *Greek* χολὴ, and the Latin *Duco*, I draw, lead, *&c.*

CHONDROGLOSSUM, in Anatomy, a very ſmall Pair of Muſcles of the Tongue, mention'd by *Verheyen*, and ſeveral other Authors, exceedingly ſhort and narrow; ariſing from the cartilaginous Proceſſes of the *Os Hyoides*, and meeting in the Middle of the Baſis of the Tongue, where they are inſerted, forming an Arch under it.

This Pair of Muſcles is not found in all Subjects; whence ſome have queſtion'd its Exiſtence: but Nature takes ſo many Liberties, in Matters even of greater moment than a Pair of Muſcles; that we need not on that ſcore diſpute the Veracity of ſo many Authors as profeſs to have ſeen it.

CHOP-CHURCH, or *Church-Chopper*, a Name, or rather Nickname given to Parſons who make a Practice of exchanging Benefices.

Chop-Church is us'd in an antient Statute as a lawful Trade, or Occupation; and ſome of the Judges ſay it was a good Addition. *Brook* holds, that it was no Occupation, but a thing permiſſible by Law.

CHOPIN, or CHOPINE, a *French* liquid Meaſure; containing half their *Pint*. See MEASURE.

The *Paris Chopin* is nearly equal to the *Engliſh* Pint. A *Chopin* of common Water weighs a *Paris* Pound.

CHORD, or CORD, primarily denotes a ſlender Rope, or Cordage. See CORDAGE.

The Word is form'd of the Latin *Chorda*, and that from the *Greek* χορδὴ, *a great Gut*, whereof Strings may be made.

CHORDS, or CORDS, in Muſick, are the Strings, or Lines, by whoſe Vibrations the Senſation of Sound is excited; and by whoſe Diviſions the ſeveral Degrees of Tune are determin'd. See SOUND, and TUNE.

Some ſay, they are called *Cords*, or *Chords*, from the *Greek* χορδαὶ, a Name the Phyſicians give to the Inteſtines; in regard, the Strings of Muſical Inſtruments are ordinarily made of Guts: Others are made of Braſs or Iron Wire; as thoſe of Spinets, Harpſichords, *&c.*

Chords of Gold Wire, in Harpſichords, yield a Sound almoſt twice as ſtrong as thoſe of Braſs: *Chords*, or Strings of Steel, yield a feebler Sound than thoſe of Braſs; as being both leſs heavy, and leſs ductile.

M.

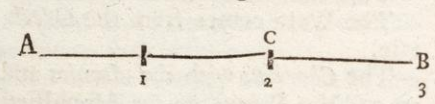
M. *Perrault* obſerves, that of late they have invented a way of changing the *Chords*, to render their Sound more ſtrong, without altering the Tone.

The ſixth *Chord* of Baſs-Viols, and the tenth of large Theorbos, conſiſt of 50 Threads, or Guts: There are ſome of them 100 Foot long, twiſted and poliſh'd with *Equiſetum*, or Horſe-Tail.

For the Diviſion of CHORDS, *ſo as to conſtitute any given Interval*, the Rules are as follow.

1. *To aſſign ſuch a Part of a* Chord A B, *as ſhall conſtitute any Concord, v. g.* a Fifth, or any other Interval, with the whole.

Divide A B into as many Parts, as the greateſt Number of the Interval has Units; *v.g.* the Fifth being 2 : 3, the Line is divided into 3. Of

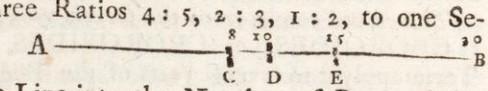


theſe I take as many as the Leſſer Number, *v.g.* 2 = A C; A C is the Part ſought: That is, two Lines, whoſe Lengths are to each other as A B to A C, make a Fifth.

Hence, if it be requir'd to find ſeveral different Sections of the Line A B, *v.g.* ſuch as ſhall be 8ve 5th and 3d *g.* I reduce the given Ratios 1 : 2, 2. 3, and 4 : 5, to one Fundamental; the Series becomes 30 : 24, 20 = 15. The Fundamental is 30; and the Sections ſought are 24; the Third *g*; 20, the Fifth; and 15, the Octave.

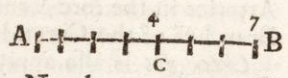
2. *To find ſeveral Sections of a Line* A B, *that from the leaſt, gradually to the whole, ſhall contain a given Series of Intervals in any given Order, viz.* ſo as the leaſt to the next greater contain a Third *g*; that to the next greater, a Fifth; and that to the whole an Octave.

Reduce the three Ratios 4 : 5, 2 : 3, 1 : 2, to one Series; hence we have 8 : 10 : 15 : 30. Divide the Line into the Number of Parts of the greateſt Extreme of the Series, *viz.* 30; we have the Sections ſought at the Points of Diviſion, anſwering the ſeveral Numbers of the Series, *viz.* at the Points, C, D, and E; ſo as A C to A D is a Third, A D to A E a Fifth, to A B Octave.



3. *To divide a Line* A B *into two Parts, to contain betwixt them any Interval, v. g.* a Fourth.

Add together the Numbers containing the Ratio of the Interval, *v.g.* 3 : 4; and the Line into as many Parts as the Sum, *v.g.* 7; the Point of Diviſion anſwering to any of the given Numbers, *v.g.* 4 or C, gives the thing ſought.



4. *For the harmonical Diviſion of* CHORDS. *To find two Sections of a Line, which with the whole ſhall be in harmonical Proportion, with regard to their Quantity.*

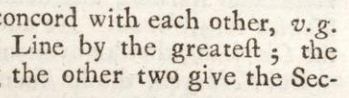
Take any three Numbers in harmonical Proportion, as 3 — 4 — 6; and divide the whole Lines into as many Parts as the greateſt of theſe three Numbers, *v.g.* 6; and at the Points of Diviſion anſwering the other two Numbers, *v.g.* 3 and 4, you have the Sections ſought.

5. *To find two Sections of a Line, which together with the whole ſhall be harmonical, with reſpect to Quantity or Tune.*

Take any three Numbers concord with each other, *v.g.* 2. 3. and 8, and divide the Line by the greateſt; the Points of Diviſion anſwering the other two give the Sections ſought.

6. *To divide a* Chord A B, *in the moſt ſimple manner, ſo as to exhibit all the original Concords.*

Divide the Line into two equal Parts at C, and ſubdivide the Part C B into equal Parts at D; and again, the Part C D into two equal Parts at E. Here A C to A B is an Octave; A C to A D a Fifth; A D to A B a Fourth; A C to A E a Third; A E to A D a Third; D C A E to E B a Sixth 9; A E to A B a Sixth C. See MONOCHORD; ſee alſo TUNE, CONCORD, HARMONY, *&c.*



Chord is alſo us'd in Muſick, for the Note, or Tone to be touch'd, or ſounded; in which Senſe, it is applicable to all the Intervals of Muſick. See CONCORD.

In this Senſe, the Fifth is ſaid to conſiſt of five *Chords*, or Tones. See FIFTH, *&c.*

CHORD, CHORDA, in Geometry, a right Line connecting the two Extremes of an Arch. See ARCH.

Or, it is a right Line, terminated at each Extreme in the Circumference of a Circle, without paſſing thro' the Centre; and dividing the Circle into two unequal Parts, call'd *Segments*: ſuch is the Line A B, Plate *Geometry*, Fig. 6.

The *Chord of an Arch*, is a right Line drawn from one Extremity of an Arch to the other; call'd alſo the *Subtenſe*.

The *Chord of the Complement of an Arch*, is the *Chord* that ſubtends the reſt of the Arch; or ſo much as makes up the Arch a Semicircle. See COMPLEMENT.

The *Chord* is perpendicular to a Line drawn from the Centre of the Circle to the Middle of the Arch, as C E; and has the ſame Diſpoſition thereto, as the *Chord*, or String of a Bow, has to the Arrow: which occaſion'd the antient Geometricians to call this Line the *Chord* of the Arch, and the other the *Sagitta*, or Arrow; the former of which Names is ſtill continu'd, tho the latter is diſus'd. What the Antients call'd *Sagitta*, is now term'd the *Sine of the Complement*. See SAGITTA.

Half the *Chord* of the double Arch B *o*, is what we now call the *Right Sine*; and the Exceſs of the Radii beyond the *Sagitta o* E, the *Verſed Sine*. See SINE.

The *Chord* of an Angle, and the *Chord* of its Complement to a Semicircle, are the ſame thing. The *Chord* of 50 Degrees is alſo the *Chord* of 130.

'Tis demonſtrated, in Geometry, that the Radius C E, biſſecting the *Chord* B A in D, does alſo biſſect the Arch in E, and is perpendicular to the *Chord* A B; and *vice verſa*. And again, if the right Line N E biſſect the *Chord* A B, and be perpendicular thereto; that it paſſes thro' the Centre, and does biſſect both the Arch A E B, and the Circle A N B.

Hence we derive ſeveral uſeful Corollaries: as, 1. To divide a given Arch A B into two equal Parts. Draw a Perpendicular to the middle Point D E of the *Chord* A B; this biſſects the given Arch A B.

2. To deſcribe a Circle, that ſhall paſs thro' any three Points A, B, C, Fig. 7. From A and C deſcribe Arches interſecting in D and E; and alſo others, G and H, from C and B: draw the right Lines D E and H G. The Point of Interſection I, is the Centre of the Circle to be deſcrib'd thro' A, B, and C.

Demonſt. For the Points A C and C B are in the Periphery of ſome Circle; and therefore, the Lines A C and C B are *Chords*. But E D is perpendicular to A C, and G H to B C; E D biſſects A C, and G H biſſects B C; wherefore each paſſes thro' the Centre. Now as D E and G H only interſect in I; I will be the Centre of a Circle, paſſing thro' the given Points A, C, and B.

Hence, aſſuming three Points in the Periphery or Arch of any Circle, the Centre may be found, and the given Arch compleated.

Hence alſo, if three Points of one Periphery do agree or coincide with three Points of another; the whole Peripheries agree, and therefore the Circles are equal.

Hence, laſtly, every Triangle may be inſcrib'd in a Circle.

The Chord *of an Arch* A B, (Fig. 7.) *and the Radius* C E *being given; to find the* Chord *of the half Arch* A E. From the Square of the Radius C E, ſubtract the Square of half the given *Chord* A D, the Remainder is the Square of *o* C; from which extract the ſquare Root = D C: This ſubtracted from the Radius E C, leaves *o* E. Add the Squares of A E and E *o*; the Sum is the Square of A E: whence, the reſt being extracted, we have the *Chord* of half the Arch A E.

Line of CHORDS, is one of the Lines of the Sector and Plain Scale. See its Deſcription and Uſe under the Words SECTOR, and PLAIN SCALE.

CHORD, CHORDA, in Anatomy, a little Nerve extended over the *Membrana Tympani*, or Drum of the Ear. See TYMPANUM.

Anatomiſts are not agreed about the Uſe of the *Chorda Tympani*: Some ſay, it ſerves to vary and modify the Sound of the *Tympanum*, in the ſame manner as the Strings, or Braces, ſtretch'd over the War-Drum. Others will have it to be no more than a Branch of the fifth Pair. See EAR.

CHORDAPSUS, in Medicine, a Diſeaſe of the Inteſtines, otherwiſe call'd *Miſerere mei*: Tho ſome ſay 'tis only a Species of the *Miſerere*. See MISERERE.

Galen defines it, a Humour or Inflation of the ſmall Inteſtines, which makes them appear fill'd, and ſtretch'd like a *Chord*. *Archigenes* makes it a kind of *Miſerere*; conſiſting in a Tumor in a certain Place of the ſmall Inteſtines, which ſinks in, and gives way to the Hand when preſs'd: He adds, that it's exceeding dangerous, and ordinarily kills in three or four Hours, unleſs it come to Suppuration; which, however, does not take away all Danger.

'Tis probable, however, that the *Chordapſus* is in reality nothing elſe but the *Miſerere*. *Celſus* informs us, that in his Time they were the ſame thing.

The Word comes from the *Greek* χορδη, *Chord*, and απτεσθαι, *to touch*.

CHORDEE, in Medicine, an Inflammation and Contraction of the *Frænum*, and under Part of the *Penis*; ſo as to render Erection painful. See ERECTION.

It happens in Gonorrhæas, and is generally proportional to the Degree of the *Virus* receiv'd; ſo that in virulent Gonorrhæas, it is uſually a very troubleſome Symptom. See GONORRHÆA.

It proceeds from the Acrimony of the Matter which runs from the Urethra, irritating the under Part of the Yard; by which it is, as it were, ty'd or held forcibly downward in Erection, eſpecially its *Frænum*. When the

Acri-

Acrimony is considerable, it sometimes gives rise to unnatural Erections, or the Symptom call'd a Priapism. See PRIAPISM.

If the *Chordee* be violent, or does not decrease proportionally to the other Symptoms in Gonorrhæas, an Emetic of Turpeth Mineral is usually given with success; it causing a Revulsion from the Part. See VENEREAL *Disease*.

CHOREA *Sancti Viti*, in Medicine, a Distemper which some Authors reckon as an hysterical Case; and others a Species of a *Furor Uterinus*.

It is suppos'd to proceed from a Turgency and Repletion of hot Juices, especially in the Uterine Vessels, which raises violent Motions; and that only Females are affected by it: But Dr. *Sydenham* more properly observes it to be an universal Convulsion, which sometimes continues several Weeks, nay Months, without intermission.

Those affected with this Disease, are continually in strange Motions with their Head, Legs, and Arms; so that they are unfit to feed themselves. It differs from other Convulsions, in that the Motions are not painful, nor any of the Extremities or Parts forcibly contracted, or extended for any time. Boys and Girls are most subject to this Disease, and that from ten Years of Age to Puberty; tho the latter oftner than the former.

It sometimes precedes the first Eruption of the Menses; in which Case, proper Cathartics, with Calomel and Deobstruents, are generally us'd; otherwise, Evacuations and Antiepileptics, as in other nervous Distempers.

It takes the Name of *Chorea Sancti Viti*, or Saint *Vitus*'s Dance, from the Chapel of S. *Vitus*; because it was suppos'd to seize Persons about *May*, which was the Time of the Year they visited that Chapel, and to make them leap and dance about in a strange manner.

CHOREPISCOPUS, an Episcopal Officer in the antient Church, about whose Function the Learned are extremely divided. See BISHOP.

M. *de la Roque* thinks, that the *Chorepiscopi* were the Country Bishops, and had the same Authority in Villages, that the Bishops had in Cities; but that, by degrees, as the Church flourish'd, the Country Bishops grew too proud for the Country Life; and imagin'd the Episcopal Honour debas'd, and render'd contemptible in a Rural Retreat. Accordingly, the *Sardic* Council prohibited the Consecration of Bishops in the Country, or in little Towns; that the Episcopal Character might always be sustain'd by the Splendor of great Cities.

M. *du Bois* adds, that tho the *Chorepiscopi* exercis'd most of the Episcopal Functions in Country Towns, &c. yet they were not ordain'd like Bishops, nor vested with their whole Authority, but were only a step above mere Priests.

M. *le Maitre* is of Opinion, that the Office of a *Chorepiscopus*, which is that now discharg'd by the Rural Deans, was to overlook, under the Bishops, those Parishes that were at a distance from the See in the Country. He adds, they were abolish'd, by reason they usurp'd the Authority of the Bishops. See RURAL *Dean*.

Others, again, say, the *Chorepiscopi* were properly what we now call Bishops *in partibus*; to whom, in quality of Suffragans, were committed the Administration of Dioceses, during the Bishop's absence. See SUFFRAGAN.

Others rather think, the Institution of *Chorepiscopi* gave occasion to that of the *Episcopi in partibus*; which last, however, have Privileges the others had not.

Lastly, others take the *Chorepiscopi* to be no more than Priests, vested by the Bishops with most of their Authority in Country Places.

The Council of *Antioch*, held in 342, appoints, 'That 'those in Burghs and Villages, call'd *Chorepiscopi*, know 'the Bounds prescrib'd them: They may ordain Readers, 'Subdeacons, and Exorcists, but not Priests or Deacons, 'without the Bishop whereon they depend. The *Chorepis-* 'copus shall be ordain'd by the Bishop of the City.

Pope *Leo*, in 936, says, the *Chorepiscopi* mayn't ordain Priests, or consecrate Churches: yet Pope *Nicholas*, in a Letter to *Raoul*, in the IXth Century, declares that the *Chorepiscopi* shall have the Episcopal Functions; and that the Ordinations of Priests and Deacons perform'd by them are valid.

The first time we read of *Chorepiscopi* in the East, is in the Beginning of the IVth Century; and in the West, about the Year 439. They ceas'd, both in the East and West, in the Xth Century.

The Word comes from the *Greek* χωρα, *a Region*, or little Country, and Επισκοπος, *Bishop*.

CHOREPISCOPUS is also the Name of a Dignity still subsisting in some Cathedrals, particularly in *Germany*; signifying the same with *Chori Episcopus*, or Bishop of the Choir.

In the Church of *Cologne*, &c. the first Chantor is call'd *Chorepiscopus*.

The Word, in this Sense, does not come from χωρα, but χορος, *Choir*, &c.

CHOREUS, CHORÆUS, a Foot in the *Latin* Poetry, more commonly call'd *Trochæus*. See TROCHÆUS.

CHORIAMBUS, in the *Latin* Poetry, a Foot compounded of a *Choræus*, or *Trochæus*; and an *Iambus*.

It consists of four Syllables; of which the first and last are long, the middle ones short.

CHORION, the exterior Membrane that invests the *Fœtus* in the Womb. See FOETUS.

'Tis very thick and strong; on the inside, where it joins another Membrane, call'd *Amnios*, very smooth; but rough and uneven without side; interspers'd with a great number of Vessels, and fasten'd to the Matrix, or Womb, by means of the *Placenta*, which adheres very closely to it. See PLACENTA.

This Membrane is found in all Animals.

The Word comes from the *Greek* χωριον, *capere*, to contain.

The *Chorion*, with the *Amnios* and *Placenta*, make what we call the *Secundine*, or After-Birth. See SECUNDINE.

CHORIST, or CHORISTER, a Chantor, or Singer in the Choir. See CHOIR.

CHOROBATES, a kind of Level us'd among the Antients; compos'd of a double Square, made in form of a T, describ'd by *Vitruvius*, Lib. viii. See LEVEL.

The Word comes from the *Greek* χωροβατην, to over-run a Country.

CHOROGRAPHY, the Art of making a Map, or Description of some Country, or Province.

Chorography is distinguish'd from Geography, as the Description of a particular Country is from that of the whole Earth. See GEOGRAPHY.

From *Topography* it is distinguish'd, as the Description of the same Country, is from that of a single Place in it.

The Word comes from the *Greek* χωρα, *Region*.

CHOROIDES, or CHOROEIDES, in Anatomy, a Term apply'd to several Parts of the Body; bearing some resemblance to the *Chorion*.

The Word is form'd from the *Greek* χοριον, *Chorion*, and ειδαι, *to resemble*; or ειδος, *Image*, *Likeness*.

Thus, *Choroides* is us'd for the inner Membrane that immediately invests the Brain; so called as being intermingled with a great Number of Blood-Vessels, like the *Chorion*; but more usually call'd the *Pia Mater*, or *Meninx tenuis*. See MENINX, and MATER.

Plexus, or *Lacis* CHOROIDES, is a Knot of Veins and Arteries in the fore Ventricles of the Brain, wove out of the Branches of the Carotid. See PLEXUS, and BRAIN.

Choroides is also apply'd to the inner and posterior Tunic of the Eye, contiguous to the *Sclerotica*. See EYE.

It is soft, thin, and black; and its inner, or concave Surface, very smooth and polite. It has its Name from its being interspers'd with Vessels.

To the *Choroides* is fix'd the *Uvea*. See UVEA.

M. *Mariotte* maintains, that Vision is perform'd rather in the *Choroides* than the *Retina*: in which he agrees with *Bar. Torinus*, and is seconded by M. *Mery*; but most other Authors are of a different Sentiment. See VISION, RETINA, &c.

Next under the *Choroides* is the *Retina*. *Ruysch*, indeed, says, he has found another Tunic between the *Choroides* and *Retina*; and denominates it from himself, the *Tunica Ruyschiana*. He adds, that it grows so firmly to the *Choroides*, that 'tis overlook'd in the common Dissections.

But *Verheyen*, tho he found the *Choroides* of a Bird divisible into two Membranes, could never separate those of the human Eyes; and therefore thinks they needed not any new Name.

The *Choroides* is black in Men; in Lions, Camels, Bears, Sheep, Cattle, Dogs, Cats, and most Fishes, of a shining Colour, like the Brilliant of Silver, or the Lustre of Oriental Pearl; and makes what Naturalists call the *Tapis*, or Colour of the Eye. See TAPIS.

CHORUS, in Dramatic Poetry, one, or more Persons, present on the Stage during the Representation, and suppos'd to be By-standers thereto, without any particular Share or Interest in the Action. See DRAMA.

Tragedy in its Origin, M. *Dacier* observes, was no more than a single *Chorus*, who trod the Stage alone, and without any other Actors; singing Dithrambics, or Hymns in honour of *Bacchus*.

Thespis, to relieve the *Chorus*, added an Actor, who rehears'd the Adventures of some of their Heroes. *Æschylus*, finding a single Person too dry an Entertainment, added a second; and at the same time reduc'd the singing of the *Chorus*, to make more room for the Recitation.

Every thing introduc'd between the four Songs of the *Chorus*, they call'd by the Term *Episode*; and those four Songs made the four Intervals, or Acts of the Piece. See EPISODE, ACT, &c.

But when once Tragedy began to be form'd, those Recitatives, or Episodes, which at first were only intended as accessory Parts, to give the *Chorus* a breathing Time, became now the principal Part of the Tragedy: And where-

as,

as, before, they were taken from various Subjects, they were now all drawn from one and the same.

The *Chorus*, by degrees, became inserted and incorporated into the Action, to which it was only intended as an Addition or Ornament. Sometimes the *Chorus* was to speak, and then their Chief, whom they call'd *Coryphæus*, spoke in behalf of all the rest: The singing was perform'd by the whole Company; so that when the *Coryphæus* struck into a Song, the *Chorus* immediately join'd him. See CORYPHÆUS.

Besides the four Songs, which made the Division of the Piece, and which were manag'd by the *Chorus*, the *Chorus* sometimes, also, join'd the Actors in the Course of the Representation, with their Plaints and Lamentations; on occasion of any unhappy Accidents that befel 'em.

But the proper Function of the *Chorus*, now that Tragedy was form'd, and that for which it seem'd chiefly retain'd, was to shew the Intervals of the Acts: While the Actors were behind the Scenes, the *Chorus* engag'd the Spectators; their Songs usually turn'd on what was just exhibited; and were not to contain any thing but what was suited to the Subject, and had a natural Connection with it: so that the *Chorus* concurr'd with the Actors for advancing the Action.

'Tis a Fault observ'd in *Euripides*'s Tragedies, that his *Chorus*'s are detach'd from the Action, and not taken from the same Subject. There were some other Poets, who to save the Pains of composing *Chorus*'s, and adapting them to the Piece, contented themselves with invented Songs, which had no relation to the Action. These Foreign *Chorus*'s were the less pardonable, as the *Chorus* was esteem'd to act a Part in the Piece; and to represent the Spectators, who were look'd on as interested therein; insomuch that the *Chorus* was not always to be mute, even in the Course of the Acts.

In the modern Tragedies, the *Chorus* is laid aside; and the Fiddles supply its Place. M. *Dacier* looks on this Retrenchment as of ill consequence; and thinks it robs Tragedy of a great part of its Lustre. He adds, that 'tis ridiculous to have a Tragic Action broke, and interrupted by impertinent Flourishes from the Musick Box: and to have the Spectators, who are suppos'd to be mov'd by the Representation, become all of a sudden calm and easy, break off at the height of a Passion, and amuse themselves peaceably with a Foreign Entertainment. The Re-establishment of the *Chorus* he judges necessary, not only for the Embellishment and Regularity of the Piece; but also, in regard it was one of its principal Functions, to redress and correct any Extravagancies that might fall from the Mouths of the Actors, when under any violent Passion, by prudent, and virtuous Reflections.

That which occasion'd the Suppression of the *Chorus*, was its being incompatible with certain Complots, and secret Deliberations of the Actors. For 'tis in no wise probable, that such Machinations should be carry'd on in the Eyes of Persons interested in the Action. As the *Chorus*, therefore, never went off the Stage, there seem'd a Necessity of laying it aside, to give the greater Probability to these kind of Intrigues, which require Secrecy. See TRAGEDY.

M. *Dacier* observes, there was a *Chorus*, or *Grex*, also in the antient Comedy; but that too is suppress'd in the new: chiefly because made use of to reprove Vices, by attacking Persons. See COMEDY.

The *Chorus* in Comedy was at first no more than a single Person, who spoke in the antient Compositures for the Stage: The Poets, by degrees, added to him another; then two, afterwards three, and at last more: so that the most antient Comedies had nothing but the *Chorus*, and were only so many Lectures of Virtue.

To give the CHORUS, among the *Greeks*, was to purchase a Dramatic Piece of the Poet, and defray the Expences of its Representation.

The Person who did this was call'd *Choragus*. At *Athens*, the Charge of *Choragus* was laid on the Archon; at *Rome* on the Ædiles. See CHORAGUS.

CHORUS is likewise us'd in Musick, where, at certain Periods of a Song, the whole Company are to join the Singer, in repeating certain Couplets, or Verses.

CHOSE, i.e. *thing*, in Law, is us'd in various Circumstances, and with various Epithets; as,

CHOSE *Local*, something annex'd to a Place, *v.g.* a Mill.

CHOSE *Transitory*, something movable, and which may be transported from place to place.

CHOSE *in Action*, is not any thing Corporeal, but only a Right, *v. g.* an Annuity, Obligation, Covenant, *&c.*

Chose in Action may also be called *Chose in Suspence*, as having no real Existence, and not being properly in Possession.

CHRISM, Oil consecrated by the Bishop, and us'd in the *Romish* and *Greek* Churches, in the Administration of Baptism, Confirmation, Ordination, and Extreme Unction. See OIL, ORDINATION, EXTREME UNCTION, *&c.*

The *Chrism* is prepar'd on *Holy Thursday* with a world of Ceremony. In *Spain*, 'twas antiently the Custom for the Bishop to take one third of a *Sol* for the *Chrism* distributed to each Church; on account of the Balsam that enter'd its Composition.

In *England* we had likewise CHRISM *Pence*, *Chrismatis Denarii*, or *Chrismales Denarii*; which was a Tribute paid to the Bishop by the Parish Clergy, for their *Chrism*, consecrated at *Easter* for the ensuing Year: but this was afterwards condemn'd as Simoniacal.

The Word comes from the *Greek* χρισμα, which signifies the same thing.

Du Cange observes, there are two Kinds of *Chrism*; the one prepar'd of Oil and Balsam, us'd in Baptism, Confirmation, and Ordination; the other of Oil alone, consecrated by the Bishop, us'd antiently for the Catechumens, and still in Extreme Unction.

The *Maronites*, before the Time of their Reformation, besides Oil and Balsam, us'd Musk, Saffron, Cinnamon, Roses, white Incense, and several other Drugs mention'd by *Reynoldus*, in 1541, with the Doses of each. The Jesuit *Dandini*, who went to Mount *Libanus* in quality of the Pope's Nuntio, ordained, in a Synod held there in 1596, that *Chrism*, for the future, should be made only of two Ingredients, Oil and Balsam; the one representing the human Nature of Jesus Christ, the other his Divine Nature.

The Action of imposing the *Chrism*, is call'd CHRISMATION: This the generality of the *Romish* Divines hold to be the next Matter of the Sacrament of Confirmation.

The *Chrismation* in Baptism, is perform'd by the Priest; that in Confirmation by the Bishop: That in Ordination, *&c.* is more usually styl'd *Unction*. See UNCTION.

CHRISOM, CHRISMALE, was antiently the Face-cloth, or piece of Linen laid over the Child's Head when he was baptiz'd.

Whence, in our Bills of Mortality, such Children which die in the Month are call'd *Chrisoms*; and the Time between the Child's Birth and Baptism, was call'd *Chrisomus*.

CHRIST, an Appellation usually added to *Jesus*; and, together therewith, denominating the *Messiah*, or Saviour of the World. See JESUS, and MESSIAH.

The Word in the original *Greek* χριστὸς, signifies *Anointed*, of χρίω, *Inungo*, I anoint.

Sometimes the Word *Christ* is us'd singly, by way of *Antonomasis*, to denote *a Person sent from God*, an anointed Prophet, or Priest, *&c.*

Order of CHRIST, a Military Order, founded in 1318, by *Denis* I. King of *Portugal*, to animate his Nobles against the *Moors*.

Pope *John* confirm'd it in 1320, and appointed the Knights the Rule of S. *Bennet*. *Alexander* VI. permitted them to marry.

The Order became afterwards insensibly reunited to the Crown of *Portugal*; and the King took upon him the Administration thereof.

The Arms of the Order are, Gules, a Patriarchal Cross, charg'd with another Cross Argent. They had their Residence, at first, at *Castromarin*; afterwards they remov'd to the City of *Thomar*, as being nearer the *Moors* of *Andalusia*, and *Estramadura*.

Christ is also the Name of a Military Order in *Livonia*, instituted in 1205, by *Albert* Bishop of *Riga*. The End of their Institution was to defend the new Christians who were converted every Day in *Livonia*, but persecuted by the Heathens.

They wore on their Clokes a Sword with a Cross over it; whence they were also denominated *Brothers of the Sword*.

CHRISTENING. See BAPTISM.

CHRISTIAN, something that relates to *Christ*. See CHRIST.

The King of *France* bears the Title, or Sirname of the *Most Christian King*, *Rex Christianissimus*. The *French* Antiquaries trace the Origin of the Appellation up to *Gregory* the Great; who writing a Letter to *Charles Martel*, occasionally gave him that Title, which his Successors have since retain'd. See TITLE.

Lambecius, a *German*, in the IIId Tome of the *Emperor's Library*, holds, that the Quality of *Most Christian* was not ascrib'd to the antient *French* Kings, *Louis le Debonair*, &c. as Kings of *France*, but as Emperors of *Germany*; but the *French* Historians have refuted this Plea.

CHRISTIAN *Religion*, that instituted by *Jesus Christ*. See RELIGION, and REVELATION.

CHRISTIAN *Name*, that given at Baptism. See NAME.

CHRISTIAN *Church*. See CHURCH.

CHRISTIAN *Court*, or *Curia Christianitatis*, is the Ecclesiastical Jurisdiction; in contradistinction to Civil Courts, which are call'd King's Courts, *Curiæ Domini Regis*. See COURT.

CHRISTIAN is peculiarly and absolutely us'd for a Person who believes in Christ, and is baptiz'd in his Name.

The Name *Chriſtian* was firſt given at *Antioch*, to ſuch as believ'd in Chriſt, as we read in the *Acts*: Till that time they were call'd *Diſciples*.

CHRISTIANS *of St.* John, a Sect of *Chriſtians*, very numerous in *Balſara* and the neighbouring Towns.

They formerly inhabited along the River *Jordan*, where St. *John* baptiz'd; and 'twas thence they had their Name. But after the *Mahometans* became Maſters of *Paleſtine*, they retir'd into *Meſopotamia* and *Chaldea*.

They hold an Anniverſary Feaſt of five Days; during which, they all go to their Biſhops, who baptize them with the Baptiſm of St. *John*: Their Baptiſm is alſo perform'd in Rivers, and that only on Sundays.

They have no Notion of the third Perſon in the Trinity; nor have they any Canonical Books, but abundance full of Charms, *&c.* Their Biſhopricks deſcend by Inheritance, as our Eſtates do; tho they have the Ceremony of an Election.

CHRISTIANS *of S.* Thomas, or *San Thomas*, a Sect of antient *Chriſtians*, found in the *Eaſt-Indies*; when the *Europeans* touch'd at the Port of *Calecut*; who pretend to be deſcended from thoſe S. *Thomas* converted in the *Indies*: whence the Name.

The Natives call 'em, by way of Contempt, *Nazareans*; their more honourable Appellation is *Mappuley*.

Some learned Men in *Europe* ſay, 'twas not St. *Thomas* the Apoſtle that converted that Country, but another St. *Thomas*: others ſay, 'twas a *Neſtorian* Merchant, call'd *Thomas*. 'Tis certain they are *Neſtorians*, and have been ſo a long time; inſomuch, that Chriſtians of *St. Thomas*, is now eſteem'd by many a Name of a Sect.

They have a Patriarch, who reſides at *Moſoul*.

The Pope has made ſeveral Attempts to reduce 'em under his Obedience, but to no purpoſe.

CHRISTMAS, the Feaſt of the Nativity of Jeſus Chriſt. See FEAST, NATIVITY, *&c.*

It appears from S. *Chryſoſtom*, that in the primitive Times, *Chriſtmas* and Epiphany were celebrated as one and the ſame Feaſt: That Father obſerves, it was but a little while that *Chriſtmas* had been celebrated at *Antioch* on the 25th of *December*, as a diſtinct Feaſt; and that the Uſe thereof came from the Weſt. He adds, that the *Armenians* made but one Feaſt of them, as low as the XIIth Century. See EPIPHANY.

CHRISTOLYTES, a Sect of Hereticks mention'd by *Damaſcenus*; ſo call'd, becauſe they deſtroy'd *Chriſt*: maintaining, that he deſcended into Hell, Body and Soul; and that he left both there; aſcending to Heaven with his Divinity alone.

The Word comes from the *Greek* χριὼ, and λυω, *I reſolve*.

CHROMA, in Rhetoric, a *Colour*, or fair Pretence. See COLOUR.

The Word is *Greek* χρῶμα, which literally denotes *Colour*.

CHROMA, in Muſick. See CHROMATIC.

CHROMATIC, in the antient Muſick, the ſecond of the *Genera*, or Kinds, into which the Conſonant Intervals were ſubdivided into their concinnous Parts. See GENUS.

The other two Kinds were, the *Enharmonic*, and the *Diatonic*. See ENHARMONIC, and DIATONIC.

The *Chromatic* abounds in Semitones: It had its Name, either by reaſon the *Greeks* mark'd it with the Character of Colour, which they call χρῶμα; or, as *P. Parran* ſays, becauſe the *Chromatic* Kind is a Medium between the other two, as Colour is between black and white: or becauſe the *Chromatic* Kind varies and embelliſhes the *Diatonic* Kind, by its Semitones; which have the ſame Effect in Muſick, with the Variety of Colours in Painting.

Ariſtoxenus divides the *Chromatic* Genus into three Species; the *Molle*, *Hemiolion*, and *Tonicum*. *Ptolemy* into *Molle* or *Antiquum*, and *Intenſum*. See SPECIES.

Theſe Species were alſo call'd *Chroai*, or Colours of the Genera: the *Molle* expreſſes a Progreſſion by ſmall Intervals, the *Intenſum* by greater.

The *Chromatic* and *Enharmonic* Kinds, only contain the ſmalleſt of the *Diatonic* Degrees; ſo as they have the ſame proportion to the *Diatonic*, as Fractions have to Integers.

Boetius, and after him *Zarlin*, attribute the Invention of the *Chromatic* Genus to *Timotheus* a *Mileſian*, in the Time of *Alexander* the Great. The *Spartans* baniſh'd it their City, by reaſon of its ſoftneſs.

Mr. *Malcolm* obſerves, that we are at a loſs for what uſe the Antients could make of theſe Diviſions, and Subdiviſions into *Genera* and *Species*. All acknowledg'd the *Diatonic* to be the true Melody; the others ſeem only humorous Irregularities, calculated to pleaſe the Fancy by their novelty and oddneſs; and were beſides ſo very difficult, that few, if any, are ſaid to have ever practis'd them accurately. See MUSICK.

CHROMATIC is us'd, in Painting, for the Colouring; which makes the third Part of the Art of Painting. See COLOURINGS.

CHRONIC, CHRONICAL, in Medicine, is apply'd to a ſlow, or inveterate Diſeaſe, which laſts a long time; as the *Gout*, *Hæmorrhoids*, *Fiſtula*, *Dropſy*, *Aſthma*, &c. See DISEASE.

Chronic Diſeaſes ſtand in oppoſition to *acute* Diſeaſes, which are ſpeedy, and haſten to a Criſis; as *Fevers*, *Small-Pox*, &c. See ACUTE.

Chronic Diſeaſes are uſually owing either to ſome natural Defect in the Conſtitution; or to an irregular manner of living. The Word comes from the *Greek* χρόνος, *Time*.

Moſt of the *Chronical* Diſeaſes, ſays Dr. *Cheyne*, the Infirmities of old Age, and the ſhort Periods of the Lives of *Engliſhmen*, are owing to Repletion: This is evident hence, that Evacuation of one kind or another, is nine Parts in ten of their Remedy. See REPLETION, and EVACUATION.

The Sources of *Chronical* Diſtempers, ſays the ſame Author, are, 1. Viſcidity in the Juices, or the overlargeneſs of their conſtituent Particles; which not being ſufficiently broken by the concoctive Powers, ſtop, or retard the Circulation. Or, 2. Too great abundance of ſharp acrimonious Salts; whereby the Juices themſelves are render'd ſo corroſive, as to burſt or wear out the Solids. Or, 3. A Relaxation, or want of a due Force and Springineſs of the Solids themſelves.

An Exceſs in the Quantity of our Meat and Drink begets the firſt; the bad Condition of the ſame Foods the ſecond; and both together, with want of due Exerciſe, the third. See FOOD, EXERCISE, *&c.*

CHRONICLE, CHRONICON, a Hiſtory digeſted in order of Time; tho the Term is ſeldom us'd but for old Hiſtories, as *Hollinſhed's Chronicle*, *Stow's Chronicle*, &c. See HISTORY, *&c.*

CHRONOGRAM, a kind of Verſe, the figurative, or numeral Letters thereof, being join'd together, make up the Year of our Lord, *&c.*

The Word is compos'd of χρόνος, *Time*, and γραμμα, *Letter*.

CHRONOLOGY, the Art of meaſuring and diſtinguiſhing Time; or the Doctrine of Epochas, *&c.* See TIME, EPOCHA, *&c.*

Sturmius divides *Chronology* into five diſtinct Branches, *viz.* Metaphyſical, Phyſical, Political, Hiſtorical, and Eccleſiaſtical; according to the various Relations, or Habitudes wherein Time is conſider'd; *viz.* as in it ſelf, as connected and ſubjected to the Affections, States, and Alterations of natural Things; as accommodated to Civil Uſes; as match'd with Events that paſs in the World; and particularly, as it relates to the Celebration of *Eaſter*. See HOUR, DAY, WEEK, MONTH, YEAR, CALENDAR, CYCLE, PERIOD, EPACT, EASTER, *&c.*

There is more difficulty in *Chronology* than every one is aware of: It requires not only the Knowledge of Aſtronomy and Geography, and conſequently that of Arithmetic, Geometry, and Trigonometry, both plain and ſpherical; but alſo a world of Application to the antient Monuments. Its uſe is very great: 'tis call'd one of the Eyes of Hiſtory; and ſerves good Purpoſes in Theology.

The Word is compounded of the *Greek* χρόνος, *Time*, and λογος, *Diſcourſe*.

The more eminent Writers on *Chronology*, among the Antients, are *Julius Africanus* in the IIId Century; *Dionyſius Exiguus*, *Euſebius*, and *Cyril*.

Among the Moderns, *Bede*, *Funccius*, *Mercator*, *Lilius*, *Clavius*, *Scaliger*, *Vieta*, *Petavius*, *Caſſini*, *Munſter*, *Calviſius*, *Hardouin*, *Capellus*, *Uſher*, *Marſham*, *Helvicus*, *Strauchius*, *I. Voſſius*, and *Beveridge*.

CHRONOMETER, a general Name for any Inſtrument us'd in the meaſuring of Time: In this Senſe, Clocks, Watches, Dials, *&c.* are *Chronometers*.

Tho there are ſome Inſtruments peculiarly call'd by the Name *Chronometer*; particularly one deſcrib'd by M. *Sauveur*, in his *Principles of Acouſtics*.

The Word is compos'd of χρονος, *Time*, and μετρον, *menſura*, Meaſure.

CHRYSALIS, a Term us'd by the modern Writers of Natural Hiſtory of Inſects, in the ſame Senſe with *Nympha*. See NYMPHA.

The Word ſeems to imply a peculiar yellow, or golden Colour, uſual in the *Nympha*; from the *Greek* χρυσος, *Gold*: but this is purely accidental, and is not found in all *Nymphæ*.

Some confine the Word to the *Nympha* of Butterflies and Moths.

CHRYSARGYRUM, a Tribute formerly levy'd on Courteſans, and other Perſons of evil Life.

Zozimus ſays, that *Conſtantine* firſt ſet it on foot; tho there appear ſome Traces of it in the Life of *Caligula* by *Suetonius*; and that of *Alexander* by *Lampridius*. *Evagrius* ſays, *Conſtantine* found it eſtabliſh'd, and had ſome Thoughts of aboliſhing it.

It was paid every four Years: Some ſay, all petty Traders were liable to it. It was aboliſh'd by *Anaſtaſius*.

M. *Godeau* thinks, the *Chryſargyrum* was a general Tribute, levied every four Years, on Perſons of all Conditions, Rich and Poor, Slaves and Freemen: nay, even on all Animals, as low as Dogs; for each whereof they paid ſix *Oboli*.

Hoffman ſays, it was paid in Gold and Silver; whence its Name χρυσὸς, *Gold*, and ἀργυρὸς, *Silver*.

CHRYSOBERIL, a precious Stone; being a kind of pale Beril, with a Tincture of yellow. See BERIL.

CHRYSOCOLLA, a Mineral us'd in the ſoldering of Gold, &c. whence its Name. See GOLD, SOLDERING, &c.

It is found in Mines of Gold, Silver, Copper, and Lead: Its Colour is various, according to that of the Matter in which it is found; yellow if among Gold, white in Silver, green in Copper, and black in Lead. The *Arabs*, and Inhabitants of *Guzuratte*, call it *Tincar*, or *Tincal*: In *Europe*, where 'tis found in various Places, 'tis confounded with the common Borax.

The beſt is that which is green, like an Emerald, found among Copper: that found among the other Metals is too much waſh'd.

Some reckon the *Chryſocolla* a Species of Nitre.

The Phyſicians uſe it in the Cure of Wounds: Some make an Artificial *Chryſocolla*, by mixing a little of the Natural, ſteep'd in Water, with Wood.

The Term is form'd of the *Greek* χρυσὸς, *Gold*, and κόλλα, *Glue*. See BORAX.

CHRYSOCOLLA is alſo the Name of a ſort of precious Stone, mention'd by *Pliny*, L. xxxvii. cap. 10. who alſo calls it *Amphitanus*: He deſcribes it as of a Gold Colour, and the Figure of a Square; adding, that it has the Virtue of attracting Iron, and even Gold.

But this, in all probability, is fabulous; and the Stone he ſpeaks of is apparently no other than the *Chryſolite*.

CHRYSOLITE, a precious Stone of a yellow Colour. See PRECIOUS *Stone*.

The *Chryſolite* is the Topaz of the Moderns. See TOPAZ.

CHRYSOLITE is alſo a generical Name which the Antients gave to all precious Stones, wherein the yellow, or gold, was the prevailing Colour.

When the Stone was green, they call'd it *Chryſopraſin*: the red and blue too had their particular Denominations, which expreſs'd their Colour; the Gold being ſignify'd by *Chryſo*; which ſtill began the Name.

We know but few of theſe *Chryſolites* now; or rather, they are referr'd to the Species of Stones which they approach the neareſt: the green to the Emerald, the red to the Ruby; and ſo of the reſt.

CHRYSTAL. } See { CRYSTAL.
CHRYSTALLINE. } { CRYSTALLINE.
CHRSTALLIZATION. } { CRYSTALLIZATION.

CHRYSTAL *Mineral*, the ſame as *Sal Prunella*. See PRUNELLA.

CHUPMESSAHITES, a Sect among the *Mahometans*, who believe that Jeſus Chriſt is God, and the true Meſſiah, the Redeemer of the World; but without rendring him any publick or declar'd Worſhip.

Ricaut ſays, there are abundance of theſe *Chupmeſſahites* among the People of faſhion in *Turky*, and ſome even in the Seraglio.

The Word, in the *Turkiſh* Language, ſignifies Protector of the Chriſtians.

CHURCH, the Aſſembly of Perſons united by the Profeſſion of the ſame Chriſtian Faith, and the Participation of the ſame Sacraments.

Bellarmin, and the *Romiſh* Divines, to this Definition add, *Under the ſame Pope, ſovereign Pontiff, and Vicar of Jeſus Chriſt on Earth*: in which Circumſtance it is that the *Romiſh* and Reformed Notion of *Church* differ.

Amelotte, and others, make a viſible Head, or Chief, eſſential to a *Church*: Accordingly, among the Catholics, the Pope; in *England* the King, are reſpectively allow'd Heads of the *Church*. The Biſhop of *Salisbury* ſets aſide the Notion of a viſible Head: Chriſt alone, according to him, is Head of the Church; which Poſition he has maintain'd with infinite Addreſs, in a celebrated Sermon before the King on thoſe Words of our Saviour, *My Kingdom is not of this World*; and in the ſeveral Vindications thereof.

Sometimes, we conſider *Church* in a more extenſive Senſe, and divide it into ſeveral Branches.

The *Church Militant* is the Aſſembly of Faithful on Earth; *Church Triumphant*, that of the Faithful already in Glory: to which the Catholics add the *Church Patient*, that of the Faithful in Purgatory.

The Term *Eccleſia*, ἐκκλησία, ſynonymous with our Church, is us'd in the *Greek* and *Latin* profane Authors for any kind of publick Aſſembly; and even for the Place where the Aſſembly is held.

The Sacred and Eccleſiaſtical Writers ſometimes alſo uſe it in the ſame Senſe; but ordinarily reſtrain the Term to the *Chriſtians*; as the Term *Synagogue*, which originally ſignifies nearly the ſame thing, is in like manner reſtrain'd to the *Jews*. See SYNAGOGUE.

Thus, in the New Teſtament, the *Greek* ἐκκλησία, ſignifies almoſt always, either the Place deſtin'd for Prayer, as 1 *Cor.* xi. 14. or the Aſſembly of the Faithful diffus'd over the whole Earth, as *Epheſ.* v. or the Faithful of a particular City, or Province, as 1 *Cor.* viii. 1,2. or even of a ſingle Family, as *Rom.* xvi. or the Paſtors or Miniſters of a *Church*, as *Matt.* xviii. 17.

The Chriſtian *Church* is frequently divided into *Greek* and *Latin*.

Greek, or Eaſtern CHURCH, comprehends the *Churches* of all the Countries antiently ſubject to the *Greek*, or Eaſtern Empire; and thro' which their Language was carry'd, *i.e.* all the Space extended from *Greece* to *Meſopotamia* and *Perſia*, and thence into *Egypt*; which has been divided ever ſince the Time of the Emperor *Photius*, from the *Roman Church*. See GREEK *Church*.

Latin, or Weſtern CHURCH, comprehends all the *Churches* of *Italy*, *France*, *Spain*, *Africa*, the North, and all other Countries whither the *Romans* carry'd their Language.

Great Britain, part of the *Netherlands*, of *Germany*, and of the North, have been ſeparated hence ever ſince the Time of *Henry* VIII. and conſtitute what we call the *Reform'd Church*, and what the *Romaniſts* call the *Weſtern Schiſm*; as the *Greek Church* does the *Eaſtern* one.

The *Reformed* CHURCH is again divided into the *Lutheran Church*, the *Calviniſt Church*, the *Church of England*, &c. See LUTHERANISM, CALVINISM, &c.

CHURCH is alſo us'd for a Temple, built and conſecrated to the Honour of God; and, antiently, under the Invocation of ſome particular Saint, whoſe Name it aſſum'd. See TEMPLE; ſee alſo CONSECRATION, &c.

In this Senſe, *Churches* are variouſly denominated, according to their Rank, Degree, Diſcipline, &c. as *Metropolitan Church*, *Patriarchal Church*, *Cathedral Church*, *Parochial Church*, *Cardinal Church*, &c. See each under its proper Article, METROPOLIS, PATRIARCH, CATHEDRAL, PAROCHIAL, CARDINAL, &c.

In Eccleſiaſtical Writers, we meet with *Grand Church*, for the chief Church of a Place; particularly in the *Greek* Liturgy, for the *Church* S. *Sophia* at *Conſtantinople*, the See of the Patriarch, founded by *Conſtantine*, and conſecrated under *Juſtinian*: It was at that time ſo magnificent, that *Juſtinian* is ſaid to have cry'd out in the Conſecration thereof ἐνίκησάσε Σολομὼν, *I have out-done thee*, Solomon. The Dome, which is ſaid to have been the firſt that was built, is 330 Foot Diameter. See DOME.

The firſt *Church* publickly built by the Chriſtians, ſome Authors maintain to be that of S. *Saviour* at *Rome*; founded by *Conſtantine*: others contend, that ſeveral *Churches* abroad, call'd by the Name of S. *Peter Vivus*, were built in honour of that Apoſtle during his Lifetime.

Mother CHURCH, *Matrix Eccleſia*. See MATRIX, and MOTHER.

CHURCH, with regard to Architecture, *Daviler* defines a large Veſſel extended in length, with Nave, Choir, Iſles, Chapel, Belfry, &c. See each Part under its proper Head, NAVE, CHOIR, CHAPEL, &c.

A *ſimple Church*, he calls that which has only a Nave and a Choir; a *Church with Iſles*, that which has a row of Porticos, in form of vaulted Galleries with Chapels in its Pourtour.

Church in a Greek Croſs, that where the Length of the Croſs is equal to that of the Nave; ſo called, becauſe moſt of the *Greek* Croſſes are built in this form. *Church in a Latin Croſs*, that whoſe Nave is longer than the Croſs, as moſt of the *Gothic Churches*. *Church in Rotondo*, that whoſe Plan is a perfect Circle, in Imitation of the Pantheon. See ROTONDO, &c.

For the Form of the antient *Greek Churches*, when they had all their Parts, it was as follows: Firſt was a Porch, or Portico, call'd the *vaunt Nave*, πρόναος, adorn'd with Columns on the outſide, and on the inſide ſurrounded with a Wall; in the middle whereof was a Door, thro' which they paſs'd into a ſecond Portico. The firſt of theſe Porticos was deſtin'd for the *Energumenes*, and Penitents in the firſt Stage of their Repentance; the ſecond was much longer, deſtin'd for Penitents of the ſecond Claſs, and the *Catechumens*, and hence call'd ναρθηξ, *Ferula*; becauſe thoſe plac'd in it began to be ſubject to the Diſcipline of the *Church*. Theſe two Porticos took up about one third of the ſpace of the whole *Church*.

From the ſecond Portico, they paſs'd into the *Nave*, ναὸς, which took up near another third of the *Church*. In the middle, or at one ſide of the Nave, was the *Ambo*, where the Deacons and Prieſts read the Goſpel and preach'd. See AMBO. The Nave was deſtin'd for the Reception of the People, who here aſſiſted at Prayers.

Near the Entrance of this was the *Baptiſtery*, or Font. See BAPTISTERY.

Beyond

Beyond the Nave was the *Choir*, χορος, ſet with Seats, and round: the firſt Seat on the right, next the Sanctuary, being for the Chantor, or *Choragus*. See CHANTOR, &c.

From the Choir, they aſcended by Steps to the *Sanctuary*, which was enter'd at three Doors. The Sanctuary had three *Apſides* in its length; a great one in the middle; under which was the *Altar*, crown'd with a *Baldaquin*, ſupported by four Columns: See SANCTUARY, BALDAQUIN, &c. Under each of the ſmall *Apſides*, was a kind of a Table, or Cupboard, in manner of a Buffet. See APSIDES, &c.

Tho, of the *Greek Churches* now remaining, few have all the Parts above deſcrib'd; moſt of 'em having been reduc'd to Ruins. or converted into Moſques.

M. *Frezier*, Engineer to the *French* King, and F. *Cordemoy*, a Regular Canon, have diſputed the Form of the antient and modern *Churches*, and the beſt manner of building them, with a good deal of Learning, in the *Journals de Trevoux*.

For the Form of the *Latin Churches*, tho it be various, yet may all the Variety be reduc'd to two Heads; *viz.* thoſe in form of a Ship, and thoſe of a Croſs.

CHURCH-*Yard*, a ſacred Place, deſtin'd for the Interment of the Deceas'd. See BURIAL, FUNERAL, &c.

In the primitive Times, the Chriſtians held their Meetings in *Church-yards*, as we are inform'd by *Euſebius*, Lib. vii. and *Tertullian*, who calls thoſe *Church-yards* where the People us'd to meet to pray, *Areas*. *Euſebius* adds, that *Valerian* having confiſcated the *Church-yards*, and Places deſtin'd for the Worſhip of God; *Gallian* reſtor'd 'em by a publick Reſcript, rehears'd by the ſame Author. From theſe Paſſages, it ſeems as if *Church-yards*, and Places of Worſhip, were us'd indifferently for the ſame thing.

The Heathen Writers frequently upbraid the primitive Chriſtians for their meeting in *Church-yards*; as if they ſerv'd other Purpoſes beſides thoſe of Religion. The Council of *Elvira* prohibits the keeping of Tapers lighted in *Church-yards*, during the Day-time; and by another Canon, the Women from paſſing the Night watching in *Church-yards*.

The Cuſtom of bleſſing *Church-yards* is of an old ſtanding: the Method was, for the Biſhop to go round it with his Croſier, or paſtoral Staff, and to ſprinkle it with ſome conſecrated Fluid. *Lobineau* ſays, the Holy Water-Pot was carry'd before him.

Antiently, all were bury'd in *Church-yards*; none in *Churches*. From the Bodies of Martyrs, &c. being depoſited here, the Chriſtians choſe particularly to build their *Churches* in them, when *Conſtantine* gave them the liberty: and hence *Tillemont* derives that Cuſtom which ſtill obtains in the *Romiſh Church*, never to conſecrate any Altar, without depoſiting in it the Relicks of ſome Martyr.

Chorier obſerves, that under *Church-yard*, *Cœmeterium*, κοιμητηριον, was antiently comprehended, not only the ſtrict Dormitory, or Place where the Dead were diſpos'd; but all the Lands which encompaſs'd the Pariſh-*Churches*, and were contiguous to the real *Churches*. Perhaps it might be added, that all the *Church* Domains were compriz'd under *Church-yard*. This will beſt account for that Confiſcation of the *Church-yards*, charg'd on *Valerian*.

CHURCH-SCOT, or CHURCHESSET, a Payment, or Contribution, by the *Latin* Writers frequently call'd *Primitiæ ſeminum*; being, at firſt, a Quantity of Corn, paid to the Prieſt on St. *Martin*'s Day, as the Firſt-Fruits of Harveſt. See PRIMITIÆ, and FIRST-*Fruits*.

This was enjoin'd by the Laws of King *Malcolm* IV. and *Canut*. c. 10. But after this *Church-Scot* came to ſignify a Reſerve of Corn-Rent paid to the Secular Prieſts, or to the Religious; and ſometimes was taken in ſo general a Senſe as to include Poultry, or any other Proviſion that was paid in kind to the Religious. See TITHES.

CHURCH-*Government*, *Diſcipline*, &c. See ECCLESIASTICAL *Government*, &c.

CHURCH-*Reves*. See CHURCH-*Wardens*.

CHURCH-*Wardens*, antiently call'd CHURCH-*Reves*, are Officers choſen yearly by the Parſon and his Pariſhioners, according to the Cuſtom of the Place.

Their Buſineſs is to look to the *Church*, *Church-yard*, *Church-Revenues*, &c. to obſerve the Behaviour of the Pariſhioners with regard to Faults that come under the Juriſdiction of the Eccleſiaſtical Court; to preſent ſcandalous Livers to the Biſhop; take care none preach without Licence, &c.

The *Church-Wardens* are a kind of Corporation; and are enabled by Law to ſue and be ſued for any thing belonging to the *Church*, or the Poor of the Pariſh. See PARISH.

CHYLE, or CHYME, in the Animal Oeconomy, a whitiſh Juice, into which the Food is immediately converted by Digeſtion, or, more properly, by that Branch thereof call'd *Chylification*. See CHYLIFICATION, DIGESTION, &c.

The *Chyle*, Dr. *Drake* obſerves, is nothing but a Mixture of the oily and aqueous Parts of the Food, incorporated with the ſaline ones; which, while they yet remain mix'd with the groſſer Parts in the Stomach, make a thick, whitiſh, partly fluid Maſs, called *Chyme*: which, as ſoon as it is reduc'd to a Conſiſtence looſe enough to be obedient to the Preſſure and periſtaltic Motion of the Stomach, is gradually thruſt out at the *Pylorus* into the *Duodenum*, and denominated *Chyle*.

Thus is the *Chyle* begun to be form'd in the Stomach; it is perfected in the Inteſtines by the Mixture of the Bile and the pancreatic Juice; and is thence receiv'd into the Lacteal Veins, which carry it to the *Receptaculum Chyli*, or *Pecquets* Reſervatory: thence it paſſes into the Thoracic Duct, which terminates in the left Subclavian Vein: In this Vein, the *Chyle* firſt begins to mix with the Blood; into which it is afterwards converted by the Action called *Sanguification*. See BLOOD.

The Antients ſuppos'd the *Chyle* was chang'd into Blood in the Liver; others of 'em in the Heart: but the Moderns, with more reaſon, take the Change to be effected by the Blood it ſelf, in all the Parts of the Body. See SANGUIFICATION.

Some take *Chyle* to be the immediate Matter of Nutrition; others the Blood. See NUTRITION.

The Word comes from the *Greek* χυλος, *Juice*.

Dr. *Liſter* is of Opinion, that in the Digeſtion of Meat in the Stomach, there is made a Separation, or Solution of urinous Salts, no otherwiſe than in the rotting of Plants, or Animals: that the *Chyle* is highly impregnated with this urinous Salt; that it owes its whiteneſs to the Fermentation it acquires from that Mixture: That the ſalt *Chyle* is convey'd into the venal Blood, and with it enters the Heart; and is thence thrown out *Chyle*, as it comes in, by a continual Pulſation, into the Arteries: that as oft as it enters the Emulgent Arteries, it leaves behind part of its ſaline Liquor, or Urine, and conſequently abates of its Colour: That when ſufficiently freed of its Salts, it becomes a *Lympha*; which ſeems to be nothing elſe but the Reſidue of the *Chyle* not yet converted into Blood; as not yet ſufficiently depurated of its ſaline Particles. See LYMPHA.

CHYLIFICATION, the Formation of the *Chyle*; or the Act whereby the Food is chang'd into *Chyle*. See FOOD, and CHYLE.

Chylification is begun by comminuting, or breaking the Aliment in the Mouth, mixing it with *Saliva*, and chewing it with the Teeth. See MASTICATION.

By ſuch means, the Food is reduc'd into a kind of Pulp, which falling thro' the *Oeſophagus* into the warm Stomach, mixes with the Juices thereof; and is thus diluted, begins to ferment, or putrefy, and aſſumes a very different form from what it had before; growing either acid or rancid.

Here it mixes with a Juice ſeparated from the Blood by the Glands of that Part, whoſe Excretory Ducts open into the Stomach; as alſo with the Remains of the former Aliment: and thus it becomes better macerated, diluted, diſſolv'd, and acquires ſtill a greater likeneſs to the Animal Fluids, and is called *Chyme*. See CONCOCTION.

Add to this, that the fleſhy Membrane of the Stomach continually contracting and preſſing its Contents by its periſtaltic Motion, occaſions a more intimate Mixture, and by degrees works out the more fluid Parts thro' the *Pylorus* into the *Duodenum*; along the Sides whereof, and the reſt of the *Inteſtina Tenuia*, the Lacteals are planted; into the minute Orifices whereof, the finer Parts of the Maſs is receiv'd. See PERISTALTIC *Motion*, INTESTINES, and LACTEALS.

The Fabrick of the Stomach being conſider'd, the Heat of the circumambient Parts, the Pulſations of innumerable Arteries, the great Stroaks of the *Aorta* underneath, the conſtant Compreſſion of the *Diaphragma* and Abdominal Muſcles; it muſt neceſſarily follow, that the finer Parts of the Aliment will be firſt expell'd the Stomach; and that the groſſer will remain; till, by the repeated Action of the Fluids, and the Contraction and Pulſation of the Solids, they alſo become fine enough to go off: thus is the Stomach left empty; and by means of its muſcular Coat, reduc'd to a State of Contraction, and Appetite renew'd. See HUNGER.

Thus will even the fleſhy Membranes, Cartilages, &c. of Animals fed on, be ſqueez'd, and oblig'd to give out their Juices; and thus is a Fluid obtain'd, that ſhall have in ſome meaſure the ſame Properties with thoſe of our Bodies.

The Juice being got thro' the *Pylorus* into the Inteſtines, its Liquefaction is ſtill promoted by its mixture with two other Diſſolvents, the pancreatic Juice and the Bile; which divide and ſubtilize thoſe Parts that were left too groſs: and by the periſtaltic Motion of the Guts it is protruded forwards. In the Paſſage thro' the ſmall Inteſtines, the finer Part of the Maſs, which we call the *Chyle*, enters the Orifices of the Lacteal Veins of the firſt Kind, wherewith the whole Meſentery is intermix'd; which either alone, or together with the Meſaraic Veins, diſcharge themſelves into the Glands at the Baſis of the Meſentery.

Then the *Chyle* is taken up by the Lacteals of the ſecond Kind, and convey'd into Glands between the two Tendons of the Diaphragma, known heretofore under the Name of the *Lumbary* Glands, now call'd *Pecquet*'s Reſervatory; whence it is carry'd to the Heart by the Thoracic Duct and the Subclavian Vein; wherein it begins to be mix'd with the Blood, and to circulate, and in time become aſſimilated thereto. See CIRCULATION, ASSIMILATION, &c.

CHYLOSIS, in Medicine, the Action whereby the Aliment is converted into *Chyle*, or *Chyme*, in the Stomach, &c. whether it be by a Ferment in the Stomach, or the contractile Force of the Stomach, or both. See CHYLIFICATION, and DIGESTION.

CHYME, an Animal Juice, the ſame with that commonly call'd *Chyle*. See CHYLE.

Some, however, diſtinguiſh between *Chyme* and *Chyle*; reſtraining the Word *Chyme* to the Maſs of Food, &c. while in the Stomach, e'er it be ſufficiently comminuted and liquefy'd to paſs the *Pylorus* into the *Duodenum*, and thence into the Lacteals, to be further diluted and impregnated with the pancreatic Juice; where it commences *Chyle*.

CHYMISTRY, or more properly CHEMISTRY, the Art of ſeparating the ſeveral Subſtances whereof mix'd Bodies are compos'd, by means of Fire; and of compoſing new Bodies in the Fire, by the Mixture of different Subſtances or Ingredients. See FIRE.

The great Object of *Chymiſtry*, is to analyſe, or decompound natural Bodies; reduce them to their firſt Principles; diſcover their hidden Virtues, and demonſtrate their inner Contexture, or the Centre, as they call it, wherein natural Subſtances concur. In a word, *Chymiſtry* is the Anatomy of natural Bodies, by means of Fire; which is the Definition *Hanneman* gives us of the Art.

The very learned *Boerhaave* defines *Chymiſtry* very ſcientifically: 'An Art whereby ſenſible Bodies contain'd in 'Veſſels, or capable of being contain'd therein, are ſo 'chang'd, by means of certain Inſtruments, and principally 'Fire, that their ſeveral Powers and Virtues are thereby 'diſcover'd, with a View to Philoſophy, Medicine, &c.

This Definition appears very prolix and circumſtantial, and more like a Deſcription than a Definition; but with all his Endeavours, he aſſures us, he could not frame a ſhorter, that would expreſs the full Scope, Object, and Inſtruments of *Chymiſtry*, ſo as to diſtinguiſh it from every other Art: which is a Point all the Writers of *Chymiſtry* have ſtumbled at.

For *Chymiſtry* cannot juſtly be call'd the Art *of reſolving Bodies*, as *Regius*, *Paracelſus*, &c. define it; ſince Mechanicks will alſo do that: Nor is the Matter mended, by ſaying, It is the Art *of analyſing Bodies by Fire*; as *Helmont* has done: nor *by Salt*, as others would have it. Theſe Definitions include only a Part, inſtead of the whole. And with as little Propriety is it term'd, The Art of *ſeparating the Pure from the Impure*; inaſmuch as it compounds as well as ſeparates, and frequently mixes the Pure with the Impure.

Chymiſtry, on this footing, appears a very extenſive Art: Its Object, or the *Materia Chymica*, is all ſenſible Bodies, capable of being contain'd in Veſſels; and is accordingly divided into three Kingdoms, *Foſſil*, *Vegetable*, and *Animal*. See BODY, FOSSIL, VEGETABLE, &c.

The Operations of *Chymiſtry*, include all the Changes produc'd in Bodies by natural Agents or Inſtruments, *viz. Decoction*, *Infuſion*, *Exhalation*, *Calcination*, *Extraction*, *Diſtillation*, *Cryſtallization*, &c. See OPERATION, and ELEMENT; ſee alſo DECOCTION, INFUSION, EXHALATION, DISTILLATION, CALCINATION, EXTRACTION, &c.

The Effects, or Productions of *Chymiſtry*, may be reduc'd to *Magiſteries*, *Extracts*, *Tinctures*, *Elixirs*, and *Clyſſus's*. See MAGISTERY, EXTRACT, TINCTURE, ELIXIR, &c.

The *Inſtruments, or Agents of Chymiſtry*, whereby its Operations are perform'd, are *Fire*, *Water*, *Air*, *Earth*, *Menſtruums*, and Inſtruments properly ſo call'd, as *Alembics*, *Cucurbits*, *Retorts*, *Pelicans*, *Furnaces*, and *Lutes*. See FIRE, AIR, WATER, EARTH, MENSTRUUM, ALEMBIC, CUCURBIT, RETORT, FURNACE, and LUTE.

Chymiſtry is an Art of very great Antiquity, and is held by ſome very learned Perſons to have been practis'd in the Antediluvian World. *Cham*, the Son of *Noah*, is commonly held to have been its Inventor, from whom it is ſuppos'd to have taken its Name. Others refer the Invention to *Tubal Cain*, whom the Scripture records as the Inventor of Inſtruments of Braſs and Iron. This is pretty certain, that ſome of the higheſt and moſt difficult Things in *Chymiſtry*, muſt have been known by him; among which are the ſeparating and purifying of Copper and Iron, the making of Braſs, &c. See COPPER, IRON, &c.

The firſt mention we find made of the Art, is in *Zozimus*, the *Panopolitan*, who lived about the Year of Chriſt 400. 'In the Sacred Writings, ſays that Author, we find 'certain *Genii* ſpoke of, who had commerce with Women. 'Hermes ſays as much in his Books upon Nature; and 'ſcarce any Author but has ſome Footſteps of this Tradition. Theſe *Genii*, intoxicated with the Love of Women, diſcover'd 'em all the Secrets of Nature; and 'taught 'em abundance of Things unfit for 'em to know: 'for which reaſon they were baniſh'd from Heaven. The 'Book wherein their Secrets was contain'd, was call'd *Chema*; and hence the Name *Chemia*, or *Chymia*.'

The Text of Scripture *Zozimus* here refers to, is that Paſſage in *Moſes*, *The Sons of God ſaw the Daughters of Men, and took 'em to Wife.*

This Antediluvian Origin of *Chymiſtry* is confirm'd by *Tertullian*: 'The Angels that fell, ſays that Father, diſcover'd Gold and Silver to Men, with the Arts of working 'em, of dying Wool, &c. for which reaſon they were baniſh'd, as is related by *Enoch*.'

Borrichius looks on theſe Paſſages as authentic; but adds, that *Enoch* was miſtaken, for that the Angels he ſpeaks of were not real Angels; but the Deſcendants of *Seth* and *Tubal Cain*, who degenerating from their Fathers, gave themſelves up to criminal Pleaſures with the Women deſcended from *Cain*; and in the Courſe of their Intrigues, divulg'd the Secrets God had truſted 'em withal.

Be this as it will, *Chymiſtry*, no doubt, was firſt practis'd in *Egypt*. According to *Moſes*, *Tubal Cain* ſhould be the firſt Inventor. Profane Authors refer it to *Vulcan*; and ſome of the lateſt and beſt Criticks endeavour to ſhew, that *Tubal Cain* and *Vulcan* were the ſame; as, indeed, there is found a great reſemblance between their Names.

After *Tubal Cain*, the firſt *Chymiſt* we read of is *Moſes*; whoſe Skill in *Chymiſtry* is inconteſtable, from his burning and pulverizing the Golden Calf the *Iſraelites* had ſet up, and giving it the People to drink. There is ſcarce a more difficult Operation in all *Chymiſtry*, than to make Gold potable. See GOLD.

Chymiſtry had the common Fate of the other Arts, at the Declenſion of the Eaſtern Empire; and lay bury'd and forgot till the Time of *Roger Bacon*, who retriev'd it. He was follow'd by *Lully*, *Ripley*, *Baſil Valentine*, *Paracelſus*, *Van Helmont*, *Glauber*, *Boyle*, *Lemery*, *Homberg*, &c. by whom the Art has been carry'd to its preſent degree of Perfection.

The firſt *Chymiſts* confin'd themſelves to Metals: In theſe latter Ages, the Bounds of *Chymiſtry* have been greatly enlarg'd; and Plants, Animals, Minerals, &c. have been taken into it.

'Tis but of late that *Chymiſtry* has been apply'd to the Preparation of Medicines: *Baſil Valentine*, and *Arnoldus de Villa Nova*, ſeem to have been the firſt that attempted it. *Paracelſus* and *Van Helmont* carry'd it to ſuch a length, as to render Medicine almoſt wholly *chymical*. See MEDICINE.

Chymiſtry is divided into *Metallurgia*, *Alchymia*, *Chymical Pharmacy*, and *Chymical Philoſophy*. See METALLURGIA, ALCHYMIA, &c.

Criticks are divided as to the Etymology of the Name *Chymiſtry*: It is uſually deriv'd from the *Greek* χυμὸς, *Juice*; or from χέειν, *to melt*.

Boerhaave, and others, more juſtly derive it from the Egyptian *Chema*, or *Kema*, black; and write it *Chemia*, not *Chymia*.

Others, making *Cham* the Inventor of *Chymiſtry*, derive the Term from his Name; ſupporting their Etymology on the Signification of the Word חם *Cham*, which in the *Hebrew* ſignifies *heat*, *hot*, *black*; all of them bearing ſome relation to the Operation of *Chymiſtry*.

Chymiſtry is alſo known under various other Names: It is ſometimes call'd the *Hermetical Art*, from a Suppoſition of its being invented by *Hermes Triſmegiſtus*: See HERMETIC. Others call it, the *Egyptian Art*, from the People among whom it was firſt practis'd: Others the *Sacred, or Divine Art*; *Poieſis*; the Art of *making Gold*, &c. Others call it the *Spagyric* Art; *Paracelſus* the *Hyſſopic* Art: others *Pyrotechnia*, &c. See SPAGYRIC, HYSSOPIC, PYROTECHNIA, &c.

When the *Chymiſts* would expreſs the moſt ſublime Parts of their Art, they prefix the *Arabic* Particle *Al* to the Word *Chymia*, or *Chymiſtry*, and thus form *Alchymy*. See ALCHYMY.

Some Authors obſerve, that *Diocleſian*, after the taking of *Alexandria*, order'd all the Books of *Chymiſtry*, antiently wrote by the *Egyptians*, for making Gold and Silver, to be ſought out and burnt; that they might not have the Power of enriching themſelves by this Art, or of putting themſelves, by this means, into a Condition of revolting.

Authors on the Subject of *Chymiſtry* are very numerous: *Borel* has publiſh'd a Catalogue of moſt of 'em, under the Title of *Bibliotheca Chymica*; containing the Names of above ten thouſand. *Boerhaave* is the lateſt, fulleſt, and infinitely the beſt; he has given both the Hiſtory, Theory, and Practice, in the fineſt, moſt orderly, and ſcientifical Way in the World. Dr. *Friend* has reduc'd *Chy-*

miſtry to *Newtonianiſm*, and accounted for the Reaſons of the Operations on Mechanical Principles.

CHYMOSIS, in Medicine, the Act of making or preparing *Chyme*. See CHYME.

Chymoſis is particularly us'd for the ſecond of the Concoctions made in the Body; being a repeated Preparation of the moſt impure and groſs Parts of the Chyle, which being turn'd back by the Lacteals, is imbib'd by the Meſeraics, and thence carry'd to the Liver, to be there elaborated, purify'd, and ſubtiliz'd afreſh. See CONCOCTION.

'Tis of this, according to *Rogers*, that the Animal Spirits are form'd.

The Word comes from χυμὸς, *ſuccus*, of χέω, *fundo*, I melt.

CHYMOSIS, or CHEMOSIS, is alſo us'd in Medicine, for an Inflammation of the Eyelids, which turns out their inſide to ſight.

The Word comes from the *Greek* χαίνω, *hiſco*.

CICATRICULA, in Natural Hiſtory, a little whitiſh Speck, in the Coat of the Yolk of an Egg; wherein the firſt Changes appear towards the Formation of the Chick. See YOLK.

The *Cicatricula* is what is commonly call'd the *Treddle* of the Egg. See EGG.

CICATRISIVE, in Medicine, is apply'd to ſuch Medicines as are very Deſiccative; and on that account aid Nature to repair the Skin, and to form a *Cicatrix*, or *Eſchar*. See CICATRIX.

Such are *Armenian* Bole, Pouder of Tutty, the Unguent *Diapompholigus*, *deſiccativum Rubrum*, &c.

Cicatriſive Medicines are otherwiſe call'd *Eſcharotics*, *Epuloticks*, *Incarnatives*, *Agglutinants*, &c. See EPULOTIC, ESCHAROTIC, INCARNATIVE, &c.

CICATRIX, in Medicine, &c. a little Seam, or Elevation of callous Fleſh, riſing on the Skin, and remaining there after the healing of a Wound, &c. ordinarily call'd a Scar, or Eſchar. See ESCHAR, WOUND, &c.

The *Cicatrix* is the ſame as to the joining of the fleſhy Parts, as a *Callus* is to the Bones. See CALLUS.

In young Infants, theſe Calloſities, or Scars, ſometimes much diminiſh, and oftentimes quite vaniſh when come to Age, as is particularly obſerv'd in the Pits of the Small-Pox: and, in growing, they are ſometimes obſerv'd to change their Situation.

Some derive the Word from *quaſi circa cutem*: others fetch *Cicatrix* from *quaſi Occæcatrix*, the *Cicatrix* being only *obductio vulneris*, the covering up, or hiding of the Wound: but 'tis better deriv'd from *Cæcatrix*, which has the ſame force; of the Verb *Cæcare*, to blind.

CICUTA, a vegetable Poiſon, celebrated both among Antients and Moderns. See POISON.

The modern *Cicuta* is the Plant *Hemlock*; whereof there are two Kinds: the *Cicuta*, abſolutely ſo call'd, or *Cicuta major*; and *Cicuta minor*.

The firſt grows in Places a little moiſt, in the Shade, among old Ruins, or along Roads.

So many unhappy Effects have been perceiv'd from it, that its Uſe, internally, is by no means to be recommended: And yet ſome Perſons boaſt of it as a powerful Sudorific. Externally it may be apply'd, to reſolve Wens, and Hardneſſes of the Spleen and Liver. It is the Baſe of the Plaiſter which bears its Name.

The Phyſicians have generally rank'd it among the cold Poiſons; but the later Writers, with more juſtneſs, regard it as a Diſſolvent, or hot Poiſon. The Reaſons they give, as related by *Wepfer*, are, that it bites the Tongue; that the Effluvia it yields are hot, and ariſe from a volatile Salt, and an impure Sulphur; that the Madneſs it occaſions, as well as the other Sympoms, ſhew a great activity of Parts; and that if the Blood be found coagulated by it after Death, Spirit of Wine does the ſame.

The *leſſer Cicuta* is not leſs dangerous than the *greater*; it is ever ſuppos'd more violent, as well as more haſty in its Operation.

Several Perſons have been render'd fooliſh, by eating Porridge wherein *Cicuta* has been us'd inſtead of Parſly. It has much ſuch an Enmity to the Brain, as *Cantharides* have to the Bladder; and *Læpus Marinus* to the Lungs.

The *Cicuta* of the Antients, is a Secret which is now ſcarce poſſible to be diſcover'd: it was call'd *Cicuta Aquatica*, and was of the Umbelliferous Tribe. *Wepfer*, in an expreſs Treatiſe on the Subject, will have it the *Sium Erucæ folio C. B.*

CICUTA is alſo us'd, chiefly, among the Antients, for a Juice, or Liquor, expreſs'd from the Plant *Cicuta*. This *Cicuta* was the common Poiſon wherewith their State-Criminals were put to death: *Socrates* drank the *Cicuta*.

Plato, in his Dialogue on the Immortality of the Soul, obſerves, that 'The Executioner advis'd *Socrates* not to 'talk, for fear of cauſing the *Cicuta* to operate too ſlowly.' M. *Petit*, in his *Obſervationes Miſcellaneæ*, remarks, that this Advertiſement was not given by the Executioner out of Humanity, but to ſave the *Cicuta*: for he was only allow'd ſo much *per Ann.* which if he exceeded, he was to furniſh at his own Expence. This Conſtruction is confirm'd by a Paſſage in *Plutarch*: The Executioner who adminiſter'd the *Cicuta* to *Phocion*, not having enough, *Phocion* gave him Money to buy more; obſerving, by the way, that it was odd enough, that at *Athens* a Man muſt pay for every thing, even his own Death.

CIDER, a briſk, tart, cool Liquor, prepar'd from Apples.

The Manner of making CIDER *is as follows.*

The Fruit is firſt ground, or ſtamp'd, and the Juice ſqueez'd out in a Preſs; then 'tis ſtrain'd thro' a Sieve, or other Filtre, and tunn'd up: the Veſſel not to be full. For two or three Days it is to be ſtopp'd looſely, then quite clos'd with Clay. Henceforward, a ſmall Quantity to be drawn out every Day for ſome Weeks, till ſuch time as it be ſuppos'd pretty clear; then 'tis pierc'd, to ſee how fine it is: the Summer Fruit after a Month; the Gennet-Moil, after the firſt Froſts; the Redſtreak not till after *January*; and the other Winter Fruits about the ſame time.

If it ben't now found fine enough, it ſtands a Month longer; and if even then it be defective, 'tis rack'd off like Wine, ſo as to keep out the Air.

Some, inſtead of racking, fine it with Iſing-glaſs, ſteep'd in Whitewine, and diſſolv'd over the Fire; this they boil in a quantity of the Liquor to be fined, and then mix it with the reſt: and others, inſtead of diſſolving the Iſing-glaſs over the Fire, let it ſteep in the Whitewine for about a Month, in which time it diſſolves into a Gelly of it ſelf: a quantity of this is mix'd with ſome of the Liquor, and the whole beat to a froth; then mingled, together with ſome Broom, with the reſt. The Liquor once fine, 'tis drawn out, or bottled off, as occaſion requires. See CLARIFYING.

'Tis obſerv'd, that a Mixture of Fruits is a great Advantage to *Cider*; the worſt Apples, mix'd together, making as good *Cider* as the beſt alone: always obſerving, however that they be of equal ripeneſs.

The beſt Mixture, according to Mr. *Worlidge*, is that of Redſtreaks with Golden-Rennets: Bitter Apples ſpoil the *Cider*; but the Juice of them and of Crabs, yield as good Spirits as the beſt Apples, when fermented: neither the ſour nor the bitter Taſte ariſing with the Spirit upon Diſtillation.

If the Apples be pounded in a Stone Mortar, which is the Cuſtom of ſome, the Kernels and Stalks are bruis'd with them, which gives the Liquor an ill Savour.

CIDERKIN, or *Purre*, is a Liquor made of the Murk, or groſs Matter remaining after the *Cider* is preſs'd out.

For this purpoſe, the Murk is put up in a large Fat, with a proper Quantity of boil'd Water, which has ſtood till it be cold again: if half the Quantity of Water be us'd that there was of *Cider*, 'twill be good; if the Quantities be equal, the *Ciderkin* will be ſmall. The whole is left to infuſe forty eight Hours, then well preſs'd: What is ſqueez'd out by the Preſs is immediately tunn'd up and ſtopp'd; 'tis fit to drink in a few Days.

It clarifies of it ſelf, and ſerves in Families inſtead of Small Beer. It will keep, if boil'd after preſſure, with a convenient quantity of Hops.

CILIA, in Anatomy, the Hairs wherewith the *Palpebræ*, or Eyelids are fring'd; eſpecially the Upper, which is larger and ſtiffer than that of the Under. See PALPEBRA.

Their Uſe ſeems to be, to break the too fierce Impreſſion of the Rays of Light; as alſo to keep out Flies and Moats, and other Things floating in the Air, which might annoy the Eye.

Theſe *Cilia* ſpring from a ſmall row of Glands, which cover a thin tender Cartilage, edging each Eyelid, and ſerving as a kind of Rod, or Ring to ſtretch 'em upon.

CILIARE, in Anatomy, an Epithet given to a Part of the Eye, call'd *Ligamentum Ciliare*; becauſe of its reſembling the *Cilium*, or Hair of the Eyelids. See LIGAMENT.

The *Ligamentum Ciliare*, call'd alſo *Proceſſus Ciliaris*, conſiſts of a range of black Fibres diſpos'd circularly; having their riſe in the inner Part of the *Uvea*, and terminating in the prominent Part of the Cryſtalline, which they incompaſs round.

Anatomiſts generally imagine their Uſe to be to ſuſpend the Cryſtalline in the Globe of the Eye, to lengthen or ſhorten its Figure, and bring it nearer to or further from the Uvea; and even to open or contract the Pupil as occaſion requires, *i. e.* as near or remote Objects, obſcure or bright Objects are to be view'd. See CRYSTALLINE, and PUPIL.

The Motion of the Pupil, ſome ſay, is effected by the circular and ſtrait Fibres of the Uvea; others attribute it to the *Ciliary* Ligament: yet, I have no great doubt, but they both concur in the ſame Action; and that the *Ligamentum Ciliare* doth, at the ſame time the Pupil opens or ſhuts, dilate or compreſs the Cryſtalline, and bring it nearer, or carry it farther off the *Retina*. *Derham Phyſ. Theol.*

M. *Mariotte* denies the *Ligamentum Ciliare* to have any connection with the Cryſtalline, or to ſerve for any purpoſes thereof. See VISION.

CILIARIS, in Anatomy, a Muſcle, otherwiſe call'd *Orbicularis Palpebrarum*. See ORBICULARIS.

CIMA, or *Sima*, in Architecture, a Member or Moulding, call'd alſo *Gula*, and *Cymatium*. See GULA, and CYMATIUM.

CIMIER, in the *French* Heraldry. See CREST.

CINCTURE, or CEINTURE, in Architecture, a Ring, Liſt, or Orlo, at the top and bottom of the Shaft of a Column; dividing the Shaft, at one end, from the Baſe; and at the other from the Capital. See SHAFT, COLUMN, *&c.*

That at bottom is peculiarly call'd *Apophyges*; as if the Pillar took its height hence: and that at top *Colarin*, or Collar. See APOPHYGES, and COLARIN.

The *Cincture* is ſuppos'd to be an Imitation of the Girts, or Ferrils, antiently us'd to ſtrengthen and preſerve the primitive wooden Columns. See ORDER.

The Word, in its original *French*, ſignifies *Girdle*; of the Latin *cingo*, I gird.

CINERATION, in Chymiſtry, the reduction of Wood, or any other combuſtible Matter into *Aſhes*, by means of Fire. See ASHES, CALCINATION, *&c.*

This, others call *Cinefaction*.

CINERES. See ASHES.

CINERES *Clavellati*, among Chymiſts, are the Aſhes of Tartar, or the Lees of Wine burnt. See TARTAR.

CINERITIOUS, a Term apply'd to Things reſembling Aſhes; particularly in point of Colour and Conſiſtence.

Thus, the Cortical Part of the Brain, is alſo call'd the *Cineritious* Part. See CORTICAL.

CINNABAR, or CINOPER, in Natural Hiſtory, a Mineral Stone, red, heavy, and brillant; found chiefly in the Quickſilver Mines; call'd alſo *Vermilion*. See FOSSIL, and MERCURY.

Many, with good reaſon, eſteem this the *Minium* of the Antients; tho a very different thing from the modern *Minium*. See MINIUM.

The ordinary Vermilion it ſelf, is nothing elſe but *Cinnabar* ground up with Spirit of Wine and Urine. See VERMILION.

Some have imagin'd *Cinnabar* to be Dragons-Blood, gather'd, as *Pliny* and *Solinus* have it, when the Dragon and Elephant fight together: This Fable is refuted by *Dioſcorides* and *Scaliger*. See DRAGONS-BLOOD.

Cinnabar is either *Native*, or *Factitious*.

The *Native*, or Mineral *Cinnabar*, or Vermilion, which is that abovemention'd, is found in moſt Places where there are Quickſilver Mines; yet, 'tis true alſo, that it has Mines its own: thoſe in *Spain* are very famous; the *French* too have theirs, in *Normandy*.

It may be eſteem'd as Marcaſſite of Quickſilver, or rather, as Quickſilver petrify'd and fix'd, by means of Sulphur, and a ſubterraneous Heat: Chymiſtry being found to reduce it without much trouble or loſs, to the Nature of Mercury. Each Pound of good *Cinnabar* yields fourteen Ounces of Mercury. Accordingly, the principal Property and Uſe of this Mineral, is to yield a moſt excellent Mercury; and that which the Alchymiſts maintain to be the beſt diſpos'd for attaining to the Tranſmutation of Gold.

The beſt Mineral *Cinnabar* is of a high Colour, brillant, and free from the Stone.

It is us'd by Phyſicians in Venereal Caſes, and others, occaſion'd by ſharp Seroſities. It's alſo eſteem'd a good Cephalic, and accounted of ſervice in Epilepſies, and other nervous Diſtempers: Add, that it is reckon'd of efficacy in cutaneous Caſes, as the Scurvy.

Factitious, or Artificial *Cinnabar*, or Vermilion, is form'd of a Mixture of Mercury and Sulphur, ſublimed, and thus reduced into a kind of Stone.

The beſt is of a high Colour, full of Fibres, like Needles.

The Method of preparing Factitious CINNABAR is thus.

They take three Ounces of Sulphur, and four of Quickſilver; theſe being well mix'd, are ſet on the Fire, till part of the Sulphur be conſum'd, and the Pouder remain black. 'Tis then ſublim'd once or twice in open Pots; at bottom of which remains the *Cinnabar*, very heavy, and ſtreak'd with Lines, or Needles; ſome red, others brillant, like Silver.

This ſerves for the ſame medicinal Purpoſes with the *Native Cinnabar*: beſides which, 'tis likewiſe us'd by the Farriers, to make Pills for their Horſes; and by Painters, as a Colour: it being a very vivid red; but drying with ſome difficulty.

Cinnabar, or Vermilion, is render'd more beautiful by grinding it with Gum-Water and a little Saffron: thoſe two Drugs preventing its growing black. See VERMILION.

There is likewiſe a *blue Cinnabar*, made by mixing two Parts of Sulphur with three of Quickſilver, and one of Sal Ammoniac: theſe being ſublimed, produce a beautiful blue Subſtance; whereas Quickſilver and Sulphur alone produce a red.

The Word comes from the *Greek* κινάβρα, *the ſmell of Goats*; by reaſon, ſays *Matthiolus*, in digging a kind of Mineral *Cinnabar*, it yields ſo ſtrong a Scent, that the Diggers are oblig'd to ſtop their Noſtrils.

The Chymiſts prepare other Kinds of Artificial *Cinnabar*; as,

CINNABAR *of Antimony*, a Compoſition of Mercury, common Sulphur, and crude Antimony ſublimed. See ANTIMONY.

It is held a Diaphoretic, and Alterative; and is us'd in Scrophulous and other chronic Caſes.

CINNAMON, an agreeable aromatic Spice, furniſh'd by the *Eaſt-Indies*. See SPICE.

Cinnamon is allow'd to be the Bark of a Tree, growing in the Iſlands of *Ceylon*, *Java*, and in *Malabar*.

The *Cinnamon* Tree, call'd by the Natives *Corunda Gauhah*, grows in Woods, like other Trees; and is but little regarded by 'em. It never grows high: Its Leaves reſemble thoſe of the Laurel, both as to Subſtance, and Colour. When they firſt begin to open, they are red as Scarlet; and if rubb'd between the Hands, yield an Odour more like that of Cloves than of *Cinnamon*. The Fruit reſembles an Acorn, or Olive; and has neither the Smell nor Taſte of the Bark. When boil'd in Water, it yields an Oil, which, as it cools and hardens, becomes as firm and white as Tallow. Its Smell is agreeable, and they make Candles of it, which are only allow'd to be burnt in the King's Palace. The Wood is of no Virtue at all.

The chief Virtue of the *Cinnamon* Tree is in its Bark; which, when green, appears to be double: its exterior Surface being grayiſh, and the inner of the common *Cinnamon* Colour.

'Tis then diviſible into two Barks of different Colours; but theſe drying together, become inſeparable, and paſs for the ſame Bark; the grayiſh Colour changing in proportion as it dries.

When the *Cinnamon* is freſh taken from the Tree, 'tis flat, has little Taſte, Smell, or Colour; but it twiſts or convolves, as it dries, in form of a Stick, or Cane: whence the *French* call it *Cannelle*.

By thus exhaling its ſuperfluous Humidity, it acquires a ſweet briſk Smell, and a ſharp pungent Taſte. 'Tis ſaid, that after the Tree has been ſtripp'd of its Bark, in three Years it forms a new one, which is as good as the firſt: but this is not very probable.

Some hold, that the ſmall Branches of the ſame Tree make the *Caſſia*; but that muſt be a Miſtake. See CASSIA.

The Natives draw from the Roots of the Tree a Liquor, very much reſembling *Camphor*.

Cinnamon, to be good, muſt have a briſk agreeable Taſte, and a bright brown Colour. Its Qualities are, to heat and dry; to promote the Menſes, to fortify the Spirits, and to help Digeſtion: but its chief Uſe, in Medicine, is as an Aſtringent; with which Intention it is preſcrib'd in Diarrhæas, and Weakneſſes of the Stomach.

The *Cinnamon* of the Antients was different from that of the Moderns; they diſtinguiſh'd five Kinds of *Cinnamon*: the *Moſylitique*; *Cinnamon of the Mountain*; *black* and *branch'd Cinnamon*; another white and ſpongeous; and a fifth of leſs value, reddiſh, and of a ſtrong ſmell: as alſo a *baſtard Cinnamon*, call'd *Zinziber*: This laſt Species was antiently in very high eſteem, but is now no longer known. See ZINZIBER.

They extract an Oil from *Cinnamon*, call'd its Eſſence, or Quinteſſence, which is an excellent Cardiac: the manner of preparing it, is ſaid to be a Secret known only to the *Dutch*. The common *Cinnamon* is often adulterated with that out of which this Eſſence has been extracted.

Cinnamon, by means of Fire, furniſhes Waters, Extracts, and Salts; out of which are compounded Syrups, and Paſtils, call'd *Oleo Sacchara*; together with an Eſſence, that ſerves to turn all manner of Wines, white and red, into *Hypocras*.

CINNAMON-*Water*, is made by diſtilling the Bark, (firſt infus'd in Barley-Water) in Spirit of Wine, or Whitewine. See WATER.

All the *Cinnamon* conſum'd in *Europe*, comes from the *Dutch*; who have got the whole Commerce thereof in their own Hands, by becoming Maſters of the Iſle of *Ceylon*, and deſtroying all the other *Cinnamon* Trees about the Kingdom of *Cochin*.

Clove CINNAMON, is alſo the Bark of a Tree growing in *Braſil* and *Madagaſcar*; where it is known under the Name of *Ravendſara*. The *Portugueze* call it *Cravo de Marenhan*.

This Bark, pulveriz'd, is ſometimes ſubſtituted for real *Cloves*, tho far ſhort of 'em in reſpect of Quality. See CLOVES.

Saſſafras, or Saxafras, is ſometimes alſo call'd *Cinnamon-Wood*. See SASSAFRAS.

White CINNAMON, which ſome call *Coſtus Corticus*, or *Corticoſus*, or *Cortex Winteri*, *Winter*'s Bark, from the Perſon's

Perſon's Name who firſt brought it into *England*; is the Bark of a Tree reſembling the Olive Tree, frequent in the Iſland of S. *Domingo*, *Guadeloupa*, and *Madagaſcar*; call'd by the Natives *Fimpi*. See CORTEX.

The Bark, which dries like that of *Cinnamon*, is at firſt grayiſh, of a ſharp biting Taſte, like Pepper; and a Smell like Muſk: as it dries it whitens.

Some uſe it in lieu of Nutmeg: In Medicine, it's us'd as a Stomachic, and ſometimes as an Antiſcorbutic.

The ſame Tree yields a Gum, call'd *Alouch*, or *Bdellium*, which is no diſagreeable Perfume.

CINQUE-PORTS, or *Quinque portus*, five Havens that lie on the Eaſt Part of *England*, towards *France*; thus call'd, by way of Eminence, on account of their ſuperior Importance; as having been thought by our Kings to merit a particular regard, for their preſervation againſt Invaſion.

Hence they have a particular Policy, and are govern'd by a Keeper, with the Title of *Lord Warden of the Cinque-Ports*.

They have various Privileges granted 'em, as a particular Juriſdiction; their Warden having the Authority of an Admiral among 'em, and ſending out Writs in his own Name. See WARDEN.

Camden tells us, that *William* the Conqueror firſt appointed a Warden of the Cinque-Ports; but King *John* firſt granted them their Privileges; and that upon Condition they ſhould provide 80 Ships at their own Charge, for 40 Days, as often as the King ſhould have occaſion in the Wars: he being then ſtraitned for a Navy to recover *Normandy*.

The five Ports are *Haſtings*, *Romney*, *Hythe*, *Dover*, and *Sandwich*.

Thorn tells us, that *Haſtings* provided 21 Veſſels; and in each Veſſel 21 Men. To this Port belong *Seaford*, *Pevenſey*, *Hedney*, *Winchelſea*, *Rye*, *Hamine*, *Wakesbourn*, *Creneth*, and *Fortholipe*.

Romney provided 5 Ships, and in each 24 Men. To this belong *Bromhal*, *Lyde* of *Marſtone*, *Dangemures*, and *Romential*.

Hythe furniſh'd 5 Ships, and in each 21 Seamen: To this belongs *Weſtmeath*.

Dover the ſame Number as *Haſtings*: To this belong *Folkſton*, *Feverſham*, and *Margate*.

Laſtly, *Sandwich* furniſh'd the ſame with *Hythe*: To this belong *Fordivice*, *Reculver*, *Serve*, and *Deal*.

CION, or CYON, or SCION, in Gardening, a young Shoot, Sprout, or Sprig, put forth by a Tree. See SHOOT.

Grafting is perform'd by the Application of the *Cion* of one Plant upon the Stock of another. See GRAFT, and ENGRAFTING.

To produce a Stock of *Cions* for Grafting, Planting, &c. the Gardeners ſometimes cut off the Bodies of Trees, a little above the Ground, and only leave a Stump or Root ſtanding: the redundant Sap will not fail next Spring to put forth a great number of Shoots. See STOCK.

In dreſſing dwarf Trees, a great many *Cions* are to be cut off. See DWARF; ſee alſo PRUNING.

CION, in Anatomy, is ſometimes us'd for the *Uvula*. See UVULA.

CIPHER, or CYPHER, one of the Numeral Characters, or Figures; form'd thus o. See CHARACTER, FIGURE, &c.

The *Cipher* of it ſelf implies a Privation of Value; but when diſpos'd with other Characters on the left thereof, in the common Arithmetic, it ſerves to augment each of their Values by ten; and in Decimal Arithmetic, to leſſen the Value of each Figure to the right thereof, in the ſame proportion. See NOTATION, NUMERATION, and DECIMAL.

CIPHER is alſo a kind of myſtick Character, compos'd of ſeveral Letters interwove together; which are ordinarily the initial Letters of the Perſons Names, for whom the *Cipher* is intended.

Theſe are frequently us'd on Seals, Coaches, and other Moveables.

Antiently, Merchants and Tradeſmen were not allow'd to bear Arms: in lieu thereof they bore their *Ciphers*, or the initial Letters of their Names, artfully interwove about a Croſs; of which we have divers Inſtances on Tombs, &c.

CIPHER is alſo us'd for certain ſecret Characters, diſguis'd and varied; us'd for the writing of Letters that contain Secrets, not to be underſtood by any but thoſe between whom the *Cipher* is agreed on.

This is now reduc'd into a ſeparate Art, call'd *Polygraphia*, and *Steganographia*; but appears to have been little known to the Antients. See STEGANOGRAPHY, &c.

De la Guilletiere, in his *Lacædemon Antient and Modern*, endeavours to make the antient *Spartans* the Inventors of the Art of writing in *Cipher*.

Their *Scytala*, according to him, was the firſt Sketch of this myſterious Art: Theſe *Scytalas* were two Rollers of Wood, of equal length and thickneſs; one of them kept by the *Ephori*; the other by the General of the Army, ſent on any Expedition againſt the Enemy.

Whenſoever thoſe Magiſtrates would ſend any ſecret Orders to the General, they took a ſlip of Parchment, and roll'd it very juſtly about the *Scytala* which they had reſerv'd; and in this ſtate wrote their Intentions, which appear'd perfect and conſiſtent while the Parchment continu'd on the Roller: when taken off, the Writing was maim'd, and without connection; but was eaſily retriev'd by the General, upon applying it to his *Scytala*.

Polybius ſays, that *Æneas Tacticus*, 2000 Years ago, collected together twenty different Manners of Writing ſo as not to be underſtood by any but thoſe in the Secret; part whereof were invented by himſelf, and part us'd before his Time.

Trithemius, *Bap. Porta*, *Vigenere*, and *P. Niceron* have wrote on the Subject of *Ciphers*.

As the writing in *Cipher* is become an Art; ſo is the reading, or unravelling thereof, call'd *Deciphering*. See DECIPHERING.

A CIPHER *with a ſingle Key*, is that wherein the ſame Character is conſtantly us'd to expreſs the ſame Word, or Letter: This is eaſily decipher'd with a little Application.

A CIPHER *with a double Key*, is that wherein the Alphabet, or Key, is chang'd in each Line, or each Word; and wherein are inſerted Characters of no ſignificancy, to amuſe and perplex the Meaning.

The Word *Cipher* comes from the Hebrew *Sifre*, Number, Enumeration.

CIPHERING, is popularly us'd for the Art of Accompting; properly call'd *Arithmetic*. See ARITHMETIC.

CIPPUS, among Antiquaries, a little low Column, erected in the great Roads, and other Places, with an Inſcription thereon; either to ſhew the Way to Travellers, or to preſerve the Memory of ſomething remarkable.

The *Cippi* plac'd in the Highway, for the Convenience of Travellers, were alſo call'd *Milliary Columns*. See MILLIARY *Column*.

Hottinger has an expreſs Treatiſe of the *Cippi* of the *Jews*, *De Cippis Hebræorum*; wherein he takes *Cippus* for the Tomb of a Defunct. See TOMB, and TUMULUS.

CIPPUS was alſo us'd in Antiquity, for a wooden Inſtrument, wherewith Criminals and Slaves were puniſh'd.

CIRCENSES *Ludi*, in Antiquity, *Circenſian Games*, or *Games of the Circus*, a general Term, under which were comprehended all Combats exhibited in the *Roman Circus*, of what Kind ſoever; whether a-foot, or on Horſeback, or in a Car; Wreſtling, or Boxing; with Swords, Pikes, Darts, or Arrows; againſt Men, or againſt Beaſts; on the Ground, or aboard Veſſels. See GAMES, and CIRCUS.

There were few but Slaves that gave the People this cruel Pleaſure: it was an Exerciſe that would have diſgrac'd People of any Account.

Some ſay, the *Circenſian* Games were ſo call'd from the Latin *Circuitus*; becauſe they were held in a Place incompaſs'd round with naked Swords, that the Combatants might not have an opportunity of eſcaping.

At firſt they are ſaid to have been exhibited on the brink of the River *Tyber*, and the Ground incompaſs'd, to the Landward, with naked Swords.

Moſt of the Feaſts of the *Romans* were accompany'd with *Circenſian* Games; and the Magiſtrates, or other Officers of the Republick, frequently preſented the People with them on other Occaſions. See FEAST.

The grand ones were held for five Days, commencing on the 15th of *September*.

CIRCLE, in Geometry, a plane Figure, comprehended under one ſingle Line, which returns into it ſelf; having a Point in the Middle, from which all the Lines drawn to its Circumference are equal. See CENTRE.

Properly ſpeaking, 'tis the Space included within the Circumference, or Periphery, that is the *Circle*: tho in the popular Uſe of the Word, *Circle* is frequently us'd for the Periphery alone. See PERIPHERY.

Every *Circle* is ſuppos'd to be divided into 360 Degrees. See DEGREE; ſee alſo CHORD, TANGENT, DIAMETER, &c.

The Area of a *Circle*, is found by multiplying the Periphery by the fourth Part of the Diameter; or half the Periphery by half the Diameter.

The Area is alſo found by finding a Fourth proportional to 1000,785, and the Square of the Diameter: or, to 452, 355, and the Square of the Diameter. See AREA.

Circles, and ſimilar Figures inſcrib'd in 'em, are always as the Squares of the Diameters: So that they are in a duplicate Ratio of their Diameters; and therefore of their Radii.

A *Circle* is equal to a Triangle whoſe Baſe is equal to the Periphery, and its Altitude to the Radius. *Circles*, therefore, are in a Ratio compounded of the Peripheries and the Radii.

To find the Proportion of the Diameter of a CIRCLE *to its Periphery.*

Find, by continual Biſſection, the Sides of the inſcrib'd Polygons, till you arrive at a Side ſubtending any Arch, howſoever ſmall: this found, find likewiſe the Side of a ſimilar circumſcrib'd Polygon; multiply each by the Number of Sides of the Polygon; by which you will have the Perimeter of each Polygon. The Ratio of the Diameter to the Periphery of the Circle, will be greater than of the ſame Diameter to the Perimeter of the circumſcrib'd Polygon; but leſs than that to the inſcrib'd Polygon.

The Difference of the two being known, the Ratio of the Diameter to the Periphery, is eaſily had in Numbers very nearly true; tho not juſtly ſo.

Thus, *Wolfius* finds it as 1000000000000000 to 3141592-6535897932. *Archimedes* fix'd the Proportion as 7 to 22. *Ludolphus à Ceulen* carries it to a much greater accuracy; finding, that putting the Diameter for 1, the Periphery is greater than 3. 14159265358979323846264338387950; but, leſs than the ſame Number, changing the laſt Cipher into an Unite. *Metius* gives us the following Proportion, which is the beſt that is expreſs'd by ſmall Numbers: if the Diameter be 113, the Periphery (113. 31415): 10000; that is, 355, nearly.

To circumſcribe a CIRCLE *about a given regular Polygon:* biſſect two of the Angles of the Polygon E and D, (Tab. *Geom.* Fig. 28.) by the Lines E F and D E; and on the Point of Concourſe F, as on a Centre, with the Radius E F, deſcribe a *Circle*. See CIRCUMSCRIBING.

To inſcribe any given regular Polygon in a CIRCLE: divide 360 by the Number of Sides, to find the Quantity of the Angle E F D; which being made, in the Centre apply the Chord E D to the Periphery, as often as it will go: Thus is the Figure inſcrib'd in the *Circle*. See INSCRIBED.

Thro' three given Points, not in a right Line, A, B, C, *to deſcribe a* CIRCLE. On A and C ſtrike Arches interſecting in D and E; and others, G and H; from C and B draw the right Lines D E and H G: The Point of Interſection, I, is the Centre of the *Circle*.

Hence, 1ſt, by aſſuming three Points in the Periphery, or the Arch of any *Circle*, the Centre may be found, and the given Arch be perfected. See CENTRE.

2dly, If three Points of any Periphery agree, or coincide with three Points of another; the whole Peripheries agree, and the *Circles* are equal.

3dly, Every Triangle may be inſcrib'd in a *Circle*. See TRIANGLE.

In Opticks, 'tis ſhewn, that a *Circle* never appears truly ſuch, unleſs either the Eye be directed perpendicularly to its Centre; or the diſtance of the Eye from the Centre, when directed obliquely, be equal to the Semidiameter of the *Circle*: in every other Caſe the *Circle* appears oblong; and to make a *Circle* that ſhall appear ſuch, it muſt be oblong.

Parallel, or *Concentric* CIRCLES, are ſuch as are equally diſtant from each other in every Point of their Peripheries; or are deſcrib'd from the ſame Centre: as, on the contrary, thoſe ſtruck from different Centres, are ſaid to be *eccentric*. See CONCENTRIC, and ECCENTRIC.

The Quadrature of the CIRCLE, or the manner of making a Square, whoſe Surface is perfectly and geometrically equal to that of a *Circle*, is a Problem that has employ'd the Geometricians of all Ages. See QUADRATURE.

Many maintain it to be impoſſible; *Des Cartes*, in particular, inſiſts on it, that a right Line and a *Circle* being of different Natures, there can be no ſtrict Proportion between 'em: and, in effect, we are likewiſe at a Loſs for the juſt Proportion between the Diameter and Circumference of a *Circle*.

Archimedes is the Perſon who has come the neareſt to the Quadrature of the *Circle*: all the reſt have made Paralogiſms.

Charles V. offer'd a Reward of 100000 Crowns to the Perſon who ſhould ſolve this celebrated Problem; and the States of *Holland* have propos'd a Reward for the ſame.

CIRCLES *of the higher Kinds*, are Curves wherein $A p^m : p M^m : M : p B$, (Tab. *Analyſis*, Fig. 8.) or $A p^m : p M^m_c :: p M^n : p B^n$.

Cor. I. Suppoſe $A p = x$, $p M = y$: $A B = a$; then will $p B = a - x$. Conſequently, $x^n : y^m :: y : a - x$. Hence we have an Equation that defines infinite *Circles*, *viz.* $y m + 1 = a x^m - x m + 1$; and another defining infinite other *Circles*, viz. $y m + n = (a - x) n x^m$.

Cor. II. If $m = 1$, then will $y^2 = a x - x^2$; and therefore a *Circle* of the firſt Kind is contain'd under this Equation alone. If $m = 2$, $y^2 = a x^2 - x^3$. which Equation defines a *Circle* of the firſt Kind.

CIRCLES *of the Sphere*, are ſuch as cut the mundane Sphere, and have their Periphery either on its moveable Surface, or in another immoveable, conterminous, and equidiſtant. See SPHERE.

Hence ariſe two Kinds of *Circles*, *moveable*, and *immoveable*.

The firſt, thoſe whoſe Peripheries are in the moveable Surface, and which therefore revolve with its diurnal Motion, as the *Meridians*, &c. See MERIDIAN.

The latter, having their Periphery in the immoveable Surface, don't revolve; as the *Ecliptic*, *Equator*, and its *Parallels*, &c. See ECLIPTIC, *&c.*

If a Sphere be cut in any manner, the Plane of the Section will be a *Circle*, whoſe Centre is in the Diameter of the Sphere. See SPHERICS.

Hence, the Diameter of a *Circle* paſſing thro' the Centre, being equal to that of the *Circle* which generated the Sphere; and that of a *Circle* which does not paſs thro' the Centre, being only equal to ſome Chord of the generating *Circle*; the Diameter being the greateſt of all Chords, there hence ariſes another diviſion of the *Circles* of the Sphere, *viz.* into *great* and *leſs*.

A great CIRCLE *of the Sphere*, is that which divides it into two equal Parts, or Hemiſpheres; having its Centre in the Centre thereof. See GREAT.

Hence, all *great Circles* are equal, and cut each other into equal Portions, or Semicircles. See SPHERICS.

The *great Circles* are the *Horizon*, *Meridian*, *Equator*, *Ecliptic*, the *Colures*, and the *Azimuths*; which ſee in their Places, HORIZON, MERIDIAN, ECLIPTIC, *&c.*

A leſſer CIRCLE *of a Sphere*, is that which divides the Sphere into equal Parts, and has its Centre in the Axis of the Sphere, but not in the Centre thereof. See LESSER.

They are uſually denominated from the great *Circles* they are parallel to, as *Parallels of the Equator*, &c. See PARALLEL.

CIRCLES *of Altitude*, otherwiſe call'd *Almacantars*, are *Circles* parallel to the Horizon, having their common Pole in the Zenith, and ſtill diminiſhing as they approach the Zenith. See ALMACANTAR.

They have their Names from their Uſe; which is to ſhew the Altitude of a Star above the Horizon. See ALTITUDE.

CIRCLES *of Latitude*, or *Secondaries of the Ecliptic*, are great *Circles* parallel to the Plane of the Ecliptic, paſſing thro' the Poles thereof, and thro' every Star and Planet. See SECONDARY.

They are ſo call'd, becauſe they ſerve to meaſure the Latitude of the Stars, which is nothing but an Arch of one of theſe *Circles*, intercepted between the Star and the Ecliptic. See LATITUDE.

CIRCLES *of Longitude*, are ſeveral leſſer *Circles*, parallel to the Ecliptic; ſtill diminiſhing, in proportion as they recede from it.

On the Arches of theſe *Circles*, the Longitude of the Stars is reckon'd. See LONGITUDE.

CIRCLES *of Declination*, are great *Circles* paſſing thro' the Poles of the World. See DECLINATION.

Vertical CIRCLES, or *Azimuths*. See VERTICAL, and AZIMUTH.

Diurnal CIRCLES, are immoveable *Circles*, ſuppos'd to be deſcrib'd by the ſeveral Stars, and other Points of the Heavens, in their diurnal Rotation round the Earth; or rather, in the Rotation of the Earth round its Axis. See DIURNAL.

The *Diurnal Circles* are all unequal: the Equator is the biggeſt.

Polar CIRCLES, are immoveable *Circles*, parallel to the Equator, and at a diſtance from the Poles, equal to the greateſt Declination of the Ecliptic. See POLAR.

That next the Northern Pole is call'd the *Arctic*; and that next the Southern one the *Antarctic*. See ARCTIC, and ANTARCTIC.

CIRCLES *of Exurſion*, are *Circles* parallel to the Ecliptic, and at ſuch a diſtance from it, as that the Excurſions of the Planets towards the Poles of the Ecliptic, may be included within it; which are uſually fix'd at 10 Degrees. See SPHERE, and SPHERICS.

It may be here added, that all the *Circles* of the Sphere above deſcrib'd, are transferr'd from the Heavens to the Earth; and thence come to have Place in Geography, as well as Aſtronomy: all the Points of each *Circle* being conceiv'd to be let fall perpendicularly on the Surface of the Terreſtrial Globe, and ſo to trace out *Circles* perfectly ſimilar to them.

Thus, the Terreſtrial Equator is a Line, conceiv'd preciſely under the Equinoctial Line, which is in the Heavens; and ſo of the reſt. See EQUATOR, *&c.*

Horary CIRCLES, in Dialling, are the Lines which ſhew the Hours on Dials; tho theſe be not drawn circular, but nearly ſtrait. See DIAL.

CIRCLE *Equant*, in the *Ptolemaic* Aſtronomy, is a *Circle* deſcrib'd on the Centre of the Equant. See EQUANT.

Its chief Uſe, is to find the Variation of the firſt Inequality. See VARIATION.

CIRCLE *of perpetual Apparition*, one of the leſſer *Circles*, parallel to the Equator; deſcrib'd by any Point of the Sphere touching the Northern Point of the Horizon; and carry'd about with the diurnal Motion.

All the Stars included within this *Circle* never ſet, but are ever viſible above the Horizon.

The CIRCLE *of perpetual Occultation*, is another *Circle* at a like Diſtance from the Equator; and contains all thoſe Stars which never appear in our Hemiſphere. See OCCULTATION.

The Stars ſituate between theſe *Circles*, alternately riſe and ſet at certain Times. See STAR, RISING, SETTING, &c.

CIRCLES *of Poſition*, are *Circles* paſſing thro' the common Interſections of the Horizon and Meridian, and thro' any Degree of the Ecliptic, or the Centre of any Star, or other Point in the Heavens; us'd for finding out the Situation or Poſition of any Star, &c. See POSITION.

They are uſually made ſix in number; and cut the Equator into twelve equal Parts, which the Aſtrologers call the *Celeſtial Houſes*.

Hence ſome call them *Circles of the Celeſtial Houſes*.

CIRCLE, in Phyſicks, is underſtood, among the Schoolmen, of a Viciſſitude of Generations, ariſing one out of another.

Thus, good Concoction cauſes a good Habit of Body; a good Habit of Body produces Strength and Vigour; theſe occaſion frequent Exerciſes; and theſe a good Concoction.

'Tis a celebrated Dogma of the Scotiſts, 'There is no 'Circle in Cauſes of the ſame Order, or Kind.'

CIRCLE, in Logick, the Fault of an Argument that ſuppoſes the Principle it ſhould prove, and afterwards proves the Principle by the Thing it ſeem'd to have prov'd.

Or, a *Circle* in Logick, call'd alſo *Syllogiſtic Circle*, is when the ſame Terms are proved, *in Orbem*, by the ſame Terms; and the Parts of the Syllogiſm, alternately by each other, both directly and indirectly.

There are two Kinds of *Circles*; the one *Material*, the other *Formal*.

The *Formal* is that which in two reciprocal Syllogiſms begs the *Medium*, which is the next Cauſe of the greater Extreme. This Kind is by no means to be admitted: otherwiſe, the ſame Thing becomes both prior and poſterior; the Cauſe and Effect of it ſelf; which is abſurd.

The *Material Circle*, call'd alſo *Regreſſus*, conſiſts of two Syllogiſms, the former whereof proves the Cauſe by the Effect; and the latter the Effect by the Cauſe: This may be admitted.

CIRCLES *of the Empire*, are ſuch Provinces, and Principalities of the Empire, as have a Right to be preſent at Diets. See EMPIRE, and DIET.

The Diviſion of the Empire into ſix *Circles*, was eſtabliſh'd by *Maximilian* I. in 1500, at *Ausburg*: twelve Years afterwards he divided it afreſh, into ten *Circles*; which Partition was confirm'd by *Charles* V. at the Diet of *Nuremberg*, in 1522.

Tho the Order of theſe *Circles* has never been well regulated; yet, in the Imperial *Matricula*, it is as follows: The *Circle* of *Auſtria*, that of *Burgundy*, of the *Lower Rhine*, of *Bavaria*, *Upper Saxony*, *Franconia*, *Suabia*, *Upper Rhine*, *Weſtphalia*, and the *Lower Saxony*.

CIRCUIT, or CIRCUITY, in Law; a longer Courſe of Proceeding to recover the Thing ſued for, than is needful.

Thus, if a Man grant a Rent-Charge of 10 *l.* out of his Manor, and after, the Grantee diſſeizeth the Grantor of the ſame Manor, who brings an Aſſiſe, and recovers the Land, and 20 *l.* Damages: which being paid, the Grantee brings his Action for 10 *l.* of his Rent, due during the Time of the Diſſeiſin, and which he muſt have had if no Diſſeiſin had been: This is call'd *Circuit of Action*; becauſe, whereas the Grantor was to receive 20 *l.* Damages, and to pay 10 *l.* Rent, he might have receiv'd but 10 *l.* for Damages, and the Grantee have kept the other.

CIRCUIT, is alſo the Journey, or Progreſs the Judges take, twice every Year, thro' the ſeveral Counties of *England* and *Wales*, to hold Courts, and adminiſter Juſtice, where recourſe cannot ſo well be had to the King's Courts at *Weſtminſter*. See JUDGE, and ASSIZE.

CIRCULAR, any thing that is deſcrib'd, or mov'd in a round; as the Circumference of a Circle, or the Surface of a Globe. See CIRCLE.

The *circular* Form is of all others the beſt diſpos'd for Motion; and the moſt capacious.

The modern Aſtronomers ſhew, that the Heavenly Bodies don't move in *Circular*, but in Elliptic Orbits. See ORBIT, PLANET, &c.

CIRCULAR *Lines*, in Mathematicks, are ſuch ſtrait Lines as are divided from the Diviſions made in the Arch of a Circle.

Such are Sines, Tangents, Secants, &c. See SINE, TANGENT, &c.

CIRCULAR *Velocity*, a Term in Aſtronomy, ſignifying that Velocity of a Planet, or revolving Body, which is meaſur'd by the Arch of a Circle: as ſuppoſe by A *b*, (Tab. *Aſtron.* Fig. 10.) deſcrib'd on the Centre of Attraction S.

The *circular* Velocity of a Body moving from B to C, is meaſur'd by the Ark B C.

CIRCULAR *Numbers*, are ſuch whoſe Powers end in the Roots themſelves; as 5, whoſe Square is 25, and Cube 125. See NUMBER.

CIRCULAR *Letter*, a Letter directed to ſeveral Perſons, who have the ſame Intereſt in the ſame Affair; as in the Convocation of Aſſemblies, &c.

CIRCULAR *Sailing*, is that perform'd in the Arch of a great Circle. See SAILING.

Circular Sailing, of all others, goes the neareſt or ſhorteſt way: and yet there are ſuch Advantages in ſailing by Rhumbs, that this latter is generally preferr'd.

CIRCULATION, the Act of *circulating*, or moving in a *Circle*. See CIRCLE.

Thus, we ſay, The *Circulation* of the Blood; the *Circulation* of the Sap; of the Spirits, &c. See BLOOD, SAP, SPIRITS.

As in the great World we find a perpetual and orderly *Circulation* of Waters, convey'd from the Sea by ſubterraneous Paſſages, Springs, &c. and return'd thither again by Rivers, &c. ſo in the little World, Man, a like Circuit is obſerv'd; the Blood being continually driven from the Heart, by the Arteries, to all Parts of the Body; and brought back again to the Heart by the Veins. See HEART, VEIN, and ARTERY.

CIRCULATION *of the Blood*, a natural Motion of the Blood in a living Animal; whereby that Humor is alternately convey'd from the Heart to all the Parts of the Body, by the Arteries, and return'd from the ſame Parts to the Heart by the Veins. See BLOOD.

The *Heart*, we have elſewhere ſhewn, is a Muſcle, into the *Ventricles* or Cavities whereof, all the Veins diſcharge themſelves, and from which all the Arteries ariſe; having, withal, a reciprocal Action of Dilatation, or *Diaſtole*; and Conſtriction, or *Syſtole*. See HEART, SYSTOLE, and DIASTOLE.

Now, the neceſſary Effect of ſuch alternate Action, is, that the Heart, by turns, both receives and expels the Blood. The Blood expell'd out of the right Ventricle, muſt be carry'd thro' the *Pulmonary* Artery (which ariſes thence) into the Lungs; from which it muſt be return'd, by the *Pulmonary* Vein, to the left Ventricle, (in which that Vein terminates.) From the left Ventricle, the Blood thus imported, is by the Conſtriction of that Part, again expell'd into the *Aorta*, and by it diſtributed all over the reſt of the Body; and thence return'd again to the right Ventricle by the *Cava*, which compleats the *Circulation*. See PULMONARY *Artery*, and *Vein*; CAVA, and AORTA.

The *Circulation* of the Blood, has been generally allow'd to have been firſt diſcover'd in *England*, in the Year 1628, by *Harvey*, a Phyſician of our own Country; tho there are ſeveral Authors who diſpute it with him.

Janſen de Almeloveen, in a Treatiſe of *New Inventions*, printed in 1684, quotes ſeveral Paſſages from *Hippocrates*, to prove that the *Circulation* was known to him.

Walæus, (*Ep. ad Barthol.*) and *Carleton*, (*Oecon. Anim.*) pretend, 'twas known not only to *Hippocrates*, but alſo to *Plato* and *Ariſtotle*.

'Tis added, that the *Chineſe* Phyſicians taught it 400 Years, e're it was ſpoke of in *Europe*.

Some go back as far as *Solomon*, and imagine they ſee ſome Traces of it in *Eccleſiaſtes*, Chap. xii.

Bern. Genga, in an *Italian* Treatiſe of Anatomy, quotes ſeveral Paſſages from *Realdus Columbus*, and *And. Cæſalpinus*, whereby he endeavours to prove that they admitted a *Circulation*, long enough before *Harvey*.

He adds, that *Fra. Paolo Sarpio* the famous *Venetian*, from a Conſideration of the Structure of the Valves of the Veins, and other Experiments, concluded a *Circulation*. See VALVE.

Leonicenus adds, that *F. Paolo* durſt not make known his Diſcovery, for fear of the Inquiſition; that he therefore only communicated the Secret to *Fab. ab Aquapendente*; who, after his Death, depoſited the Book he had compos'd on it in the Library of S. *Mark*; where it lay hid a long time, till *Aquapendente* diſcover'd the Secret to *Harvey*, who then ſtudy'd under him at *Padua*; and who, upon his return to *England*, a Country of Liberty, publiſh'd it as his own.

The *Circulation* of the Blood is evinc'd, from the following Conſiderations.

1. All the Blood of a living Animal, upon wounding any one of the larger Arteries, is, in a little time, evacuated; and that with a conſiderable force: as appears from the Operations of Butchers, &c.

Hence, it follows, that the Blood has a Paſſage from every Part of the Animal Body into every Artery: and if the whole Maſs of Blood be found to move on this occaſion, 'tis evident it muſt have mov'd before.

2. The great Quantity of Blood driven out of the Heart into the Arteries at every Pulſe, makes a *Circulation* neceſſary; ſince, without it, an infinitely greater Stock of Blood muſt be ſuppos'd in the Body of a Man, than any Obſervation or Experiment will allow of.

For tho the Antients, who knew not this *Circulation*, imagin'd that only a Drop or two was expell'd at each Syſtole; which they were neceſſitated to ſuppoſe, to avoid the too great

great Diſtenſion of the Arteries, from a more conſiderable Influx: yet it is certain, and even demonſtrable, that there muſt needs be an Ounce, or more, driven into 'em at each time; and yet ſome compute five or ſix thouſand Pulſations in an Hour.

3. Any of the Arteries, being ty'd with a Thread, ſwell, and beat, between the Bandage and the Heart; but grow flaccid between the Bandage and the Extremities of the Body.

If now the Artery be cut between the Bandage and the Heart, the Blood ſtreams out, even to Death: If it be cut between the Bandage and the Extremities of the Body, the Quantity of Blood it yields is very ſmall.

The vital Blood, therefore, flows thro' the Arteries; and its Courſe is from the Heart towards the Extremes of the Body: and this it does in every Point of the Body, internal and external; ſtill out of a wider Part into a narrower; out of the Trunk into the Branches. 'Tis on this Principle alone, that all the Blood may be deriv'd into any Artery, and evacuated at it. See ARTERY.

4. Any of the larger Veins being bound up with a Thread, ſwell between the Extremes of the Body and the Bandage; but without beating: between the Bandage and the Heart it becomes flaccid.

If open'd in the former Part, it bleeds even to Death; if in the latter, it ſcarce bleeds at all. The Blood, therefore, flows briſkly from every Part of the Body into this Vein; and its Courſe is from the Extremes of the Body towards the Heart; from the narrower Parts of the Vein towards the wider Parts; from the Branches to the Trunk. See VEIN.

From the whole, 'tis evident, that all the Arteries of the Body are continually bringing the Blood from the left Part of the Heart, thro' the Trunks of the Arteries, into the Branches; and from thoſe to all Parts of the Body, internal and external: And on the contrary, that all the Veins, excepting the *Porta*, are perpetually bringing back the Blood from the extreme Parts into the ſmaller Branches; from thoſe it paſſes into the larger, at length into the Trunks, and thence into the *Cava*; and thro' the *Sinus Venoſus*, or Trunk of that Vein (which ends in the Cavity of the right *Auricle*) into the Heart.

The Blood arriv'd here, its Motion, or *Circulation*, is continu'd as follows.

The Auricles of the Heart being large hollow Muſcles, furniſh'd with a double Series of ſtrong Fibres proceeding with a contrary Direction to two oppoſite Tendons, the one adhering to the right Ventricle, the other to the *Sinus Venoſus*, as alſo with innumerable Veins and Arteries; by the contractile Force of theſe Auricles, the Blood will be vigorouſly expreſs'd, and drove into the right Ventricle; which, upon this Contraction, is render'd flaccid, empty, and diſpos'd to admit it. See MUSCLE.

If now the right Ventricle, thus full of Blood, by the Contraction of its Fibres preſs the Blood towards the Aperture again; the venous Blood at the ſame time pouring in, will drive it back again into the Cavity, and mix it more intimately; till riſing up againſt the *Parietes*, it raiſes the *Valvulæ Tricuſpides*, which are ſo connected to the fleſhy Columns extended on the oppoſite ſide, as that when laid quite down they cannot cloſe the *Parietes* of the right Ventricle: theſe it thruſts towards the right Auricle, till being there join'd, they ſtop the Paſſage very cloſely, and prevent any return.

By the ſame means, the ſame Blood riſes up into the three *Semilunar* Valves, plac'd in the Extremity of the other Mouth, and lying open to the Pulmonary Artery: theſe it ſhuts cloſe againſt the Sides of the Artery, and leaves a Paſſage into the Artery alone.

The venous Blood therefore, that is, the Blood of the whole Body, continually moves out of the *Sinus*, or Trunk of the *Vena Cava*, thro' the right Auricle, and right Ventricle, into the Pulmonary Artery, in a continu'd and forcible Stream.

The Blood carry'd by this Artery into the Lungs, and diſtributed by its Branches thro' the whole Subſtance thereof, is firſt admitted into the Extremities of the Pulmonary Vein, call'd *Arteria Venoſa*; whence paſſing into four large Veſſels, which unite together, it is brought to the left *Sinus Venoſus*, or Trunk of the Pulmonary Vein; by the force of whoſe muſculous Structure it is driven into the left Ventricle, which, on this occaſion, is relax'd, and by that means prepar'd to receive it.

Hence, as before, 'tis driven into the left Ventricle, which is relax'd by the ſame means; and the *Valvulæ Mitrales* opening, admit it into the left Ventricle, and hinder its reflux into the Pulmonary Vein.

From hence it is forc'd into the *Aorta*; at whoſe Orifice there are three Semilunar Valves, which alſo prevent a Reflux by cloſing the ſame.

And thus is *Circulation* effected; all the Blood ſent into the Lungs, and receiv'd into the *Arteria Venoſa*, *Sinus Venoſus*, left Auricle and Ventricle, being here continually propell'd into the *Aorta*; whoſe Ramifications are ſpread throughout all the reſt of the Body, with a violent Motion.

This Motion, in living Animals, is attended with the following Phænomena.

1. Both *Venous Sinus's* are fill'd, and grow turgid at the ſame time. 2. Both Auricles grow flaccid at the ſame time; and both are fill'd at the ſame time, with Blood impell'd by the contractile Force of its correſpondent muſcular *Venous Sinus*. 3. Each Ventricle contracts, and empties it ſelf of Blood at the ſame time; and the two great Arteries are fill'd and dilated at the ſame time. 4. As ſoon as the Blood, by this Contraction, is expell'd, both Ventricles being empty, the Heart grows longer and broader; and conſequently more flaccid and capacious. 5. Upon which, the muſcular Fibres of both *Venous Sinus*'s contract, and expreſs the Blood contain'd in 'em into the Ventricles of the Heart. 6. In the mean time, the *Venous Sinus*'s are again fill'd, as before; and the Auricles, *&c.* return into their former habitude. 7. And this Alternation continues till the Animal begins to languiſh, under the Approach of Death; at which time, the Auricles and *Venous Sinus*'s make ſeveral Palpitations, for one Contraction of the Ventricle.

Thus is all the Blood, in its return from every Point of the Body, internal and external, and from every Point of the Heart and its Auricles, impell'd into the right Ventricle; out of that into the Lungs; thence into the left Ventricle; and thence thro' the whole extent of the Body; and thence again brought back to the Heart.

As to the manner of the Blood's paſſing out of the Arteries into the Veins, in order to its being return'd to the Heart; there are two Opinions.

In the firſt, the Veins and Arteries are ſuppos'd to open into each other, or to be continu'd from each other, by *Anaſtomaſes*, or Inoſculations of their Extremities. See INOSCULATION, *&c.*

In the latter the extreme Capillary Arteries are ſuppos'd to let out their Blood into the Pores of the Subſtance of their Parts; on whoſe Nutrition part is ſpent, and the reſt receiv'd in at the Mouths of the Capillary Veins.

Each of theſe manners muſt be allow'd to have its Place: For without the firſt, it were difficult to account for ſo quick a return of the Blood to the Heart, as in effect we find; beſides that, in ſome of the larger Veſſels, there is a confeſs'd *Anaſtomaſis*, *v. g.* in the Splenic Artery with the Splenic Vein, *&c.* whence Authors conclude the ſame Contrivance to hold in the leſſer Veſſels; even in the ſmalleſt Twigs in the extreme Parts of the Body, tho not diſcover'd by the Eye; Nature being ordinarily found very uniform, and conſiſtent with her ſelf.

Riolanus, however, who will allow of no *Circulation* but by *Anaſtomaſes*; allows of none, neither, but by the larger Veſſels.

The Reaſon of the latter Opinion is deduc'd hence, that if part of the arterial Blood did not ooze out into the Subſtance of the Parts, they could not be nouriſh'd thereby: For the Blood, while contain'd in the Veſſels, may indeed convey Warmth thereto, but no Nutriment; the very Veſſels themſelves being not nouriſh'd by the Fluid running in their Cavity, but by Capillaries paſſing their Coats. See NUTRITION.

If then the Blood be driven out of the Veſſels in a greater Quantity than is requir'd for Nutrition; the redundancy muſt be imbib'd by the Capillary Veins.

M. *Leewenhoeck* ſeem'd to have put this Matter out of doubt by his Microſcopes, with which he diſcover'd the Inoſculations, or Continuations of the Extremities of the Veins and Arteries in Fiſhes, Frogs, *&c.* But ſome ſtill doubt whether there be ſuch Continuations in the Extremes of the Veins and Arteries in human Bodies and Quadrupeds: thoſe Animals it has been hitherto obſerv'd in, being either Fiſh, or of the amphibious Kind, which have but one Ventricle in the Heart, and their Blood actually cold; to which it may be added, that the Blood in theſe Creatures does not *circulate* with that Rapidity as in thoſe whoſe Hearts have two Ventricles.

This difference in the principal Organs of *Circulation*, occaſion'd Mr. *Cowper* to make Experiments on other Animals, whoſe Parts have the ſame Structure with thoſe of Man. In the *Omentum* of a Cat, he ſaw the Blood move briſkly thro' the Inoſculations; the ſame he found in the *Omentum*, and much clearer in the Meſentery, of a Dog. He adds, that the Extremities of the Veſſels are not equally leſſen'd, in the Inoſculations, in different Animals.

In the Tail of the Tadpole, he frequently obſerv'd ſeveral Communications between the Veins and Arteries; thro' each of which two Globules of Blood might paſs abreaſt. In young Fiſh, particularly Grigs, the communicant Branch is ſo ſmall, that one Globule of Blood can ſcarce paſs in the Space of three Seconds. See VEIN, *&c.*

In a *Fœtus*, the Apparatus for the Circulation is ſomewhat different. from that above deſcrib'd.

The *Septum*, which ſeparates the two Auricles of the Heart, is pierc'd thro' with an Aperture, call'd the *Foramen Ovale*; and the Trunk of the Pulmonary Artery, a little after it has left the Heart, ſends out a Tube into the deſcending *Aorta*, call'd the *Communicating Canal*.

The *Fœtus* being born, the *Foramen Ovale* cloſes, by degrees, and the Canal of Communication dries up, and becomes a ſimple Ligament. See FOETUS.

This Mechaniſm once known, 'twas eaſy to perceive its Uſe.

For while the *Fœtus* is inclos'd in the *Uterus*, it receives no Air, but that little furniſh'd it by the Umbilical Vein: Its Lungs, therefore, can't ſwell and ſubſide as they do after the Birth, and after the free Admiſſion of the Air. They continue almoſt at reſt, and without any Motion; their Veſſels are as it were full of themſelves, and don't allow the Blood to *circulate*, either in abundance, or with Eaſe.

Nature, therefore, has excus'd the Lungs from the Paſſage of the greateſt Part of the Blood; and has contriv'd the *Foramen Ovale*, by which Part of the Blood of the *Vena Cava*, receiv'd into the right Auricle, paſſes into the left Auricle, at the Mouth of the Pulmonary Veins; and by this means is found as far in its Journey as if it had paſs'd the Lungs.

But this is not all, for the Blood of the *Cava*, which, miſſing the *Foramen Ovale*, paſſes from the right Auricle into the right Ventricle; being ſtill in too great Quantity to paſs by the Lungs, whither 'tis driven thro' the Pulmonary Artery; the communicant Canal intercepts part of it in the way, and pours it immediately into the deſcending *Aorta*. See FORAMEN, *&c.*

This is the Doctrine of *Harvey*, *Lower*, and moſt other Anatomiſts; but, M. *Mery*, of the Royal Academy, has made an Innovation in it.

He aſſigns another uſe for the *Foramen Ovale*; and maintains, that the whole Maſs of Blood brought from the *Cava* to the right Ventricle, paſſes, as in Adults, into the Pulmonary Artery, whence Part of it is convey'd by the communicant Canal into the *Aorta*; and the reſt brought from the Lungs by the Pulmonary Veins into the left Auricle, where 'tis divided into two Parts; the one paſſing thro' the *Foramen Ovale* into the right Ventricle, without *circulating* thro' the *Aorta* and the reſt of the Body; the other Part puſh'd, as in Adults, by the Contraction of the left Ventricle, into the *Aorta*, and the whole Body of the *Fœtus*.

The whole Queſtion then turns upon this, *viz.* whether the Blood paſs thro' the *Foramen Ovale* from the right to the left Ventricle, or from the left to the right.

M. *du Verney* aſſerts the antient Opinion, againſt M. *Mery*, and maintains that the *Foramen Ovale* has a Valve ſo diſpos'd as to be open'd by the Blood driving into the right Ventricle, but ſhut the more firmly by its puſhing into the left. M. *Mery* denies the Exiſtence of any ſuch Valve.

Again, in an Adult, the *Aorta* being to receive all the Blood of the Pulmonary Artery, is found of the ſame bigneſs. In a *Fœtus*, the two Arteries are to receive unequal Quantities, which of the two Syſtems ſoever be follow'd.

According to the common Opinion, the *Aorta* receiving more Blood than the Pulmonary, ſhould be bigger: according to the Opinion of M. *Mery*, the Pulmonary Artery ſhould be the bigger, as being eſteem'd to receive a larger Quantity of Blood.

To judge of the two Syſtems therefore; it ſhould ſeem there needed nothing but to determine which of the two Veſſels were biggeſt in a *Fœtus*.

M. *Mery* always found the Pulmonary Artery half as big again as the *Aorta*; and, on the other hand, M. *Tauvry*, who ſeconded M. *du Verney*, produces Caſes where the Pulmonary is leſs than the *Aorta*: the Facts on both Sides being examin'd by the *French* Royal Academy.

M. *Tauvry* adds, that tho the Pulmonary Artery ſhould be greater than the *Aorta*, yet this does not prove that more Blood paſſes the firſt than the ſecond; ſince it may be accounted for from the Blood's preſſing more ſlowly towards the Lungs, which it finds ſome difficulty to penetrate, and accordingly ſwells, and is driven back.

M. *Littre*, upon diſſecting an Adult, in whom the *Foramen Ovale* was ſtill open, and meaſuring the Capacities of the Veſſels on each ſide, declares for M. *Mery*.

For the Source of the *Circulation* in the *Fœtus*, Anatomiſts are again divided.

The popular Opinion is, that during Geſtation, the Arteries of the *Uterus* convey their Blood into the *Placenta*, which is nouriſh'd by it, and the Surplus convey'd into the Roots of the Umbilical Vein, which makes Part of the Navel-ſtring: thence 'tis carry'd to the Liver of the *Fœtus*, where it enters the *Vena Cava*, and is thence convey'd to the right Ventricle of the Heart, and diſtributed as before.

Again, the Blood brought from the Iliac Arteries of the *Fœtus*, enters the Navel-ſtring by the Umbilical Arteries; thence paſſes into the *Placenta*, where it is reſum'd by the Veins of the *Uterus*, which carry it back again to the Mother; and perhaps alſo by the Roots of the Umbilical Vein, which mix it afreſh with the Blood of the Mother.

According to this Syſtem therefore, 'tis the Blood of the Mother that ſupplies the Child; which is here only regarded as a diſtinct Member, or Part of her Frame.

The beating of her Heart ſends it a Portion of her Blood; and ſo much of the Impulſe is preſerv'd, as ſuffices to maintain that languid *Circulation* which a *Fœtus* enjoys; and, in all probability, gives that feeble Pulſation obſerv'd in the Heart.

Other Anatomiſts maintain, that the *Fœtus* is only ſupply'd with Chyle from the Glands of the *Uterus*; which is further elaborated, and turn'd into Blood in the Veſſels of the *Fœtus*; and circulates therein, without any further Communication with the Mother.

They allow of no reciprocal *Circulation*, excepting between the *Placenta* and the *Fœtus*.

But the former Opinion is beſt ſupported: For the *Placenta* being ſeparated from the *Uterus*, during the time of Geſtation, neither yields any Chyle, nor any thing but Blood. Beſides, M. *Mery* has ſhewn, that the *Uterus* has no Glands to furniſh any Chyle.

Two other Obſervations of the ſame Author, confirm the popular Syſtem: The inner Surface of the *Uterus* is lin'd with Veins; and the outer Surface of the *Placenta* is not lin'd with any Membrane. Now as 'tis by theſe two Surfaces that the two ſeem in ſome meaſure glu'd together; it looks as if they were only left without Membranes, for an immediate Communication between their Blood-Veſſels.

Add to theſe a Fact whereof M. *Mery* was an Eye-witneſs: A Woman big with Child was kill'd by a Fall; in the Cavity of her Belly were found ſeven or eight Pints of Blood; all the Blood-Veſſels being empty'd: the Child too was found dead; but without the leaſt Appearance of any Wound or Contuſion: all its Blood-Veſſels being empty of Blood, like thoſe of the Mother. The Body of the *Placenta* ſtill adher'd to the whole inner Surface of the *Uterus*; nor was there any extravaſated Blood.

Now the Blood here had no other way to diſcharge it ſelf, but by the Veins of the *Uterus*: whence it follows, that thoſe Veins bring back to the Mother the Blood of the *Fœtus*; which alone eſtabliſhes the whole Syſtem. If the *Circulation* were only from the *Fœtus* to the *Placenta*, and not alſo to the Mother; the dead Child would have had all its Blood.

Upon the whole, the Blood in the Lungs of the *Fœtus* has none of the Advantages of Air or Reſpiration; which yet being neceſſary, Nature, 'tis ſuppos'd, takes care that it receive a Portion of Air, mix'd together with its Mother's Blood, and tranſmitted to it by the Umbilical Veſſels, to be diffus'd thro' the Body.

This is confirm'd hence, that by conſtringing the Navel-ſtring very tight, the Child dies like a Man ſtrangled: which appears to be owing to nothing but the want of Air. Add to this, that as ſoon as the Mother ceaſes to reſpire, the *Fœtus* expires.

As to the Velocity of the *circulating* Blood, and the Time wherein a *Circulation* is compleated; ſeveral Computations have been made.

By Dr. *Keil*'s Account, the Blood is driven out of the Heart into the *Aorta*, with a Velocity which would carry it 52 Feet in a Minute. But this Velocity is continually abated in the Progreſs of the Blood thro' the numerous Sections, or Branches of the Arteries: ſo that e'er it arrive at the Extremities of the Body, its Motion is infinitely diminiſh'd.

The ſame Author, upon a moderate Ratio of the Branches of the Arteries to the Trunks, ſhews, that the greateſt Velocity of the Blood is to the leaſt, in a greater proportion than of 1000,00000,00000,00000,00000,00000,00000,00000, to 1.

The ſpace of Time wherein the whole Maſs of Blood may ordinarily *circulate*, is variouſly determin'd.

Some of the lateſt Writers ſtate it thus: Suppoſing the Heart to make 2000 Pulſes in an Hour, and that at every Pulſe there is expell'd an Ounce of Blood; as the whole Maſs is not ordinarily computed to exceed 24 Pounds, it muſt be *circulated* 7 or 8 times over in the ſpace of an Hour.

CIRCULATION *of the Spirits*, or the *Nervous Juice*. That the Spirits *circulate*, is evinc'd in the ſame manner as ſome Authors chuſe to prove the *Circulation of the Blood*; *viz.* That as the Heart drives out every Hour three or four thouſand Ounces of Blood, whereas, ordinarily, there is not above two thouſand in the whole Body; there is a Neceſſity for the Blood driven out, to return to the Heart, in order to ſupply a Fund to be expell'd.

In like manner, 'tis ſhewn, that there is form'd each Hour a large quantity of Spirits, which are nothing but the more ſubtil Parts of this Blood driven out from the Heart: whence 'tis inferr'd, that theſe too muſt *circulate*. See SPIRIT.

The Courſe they are ſuppos'd to take is this.

The moſt ſubtil Parts of the Arterial Blood being carry'd from the Heart to the Brain by the Carotid Arteries, are thrown violently into the fine Network, wherewith the Bottom of the Ventricles of the Brain is lin'd; whence the more delicate Parts are driven into the Mouths of the Choroid Arteries, where they continue their rapid Motion, and diſcharge themſelves at the Pores where thoſe Veſſels terminate around the Pineal Gland.

Hence they enter that Gland, and there form a conſtant Spring of Spirits; which being here purify'd, enters the Cavities of the Brain, and inſinuating into the Pores of its Subſtance, flow into the Lymphatics; whence they are carry'd to the Heart by two ways.

Thoſe from the upper Parts by the Subclavian Veins, and the adjacent Veſſels: thoſe from the lower, being diſcharg'd into *Pecquet*'s Reſervoir, proceed by the Thoracic Duct, and at laſt by the deſcending Veins to the Heart. Whence they begin their Courſe afreſh.

CIRCULATION *of the Sap*, is a natural Motion of the nutritious Juice of Plants, from the Root to the extreme Parts, and thence back again to the Root. See SAP, and PLANT.

The Experiments of modern Naturaliſts, and Gardeners ſeem to prove a *Circulation* in the Body of Plants, by Veins and Arteries, analogous to that in Animals.

M. *Perrault* firſt ſtarted the *Circulation* of the Sap in *France*, and propos'd it, in 1667, to the Royal Academy: Tho M. *Major*, a Phyſician of *Hambourg*, had publiſh'd it, unknown to M. *Perrault*, two Years before. A Year and half afterwards, M. *Marriotte* propos'd the ſame to the Academy, as a new thing; not knowing that M. *Perrault* had been beforehand with him: And the great *Malpighi* appears to have entertain'd the ſame Thought about the ſame time.

The Opinion, however, is not univerſally receiv'd: ſome of the ableſt Botaniſts, and particularly M. *Dodart*, proteſting openly againſt it.

That Author allows of a Juice mounting from the Root to the Extremities of the Branches; and of another deſcending from theſe Extremities to the Root: the firſt imbib'd from the Soil, and digeſted in the Root, for the Nouriſhment of the Plant: the ſecond receiv'd from the moiſt Parts of the Air, in at the Extremities of the Branches. The riſing and deſcending Juices, therefore, according to him, are not the ſame; or, that which riſes never deſcends, and reciprocally; *i. e.* there is no *Circulation*.

Dr. *Tong*, in the *Philoſophical Tranſactions*, maintains, that the Sap always riſes, and never properly deſcends; having only a Subſiding, or Recidivation, which he can by no means call a *Circulation*.

M. *Switzer* owns himſelf at a Loſs for the Method wherein a *Circulation* ſhould be effected; as well as for the Parity of Reaſon commonly urg'd for a *Circulation* of the Sap and of the Blood. In Animals, he obſerves, the degree of Growth, or Extenſion, is but very ſmall: ſo that the Blood, not being employ'd in any other ſervice, may be eaſily ſuppos'd to *circulate*: But Trees, growing to an unlimited Tallneſs, 'tis probable the great Effort of Nature is employ'd in extending 'em that way; and that the nutritious Juice only aſcends. He adds, that as to the Swelling or Extenſion of Trees in bulk, it evidently ariſes from the Effuſion of the Sap from the Heart of the Tree thro' the Pores, which dilates the whole inſenſibly, by accumulating Circle on Circle; which are annual Gradations eaſily obſerv'd upon cutting a Branch, or Trunk acroſs.

But ſtill, the Arguments for a *Circulation*, muſt be allow'd of more weight than any thing here urg'd againſt it.

The ſame Experiments of Ligature, and Inciſion, which evince a *Circulation* in Animals, have been made in Plants; particularly in ſuch as abound in Sap, as the Milk-Thiſtle, *&c.* and with the ſame Succeſs; the Part between the Ligature and the Root ſwelling very conſiderably, and the other much leſs.

The Ligatures are to be made with metalline Rings. Dr. *Liſter* gives us an Inſtance in the *Cataputia minor*, where the Ligature being only a ſilken Thread, ty'd as hard as poſſible without breaking the Skin, no greater Swelling aroſe on one ſide the Ligature than the other.

Mr. *Lawrence* gives us a Demonſtration of the *Circulation* of the Sap, from an Experiment on the yellow ſtrip'd Jeſſamine.

Upon a Branch of a plain Jeſſamine, whoſe Stem ſpreads it ſelf in two or three Branches, inoculate a Bud of the yellow ſtrip'd Jeſſamine, in Autumn: As the Tree comes to ſhoot, the following Summer, ſome of the Leaves will be found ting'd here and there with yellow, and this even on the Branches not inoculated; till, by degrees, the whole Tree, even the very Wood of the young Branches, will be all variegated, or ſtrip'd with green and yellow. See VARIEGATION.

Mr. *Fairchild* confirms this Experiment by a ſimilar one of his own: Having inoculated a yellow ſpotted Jeſſamine Tree, into another Jeſſamine Tree; he found, that tho the Bough did not take, yet, in a Fortnight's time, yellow Spots began to appear on a Shoot which came out of the Ground from another Part of the Plant. See MULE.

As to the manner of the *Circulation*; it is not difficult to conceive. *Malpighi*, *Grew*, &c. by means of Microſcopes, have diſcover'd, that the Wood of Plants conſiſts of fine Capillary Tubes, which run parallel from the Root, thro' the Trunk, and may be look'd on as Arteries; and on the outſide of theſe, betwixt the Wood and the inner Bark, are other large Tubes, to do the Office of Veins.

Now, the Root having imbib'd a Stock of Juice from the Earth, that Juice will be put in motion by the Heat; that is, it will be rarefy'd, and made to aſcend in form of a Steam or Vapour. Meeting, therefore, with the patent Mouths of the Arterial Veſſels, it will paſs thro' the ſame to the Top and extreme Parts of the Tree, with a Force anſwerable to the Heat by which it is put in motion: when it is there arriv'd; meeting with the Cold of the external Air, it is condens'd into a Liquor; and in that form returns, by its own weight, towards the Root of the venal Veſſels abovemention'd.

CIRCULATION, in Chymiſtry, is an Operation whereby the ſame Vapour, rais'd by Fire, falls back; to be return'd and diſtill'd ſeveral times, and thus reduc'd into its moſt ſubtil Parts. See DISTILLATION.

Circulation is perform'd by diſpoſing the Liquor in a ſingle Veſſel, ſtopp'd at top, call'd a *Pelican*; or in a double Veſſel, conſiſting of two Pieces, luted on each other; the lower to contain the Liquor. See PELICAN, and DOUBLE *Veſſel*.

'Tis perform'd either by the Heat of a Lamp, or that of Aſhes, or of Sand moderately hot, or in Dung, or by the Sun. It uſually demands a continu'd heat of ſeveral Days, ſometimes of ſeveral Weeks, or even ſeveral Months. See FIRE, and HEAT.

By *Circulation*, the fineſt Part of the Fluid mounts to the Top of the Veſſel; and finding no iſſue there, falls back again, and rejoins the Matter left behind at the Bottom, whence it aroſe: and thus, by continuing to riſe, and fall alternately in the Veſſel, there is effected a kind of *Circulation*, or Remixtion of the ſpirituous Parts with the groſs ones; whereby the former are render'd finer and more ſubtil, and better diſpos'd to exert their Activity when ſeparated from the latter. See RECTIFICATION.

CIRCULATORY, CIRCULATORIUM, in Chymiſtry, the Veſſel wherein a Fluid is put, to undergo the Proceſs of *Circulation*. See CIRCULATION.

There are two Kinds of *Circulatories*, the *Diota*, or double Veſſel; and the *Pelican*. See DOUBLE *Veſſel*, and PELICAN.

CIRCULUS, in Geometry Logick, *&c.* See CIRCLE.

CIRCULUS, among Chymiſts, is a round Iron Inſtrument, us'd in cutting off the Necks of glaſs Veſſels: which they effect thus.

The Inſtrument being heated, is apply'd to the glaſs Veſſel, and there kept till it grow hot: then, by a few Drops of cold Water, or a cold Blaſt thereon, it flies aſunder.

Thus they cut off the Necks of Retorts or Cucurbits. See RETORT, *&c.*

There is another Method of doing the ſame, *viz.* by tying a Thread, firſt dipp'd in Oil of Turpentine, round the Place where the Fracture is to be; and then ſetting fire to the Thread.

This done, ſome cold Water being ſprinkled on the Place, the Glaſs will be crack'd thro' preciſely where the Thread was ty'd.

CIRCUMAGENTES *Muſculi*, in Anatomy. See OBLIQUI.

CIRCUMAMBIENT, an Epithet denoting a thing to inveſt, or incompaſs another around. See AMBIENT.

We ſay the *Ambient*, or *Circumambient* Air, *&c.* See AIR, ATMOSPHERE, *&c.*

CIRCUMCISION, the Act of cutting off the Prepuce: or, a Ceremony in the *Jewiſh* and *Mahometan* Religions, wherein they cut away the *Præputium*, or Fore-ſkin of the Males who are to profeſs the one, or the other Law. See PREPUCE, JEW, MAHOMETAN, *&c.*

Circumciſion commenc'd in the Time of *Abraham*; and was, as it were, the Seal of a Covenant ſtipulated between God and him: It was in the Year of the World 2178, that *Abraham*, by divine Appointment, *circumcis'd* himſelf, and all the Males of his Family; from which time it became an hereditary Practice among his Deſcendants.

The Ceremony, however, was not confin'd to the *Jews*: *Herodotus* and *Philo Judæus* obſerve, that it obtain'd alſo among the *Egyptians* and *Ethiopians*. *Herodotus* ſays, that the Cuſtom was very antient among each People; ſo that there was no determining which of them borrow'd it from the other. The ſame Hiſtorian relates, that the Inhabitants of the *Colchide* alſo us'd *Circumciſion*; whence he concludes, that they were originally *Egyptians*. He adds, that the *Phœnicians* and *Syrians* were likewiſe *circumcis'd*; but that they borrow'd the Practice from the *Egyptians*. And laſtly,

that a little before the Time when he wrote, *Circumciſion* had paſs'd from the *Colchide*, to the People inhabiting near *Thermodoon* and *Parthenius*.

Marſham is of Opinion, that the *Hebrews* borrow'd *Circumciſion* from the *Egyptians*; and that God was not the firſt Author thereof: citing *Diodorus Siculus* and *Herodotus* as Evidences on his ſide. Be this as it will, 'tis certain, the Practice of *Circumciſion* among the *Hebrews*, differ'd very conſiderably from that of the *Egyptians*.

Among the firſt, 'twas a Ceremony of Religion, and was perform'd on the eighth Day after the Birth of the Child. Among the latter, a Point of mere Decency and Cleanlineſs; and, as ſome will have it, of phyſical Neceſſity: and was not perform'd till the thirteenth Year; and then on Girls as well as Boys.

Among the *Jews*, *Circumciſion* was perform'd with a Knife of Stone. They ſet aſide the Practice of *Circumciſion*, during the forty Years of their Paſſage thro' the Wilerneſs; in regard, *Circumciſion* being intended as a Mark of Diſtinction between the *Jews* and *Gentiles*, it was unneceſſary to make any Mark at all, in a Place wherein there was no body to mix with them.

M. *Fleury* obſerves, that the *Jews* were not unanimous as do the Neceſſity of *Circumciſion*; ſome holding it an Eſſential, others as a Circumſtance.

The *Turks*, before the Operation of Circumciſion, ſqueeze the Skin with little Pinchers, to deaden the Senſation: they then cut it off with a Razor, and apply a certain Pouder, which heals the Wound, and abates the Pain. They never *circumciſe* till the ſeventh or eighth Year; as having no Notion of its being neceſſary to Salvation.

The *Perſians* circumciſe their Boys at thirteen Years; and their Girls from nine to fifteen. Thoſe of *Madagaſcar* cut off the Fleſh at three ſeveral times: The moſt zealous of the Relations preſent, catches hold of the *Preputium* and ſwallows it.

Herrera tells us, there is a kind of *Circumciſion* among the *Mexicans*, tho they are very remote both from *Judaiſm* and *Mahometaniſm*: they cut off the Foreſkin of the virile Member and the Ears, as ſoon as the Child is born, with a world of Ceremony.

Circumciſion is alſo practis'd on Women, by cutting off the Fore-ſkin of the *Clitoris*; which bears a near reſemblance, and analogy to the *Præputium* of the Male Penis. *Strabo* ſays, the *Egyptian* Women were *circumcis'd*; *Belon* ſays the ſame of the *Cophtæ*; and *P. Jovius* and *Munſter* of the Subjects of *Preſter John*. See CLITORIS.

Among the *Jews*, the Father is oblig'd to have his Son *circumcis'd* on the eighth Day; it mayn't be ſooner: but the Child's Weakneſs may allow of its being deferr'd longer. There is a Godfather to hold the Child, and a Godmother to carry it from the Houſe to the Synagogue, and to preſent it there. He who *circumciſes* is call'd in *Hebrew*, *Mohel*: Any Perſon is choſen for the Purpoſe, indifferently; provided he be but capable of the Function; which among the *Jews* is a Title of great Merit.

The Manner of the Ceremony, as related by *Leo de Modena*, is as follows.

Two Seats are prepar'd, in the Morning, with ſilken Cuſhions; the one for the Godfather who holds the Child, the other, as they ſay, for the Prophet *Elias*, whom they ſuppoſe to aſſiſt inviſibly. The Perſon who is to *circumciſe* brings the neceſſary Utenſils, the Razor, Styptic, Linen, Fillet, and Oil of Roſes; to which ſome add a Shell full of Sand to put the *Præputium* in. A Pſalm is ſung till the Godmother brings the Child, attended with a Croud of Women, and delivers it to the Godfather; none of 'em entering the Door. The Godfather being ſeated, ſets the Child on his Lap: then the *Cicumciſer* taking the Razor, and preparing the Child for the Operation, ſays, *Bleſſed be thou, O Lord, who haſt enjoin'd us Circumciſion*; and in ſo ſaying cuts off the thick Skin of the *Præputium*, and with his Finger Nails tears off another finer Skin remaining; ſucking the Blood two or three times as it breaks out, and ſpitting it out into a Glaſs full of Wine: then he lays Dragons-Blood on the Wound, with Pouder of Coral, and other Things to ſtanch the Blood; and laſtly, a Compreſs of Oil of Roſes; and thus binds up the whole. This done, he takes a Glaſs of Wine, and bleſſing it, adds another Benediction for the Child, and impoſes the Name.

The Manner of *Circumciſing* among the *Turks*, differs from that of the *Jews*: for the former, after they have cut off the Skin, meddle no further; but the laſt tear off the Edge of the remaining Skin in ſeveral Places with their Thumb-Nails; which is the Reaſon why the circumcis'd *Jews* are cur'd much ſooner than the *Turks*.

Thoſe among the *Jews* who perform the Operation of *Circumciſion*, are diſtinguiſh'd by the Length of their Thumb-Nails.

CIRCUMCISION is alſo the Name of a Feaſt celebrated on the firſt of *January*, in Commemoration of the *Circumciſion* of our Saviour. See FEAST.

This Day was antiently kept a Faſt; in oppoſition to the Pagan Superſtitions, who feaſted on it in honour of the God *Janus*.

CIRCUMFERENCE, in Geometry, the Curve Line that incloſes a Circle, or circular Space; call'd alſo *Periphery*. See CIRCLE, and PERIPHERY.

All Lines drawn from the Centre of a Circle to the *Circumference*, call'd *Radii*, are equal. See RADIUS.

Any Part of the *Circumference* is called an *Arch*; and a right Line drawn from one Extreme of the Arch to the other, a *Chord*. See ARCH, and CHORD.

The *Circumference* of every Circle is ſuppos'd to be divided into 360 equal Parts, call'd *Degrees*. See DEGREE.

The Angle at the *Circumference*, is double that at the Centre. See ANGLE, and CENTRE.

Every Circle is equal to a Triangle, whoſe Baſe is equal to the *Circumference*, and its Height to the Radius. See TRIANGLE.

Hence, the *Circumferences* of Circles are to each other as their Radii.

Hence, again, ſince the *Circumference* of one Circle is to its Radius, as that of any other Circle to its Radius; the Ratio of the *Circumference* to the Radius is the ſame in all Circles.

The Ratio of the Diameter of a Circle to its *Circumference*, *Archimedes* makes as 7 to 22; others, who bring it nearer the Truth, as 100000000000000 to 314159265358-97932. For Uſe, the Proportion of 100 to 314 in ſmaller Circles; and of 1000 to 3145 in larger Circles, is commended by *Vieta*, *Huygens*, &c. The juſteſt Proportion for ſmall Numbers, is that of *Metius*, who makes it as 113 to 355. See DIAMETER.

The Diameter of a Circle therefore being given, its *Circumference* is had; and that multiply'd by one fourth Part of the Diameter gives the Area of the Circle. See AREA.

The Word is form'd from the Latin *Circum*, about, and *fero*, I carry.

CIRCUMFERENTOR, an Inſtrument us'd in Surveying, to take Angles by. See ANGLE, and SURVEYING.

The *Circumferentor* is very ſimple, yet expeditious in the Practice: It conſiſts of a Braſs Circle and an Index, all of a piece. See its Figure in Tab. *Surveying*, Fig. 19.

On the Circle is a Card, or Compaſs, divided into 360 Degrees; the Meridian Line whereof anſwers to the middle of the Breadth of the Index. On the Limb, or Circumference of the Circle, is ſolder'd a Braſs Ring; which, with another fitted with a Glaſs, make a kind of Box for the Needle, which is ſuſpended on a Rivet in the Centre of the Circle. To each Extreme of the Index is fitted a Sight. See SIGHTS.

The whole is mounted on a Staff; with a Ball and Socket for the Conveniency of its Motion. See BALL and *Socket*.

Uſe of the CIRCUMFERENTOR.

To take an Angle by the CIRCUMFERENTOR. Suppoſe the Angle requir'd E K G, (Tab. *Surveying*, Fig. 20.) place the Inſtrument, *v. g.* at K, with the Flower-de-luce in the Card towards you. Then direct the Sights, till thro' em you ſpy E; and obſerve what Degree is pointed at by the South End of the Needle, which ſuppoſe 296: then turn the Inſtrument about, the Flower-de-luce ſtill towards you, and direct the Sights to G; noting the Degree at which the South End of the Needle points, which ſuppoſe 182.

This done, ſubtracting the leſſer Number 182, from the greater 296, the Remainder 114, is the Number of Degrees of the Angle E K G.

If the Remainder chance to be more than 180 Degrees, it muſt be again ſubtracted from 360 Degrees; the laſt Remainder is the Quantity of the Angle ſought.

To take the Plot of a Field, Wood, Park, &c. *by the* CIRCUMFERENTOR.

Suppoſe A B C D E F G K, (Fig. 21.) an Incloſure to be ſurvey'd with the *Circumferentor*.

1. Placing the Inſtrument at A, the Flower-de-luce towards you, direct the Sights to B; where, ſuppoſe the South End of the Needle to cut 191°; and the Ditch, Wall, or Hedge, meaſur'd with the Chain, to contain 10 Chains, 75 Links; which enter down. See CHAIN.

2. Placing the Inſtrument at B, direct the Sights as before to C; the South End of the Needle, *v. g.* will cut 279°; and the Line B C contain 6 Chains 83 Links, to be noted as before. Then move the Inſtrument to C; turn the Sights to D, and meaſure C D as before.

In the ſame manner, proceed to D, E, F, G, H, and laſtly to K; ſtill noting down the Degrees of every Bearing, or Angle, and the Diſtances of every Side.

Having thus gone round the Field, you will have a Table in the following form.

Stations.	Degrees.	Min.	Chains.	Links.
A	191.	00	10.	75
B	297.	00	6.	83
C	216.	30	7.	82
&c.				

From

From this Table, the Field is to be *plotted*, or *protracted*; For the Manner whereof, ſee PLOTTING, and PROTRACTION.

Note, Where Security is to be conſulted rather than Diſpatch, it may be convenient to take Back-ſights; *i. e.* to place the Inſtrument ſo, at each Station, as that looking backwards thro' the Sights to the laſt Station, the North End of the Needle may point to the ſame Degree as the South End did, in looking forwards from the laſt Station to this. See THEODOLITE, and PLAIN-TABLE: Both which Inſtruments are us'd, on occaſion, as *Circumferentors*.

CIRCUMFLEX, in Grammar, an Accent, ſerving to note, or diſtinguiſh a long Syllable. See ACCENT, LONG, *&c.*

The *Greeks* had three Accents, the *Acute*, the *Grave*, and the *Circumflex*, form'd thus ′, ‵, ~. In *Engliſh*, *French*, &c. the *Circumflex* is made thus ^. See CHARACTER.

The Acute raiſes the Voice, and the Grave falls, or lowers it: the *Circumflex* is a kind of Undulation, or wavering of the Voice, between the two. See ACUTE, GRAVE, *&c.*

'Tis ſeldom us'd unleſs to ſhew the Omiſſion of a Letter which made the Syllable long and open; a thing vaſtly more frequent in the *French* than among us: Thus they write *pâte*, for *paſte*; *tête*, for *teſte*; *fêmes*, for *fuſmes*, &c. They alſo uſe the *Circumflex* in the Participles; ſome of their Authors writing *conneu*, *pee*, others, *connû*, *pû*, &c. Father *Buffier* is at a Loſs for the Reaſon of the *Circumflex* on this occaſion.

The Form of the Greek *Circumflex* was antiently the ſame with that of ours: but the Copiſts changing the Form of the Characters, and introducing the running Hand, chang'd alſo the Form of the *Circumflex* Accent; and inſtead of making a juſt Angle, rounded it off, adding a Daſh thro' too much haſt; and thus form'd an *s*, inverted and laid horizontally, which produc'd this Figure ~, inſtead of this ^.

CIRCUMLOCUTION, a Circuit, or Tour of Words, us'd either when a proper Term is not at hand, to expreſs a thing naturally and immediately by; or when one chuſes not to do it, out of reſpect; or on ſome other occaſions.

The Word comes from the Latin *Circumloquor*, I ſpeak about.

CIRCUMLOCUTION, in Oratory, is the avoiding of ſomething diſagreeable, or inconvenient to be expreſs'd in direct Terms; by intimating the Senſe thereof in a kind of Paraphraſe, ſo conceiv'd as to ſoften, or break the Force thereof.

Thus *Cicero*, unable to deny that *Clodius* was ſlain by *Milo*, owns it, with this *Circumlocution*, 'Milo's Servants 'being prevented from aſſiſting their Maſter, who was re-'ported to be kill'd by *Clodius*; they, in his abſence, and 'without his Privity, or Conſent, did what every body 'would expect from their own Servants on ſuch an occaſion.'

CIRCUMINCESSION, in Theology, a Term whereby the Schoolmen uſe to expreſs the Exiſtence of three divine Perſons in one another, in the Myſtery of the Trinity. See PERSON.

The School-Divines are not the firſt Authors of this Term; *Damaſcenus*, in the VIIIth Century, having us'd the Word περιχώρησις, which ſignifies the ſame thing, in his Explanation of that Text, *I am in my Father, and my Father is in me.*

CIRCUM *Polar Stars*, are ſuch Stars as being pretty near our North-Pole, move around it; and in our Latitude, never ſet, or go below the Horizon. See STAR, POLE, SETTING, *&c.*

CIRCUMSCRIBING, in Geometry, denotes the deſcribing a polygonous Figure about a Circle, in ſuch manner, as that all its Sides are Tangents to the Circumference. See CIRCLE, POLYGON, *&c.*

The Term is ſometimes alſo us'd for the deſcribing of a Circle about a Polygon; ſo, as that each ſide is a Chord. But in this Caſe, we more uſually ſay, the Polygon is *inſcribed*, than the Circle *circumſcribed*. See INSCRIBING.

Any regular Figure A B C D E, (Plate *Geometry*, Fig. 29.) inſcrib'd in a Circle, is reſolv'd into equal and ſimilar Triangles, by Radii drawn from the Centre of the *circumſcribing* Circle F, to the ſeveral Angles of the Figure; and its Area is equal to a rectangled Triangle, whoſe Baſe is equal to the Circumference of the whole Polygon; and its Height a Perpendicular let fall from the Centre F to one ſide A B.

The ſame may be ſaid of the Area of the *circumſcribing* Circle *a b c d e*, excepting that the Height is to be the Radius.

The Area of every Polygon that can be inſcrib'd in a Circle is leſs; and that of every Polygon that can be *circumſcrib'd*, greater than that of the Circle: In like manner, the Perimeter of the firſt is leſs, and that of the ſecond greater than the Circumference of the Circle. See PERIMETER, *&c.*

On this Principle *Archimedes* attempted the Quadrature of the Circle; which is nothing elſe, in effect, but the meaſuring of the Area, or Capacity of a Circle. See QUADRATURE.

The Side of a Hexagon is equal to the Radius of a *circumſcrib'd* Circle. See HEXAGON.

To Circumſcribe a Circle about any given regular Polygon, A B C; (Fig. 30.) and *vice verſa*. Biſſect two of the Angles, *v. g.* A and B; and on the Point F, where the two Lines of Biſſection interſect, as on a Centre, deſcribe a Circle with the Radius F A.

To Circumſcribe a Square about a Circle. Draw two Diameters, A B and D E, (Fig. 31.) interſecting each other in the Centre C, at right Angles. From A E B D, with the Interval of the Radius, make Interſections in F, G, H, I. Draw the right Lines F G, G H, I H, and I F. Then is F G H I a Square *circumſcrib'd* about the Circle.

To circumſcribe any regular Polygon, v. g. a Pentagon, *about a Circle.* Biſſect the Chord A E, (Fig. 32.) by the Perpendicular F G, which continue till it cut the Arch in *g*. Thro' A and E, draw the Radii A F and E F: and thro' *g* draw a Line parallel to A E, meeting the Radii continu'd on each ſide in *a* and *e*: Then is *a e* one ſide of the *circumſcrib'd* Polygon. Produce the Radius F B to *b*, till F *b* = F *a*; and draw *a b*: this is another Side of the Polygon; and in the ſame manner may the reſt of the Sides be drawn.

To Inſcribe any regular Polygon in a Circle. Divide 360 by the number of Sides, in order to find the Quantity of the Angle E F D; which make at the Centre, and apply the Chord to the Periphery as often as it will go. Thus will the deſir'd Figure be *inſcrib'd* in the Circle.

CIRCUMSTANCES, the Incidents of an Event, or the Particularities that accompany an Action. See INCIDENT.

Divines ſay, the Converſion of a Sinner depends on a certain Aſſemblage, and a certain Management of external *Circumſtances* in the midſt whereof he is plac'd; which Arrangement of *Circumſtances*, depends on the Providence of God: whence Converſion alſo depends on him. See CONVERSION.

The *Circumſtances* of the Actions of Men, are expreſs'd in this *Latin* Verſe.

Quis, quid, ubi, quibus auxiliis, cur, quomodo, quando.

Quis, who, denotes the Quality, State, Age, *&c.* of the Perſon. *Quid*, what, the greatneſs, ſmallneſs, multitude, fewneſs, *&c.* of the thing. *Ubi*, where, the Place. *Quibus Auxiliis*, with what Aſſiſtances, the Inſtruments, Means, *&c.* *Cur*, why, on what Account, with what View. *Quomodo*, how, the Quality of the Action, as to Intenſion or Remiſſneſs, Deſignedneſs or Caſualty, Secrecy or Openneſs. *Quando*, when, the Time; as on a Holiday, at the Hour of Prayer, *&c.*

CIRCUMSTANTIBUS, in Law, is us'd for the ſupplying, and making up the Number of Jurors, (in caſe any impanell'd appear not; or appearing, be challeng'd by either Party) by adding to them ſo many of the Perſons preſent, or ſtanding by, as will ſerve the turn. See JURY, and JUROR.

CIRCUMVALLATION, in Fortification, a Line, or large Trench, made around a Camp; in the beſieging of a Town. See LINE, FORTIFICATION, *&c.*

This Trench is to be a Cannon-ſhot diſtant from the Place, ordinarily, about 12 Foot broad, and ſeven deep. It is border'd with a Parapet, and flank'd with Redoubts, or little Forts, erected from Space to Space. It ſerves both to prevent any Succour from being ſent into the Place, to keep in Deſerters, and prevent Incurſions of the Enemy's Gariſon.

Care muſt be taken that the Line of *Circumvallation* never paſs by the Foot of an Eminence; leſt the Enemy ſeizing on the Eminence, lodge his Cannon, and command the Line.

The Word is form'd from the Latin *circum*, about, and *vallum*.

CIRCUMVOLUTIONS, in Architecture, the Turns of the Spiral Line of the *Ionic* Volute. See VOLUTE.

The Word comes from the Latin *Circumvolvere*, to turn around; and is alſo apply'd to the Turns of a wreath'd or twiſted Column. See COLUMN.

CIRCUS, in Antiquity, a large Building, either round, or oval; us'd for the exhibiting of Shews to the People. See SPECTACLES, CIRCENSIAN *Games*, &c.

The *Roman Circus*, was a large Place, or Square, arch'd at one End; incompaſs'd with Porticos, and furniſh'd with Rows of Seats, plac'd aſcending over each other.

In the middle was a kind of *Banquette*, or Eminence, with Obeliſks, Statues, and Poſts at each End. This ſerv'd 'em for the Courſes of their *Bigæ* and *Quadrigæ*. See BIGÆ, *&c.*

There were no leſs than ten *Circus*'s at *Rome*: the largeſt was that built by the Elder *Tarquin*, called *Circus Maximus*; between the *Aventine* and *Palatine* Mounts. *Pliny* ſays, it was enlarg'd by *J. Cæſar*, ſo as to take in no leſs than three *Stadia* in Length, and one in Width.

The moſt magnificent *Circus*'s were thoſe of *Auguſtus* and *Nero*. There are ſtill ſome Remains of the *Circus*'s, both at *Rome*, at *Niſmes*, and other Places.

The *Romans* were exceſſively fond of the Games exhibited in the *Circus*, witneſs that Verſe in *Juvenal*,

——Atque duas tantum res anxius optat,
Panem & Circenſes——

Some derive the Word from *Circe*, to whom *Tertullian* attributes the Invention. *Caſſiodorus* ſays, *Circus* comes *à circuitu*.

The *Romans*, *Servius* obſerves, at firſt, had no other *Circus* but that made by the *Tiber*, on one ſide, and a Palliſade of naked Swords on the other.

Hence, according to *Iſidore*, came the Term *Ludi Circenſes*, *quaſi Circum-Enſes*. But *Scaliger* laughs at the Etymology.

The Games of the CIRCUS, which ſome call *Circenſian Games*, were Combats celebrated in the *Circus*, in honour of *Conſus* the God of Councils; thence alſo call'd *Conſualia*. See CONSUALIA.

They were alſo called *Roman Games*, *Ludi Romani*, either on account of their Antiquity, as being coeval with the *Roman* People, or becauſe eſtabliſh'd by the *Romans*: and the great Games *Ludi Magni*, becauſe celebrated with more Expence and Magnificence than any others; and becauſe held in honour of the great God *Neptune*, who was their *Conſus*.

Thoſe who ſay they were inſtituted in honour of the Sun, confound the *Pompa Circenſis*, or Proceſſion of the *Circus*, with the Games.

The Games of the *Circus* were inſtituted by *Evander*, and re-eſtabliſh'd by *Romulus*: The Proceſſion was only a Part of the Games, making the Prelude thereof; and conſiſting of a ſimple Cavalcade of Chariots.

Till the Time of the Elder *Tarquin*, they were held in an Iſland of the *Tiber*; and were called *Roman Games*: after that Prince had built the *Circus*, they took their Name therefrom; as being conſtantly held there.

There were ſix Kinds of Exerciſes in the *Circus*: the 1ſt Wreſtling, fighting with Swords, with Staves, and with Pikes: the 2d was Racing: the 3d *Saltatio*, Dancing: the 4th *Diſci*, Quoits, Arrows, and *Ceſtus*; all which were all on Foot: the 5th was Horſecourſing: the 6th Courſes of Chariots, whether with two Horſes, or with four. See BIGÆ, and QUADRIGÆ.

In this laſt Exerciſe, the Combatants were at firſt divided into two *Quadrils*, then into four; each bearing the Names of the Colours they wore; *Factio Alba*, *Ruſſea*, &c. See FACTION, QUADRIL, *&c.*

At firſt there was only white and red; then green was added, and blue. *Domitian* added two more Colours, but they did not hold.

It was *Oenomaus* who firſt invented this Method of diſtinguiſhing the *Quadrils* by Colours. The green was for thoſe who repreſented the Earth; the blue for the Sea, *&c.* See COLOUR, *&c.*

CIRRI, in Botany, a Term us'd for thoſe fine Strings, or Hairs, by which ſome Plants faſten themſelves, for their ſupport; as Ivy, and the like. See CLASPERS.

CIRSOCELE, in Medicine, a Dilatation of the Spermatic Veins; occaſion'd by a too thick, grumous Blood; call'd alſo *Hernia Varicoſa*. See HERNIA.

The Word comes from the *Greek* κιρσὸς, *varix*, Vein, and κήλη, *Hernia*. See VARIX.

CISALPINE, any thing on this ſide the *Alps*.

The *Romans* divided *Gaul*, and the Country now call'd *Lombardy*, into *Ciſalpine* and *Tranſalpine*. See TRANSALPINA.

That which was *Ciſalpine* with regard to the *Romans*, is *Tranſalpine* with regard to us.

The Word is form'd from the Prepoſition *Cis*, on this ſide, and *Alpes*; which, tho properly confin'd to the Mountains ſeparating *Italy* and *France*, yet is us'd by Authors for any very high Mountains.

Thus *Auſonius* has the *Alps* of the *Pyreneans*, the *Alps* of the *Apennines*, &c.

CISSOID, in Geometry, an Algebraic Curve, firſt invented by *Diocles*; whence it is peculiarly call'd the *Ciſſoid of Diocles*. See CURVE.

The Geneſis of the *Ciſſoid* may be thus conceiv'd: To the Diameter A B, (Tab. *Analyſis*, Fig. 9.) of the Semicircle A O B, draw an indefinite Line, at right Angles, B C: then, draw the right Line A H, and make A M = I H; or in the other Quadrant, L C = A N. Thus will the Points M and L be in a Curve Line A M O L; which is the *Ciſſoid* of *Diocles*.

Properties of the CISSOID.

From the Geneſis it follows, 1ſt, That drawing the right Lines P M and K I, perpendicular to A B; we ſhall have A P : K B :: A M : I H. But A M = I H; conſequently, A P = A B. And therefore, A K = P B; and P N = I K.

2d, After the ſame manner, it appears, that the *Ciſſoid* A M O biſſects the Semicircle A O B.

3d, Again, A K : K I :: K I : K B. That is, A K : P N :: P N : A P. And again, A K : P N :: A P : P M; therefore, P N : A P :: A P : P M. Conſequently, A K, P N, A P, and P M, are four Lines in continual Proportion. And if P N = *v*, A P = *x*, P M = *y*; $x^2 = v\,y$. And after the ſame manner it may be ſhewn, that A P, P N, A K, and K L, are in continual Proportion.

4th, In the *Ciſſoid*, the Cube of the Abſciſſa A P, is equal to a Solid, ariſing of the Square of the Semiordinate P M, multiply'd into the Complement of the Diameter of the generating Circle P B.

Hence, when the Point P falls on B, then $x = a$, and B C $= y$; conſequently, $y^2 = \frac{a^3}{o}$. Wherefore, $o : 1 :: a^3 : y^2$. that is, the Value of y becomes infinite: and therefore the *Ciſſoid* A M O L, tho it continually approach B C yet they will never meet.

5th, B C, therefore, is an *Aſſymptote* of the *Ciſſoid*. See ASSYMPTOTE.

The Antients made uſe both of the *Conchoid* and *Ciſſoid*; for the finding of two mean continual Proportionals between two given right Lines. See PROPORTIONAL.

For *the Quadrature*, *Subnormal*, and *Subtangent of the* CISSOID; ſee QUADRATURE, SUBNORMAL, and SUBTANGENT.

CISTERCIANS, an Order of Religious, call'd by the French *Ciſteaux*; conſiſting of an hundred Monaſteries, and near as many Nunneries. See ORDER, MONK, RELIGIOUS, *&c.*

The Order took its riſe in 1075, from twenty one zealous Monks in the Monaſtery of *Moleſme* in *Burgundy*; who, with their Abbot *Robert*, complaining that the Rule of S. *Benedict* was not ſtrictly enough obſerv'd; obtain'd Permiſſion of *Hugh*, Archbiſhop of *Lyons* and Legate of the Holy See, to ſettle in a Place call'd *Ciſteaux*, five Miles from *Dijon*.

Here *Eudes* Duke of *Burgundy* erected 'em a Building, into which they were admitted in 1098; endowing it with a conſiderable Revenue. The Biſhop of *Chalons* gave *Robert* the Paſtoral Staff, in quality of Abbot; and erected the new Monaſtery into an Abbey. See ABBOT.

Such was the beginning of the *Ciſtercians*, ſo famous in After-times, and now ſo extended throughout all *Europe*.

CISTERN, or CESTERN, is properly us'd for a ſubterraneous Reſervoir of Rain-water. See WELL.

Ciſterns muſt be made with good Cement, to retain the Water. See CEMENT.

The Bottom ſhould be cover'd with Sand, to ſweeten and preſerve it. See WATER.

Authors mention a *Ciſtern* at *Conſtantinople*, the Vaults whereof are ſupported by two rows of Pillars, 212 in each Row; each Pillar being two Foot in Diameter. They are planted circularly, and in Radii tending to that in the Centre.

The Word, according to ſome, comes from *Cis*, and *terram*, i. e. *inter terram*; others derive it from *Ciſta*, an Oſier Baſket, a Duct, *&c.*

CISTIC. } See { CYSTIC.
CIST-*Hepatic.* } See { CYST-*Hepatic.*
CISTUS. } See { CYSTUS.

CITADEL, or CITTADEL, a Fort, or Place fortify'd with four, five, or ſix Baſtions; built ſometimes in the moſt eminent Part of a City, and ſometimes only near the City.

In the firſt Caſe, the *Citadel* ſerves to defend the City againſt Enemies. See FORT, FORTIFY'D *Place*, &c.

In the latter it ſerves to command it, and to keep the Inhabitants in their Obedience: for which purpoſe the City is left unfortify'd on the Part toward the *Citadel*, but the *Citadel* fortify'd toward the City.

The moſt uſual Form for *Citadels*, is that of a Pentagon: a Square being too weak, and a Hexagon too big. See FORTIFICATON, PENTAGON, *&c.*

There is always a large Eſplanade between the *City* and *Citadel*. See ESPLANADE.

The Word is a Diminutive of the Italian *Citta*, City, *q.d.* little City.

CITATION, an Aſſignation, or ſummoning of a Perſon before an Eccleſiaſtical Judge, on ſome Affair relating to the Church.

In the Civil, and Ordinary Courts, it is call'd *Summoning*. See SUMMONS.

The Word CITATION is alſo us'd in ſpeaking of Military and Monaſtick, as well as Eccleſiaſtical Courts. Such a Heretick was *cited* to *Rome*; to a General Council, *&c.*

Knights are *cited* to the General Chapters of their Order.

K. *Edward* I. of *England*, was *cited*, by Order of *Philip* IV. of *France*, to a Court of his Peers. The *Citation* was publiſh'd by the Seigneur *d'Arrablay*, Seneſchal of *Perigord* and *Querci*; and was paſted up, by his Order, on the Gates of the City *Libourne*, which then belong'd to K. *Henry*. For Default in not appearing, all his Domains, and Effects in *France* were confiſcated. F. *Daniel*.

CITATION is alſo an Allegation, or Quotation of ſome Law, Authority, ot Paſſage. See QUOTATION.

The Word comes from *cito*, of *cieo*, I ſtir up.

CITRON, an agreeable Fruit, in Colour, Taſte, Smell, *&c.* reſembling a Lemon; and ſerving, like that, to cool, and quench the Thirſt: being produc'd by a Tree of the ſame Name, much reſembling the Lemon Tree. See LEMON.

The *Citron* is diſtinguiſh'd from the Lemon, in that it is bigger, and its Pulp firmer; its Smell briſker, and Colour higher. It is held excellent againſt Poiſons: and *Athenæus*

relates an Inſtance of two Perſons, preſerv'd ſafe from the moſt dangerous Aſpics, by eating a *Citron*.

The Diſtillers, Perfumers, Confectioners, *&c.* procure divers things from *Citrons*; as Eſſences, Oils, Confections, Waters, *&c.*

CITRON-*Water*. See *Citron*-WATER.

CITRON-*Santal*. See SANTAL.

CITY, a large Town, inclos'd with a Wall. See TOWN.

'Tis hard to give any juſt Definition of a *City*; in regard, Cuſtom has reſerv'd the Appellation of *Towns*, to ſo many Places which ſeem to have every thing requiſite to conſtitute a City.

Formerly, *City* was only underſtood of ſuch Towns as were Biſhops Sees: which Diſtinction ſeems ſtill to hold in *England*; tho no where elſe. See SEE.

City is particularly us'd to expreſs the Heart of the Place. At *Paris* they have the *City* and the *Univerſity*; at *London* we have the *City* and the *Suburbs*.

The Term *City* had its riſe among us, ſince the Conqueſt; for in the Time of the *Saxons* there were no *Cities*, but all great Towns were called *Burghs*: Thus, *London* was call'd *Lunden Burgh*. See BURGH.

And for a long time after the Conqueſt, *City* and *Burgh* were us'd promiſcuouſly: thus, in the Charter of *Leiceſter*, that Place is called both *Civitas* and *Burgus*; which ſhews a Miſtake in my Lord *Coke*, where he tells us, that every *City* was, or is a Biſhop's See. Nor had *Gloceſter* any Biſhop then; tho 'tis call'd a *City* in *Dome's-Day*. The like may be obſerv'd of *Cambridge*; to which it may be added, that *Crompton*, reckoning up our *Cities*, leaves out *Ely*, tho it had a Biſhop and a Cathedral.

Yet *Caſſanæus*, *de Conſuetud. Burgund.* ſays, *France* has within its Territories 104 *Cities*; and gives his Reaſon, becauſe it has ſo many Archbiſhops and Biſhops.

CITY, *Civitas*, in ſpeaking of Antiquity, ſignifies a State, or People, with all its Dependencies, conſtituting a particular Republic; ſuch as are, ſtill, ſeveral *Cities* of the Empire, and the *Swiſs* Cantons.

Tho the antient *Gauls* were, in effect, only one Nation; they were yet divided into ſeveral Peoples, which form'd as many different States: or, to ſpeak with *Cæſar*, as many different *Civitates*, *Cities*. Beſides that each *City* had its particular Aſſemblies, it ſent Deputies, too, from time to time, to the general Aſſemblies, held on Affairs relating to their common Intereſt.

Auguſtus, upon numbring the *Roman Citizens*, found they amounted to 4 Millions, 137000. See ENUMERATION.

To make a good *Roman Citizen*, there were three things requir'd: that he were an Inhabitant of *Rome*; that he were inroll'd in one of the 35 Tribes; and that he were capable of Dignities. Thoſe to whom were granted the Rights and Privileges of *Roman Citizens*, were properly only *Honorary Citizens*.

The ſeventh Law, *de Incolis*, makes a great deal of difference between a *Citizen* and a mere Inhabitant. Birth, alone, made a *Citizen*; and entitled to all the Privileges of Burgeſy: Time could not acquire it; but the Emperor cou'd beſtow it.

The Word comes from the Latin *Civis*; which Authors derive from *Coëo*, by Reaſon the *Citizens* live together: or rather from *Cieo*, I call together.

CIVET, a kind of Perfume, bearing the Name of the Animal whence it is taken. See PERFUME.

The *Civet*, or *Civet-Cat*, is a little Animal, reſembling our Cat; excepting that his Snout is more pointed, his Claws leſs dangerous, and his cry different.

The Perfume this Animal produces, is form'd like a kind of Greaſe, or thick Scum, in an Aperture, or Bag, under his Tail. 'Tis gather'd from time to time; and ſtill abounds, in proportion as the Animal is fed.

There is a very conſiderable Traffic of *Civet*, from *Baſſora*, *Caticut*, and other Places, where the Animal that produces it is found. Tho, part of the *Civet* among us is furniſh'd us by the *Dutch*; who bring up a conſiderable Number of the Animals.

Before any of theſe Animals were ſeen in *Europe*, or it had been obſerv'd how the Perfume had been gather'd; the common Opinion, founded on the Relations of Travellers, was, that it was the Sweat of that Animal, irritated, and kindled into Rage.

To this effect, 'twas ſaid, that the Animal was inclos'd in an Iron Cage; and after having been a long time beaten with Rods, they gather'd with a Spoon, thro' the Bars of the Cage, and between the Thighs of the Animal, the Sweat or Foam, which the Rage and Agitation had produc'd: and that without this Precaution, the Animal would yield no Perfume at all.

But Experience has taught us better; and we now know, that the Perfume *Civet*, is only a thick unctuous Humour, ſecreted by certain Glands between the two Tunics of the Bag wherein it is amaſs'd, under its Tail, beneath the *Anus*.

Civet muſt be choſen new, of a good Conſiſtence, a whitiſh Colour, and a ſtrong diſagreeable Smell.

Beſides the *Indian* and *Dutch Civet*, there is alſo a *Civet* from *Braſil*, or *Guinea*, like that of *India*; and an *Occidental Civet*, which bears no reſemblance to it.

Civet is little us'd in Medicine, except in a Thickneſs of Hearing, from Cold; where a Grain or two being put in a little Cotton, or Wool, and the Ears ſtopp'd therewith, is ſometimes of ſervice. It is much us'd among Perfumers and Confectioners.

The Word *Civet* comes from the Arabic *Zibet*, or *Zebet*, Scum, Froth.

CIVIC, an Epithet apply'd to a Kind of Crown, made of Oaken Leaves; antiently beſtow'd by the *Romans*, on thoſe who ſav'd the Life of a Fellow-Citizen in a Battle, or an Aſſault. See CROWN.

The *Civic* Crown was exceedingly eſteem'd; and was even given as an Honour, to *Auguſtus*; who on this Occaſion ſtruck Coins with this Device, OB CIVES SERVATOS.

It was alſo given to *Cicero*, after his Diſcovery of *Catiline*'s Conſpiracy.

CIVIL, in its general Senſe, is ſomething that regards the Policy, publick Good, or repoſe of the Citizens, or Subjects of a State. See CITY.

In this Senſe, we ſay, *Civil* Government; *Civil* Law; *Civil* Rights; *Civil* War, *&c.* See GOVERNMENT, *&c.*

CIVIL *Law*, *Lex Civilis*, is defin'd, in the Inſtitutes, to be the Laws peculiar to each City, or each People: but in the modern Uſe, it properly implies the *Roman Law*, contain'd in the Inſtitutes, the Digeſt, and the Code; otherwiſe call'd, the *Lex Scripta*, or *Written Law*. See LAW.

The *Roman* Law, at its Commencement, was very inconſiderable. Under the Kings, the People were govern'd by certain Laws, prepar'd by the Senate, paſs'd by the Kings, and confirm'd in an Aſſembly of the People.

Papirius was the firſt who made a Collection of the Regal Laws; which took its Name from its Author, and was call'd *Jus Papirianum*.

The Republic, after aboliſhing the Regal Government, ſtill retain'd the Royal Laws: To theſe they added the Law of the *Twelve Tables*; drawn by the *Decemviri*, from the Laws of twelve of the principal Cities of *Greece*; and the more Equitable among the Laws hitherto practis'd at *Rome*. See DECEMVIRI.

The Law of the *Twelve Tables* was at length found ſo ſevere, and conceiv'd in ſuch obſcure Terms; that it was judg'd proper to moderate, reſtrain, and aſcertain it, by other Laws, propos'd to the Senate by the Conſuls, and paſs'd at general Aſſemblies of the People; according to the Practice that had obtain'd under the Kings themſelves.

In the Year of *Rome* 731, the Republic expir'd; and the whole Power of the People was transferr'd to *Auguſtus*, who was contented to publiſh his new Laws in the Aſſembly of the People; to keep up ſome Image of the Republic by this Formality.

Tiberius aboliſh'd theſe occaſional Aſſemblies, on pretence of their being too numerous; and in lieu thereof proffer'd his Laws to the Senate, who never fail'd to confirm 'em: inſomuch that the Laws of *Tiberius*, and his Succeſſors, who kept the ſame Meaſures with the Senate, were eſteem'd *Senatus-Conſulta*.

Thus aroſe two Kinds of *Roman* Law, with regard to the Changes in the Legiſlative Authority: the Law eſtabliſh'd by the People, *Plebiſcita*; and the Laws of the Emperors, or *Imperial Laws*. See PLEBISCITA, and IMPERIAL.

During the Time of the Republic, and even under the Emperors, there were *Juris-Conſulti*; who making publick Profeſſion of the Study of the Law, interpreted, were conſulted on the different Senſes of the Laws, and gave Anſwers to the Queſtions propos'd to 'em hereon; which were call'd *Reſponſa Prudentium*.

Papirius was the firſt of theſe *Juris-Conſulti*, after the Expulſion of the Kings; and *Modeſtinus* the laſt. See JURIS-CONSULTI.

After him, *viz.* in 240, theſe Oracles of the *Roman* Juriſprudence ceaſing, out of their Writings, which made no leſs than 2000 Volumes, a Body of the *Roman* Law was afterwards compil'd, by Order of *Juſtinian*.

The Magiſtrates, on their ſide, in adminiſtring Juſtice, interpreted the Laws with more freedom than even the *Juris-Conſulti*; and were, as it were, the living Voice of the Law.

The Emperors too, to render the Interpretations of the Magiſtrates leſs free and frequent, appointed, that they themſelves ſhould be conſulted; and their Anſwers expected, as to Queſtions in Law, as may be obſerv'd from *Pliny*'s Epiſtles to *Trajan*. See RESCRIPT.

In proportion as new Laws were made at *Rome*, care was taken to collect and reduce 'em into *Bodies*. See BODY.

Papirius, in the Time of *Tarquinius Superbus*, made a Collection of the Regal Laws. And no ſooner was the Republic eſtabliſh'd, than the Laws of the *Twelve Tables* were drawn.

In the Time of *Julius Cæsar*, *Ofilius*, a Lawyer, began a Collection of the Edicts of the Prætors; which was not finish'd till the Time of *Adrian*, by another Lawyer, *Julianus*.

In the Time of *Conſtantine*, or his Children, two *Juris-Conſulti* compil'd two Codes; from their Authors call'd *Gregorian*, and *Hermogenian Code*. See CODE.

Laſtly, *Juſtinian*, finding the Authority of the *Roman* Law almoſt aboliſh'd in the Weſt, by the Declenſion of the Empire; reſolv'd to make a general Collection, of the whole *Roman* Juriſprudence; and committed the Care thereof to his Chancellor *Tribonianus*.

That Miniſter executed his Commiſſion with a great deal of Diligence, not to ſay Precipitation: a new Code was finiſh'd in 529, and a Digeſt in 533. See DIGEST, and CODE.

The ſame Year he publiſh'd an Abridgment, thereof containing the firſt Principles and Elements of Law, under the Title of *Inſtitutes*. See INSTITUTES.

In the Courſe of this Reign, *Juſtinian* made 168 Conſtitutions, and 13 Edicts; which made a conſiderable Alteration in the antient Law, and were call'd *Novels*. See NOVEL.

All theſe together, make the *Corpus Juris Civilis*, or Body of the *Civil Law*, as reduc'd, by order of *Juſtinian*.

For the Space of 300 Years, this Syſtem of Law obtain'd without any Innovation. But the new Conſtitutions made by the Emperors from time to time, at length occaſioning ſome Alterations; the Emperor *Baſil*, and *Leo* his Son, compos'd a new Body of the *Roman* Law, chiefly from the *Juſtinian*, in the *Greek* Language, dividing it into 7 Volumes, and 60 Books; under the Title of *Baſilica*. From which time, *Juſtinian*'s Body had but little Credit in the Eaſt; the *Baſilica* taking place of it. See BASILICA.

In the Weſt, the *Civil Law* had a different Fortune: 'Tis ordinarily ſuppos'd not to have been there known till the Year 600; when *Lotharius* II. finding the Book at the taking of *Melphi*, a Town in *Naples*, made a preſent of it to the City of *Piſa*: Tho we find it quoted in ſeveral *Latin* Works long before *Lotharius*. 'Tis true, however, it was never taught publickly till the XIIth Century; when *Irnerius* firſt made profeſſion of it at *Bologne*, in 1128; whence it was carry'd by his Diſciples into other Countries; and in a little time was taught in all the Univerſities.

'Tis allow'd that the *Civil Law* contains all the Principles of Natural Equity; and that nothing can be better calculated to form good Senſe, and ſound Judgment. Hence, tho in ſeveral Countries it has no other Authority but that of Reaſon and Juſtice; 'tis yet every where referr'd to for Authority, and is that alone taught in Univerſities.

It is not receiv'd at this Day in any Nation without ſome Alterations: ſometimes the *Feudal* Law is mix'd with it, or general and particular Cuſtoms; and often, Ordinances and Statutes cut off a great part of it.

In *Turkey*, the *Baſilica* are only us'd. In *Italy*, the Canon Law, and Cuſtoms have excluded a good part of it. In *Venice*, Cuſtom hath almoſt an abſolute Government. In the *Milaneſe*, the Feudal Law, and particular Cuſtoms, bear ſway. In *Naples* and *Sicily*, the Conſtitutions and Laws of the *Lombards* are ſaid to prevail. In *Germany* and *Holland*, the *Civil Law* is eſteem'd to be the municipal Law: but yet many Parts of it are there grown obſolete; and others are alter'd, either by the Canon Law, or a different Uſage.

In *Friezeland*, it is obſerv'd with more ſtrictneſs: But in the Northern Parts of *Germany*, the *Jus Saxonicum*, *Lubecenſe*, or *Culmenſe*, is preferr'd before it. In *Denmark* and *Sweden* it hath ſcarce any Authority at all. In *France* only a Part of it is receiv'd; and that Part is in ſome Places as a Cuſtomary Law: And in thoſe Provinces neareſt to *Italy*, the municipal Written Law. In Criminal Cauſes, the *Civil Law* is more regarded in *France*; but the manner of Trial is regulated by Ordonnances and Edicts.

The *Civil Law*, in *Spain* and *Portugal*, is connected with the *Jus Regium*, and Cuſtom. In *Scotland*, the Statutes of the *Sederunt*, part of the *Regiæ Majeſtatis*, and their Cuſtoms, control the *Civil Law*.

In *England*, it is us'd in the Eccleſiaſtical Courts; in the Courts of the Admiralty; and in the two Univerſities: yet in all theſe reſtrain'd and directed by the Common Law. See LAW, COMMON-*Law*, &c.

CIVIL *War*, is a War between People of the ſame State, or Citizens of the ſame City. See WAR.

CIVIL *Death*, any thing that retrenches, or cuts off a Man from *Civil* Society: as a Condemnation to the Gallies, perpetual Baniſhment, Condemnation to Death, and Excommunication: All which make a Man ceaſe to be look'd on as a Citizen.

The Term is likewiſe apply'd to thoſe who are no longer capable of acting in Temporal Concerns; as thoſe who renounce the World, who retire and make Vows in a Monaſtery, &c. See MONK, VOWS, MONASTERY, &c.

CIVIL, in a Legal Senſe, is alſo apply'd to the ordinary Procedure in an Action relating to ſome Pecuniary Matter, or Intereſt; in which Senſe it is oppos'd to *Criminal*. See ACTION, CRIMINAL, &c.

CIVIL *Year*, is the Legal Year, or annual Account of Time, which every Government appoints to be us'd within its own Dominions. See TIME.

It is thus call'd, in contradiſtinction to the *Natural Year*; which is meaſur'd exactly by the Revolution of the Heavenly Bodies. See YEAR.

CIVIL *Month.* } See { MONTH.
CIVIL *Day.* } See { DAY.

CIVILISATION, a Law, Act of Juſtice, or a Judgment which renders a Criminal Proceſs, Civil.

Civiliſation is perform'd by turning the Information into an Inqueſt, or *vice verſa*. See INFORMATION, INQUEST, &c.

CLAIM, in Law, a challenge of Intereſt in any thing that is in Poſſeſſion of another; at leaſt, out of his own. See CHALLENGE, POSSESSION, &c.

There are divers Kinds of *Claims*: as,

CLAIM *by Charter*. See CHARTER.

CLAIM *by Deſcent*. See DESCENT.

Continual CLAIM, a *Claim* made from time to time, within every Year and Day, to Land, or other Thing, which on ſome accounts cannot be attain'd without danger.

Thus, if I am diſſeis'd of Land, into which, tho I have a Right, I do not enter for fear of beating; I am to hold on my Right of Entry at my beſt opportunity; by approaching as near as I can, once every Year, as long as I live: thus I leave the Right of Entry to my Heir. See ENTRY.

CLAIR-OBSCURE, or CHIARO-SCURO, in Painting, the Art of diſtributing, to advantage, the Lights and Shadows of a Piece; both with regard to the eaſing of the Eye, and the Effect of the whole Piece. See LIGHT, and SHADOW.

Thus, when a Painter gives his Figures a ſtrong Relievo, looſens 'em from the Ground, and ſets 'em free from each other, by the Management of his Lights and Shadows; he is ſaid to underſtand the *Clair-obſcure*.

The *Clair-obſcure* makes one of the great Diviſions, or Branches of Painting; the whole of a Picture being reſolvable into *Light*, and *Shadow*. See PAINTING.

The Doctrine of the *Clair-obſcure*, will come under the following Rules.

Light may be either conſider'd with regard to it ſelf; to its Effects; the Place wherein 'tis diffus'd; or its Uſe.

For the 1ſt, Light is either *Natural*, or *Artifical*.

Natural, either comes immediately from the Sun, which is briſk, and its Colour various according to the Time of the Day; or 'tis that of a clear Air thro' which Light is ſpread, and whoſe Colour is a little bluiſh; or a cloudy Air, which is darker, yet repreſents Objects in their genuine Colours with more eaſe to the Eye.

Artificial proceeds from Fire, or Flame, and tinges the Object with its own Colour: but the Light it projects, is very narrow and confin'd.

For the 2d, the *Effects* of Light are either *Principal*, as when the Rays fall perpendicularly on the Top of a Body, without any Interruption; or *Glancing*, as when it ſlides along Bodies; or *Secondary*, which is for things at a diſtance.

3. For the *Place*, 'tis either the open Campaign, which makes Objects appear with great Softneſs; or an incloſ'd Place, where the Brightneſs is more vivid, its Diminution more haſty, and its Extremes more abrupt.

4. For the *Uſe*, or Application: The Light of the Sun is always to be ſuppos'd without, and over againſt the Picture; that it may heighten the foremoſt Figures: the Luminaries themſelves never appearing, in regard the beſt Colours can't expreſs 'em. The chief Light to meet on the chief Group, and as much as poſſible on the chief Figure of the Subject. The Light to be purſu'd over the great Parts, without being croſs'd, or interrupted with little Shadows. The full Force of the principal Light to be only in one Part of the Piece: taking care never to make two contrary Lights: Not to be ſcrupulouſly confin'd to one univerſal Light; but to ſuppoſe other acceſſory ones, as the opening of Clouds, &c. to looſen ſome Things, and produce other agreeable Effects. Laſtly, the Light to be different, according to the Quality of Things whence it proceeds, and the Nature of the Subjects which receive it.

For *Shadows*; they are diſtinguiſh'd, 1ſt, into thoſe form'd on the Bodies themſelves, by their proper Relievos. 2d, Thoſe made by adjacent Bodies; thoſe that make Parts of any whole; and the different Effects, according to the difference of Places.

For the firſt, ſince the different Effects of Lights only appear by Shadows, their Degrees muſt be well manag'd. The Place which admits no Light, and where the Colours are loſt, muſt be darker than any Part that has Relievo, and diſpos'd in the Front. The Reflex, or return of the Light, brings with it a Colour borrow'd from the Subject that reflects it; and flies off at a greater or leſs Angle, according to the Situation of the reflecting Body, with regard to the luminous one:

one: Hence, its Effects muſt be different in Colour, and in Force; according to the Diſpoſitions of Bodies. Deepenings, which admit not of any Light, or Reflex, muſt never meet on the Relievo of any Member of any great elevated Part; but in the Cavities or Joints of Bodies, the Folds of Draperies, &c. And to find Occaſions for introducing great Shadows, to ſerve for the Repoſe of the Sight, and the looſening of Things; inſtead of many little Shadows, which have a pittiful Effect.

For the 2d, The Shadows made by Bodies, are either in plain and ſmooth Places, or on the Earth; wherein they are deeper than the Bodies that occaſion 'em, as receiving leſs reflex Light; yet ſtill diminiſh as they depart further from their Cauſe; or on the neighbouring Bodies, where they are to follow the Form of the ſaid Bodies, according to its Magnitude and its Poſition, with regard to the Light.

For the 3d, In Shadows that have Parts, the Painter muſt obſerve to take for a Light in a ſhadow'd Place, the Teint, or Luſtre of the light Part; and, on the contrary, for the Shadow in the lighten'd Part, the Teint, or Luſtre in the Shadow: To make an agreeable Aſſemblage of Colour, Shadow, and Reflex in the ſhadow'd Part; but without interrupting the great Maſſes of Shadows: To avoid forming little Things in the Shadow; as not being perceiv'd, unleſs cloſely look'd at; and to work, as it were, in the general, and at one ſight: Never to ſet the ſtrong Shadows againſt the Lights, without ſoftening the harſh Contraſt by the help of ſome intermediate Colour: tho the Maſs of Light may be plac'd either before or behind that of the Shadow; yet ought it to be ſo diſpos'd, as to illumine the principal Parts of the Subject.

For the 4th, The Effects of Shadows are different, as the Place is either wide and ſpacious; as in thoſe coming immediately from the Sun, which are very ſenſible, and their Extremes pretty abrupt; from the ſerene Air, which are fainter and more ſweet; from the dark Air, which appear more diffus'd, and almoſt imperceptible; and thoſe from an artificial Light, which makes the Shadow deep, and their Edges abrupt: or as it is more narrow and confin'd, where the Lights coming from the ſame Place; make the Shadow more ſtrong, and the reflex leſs ſenſible. See COLOURING.

CLAIR-OBSCURE, CHIARO SCURO, is alſo us'd for a Deſign conſiſting only of two Colours; ordinarily black and white, ſometimes black and yellow. See CAMIEUX.

Or, it is a Deſign only waſh'd with one Colour; the Shadows being of a duſky brown Colour, and the Lights heighten'd up with white.

The Word is alſo apply'd to Prints of two Colours, taken off at twice; whereof there are Volumes in the Cabinets of the Curious in Prints.

The Word *Clair-Obſcure* is a compound of two others. *Clair* is us'd among the *French* for thoſe Parts of a Painting which reflect the moſt Light; and comprehends not only the Lights themſelves, but alſo thoſe Colours that are luminous. By *Obſcure*, is meant not only all the Shades, but alſo all the Colours that are duſky. See COLOUR.

CLAMEA *admittenda in itinere per Atturnatum*, is a Writ whereby the King commands the Juſtice in Eyre to admit ones *Claim* by an Attorney, who being employ'd in the King's Service, cannot come in Perſon.

CLAMOR, or CLAMEUR *de Haro*, a popular Term in the *French* Laws, importing a Complaint, or Cry, whereby any one implores the Aſſiſtance of Juſtice againſt the Oppreſſion of another. See HARO.

Du Moulin calls it *Quiritatio Normannorum*. The *Haro* has the ſame Force with the Interdict *Retinendæ poſſeſſionis*. The Perſon on whom the *Haro* is cry'd, is oblig'd to ceaſe his Enterpriſe, and the Crier leads him before the Judge; where each gives Security, the one to purſue the *Haro*, the other to defend it.

In the mean time, the Thing in diſpute is ſequeſter'd into the hands of a third Perſon. Nor can the Judge annul the *Clameur de Haro*, without a Mulct.

This Cuſtom has prevail'd in *Normandy*, ſince the Conqueſt of *Raoul*, or *Rou*. *Du Moulin* ſays, the Word *Haro* is form'd of *Hal Rou*; the Cry whereby they invok'd that Prince.

CLAMP, in a Ship, a piece of Timber apply'd to a Maſt, or Yard, to ſtrengthen it, and prevent the Wood from burſting. See MAST.

CLAMP is alſo a little piece of Wood, in form of a Wheel, us'd inſtead of a Pulley in a Mortice.

CLAMP-*Nails*, are ſuch Nails as are us'd to faſten on *Clamps*, in building and repairing of Ships. See NAILS.

CLAMPING, in Joinery, &c. when a piece of Board is fitted with the Grain to the End of another piece of Board croſs the Grain; the firſt Board is ſaid to be *clamp'd*.

Thus the Ends of Tables are commonly *clamp'd*, to preſerve them from warping.

CLANCULARIES, CLANCULARII, a Sect of Anabaptiſts, who deny'd the Neceſſity of making any open Profeſſion of the Faith; and taught that a private one would be ſufficient. See ANABAPTIST.

Theſe were alſo call'd *Hortularies*, and *Gardners*, from the Places they choſe to aſſemble in, inſtead of Churches.

CLANDESTINE, any thing done ſecretly, and without the Knowledge of ſome of the Parties intereſted in it; or without the proper Solemnities.

Thus, a Marriage is ſaid to be *Clandeſtine*, when perform'd without the Publication of Banns, the Conſent of Parents, or the Knowledge of the Ordinary. See MARRIAGE.

The Council of *Trent*, and the *French* Ordonnances annul all *clandeſtine* Marriages.

The Word comes from the Prepoſition *Clam*, of κλείω, *claudo*, I ſhut, or κλέμμα, *furtum*, theft.

CLAP, in Medicine, the firſt Stage, or State of the Venereal Diſeaſe; call'd alſo a *Gonorrhæa*. See VENEREAL *Diſeaſe*, and GONORRHÆA.

Dr. *Cockburn*, and others after him, will have the *Clap* to conſiſt in an Ulceration of the Mouths of the Glands of the *Urethra* in Men, and of the *Glandula Lacunæ* in Women; occaſion'd by the Inſinuation of an acrimonious, purulent Matter, contracted from an infected Perſon *in Actu Coitus*.

From theſe Glands, iſſues, or gleets a ſharp, corroſive Matter, accompany'd with heat of Urine, Cordee, &c. which makes what is uſually term'd the firſt Stage of the Diſtemper. See CORDEE, &c.

A *Clap* appears ſometimes ſooner, and other times later, tho generally in about three or four Days after the Infection is receiv'd; and diſcovers it ſelf by the running, &c. of the Penis, with Inflammation of the Glans, or Nut of the Yard.

If the Perſon be affected with a *Phymoſis*, or *Paraphymoſis*; if the running be of a thin Conſiſtence, a yellow or green Colour, and in great Quantity, and the Teſticles ſwell'd, 'tis uſually term'd a *Gonorrhæa Virulenta*; and the *Clap* ſuppos'd to be in its ſecond Stage. See PHYMOSIS, &c.

Some Authors think, that in this Degree, or Stage, the Infection has reach'd the Maſs of Blood, and the *Veſiculæ Seminales*: others inſiſt, that the Symptoms may be accounted for from the Running, or *Virus*, being more corroſive; and by that means irritating and inflaming the adjacent Parts.

The Cure of a *Clap* conſiſts in proper Evacuations, as Calomel-Purgatives, Refrigerant-Emulſions, Pouders, &c. Turbeth-Emeticks, and laſtly, proper Terebinths, &c. to which ſome add Decoctions of the *Lignum Vitæ*, &c. As to Externals, they are generally comprehended under the form of Fomentations, Cataplaſms, Liniments, and Lotions.

Late Authors, and eſpecially Dr. *Cockburn*, have inſiſted on the Cure of a *Clap* by a particular Injection, without the uſe of any other Medicine.

This has given a Handle to Quacks, who, by affecting to do the ſame by their Injections, generally check the Running, and make a confirm'd Pox.

Turbeth-Mineral, Calomel, &c. given in ſmall Doſes, and continu'd for ſome time, ſo as to take effect by way of Alteratives, have been lately much commended as to Succeſs. Mercurial Unguents, us'd in ſmall Quantities, ſo as not to raiſe a Salivation, is ſaid to cure all the Stages of the Venereal Diſeaſe: This Practice is uſual in *Montpelier*, &c. See SALIVATION, MERCURY, &c.

Mr. *Becket*, in the *Philoſophical Tranſactions*, attempts to ſhew, that the Diſeaſe we now call a *Clap*, is the ſame with that our Forefathers call'd a *Burning*, or *Brenning*; under which Name it was known ſeveral hundred Years before the commonly ſuppos'd Origin of the Venereal Diſeaſe; and that the Appellation *Brenning*, &c. was only diſcontinu'd as that of *Clap* commenc'd.

In a MS. as old as *Henry* IV. *Arden*, Chirurgeon to that Prince, defines Brenning to be a certain inward Heat and Excoriation of the *Urethra*; which, Mr. *Becket* obſerves, gives us a perfect Idea of what we now call a *Clap*. For frequent Diſſections of ſuch as have labour'd under that Diſeaſe, have made it evident, that the *Urethra* is excoriated by the Virulency of the Matter they receive from the infected Woman: Which Excoriation, or Ulceration, he adds, is not confin'd to the *Oſtiola*, or Mouths of the mucous Glands of the *Urethra*, as has been lately imagin'd; but may equally attack any Part of the *Urethra*.

The heat, or *burning* which ſuch Perſons feel in making water, is a Conſequence of this Excoriation of the *Urethra*; the Salts contain'd in the Urine pricking and irritating the nervous *Fibrillæ* of the Urine, thus diveſted of its natural Membrane. See BURNING.

CLARENCIEUX, the ſecond King at Arms; thus call'd from the Duke of *Clarence*, to whom he firſt belong'd. See KING *at Arms*.

Lionel, third Son of *Edward* III. having by his Wife the Honour of *Clare* in the County of *Thomond*, was hereupon created Duke of *Clarence*; which Dukedom afterwards eſcheating to *Edward* IV. he made this Herald, who properly belong'd to the Duke, a King at Arms; naming him *Clarencieux* in *French*, and *Clarencius* in *Latin*. See HERALD.

His

His Office is to marſhal, and diſpoſe of the Funerals of all the lower Nobility; as Baronets, Knights, Eſquires, and Gentlemen on the South ſide of *Trent*: whence he is alſo call'd *Surroy*, or *South-Roy*, in contradiſtinction to *Norroy*. See NORROY.

CLARET, or CLAIRET, *Pale red*, a Name the *French* give to ſuch of their red Wines as are not of a deep, or high Colour. See WINE.

The Word is a Diminutive of *clair*, clear, bright, tranſparent.

CLARET, CLARETA, in the antient Pharmacy, was a kind of Wine impregnated with Aromatics; ſometimes alſo called *Hippocras*, or *Vinum Hippocraticum*; becauſe ſuppos'd to have been firſt preſcrib'd by *Hippocrates*.

It has its Name *Claret*, from its being *clarify'd* by Percolation thro' a Wine-Sack, or Bag, call'd *Hippocrates*'s Sleeve.

CLARICORD, or *Manichord*, a Muſical Inſtrument, in form of a Spinett. See SPINETT.

It has 49 or 50 Stops, and 70 Strings, which bear on five Bridges; the firſt whereof is the higheſt, the reſt diminiſhing in proportion. Some of the Strings are in Uniſon; their Number being greater than that of the Stops.

There are ſeveral little Mortaiſes for paſſing the Jacks, arm'd with little Braſs Hooks, which ſtop and raiſe the Chords in lieu of the Feather us'd in Virginals and Spinetts. But what diſtinguiſhes it moſt, is, that the Chords are cover'd with pieces of Cloth, which render the Sound the ſweeter; and deaden it ſo, as that it can't be heard to any conſiderable diſtance.

Hence ſome call it the *dumb Spinett*; whence it comes to be particularly in uſe among the Nuns, who learn to play, and are unwilling to diſturb the Silence of the Dormitory.

The *Claricord* is more antient than either the Spinett or Harpſicord; as is obſerv'd by *Scaliger*, who only gives it 35 Chords.

CLARIFICATION, in Chymiſtry, the Act of clearing, or fining of Liquors from their groſſer Parts. See REFINING.

Clarification is perform'd by Ebullition, Deſpumation, and Colature or Filtration.

The Term is chiefly apply'd to Juices, Decoctions and Syrups, which are *clarify'd* by Filtration, or by paſſing 'em thro' a Strainer, after having beat them up into a Froth with the Whites of Eggs; the viſcous Parts of the Eggs intangling the thick groſs Particles of the Liquor, retain them in the Strainer. See FILTRATION.

Sometimes the Mixture is boil'd; by which means, the Eggs intangle the groſſer Parts, and carry them up to the Top in a tough Scum; which is either taken off with a Spoon, or ſeparated by a Flannel Bag, as before, call'd *Hippocrates*'s Sleeve. See DESPUMATION.

Another Method is, by letting the Liquor ſtand in a convenient Veſſel, till the groſſer Particles ſettle.

In diſtill'd Waters, &c. which have a milky hue, or are turbid, it is generally effected with fine Sugar, mix'd with a ſmall quantity of Allum; which will bear down the oily Parts, and leave the reſt clear. See DEPURATION.

Many Liquors are *clarify'd* by paſſing them thro' a thick brown Paper; among others, Hippocras, Hydromel, &c. See HYDROMEL, &c.

Fine and delicate Wines are uſually *clarify'd* with Fiſh-Glue: The thicker Wines with Omelette, or whites of Eggs diluted in Water. Sometimes with pouring them thro' a heap of little Chips. See WINE.

'Tis an Error to ſuppoſe that Fiſh-Glue, or Omelette, can be prejudicial to the Health; ſince both the one and the other fall down with the Lees, without producing any ill Effect. That which makes Wines unwholeſom, is not the *clarifying* by theſe innocent means, but the Mixtures and Sophiſtications of the Vintners, to make 'em briſk, and bring them to life again after the Fret; which is done with Aqua vitæ, Spices, Pidgeons Dung, &c.

The Antients *clarify'd* their Wines by pouring them from off the Lees, into another Barrel, thro' a Tin Strainer.

Sugar is *clarify'd* with the Whites of Eggs and Sugar beat together. See SUGAR.

CLARIGATIO, or CLARIGATION, in the Law of Nations, a loud, clear Call, or Summons made to an Enemy, to demand Satisfaction for ſome Injury receiv'd; in defect whereof, recourſe will be had to Repriſals.

Clarigatio is the ſame with what the *Greeks* call ἀνδροληψία. See ANDROLEPSIA.

Nauda uſes the Word in a ſomewhat different manner. 'Repriſals, ſays he, ſignify the ſame as *pignorationes Budæo, aut Clarigationes Hermolao*: For, as to the *Greek* 'Word *Androlepſia*, it is equivalent to the Latin *pignorandi poteſtas*.

CLARION, a kind of Trumpet, whoſe Tube is narrower, and its Tone acuter and ſhriller than the common Trumpet. See TRUMPET.

Nicod ſays, the *Clarion*, as now us'd among the *Moors*, and *Portugueze* who borrow'd it from the *Moors*, ſerv'd antiently for a Treble to ſeveral Trumpets, which ſounded Tenor and Baſs. He adds, that it was only us'd among the Cavalry and the Marines.

Menage derives the Word from the Italian *Clarion*, of the Latin *Clarus*, by reaſon of the Clearneſs of its Sound.



CLARION, in Heraldry, is a Bearing of this Figure. He bears Ruby three *Clarions* Topaz; being the Arms of the Earl of *Bath*, by the Name of *Greenvile*.

Guillim takes theſe *Clarions* to be a kind of old-faſhion'd Trumpet; but others rather think, they repreſent the Rudder of a Ship; others a Reſt for a Lance.

CLARO-OBSCURO. See CLAIR-OBSCURE.

CLASPERS, in Botany, are Tendrels, Threads, or Ligaments of a middle Nature between that of a Root and Trunk; whereby Shrubs, and other Plants, take hold of Trees, or other things near 'em, for their Support, &c.

The Wiſdom of the Creator is very conſpicuous, in this Proviſion for ſome Species of Plants, which need it; as Ivy, Vines, Briony, &c.

The Contrivance is various in various Subjects. *Malpighi* obſerves, that the *Claſpers* of Ivy are roundiſh, and cover'd with Hair; and what is very remarkable, they yield a glutinous Teribinthine Humor, by means whereof they adhere cloſely to Stones, &c. Nature, he adds, uſes no leſs Artifice in the *Vitis Canadenſis*.

Claſpers ſerve ſomeſimes for Support only; as thoſe of the Vine, Briony, &c. whoſe Branches being long, ſlender, and brittle, would be weigh'd down by their own load, and that of their Fruit; but for theſe *Claſpers*, which by a natural Spire, or Circumvolution, catch hold of any adjacent body.

Claſpers ſometimes alſo ſerve for a Supply of Juice; as in the Trunk-Roots of Ivy, which being a tall Plant, and of a compact Subſtance, the Sap would not be ſufficiently furniſh'd to the upper Sprouts without this Expedient.

Claſpers alſo ſometimes ſerve for Stabiliment, as thoſe of Cucumbers; for Propagation, as thoſe of Camomile; and for Shade, Stabiliment, and Propagation all together, as thoſe of Strawberries.

CLASS, or CLASSIS, a diſtribution of Perſons, or Things, arranged them according to their Merit, Value, or Nature.

The Word comes from the Latin *Claſſis*, of the *Greek* καλέω, *congrego*, *convoco*; a *Claſs* being nothing but a multitude, aſſembled apart.

CLASS, CLASSIS, in Antiquity. See CLASSIC.

CLASS is particularly us'd for a Diſtinction among Scholars; who are diſtributed into ſeveral *Claſſes*, or Forms, according to their Capacities and Attainments.

Quintilian uſes the Word *Claſſis* in this Senſe in the 1ſt Book of his *Inſtitutiones*.

CLASSIC, CLASSICAL, a Term ſeldom us'd but for Authors read in the *Claſſes*, at Schools, and who are in great Authority there. See SCHOOL.

Aquinas, and the *Maſter of the Sentences* are *Claſſic* Authors in the School Divinity; *Ariſtotle*, in Philoſophy; *Cicero* and *Virgil* in the Humanities. *Aulus Gellius* ranks among *Claſſic* Authors, *Cicero*, *Cæſar*, *Saluſt*, *Virgil*, *Horace*, &c.

The Term ſeems properly applicable only to Authors who liv'd in the Time of the Republic and the *Auguſtan* Age, when the *Latin* was in its Perfection. It appears to have taken its riſe hence, that an Eſtimate of every Perſon's Eſtate being appointed by *Servius Tullius*, he divided the *Roman* People into ſix Bands, which he called *Claſſes*.

The Eſtate of thoſe of the firſt *Claſſis* was not to be under 200 Pounds: And theſe, by way of Eminence, were call'd *Claſſics*, *Claſſici*. Hence, Authors of the firſt Rank came to be call'd *Claſſics*: all the reſt were ſaid to be *infra Claſſem*.

The firſt *Claſſis*, again, was ſubdivided into *Centuries*; making fourſcore Centuries of Footmen, and eighteen of Horſemen. See CENTURY.

Each *Claſſis* conſiſted, one half of the younger ſort, who were to make War abroad; and the other of old Men, who ſtaid at home for the Defence of the City.

CLAVICULÆ, *Channel Bones*, in Anatomy, two ſmall Bones, ſituate at the Baſis of the Neck, and atop of the Breaſt. See NECK, THORAX, &c.

They are about half a Foot long, of the thickneſs of a Finger, and a little bent at each end, and that different ways, ſomewhat like the Letter S; and are thus call'd, as being the Keys, or *Claves* of the Thorax.

Their inner Subſtance is ſpongy; whence they are brittle, eaſily broke, and eaſily coaleſcing again.

They are join'd to the *Acromium* of the Scapula *per Synchondroſin*; and on the Forepart, *per Arthrodiam*, to a Sinus on each ſide of the Upper-part of the *Sternum*.

Their Uſe is, to fix the *Scapulæ* with the *Sternum* and the Arms, and to prevent 'em from ſlipping too forward upon the Thorax.

CLAVIS, a *Latin* Word, ſometimes us'd in *Engliſh* Writers for a *Key*. See KEY.

CLAUSE, an Article, or particular Stipulation in a Contract; a Charge, or Condition in a Teſtament, &c.

We ſay, *Derogatory Clauſe*, *Penal Clauſe*, *Codicillary Clauſe*, *Reſolutary Clauſe*. See each of theſe in its Place, DEROGATORY, PENAL, &c.

CLAUSUM *Fregit*, an Action of Treſpaſs; thus call'd, by reaſon the Writ demands the Perſon ſummon'd to anſwer to *quare clauſum fregit*, why he committed ſuch a Treſpaſs. See TRESPASS.

CLAVUS, in Antiquity, a Band or Fillet of Purple, more or leſs broad, according to the Dignity of the Perſon; us'd among the antient *Romans*: whence the Difference of the *Tunica Auguſticlavia*, and *Laticlavia*. See LATICLAVUS, &c.

This Ornament, according to ſome, was call'd *Clavus*, Nail; as being ſet with little round Plates of Gold, or Silver, like the Heads of Nails. *Cantelius* maintains, that the *Clavus* conſiſted of a kind of Purple Flowers, ſewed upon the Stuff.

CLAVUS, in Medicine, a Name Phyſicians give to a ſhooting Pain in the Head, commonly ſituate a little above the Eyes, *viz.* on the *Sinus Frontalis*; and ſuppos'd to reſemble a boring of the Head thro' with an Augre; whence the Name. In ſome 'tis only in one, and in others in both.

'Tis generally allow'd to be a Species of an Ague, or an intermitting Fever; its Periods of coming or going, being uſually regular or ſtated. In ſome 'tis Quotidian, in others Tertian. See FEVER.

The Cure conſiſts in giving an Emetic a little before the Fit, and after, confirming it with a proper Quantity of the Cortex, &c. as in intermitting Fevers: tho Bleeding and Diaphoretics ſometimes effect a Cure without other Aſſiſtants.

A Pain like to this, on the top of the Head, ſometimes attacks hyſterical Perſons; which by Dr. *Sydenham* is term'd *Clavus Hyſtericus*. See HYSTERIC.

CLAVUS is alſo us'd in Medicine, for a Callus form'd on the Toes; popularly call'd a *Corn*. See CALLUS.

Clavi ariſe from a too great Compreſſion of the *Cutis*; which by this means hardens, and forms it ſelf into a Knot. The Cure is by firſt ſoftening 'em, as with *Emplaſt. de Ranis cum Mercurio*, or *Mynſicht. Galban. Crocat.* with Sal Ammoniac; and then plucking 'em up. A piece of raw Beef, apply'd in manner of a Plaiſter, and frequently ſhifted, is found to diſſipate 'em in a little time.

CLAY, in Natural Hiſtory, a ſoft viſcous Earth, found in various Places, and us'd for various Purpoſes, of ſeveral Kinds and Properties. See EARTH, SOIL, &c.

Dr. *Liſter*, in the *Philoſophical Tranſactions*, gives us a Table of 22 ſeveral *Clays* found in the ſeveral Counties of *England*; five whereof he calls *pure*, *i. e.* ſuch as are ſoft, like Butter, to the Teeth, with little or no Grittineſs in 'em, *viz.* 1. *Fullers Earth*, which he diſtinguiſhes by its Colour into yellowiſh, brown, and white. See FULLERS *Earth*.

2. *Boles*. See BOLE.

3. *Pale yellow Clay*. 4. *Cowſhot Clay*. 5. *Dark blue Clay*, or Marle.

Seventeen *impure*; whereof eight are harſh and duſty when dry: as, 1, *Creta*, or milk-white *Clay*. 2. *Potters pale yellow Clay*. 3. *Blue Potters Clay*. 4. *Blue Clay*, wherein is found the *Aſtroites*. 5. *Yellow Clay*. 6. Fine *red Clay*. 7. Soft chalky *blue Clay*. 8. Soft chalky *red Clay*.

Three are ſtony when dry, *viz.* 1. A red ſtony *Clay*. 2. A blue ſtony *Clay*. 3. A white ſtony *Clay*.

Three are mix'd with Sand, or Pebbles, *viz.* 1. a yellow *Loam*. 2. A red ſandy *Clay*. 3. A ſecond Species of the ſame Kind.

Laſtly, three are mix'd with flat or thin Sand, glittering with *Mica*: *viz.* 1. *Crouch white Clay*. 2. Grey or bluiſh *Tobacco pipe Clay*. 3. A red *Clay*.

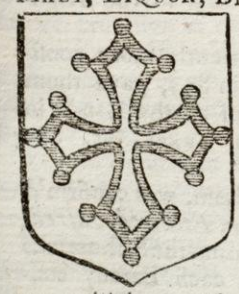
CLAYES, in Fortification, are Wattles made with Stakes, interwove with Oziers, &c. to cover Lodgments. See FASCINES.

CLAYING *of Land*. See MANURE.

CLEAR, in Building, is ſometimes us'd among the Workmen for the inſide Work of a Houſe, &c. See HOUSE, &c.

CLEARING *of Liquors*. See CLARIFICATION.

For Malt Liquors, particularly Beer, there are various Methods of *clearing*; the beſt is by caſting into it fix'd Nitre: ſome add the Quinteſſence of Malt and Wine; whites of Eggs made into Balls with a little Flower and Izing-glaſs: Oil and Quinteſſence of Barley have the ſame Effect. It is exceedingly *clear'd* and ſtrengthen'd, by adding to it, during the time of its Fermentation, ſome ardent Spirit. See MALT, LIQUOR, BEER, &c.



CLECHE', or CLECHE'E, in Heraldry, is uſually underſtood of an Ordinary open to the Light, or pierc'd thro' with another inner one of the ſame Figure; *e. g.* when a Croſs appears as if charg'd with another Croſs of the ſame Colour with the Field; or as if the Field appeared thro' the Apertures thereof.

But *Colombiere*, and ſome other Writers, will have this piercing to be only a Circumſtance of the *Croſs Clechè*, and call it by the Name *Vuidè*, voided. The thing that denominates it *Clechè*, is its ſpreading from the Centre towards the Extremities, which are very wide, and end in an Angle in the middle; as in the Figure adjoining.

The Word is *French*, ſuppos'd to be form'd of *Clef*, Key; the Ends of the Croſs being thought to bear ſome reſemblance to the Bowls of the antient Keys.

CLEDONISM, CLEDONISMUS, a kind of Divination in uſe among the Antients. See DIVINATION.

The Word is form'd from the *Greek* κληδὼν, which ſignifies two things, *Rumor*, a Report, and *Avis*, a Bird: In the firſt Senſe, *Cledoniſm* is a kind of Divination drawn from Words occaſionally utter'd. *Cicero* obſerves, that the *Pythagoreans* made Obſervation not only of the Words of the Gods, but of thoſe of Men; and accordingly believ'd the pronouncing of certain Words, *v. g.* the Word *Incendium*, at a Meal, very unhappy.

Thus, inſtead of Priſon, they us'd the Word *Domicilium*; and to avoid *Erinnies*, ſaid *Eumenides*.

In the ſecond Senſe, *Cledoniſm* ſhould ſeem a Divination drawn from Birds; the ſame with *Ornithomantia*. See ORNITHOMANCY.

CLEF, CLIFF, or *Key*, in Muſick, a Mark at the Beginning of the Lines of a Song, which ſhews the Tone, or Key in which the Piece is to begin. Or, it is a Letter mark'd on any Line, which explains and gives the Name to all the reſt. See KEY.

Antiently, every Line had a Letter mark'd for a *Clef*; now a Letter on one Line ſuffices: ſince by this all the reſt are known; reckoning up or down in the Order of the Letters.

'Tis call'd the *Clef*, or Key, becauſe hereby we know the Names of all the other Lines and Spaces; and conſequently the Quantity of every Degree, or Interval.

But becauſe every Note in the Octave is call'd a *Key*, tho in another Senſe, this Letter mark'd, is call'd in a particular manner the *Sign'd Clef*; becauſe being written on any Line, it not only ſigns and marks that one, but explains all the reſt.

By CLEF, therefore, for diſtinction-ſake, we mean that Letter ſign'd on a Line, which explains the reſt; and by *Key* the principal Note of a Song, in which the Melody cloſes.

There are three of theſe *Sign'd Clefs*, *c*, *f*, *g*. The *Clef* of the higheſt Part in a Song, call'd *Treble*, or *Alt*, is *g* ſet on the ſecond Line counting upwards. The *Clef* of the Baſs, or the loweſt Part, is *f* on the fourth Line upwards: For all the other mean Parts, the *Clef* is *c*, ſometimes on one, ſometimes on another Line. Indeed, ſome that are really mean Parts, are ſometimes ſet with the *g Clef*. See BASS, &c.

It muſt, however, be obſerv'd, that the ordinary Signatures of *Clefs* bear little reſemblance to thoſe Letters. Mr. *Malcolm* thinks it would be well if we us'd the Letters themſelves. *Kepler* takes a world of Pains, to ſhew that the common Signatures are only Corruptions of the Letters they repreſent. See their Figure among the other CHARACTERS *of Muſick*.

The *Clefs* are always taken Fifths to one another: That is, the *Clef f* is loweſt, *c* a Fifth above it, and *g* a Fifth above *c*.

When the Place of the *Clef* is chang'd, which is not frequent in the *mean Clef*, 'tis with Deſign to make the Syſtem comprehend as many Notes of the Song as poſſible, and ſo to have the fewer Notes above or below it. If then there be many Lines above the *Clef*, and few below it, this Purpoſe is anſwer'd by placing the *Clef* in the firſt or ſecond Line: If there be many Notes below the *Clef*, 'tis plac'd higher in the Syſtem. In effect, according to the Relation of the other Notes to the *Clef* Note, the particular Syſtem is taken differently in the Scale; the *Clef* Line making one in all the Variety. See SCALE.

But ſtill, in whatever Line of the particular Syſtem any *Clef* is found, it muſt be underſtood to belong to the ſame of the general Syſtem, and to be the ſame individual Note or Sound in the Scale.

By this conſtant Relation of *Clefs*, we learn how to compare the ſeveral particular Syſtems of the ſeveral Parts; and know how they communicate in the Scale, *i. e.* which Lines are Uniſon, and which not: for 'tis not to be ſuppos'd that each Part has certain Bounds, within which another muſt never come. Some Notes of the Treble, *v. g.* may be lower than ſome of the mean Parts, or even of the Baſs. To put together therefore in one Syſtem all the Parts of a Compoſition written ſeparately, the Notes of each Part muſt be plac'd at the ſame Diſtances above and below the proper *Clef*, as they ſtand in the ſeparate Syſtem; and becauſe all the Notes that are conſonant, (or heard together) muſt ſtand perpendicularly over each other, that the Notes belonging to each Part may be diſtinctly known, they may be made with ſuch Differences as ſhall not confound or alter their Significations with reſpect to Time, but only ſhew that they belong to this or that Part. Thus ſhall we ſee how

the Parts change and pass thro' one another; and which, in every Note is highest, lowest, or unison.

The Use of particular *Sign'd Clefs* then, is an Improvement with respect to the Parts of any Composition; for unless some one Key in the particular Systems were distinguish'd from the rest, and refer'd invariably to one Place in the Scale, the Relations could not be distinctly mark'd.

It must here be observ'd, that for the Performance of any single Piece, the *Clef* only serves for explaining the Intervals in the Lines and Spaces: so that we need not regard what Part of any greater System it is; but the first Note may be taken as high or as low as we please. For the proper Use of the Scale is not to limit the absolute Degree of Tone; so the proper Use of the *Sign'd Clef*, is not to limit the Pitch at which the first Note of any Part is to be taken; but to determine the Tune of the rest with relation to the first: And considering all the Parts together, to determine the Relations of their several Notes by the Relations of their *Clefs* in the Scale: Thus, the pitch of Tune being determin'd in a certain Note of one Part; the other Notes of that Part are determin'd by the constant Relations of the Letters of the Scale, and the Notes of the other Parts by the Relations of their *Clefs*.

In effect, for performing any single Part, the *Clef* Note may be taken in any Octave, *i. e.* at any Note of the same Name, provided we do not go too high or too low for finding the rest of the Notes of a Song. But in a Concert of several Parts, all the *Clefs* must be taken, not only in the Relations, but also in the Places of the System abovemention'd; that every Part may be comprehended in it.

The difference of *Clefs* in particular Systems, makes the Practice of Musick much more difficult and perplex'd than it would otherwise be; both with respect to Instruments, and to the Voice. This occasion'd Mr. *Salmon* to propose a Method of reducing all Musick to one *Clef*; whereby the same Writing of any Piece of Musick, should equally serve to direct the Voice, and all Instruments; which he calls an *Universal Character*.

The Natural and Artificial Note express'd by the same Letter, as *c* and *c* ♯; are both set on the same Line or Space. When there is no Character of Flat or Sharp at the beginning with the *Clef*, all the Notes are Natural: and if in any particular Place the Artificial Note be requir'd, 'tis signify'd by the Sign of a Flat or Sharp set on the Line a Space before that Note.

If a Sharp or Flat be set at the beginning in any Line or Space with the *Clef*, all the Notes on that Line or Space are Artificial ones; *i. e.* are to be taken a Semitone higher or lower than they would be without such Sign. The same affects all their Octaves above and below, tho they ben't mark'd so, In the Course of the Song, if the Natural Note be sometimes requir'd, 'tis signify'd by ♮.

The marking of the System thus by Flats and Sharps, Mr. *Malcolm* calls the *Signature of the Clefs*. See NOTE, TUNE, TRANSPOSITION, FLAT, SHARP, &c.

CLEMENTINE, a Term in use among the *Augustins*, who apply it to a Person, who after having been nine Years a Superior, ceases to be so, and becomes a private Monk, under the Command of a Superior.

The Word has its rise hence, that Pope *Clement*, by a Bull, prohibited any Superior among the *Augustins* from continuing above nine Years in his Office.

CLEMENTINES, in the Canon Law, are the Constitutions of Pope *Clement* V. and the Canons of the Council of *Vienna*. See CANON.

CLEPSYDRA, a kind of Water-Clock, or Hour-Glass, serving to measure Time by the Fall of a certain quantity of Water. See CLOCK, &c.

There have likewise been *Clepsydras* made with Mercury.

The *Egyptians* by this Machine measur'd the Course of the Sun. *Tycho Brahe*, in our Days, made use of it to measure the Motion of the Stars, &c. and *Dudley* us'd the same Contrivance in making all his Maritime Observations.

The Use of *Clepsydras* is very antient: They were invented in *Egypt* under the *Ptolomys*; as were also Sun-Dials. Their Use was chiefly in the Winter; Sun-Dials serv'd in the Summer. They had two great Defects; the one, that the Water run out with a greater or less facility, as the Air was more or less dense: The other, that the Water run out more readily at the Beginning, than towards the Conclusion.

M. *Amontons* has invented a *Clepsydra* free from both these Inconveniencies, and which has the three grand Advantages, of serving the ordinary Purpose of Clocks; of serving in Navigation for the Discovery of the Longitude; and of measuring the Motion of the Arteries.

The Word comes from κλέπτω, *condo*, and ὕδωρ, *aqua*.

The Word *Clepsydra* is also us'd for an Hour-Glass of Sand.

For the Construction of a CLEPSYDRA.

Problem. *To divide any cylindric Vessel into Parts, to be empty'd in each Division of Time; the Time wherein the whole, and that wherein any Part is to be evacuated, being given.*

Suppose, *v. g.* a cylindric Vessel, whose Charge of Water flows out in twelve Hours, were required to be divided into Parts to be evacuated each Hour. 1. As the part of Time 1 is to the whole Time 12, so is the same Time 12 to a fourth Proportional, 144. 2. Divide the Altitude of the Vessel into 144 equal Parts: Here, the last will fall to the last Hour; the three next above to the last Part but one; the five next to the tenth Hour, &c. Lastly, the 23 last to the first Hour.

For, since the Times increase in the Series of the Natural Numbers 1 2 3 4 5, &c. and the Altitudes, if the Numeration be in a retrograde Order from the twelfth Hour, increase in the Series of the unequal Numbers 1 3 5 7 9, &c. the Altitudes computed from the twelfth Hour, will be as the Squares of the Times 1 4 9 16 25, &c. Therefore, the Square of the whole Time 144, comprehends all the Parts of the Altitude of the Vessel to be evacuated. But a third Proportional to 1 and 12 is the Square of 12; and consequently it is the Number of equal Parts into which the Altitude is to be divided, to be distributed according to the Series of the unequal Numbers, thro' the equal Intervals of Hours.

Since, in lieu of Parts of the same Vessel, other less Vessels equal thereto may be substituted; the Altitude of a Vessel emptied in a given Space of Time being given, the Altitude of another Vessel to be emptied in a given Time may be found; *viz.* by making the Altitudes as the Squares of the Times.

Hence we see the Method of constructing the *Clepsydras* us'd by the Antients.

CLERGY, *Clerus*, the Assembly or Body of *Clerks*, or Ecclesiasticks. See CLERK.

In the *Romish* Church there are two Kinds of *Clergy*; the one *Regular*, comprehending all the Religious of both Sexes: the other *Secular*, comprehending all the Ecclesiasticks that don't make the Monastic Vows. See REGULAR, &c.

Among the *Reformed*, there are none but Secular *Clergy*. See ECCLESIASTIC.

The *Roman Clergy* forms a Monarchical State, under the Pope, who is the Head thereof. See POPE, HIERARCHY, &c.

The *Clergy* was antiently divided into three Orders, *viz. Priests*, *Deacons*, and *inferior Clerks*; and each Order had its Chief: the Arch-Priest was the Head of the first Order, the Archdeacon of the second, and the Dean of the third. See PRIEST, DEACON, ARCHDEACON, DEAN, ARCH-PRIEST, &c.

Under the Name of *Clergy*, were also formerly compris'd all the Officers of Justice; as being suppos'd to be Men of *Letters*. See CLERK.

Tho the *Clergy* formerly claim'd an Exemption from all Secular Jurisdiction, yet *Matt. Paris* tells us, *William* the Conqueror subjected the Bishops and Abbeys who held *per Baroniam*, and who till then had been exempt from all Secular Service; and order'd they should be no longer free from Mortuary Services. To this purpose he prescrib'd arbitrarily what Number of Soldiers every Abbey and Bishoprick should provide, to serve him and his Successors in War, and laid up these Registers of Ecclesiastical Servitude in his Treasury.

But, in effect, the *Clergy* were not exempt from all Secular Service till then; as being bound by the Laws of King *Edgar* to obey the Secular Magistrate in three Things, *viz.* upon an Expedition to the Wars, and in contributing to the Building and Repairing of Bridges, &c.

The *Privileges of the English* CLERGY are still very considerable: Their Goods pay no Toll in Fairs or Markets; they are exempt from all Offices, but their own; from the King's Carriages, Posts, &c. from appearing at Sheriffs *Tourns*, or Frank-Pledges; and are not to be fin'd or amerc'd according to their Spiritual, but their Temporal Means.

A *Clergyman* acknowledging a Statute, his Body shall not be imprison'd: If he be convict of a Crime, for which the Benefit of the *Clergy* is allow'd, he shall not be burnt in the Hand: and he shall have the Benefit of the Clergy *in infinitum*, which no Layman can have but once.

The *Clergy* are not to be burden'd in the general Charges with the Laity; nor to be troubled or incumber'd, unless expresly nam'd and charg'd by the Statute; for general Words don't affect them. Thus, if a Hundred be sued for a Robbery, the Minister shall not contribute; tho the Words are, *Gentes demorantes*: neither are they assess'd to the Highway, to the Watch, &c.

The *Revenues of the* CLERGY were antiently more considerable then at present: *Ethelwolthus*, in 855, gave them the Tithe of all Goods, and the Tenth of all the Lands in *England*; free from all Secular Services, Taxes, &c. See TITHE.

The Charter whereby this was given them, was confirm'd by several of his Successors, *Edmund*, *Edgar*, *Ethelred*, *Alfred*, and *William* the Conqueror; which last, finding the Bishopricks so rich, erected them all into Baronies; each Barony containing 13 Knights Fees, at least. But since the Reformation

tion the Biſhopricks are much impair'd. See BISHOPRICK, DIOCESS, &c.

The Revenues of the inferior *Clergy*, in the general, are ſmall; a third Part of the beſt Benefices being antiently, by the Pope's Grant, appropriated to Monaſteries; upon the Diſſolution whereof they became Lay-Fees. See ABBEY, FEE, &c.

Indeed, an Addition was made 2° *Annæ*; the whole Revenue of Firſt-Fruits and Tenths being then granted, to raiſe a Fund for the Augmentation of the Maintenance of the Poor *Clergy*: purſuant to which, a Corporation was form'd, by the Name of the *Governours of the Bounty of Queen* Anne, *for the Augmentation of the Maintenance of the Poor Clergy*; to whom the ſaid Revenues were convey'd in Truſt, &c. See AUGMENTATION.

CLERGY is alſo us'd for an antient Liberty of the Church, confirm'd by ſeveral Acts of Parliament; conſiſting in this, that when a Prieſt, or one in Orders, was arraign'd of Felony before a ſecular Judge, he might *pray his Clergy*, *i.e.* he might pray to be deliver'd to his Ordinary, to purge himſelf of the Crime objected againſt him.

This was admitted, even in Caſes of Murder: But ſeveral Statutes made in aftertimes have abridg'd and reſtrain'd this Privilege.

The antient Courſe of the Law is now much alter'd on this Head; for by the Stat. 18 *Eliz.* cap. 7. Clerks are no more committed to their Ordinaries to be purg'd; but every Man to whom the Benefit is granted, tho not in Orders, is put to read at the Bar, after he is found guilty, and convicted of ſuch Felony; and ſo, burnt in the Hand, and ſet free for the firſt time, if the Ordinary's Commiſſioner, or Deputy ſtanding by, do ſay, *Legit ut Clericus*; otherwiſe he ſuffers Death.

CLERICO *Admittendo*, in Law, a Writ directed to the Biſhop, for the admitting a *Clerk* to a Benefice upon a *Ne admittas*, try'd, and found for the Party who procures the Writ.

CLERICO *capto per Statutum Mercatorum*, is a Writ for the Delivery of a *Clerk* out of Priſon, who is impriſon'd upon the Breach of Statute Merchant.

CLERICO *convicto commiſſo Gaolæ in defectu Ordinarii deliberando*, is a Writ for the Delivery of a *Clerk* to his Ordinary, that was formerly convicted of Felony; by reaſon his Ordinary did not challenge him according to the Privilege of *Clerks*.

CLERICO *intra ſacros Ordines conſtituto non eligendo in officium*, is a Writ directed to the Bailiffs, &c. that have thruſt a Bailiwick or Beadleſhip upon one in Holy Orders; charging them to releaſe him.

CLERK, *Clericus*, an antient Word, formerly us'd to ſignify a *learned Man*, or *Man of Letters*.

Thus, *Paſquier* obſerves, the Officers of the Counts, *Comites*, were antiently created under the Title of *Clerks of Accompts*; and Secretaries of State were call'd *Clerks of the Secret*. So, *Clericus Domini Regis*, in the Time of *Edward* I. was engliſh'd, the King's Secretary, or *Clerk* of his Council.

This Term, *Clerk*, was apply'd indifferently to all who made any Profeſſion of Learning; or who knew how to manage the Pen: tho, originally it was appropriated to Eccleſiaſticks.

As the Nobility and Gentry were uſually brought up to the Exerciſe of Arms; there was none but the Clergy left to cultivate the Sciences: Hence, as it was the Clergy alone who made any Profeſſion of Letters, a very learned Man came to be call'd a *great Clerk*; and a ſtupid ignorant Man, a *bad Clerk*.

Ronſard, in his old Language, uſes the Word femininely, *Clergeſſe* for a learned Woman.

Mais trop plus eſt à craindre une femme Clergeſſe.

The Word *Clerk*, and its Derivatives, come from the *Greek* κλῆρος, us'd for *Clergy*, but more properly ſignifying *Lot*, or *Heritage*; in regard the Lot, and Portion of *Clerks* or Eccleſiaſticks is to ſerve God.

Accordingly, *Clerus* was at firſt us'd to ſignify thoſe who had a particular Attachment to the Service of God.

The Origin of the Expreſſion is deriv'd from the Old Teſtament, where the Tribe of *Levi* is call'd the *Lot*, *Heritage*, κλῆρος; and God is reciprocally call'd their Portion: by reaſon that Tribe was conſecrated to the Service of God, and liv'd on the Offerings made to God, without any other ſettled Proviſion as the reſt had. See CLERGY.

CLERK is alſo us'd in the general for all thoſe of the Eccleſiaſtical State, or who are in Orders, of any Degree, or Kind; from the Deacon to the Prelate. See ORDERS, DEACON, BISHOP, &c.

Yet, in its utmoſt Latitude, the Word alſo includes *Chantors*, *Acolythi*, *Exorciſtæ*, and *Oſtiarii*. See CHANTOR, ACOLYTHI, EXORCIST, &c.

In this Senſe, the Canons excommunicate all thoſe who lay hands on a *Clerk*. See ORDERS, ECCLESIASTIC, PRIEST, &c.

A Council held in *Africa*, prohibited the appointing any *Clerk* to be a Tutor, Guardian, or Curator, by Teſtament. The Council of *Elvira* enjoins Continence on all *Clerks*, Biſhops, Prieſts, and Deacons, on Pain of being ſtripp'd of their *Clericature*. See CELIBATE.

Acephalus CLERK, in the VIth Century, was a Name given to thoſe *Clerks* who ſeparated from the Biſhop, and choſe not to live any longer in Community with him; in contradiſtinction to *Canon*-CLERKS, who continu'd to live with the Biſhop, according to the Canons. See CANON.

CLERK, is alſo a Title given to ſeveral Officers in the Royal Palace, the Courts of Juſtice, Revenue, Army, Navy, &c. The principal of theſe are as follow.

CLERK *of the Acts*, is an Officer of the Navy, who receives and enters the Commiſſions and Warrants of the Lord Admiral; and regiſters the Acts and Ordinances of the Commiſſioners of the Navy. See NAVY, ADMIRAL, &c.

CLERK *of Aſſize*, is he that writeth all things judicially done by the Juſtices of Aſſize, in their Circuits. See ASSIZE.

CLERK *of the Check*, is an Officer in Court; ſo call'd, becauſe he hath the Check and Controlement of the Yeomen of the Guard, and all other ordinary Yeomen, or Uſhers, belonging either to the King, Queen, or Prince; giving leave, or allowing their Abſence, or Defects in Attendance; or diminiſhing their Wages for the ſame. See CHECK.

CLERK *of the Crown*, an Officer in the King's-Bench Court, whoſe Buſineſs is to read, frame, and record all Indictments againſt Traytors, Felons, and other Offenders there arraign'd upon any publick Crime. See CROWN.

CLERK *of the Cloſet*, is a Divine; otherwiſe called *Confeſſor to his Majeſty*; whoſe Office is to attend at the King's right Hand during Divine Service, to reſolve all Doubts concerning Spiritual Matters, to wait on the King in his private Oratory, &c. See CLOSET.

CLERK *of the Crown*, in Chancery, an Officer, who by himſelf, or Deputy, is continually to attend the Lord Chancellor, or Lord Keeper, for ſpecial Matters of State, by Commiſſion, or the like either immediately from his Majeſty, or by Order of his Council; as well ordinary as extraordinary: Alſo all general Pardons, upon Grants of them at the King's Coronation or in Parliament, the Writs of Parliament, with the Names of the Knights, Citizens, and Burgeſſes, are return'd into this Office. He hath alſo the making of ſpecial Pardons, and Writs of Execution upon Bonds of Statute Staple forfeited.

CLERK *of the Deliveries*, is an Officer in the Tower, who takes Indentures for all Stores iſſued thence. See TOWER.

CLERK *of the Enrollments of Fines and Recoveries*, is an Officer in the Court of Common Pleas, under the three Elder Judges of that Court, and removable at their Pleaſure. See ENROLLMENT.

CLERK *of the Errors*, in the Court of Common Pleas, tranſcribes and certifies into the King's-Bench the Tenor of the Records of the Cauſe, or Action, upon which the Writ of Error is brought there to be determin'd. See ERRORS.

CLERK *of the Errors*, in the King's-Bench, does likewiſe tranſcribe, and certify the Records of ſuch Cauſes in that Court into the Exchequer; if the Cauſe, or Action, is by Bill. See KING'S-*Bench*.

CLERK *of the Errors*, in the Exchequer, tranſcribes the Records certify'd thither out of the King's-Bench; and prepares them for Judgment in the Court of Exchequer, to be given by the Juſtice of the Common Pleas, and Barons there. See EXCHEQUER.

CLERK *of the Eſſoigns*, is an Officer belonging to the Court of Common Pleas; who keeps the Eſſoign-Roll, or enters Eſſoigns. He alſo provides Parchment, cuts it into Rolls, makes the Number on them; delivers out all the Rolls to every Officer, and receives them again when written. See ESSOIGN.

CLERK *of the Eſtreats*, belongs to the Exchequer; and every Term receiveth the Eſtreats out of the Lord Treaſurer's Remembrancer's Office, and writeth them out to be levy'd for the King. He alſo maketh Schedules of ſuch Sums eſtreated as are to be diſcharg'd. See ESTREAT.

CLERK *of the Hamper*, or *Hanaper*; or *Warden of the Hamper*; is an Officer in Chancery, whoſe Buſineſs is to receive all Money due to the King for the Seals of Charters, Patents, Commiſſions, and Writs: as alſo Fees due to the Officers for enrolling and examining the ſame. He is oblig'd to attend on the Lord Chancellor, or Lord Keeper daily in Term time; and at all Times of Sealing. See HAMPER.

CLERK *of the Juries*, or *Curata Writs*, is an Officer belonging to the Court of Common Pleas; who maketh out the Writs call'd *Habeas Corpus*, and *Diſtringas*, for the Appearance of the Jury, either in Court, or at the Aſſizes; after the Pannel is return'd upon the *Venire Facias*. See JURY.

CLERK *Comptroller of the King's Houſe*, an Officer of the Court, who has Place and Seat in the Compting-Houſe; with Authority to allow or diſallow the Charges and Demands of Purſuivants, and Meſſengers of the green Cloth, Purveyors,

ors, &c. He has also the overſight of all Defaults and Miſcarriages of inferior Officers; and ſits in the Compting-Houſe with the ſuperior Officers, *viz.* the Lord Steward, Treaſurer, Comptroller, and Cofferer, for the correcting and redreſſing things out of order. See HOUSHOLD, and COMPTING-*Houſe*.

CLERK *of the King's great Wardrobe*, is an Officer of the King's Houſe, that keepeth an Accompt, or Inventory in Writing, of all things belonging to the King's Wardrobe. See WARDROBE.

CLERK *of the King's Silver*, is an Officer belonging to the Common Pleas; to whom every Fine is brought, after it has been with the *Cuſtos Brevium*; and by whom the Effect of the Writ of Covenant is enter'd into a Paper Book: and according to that Note, all the Fines of that Term are alſo recorded in the Rolls of the Court. See SILVER-*Office*.

CLERK *of the Market*, is an Officer of the King's Houſe; whoſe Duty is to take charge of the King's Meaſures, and to keep rhe Standards of them: that is, Examples of all the Meaſures that ought to be us'd thro' the Land. See STANDARD.

CLERK-*Marſhal* of the King's Houſe, ſeems to be an Officer that attends the Marſhal in his Court, and recordeth all his Proceedings.

CLERK *of a Merchant Ship*, is an Officer appointed to take care that nothing be ſquander'd, or ſpent needleſly. See SHIP.

He is oblig'd to keep a Regiſter, or Journal, containing an exact Inventory of every thing in the Loading of the Veſſel; as the Rigging, Apparel, Arms, Proviſion, Munition, Merchandiſes: as alſo the Names of the Paſſengers, if there be any; the Freight agreed on; a Liſt of the Crew; their Age, Quality, Wages; the Bargains, Purchaſes, Sales, or Exchanges the Ship makes from its Departure; the Conſumption of Proviſion; and in ſhort, every thing relating to the Expence of the Voyage. He alſo regiſters the Conſultation of the Captains, Pilots, &c.

He alſo does the Office of a Regiſter in all criminal Proceſſes; and of a Notary, to make and keep the Wills of thoſe who die in the Voyage; takes Inventories of their Effects, &c. The *Clerk* is not allow'd to quit the Veſſel during the Voyage, on Forfeiture of all his Wages, &c.

In ſmall Veſſels, the Maſter, or Pilot, does the Office of *Clerk*. See MASTER.

CLERK *of the Nichils*, or *Nihils*, is an Officer in the Exchequer, that maketh a Roll of all ſuch Sums as are *nihiled* by the Sheriffs upon their Eſtreats of green Wax; and delivers the ſame into the Lord Treaſurer's Remembrancer's Office, to have Execution done upon them for the King. See NIHIL.

CLERK *of the Ordnance*, is an Officer in the Tower; who regiſters all Orders relating to the King's Ordnance. See ORDNANCE.

CLERK *of the Outlawries*, is an Officer belonging to the Court of Common Pleas; being a Deputy to the King's Attorney-General, for making out the Writs of *Capias utlegatum*, after Outlawry; and the King's Attorney's Name is to every one of thoſe Writs. See OUTLAWRY.

CLERK *of the Paper-Office*, is an Officer of the King's Bench. See PAPER-*Office*.

CLERK *of the Parcels*, an Officer of the Exchequer. See EXCHEQUER.

CLERK *of the Parliament*, is he that recordeth all Things done in the Parliament; and engroſſeth them fairly into Parchment Rolls, for their better keeping to Poſterity. See PARLIAMENT.

Of theſe there are two, one of the *higher*, or Houſe of Lords; and the other of the *lower*, or Houſe of Commons.

CLERK *of the Patents*, or *Letters Patent* under the Great Seal. See PATENT.

CLERK *of the Peace*, is an Officer belonging to the Seſſion of the Peace; whoſe Duty is at the Seſſion to read the Indictments, to enroll the Acts, and draw the Proceſs; to enroll Proclamations of Rates for Servants Wages; to enroll the Diſcharge of Apprentices; to keep the Counterpart of the Indenture of Armour, &c. Alſo to certify in the King's-Bench Tranſcripts of Indictments, Outlawries, Attainders, and Convictions, had before the Juſtices of the Peace within the Time limited by Statute. See PEACE.

CLERK *of the Pell*, belongs to the Exchequer: His Buſineſs is, to enter the Teller's Bills into a Parchment Roll, call'd *Pellis receptorum*; and alſo to make another Roll of Payment, call'd *Pellis exituum*; wherein he ſets down by what Warrant the Money was paid. See PELL.

CLERKS *of the Petty Bag*, is an Officer in Chancery, whereof there are three; the Maſter of the Rolls being their Chief. See CHANCERY.

Their Office is to record the Return of all Inquiſitions out of every County; all Liveries granted in the Court of Wards; all *Oſter les maines*: to make all Patents of Cuſtomers, Gaugers, Comptrollers, and Aulnagers; Summons's of the Nobility, Clergy, and Burgeſſes to the Parliament; Commiſſions directed to Knights and others, of every Shire, for raiſing of Subſidies; Writs for nomination of Collectors for the Fifteenths; and all Traverſes upon any Office, Bill, or otherwiſe; and to receive the Money due to the King for the ſame. See PETTY-*Bag*.

CLERK *of the Pipe*, belongs to the Exchequer; who having all Accompts and Debts due to the King delivered and drawn out of the Remembrancer's Office, chargeth them down into the great Roll: He alſo writes Summons's to the Sheriff, to levy the ſaid Debts upon the Goods and Chattels of the ſaid Debtors; and if there be no Goods, he draws them down to the Lord Treaſurer's Remembrancer, to write Eſtreats againſt their Lands. See PIPE.

CLERK *of the Pleas*, is an Officer in the Exchequer, in whoſe Office the Officers of the Court, upon ſpecial Privileges belonging to them, ought to ſue, and be ſued upon any Action. See PLEA.

CLERKS *of the Privy-Seal*. There are four of theſe Officers, who attend the Lord Keeper of the Privy-Seal, or, if there be none ſuch, the principal Secretary; and write or make out all Things ſent by warrant from the Signet to the Privy-Seal, and to be paſs'd to the Great Seal: as alſo to make out Privy-Seals upon any ſpecial Occaſion of the King's Affairs; as for Loan of Money, or ſuch-like. See PRIVY-*Seal*.

CLERK *of the Sewers*, is an Officer belonging to the Commiſſioners of the Sewers, who writes down all Things they do by virtue of their Commiſſion. See SEWER.

CLERK *of the Signet*, is an Officer continually attending on the King's principal Secretary; who has cuſtody of the Privy-Signet, as well for ſealing the King's private Letters, as for ſuch Grants as paſs his Majeſty's Hand by Bills ſign'd. Of theſe there are four, who attend in their Turn, and have their Diet at the Secretary's Table. See SIGNET.

CLERK *of the Superſedeas*, is an Officer of the Court of Common Pleas, who makes out Writs of *Superſedeas* (upon the Defendant's appearing to the Exigent) whereby the Sheriff is forbid to return the Exigent. See SUPERSEDEAS.

CLERKS *of the Treaſury*. See TREASURY.

CLERK *of the Treaſury*, is alſo an Officer of the Common Pleas, who has charge of the Records of the *Niſi prius*; the Fees due for all Searches; and hath the certifying of all Records into the King's-Bench, when a Writ of Error is brought: He alſo makes out all Writs of *Superſedeas de non Moleſtanda*, which are granted for the Defendants while the Writ of Error hangeth: he alſo maketh all Exemplifications of Records, being in the Treaſury.

CLERK *of the Warrants*, is an Officer likewiſe belonging to the Court of Common Pleas, who enters all Warrants of Attorney for Plaintiff and Defendant: and enrolls all Deeds of Indentures of Bargain and Sale, which are acknowledg'd in the Court, or before any Judges out of the Court. See WARRANT.

CLEROMANCY, a kind of Divination perform'd by the throwing of Dice, or little Bones; and obſerving the Points, or Marks turn'd up. See DIVINATION.

At *Bura*, a City of *Achaia*, was a Temple, and a celebrated Oracle of *Hercules*; where ſuch as conſulted the Oracle, after praying to the Idol, threw four Dies, the Points whereof being well ſcann'd by the Prieſt, he was ſuppos'd to draw an Anſwer from them. See ORACLE, and SORTES.

The Word comes from the *Greek* κλῆρος, *Lot*, and μαντεία, *Divination*.

CLIENT, *Cliens*, among the *Romans*, was a Citizen who put himſelf under the Protection of ſome great Man, who in that Relation was call'd his *Patron*, *Patronus*. See PATRON.

The Patron aſſiſted his *Client* with his Protection, Intereſt and Eſtate; and the *Client* gave his Vote for his Patron, when he ſought any Office for himſelf, or his Friends. *Clients* ow'd reſpect to their Patrons, as theſe reciprocally ow'd them their Protection.

This Right of Patronage was appointed by *Romulus*, to unite the Rich and Poor together, in ſuch manner, as that one might live without Contempt, and the other without Envy. But the Condition of a *Client*, in courſe of Time, became little elſe but a moderate kind of Slavery.

By degrees, the Cuſtom extended it ſelf beyond *Rome*; and not only Families, but Cities, and entire Provinces, even out of *Italy*, follow'd the Example. Thus, *Sicily*, *v.g.* put it ſelf under the *Clientela*, or Protection of *Marcellus*.

Lazius and *Budeus*, refer the Origin of Fiefs and Tenures to the Patrons and *Clients* of antient *Rome*: But the Difference is pretty conſiderable between the Relation of Vaſſals and their Lords, and that of *Clients* and their Patrons. See VASSAL, LORD, &c.

For the *Clients*, beſide the Reſpect they bore their Patrons, and the Vote they gave them, were oblig'd to aſſiſt them in all Affairs; and even to pay their Ranſom, if they ſhould be taken Priſoners in War, in caſe they were not able to do it of themſelves. See FEE, and TENURE.

The Word *Cliens* is form'd of *Colens*, honouring.

CLIENT, is now us'd for a Party in a Law-Suit, who has turn'd over his Cauſe into the Hands of a Counſellor, or Solicitor.

CLIMACTERIC, *Annus Climactericus*, a critical Year, wherein, according to the Aſtrologers, there is ſome very notable Alteration in the Body to ariſe; and a Perſon ſtands in great danger of Death. See CRITICAL.

The firſt *Climacteric* is the ſeventh Year of a Man's Life; the reſt are Multiples of the firſt, as 21, 49, 56, 63, and 81; which two laſt are called the *Grand Climacterics*, and the Dangers here ſuppos'd more imminent.

The Opinion has a great deal of Antiquity on its ſide. *Aulus Gellius* ſays, it was borrow'd from the *Chaldeans*; who might probably receive it from *Pythagoras*, whoſe Philoſophy turn'd much on Numbers; and who imagin'd an extraordinary Virtue in the Number 7.

Marc. Ficinus gives us the Foundation of the Opinion: He tells us, there is a Year aſſign'd for each Planet to rule over the Body of Man, each in his turn: now, *Saturn* being the moſt malific Planet of all, every ſeventh Year, which falls to his Lot, becomes very dangerous; eſpecially thoſe of 63 and 81, when the Perſon is already advanc'd in Years.

Some hold, according to this Doctrine, every ſeventh Year an eſtabliſh'd *Climacteric*; but others only allow the Title to thoſe produc'd by the Multiplication of the *climacterical* Space by an odd Number, 3, 5, 7, 9, &c. Others obſerve every ninth Year as a *Climacteric*.

Hevelius has a Volume under the Title of *Annus Climactericus*; deſcribing the Loſs he ſuſtain'd in the burning of his Obſervatory, &c. which it ſeems happen'd in his firſt *grand Climacteric*.

Suetonius ſays, *Auguſtus* congratulated his Nephew upon his having paſs'd his firſt *grand Climacteric*, whereof he was very apprehenſive.

Some pretend, that the *Climacteric* Years are alſo fatal to political Bodies.

Authors on the Subject, are *Plato*, *Cicero*, *Macrobius*, *Aulus Gellius*, among the Antients; *Argol*, *Maginus*, and *Salmaſius* among the Moderns. S. *Auguſtin*, S. *Ambroſe*, *Beda*, and *Boetius* countenance the Opinion.

The Word *Climacteric* comes from the *Greek* κλίμαξ, κλίμακος, *Scala*; *q. d.* by a Scale, or Degrees.

CLIMATE, in Geography, a part of the Surface of the Earth, bounded by two Circles parallel to the Equator, and of ſuch a Breadth, as that the longeſt Day in the Parallel nearer the Pole, exceeds the longeſt Day in that next the Equator by ſome certain Space, *viz.* half an Hour. See EARTH, PARALLEL, &c.

The *Beginning of the* CLIMATE, is the parallel Circle wherein the Day is the ſhorteſt.

The *End of the* CLIMATE, is that wherein the Day is the longeſt. See DAY.

The *Climates* therefore are reckon'd from the Equator to the Pole; and are ſo many Bands, or Zones, terminated by Lines parallel to the Equator: tho, in ſtrictneſs, there are ſeveral *Climates* in the Breadth of one Zone. See ZONE.

Each *Climate* only differs from its contiguous ones, in that the longeſt Day in Summer is longer or ſhorter by half an Hour in the one Place than in the other.

As the *Climates* commence from the Equator, the firſt *Climate*, at its Beginning, has its longeſt Day preciſely 12 Hours long; at its End, 12 Hours and an half: The ſecond, which begins where the firſt ends, *viz.* at 12 Hours and an half, ends at 13 Hours; and ſo of the reſt, as far as the Polar Circles. See HOUR.

Here, what the Geographers call *Hour-Climates* terminate, and *Month-Climates* commence.

As an *Hour-Climate* is a Space compriz'd between two Parallels of the Equator, in the firſt of which, the longeſt Day exceeds that in the latter by half an Hour; ſo the Month-*Climate* is a Space terminated between two Circles parallel to the Polar Circles whoſe longeſt Day is longer or ſhorter than that of its contiguous one by a Month, or 30 Days. See MONTH.

The Antients, who confin'd the *Climates* to what they imagin'd the habitable Parts of the Earth, only allow'd of ſeven. The firſt they made to paſs thro' *Meroe*; the ſecond thro' *Sienna*; the third thro' *Alexandria*; the fourth thro' *Rhodes*; the fifth thro' *Rome*; the ſixth thro' *Pontus*; and the ſeventh thro' the Mouth of the *Boriſthenes*.

The Moderns, who have ſail'd further toward the Poles, make thirty *Climates* on each ſide: and in regard the Obliquity of the Sphere makes a little difference in the length of the longeſt Day; inſtead of half an Hour, ſome of 'em only make the difference of *Climates* a quarter.

In fixing the *Climates*, there ordinarily is no regard had to the Refraction. See REFRACTION.

Vulgarly, the Term CLIMATE is beſtow'd on any Country or Region differing from another, either in reſpect of the Seaſons, the Quality of the Soil, or even the Manners of the Inhabitants; without any regard to the Length of the longeſt Day.

Albufeda, an *Arabic* Author, diſtinguiſhes the firſt kind of *Climates* by the Term *real Climates*; and the latter by that of *apparent Climates*.

The Word comes from the *Greek* κλιμα, *Inclinamentum*, an Inclination.

Varenius gives us a Table of thirty *Climates*; but without any regard to the Refraction. *Ricciolus* furniſhes a more accurate one, wherein the Refractions are allow'd for: An Abſtract of which follows.

A Table of CLIMATES.

Middle of *Clim.*	Longeſt Day.	Latit.	*Climates.*	Longeſt Day.	Latit.	Middle of *Clim.*	Latit.	Cont. Lax.	North Night	Cont. Lax.	South. Night.
I	12h. 30′	7° 1′	VIII	16h. 0′	48° 15′	XV	66° 53′	31d.	27d.	30d.	28d.
II	13 0	15 36	IX	17 0	53 46	XVI	69 30	62	58	60	59
III	13 30	23 8	X	18 0	57 44	XVII	73 0	93	87	89	88
IV	14 0	29 49	XI	19 0	60 39	XVIII	78 6	124	117	120	118
V	14 30	35 35	XII	20 0	62 44	XIX	84 0	156	148	150	149
VI	15 0	40 32	XIII	22 0	65 10	XX	90 0	188	180	178	177
VII	15 30	44 42	XIV	24 0	66 54						

CLIMAX, or *Gradation*, in Rhetorick, a Figure, where by we aſcend or deſcend, as it were by degrees.

Such is that of *Cicero* to *Catiline*, *Nihil agis, nihil moliris, nihil cogitas*; *quod ego non audiam, quod etiam non videam, planeque ſentiam*: Thou doſt nothing, moveſt nothing, thinkſt nothing; but I hear it, nay ſee it, and perfectly underſtand it. Thus, the ſame *Cicero* to *Atticus*; *Si dormis expergiſcere*; *ſi ſtas, ingredere*; *ſi ingrederis, curre*; *ſi curris advola*. Thus, *Tertullian de Spac.* 'Who ever found 'the Truth without God? Who ever found God without 'Chriſt? who Chriſt without the Holy Spirit? who the Ho-'ly Spirit without Faith?

CLINIC, CLINICUS, a Term apply'd by ſome Church-Hiſtorians to thoſe among the Antients, who receiv'd Baptiſm on their Death-Bed. See BAPTISM.

It was the Doctrine of many of the Fathers, that Baptiſm abſolutely waſh'd away all previous Sins, and that there was no Attonement for Sins committed after Baptiſm. On this account, many defer'd that Sacrament till they were arriv'd at the laſt Stage of Life, and were pretty ſafe from the danger of ſinning any more; and ſuch were call'd *Clinici*.

Magnus, in the IIId Century, made a Doubt whether or no *Clinics* were truly baptiz'd, in regard the Ceremony was only perform'd by Aſperſion, inſtead of Immerſion. He conſulted S. *Chryſoſtom* on the Point, who made him anſwer, that the Sacrament does not waſh away Sin after the manner of a corporal Bath; and ſhews from Scripture that Aſperſion is ſufficient.

The Word comes from the *Greek* κλινὴ, *a Bed*.

CLINIC is alſo us'd in Antiquity in two other Senſes: 1ſt, for a Patient, or Perſon merely ſick, even without keeping his *Bed*; as appears from the Life of *Charlemaigne*, in *Caniſius*.

2dly, For a *Phyſician*; in regard, Phyſicians are much converſant about the *Beds* of the Sick.

It was, however, principally the Phyſicians of Emperors that were call'd by this Title. (*Raderus* on *Martial*, *Roſweid*, and *Hoffman.*)

Medicina CLINICA, was particularly us'd for the Method of viſiting and treating ſick Perſons a-bed, for the more exact Diſcovery of all the Symptoms of the Diſeaſe. See MEDICINE.

Le Clerc obſerves, that *Æſculapius* was the firſt who exercis'd the *Medicina Clinica*.

CLINIC is now ſeldom us'd but for a *Quack*; or rather for an empyrical Nurſe, who pretends to have learnt the Art of curing Diſeaſes by attending on the Sick. See PHYSICIAN.

CLINOIDES, in Anatomy, an Epithet given to three internal Apophyſes of the *Os Sphenoides*, one of the Bones of the *Cranium*; ſo called, ſay ſome, from their reſembling the Feet of a *Bed*. See SPHENOIDES.

Two of theſe are anterior, or before; the third poſterior, behind: The three together form a little Cavity, from its Shape call'd *Sella Turcica*, or *Equina*; wherein is plac'd the Pituitary Gland. See SELLA, and PITUITARY *Gland*.

The Word is form'd of the *Greek* κλίνη, *a Bed*, and εἶδος, *form*; either from the three Bones which reſemble the Feet of a Bed; or from the Cavity they form, which reſembles a Bed it ſelf.

CLITORIDIS *Muſculi*, in Anatomy. See ERECTOR *Clitoridis*.

CLITORIS, in Anatomy, a long round Body in the Forepart of the *Vulva*, or Natural Parts of a Woman; being one of the principal Organs of Generation in that Sex. See GENERATION.

Its Figure repreſents that of a Gland, or Acorn: ordinarily 'tis pretty ſmall, but in ſome Women thick, and long.

In many reſpects it repreſents the Penis of a Man; whence ſome call it the *Woman's Yard*. See PENIS.

In effect, it is compos'd of the ſame Parts; has, like it, two cavernous, or ſpongious Bodies; and a Glans at the Extremity, cover'd with a *Præputium*; but is not pierced thro' like the Penis. See GLANS, PREPUCE, &c.

It has two Muſcles which erect it in Coition; on which occaſion it ſwells and grows hard. Some Anatomiſts ſay, too, it has two *Muſculi Ejaculatores*. See ERECTOR, &c.

Its Senſation is exquiſite; and 'tis found the chief Seat of Pleaſure: hence ſome Women are apt to abuſe it.

The Extremity of this Part is ſometimes cut off; as in Circumciſion, and where it advances out too far. 'Tis ſometimes ſo large and propendent, that it bears a full reſemblance to the virile Member; whence the Perſons in whom 'tis ſo found, frequently paſs for *Hermaphrodites*. See HERMAPHRODITE.

The ſpongious Bodies of the *Clitoris*, ariſe diſtinctly from the lower Parts of the *Os Pubis*; and approaching one another, unite, and form the Body of the *Clitoris*. Before their Union they are called the *Crura Clitoridis*; and are twice as long as the Body of the *Clitoris*. See CRURA.

Its Muſcles ariſe from the Protuberance of the *Iſchium*, and are inſerted into its ſpongious Bodies. It has Veins and Arteries from the Hemorrhoidal Veſſels, and Pudenda; and Nerves from the Intercoſtals.

CLOACA, among the Antients, was a ſubterraneous Aqueduct; or a Common-ſhore, or Canal, for the Reception and Diſcharge of the Filth of a City, or a Houſe.

Tarquinius Priſcus is ſaid to have been the firſt who contrived *Cloaca* in antient *Rome*; to which end, a Canal was firſt dug thro' the Mountains, whereon the City ſtood, and divided into three Branches, call'd the *great Cloaca*.

The Care and Inſpection of the *Cloacæ* belong'd to the Cenſors, till the Time of *Auguſtus*, who appointed *Curatores Cloacarum*, on purpoſe.

They had their *Cloacina*, or Goddeſs who preſided over the *Cloacæ*.

The Word is compounded of the *Greek* κλύζω, *purgo*.

CLOCK, an Automaton, or Machine, ſerving to meaſure and ſtrike Time. See TIME.

The uſual Movements are *Watches*, and *Clocks*: the former, in ſtrictneſs, are ſuch as ſhew the Parts of Time; the latter ſuch as publiſh it by ſtriking: Tho the Name *Watch* is ordinarily appropriated to Pocket-*Clocks*, and that of *Clocks* to larger Machines; whether they ſtrike or no.

The Parts common to both Kinds of Movements, ſee under the Article MOVEMENT.

Thoſe peculiar to Watches and *Clocks*, ſee under WATCH-*Work*, and CLOCK-*Work*.

The Invention of *Clocks* with Wheels, is referr'd to *Pacificus* Archdeacon of *Verona*, who liv'd in the Time of *Lotharius*, Son of *Louis le Debonnaire*; on the Credit of an Epitaph quoted by *Ughelli*, and borrow'd by him from *Panvinius*.

It was at firſt called the *Nocturnal Clock*; to diſtinguiſh it from the Dials, which ſhew'd the Hour by the Sun's Shadow. Others aſcribe it to *Boethius*, about the Year 510.

Mr. *Derham* makes *Clock-work* of a much older ſtanding; and ranks *Archimedes*'s Sphere, mention'd by *Claudian*; and that of *Poſidonius*, mention'd by *Cicero*, among the Machines of this Kind; not that either their form or uſe were the ſame with thoſe of ours: but that they had their Motion from ſome hidden Weights, or Springs, with Wheels or Pullies, or ſome ſuch *Clock-work* Principle. Thus he underſtands the *Incluſus variis famulatur ſpiritus Aſtris; & vivum certis motibus urget opus*.

Be this as they will, 'tis certain the Art of making *Clocks*, ſuch as are now in uſe, was either firſt invented, or at leaſt retriev'd in *Germany*, about 200 Years ago.

The *Water-Clocks*, or *Clepſydræ*, and Sun-Dials, have, both, a much better Claim to Antiquity. See CLEPSYDRA, and DIAL.

The *French* Annals mention one of the former Kind, ſent by *Aaron* King of *Perſia* to *Charlemaign*, about the Year 807, which ſeem'd to bear ſome reſemblance to the modern *Clocks*: It was of Braſs, and ſhew'd the Hours by twelve little Balls of the ſame Metal, which fell at the End of each Hour, and in falling ſtruck a Bell and made it ſound. There were alſo Figures of twelve Cavaliers, which at the End of each Hour came forth at certain Apertures, or Windows in the Side of the *Clock*, ſhut 'em again, &c.

Among the modern *Clocks*, the moſt eminent for their Furniture, and the Variety of their Motions and Figures, are thoſe of *Strasbourg*, of *Lunden*, and of *Lyons*. In the firſt, a Cock claps his Wings, and proclaims the Hour; the Angel opens a Gate and ſalutes the Virgin; the Holy Spirit deſcends on her, &c. In the ſecond, two Horſemen encounter, and beat the Hour on each other; a Door opens, and there appears on a Theater the Virgin, with Jeſus Chriſt in her Arms; the *Magi*, with their Retinue, marching in order, and preſenting their Gifts; two Trumpeters ſounding all the while to adorn the Proceſſion. See *Scottus*; ſee alſo *Salmaſius* on *Solinus*; *Maſius de Tintinnabulis*, and *Kircher* in his *Muſæum Romanum*, and *Ædep. Ægypt.*

The Invention of *Pendulum Clocks* is owing to the happy Induſtry of the laſt Age: The Honour of it is diſputed between *Huygens* and *Galileo*. The former, who has a juſt Volume on the Subject, declares it was firſt put in practiſe in the Year 1657, and the Deſcription thereof printed in 1658. *Becher*, *de nova Temporis dimetiendi Theoria*, *Anno* 1680, ſtickles for *Galileo*; and relates, tho at ſecond hand, the whole Hiſtory of the Invention: adding, that one *Treſſler*, Clock-maker to the Father of the then grand Duke of *Tuſcany*, made the firſt Pendulum-*Clock* at *Florence*, by direction of *Galilæus à Galileo*; a Pattern of which was brought into *Holland*.

The Academy *de l'Cimento* ſay expreſly, that the Application of the Pendulum to the Movement of a *Clock* was firſt propos'd by *Galileo*, and firſt put in practiſe by his Son *Vincenzo Galilei*, in 1649.

Be the Inventor who he will, 'tis certain the Invention never flouriſh'd till it came into *Huygens*'s hands, who inſiſts on it, that if ever *Galileo* thought of ſuch a thing, he never brought it to any degree of Perfection.

The firſt Pendulum-*Clock* made in *England*, was in the Year 1622, by M. *Fromantil* a *Dutchman*. See PENDULUM.

Pendulum-CLOCK. See PENDULUM-*Clock*.

Pocket-CLOCK. } See WATCH.
Repeating-CLOCK. }

CLOCK-*Work*, is that Part of a Movement which ſtrikes the Hour, &c. on a Bell. See MOVEMENT.

The Wheels it conſiſts of are the *great*, or *firſt* Wheel; which is that the Weight, or Spring firſt drives: in ſixteen or twenty hour *Clocks*, this has uſually Pins, called the *Pin-Wheel*; in eight day Pieces, the ſecond Wheel is commonly the Pin-Wheel, or *Striking-Wheel*. Next the Striking-Wheel, is the *Detent-Wheel*, or *Hoop-Wheel*, having a Hoop almoſt round it, wherein is a Vacancy at which the *Clock* locks. The next is the *third*, or *fourth Wheel*, according to its diſtance from the firſt. The laſt is the *flying Pinion*; with a Fly, or Fan to gather Air, and ſo bridle the Rapidity of the *Clock's* Motion. To theſe muſt be added the *Pinion of Report*; which drives round the *Locking-Wheel*, called alſo the *Count-Wheel*; ordinarily with eleven Notches in it, unequally diſtant, to make the *Clock* ſtrike the Hours. See WHEEL.

Beſides the Wheels, to the *Clock*-part belongs the *Raſh*, or *Ratch*; a kind of Wheel of twelve large Fangs, running concentrical to the *Dial-Wheel*, and ſerving to lift up the *Detents* every Hour, and make the *Clock* ſtrike: The *Detents*, or Stops, which being lifted up, and let fall, lock and unlock the *Clock* in ſtriking. The *Hammers* which ſtrike the Bell; the *Hammer-tails*, by which the ſtriking Pins draw back the Hammers; *Latches*, whereby the Work is lifted up and unlocked; and *Lifting-pieces*, which lift up and unlock the Detents.

Theory and Calculation of CLOCK-*Work*.

The Method of calculating the Numbers of a piece of *Clock-Work*, having ſomething in it very pretty, and at the ſame time very eaſy and uſeful, we ſhall give the Reader the Rules relating thereto; referring, for the general Rules that obtain in the Calculation of all Movements, of *Watch* as well as *Clock-Work*, to the Article MOVEMENT; and for the particular Rules of *Watch-Work*, to the Article WATCH-*Work*.

For the ſtrict Calculation it ſelf, it bears that affinity to the Calculation of Watch-Work, that to avoid Repetitions we ſhall refer to that Head: what *Clock-Work* has peculiar to it ſelf, will be conceiv'd from what follows.

Rules for calculating the ſtriking Part of a CLOCK.

1ſt then, Obſerve that regard, here, needs only to be had to the Count-Wheel, Striking-Wheel, and Detent-Wheel, which move round in this proportion: the Count-Wheel commonly goes round once in 12 or 24 Hours; the Detent-Wheel moves round every ſtroke the *Clock* ſtrikes, or ſometimes but once in two Strokes; wherefore, it follows, that,

2dly, As many Pins as are in the Pin-Wheel, ſo many Turns hath the Detent-Wheel in one Turn of the Pin-Wheel; (or which is the ſame) the Pins of the Pin-Wheel are the Quotients of that Wheel, divided by the Pinion of the Detent-Wheel. But if the Detent-Wheel moveth but once round in two Strokes of the *Clock*, then the ſaid Quotient is but half the number of Pins.

3dly, As many Turns of the Pin-Wheel as are requir'd to perform the Strokes of 12 Hours, (which are 78) ſo many Turns muſt the Pinion of Report have, to turn round the Count-Wheel once: Or thus, the Quotient of 78, divided

vided by the Number of ſtriking Pins, ſhall be the Quotient for the Pinion of Report and the Count-Wheel; and this is in caſe the Pinion of Report be fix'd to the Arbor of the Pin-Wheel, which is commonly done.

An Example will make all plain: The Locking-Wheel being 48, the Pinion of Report 8, the Pin-Wheel 78, the Striking-Pins are 13, and ſo of the reſt. Note alſo, that 78 divided by 13 gives 6, the Quotient of the Pinion of Report. As for the Warning-Wheel and Flying-Wheel, it matters little what Number they have; their uſe being only to bridle the Rapidity of the Motion of the other Wheels.

8) 48 (6.
6) 78 (13.
6) 60 (10.
6) 48 (8.

The following Rules will be of good ſervice in this Calculation.

1. *To find how many Strokes a Clock ſtrikes in one turn of the Fuſy, or Barrel.* As the Turns of the great Wheel, or Fuſy, are to the Days of the *Clock*'s continuance; ſo is the number of Strokes in 24 Hours, *viz.* 156, to the Strokes of one Turn of the Fuſy.

2. *To find how many Days the Clock will go.* As the Strokes in 24 Hours are to thoſe in one turn of the Fuſy; ſo are the Turns of the Fuſy to the Days of the *Clock*'s going.

3. *To find the Number of Turns of the Fuſy, or Barrel.* As the Strokes in one turn of the Fuſy are to thoſe of 24 Hours; ſo is the *Clock*'s continuance to the Turns of the Fuſy, or great Wheel.

4. *To fix the Pin of Report on the Spindle of the great Wheel.* As the Number of Strokes in the *Clock*'s continuance is to the Turns of the Fuſy; ſo are the Strokes in 12 Hours, *viz.* 78, to the Quotient of the Pinion of Report, fix'd on the Arbor of the great Wheel.

5. *To find the Strokes in the Clock's continuance.* As 12 is to 78, ſo are the Hours of the *Clock*'s continuance to the Number of Strokes in that time.

To add Chimes *to a piece of* Clock-*Work*, ſee the Article Chimes.

CLOISTER, a Habitation ſurrounded with Walls, and inhabited by Canons and Religious. See Canon, &c.

In a more general Senſe, *Cloiſter* is us'd for a Monaſtery of Religious of either Sex. See Monastery.

In a more reſtrain'd Senſe, *Cloiſter* is us'd for the principal Part of a Regular Monaſtery, conſiſting of a Square built around; ordinarily, between the Church, the Chapter, and the Refectory; and over which is the Dormitory. See Dormitory, &c.

The *Cloiſters* ſerv'd for ſeveral Purpoſes in the antient Monaſteries. 1ſt, *Peter de Blois* obſerves, that it was here the Monks held their Lectures: The Lecture of Morality at the North ſide, next the Church; the School on the Weſt, and the Chapter on the Eaſt; Spiritual Meditation, &c. being reſerv'd for the Church.

Du Cange concludes, that all theſe different Exerciſes were perform'd in the *Cloiſter* it ſelf; but by miſtake. The Church, the Chapter, and the School were not Parts of the *Cloiſter*, but Buildings adjoining to it.

Lanfranc obſerves, that the proper Uſe of the *Cloiſter* was for the Monks to meet in, and converſe together, at certain Hours of the Day.

The Form of the *Cloiſter* was ſquare; and it had its Name, as being incloſ'd on its four Sides with Buildings.

Hence, in Architecture, a Building is ſtill ſaid to be in form of a *Cloiſter*; when there are Buildings on each of the four Sides of the Court.

CLOSE, in Heraldry, when any Bird, addicted to flight, is drawn in a Coat of Arms with its Wings *cloſe* down about it, and not either flying or diſplay'd, *i. e.* in a ſtanding Poſture, they blazon it by the Word *Cloſe*. See Vol.

If it be flying, they call it *Volant*.

Cloſe is not apply'd to the Peacock, Dunghill-Cock, &c. in regard that is their ordinary poſture.

The Term *Cloſe* is likewiſe us'd for the Barnacles, or Bits of a Bridle, when not extended, as they are uſually bore.

It is alſo us'd for the Bearing of a Helmet, with the Vizor down: A Barnacle *Cloſe*, a Helmet *Cloſe*, &c.

Close, in Muſick. See Cadence.

Close-*Fights*, a-board a Ship, are Bulk-heads put up fore and aft in the Ship, for the Men to ſtand behind in a *cloſe* Engagement, and fire on the Enemy; or if the Ship be boarded, to ſcour the Decks.

CLOSET, is a Term in Heraldry, ſignifying the half of a Bar. See Bar.

The Bar ought to contain one fifth Part of the Eſcutcheon, as the Feſſe doth the third.

CLOTH, in Commerce, in its general Senſe, includes all Kinds of Stuff, wove or manufactur'd on the Loom, whether their Threads be of Wool, or Flax. See Stuff, Loom, Weaving, &c.

In its more reſtrain'd Senſe, *Cloth* is peculiarly apply'd to a Web, or Tiſſue of woolen Threads, interwoven; whereof ſome, called the *Warp*, are extended lengthwiſe, from one end of the Piece to the other; the reſt, called *Woof*, diſpos'd a-croſs the firſt, or breadthwiſe of the Piece. See Woof, and Warp.

Cloths are wove on the Loom as well as Linens, Druggets, Serges, Camelots, &c. They are of various Qualities, fine, coarſe, ſtrong, &c. ſome made of Wool of different Colours; *i. e.* the Wools being dy'd and dreſs'd, are either ſpun, or wove: others are wrought white, deſtin'd to be dy'd in ſcarlet, black, blue, green, yellow, &c.

Their Widths and Lengths are various, according to the Places where they are manufactur'd. See Spinning, &c.

The goodneſs of Cloth conſiſts in the following Circumſtances. 1ſt, In the Wool's being fine and well dreſs'd. See Wool.

2d, In its being ſpun equally; always obſerving, however, that the Thread of the Warp be finer and better twiſted than that of the Woof. 3d, In the *Cloth*'s being well wrought and beaten on the Loom, ſo as to be every where equally cloſe and compact. See Weaving.

4th, In the Wool's not being finer and better at one End of the Piece than in the reſt. 5. In the Liſts being ſufficiently ſtrong, and of the ſame Length with the Stuff; and that they conſiſt of good Matter, as Wool, Oſtrich Feathers, or the Hair of *Daniſh* Dogs; which laſt is the beſt. 6. In the *Cloth*'s being well clear'd of the Knots and other Imperfections. 7. In its being firſt well ſcour'd with good Fullers-Earth, then full'd with the beſt white Soap, and waſh'd out in clear Water. 8. In the Hair, or Nap's being well drawn out with the Teazle, or Thiſtle, on the Pole, without being too much open'd. 9. In its being ſhorn cloſe; yet without laying the Ground or Thread bare. See Sheering.

10. In its being well dy'd. See Dying.

11. In its not being ſtretch'd, or pull'd farther than is neceſſary to ſet it ſquare, and bring it to its juſt Length and Breadth. See Stretching.

12. In its only being preſs'd cold; hot-preſſing being an utter Enemy to *Cloth*. See Pressing.

Manufacturing of fine Cloths *in white, for dying.*

The beſt Wools for the Purpoſe are thoſe of *England* and *Spain*; eſpecially thoſe of *Lincolnſhire*, and *Segovia*.

To uſe them to the beſt advantage; when taken out of the Bales, they muſt be ſcour'd, by putting 'em in a Bath ſomewhat more than luke-warm, compos'd of three Parts of fair Water, and one of Urine. After the Wool has continu'd long enough in the Bath to diſſolve and looſen the Greaſe, it is taken out, drain'd, and waſh'd in a running Water: 'Tis known to be well ſcour'd, when it feels dry to the touch, and has no ſmell but the natural Smell of the Sheep.

In this ſtate 'tis hung out to dry in the Shade; the heat of the Sun being apt to make it harſh, and untractable. When dry, 'tis beat with rods on Hurdles of Wood, or on Ropes, to clear out the Duſt and groſſer Filth: The more it is thus beat and clean'd, the more ſoft it becomes, and the better it ſpins.

After beating, it is well pick'd, to clear the reſt of the Filth, that had eſcap'd the Rods.

'Tis now in a State to be oil'd, and carded on large Iron Cards, plac'd a-ſlope. The beſt Oil for the Purpoſe is Oil of Olives; one fifth of which, at leaſt, ſhould be us'd for the Wool deſtin'd for the Woof, and a ninth for that of the Warp.

'Tis now given out to the Spinners; who firſt card it on the Knee, with ſmall fine Cards; then ſpin it on the Wheel: obſerving to make the Thread of the Warp ſmaller by one third than that of the Woof, and much cloſer twiſted; in order to this, the latter muſt be ſpun with the Band, or String open, and the former with it croſs'd.

The Thread thus ſpun, reel'd, and made into Skeins, that deſtin'd for the Woof is wound on Spools, *i. e.* on little Tubes, or pieces of Paper, or Ruſhes, ſo diſpos'd as that they may be eaſily put in the Eye of the Shuttle. That for the Warp is wound on a kind of Rochets, or large wooden Bobbins, to diſpoſe it for warping. See Shuttle, and Warping.

When warp'd, 'tis ſtiffen'd with Size; whereof, that made of ſhreds of Parchment is the beſt; and when dry, is given to the Weavers, who mount it on the Loom.

The Warp being on the Loom, the Weavers, who are two to each Loom, one on each ſide, tread at the ſame time, alternately, on the ſame Treddle; *i. e.* now on the right Step, and now on the left, which raiſes and lowers the Threads of the Warp equally; between which they throw, tranſverſly, the Shuttle from the one to the other. And each time that the Shuttle is thrown, and ſo a Thread of the Woof inſerted within the Warp, they ſtrike it conjointly with the ſame Frame wherein is faſten'd the Comb, or Reed, between whoſe Teeth the Threads of the Warp are paſs'd; repeating the Stroke as often as is neceſſary; in ſome *Cloths* no leſs than 12 or 13 times, *viz.* ſix with the Warp open, and ſeven ſhut.

It

It may be obſerv'd, that the more the Threads of the Woof are ſtruck againſt each other, the cloſer the *Cloth* is: hence it becomes enabled to ſuſtain the Violence of the Fulling-Mill, as well as of the Teazel, or Fulling-Thiſtle, without fretting or opening.

The Weavers having continu'd their Work till the whole Warp is fill'd with Woof, the *Cloth* is finiſh'd: 'Tis taken off the Loom, by unrolling it from the Beam whereon it had been roll'd, in proportion as it was wove; and now given to be clear'd of the Knots, ends of Thread, Straws, and other Filth; which is done with little Iron Pinchers.

In this Condition 'tis carried to the Fullery, to be ſcour'd with Urine, or a kind of glaz'd Earth well clean'd and ſteep'd in Water, put along with the *Cloth* in the Trough, wherein it is fulled.

The *Cloth* being again clear'd from the Earth, or Urine, by waſhing it in Water, is return'd to the former Hands, to have the leſſer Filth, ſmall Straws, and almoſt imperceptible Knots taken off as before: then 'tis return'd to the Fuller, to be beat, and full'd with hot Water, wherein five or ſix Pounds of Soap have been diſſolv'd. The Soap moſt eſteem'd is the white, eſpecially that of *Genoa*. After fulling an Hour and a half, 'tis taken out to be ſmooth'd, *i. e.* to be pull'd by the Liſts lengthwiſe, to take out the Wrinkles and Creaſes occaſion'd by the Force of the Mallets, or Peſtles falling on the *Cloth* when in the Troughs.

The Smoothing is repeated every two Hours, till the Fulling be finiſh'd, and the *Cloth* brought to its proper Breadth: after which, it is waſh'd in clear Water, to purge it of the Soap, and given, all wet, to the Carders, to raiſe the Hair, or Nap, on the right Side, with the Thiſtle, or Weed; wherewith they give it two courſes, the firſt again the Grain, from Tail to Head; the ſecond with the Grain, from Head to Tail.

The *Cloth* being dry'd after this Preparation, the Sheerman takes it, and gives it its firſt cut, or ſheering.

This done, the Carders reſume it, and after wetting it, give it as many more courſes with the Weed as the quality of the Stuff requires: always obſerving to begin againſt the Hair, and to end with it; and to begin with a ſmoother Weed, proceeding ſtill to a ſharper and ſharper, as far as the ſixth degree.

After this, the *Cloth* being dry'd, is return'd to the Sheerman, who ſheers it a ſecond time, and returns it to the Carder; who wetting it, gives it as many courſes as he thinks fit, dries it, and gives it back again to the Sheerman; who after ſheering it the third and laſt time, returns it to the Carders, who repeat their Operation as before, till the Hair, or Nap, be well rang'd on the Surface of the *Cloth*, from one end of the Piece to the other.

It muſt be obſerv'd, that 'tis indifpenſibly neceſſary the *Cloth* be wet, while in the Carders hands; in order to which, 'tis ſprinkled from time to time with Water.

The Nap finiſh'd, and the *Cloth* dry'd, the Sheerman gives it as many cuts as he thinks requiſite for the Perfection of the Stuff. It muſt alſo be obſerv'd, that all the Sheerings muſt be on the right Side, except the two laſt, which muſt be on the other; and that the *Cloth* can't be too dry for Sheering.

The *Cloth* thus *wove*, *fulled*, *nap'd*, and *ſhorn*, is ſent to the Dyer. See DYING.

When dy'd, 'tis waſh'd in fair Water, and the Sheerman takes it again, wet as it is, lays the Hair, or Nap, with a Bruſh on a Table, and hangs it on the Tenters; where it is ſtretch'd both in length and breadth, enough to ſmooth it, ſet it ſquare, and bring it to its proper Dimenſions, without ſtraining it too much; obſerving to bruſh it afreſh, the way of the Hair, while yet a little moiſt on the Tenter.

When quite dry, the *Cloth* is taken off from the Tenter, and bruſh'd again on the Table, to finiſh the laying of the Hair: 'Tis then folded, and laid cold under a Preſs, to make it perfectly ſmooth and even, and to give it a little Luſtre.

The Luſtre is given by laying a Leaf of Vellom, or fine Paſtboard in each Plait of the Piece; and over the whole a ſquare Plank of Wood: on which, by means of a Lever, the Screw of the Preſs is brought down, with the degree of Force judg'd neceſſary, with regard to the Quality of the *Cloth*.

There are none but Scarlets, Greens, Blues, *&c.* which receive this laſt Preparation; Blacks needing it not.

Laſtly, the *Cloth* being taken out of the Preſs, and the Paſtboards remov'd; it is in a condition for Sale or Uſe.

For the Manufacture of mix'd CLOTHS, or thoſe wherein the Wools are firſt dy'd, then mix'd, ſpun, and wove of the Colours intended; the Proceſs, except in what relates to the Colour, is moſtly the ſame with that juſt ſpoke of.

The Method of adjuſting the Mixture, is by firſt making a Felt of the Colours of the intended *Cloth*, as a Specimen: The Wool of each Colour is weigh'd, and when the Specimen is to the Manufacturer's Mind, he mixes, for uſe, a Quantity in the ſame proportion; eſtimating each Grain of the Specimen at 20 Pounds weight of the ſame Wool in the *Cloth* to be made.

Thus, if he would mix three Colours, *v. g.* Coffee Colour, Feuillemort, and pale Blue, the firſt to be the prevailing Colour; he weighs a Quantity of each: for inſtance, 70 Grains of the firſt, 25 of the ſecond, and 20 of the third; then multiplies each by 20 Pounds of Wool; and thus gains 1400 Pounds for the Coffee Wool; 500 Pounds for the Feuillemort, and 400 for the pale Blue.

The Wools of the Specimen thus weigh'd, are mix'd, oil'd, carded, moiſten'd with clear Water, rubb'd with black Soap, and in this ſtate wrought a long time in the Hands; till being perfectly full'd, they are reduc'd into a piece of Felt, like that us'd by Hatters.

'Tis then rinſed in Water, to purge out the Oil and Soap; and when dry, the Hair, or Nap is carded out with the Weed; then ſhorn once again, till the Ground appear, and the ſeveral Colours be diſcoverable.

Laſtly, wetting it a little, and preſſing it, he examines it well, and if he be not contented with it, makes another Felt; if he be, he proceeds to mix his Wools: when mix'd, 'tis beat on Hurdles, clean'd, oil'd, carded, ſpun, wove, *&c.* as in white *Cloth*.

Incombuſtible CLOTH. See LINUM *Incombuſtibile*.

CLOUD, in Phyſiology, a Collection of condens'd Vapour. See VAPOUR.

A *Cloud* is a Congeries of watery Particles, or *Veſiculæ* rais'd from the Waters or watery parts of the Earth, by the ſolar, or ſubterraneous Heat, or both; which at their firſt riſe from our Globe, are too minute to be perceiv'd; but as they mount, meeting with a greater degree of cold, are condens'd, and render'd opaque by the reunion of their Parts; ſo as to reflect Light, and become viſible. See CONDENSATION.

The manner wherein Vapours are rais'd into *Clouds* may be conceiv'd thus:

Fire being of a light, agil Nature, eaſily breaks looſe from Bodies wherein 'tis detain'd: *For the manner whereof, ſee* BOILING.

Now, by reaſon of the exceeding ſmallneſs of the Particles of Fire, their attractive Force muſt be exceeding great: hence, in their Aſcent thro' fluid Bodies, part of the Fluid will cling around them, and mount up together with them, in form of Veſicles of Water replete with Particles of Fire; which Veſicles are what we call *Vapour*. See FIRE, and VAPOUR.

Further, this Vapour being ſpecifically lighter than Air, mounts in it, till having reach'd ſuch a Region of the Atmoſphere as is of the ſame ſpecific Gravity with themſelves, they will be ſuſpended; till the watery Veſicles, which were at firſt too thin to be perceiv'd, being now condens'd by the Cold of the ſuperior Regions; and their included igneous Particles extinct, or at leaſt driven into a leſs compaſs, and conſequently the Parts ſet cloſer together; their Denſity is firſt augmented ſo as to render 'em opaque enough to reflect the Sun's Light, and become viſible; and their ſpecific Gravity increas'd, ſo as to make 'em deſcend: in the former State they are called *Clouds*; and in the latter, when they arrive at us, *Rain*. See RAIN; ſee alſo BAROMETER.

Clouds, beſide their uſe when they deſcend in Rain, are likewiſe of uſe while ſuſpended in the Atmoſphere; as they help to mitigate the exceſſive Heat of the Torrid Zone, and ſcreen it from the Beams of the Sun, eſpecially when in his Zenith.

CLOVE, an aromatic Fruit, bore on a Tree of the ſame Name; by the *Latins* alſo called *Caryophillum*. See SPICE.

This Tree was antiently very common in the *Molucco* Iſlands; where all the *European* Nations, who traffick in Spices to the *Indies*, furniſh'd themſelves with what quantity of *Cloves* they requir'd. At preſent there are ſcarce any found but in the Iſland of *Ternate*: the *Dutch*, in order to render themſelves Maſters of that Merchandiſe, having dug up the *Clove*-Trees of the *Moluccos*, and tranſplanted them to *Ternate*; ſo that there are none now to be had but thro' their Hands.

The Tree is very large; it only bears Fruit once in eight Years, but holds, at this rate, an hundred. Its Bark reſembles that of the Olive-Tree, and its Leaves thoſe of the Laurel: Its Fruit falling, takes root, and thus multiplies of it ſelf without any culture. 'Tis ſaid, it will not allow any other Herb or Tree near it; its exceſſive heat drawing to it all the Humidity of the Soil.

When the *Clove* firſt begins to appear, it is of a greeniſh white; as it ripens it grows brown: Nor is there any Preparation neceſſary in order to render it ſuch as it comes to us, but to dry it in the Sun; whatever ſome Authors talk of firſt ſteeping it in Sea-Water, to preſerve it from Worms.

The Fruit is ſomewhat in form of a Nail; whence the Term *Clove*, from the French *Clou*, Nail.

Towards the Head it ſeparates into four; the four Quarters being made angle-wiſe, and their Apices meeting at the top, form a kind of Crown, ſomewhat in the antique manner.

They muſt be choſen dry, brittle, ſharp to the Touch, well grown, of a duſky red Colour; a hot aromatic Taſte, an agreeable Smell, and, if poſſible, with the Fuſt, or Button.

Their Properties are to warm and dry, to correct a fetid Breath, ſharpen the Sight, diſſipate Films in the Eyes, fortify the Stomach and Liver, and ſtop Vomiting. They are us'd in Apoplexies, Palſies, Lethargies, and other Diſeaſes of the Brain.

Such of the Fruit as eſcape the Gatherers, grow and ſwell on the Tree, and become full of a Gum us'd in Medicine, called *Mother of Cloves*.

There is alſo an Oil drawn from *Cloves* by Diſtillation; which, when new, is of a gilded white Colour, but reddens as it grows old: 'tis us'd in Medicine as a ſovereign Remedy for the Tooth-ach, and in Compoſitions with the ſame View as the Fruit. It is alſo much us'd among the Perfumers.

The Natives call the Tree *Chamque*, the *Perſians* and *Arabs Karumſel*, and the *Turks Kalafour*. They make ſeveral Preparations both of the Flowers and Fruit.

CLOUGH, or *Draught*, in Commerce, an Allowance of two Pounds in every hundred Weight for the turn of the Scale; that the Commodity may hold out weight when ſold out by retail.

CLUNY, or CLUGNY, a celebrated Abbey of *Benedictin* Monks, in a City of that Name; being the Head, or Chief of a Congregation denominated from them. See ABBEY, and BENEDICTINS.

It is ſituate in the *Maſonnois*, a little Province of *France*, on the River *Grône*; and was founded by *William* Duke of *Berry* and *Aquitain*; or, as others ſay, by the Abbot *Bernon*, ſupported by that Duke, in the Year 910.

This Abbey was antiently ſo very ſpacious and magnificent, that in 1245. after the holding of the firſt Council of *Lyons*, Pope *Innocent* IV. went to *Cluny*, accompanied with the two Patriarchs of *Antioch* and *Conſtantinople*, twelve Cardinals, three Archbiſhops, fifteen Biſhops, and a great number of Abbots; who were all entertain'd, without one of the Monks being put out of their place: tho S. *Louis*, Q. *Blanche* his Mother, the Duke of *Artois* his Brother, and his Siſter; the Emperor of *Conſtantinople*, the Sons of the Kings of *Arragon* and *Caſtile*, the Duke of *Burgundy*, ſix Counts, and a great number of Lords, with all their Retinue, were there at the ſame time.

Cluny, at its firſt Erection, was put under the immediate Protection of the Apoſtolick See; with expreſs Prohibition to all Secular and Eccleſiaſtick Powers, to diſturb the Monks in the Poſſeſſion of their Effects, or the Election of their Abbot. By this they pretended to be exempted from the Juriſdiction of Biſhops; which, at length, gave the Hint to other Abbies to inſiſt on the ſame. See ABBOT.

Cluny is the Head of a very numerous and extenſive Congregation: In effect, it was the firſt Congregation of divers Monaſteries united under one Chief, ſo as only to conſtitute one Body, or, as they call it, one Order, that ever aroſe. See CONGREGATION, and ORDER.

CLYPEUS, CLIPEUS, or CLYPÆUM, a Buckler; a piece of defenſive Armour, which the Antients us'd to carry upon the Arm, to ſecure them from the Blows of their Enemies. See SHIELD, and BUCKLER.

The Figure of it was either round, oval, or ſexangular: in the middle was a Boſs of Iron, or of ſome other Metal, with a ſharp point.

CLYSSUS, in Chymiſtry, is one of the Effects, or Productions of that Art; conſiſting of the moſt efficacious Principles of any Body, extracted, purify'd, and then re-mix'd. See CHYMISTRY.

Or, a *Clyſſus* is when the ſeveral Species, or Ingredients of a Body, are prepar'd and purify'd ſeparately, and then combin'd again. Thus, Salt, Sulphur, Oil, Spirit, and Mercury, reaſſembled into one Body, by long Digeſtion, *&c.* make a *Clyſſus*. Thus,

CLYSSUS *of Antimony*, is an agreeable acid Spirit, drawn by Diſtillation from Antimony, Nitre, and Sulphur mix'd together. See ANTIMONY.

There is alſo a *Clyſſus of Vitriol*, which is a Spirit drawn by Diſtillation from Vitriol diſſolv'd in Vinegar: this is us'd by Phyſicians in various Diſeaſes, and to extract the Tinctures of ſeveral Vegetables.

CLYSSUS is us'd among ſome Authors for a kind of *Sapa*, or Extract, made with eight Parts of the Juice of a Plant, and one of Sugar, ſeeth'd together into the Conſiſtence of Honey.

CLYSTER, in Medicine, a liquid Remedy, or Injection, introduc'd into the Inteſtines by the Fundament; in order to refreſh them, looſen the Belly, moiſten and ſoften the *Fæces*, diſſipate Wind, *&c.*

Clyſters are made of Bran-Water, and Milk, but more uſually of Decoctions of certain Herbs; to which are added Honey, brown Sugar, ſometimes Catholicon, and other Drugs.

Clyſters are either *Emollient*, *Carminative*, *Lenitive*, *Aſtringent*, *Laxative*, *Anodyne*, *Uterine*, *Antifebrific*, *Nouriſhing*, &c.

Uterine CLYSTERS, are Injections into the *Uterus*, or Womb. See PESSARY.

Nouriſhing CLYSTERS, are thoſe apply'd with deſign to nouriſh Perſons who cannot take in any Aliment at the Mouth. *Hildanus* tells us, that *Auberi*, a Phyſician, fed a Woman of Quality ſix Weeks by *Clyſters* compos'd of Capons Fleſh, and other Fowls, boil'd to a Pulp, with Yolks of Eggs, applied twice a Day.

'Tis difficult, however, to conceive how *Clyſters* ſhould nouriſh; and the Caſe is briſkly controverted in the Memoirs of the *French* Royal Academy, between M. *Littre*, who maintains the Negative, and M. *Lemery*.

The Arguments urg'd by the firſt, are, that the Materials of the *Clyſter*, for want of the ordinary Paſſage, want the neceſſary Preparations to be converted into Nouriſhment; and beſide that, are out of the Road for getting into the Blood: For in the firſt of the large Inteſtines, call'd the *Cæcum*, is a Valve called *Valvula Bautuni*; to oppoſe the paſſage of any Food into the ſmall Inteſtines: And there are no Lacteal Veins in the large Inteſtines, but abundance in the ſmall ones. But the Lacteals are the only Canals that can carry the Chyle into its Receptacle, and the Chyle the only Subſtance that can nouriſh.

To this M. *Lemery* objects, that very great Anatomiſts have found Lacteals in the large Inteſtines, tho in ſmall number: But tho there were none, adds he, the Meſaraic Veins are indiſputably diſtributed to theſe Inteſtines; and may eaſily be ſuppos'd to pump the moſt ſubtil Part of a Broth, and carry it into the Blood. M. *Mery* has paſs'd a Liquor immediately from the large Inteſtines into theſe Veins; beſides that, the animal Machine is ſo porous thro'-out, that Nature ſeems to have intended an extraordinary way of conveying Fluids into the Blood, to be ready on extraordinary occaſions.

This Notion will appear inconteſtable, if M. *Morin*'s Theory of the Paſſage of the Urine be admitted. See URINE.

Herodotus ſays, the *Egyptians* were the firſt who invented *Clyſters*; or rather, who apply'd 'em to uſe. *Galen* and *Pliny* add, that they learnt the thing from a Bird of their Country, call'd *Ibis*; which they frequently obſerv'd to make this kind of Injection with its Beak, and afterwards to diſcharge it ſelf ſeveral times. Others ſay, that the *Ciconea*, or Stork, firſt taught Men the Application of *Clyſters*.

The Word comes from the *Greek* κλύω, *lavo*, *abluo*, I waſh.

CNEMODACTYLIUS, in Anatomy, a Muſcle, otherwiſe called *Extenſor tertii Internodii digitorum*. See EXTENSOR *tertii Internodii*, &c.

COACH, a Vehicle for commodious travelling, ſuſpended on Leathers, and mov'd on Wheels.

In *England*, and throughout *Europe*, the *Coaches* are drawn by Horſes, except in *Spain*, where they uſe Mules. In a part of the Eaſt, eſpecially the Dominions of the great *Mogul*, their *Coaches* are drawn by Oxen. In *Denmark* they ſometimes yoke Rein Deer in their *Coaches*; tho rather for Curioſity than Uſe.

The *Coachman* is ordinarily placed on a Seat rais'd before the Body of the *Coach*. But the *Spaniſh* Policy has diſplac'd him in that Country by a Royal Ordonnance; on occaſion of the Duke *d' Olivares*, who found that a very important Secret whereon he had conferr'd in his *Coach*, had been overheard, and reveal'd by his *Coachman*: Since that time, the Place of the *Spaniſh Coachman*, is the ſame with that of the *French* Stage-*Coachman*, and our Poſtillion, *viz.* on the firſt Horſe on the left.

The Invention of *Coaches* is owing to the *French*: yet are not *Coaches* of any great antiquity, even in *France*; ſcarce reaching beyond the Reign of their *Francis* I.

Their uſe, at their firſt riſe, was only for the Country: and Authors obſerve, as a thing very ſingular, that there were at firſt no more than two *Coaches* in *Paris*; the one that of the Queen, and the other that of *Diana*, natural Daughter of *Henry* II. The firſt Courtier who had one, was *Jean de Laval de Bois Dauphin*; whoſe enormous Bulk diſabled him from travelling on Horſeback.

One may hence judge how much Vanity, Luxury, and Softneſs have grown upon our Hands in later Days; there being now computed in that ſame City no leſs than 15000 *Coaches*.

Coaches have had the Fate of all other Inventions to be brought by ſteps and degrees to their Perfection; at preſent they ſeem to want nothing, either with regard to Eaſe or Magnificence. *Louis* XIV. of *France*, made ſeveral ſumptuary Laws for reſtraining the exceſſive Richneſs of *Coaches*, prohibiting the uſe of Gold, Silver, *&c.* therein; but they have had the Fate to be neglected.

Coaches may be divided into two Kinds; thoſe that have Iron Bows, and thoſe that have not: Both the one and the other have two principal Parts, the *Body*, and the *Train*, or Carriage.

The *Body* is that part where the Paſſengers are diſpos'd; and the *Carriage* that which ſuſtains the Body, and to which the Wheels are faſten'd, that give Motion to the whole Machine.

Coaches are diſtinguiſh'd, with regard to their Structure, into *Coaches*, properly ſo call'd, *Chariots*, *Calaſhes*, and *Berlins*. With regard to the Circumſtances of their

Uſe, &c. we diſtinguiſh *Stage-Coaches*, *Hackney-Coaches*, &c.

Chariot, or *Half-Coach*, is a kind of *Coach* that has only a Seat behind; with a Stool, at moſt, before. When theſe are very gay, richly garniſh'd, and have five Glaſſes, they are call'd *Calaſhes*.

Calaſh is alſo a kind of light ſmall *Coach*, with very low Wheels, richly adorn'd; us'd on occaſion of Pleaſure; and open on all ſides, to take the Air, and enjoy the Proſpect. There are of theſe *Calaſhes* with one, two, and three Seats; where the Perſons don't ſit facing one another, as in the common *Coaches*, but all forwards, each Seat having its back.

Hackney Coaches, thoſe expos'd to hire, in the Streets of *London*, and ſome other Capital Cities, at Rates fix'd by Authority.

Thoſe in *London* are under the Direction of Commiſſioners, who take cognizance of all Cauſes and Diſputes ariſing thereupon. They are diſtinguiſh'd by Numbers affix'd to the *Coach*-Doors; and the Fares, or Rates, fix'd by a Statute 14 *Car.* II. and confirm'd by another in the 5th and 6th of K. *William* III.

For a whole Day of twelve Hours the Fare is 10*s.* for a ſingle Hour 1*s.* 6*d.* for every Hour after the firſt 1*s.* At theſe Rates, they are oblig'd to carry Paſſengers any where within 10 Miles of *London*.

Stage-Coaches, are thoſe deſtin'd for the Conveyance of Travellers from one City or Town to another.

COADJUTOR, *q. d. a Fellow-helper*, is properly uſed for a Prelate join'd to another, to aſſiſt him in the Diſcharge of the Functions of his Prelature; and even, in virtue thereof, to ſucceed him.

The *Coadjutor* has the ſame Privileges with the Biſhop himſelf. See Bishop.

Coadjutors were appointed by the King, for Archbiſhops and Biſhops grown old, or abſent, and not able to adminiſter in their Dioceſes. But the Right of appointing *Coadjutors* is now reſerv'd to the Pope alone.

Coadjutors are called Biſhops *in partibus infidelium*; in regard it is neceſſary the *Coadjutor* of a Biſhop ſhould be a Biſhop himſelf; without which, he can't diſcharge the Offices.

The Uſe of *Coadjutors* in the Church, is borrow'd from the *Roman* Empire. *Symmachus* ſpeaks of Aſſiſtants, or *Coadjutors*, given to Magiſtrates; and calls them *Adjutores publici officii*.

The Popes, formerly, made a ſhameful Abuſe of the *Coadjutories*: Some they granted to Children, and young People, with this Clauſe, *Donec ingreſſus fuerit*; 'Till they were 'capable of entering upon the Adminiſtration of the Office.' Others they granted to Perſons not in Orders, with this Clauſe, *Donec acceſſerit*: and others to Perſons at a great diſtance, with this Clauſe, *Cum regreſſus*: But the Council of *Trent* ty'd down the Pope's Hands, by adding abundance of Reſtrictions upon the Article of *Coadjutors*.

In Nunneries they have *Coadjutrix's*; who are Religious nominated to ſucceed the Abbeſs, under pretence of aiding her in the Diſcharge of her Office. See Abbess.

COAGMENTATION, is uſed among Chymiſts, for the Act of melting down a Matter, by caſting in certain Pouders, and afterwards reducing the whole into a Concrete, or Solid.

COAGULATION, the condenſing or thickning of a fluid Matter, without its loſing any of the ſenſible Parts which occaſion'd its fluidity; as we frequently ſee in Blood, Milk, &c. See Fluid.

We diſtinguiſh between that kind of thickening which is effected by the Evaporation of the fluid Parts of a Body, as in Clay, which condenſes in the Sun, which we properly call *hardening*; and that effected without any loſs of its Subſtance, which we call *coagulating*. Thus, we ſay, that Cold *coagulates* Blood, &c.

There is one general Term, *viz. Concretion*, which includes both *Coagulation*, *Condenſation* and *Hardening*. See Concretion.

Coagulation is perform'd by the mixing of Salts of different Natures; as when Spirit of Vitriol is pour'd on Oil of Tartar; or when Oils are mix'd in a Mortar with ſaline, or aqueous Liquors, as in Nutrition.

By injecting an Acid into the Vein of an Animal, the Blood *coagulates*; which ſtops its Circulation, and brings immediate Death. See Blood.

Several Poiſons have their effect by inducing a *Coagulation*. See Poison.

COAL, a black, ſulphurous, inflammable Matter, dug out of the Earth; ſerving in many Countries as the common Fuel. See Fuel.

This we ſometimes call *Pit-Coal*, ſometimes *Sea-Coal*, *Foſſil-Coal*, *Earth-Coal*, and *Natural Coal*; to diſtinguiſh it from an Artificial Fuel made in imitation hereof, by half burning the Branches and Roots of Trees; properly call'd *Charcoal*, and *Smallcoal*. See Charcoal.

Pit-Coal is rank'd among the number of Minerals, and the Places it is dug out of are call'd *Coal-Mines*, or *Coal-Pits*. It is common in moſt Countries of *Europe*: tho the *Engliſh Coal* is of moſt repute, even in foreign Countries; notwithſtanding ſome pretend, that of the *Foſſe* in *Auvergne* is not any thing inferior to it.

The Goodneſs of *Coal* conſiſts in its being as free as poſſible from Sulphur, in its heating Iron well, and in its burning a long time in the Smith's Forge. The *Engliſh Coal* has this particular to it; that it never lights ſo perfectly as when Water is thrown on it.

The Commerce of *Coal* is very conſiderable in *England*; great Quantities are exported to *France*, &c. by way of *Rouen*. The Meaſure whereby they are ſold is the *Chaldron*; containing 36 *Buſhels*. See Bushel.

In the Memoirs of the *French* Royal Academy, we have an Account of two Experiments on the common *Pit-Coal*, made by M. *Des Landes* while in *England*, and which he thinks have eſcap'd the *Engliſh* Philoſophers.

1ſt, Pounding ſome *Coal*, and putting half an Ounce of it in a Viol of Water, the Mixture became quite black: but leaving it expos'd to the Air in a Window, during a cold Winter Night; in the Morning 'twas found frozen, and converted into a reddiſh Colour. The Reaſon of the Change muſt be, that the Froſt had diſengag'd the Sulphurs of the *Coal*: tho one would little expect ſuch an Effect from it.

2dly, From an Infuſion of *Cinders* in Brandy, mix'd with Iron Filings, ariſes a black Tincture, which brightens in proportion as it is heated; when arriv'd at the height of boiling, the Colour becomes perfectly fine and ſoft; and gives a Dye to Cloth, which no Workman can imitate.

The *Strata*, or Veins of *Coals* in *Coalpits* are numerous, and their Order, Qualities, &c. different in different Places. See Strata, and Vein.

In thoſe at *Dudley* in *Staffordſhire*, the *Strata*, below the Turf, two or three Clays, a grey Stone, and a hard grey Rock, are expreſs'd in the *Philoſophical Tranſactions* to be 1ſt, *Coal*, called *Bench-Coal*; 2d, *Slipper-Coal*, leſs black and ſhining than the former; 3d, *Spin-Coal*, more black and ſhining; 4th, *Stone-Coal*, much like *Canal-Coal*.

Theſe *Strata* have between each of 'em a *Bat*, or Bed, of a peculiar ſort of Matter, about the thickneſs of a Crown-Piece. Below theſe are divers metalline *Strata*; as a black Subſtance call'd the *Dun-row bat*; a grey Iron Ore, call'd the *Dun-row Iron-ſtone*; a bluiſh Bat, call'd *White-row*; a blackiſh Iron Ore, call'd *White-row grains*, or Iron-ſtone; a grey Iron Ore, call'd *Mid-row grains*; a black foſſil Subſtance, call'd the *Gubling bat*; a black Iron Ore, call'd *Gublin Iron-ſtone*; a dark grey Iron Ore, call'd *Rubble Iron-ſtone*: the *Table Bats*.

Then, 5°, comes a coarſe ſort of *Coal*, call'd *Foot-Coal*; a black brittle Bat: 6th, the *Heathen Coal*; 7th, a Subſtance like coarſe *Coal*; tho call'd a *Bat*, becauſe it does not burn well: And 8th, *Bench-Coal*.

Small-Coal is prepar'd from the Spray, and Bruſh Wood, ſtripp'd off from the Branches of Coppice Wood; ſometimes bound in Bavins for that purpoſe, and ſometimes prepar'd without binding.

The Wood they diſpoſe on a level Floor, and ſetting a Portion of it on fire, throw on more and more, as faſt as it kindles; whence ariſes a ſudden blaze, till all be burnt that was near the Place. As ſoon as all the Wood is thrown on, they caſt Water on the Heap, from a large Diſh, or Scoop; and thus keep plying the Heap of glowing *Coals*, which ſtops the Fury of the Fire, while with a Rake they ſpread it open, and turn it with Shovels till no more Fire appears. When cold, they are put up into Sacks for uſe.

Char-coal, ſee its Preparation under Charcoal.

COALITION, the reunion, or growing together of Parts before ſeparated. In this Senſe, the Word is us'd both in a Phyſical and a Moral Senſe.

COAST, a Sea-ſhore, or the Country adjoining to the Edge of the Sea. See Sea, &c.

COASTING, that Part of Navigation, wherein the Places aſſign'd are not far diſtant; ſo that a Ship may ſail in ſight of the Land, or within ſounding, between the Places.

Such are the Voyages on the Narrow, or *Britiſh* Seas, between *England*, *Holland*, and *France*; alſo thoſe about the *Britiſh* Seas, and in the *Mediterranean*, &c.

For the Performance hereof, there is only requir'd good knowledge of the Land, the Uſe of the Compaſs, and of the Lead, or Sounding-Line. See Compass, Sounding, &c.

Coasting, in Agriculture, &c. the tranſplanting of a Tree, and placing it in the ſame Situation, with reſpect to Eaſt, Weſt, North, &c. as it ſtood in before. See Planting, and Transplanting.

COAT *of Arms*, in Heraldry, a Cloke, or Habit bore by the antient Knights over their Arms, both in War, and at Tournaments; and ſtill bore by the Heralds at Arms. See Arms, Herald, &c.

It was a kind of Jacket, reaching only as low as the Navel; open at the Sides, with ſhort Sleeves; ſometimes furr'd with Ermins and Vair, whereon were apply'd the Armories of the Knight, embroider'd in Gold and Silver, and enamell'd with Colours of beaten Tin, colour'd black, green, red, and blue: whence the Rule, never to apply Colour on Colour, nor Metal on Metal.

The

The *Coats of Arms* were frequently open, and diverſify'd with Bands and Fillets of ſeveral Colours, alternately plac'd, as we ſtill ſee Cloths ſcarleted, water'd, *&c.* hence they were alſo call'd *Divizes*, or *Diviſes*; as being divided, or compos'd of ſeveral Pieces, ſew'd together; whence the Words, *Feſſe*, *Pale*, *Chevron*, *Bend*, *Croſs*, *Salteer*, *Lozenge*, &c. which have ſince made the honourable Pieces, or Ordinaries of the Shield. *See each in its Place*, FESSE, BEND, CROSS, *&c.*

Coats of Arms, and *Banners*, were never allow'd to be wore by any but Knights, and antient Nobles. See ESCUTCHEON, *&c.*

COAT *of Mail*, or *Jacques de Mail*, a kind of Armour made in form of a Shirt; conſiſting of Iron Rings wove together. See MAIL.

COAT, in Anatomy. See TUNIC.

COBALT, in Natural Hiſtory, a kind of Natural Cadmia, out of which is drawn Bizmuth, Arſenic, and Smalt. See CADMIA, BIZMUTH, ARSENIC, *&c.*

Cobalt uſually contains a little Silver. There are various Mines of *Cobalt*, eſpecially in *Saxony*; ſome in *France* and *England*.

COCCIFEROUS, in Botany, ſuch Plants, or Trees, as bear Berries. See BERRY.

COCCIGIS, or COCCÆ OS, in Anatomy, a Bone join'd to the Extremity of the *Os Sacrum*; compos'd of three or four Bones, whereof the lower is ſtill leſs than the upper, till the laſt ends in a ſmall Cartilage.

It reſembles a little Tail turned inwards; or rather, as ſome imagine, the Beak of a Cuckow; whence the Name. Its Uſe is to ſuſtain the ſtrait Gut: It yields to the Preſſure of the *Fœtus* in Women in travail; and Midwives uſe to thruſt it backwards; but ſometimes rudely and violently, which is the occaſion of great Pain, and ſeveral bad Effects.

COCCULUS *Indicus*, a poiſonous Narcotick Berry, known moſtly now to Poachers, who have got a trick of intoxicating Fiſh therewith, ſo as to take them out of the Water with their Hands; for which Reaſon they are called *Baccæ Piſcatoriæ*, Fiſhers Berries.

COCHINEAL, or COCHENEAL, a Drug us'd by the Dyers, *&c.* for giving red Colours, eſpecially Crimſons, and Scarlets. See RED, SCARLET, *&c.*

It is brought from the *Weſt Indies*: but Authors are divided as to its Nature; ſome taking it to be a kind of Worm, and others the Grain of a Tree. F. *Plumier*, the Minime, a celebrated Botaniſt, has maintain'd the former Opinion, and *Pomet* the latter.

It may perhaps be ſaid, that they are both equally diſtant from the Truth in the Deſcription they have given of *Cochineal*; and yet that there is both a *Cochineal* which is a Worm, and another a Grain. This Opinion is founded on the Account given by *Dampier*; who gives a preciſe Deſcription of each kind: If it ben't true, 'tis at leaſt more likely than any Opinion yet propos'd. His Deſcription of each is as follows:

'The *Cochineal Worm*, is an Inſect ingender'd in a Fruit 'reſembling a Pear: The Shrub which bears it is five or ſix 'Foot high. A-top of the Fruit grows a red Flower, which 'when mature falls on the Fruit; and that opening, diſco-'vers a Cleft two or three Inches in Diameter. The Fruit 'then appears full of little red Inſects, having Wings of a 'ſurprizing ſmallneſs, and which would die and rot there, if 'not taken out.

'The *Indians*, therefore, ſpreading Cloth under the Tree, 'ſhake it with Poles, till the Inſects are forc'd to quit their 'Lodging, and fly about the Tree; which they cannot do 'many Moments, but tumble down dead into the Cloth; 'where they are left till they be entirely dry: When the 'Inſect flies it is red; when it is fallen, black; and when 'dry, white; tho it afterwards changes Colour.

There are whole Plantations of the *Cochineal* Tree, or *Tonna*, as the Natives call it, about *Guatimala*, *Chepe*, and *Guexaca*, in the Kingdom of *Mexico*.

Cochineal Grain, or, as *Dampier* calls it, *Sylveſtris*, is a red Berry, growing in *America*, found in a Fruit reſembling that of the *Cochineal* Tree, or *Tonna*. The firſt Shoots produce a yellow Flower; then comes the Fruit, which is long, and when ripe opens with a Cleft of three or four Inches. The Fruit is full of Pippins, or Grains, which fall on the leaſt Agitation, and which the *Indians* take care to gather. Eight or ten of theſe Fruits may yield about an Ounce of Grain.

This Berry yields a Dye almoſt as beautiful as that of the Inſect; and a Perſon may be eaſily deceiv'd in them: tho the firſt is much leſs eſteem'd. See DYING.

Cochineal is us'd in Medicine as an Alexipharmic, tending to promote Sweating, and alſo as a Cordial.

COCHLEA, in Mechanicks, one of the five mechanical Powers; otherwiſe called the Screw. See SCREW.

It is thus call'd, from the reſemblance a Screw bears to the ſpiral Shell of a *Snail*, which the *Latins* call *Cochlea*.

COCHLEA, in Anatomy, is the laſt Canal, or Cavity of the Ear; thus call'd from its helical Form. See EAR.

The *Cochlea* is divided into two Parts, the upper, and lower, by a thin, ſpiral *Lamina*; of which the Part next the Axis is bony, but extremely brittle; and that, next the outer Shell, membranous; appearing to be only made of an Expanſion of the Auditory Nerve. See NERVE.

The upper Canal opens into the *Tympanum*, and the lower into the *Veſtibulum*: this is narrower than that, eſpecially towards the Baſis of the *Cochlea*; where each is about a Line wide; and the Baſis it ſelf is about four Lines in Diameter. See HEARING.

COCK *of a Dial*, the Pin, Style, or Gnomon. See DIAL, STYLE, and GNOMON.

COCKET, a Seal belonging to the King's Cuſtom-houſe. See SEAL, *&c.*

COCKET is alſo a Scroll of Parchment, ſealed and deliver'd by the Officers of the Cuſtom-houſe to the Merchants, upon entering their Goods, certifying that the Goods were cuſtomed. See CUSTOMS.

The ſame Word is alſo uſed in the Statutes of Bread and Ale, 15 *Hen.* III. where there is mentioned *Cocket Bread*, among ſeveral other Kinds: It ſeems to have been hard Sea-Biſket, which perhaps had then ſome *Cocket*, Mark, or Seal; or elſe was ſo called from its being deſign'd for the uſe of the *Cockſwains*, or Seamen.

COCKLE-*Stairs*. See STAIRS.

COCKING-CLOTH, a Deviſe for the catching of Pheaſants withal.

It conſiſts of a piece of coarſe Canvas, about an Ell ſquare, dipp'd in a Tan Pit to colour it; and kept ſtretch'd by two Sticks, placed from corner to corner, diagonal-wiſe: a Hole to be left to peep thro'. The Gameſter, then, being provided of a ſhort Gun; carries the Cloth before him at Arms end; under cover of which, he may approach his Game as near as he pleaſes: when near enough, he puts the Noſel of his Gun thro' the Hole, and ſhoots.

COCKPIT, a ſort of Theatre, whereon Game-Cocks fight their Battels.

The *Cock-Pit* is uſually a Houſe, or Hovel cover'd over: They fight on the Clod, or green Sod; which is generally mark'd out round, and incompaſs'd with Seats, one above another.

The COCK-PIT *Laws*, are principally theſe: When Cocks are ſet, none to be on the Sod but the two Setters. When the Cocks are ſet Beak to Beak in the middle of the Clod, and there left by the Setters, if the ſet Cock do not ſtrike in counting twenty, and ſix times ten, and twenty after all, the Battel is loſt: but if he do ſtrike, the Battel is to begin again, and they muſt count again. If any offer a Mark to a Groat, or 40 to 1, and the Wager be taken, the Cock muſt be ſet, and they are to fight it out. Done, and done, is a ſufficient Bet, or Wager, when the Cocks are caſt on the Clod.

COCK-PIT, in a Man of War, is a Place on the lower Floor, or Deck, abaft the main Capſtan, lying between the Platform and the Steward's Room; where are Subdiviſions or Partitions for the Purſer, the Surgeon, and his Mates.

COCK-ROAD, a Contrivance for the taking of Woodcocks.

As that Bird lies cloſe by day, under ſome Hedge, or near the Root of an old Tree, to peck for Worms under dry Leaves, and will ſcarce ſtir out, unleſs diſturb'd, as not ſeeing his way ſo well in the Morning; toward the Evening he takes Wing, to ſeek for Water; flying generally low, and when he finds any thorowfare in a Wood ventures thro' it.

To take 'em, therefore, they plant Nets in ſuch Places; or, for want of ſuch Places ready to their hands, they cut *Roads* thro' Woods, Thickets, Groves, *&c.*

Theſe Roads they uſually make 35 or 40 Foot broad, perfectly ſtrait and clear; and to two oppoſite Trees they tie the Net, which has a Stone faſten'd to each corner. Then, having a Stand, or Place to lie conceal'd in, at a proper diſtance, with a Stake near the ſame, to faſten the Lines of the Net to: when they perceive the Game flying up the *Road*, they unwind the Lines from off the Stake; upon which, the Stones drawing it down, the Birds are intangled in the ſame.

COCK-SWAIN, or COCKSON, is an Officer on board a Man of War, who hath the care of the Barge, or Sloop, and all things belonging to it; to be always ready with his Boat's-Gang, or Crew, and to Man the Boat on all Occaſions.

He ſits in the Stern of the Boat, and ſteers; and hath a Whiſtle to call and encourage his Men.

COCOA, or more juſtly CACAO, the Nut whoſe Kernel yields the Chocolate. See CACAO, and CHOCOLATE.

COCOS, or COCO, is alſo uſed for a Nut, whoſe Shell is much uſed by Turners, Carvers, *&c.* for divers Works.

The *Coco* Tree, which the *Malabars* call *Tenga*, is ſtrait, without any Branches, and ordinarily thirty or forty Foot high: Its Wood is too ſpongious to be uſed in Carpentry. A-top it bears twelve Leaves, ten Foot long, and half a Foot broad,

broad, us'd in the covering of Houſes, making Matts, &c. Above the Leaves is form'd a large Bud, in form of a Cabbage, excellent to eat; but the taking it off is mortal to the Tree.

Between the Leaves and the Top are ſeveral Suckers, of the thickneſs of the Arm; which, when cut, diſtil a white, ſweet, agreeable Liquor, ſerving as a Wine, and intoxicating: It becomes acid if kept a few Hours; and at the end of 24 Hours is converted into a ſtrong Vinegar: and is further prepar'd into Brandy. While this Liquor diſtils, the Tree yields no Fruit; but when the Suckers are let grow, it puts forth a large Cluſter, or Bunch, wherein the *Coco*-Nuts are faſten'd, to the number of ten or twelve.

While they are yet new, and the Bark tender, they yield half a Pint of a clear refreſhing Water: which in a little time becomes firſt a white, ſoft Fleſh, and at length condenſes, and aſſumes the Taſte of the Nut.

It yields Fruit thrice a year; and thoſe ſometimes as big as a Man's Head. Many Travellers aver, that from a ſingle *Coco* Tree, and its Fruit, a Ship might be built, equipp'd, and loaden with Merchandize and Proviſion.

The *Cocos* of the *Antilles*, are not ſo large as thoſe of the *Eaſt-Indies*, *Africa*, and *Arabia*: the Trees ſeldom exceed 25 Foot in height; and the Fruits in proportion: 'Tis theſe are uſed among us.

In the Kingdom of *Siam*, the *Coco*'s Fruit, dried and emptied of its Pulp, ſerves as a Meaſure, both for things liquid and dry. See MEASURE.

As theſe Fruits are not all of the ſame Capacity, but are ſome larger, others leſs; their content is firſt meaſur'd with *Cauris*, thoſe little *Maldives* Shells, which ſerve as ſmall Money in ſeveral States of the *Indies*. Some *Cocos* contain 1000 *Cauris*, others 500, &c.

COCTION, a general Name for all Alterations made in Bodies, by the approach of Fire, or Heat. See HEAT.

The greateſt Secret in Chymiſtry is to manage the *Coction* aright; to give the Fire to advantage.

There are various Species of *Coctions*; as *Maturation*, *Friction*, *Elixation*, *Aſſation*, *Torrefaction*, and *Uſtion*; which ſee in their Places, MATURATION, FRICTION, &c. ſee alſo CONCOCTION.

COD-*Fiſhery*. See *Cod*-FISHERY.

CODE, CODEX, a Collection of the Laws and Conſtitutions of the *Roman* Emperors; made by order of *Juſtinian*.

It is compriz'd in twelve Books, which make the ſecond Part of the Civil, or *Roman* Law. See CIVIL-*Law*.

There were ſeveral other *Codes* before the Time of *Juſtinian*; all of them Collections, or Abridgments of the *Roman* Laws. *Gregory* and *Hermogenes*, two Lawyers, made each a Collection of this kind, called from their Names the *Gregorian Code* and *Hermogenean Code*. Theſe included the Conſtitutions of the Emperors from *Adrian*, to *Dioclesian* and *Maximin*, *A. D.* 306. We have nothing remaining of 'em but a few Fragments: the Work falling to the ground, for want of Authority to put it in Execution.

Theodoſius the Younger was the firſt Emperor who made a *Code*, which was compriz'd in ſixteen Books, form'd out of the Conſtitutions of the Emperors from *Conſtantine* the Great to his own Time; abrogating all other Laws not included in it: And this is what we call the *Theodoſian Code*; which was publiſh'd in the Year 438, and receiv'd and obſerv'd, till annulled by the *Code* of *Juſtinian*.

Theodoſian's *Code* has been a long time loſt in the *Weſt*: *Cujas* took a great deal of Pains to retrieve it, and to publiſh it in a better Condition than ever. *Gothefrid* has given us a Comment on the *Theodoſian Code*; a Work which coſt him 30 Years.

In 506, *Alarick* King of the *Goths*, made a new Collection of the *Roman* Laws, taken from the three former *Codes*, the *Gregorian*, *Hermogenian*, and *Theodoſian*, which he likewiſe publiſh'd under the Title of the *Theodoſian Code*. This *Code* of *Alarick* continu'd a long time in force; and was all the *Roman* Law receiv'd into *France*.

Laſtly, the Emperor *Juſtinian*, finding the Authority of the *Roman* Law exceedingly weaken'd in the *Weſt*, upon the Decline of the Empire, reſolved to make a general Collection of the whole *Roman* Juriſprudence. The Management hereof he committed to *Tribonianus*; who choſe out the moſt excellent Conſtitutions of the Emperors, from *Adrian* to his own Time; and publiſh'd his Work in 528, under the Title of the *New Code*.

But becauſe *Juſtinian* had made ſeveral new Deciſions, which made ſome Alteration in the antient Juriſprudence; he retrench'd ſome of the Conſtitutions inſerted by *Tribonianus*, and added his own in their Place: on which account, he publiſh'd a new Edition of the *Code* in 534, and abrogated the former.

This *Code* of *Juſtinian*, as well as the reſt of the *Roman* Law, was a long time loſt in the *Weſt*, till the Time of *Lotharius* II. who found it at the taking of *Melphis*, and gave it to the City of *Piſa*. This was firſt re-publiſh'd by *Irnier*, in 1128.

The Emperor *Frederic*, at the Requeſt of the Univerſities, appointed it to be taught in the Schools; and commanded all his People to obſerve it. Accordingly, it obtain'd in *Italy* and *Germany*; and ſtill obtains in a Part of *France*, particularly the Southern Provinces.

The Word comes from the Latin *Codex*, a paper Book; ſo called *a Codicibus* or *Caudicibus arborum*, the Trunks of Trees; the Bark whereof being ſtripp'd off, ſerv'd the Antients to write their Books on.

There have been various other later *Codes*, particularly of the antient *Gothic*, and ſince of the *French* Kings; as the *Code* of *Euridia*, the *Code Michault*, *Code Louis*, *Code Neron*, *Code Henry*, *Code Marchand*, *Code des Eaux*.

CODE *of Canons*, CODEX *Canonum*. See CANON.

CODIA, in Botany, is uſed for the Top, or Head of any Plant; but, by way of eminence, for that of a ſort of Poppy: whence the Syrup made therewith is called *Diacodium*, from *δια*, *cum*, with, and *κωδια*, *the Poppy head*. See DIACODIUM.

CODICIL, a Schedule, or Supplement to a Will, or other Writing. See SCHEDULE, WILL, &c.

It is us'd as an Addition to a Teſtament, when any thing is omitted which the Teſtator would add, explain, alter or retract; and is of the ſame Nature as a Teſtament, but that it is without an Heir or Executor.

So that a *Codicil* is a leſs ſolemn Will of one that dies either Teſtate or Inteſtate, without the Appointment of an Heir: Teſtate, when he that hath made his *Codicil*, hath either before or afterwards made his Teſtament, on which that *Codicil* depends, or to which it refers. Inteſtate, when one leaves behind him only a *Codicil* without a Teſtament; wherein he gives Legacies only to be paid by the Heir at Law, and not by any Heir inſtituted by Will, or Teſtament.

A *Codicil*, as well as a Will, may be either *Written* or *Nuncupatory*. Some Authors call Teſtament, a *great Will*; and *Codicil*, a *little* one: and compare Teſtament to a Ship, and *Codicil* to the Boat tied to it.

But there is this further difference between a *Codicil* and a Teſtament; that a *Codicil* cannot contain the Inſtitution of an Heir; and that in a *Codicil*, a Man is not oblig'd to obſerve ſtrictly all the Formalities preſcrib'd by Law forſolemn Teſtaments.

In Cuſtomary Countries, Teſtaments, properly ſpeaking, are no more than *Codicils*; in regard, Cuſtom it ſelf names the Heir, and does not allow of Teſtamentory Inheritors.

Codicils were firſt brought into uſe in the Time of *Auguſtus*, by *L. Lentulus*: They were originally intended to follow the Teſtament; which was, as it were, their Baſis. In proceſs of time, *Codicils* came to have their effect, even tho made before the Teſtament; provided there was nothing in the Teſtament contrary to the *Codicil*.

People were alſo allow'd to make *Codicils* without Teſtaments.

Raym. Lully has a Book which he calls *The Codicil*; wherein he pretends to have left his Readers the Secret of the Philoſopher's Stone; provided they do but underſtand it.

COECUM, or CÆCUM, in Anatomy, the *blind Gut*, the firſt of the thick Inteſtines; ſo called, becauſe made like a Sack, having but one Aperture, which ſerves it both for entrance and exit. See INTESTINES.

It is ſituate on the right Side, below the Kidney. In Children new born, and in Quadrupeds, it is found full of Excrements; but in Adults, &c. it frequently diſappears, and only hangs like a Worm.

Its uſe in Adults is very obſcure: In a *Fœtus*, or Infant newly born, it appears to ſerve as a Receptacle for the *Fæces* during ſuch time as the Animal does not diſcharge by Stool.

Dr. *Gliſſon* imagines it may likewiſe ſerve in ſuch Animals as have it large, as Dogs, Conies, Rats, &c. for a kind of ſecond Ventricle, or Bag, wherein the prepar'd Aliment may be retain'd, while a richer and more nutritious Juice is drawn from the ſame.

Others will have it contain a Ferment; and others the Flatuoſity of the Inteſtines: Laſtly, others fancy it may ſeparate a Humor, by ſome Glands placed therein, wherewith to harden the Excrements as they paſs thro' the Colon. See EXCREMENT, COLON, &c.

CO-EFFICIENTS, in Algebra, are Numbers prefix'd to Letters, or Species, into which they are ſuppos'd to be multiply'd; and therefore, with ſuch Letters, or with the Quantities repreſented by them, they make a Rectangle, or Product, *co-efficiunt Productum*; whence the Name.

Thus, *c b* implies, that the Quantities repreſented by *a b*, are multiply'd into the *co-efficient c*; and that out of theſe two, the Rectangle, or Product *c b* is form'd. If a Letter have no Number prefix'd, it is always ſuppos'd to have a *Co-efficient*; becauſe every thing is once it ſelf.

The *Co-efficient*, in a Quadratic Equation, is according to its Sign, either the Sum, or Difference of the two Roots: And in any Equation of an higher Nature, the *Co-efficient* of the ſecond Term, is always the Aggregate of all the Roots retaining their proper Signs: So that if all the Negatives be equal to all the Affirmatives, the ſecond Term will vaniſh; and

and where the ſecond Term is thus wanting, it is a Sign that the Quantities under contrary Signs were thus equal.

The *Co-efficient* of the third Term is the Aggregate of all the Rectangles ariſing by the Multiplication of every two of the Roots, how many ways ſoever thoſe Combinations of Two's can be had; as three times in a Cubic, ſix in a Biquadratic Equation, *&c.*

The *Co-efficient* of the fourth Term, is the Aggregate of all the Solids, made by the continual Multiplication of every three of the Roots, how often ſoever ſuch a Ternary can be had; as there may be four in a Biquadratic, five in an Equation of five Dimenſions, *&c.* And thus it will go on infinitely.

COELESTIAL *Obſervations*, are Obſervations of the Phænomena of the Heavenly Bodies, made with a proper Apparatus of Aſtronomical Inſtruments, in order to the determining their Places, Motions, Phaſes, *&c.* See OBSERVATION.

The Inſtruments chiefly uſed in *Cæleſtial Obſervations*, are the Aſtronomical Gnomon, Quadrant, Micrometer, and Teleſcope; each of which ſee under its proper Head, QUADRANT, MICROMETER, TELESCOPE, GNOMON, *&c.*

Obſervations in the Day-time are eaſy; in regard the croſs Hairs in the Focus of the Object-Glaſs of the Teleſcope are then diſtinctly perceivable: in the Night, thoſe croſs Hairs are to be illumined to make them viſible.

This Illumination is either perform'd by a Candle, placed obliquely near 'em, ſo as the Smoke don't intercept the Rays; or where this is inconvenient, by making an Aperture in the Tube of the Teleſcope, near the Focus of the Object-Glaſs, thro' which a Candle is apply'd to illumine the croſs Hairs.

M. *de la Hire* has made an Improvement on the firſt Method, which renders it of very good uſe; and it is by covering that end of the Tube next the Object-Glaſs with a piece of Gauſe, or fine white ſilken Crape. For in ſuch caſe, a Link, placed at a good diſtance from the Tube, ſo enlightens the Gauſe, as to render the croſs Hairs very perceivable.

Obſervations of the Sun, are not to be made without placing a Glaſs, ſmoked in the Flame of a Lamp or Candle, between the Teleſcope and the Eye; to take off from its Luſtre, which would otherwiſe confound and damage the Eye, were not a good part of its Beams intercepted.

Note, When any of the Heavenly Bodies are obſerv'd thro' a Teleſcope of only two Glaſſes, they appear inverted.

Cæleſtial Obſervations are chiefly of two Kinds; the one when the Objects are in the Meridian. See MERIDIAN *Obſervations.*

The other, when in Vertical Circles. See *Vertical* CIRCLES.

COELIAC *Artery*, the firſt Artery, detach'd from the deſcending Trunk of the *Aorta* into the Abdomen. See AORTA, ARTERY, *&c.*

It divides into two Branches, the one on the right ſide, the other on the left; of which the firſt gives the *Gaſtrica dextra*, which goes to the Stomach; the *Ciſtica*, which goes to the Gall-Bladder; the *Epiplois dextra* to the *Omentum*; the *Inteſtinalis* to the *Duodenum*, and to a part of the *Jejunum*; and the *Gaſtro Epiplois* to the Stomach, to the *Omentum*, and ſome Branches to the Liver, which enter the *Capſula Communis*, to accompany the Branches of the *Vena Porta.*

The left Branch of the *Cœliaca* gives the *Gaſtrica dextra*, which is alſo ſpread upon the Stomach; the *Epiplois ſiniſtra* to the *Omentum*; and the *Splenica* to the Subſtance of the Spleen. See each Branch deſcrib'd in its Place.

COELIAC *Vein*, is that which runs thro' the *Inteſtinum Rectum.* See RECTUM.

COELIACA, or COELIAC *Paſſion*, or *Affection*, is a ſort of *Diarrhœa*, or Flux of the Belly; wherein the Chyle, or nutritious part of the Food is evacuated by Stool, inſtead of Excrements. See FLUX, and DIARRHÆA.

Authors frequently confound the *Cœliaca* with the Lientery, but they are different. See LIENTERY.

There is alſo a COELIAC *Diabetes*, call'd *Cœliaca Urinalis*, wherein the Chyle paſſes off along with, or inſtead of Urine. See DIABETES.

COELUM. See HEAVEN.

COELUM is us'd by ſome Anatomiſts for the Cavity of the Eye toward the Angles, or *Canthi.* See EYE, CANTHUS, *&c.*

COENOBITE. See CENOBITE.

COENOTAPHIUM, or rather CENOTAPHIUM, in Antiquity, an empty Tomb, or Monument erected in honour of ſome illuſtrious Defunct; who periſhing by Shipwrack, in Battel, or the like, his Body could not be found, to be interr'd or depoſited in the ſame. See TOMB, and SEPULCHER.

Cardinal *Noris* has ſeveral expreſs Diſſertations on the *Cœnotaphia* of the Cæſars *Caius* and *Lucius*, which ſtill remain at *Piſa.* See FUNERAL.

The Word is *Greek*, compounded of κενὸς, *empty*, and τάφος, *Sepulcher.*

I

COEQUALITY, a Term expreſſing the Relation of Equality between two things. See EQUALITY.

The Retainers to S. *Athanaſius*'s Doctrine of the Trinity, hold the Son and Holy Spirit *coequal* with the Father. The *Arians*, &c. deny the *Coequality.* See ARIAN, *&c.*

COETERNITY, is us'd among Divines, to denote the Eternity of one Being equal to that of another. See ETERNITY.

The Orthodox hold the ſecond and third Perſons in the Trinity *coeternal* with the firſt. See TRINITY.

COEUR, in Heraldry. *Party en* COEUR, ſignifies a ſhort Line of Partition in Pale, in the Centre of the Eſcutcheon, which extends but a little way, much ſhort of Top and Bottom; being met by other Lines, which form an irregular Partition of the Eſcutcheon.

CO-EXISTENCE, a Term of Relation, denoting two, or more Things, to exiſt together at the ſame time, *&c.* See EXISTENCE.

COFFEE, in Natural Hiſtory, a Seed, or Berry, brought from *Arabia felix*; uſed for the making a Drink of the ſame Name.

That from the *Levant* is moſt eſteem'd, being greener, heavier, and appearing riper and plumper than that from *Mocha*; which is larger, lighter, and whiter.

For *Coffee*-Berries, ſome ſubſtitute Peas, Beans, Rye, and Barley; which roaſted, yield an oily Matter, reſembling in Flavour, but leſs agreeable, as well as in much leſs quantity than *Coffee.*

COFFEE is alſo a Kind of Drink, prepared from theſe Berries; very familiar in *Europe* for theſe 60 Years, and among the *Turks* for above an hundred.

Its Original is not well known; ſome aſcribe it to the Prior of a Monaſtery, who being inform'd by a Goatherd, that his Cattel ſometimes browzing on the Tree, would wake and caper all Night; became curious to prove its Virtue: accordingly, he firſt try'd it on his Monks, to prevent their ſleeping at Matins.

Others, from *Sehehabeddin*, refer the Invention of *Coffee* to the *Perſians*; from whom it was learnt in the XVth Century by *Gemalledin*, Mufti of *Aden*, a City near the Mouth of the Red Sea; and who having tried its Virtues himſelf, and found that it diſſipated the Fumes which oppreſs'd the Head, inſpir'd Joy, open'd the Bowels, and prevented Sleep, without being incommoded by it; recommended it firſt to his Derviſes; with whom he us'd to ſpend the Night in prayer.

Their Example brought *Coffee* into vogue at *Aden*: The Profeſſors of the Law, for Study, Artiſans to work, Travellers to walk in the Night; in fine, every body at *Aden* drank *Coffee.*

Hence it paſs'd to *Mecca*, where firſt the Devotees, then the reſt of the People took it. From *Arabia felix* it paſs'd to *Cairo.*

In 1511, *Khaie Beg* prohibited it, from a Perſuaſion that it inebriated, and that it inclin'd to Things forbidden. But Sultan *Cauſou* immediately after took off the Prohibition, and *Coffee* advanced from *Egypt* to *Syria* and *Conſtantinople.*

The Derviſes declaim'd againſt it from the *Alcoran*, which declares that Coal is not of the number of Things created by God for Food. Accordingly, the Mufti order'd the *Coffee*-Houſes to be ſhut; but his Succeſſor, declaring *Coffee* not to be Coal, they were open'd again.

During the War in *Candia*, the Aſſemblies of Newſmongers making too free with State-Affairs, the Grand Vizier *Cuproli* ſuppreſs'd the *Coffee*-Houſes at *Conſtantinople*; which Suppreſſion, tho ſtill on foot, does not yet prevent the publick Uſe of the Liquor there.

Thevenot, the Traveller, was the firſt who brought it into *France*; and a *Greek* Servant, called *Paſqua*, brought into *England* by Mr. *Dan. Edwards*, a *Turky* Merchant, in 1652, to make his *Coffee*, firſt ſet up the Profeſſion of *Coffee*-Man, and introduc'd the Drink among us. Tho ſome ſay Dr. *Harvey* had us'd it before.

The Word *Coffee* is originally *Arabic*: the *Turks* pronounce it *Cahueh*, and the *Arabs Cahouah*; which ſome Authors maintain to be a general Name for any thing that takes away the Appetite: others for any thing that promotes Appetite; and others, again, for any thing that gives Strength and Vigour.

The *Mahometans*, 'tis obſerv'd, diſtinguiſh three Kinds of *Cahouah*; the firſt is Wine, or any Liquor that inebriates; the ſecond is made of the Pods that contain the *Coffee*-Berry; this they call the *Sultana*'s *Coffee*, from their having firſt introduc'd it, on account of its heating leſs than the Berry, as well as its keeping the Bowels open: the third is that made with the Berry it ſelf; which alone is us'd in *Europe*, the Pods being found improper for Tranſportation. Some *Europeans* who imported the Pods, call'd them the *Flower of the Coffee* Tree.

The deep brown Colour of the Liquor, occaſion'd its being firſt call'd *Syrup of the Indian Mulberry*; under which ſpecious Name it firſt gain'd ground in *Europe.*

The Preparation of *Coffee* conſiſts in *roaſting*, or giving it a juſt Degree of Torrefaction, on an earthen, or metalline Plate, till it have acquir'd a browniſh hue, equally deep on all Sides: 'Tis then ground in a Mill, as much as ſerves the preſent occaſion. A proper quantity of Water is next boil'd, and the ground *Coffee* put in it. After it has boil'd ſufficiently, 'tis taken from the Fire; and the Decoction having ſtood a while to ſettle and fine, they pour, or decant it into Diſhes.

The Cuſtom is to drink *Coffee* as hot as poſſible, with Sugar; tho the *Turks* don't trouble themſelves to take off its bitterneſs with any Sugar: their Grandees add to each Diſh a drop of Eſſence of Amber; others boil with it a couple of Cloves; others a little *Indian* Aniſe; others *Cacouleh*, or the Grain of the *Cardamum minus*.

Coffee is one of the Neceſſaries the *Turks* are oblig'd to furniſh their Wives withal.

The ordinary Method of roaſting *Coffee* among us, is in a Tin cylindrical Box, full of Holes; thro' the middle whereof runs a Spit: under this is a ſemicircular Hearth, wherein is a large Charcoal Fire: By help of a Jack, the Spit turns ſwift, and ſo roaſts; being now and then taken up to be ſhaken. When the Oil riſes, and it's grown of a dark brown Colour, it is emptied into two Receivers, made with large Hoops, whoſe bottoms are Iron Plates, theſe ſhut into: There the *Coffee* is ſhaken, and left till almoſt cold; and if it look bright and oily, 'tis a Sign 'tis well done.

Coffee is taken with very different, nay frequently with directly oppoſite Intentions; ſome uſe it to prevent Sleep, others to promote Digeſtion, *&c.*

Its more real Virtues, own'd by the Phyſicians, conſiſt in this; that being an excellent Dryer, it carries off Fumes and Diſorders of the Head ariſing from too much moiſture, diſſipates Megrims, and abſorbs Acrimonies of the Stomach, whence its uſe after a Debauch of ſtrong Liquors; and hence alſo its uſe in promoting watching, by bracing the Fibres, and rendering'em too tenſe for the Relaxation requir'd in Sleep.

It likewiſe promotes Circulation, but ſuch beſt with People of a pretty corpulent Habit; being found hurtful to thoſe who are thin, lean, dry, and of a bilious Temperament; as it dries up the Nerves, and inclines them to Tremors: 'tis ſaid to be prejudicial likewiſe to thoſe who digeſt too faſt, where the Circulation is too quick, or where there is a ſpitting of Blood ariſing from the Mouths of any of the Veins and Arteries being too open, or the Blood too thin and ſharp.

The oily Matter that ſeparates from the *Coffee*, and appears on its ſurface when roaſted, and its particular Smell, which diſtinguiſhes it from Peas, Beans, Rye, *&c.* which ſome ſubſtitute in lieu of *Coffee*, are to be the real Indications of its Effects. If conſider'd with regard to the Oils drawn by the Retort, this, as well as that, contains volatile Principles, both ſaline and ſulphureous.

'Tis to the Diſſolution of its Salts, and the Mixture of its Sulphurs in the Blood, that its chief Faculty of promoting Watchfulneſs is to be attributed: Hence alſo its Property of promoting Digeſtion, of precipitating Foods, of preventing Eructations, and correcting Acrimonies of the Stomach, when taken after Meals.

Hence alſo that Fermentation in the Blood, ſerviceable to corpulent People: hence alſo its diuretick Virtue. By Experience 'tis found of ſervice to drink a Glaſs of Water before *Coffee*, to render it laxative; to mix it with Milk, or Cream, to extinguiſh its Sulphurs, embarraſs its ſaline Principles, and render it nouriſhing.

S. Pauli, a *Daniſh* Phyſician, maintains that it enervates Men, and renders them incapable of Generation: And 'tis certain the *Turks* attribute the ſame Effects to it; and from the immoderate uſe hereof, account for that thinneſs of Inhabitants found in Provinces formerly the beſt peopled. But this Opinion is refuted by *Du Four*.

F. *Mallebranch* gave the Royal Academy of Sciences an Account of a Perſon cur'd of an Apoplexy, by giving him ſeveral Clyſters of *Coffee*.

The Tree that produces the *Coffee*, is a Kind of *Arabic* Jaſmin: The Berry, when ripe, is found as hard as Horn; which gave occaſion to an Opinion, that the People of the Kingdom of *Iemen* in *Arabia felix*, where it is cultivated, ſteep'd in boiling Water, or bak'd in a Furnace all the *Coffee* they ſold abroad, to prevent its growing any where elſe.

'Tis ſaid, it yields a Revenue upwards of five Millions *per Annum*. Nor will that appear any wonder, when we conſider that in *London* alone, beſides the Conſumption in private Houſes, ſome have computed three thouſand *Coffee*-Houſes. In the three Kingdoms are yearly expended one hundred Tonn of *Coffee*-Berries; in *England* alone ſeventy: which at 300 *l. per* Tonn, a moderate Price, amounts to 21000 *l.* Sterling.

COFFER, *Capſa*, in Architecture, a ſquare depreſſure, or ſinking, in each Interval between the Modillions of the *Corinthian* Cornice; ordinarily fill'd up with a Roſe, ſometimes a Pomegranate, or other Enrichment. See MODILLION.

Theſe Sinkings, call'd alſo Pannels, are of different Figures in the Compartiments of Vaults and Soffits. See SOFFIT.

COFFER, in Fortification, is an hollow Lodgment, athwart a dry Moat, from ſix to ſeven Foot deep, and from ſixteen to eighteen Foot broad: the upper Part being made of pieces of Timber rais'd two Foot above the Level of the Moat; which little Elevation has Hurdles laden with Earth for its covering; and ſerves as a Parapet, with Embraſures. See DITCH.

The Beſieged generally make uſe of theſe *Coffers* to repulſe the Beſiegers, when they endeavour to paſs the Ditch.

'Tis nearly the ſame thing with a *Caponiere*, abating that this laſt is ſometimes made beyond the Counterſcarp on the Glacis, and the *Coffer* always in the Moat, taking up half its breadth. See CAPONIERE.

It differs from the *Traverſe*, and *Gallery*, in that theſe latter are made by the Beſiegers, and the *Coffer* by the Beſieged. See GALLERY, *&c.*

To ſave themſelves from the Fire of theſe *Coffers*, the Beſiegers throw up the Earth on that ſide towards the *Coffer*.

COFFERER *of the King's Houſhold*, a principal Officer in the Court, next under the Comptroler; who, in the Counting-Houſe, and elſewhere at other times, has a ſpecial Charge and Overſight of other Officers of the Houſe, for their good Demeanor and Carriage in their Offices: to all whom he pays the Wages. See HOUSHOLD, COMPTING-*Houſe*, &c.

COGGESHAL'S *Sliding Rule*, an Inſtrument us'd in Gaging, ſo called from its Inventor: See its Deſcription and Uſe under SLIDING *Rule*.

COGITATION, the Act or Operation of *Thinking*. See THINKING.

COGNATION, in the Civil Law, the Bond of Relation between all the Deſcendents from the ſame Stock, both Males and Females: by which it is diſtinguiſh'd from *Agnation*, which only comprehends the Deſcendents in the Male Sex. See AGNATION.

In *France*, for the Succeſſion to the Crown they follow *Agnation*; in *England*, *Spain*, &c. *Cognation*, Women coming to the Succeſſion, according to the degree of Proximity, in default of Males, or their Deſcendents from Branch to Branch.

In the *Roman* Law, the Words *Cognatio* and *Cognati* are taken in a more limited Senſe; *Cognatio* ſignifying only the Bond of Relation between the Deſcendents from the ſame Stock on the Woman's ſide; and *Cognati* thoſe between whom there was ſuch a Bond of Relation ſubſiſting.

COGNIZANCE, or COGNISANCE, in Heraldry. See CREST.

COGNIZANCE, in Law, is the Acknowledgment of a Fine, or Confeſſion of a thing done. In this Senſe, we ſay, *Cognoſcens latro*.

The Word is alſo uſed for a Power or Juriſdiction: Thus, *Cognizance of Pleas*, is an Ability to call a Plea out of another Court; which no one but the King can do, unleſs he can ſhew a particular Charter for it.

Sometimes it is uſed for an Audience, or hearing of a Matter judicially; as, *to take Cognizance*.

COGNIZANCE, again, is uſed for a Badge on a Waterman, or Servingman's Sleeve, which is commonly the Giver's Creſt, whereby he is diſcern'd to belong to this or that Nobleman, or Gentleman.

COGNISOR, or CONNUSOR, is he that paſſeth, or acknowledgeth a Fine of Lands and Tenements to another. See COGNIZANCE.

COHABITATION, implies a Concubinage, Copulation, or Carnal Knowledge between two Perſons: but 'tis rarely uſed except in a criminal Senſe. See CONCUBINE.

CO-HEIR, a Perſon who ſhares an Inheritance or Eſtate with another. See HEIR.

COHERENCE, a School-Term, applied to Propoſitions, Diſcourſes, *&c.* which have a Connection or Dependence on one another.

COHESION, or COHÆSION, in Phyſicks, the Action whereby the Particles, or primary Corpuſcles whereof natural Bodies conſiſt, are connected, or bound together, ſo as to form Particles; and thoſe, again, kept together, ſo as to form ſenſible *Maſſes*, or Bodies. See PARTICLE, BODY, *&c.*

The Cauſe of this *Coheſion*, or the *Nexus Materiæ*, has extremely perplex'd the Philoſophers of all Ages. In all the Syſtems of Phyſicks, Matter is ſuppos'd originally to be in minute, indiviſible Atoms. See MATTER.

How, and by what Principle theſe ſeveral diſtinct Corpuſcles ſhould come firſt join'd and combin'd into little Syſtems; and how they ſhould come to perſevere in that State of Union; is a Point of the moſt difficulty, and even of the moſt importance of any in Phyſicks.

The moſt popular Opinion, is that ſo ſtrenuouſly defended by *J. Bernoulli*, *de gravitate Ætheris*; who accounts for the *Coheſion* of the Parts of Matter, from the uniform Preſſure of the Atmoſphere: confirming this Doctrine from the known Experiment of two poliſh'd marble Planes; which *cohere* very ſtrongly in the open Air, but eaſily drop aſunder in an exhauſted Receiver.

But tho this Theory might ſerve tolerably well to explain the *Coheſion* of Compoſitions, or greater Collections of Matter;

ter; yet it falls ſhort of accounting for that firſt *Coheſion* of the Atoms, or primitive Corpuſcles, whereof the Corpuſcles of hard Bodies are compos'd.

Sir *Iſaac Newton* delivers his Doctrine of *Coheſion* thus: 'The Particles of all hard, homogeneous Bodies which touch 'one another, *cohere* with a great Force; to account for 'which, ſome Philoſophers have recourſe to a kind of hook-'ed Atoms, which in effect, is nothing elſe but to beg the 'Thing in queſtion. Others imagine, that the Particles of 'Bodies are connected by *Reſt*; *i. e.* in effect, by nothing 'at all; and others by *conſpiring Motions*, *i. e.* by a rela-'tive reſt among themſelves. For my ſelf, it rather appears 'to me, that the Particles of Bodies cohere by an *attractive* 'Force, whereby they tend mutually toward each other: 'which Force, in the very point of Contact, is very great; 'at little Diſtances is leſs; a little farther diſtance is quite 'inſenſible.' See ATTRACTION.

'Now if compound Bodies be ſo hard, as by Experience 'we find ſome of 'em to be, and yet have a great many 'hidden Pores within 'em, and conſiſt of Parts only laid to-'gether; no doubt thoſe ſimple Particles which have no 'Pores within 'em, and which were never divided into Parts, 'muſt be vaſtly harder. See MATTER.

'For ſuch hard Particles gather'd into a Maſs, can't poſſi-'bly touch in more than a few Points: and therefore much 'leſs Force is requir'd to ſever them than to break a ſolid 'Particle, whoſe Parts touch throughout all their Surfaces, 'without any intermediate Pores or Interſtices. But how 'ſuch hard Particles, only laid together, and touching only 'in a few Points, ſhould come to *cohere* ſo firmly as in fact 'we find they do, is inconceivable; unleſs there be ſome 'Cauſe, whereby they are attracted and preſs'd together.

'Now, the ſmalleſt Particles of Matter may *cohere* by the 'ſtrongeſt Attractions, and conſtitute larger; whoſe attract-'ing Force is feebler: And, again, many of theſe larger 'Particles *cohering*, may conſtitute others ſtill larger; whoſe 'attractive Force is ſtill weaker; and ſo on for ſeveral Suc-'ceſſions, till the Progreſſion end in the biggeſt Particles, 'on which the Operations in Chymiſtry, and the Colours of 'Natural Bodies do depend; and which by *cohering* com-'poſe Bodies of a ſenſible Magnitude.' See HARDNESS, FLUIDITY, and FIRMNESS.

The different Degrees of *Coheſion*, conſtitute Bodies of different Forms and Properties.

Thus, the ſame great Author obſerves, that the Particles of Fluids which don't *cohere* too ſtrongly, and are ſmall enough to render 'em ſuſceptible of thoſe Agitations which keep Liquors in a Fluor, are moſt eaſily ſeparated and rarefied into Vapour, and make what the Chymiſts call *Volatile Bodies*; rarefying with an eaſy heat, and again condenſing with a moderate cold. See VOLATILITY.

Thoſe whoſe Particles are groſſer, and ſo leſs ſuſceptible of Agitation, or *cohere* by a ſtronger Attraction, are not ſeparable without a greater degree of Heat; and ſome of 'em not without Fermentation: and theſe make what the Chymiſts call *Fix'd Bodies*. See FIXATION.

COHOBATION, in Chymiſtry, a repeated Diſtillation of the ſame Matter, with the Liquor drawn from it; that Liquor being again and again return'd upon the Matter left at the bottom. See DISTILLATION.

The Deſign of this Operation is to open the Pores, and ſeparate and volatilize the ſpirituous Part.

Cohobation is a kind of *Circulation*; only differing from it in this, that the Liquor is drawn off in *Cohobation* as in common Diſtillation, and thrown back again; whereas in Circulation it riſes and falls in the ſame Veſſel, without ever being carried out. See CIRCULATION.

COHORT, *Cohors*, among the *Romans*, a Body of Infantry, conſiſting of five or ſix hundred Men; anſwering in moſt reſpects to our Battalion.

The *Cohort* was divided into three *Maniples*, or Companies; the Maniple into two *Centuries*; and the Century into an hundred Men. See MANIPULUS, CENTURY, *&c.*

The firſt Centurion in a *Cohort* was called *Primipilus*; and bore the Eagle, or Standard of the Legion. See PRIMIPILUS.

A Legion conſiſted of ſix *Cohorts*. See LEGION.

When the Army was rang'd in order of Battel, the *Cohorts* were diſpos'd in the following manner: The firſt *Cohort* took up the right of the firſt Line, as the Companies of Grenadiers do in our Regiments; the reſt follow'd in their natural Order: ſo that the third was in the Centre of the firſt Line of the Legion, and the fifth on the left: the ſecond between the firſt and third; and the fourth between the third and fifth. The five remaining *Cohorts* form'd a ſecond Line in their natural Order: Thus the ſixth was behind the firſt, and ſo of the reſt.

The firſt, third, and fifth *Cohorts* were eſteem'd the beſt; at leaſt it appears ſo from the Poſts they took up, which were look'd on by the *Romans* as the moſt important.

Marius was the firſt who divided the *Roman* Forces into *Cohorts*.

The Word properly ſignifies the Area, Yard, or Space before the Door of a Houſe.

COIF, the Badge of a Serjeant at Law; who is hence alſo called *Serjeant of the* COIF. See SERJEANT.

The *Coif* is of Lawn, and wore on the Head, under the Cap when they are created, and ever after.

The Uſe of the *Coif* was to cover the *Tonſuram Clericalem*, otherwiſe called, *Corona Clericalis*; becauſe the Crown of the Head was cloſe ſhav'd, and only a Border of Hair left around the lower Part, which gave it the Appearance of a Crown. See CROWN, TÆNIA, *&c.*

COIN, or *Matrice*, in the Manufactury of Money, Medals, Counters, *&c.* is a piece of Steel well temper'd, four or five Inches high, ſquare at bottom, and round a-top; whereon are engraved, Dent-wiſe, or *En creux*, with Punchions and other Inſtruments, the ſeveral Figures, Marks, *&c.* to be ſtruck on the Monies, *&c.* See MATRICE.

For the manner of engraving of the COINS; ſee ENGRAVING *on Steel.*

COIN is more generally us'd for a Piece of Metal, converted into Money, by the impreſſing of certain Marks or Figures thereon. See MONEY.

Or, *Coin* may be defin'd, a Species of Money, ſtruck with a Hammer, or Mill. See COINAGE.

Hence, *Coin* differs from *Money*, as the *Species* does from the *Genus*. Money is any Matter, whether Metal, Wood, Leather, Glaſs, Horn, Paper, Fruits, Shells, Kernels, *&c.* which have courſe as a Medium in Commerce.

Coins are a particular Branch of Monies, *viz.* ſuch as are made of Metal, Gold, Silver, or Copper, and ſtruck according to a certain Proceſs, call'd *Coinage*.

It is obſerv'd, under the Article MONEY, that the preciſe *Epocha* of the Invention of Money is not known; 'tis too antient for our Annals: And if we might argue from the Neceſſity and Obviouſneſs of the Thing, muſt be nearly coeval with the World.

Whether *Coins* be of equal Antiquity, may admit of ſome doubt; eſpecially as moſt of the antient Writers are ſo frequent and expreſs in their mention of Leather Monies, Paper Monies, wooden Monies, *&c.* Some, however, maugre all this, are of opinion that the firſt Monies were of Metal: the Reaſons they give, are the Firmneſs, Neatneſs, Cleanlineſs, Durableneſs, and Univerſality of Metals; which, however, do rather conclude, they ought to have been ſo, than that they actually were ſo.

In effect, the very Commodities themſelves were the firſt Monies, *i. e.* had courſe for one another by way of exchange; and it was the difficulty of cutting, or dividing certain Commodities, and the impoſſibility of doing it without great Loſs, that firſt put 'em on the Expedient of a general Medium. See TRUCKING.

Indeed, thus much may be ſaid in behalf of *Coins*, that, on this view, 'twas natural for 'em to have their firſt recourſe to Metals; 'as being almoſt the only things whoſe Goodneſs, and as it were Integrity, is not diminiſh'd by Partition; beſides the Advantages above expreſs'd, and the Conveniencies of melting, and returning 'em again into a Maſs of any ſize or weight. See EXCHANGE.

'Twas probably, then, this Property of Metals which firſt accuſtom'd People, who traffick'd together, to account 'em in lieu of Quantities of other Merchandiſes in their Exchanges; and at length to ſubſtitute 'em wholly in their ſtead: and thus aroſe Money: As it was their other Property to preſerve any Mark or Impreſſion a long time, which confirm'd 'em in the Right; and thus was the firſt riſe of *Coins*.

In the firſt Ages, each Perſon cut his Metal into pieces of different Sizes and Forms, according to the Quantity to be given for any Merchandize, or according to the Demand of the Seller, or the Quantity ſtipulated between them: To this end they went to Market, loaden with Metal, in proportion to the Purchaſe to be made, and furniſh'd with Inſtruments for portioning it, with Scales for dealing it out, according as occaſion requir'd.

By degrees it was found more commodious to have Pieces ready weigh'd; and as there were different Weights requir'd, according to the Value of the different Wares, all thoſe of the ſame Weight began to be diſtinguiſh'd with the ſame Mark, or Figure: Thus were *Coins* carried one ſtep further.

At length, the growing Commerce of Money beginning to be diſturb'd with Frauds, both in the Weights and the Matter, the publick Authority interpos'd; and hence the firſt Stamps or Impreſſions of Money; to which ſucceeded the Names of the Moniers; and at length the Effigies of the Prince, the Date, Legend, and other Precautions to prevent the Alteration of the Species: And thus were *Coins* compleated. See COMMERCE.

On the Foot whereon Money now ſtands, 'tis divided into *real*, or effective Money; and *imaginary* Money, or Money of Accompt.

Imagi-

Imaginary Money, or *Money of Accompt*, is that which has no Exiſtence in real Species; but is rather a Sum of ſeveral Species, invented or retain'd to facilitate Accompts, by keeping them on a fix'd footing, not to be chang'd like the current *Coins*, which the Sovereign Power either raiſes or lowers at pleaſure, according to the Occaſions of the State.

Of this Kind, among us, are Pounds, Nobles, Marks, *&c.* among the *French*, Livres, *&c.* See POUND, LIVRE, *&c.*

For the ſeveral Imaginary Monies uſed in the ſeveral Parts of *Europe*, &c. with their Proportions and Reductions, ſee MONEY.

Real, or *Effective Money*, is that which has an actual Exiſtence, in real Species of Gold, Silver, *&c.* See SPECIES.

Such are, among us, *Shillings*, *Guineas*, &c. the Liſt of which, uſed in the ſeveral Parts of the World, with their Reductions, are as follows.

Modern COINS, *or current Species of* Europe, Aſia, Africa, *and* America.

All the current Species in the four Quarters of the Earth, at this Day, are either made of Metals, or are Shells and Fruits.

The Metals are Gold, Silver, Copper, Tin, and Lead; to which may be added Billon, a mixture of Silver and Copper in a certain proportion.

In *Europe*, none are uſed beſide Gold, Silver, Copper, and Billon. In ſome part of the *Eaſt Indies*, they likewiſe uſe Tin and Lead: As to Shells and Fruits, they are the ſmall Money of ſeveral Nations in *Aſia*, *Africa*, and *America*.

Britiſh COINS.

In *England*, the current Species of *Gold*, are the Guinea, Half Guinea, Jacobus, Laureat, Angel, and Roſe-Noble: the four laſt of which are now ſeldom met with, having been moſt of them converted into Guineas, chiefly during the Reigns of *Charles* II. and *James* II. See GOLD.

The *Silver Coins* are the Crown, Half Crown, Shillings and Sixpences. See SILVER.

Copper Coins are Halfpennies and Farthings. See COPPER.

Value and Proportions of the Engliſh COINS.

Farthing.						
2	Halfpenny.					
48	24	Shilling.				
120	60	$2\frac{1}{2}$	Half Crown.			
240	120	5	2	Crown.		
960	480	20	8	4	Pound Acc.	
1058	504	21	$8\frac{1}{3}$ & $\frac{1}{3}$	$4\frac{1}{2}$	$1\frac{1}{20}$	Guinea, or Piece.
The Jacobus		25	10	5	$1\frac{1}{4}$	
The Carolus, or Laureat		23	$9\frac{1}{5}$	$4\frac{1}{2}$ & $\frac{1}{10}$		

In *Scotland*, by the Articles of the Union, 'tis appointed, that all the *Coins* be reduced to the *Engliſh*, and the ſame Accompts obſerv'd throughout. Till then, the *Scots* had their Pounds, Shillings, and Pence, as in *England*; but their Pound was but twenty Pence *Engliſh*, and the others in Proportion: Accordingly, their Mark was $13\frac{1}{3}$ *s. Scotch*, current in *England* at $13\frac{1}{2}$ *d.* their Noble in proportion.

Beſide theſe, they had their *Turnoner* Pence and Halfpence; their Penny $\frac{1}{12}$ of that of *England*: beſides baſe Money of Achiſons, Babees, and Placks. The Bodle, $\frac{1}{8}$ of the Pence, $\frac{1}{4}$ of the Achiſon, $\frac{1}{2}$ of the Babee, and $\frac{1}{2}$ of the Plack.

In *Ireland*, the *Coins* are as in *England*, *viz.* Shillings, Pence, *&c.* with this difference, that their Shilling, or Harper, is but equal to nine Pence Sterling; whence their Pound is only $\frac{3}{4}$ of ours, or 15 *s.*

French COINS.

The only *Gold Coin* now current in *France*, is the Lewidore, or Louis d'Or, with its Diviſions, which are $\frac{1}{2}$ and $\frac{1}{4}$; and its Multiples, which are the double and quadruple Louis. See LOUIS.

Till the Year 1700, they had Gold Lys, and Ecus, or Crowns; but they are now no more.

The *Silver Coins* are the Ecus, Crowns, or white Louis's, with their Diminutions, *viz.* $\frac{1}{2}$ and $\frac{1}{4}$; and Pieces of ten Sols, and of ſix. See SOL, and CROWN.

The *Billon Coins* are of two Kinds, each called *Sols*; ſome of 15 Deniers, others 21. To theſe may be added the Deniers current in the *Lionnois*, *Provence*, *Dauphine*, and other Parts.

Laſtly, the *Copper Coin* is the Liard, equal to three Deniers; and is ordinarily called the Double.

Their general Value is as in the following Table: For Particulars, ſee the particular Heads.

Denier, equal to $\frac{1}{4}$ of a Farthing Sterl.

2	Double.							
3	$1\frac{1}{2}$	Liard.				*l.*	*s.*	*d.* *qrs.*
12	6	4	Sol *Paris*,		is equal to	0	: 0	: 0 : $3\frac{3}{5}$
240	120	8	20	Livre, *Acc.*		0	: 1	: 6
720	360	240	60	3	Ecus, Crown	0	: 4	: 6

The Louis d'Or, *or* French Piſtole, *was firſt ſtruck at* 10 Livres, *but has ſince riſen as high as* 30. *With us 'tis valued at* 16 *s. Sterling.*

Spaniſh COINS.

In *Spain*, and the States depending thereon, the *Gold Coin* is the Piſtole; above which is the Double Piſtole, and Piece of four Piſtoles; and under it the Half Piſtole: to which muſt be added the Caſtillans of Gold. See PISTOLE.

The *Silver* Money are the Piaſtre, or Piece of eight Reals, and its Diminutions; as alſo the ſimple Real, with its Diminution. See REAL.

The *Copper Coins* are the Ochavos, or Octavos, which are of two Kinds, the one equal to four Maravedis, and ordinarily call'd Quarta; the other double this, and called double Quarta: laſtly, the Maravedis. See MARAVEDIS.

It muſt be obſerv'd, that in *Spain* they have new Money and old. The old, current in *Sevil*, *Cadix*, *Andaluſia*, and ſome other Places, is worth 25 *per Cent.* more than the New, current at *Madrid*, *Bilboa*, *St. Sebaſtian*, &c. *i. e.* 100 Pounds old, is equal to 125 Pounds new. This difference is owing to their King *Charles* II. who in 1688, to prevent the Export of Money abroad, rais'd it 25 *per Cent.* which, however, he was only able to effect in part; ſeveral Provinces ſtill retaining the antient Rate.

Value of the Spaniſh COINS.

Maravedis old, ſomewhat above $\frac{1}{3}$ of a Farthing Sterling.

4	Quarta.					*l.*	*s.*	*d.*
8	2	Octavo, or double Quarta.						
64	$3\frac{1}{4}$	$4\frac{1}{2}$	Real, *old Plata*,		equal to	0	: 0	: $6\frac{3}{4}$
512	68	34	8	Pieces of Eight, or *Piaſtre*,		0	: 4	: 6
2048	272	136	32	4	Piſtole,	0	: 17	: 6

Portugueſe COINS.

Thoſe of *Gold* are the Milleray, or St. Stephen, and the Moeda d'Oro, or, as we call it, the Moidore; which is properly their Piſtole: above this are Doppio Moedas, or double Piſtoles; and quadruple Species equal to five Piſtoles. See MOIDORE.

Their *Silver Coins* are the Cruzada; Pataca, or Piece of Eight; and the Vintain, whereof they have two ſorts, the one Silver, and the other Billon.

The Res is of *Copper*, which ſerves 'em in Accompts, as the Maravedis does the *Spaniards*.

Res, or Rez, equal to $\frac{3}{5}$ of a Farthing Sterling.

20	Vintain.						*l.*	*s.*	*d.*
400	20	Cruzada.							
1000	50	$2\frac{1}{2}$	Mi-moeda,			or Half Piſtole, equals	0	: 13	: 6
2000	100	5	2	Moeda d'Oro,		or Piſtole,	1	: 7	: 0
4000	200	10	4	2	Doppio Moeda,	or double Piſt.	2	: 14	: 0
10000	500	25	10	6	$2\frac{1}{2}$	Ducat of fine Gold,		6	: 15 : 0

Dutch COINS.

Thoſe of *Silver* are Crowns, or Dollars, Ducatoons, Florins, and Eſchalins, each whereof has its Diminution. The Stiver, or common Shilling, is of *Billon*; the Duyt, and Penny of *Copper*.

Penny.							*l.*	*s.*	*d.*
$1\frac{1}{2}$	Duyt.								
6	4	Gros.							
12	8	2	Stuyver,			or Shilling common	0	: 0	: $1\frac{1}{5}$
72	48	12	6	Scalin,		or Shilling groſs	0	: 0	: 7
236	160	40	20	$3\frac{1}{3}$	Florin,	or Guilder,	0	: 2	: 0
708	480	120	60	10	3	Doller, or Ducatoon,	0	: 6	: 0

Flemiſh COINS.

Thoſe of *Gold* are Imperials, Rides, or Philips, Alberts, and Crowns.

Thoſe of *Silver* are Philips, Rixdollars, Patagons, Scalines, and Gulden: And thoſe of *Copper*, Patards.

Patard,

							l.	s.	d.
Patard, or Penny.									
8	Groat.								
16	2	Single Stiver, equal to					0	0	1 1/4
96	6	6	Shilling.				0	0	7 1/2
288	18	20	3	Gulden.			0	2	0
720	90	50	2 1/2	2 1/2	Rixdollar, Dollar, Patag.		0	4	6
2104			7 1/2		2 1/2	Imperial.	0	11	3

Note, *The Rixdollar, Dollar, and Patagon, are nearly on the ſame Foot with the Crown, or Piece of Eight.*

German Coins.

Thoſe of *Gold* are Ducats, which are of various Kinds; Oboli of the *Rhine*, and Florins: of this laſt Kind there are ſome likewiſe of *Silver*; beſide Rixdollars and Izelottes, which are all of that Metal.

Thoſe of *Copper*, are the Creux, or Kreuxer, and Fenin.

Fenin, equal to 1/3 of a Farthing Sterling.

							l.	s.	d.
8	Creux, or Kreuxer.								
192	24	Dollar.							
348	43 1/2	1 8/10	Obolus.						
432	54	2 1/10	1 2/10	Izelotte.			0	2	9
480	60	2 3/10	1 3/10	1 1/10	Gulden, or Florin.		0	3	0
650	100	3 8/10	2 1/10	1 9/10	1 6/10	Rixdol. or Dollar.	0	4	6
1068	133	5 8/10	2 8/10	1 2/10	2 1/10	1 3/10 Ducat.	0	7	6

Italian Coins.

In *Italy*, the Several States have ſeveral current Monies: tho there are ſome common to them all; ſuch as the Piſtole of *Gold*, and the Ducatoon and Florin of *Silver*; which being of various Weights, Firmneſs, and Value, ſee under the Articles Pistole, Ducatoon, &c.

Thoſe peculiar to *Rome*, are the Julios, of *Silver*, the Pignatelle of *Billon*; and the Bayoco, Demi-Bayocos, and Quadrine of *Copper*.——*Venice* has its Sequins of *Gold*; its Juſtins, or Ducatoons, and Derlingues of *Silver*.—— *Naples* its Carlins.—— *Mourgues* its Monacos, or Crowns, and its Louis's of ſix Sols.——*Genoa* its Croiſats.—— *Savoy* and *Piemont*, its Lys; all *Silver*. This laſt State has likewiſe Papiroles, and Cavales of *Billon*.

	s.	d. Sterl.
Julio, equal to ——	0	6 7/100 } 8 1/2 make a *French* Crown.
Bayoco, 1/10 of the Julio =	0	0 1/2 Penny and 1/5.
Pignatelle, 1/50 of the Julio =	0	0 1/2 of 1/4 of a Penny, or near 1/8 a Far. Sterl.
Juſtine = ——	4	9
Derlingue, 1/4 of the Juſtine =	1	2 1/4
Carlin = —— ——	0	6
Monaco = —— ——	4	4
Sequin = ——	9	2
Croiſat = —— ——	4	4

Swiſs Coins, are Ratzes, and Blazes; of *Billon*.

Ratze, equal to 3/4 and 1/8 of a Penny Sterling.

Blaze of *Bern*, nearly on the ſame Footing with the Ratze.

Poliſh Coins.

Beſide the Rixdollars ſtruck here, which are common to other Countries; the *Poles* ſtrike *Silver* Roups, Abras, and Groats.

	s.	d. Sterl.
Roup —— ——	0	4 3/4
Abra —— ——	1	0 1/2
Groch —— ——	0	0 1/2 and 1/8

Daniſh Coins, are the Horſe, the Marcs Lubs, and the Scheſdals of *Silver*.

	s.	d.
Horſe —— ——	1	1 1/2 Sterl.
Marc Lubs —— ——	1	6
Scheſdal, two Marcs, or Lubs	3	0

Swediſh Coins.

Thoſe of *Silver* are the Chriſtines, Carolines, and Cavaliers. Thoſe of *Copper* the Rouſtique, Alleuvre, Mark, and Money.

	s.	d. Sterl.
Chriſtine —— ——	1	1 1/2
Caroline —— ——	1	5 1/4
Mark —— ——	0	2 1/8
Rouſtique, 1/8 of the Mark ——	0	0 1/4 and 1/8 of 1/2
Alleuvre, 1/2 of the Rouſtique	0	0 1/8 and 1/16 of 1/2

The Swediſh *Money*, properly ſo called, is a kind of *Copper*, very ſoft and malleable, found in little ſquare Pieces, or Plates, about the thickneſs of three *Engliſh* Crowns, and weighing five Pounds and a half; ſtamp'd at the four Corners with the *Swediſh* Arms; and current in *Sweden* for a Rixdollar, or Piece of Eight.

Muſcovite Coins.

There are two Kinds of Copecs in *Muſcovy*, the one of *Gold*, the other of *Silver*; the laſt call'd alſo Denaing, or Pence. Their

	s.	d.
Copec, or Kapeke of *Gold*, worth	1	6 1/11 Sterl. but
current in the Czar's Territories for	1	9.
Copec of *Silver*, or Denaing of an oval form, worth ——	0	1 Sterl. but current for
ſomewhat more.		
Poluſk, 1/2 of the Copec ——	0	0 1/2
Muſkoviſke, 1/4 of the Copec ——	0	0 1/4.

Turkiſh Coins.

The only *Gold* Species ſtruck in the Grand Seignior's Territories, is the Sultanin, called alſo Scherif, or Sequin.

Their ſmall Monies are the Para, Paraſi, called alſo Parat, and Meidein, and the Aſpre both of *Silver*.

	s.	d. Sterl.
Sultanin Scherif, or Sequin, equal to the Ducat of *Gold*, or —— ——	9	0
Para Parat, or Paraſi ——	0	1 1/2
Shakee of *Aleppo* and *Scandaroon* —	0	3 1/2
Aſpre —— ——	0	0 2/3 but ordinarily, by reaſon of the baſe Alloy, no more than 1/2.

Coins *of the Coaſts of Barbary.*

The current *Coins* ſtruck here are Rubies, Medians, Ziams, and Metecals; all of *Gold*: the laſt of which are ſtruck at *Morocco*, the reſt at *Fez*, *Algiers*, and *Tunis*; which beſide have Doublas of *Silver*, and Burbas of *Copper*.——*Tunis* its Naſaras of *Silver*, its Blanquilles likewiſe of *Silver*, and Felours of *Copper*.

Other *Coins* of *Africa*, are the Merigal of *Gold*, current in *Sofala*, and the Kingdom of *Monopotapa*; and the Pardo of *Silver*, current in *Moſambica*.

	s.	d. Sterl.
Rubie, equal to 35 Aſpres, or —	1	9
Median, 50 Aſpres, or ——	2	7
Ziam, Zian, or Dian, 2 Medians, or	5	2

Metecal, a Kind of Ducat of different Fineneſs, conſequently of different Value; whence very conſiderable Difficulties in Commerce. The Difference ariſes hence, that there is no Mint fix'd, or regular *Coiners* at *Morocco*, but every *Jew* and Goldſmith ſtrikes Ducats after his own manner in open Shop.

	s.	d. Sterl.
Double, equal to 80 Aſpres, or —	4	6
Burba, 1/12 of an Aſpre, or ——	0	0 1/12
Blanquille, —— ——	0	2 1/4
Felours, 1/8 of the Blanquille, or —	0	0 1/4 and 1/32
Merigal, worth about ——	18	0
Pardo, —— ——	1	3

Perſian Coins.

Thoſe are either *Silver*, or *Copper*; *Gold* they have none: Of the firſt Kind are the Abaſſi, Mamoudi, Chaye, and Biſti: of the ſecond the Kabeſqui, and Half Kabeſqui; the Tela, or Cherraſis, indeed is *Gold*; but 'tis leſs a Money than a Medal, tho it has ſome courſe in Commerce.

	s.	d.
Abaſſi, equal to —— ——	1	4 1/2 Sterl.
Mamoudi, Chaye, 1/2 the Abaſſi, ——	0	8 1/4
Chaye, 1/2 the Mamoudi, ——	0	4 and 1/8.

Biſti, ſome Relations make a *Coin* worth about 1 Penny Halfpenny; but others only a Term of Accompts, ſignifying 10 Dimars, or 1/1000 part of a Toman. See Toman.

Cabequi, or Cabeſque, equals 5/12 of a Penny Sterl.

Tela, or *Cheraſis*, uſually ſtruck at the Acceſſion of a new King, and at the Beginning of each new Year; its Weight and Worth various.

Chineſe Coins.

Throughout the Kingdom of *China* and *Tunquin*, there are not properly any *Coins* ſtruck; inſtead of theſe, they cut their Gold and Silver into little Pieces of different weights: Thoſe of Gold, the *Dutch*, from their Figure, which reſembles a Boat, call Golchuts: thoſe of *Silver*, the Natives call Leam; the *Portugueze*, Taels.

Their ſmall Money is of *Copper*; 10 of theſe make their Shilling, and 10 of thoſe their Crown, or Leam.

Beſide theſe, they have a ſmall Money of *Lead*, mix'd with the Scum of Copper, having Holes in the middle to ſtring 'em on for the eaſe of numbering: this Species is called Caxa, Cas, and Pitis; and the String, which uſually holds 200, is called *Santa*. They are ſo very brittle, that they never fall without breaking into a great number of Pieces; and if left all Night in Salt Water, ſtick ſo cloſe together that they can't be ſeparated.

There are two Kinds, *great* and *ſmall*.

Golchut, an Ingot, which at 3 *l.* 3 *s. per* Ounce, uſually amounts to 101 *l.* 5 *s.* Sterling.

Other Golchuts only weigh half as much; their Value in proportion.

Tael, or Leam, equal to 6 *s.* 8 *d.* Sterling.

Copper Money $\frac{1}{1000}$ part of the Tael, or ſomewhat more than $\frac{1}{4}$ of a Farthing.

Caxa, Cache, or Pitis, $\frac{10}{12}$ or $\frac{5}{6}$ of a Penny Sterl. 300000 of theſe are nearly equal to 56 *Dutch* Pounds.

Caxa larger, $\frac{1}{8000}$ of a Piaſtre, or Piece of Eight.

Coins *of Japan.*

The *Japoneſe* ſtrike Coupants, both of *Gold* and *Silver*, and Copper Pieces with Holes in the middle, like thoſe of *China*; 600 of theſe make the Tael. Their other Monies, or *quaſi* Monies, are Ingots, which they cut like the *Chineſe* of different Weights, chiefly three; the largeſt, of the weight of ſix Reals, *viz.* 48 Taels, the Tael equivalent to 75 *Dutch* Styvers. The ſecond equal to ſix Taels and an half; and the third to $\frac{5}{8}$ of a Real, or 1 Tael $\frac{1}{16}$.

Beſide theſe, they have a ſmall Silver Money, in form of round Beans, of no determinate weight, uſually weigh'd by Maiſes; the common Payment being by 10 Maiſes, which make one Tael.

	l.	*s.*	*d.* Sterl.
Coupant of *Gold*, weighing 1 Ounce 6 Drachms; its Figure a long Oval, the longeſt Diameter about 4 Inches, and the ſhorteſt half an Inch.	6	12	6
Other Coupants of *Gold*, near $\frac{1}{3}$ of the former, amounting to about ——	2	4	2
Coupant of *Silver*, current at —	0	4	6
Copper Money, —— $\frac{7}{15}$ of a Farthing.			

Coins *of Siam.*

In the Dominions of *Siam* are ſtruck *Gold* Pieces five or ſix Grains heavier than the Half Piſtole of *Spain*; but theſe are rather Pieces of Curioſity, than of Uſe in Commerce.

Their *Silver Coin* is the Tical, or Baat; the Diminutions whereof are the Mayon, or Seling, Foang, and Sompayc. Theſe Pieces are all ſtrangely ſtruck: in form they reſemble Nuts, a little flatted at the Extremities; and are ſome of them cloven like Horſe-ſhoes: On two of the Sides are ſome *Siameſe* Letters.

Their *Copper* Money, called Bia, is round and thick: beneath this is the Cauris.

	s.	*d.* Sterl.
Gold Species of *Siam*, ——	7	0
Tical, or Baat, —— —	2	$5\frac{1}{2}$
Mayon, or Seling, $\frac{1}{4}$ of the Tical, —	0	$7\frac{1}{4}$ and $\frac{1}{8}$
Foang, $\frac{1}{2}$ the Mayon, —— —	0	$3\frac{1}{24}$
Sompayc, $\frac{1}{2}$ the Foang, —— —	0	$1\frac{1}{2}$ and $\frac{1}{48}$
Copper Coin, or Farthing of *Siam*,	0	$0\frac{1}{10}$

Coins *of the Coaſts and Iſlands of the* Indies.

The Principal, and thoſe moſt generally current, are Pagods, Roupies, Larins, Fanos, or Fanons, and Coupans, each whereof are ſtruck both of *Gold* and *Silver*.

Beſide theſe general *Coins*, are particular ones, *viz.* at *Goa*, S. Thomas's of *Gold*.— Along the *Perſian* Gulf, about *Mecca*, and throughout *Arabia*, the Larin. — Along the Coaſts of *Malabar*, and at *Goa*, the Paradao Xeraphin of *Silver*.—At *Bantam*, the Fardos; at *Malabar*, the Tare; at *Siam* the Tical, with its Diminutions the Mayon, Foang, Sompayc, and Demi-Foang: all of *Silver*.—At *Surate*, *Agra*, and the reſt of *Indoſtan*, the Pecha, or Peſſa, and Doudous, all of *Copper*.—The Baſarucos and Chedas, of *Tin*.

	l.	*s.*	*d.* Sterl.
Pagod, *Gold*, denominated from its Impreſſion, an *Indian* Idol, —	0	5	0
Pagod, *Silver*, its Value very different; the ſmalleſt 8 Tangas, and the Tanga 90 Baſarucos; equal to	1	2	6
Roupia, *Gold*, —— ——	1	11	6

Roupia, *Silver*, its Fineneſs and Value various: There are three Kinds current, *viz.* the Roupias *Siceas*, the Roupias of *Surat*, and Roupias of *Maderas*.

	s.	*d.* Sterl.
Roupias *Siceas*, worth at *Bengal* ——	2	11
—— of *Surat* —— —	2	$6\frac{1}{2}$
—— of *Madras* —— ——	2	$5\frac{1}{2}$

Note, This is to be underſtood of the *new* Roupias; for as to the *old* ones, of each Kind, their Value is leſs: thoſe of *Maderas*, *v. g.* are but equal to 1 *s.* 11 *d.* Sterl. thoſe of *Surat*, 2 *s.* and the *Siceas* 2 *s.* 4 *d.*

	s.	*d.* Sterl.
Larin, in form of a round Wire, or Cylinder, equal to the Barrel of a Pen; bent in two and a little flatted at each end, to receive the Impreſſion of ſome *Arabic*, or *Perſian* Characters. —— —	0	11
Fanos, or Fanon, *Gold*, is of different Fineneſs, Weight, and Value; the *largeſt* worth	0	9
The *ſmalleſt* —— ——	0	$2\frac{1}{2}$
Fanos, *Silver*, —— —	0	$1\frac{1}{4}$
Coupant, ſee Coins *of Japan*.		
S. Thomas, equal to ——	9	0
Pardao Xeraphin —— —	2	1
Fardos —— — ——	2	$8\frac{1}{2}$
Tare —— —— ——	0	$0\frac{1}{2}$
Tical, ſee Coins *of Siam*.		
Pecha, or Peſſa, —— ——	0	$0\frac{1}{2}$
Doudou, $\frac{1}{14}$ of Fanos, or ſomewhat leſs than	0	$0\frac{1}{4}$
Baſaruco —— $\frac{1}{5}$ of a Farthing.		
Cheda is of two Kinds, the one Octogonal, current at —— ——	0	$1\frac{1}{4}$
The other round —— ——	0	$0\frac{1}{3}$

Mogul Coins.

In the Dominions of the great *Mogul*, are Roupies, Mamoudes, and Pechas; the firſt both of *Gold* and *Silver*; the ſecond of *Silver* alone, and the third of *Copper*.

There are others ſtruck by the Princes tributary to him, and the Powers bordering on him, ſcarce current beyond their reſpective Territories: particularly a ſmall *Silver Coin* ſtruck by the K. of *Matoucha*, whoſe Territories lie to the North of *Agra*, of the Value of the Pecha of *Mogul*, but half as heavy again.—The *Raja* of *Parta-jajamoula*, to the North of *Patua*, likewiſe ſtrikes ſome little Pieces, both of *Silver* and *Copper*, of ſmall Value.—The *Raja* of *Ogden*, who commands between *Brampour*, *Seronge*, and *Amadabath*, a ſmall *Silver Coin*, equal to 6 Pence Sterling; and another of *Copper*, equal to an Halfpenny Sterling.— The King of *Cheda* and *Pera*, a *Tin* Money called *Cheda*.—The King of *Achem*, little ſlight *Gold* Pieces, worth about 15 Pence Sterl. —and *Tin* Pieces, 80 of which are equal to the *Engliſh* Penny, current in the Iſles of *Sumatra*.—The *Gold Coin* of the King of *Macaſſar* and *Celebes*, is taken by the *Dutch* for a Florin.—The King of *Camboya* ſtrikes only Pieces of *Silver* and *Copper*: his Gold, wherein he abounds, is negotiated by weight.— The Kings of *Java* and *Bantam*, in the ſame Iſland, and thoſe of the *Molucca* Iſlands, ſtrike only *Copper Coins*: they allow foreign *Silver* Species to be current in their Territories, but coin none.

	s.	*d.* Sterl.
Roupia, ſee Coins *of the Coaſts*, &c. *of* India.		
Mamouds, or Mammed, its value is not fix'd: In the Kingdom of *Mazarate*, the great Mamoud is equal to ——	0	11
The ſmall half the great one ——	0	$5\frac{1}{2}$
Pecha, ſee Coins *of the Iſles*, &c. *of* India.		
Silver Piece of *Matoucha*, ——	0	$0\frac{1}{2}$
Silver Piece of the K. of *Ogden*, ——	0	6
Copper Piece of the ſame ——	0	$0\frac{1}{2}$
Cheda, ſee Coins *of the Iſles*, &c. *of* India.		
Gold Piece of the King of *Achem*, ——	1	3
Tin Piece of the ſame ——	0	$0\frac{1}{80}$
Gold Piece of the King of *Macaſſar*, taken by the *Dutch* for a Guilder, ——	1	$10\frac{1}{2}$

To the Number of current *Coins* which have diſtinct Names to ſpecify 'em, may be added many more, both in *Europe* and *Aſia*; only denominated and known from their Value: Such are thoſe called ſimply *Pieces*; with the Addition of their Price: as in *Spain*, the Piece of eight Reals, in *England* the Piece of 21 Shillings, or Guinea; in *France* the Piece of 4 Francs, Piece of 10 Sols, or Shillings; Piece of 4 Sols; Piece of 2 Sols; of 6 Blanks; of 30, 15, 6, 4, *&c.* Deniers, or Pence. See Piece.

Shells current in Aſia.

Theſe ſerve in many Places for Money; and are brought from the *Maldives*, and called in the *Indies* Cauris: On the Coaſts of *Africa* they change their Name, and are called Bouges.

In *America* they take a third Name, *viz.* Porcelains. Indeed theſe laſt don't come from the *Maldives*; there being Shells found in the *Weſt-Indies* much like thoſe of the *Eaſt*.

In the Kingdom of *Congo* is another Kind of Shells, called Zimbi; tho ſome will have them the ſame with the Cauris.

Cauris, Coris, or Bouges, are white Shells, current particularly in the State of the Great *Mogul*; dug out of the Ground by the *Maldivians*: 65 are uſually reckon'd equivalent to the Pecha, a ſmall *Copper Coin*, worth about an Halfpenny Sterling; which brings each Cauris to $\frac{1}{130}$ of a Penny Sterling.

Purcelaines are nearly on the ſame Footing with the Cauris. See Cauris.

Zimbi, current particularly in the Kingdoms of *Angola* and *Congo*. Two thouſand Zimbis make what the *Negroes* call a Macoute; which is no real Money, whereof there is none in this Part of *Africa*, but a manner of reckoning: Thus, two *Flemiſh* Knives they eſteem a Macoute; a Copper Baſon, two Pound weight, and 12 Inches Diameter, three Macoutes; a Fuſil ten, *&c.*

Fruits current for Coins.

There are three Kinds of Fruits uſed for *Coins*; two in *America*, particularly among the *Mexicans*; which are the Cacao and Maiſe: The other in the *Eaſt-Indies*, *viz.* Almonds; brought thither from *Lar*, and growing in the Deſarts of *Arabia*.

Cacao, 15 of theſe are eſteem'd equivalent to a *Spaniſh* Real, or 7 Pence Sterling.

Maiſe has ceas'd to be a common Money ſince the Diſcovery of *America* by the *Europeans*.

Almonds are chiefly uſed where the Cauris are not current. As the Year proves more or leſs favourable to this Fruit, the Value of the Money is higher or lower: In a common Year, 40 Almonds are ſet againſt a Peſcha, or Halfpenny Sterling; which brings each Almond to $\frac{1}{240}$ of a Farthing.

Thus much for the Modern Coins, *or* Monies: *Thoſe of the Antients are as follow.*

Antient Coins.

Value and Proportion of the Jewiſh Coins.

					l.	*s.*	*d.* Sterl.
Gerah					00	00	$1\frac{59}{160}$
10	Bekah				00	01	$1\frac{11}{16}$
20	2	Shekel			00	02	$3\frac{3}{8}$
1200	120	60	Maneh Minah Hebraica		06	16	$10\frac{1}{2}$
60000	6000	3000	50	Talent	342	03	09
Solidus Aureus, or Sextula, worth					00	12	$0\frac{1}{2}$
Siclus Aureus, worth					1	16	6
A Talent of Gold, worth					5475	00	0

Value and Proportion of the antient Grecian Coins.

								s.	*d.*	*qrs.* Sterl.
Lepton								0	0	$0\frac{31}{336}$
7	Chalcus							0	0	$0\frac{31}{48}$
14	2	Dichalcus						0	0	$1\frac{7}{24}$
28	4	2	Hemiobolium					0	0	$2\frac{7}{12}$
56	8	4	2	Obolus				0	1	$1\frac{1}{6}$
112	16	8	4	2	Diabolum			0	2	$2\frac{1}{3}$
224	32	16	8	4	2	Tetrobolum		0	5	$0\frac{2}{3}$
336	48	24	12	6	3	$1\frac{1}{2}$	Drachma	0	7	3
662	96	48	24	12	6	3	2	Didrachmum	1	3	2
1324	112	96	48	24	12	6	4	2	Tetradrachm. Stater	2	7	0
1660	384	120	60	30	15	$7\frac{1}{2}$	5	$2\frac{3}{4}$	$1\frac{1}{4}$ Pentadrachmum	3	2	3

Note, Of theſe the Drachma, Didrachm, *&c.* were of *Silver*, the reſt for the moſt part of *Braſs*. The other Parts, as Tridrachm, Triobolus, *&c.* were ſometimes *coin'd*.

Note alſo, the Drachma is here, with the generality of Authors, ſuppos'd equal to the Denarius: tho there's Reaſon to believe, the Drachma was ſomewhat the weightier. See Drachma.

	l.	*s.*	*d.*
The *Grecian Gold Coin* was the Stater Aureus, weighing two *Attick* Drachms, or half of the Stater Argenteus; and exchanging uſually for 25 *Attic* Drachms of *Silver*; in our Money	0	16	$1\frac{3}{4}$
According to our Proportion of *Gold* to *Silver*	1	00	9
There were likewiſe the Stater Cyzicenus, exchanging for 28 *Attick* Drachms, or Stater Philippicus, and Stater Alexandrinus, of the ſame Value.	0	18	1
Stater Daricus, according to *Joſephus*, worth 50 *Attick* Drachms, or Stater Cræſius, of the ſame Value.	1	12	$3\frac{1}{2}$

Value and Proportion of the Roman Coins.

						s.	*d.*	*qrs.* Sterl.
Teruncius						0	0	$0\frac{775}{1000}$
2	Semilibella					0	0	$1\frac{55}{100}$
4	2	Libella As				0	0	$3\frac{1}{10}$
10	5	$2\frac{1}{2}$	Seſtertius			0	1	$3\frac{3}{4}$
20	10	5	2	Quinarius Victoriatus		0	3	$3\frac{1}{2}$
40	20	10	4	2	Denarius	0	7	3

Note, Of theſe the Denarius, Victoriatus, Seſtertius, and ſometimes the As, were of *Silver*, the reſt of *Braſs*.

There were ſometimes alſo *coin'd* of *Braſs* the Triens, Sextans, Uncia, Sextula, and Dupondius.

	l.	*s.*	*d.*
The *Roman Gold Coin* was the Aureus, which weigh'd generally double the Denarius; the Value of which, according to the firſt Proportion of *Coinage* mention'd by *Pliny*, was	1	4	$3\frac{3}{4}$
According to the Proportion that obtains now amongſt us, worth	1	0	9
According to the Decuple Proportion, mention'd by *Livy* and *Julius Pollux*, worth	0	12	11
According to the Proportion mention'd by *Tacitus*, and which afterwards obtain'd, whereby the Aureus exchang'd for 25 Denarii, its Value	0	16	$1\frac{3}{4}$

Coin, in Architecture, a kind of Die, cut diagonal-wiſe, after the manner of the Flight of a Staircaſe; ſerving at bottom to ſupport Columns in a Level; and at top to correct the Inclination of an Entablature, ſupporting a Vault.

Theſe *Coins* have alſo the ſame effect with round Baluſters, which are not inclined according to any Flight.

Coin is alſo us'd for a *Coiner*, or ſolid Angle, compos'd of two Surfaces inclined towards each other; whether that Angle be exterior, as the *Coin* of a Wall, a Tree, *&c.* or interior, as the *Coin* of a Chamber, or Chimney: from the Word *Cuneus*, Wedge. See Quoin.

COINAGE, or *Coining*, the Art or Act of manufacturing, or making Money. See Money.

COINING, is either performed by the Hammer or the Mill.

The firſt Method is now little uſed in *Europe*, eſpecially in *England*, *France*, *&c.* tho the only one known till the Year 1553, when a new Machine, or *coining* Mill, having been invented by an Engraver, one *Antoine Brucher*, was firſt try'd in the *French* King's Palace at *Paris*, for the *coining* of Counters. Tho ſome attribute the Invention of the Mill to *Varin*, a famous Engraver, who, in reality, was no more than an Improver of it; and others to *Aubry Olivier*, who had only the Inſpection of it.

The Mill has met with various Fate ſince its firſt Invention; being now us'd, and again laid by, and the Hammer reſum'd: but it has at length got that footing, by the Neatneſs and Perfection of the Species ſtruck with it, that there appears no probability of its being again diſus'd. See Mill.

In either kind of *coining*, the pieces of Metal are ſtamp'd, or ſtruck with a kind of Molds, or *Coins*, wherein are engraven the Prince's Effigies, with the Arms, Legend, *&c.* The manner of preparing and cutting of which, ſee under Graving.

The firſt Operations in *coining* are the mixing, and melting of the Metal.

For the 1ſt, it is to be obſerv'd, that there are no Species *coin'd* of pure *Gold* or *Silver*, but always a quantity of Alloy of *Copper* is mix'd with them: The Reaſons are partly the Scarcity of thoſe two Metals, partly the Neceſſity of making them harder by ſome foreign Admixture; and partly to defray the Expences of *coining*. See Alloy.

Now there are two Kinds of alloying, or mixing: the firſt where the Gold or Silver has not been uſed for Money before; the other where ſeveral Kinds of Species, or Ingots of different Titles and Values, are to be melted down into a new Money.

The proportioning of the Alloy with the fine Metal is eaſy in the firſt Caſe, in the other more difficult: The Arithmeticians make a long Doctrine of it, which ſee under Alligation.

Yet is it readily effected by the following Method, taken from the anonymous Author of the Treatiſe at the End of that of Mr. *Boiſard*, *viz.*

Write down the ſeveral Matters to be melted, their Quality, Weight, and Fineneſs, in two diſtinct Articles; the one containing thoſe above the Standard, the other thoſe under it: By calculating the firſt, you ſhall have the Exceſs, by the latter the Defect. Then comparing the two Products, you will find, by Subtraction, how much Alloy muſt be added to bring the ſeveral Matters to the Fineneſs requir'd.

For the melting, if the Metal be *Gold*, 'tis done in Earthen Crucibles; if *Silver* or *Copper*, in Iron ones. See Crucible.

There are two Kinds of Furnaces proper for the melting of Metals; thoſe with Wind, and thoſe with Bellows: See each explain'd under the Article Furnace.

When the Gold or Silver are *in Balneo*, *i. e.* are entirely melted, they are ſtirr'd and brew'd together; the Silver and Copper with an Iron Stirrer, the Gold with one of bak'd Earth. In this State they are pour'd into Molds, or Frames, for the caſting 'em into Plates, or Sheets: the Method of doing which, is exactly the ſame with that us'd by the Founders, in Sand; both with regard to the Frames, the manner of working the Earth, and of ranging the Models or Patterns. See Foundry; ſee alſo Frame, and Mould.

The Models are flat Plates of Copper, about 15 Inches long, and nearly of the thickneſs of the Species to be ſtruck. In each Mold are placed eight of theſe to make Plates for Guineas, ten for Half Guineas, five for Crowns, *&c.* and in proportion for Copper. All the difference between caſting the Plates of Gold, and thoſe of other Metals conſiſting in this; that the latter are taken out of the Crucibles with Ladles, and pour'd into the Aperture of the Mold; and that for Gold, the Crucible is taken off the Fire with a kind of Tongs, and thence pour'd into the Mold.

Thus far the Proceſs is the ſame, in *coining* either with the Mill or the Hammer: When the Plates are taken out of the Molds the difference commences: ſo that here the Article of *Coining* divides into two Branches.

Coining *by the Mill, or Mill'd Money.*

The Plates being taken out of the Molds, ſcraped, and bruſh'd, are paſs'd ſeveral times thro' the Mill, to flatten 'em,

'em, and bring them to the juſt thickneſs of the Species to be coin'd; with this difference, however, that the Plates of Gold are heated again in a Furnace, and quench'd in Water, before they undergo the Mill; which ſoftens, and renders 'em the more ductile: whereas thoſe of Silver paſs the Mill juſt as they are, without any heating; and when afterwards they are heated, they are left to cool again of themſelves, without Water. See MILL.

The Plates, whether Gold, Silver, or Copper, thus reduc'd as near as poſſible to their thickneſs, are cut into round Pieces, or Planchets, near the Size of the intended Species, with a cutting Inſtrument faſten'd to the lower Extremity of an Arbor, whoſe upper end is form'd into a Screw; which being turn'd by an Iron Handle, turns the Arbor, and lets the Steel, well ſharpen'd, in form of a Punch-cutter, fall on the Plates; and thus is a piece punch'd out. See this Inſtrument repreſented in Tab. *Miſcellany*, Fig. 3.

Theſe Pieces are now given to be adjuſted, and brought by filing, or raſping, to the Weight of the Standard whereby they are to be regulated; and what remains of the Plate between the Circles is melted again.

The Pieces are adjuſted in a fine Balance; and thoſe which prove too light are ſeparated from thoſe too heavy; the firſt to be melted again, and the ſecond to be filed down. For it may be obſerv'd, that the Mill thro' which the Plates are paſs'd can never be ſo juſt, but there will be ſome inequality, whence will ariſe a difference in the Planchets. This inequality, indeed, may be owing to the Quality of the Matter, as well as of the Machine; ſome Parts being more porous than others.

When the Planchets are adjuſted, they are carried to the blanching, or whitening Houſe, *i. e.* the Place where the Gold Planchets have their Colour given them, and the Silver ones are whiten'd; which is done by heating 'em in the Furnace, and when taken out and cool'd, boiling 'em ſucceſſively in two Copper Veſſels, with Water, common Salt, and Tartar; and after ſcowring 'em well with Sand, and waſhing 'em with common Water, drying 'em over a Wood Fire, in a Copper Sieve; wherein they are put when taken out of the Boilers.

The whitening, or blanching was formerly perform'd very differently from what it now is: And as the antient Method is ſtill in uſe among Goldſmiths, and other Workmen who uſe Gold and Silver, we have made a diſtinct Article of it. See BLANCHING.

Formerly, the Planchets, as ſoon as blanch'd, were carry'd to the Preſs, to be ſtruck and receive their Impreſſions; but now they are firſt mark'd with a Legend, or Engine, on the Edges, to prevent the clipping and paring of the Species; which is one of the ways wherein the antient Money us'd to be damag'd.

The Machine uſed to mark the Edges is very ſimple, yet ingenious; it conſiſts of two Plates of Steel, in form of Rulers, about the thickneſs of a Line, on which the Legend or Edging are engraven, half on the one, and half on the other. One of theſe Plates is immoveable, and ſtrongly bound with Screws to a Copper Plate; and that again to a ſtrong Board, or Table: The other is movable, and ſlides on the Copper Plate, by means of a Handle, and a Wheel, or Pinion of Iron; the Teeth whereof catch in a kind of other Teeth, on the Surface of the ſliding Plate. Now, the Planchet being plac'd horizontally between theſe two Plates, is carried along by the Motion of the movable one; ſo, as by that time it has made half a turn, it is found mark'd all round.

This Machine is ſo eaſy, that a ſingle Man is able to mark twenty thouſand Planchets in a Day: It was invented by the Sieur *Caſtaing*, Engineer to the *French* King, and firſt us'd in 1685.

Laſtly, the Planchets being thus edg'd, are ſtamp'd, *i. e.* their Impreſſion given them in a Balancier, or Preſs; which is a Machine invented at the latter end of the XVIth Century: See its Figure in Tab. *Miſcellany*, Fig. 4.

Its chief Parts are a Beam, Screw, Arbor, *&c.* all contain'd in the Body of the Machine, except the firſt, which is a long Iron Bar, with a heavy Ball of Lead at each end, and Rings, to which are faſten'd Cords which give it Motion: it is placed horizontally over the Body of the Machine. In the middle of the Beam is faſten'd a Screw, which by turning the Beam, ſerves to preſs the Arbor underneath it; to the lower Extremity of which Arbor, placed perpendicularly, is faſten'd the Matrice, or *Coin* of the Reverſe, or Arms ſide, in a kind of Box, or Caſe, wherein it is retain'd by Screws: and under this is a Box, or Caſe containing the Matrice of the Image ſide, firmly faſten'd to the lower Part of the Balancier. See MATRICE, *&c.*

Now when a Planchet is to be ſtamp'd, 'tis laid on the Image Matrice, upon which two Men draw, each on his ſide, one of the Ropes of the Beam, and turn the Screw faſten'd in it; which by this Motion lowers the Arbor, to which the Matrice of the Arms is faſten'd: by which means, the Metal being in the middle, at once receives an Impreſſion on each ſide, from either Matrice. As to the Preſs, formerly us'd, it has all the eſſential Parts of a *Balancier*, except the Beam; which is here, as it were, divided, and only drawn one way. See ENGRAVING.

The Planchets having now all their Marks and Impreſſions, both on the Edges and Faces, become Money; but have not currency till they have been weigh'd and examin'd.

For the COINING *of Medals*, the Proceſs is the ſame, in effect, with that of Money: The principal difference conſiſts in this, that Money having but a ſmall Relievo, receives its Impreſſion at a ſingle Stroke; whereas, for Medals, the height of their Relievo makes it neceſſary that the Stroke be repeated ſeveral times: To this End, the Piece is taken out from between the *Coins*, heated, and return'd again; which proceſs, in Medallions, and large Medals, is ſometimes repeated 15 or 20 times, ere the full Impreſſion be given; care being taken every time the Planchet is remov'd, to take off the ſuperfluous Metal ſtretch'd beyond the Circumference, with a File. See MEDAL.

Add to this, that Medallions, and Medals of high Relievo, by reaſon of the Difficulty of ſtamping 'em in the Balancier, or Preſs, are uſually firſt caſt or molded in Sand, like other works of that kind, and are only put in the Balancier to perfect them; by reaſon the Sand does not leave 'em clean, ſmooth, and accurate enough. Medals, therefore, receive their Form and Impreſſion by degrees; Money all at once.

The Rule whereby they judge the Medal to be ſufficiently ſtamp'd; is, when feeling it with the Hand, 'tis found firm, and not to be ſhaken, as filling the *Coin* equally every where. See MEDALLION, *&c.*

COINING *with the Hammer, or hammer'd Money.*

In this Method of making Money, the Plates of Gold, Silver, or Copper being taken out of the Molds, or Frames, as above, are heated and ſtretch'd by beating 'em on the Anvil: when ſufficiently beaten, they are cut into Pieces; which being again heated, flatted, and further ſtretch'd with the Hammer, are adjuſted by cutting off the Angles with Sheers: thus by cutting and rounding them, they are reduc'd to the Weight of the Standard; and their roundneſs finiſh'd with another Hammer, which beats down all the Points and Angles ſtill remaining on the Edges. In this manner they are brought to the Size of the Species to be *coin'd*.

In this ſtate the Pieces become Planchets, and are carried to the Blanching-Houſe; where they undergo the ſame Preparation as the *mill'd* Money already deſcrib'd, and are given to the Minter to beat 'em with the Hammer.

For this laſt Operation, which finiſhes the Money, they uſe two Puncheons, or Matrices; the one called the *Pile*, and the other the Truſs, or *Quiver*; each engraven dent-wiſe. The Pile bearing the Arms, and the Truſs the Image, or Croſs; both their Legend, Date, *&c.*

The Pile, which is about eight Inches high, has a kind of Talon, or Heel in the middle, and ends in a Point: Which Figure it had, for the ſake of being more eaſily ſunk, and more firmly faſten'd to the Block whereon the Money is ſtruck. See PILE, *&c.*

The Minter, then, laying the Planchet horizontally on the Pile, and covering it with the Truſs, which he holds ſteadily in his left Hand, gives ſeveral ſmart Blows on the Truſs with an Iron Mallet held in the right; more or leſs, as the Graving of the *Coins* is more or leſs deep. If after theſe firſt Strokes, the Planchet ben't ſufficiently ſtamp'd, 'tis return'd again between the Matrices, exactly in its former Poſition, and the Strokes repeated till the Impreſſion be perfect.

Thus is the *Coinage* finiſh'd, and the Planchets converted into Money; which, after they have been examin'd as to their weight, become current.

Engliſh COINAGE.

Since the Invention of *milling* Money in *France*, it has been imitated by ſeveral other Nations; but by none with Succeſs equal to that of the *Engliſh*, who have carried it to the utmoſt Perfection; both by the Beauty of their Graving, and by their inventing the Impreſſions on the Edges, that admirable Expedient for preventing the Alteration of the Species, abovemention'd.

Till that time the *Engliſh* Money was ſtruck with the Hammer, as that of other Nations; and, in effect, 'tis but very late, *viz.* in the Reign of K. *William* III. that the *hammer'd* Species ceas'd to be current. Ere they were put down, the *Engliſh* Money was in a woful Condition; having been filed and clipp'd by Foreigners, eſpecially the *Dutch*, ſo as to be ſcarce left of half its Value: The retrieving of this diſtreſs'd State of the *Engliſh* Money, is look'd on as one of the Glories of King *William*'s Reign; for which we are owing, in good meaſure, to the happy Conduct of the late Earl of *Halliſax*.

The *Coinage* of *England* is now perform'd wholly in the *Tower* of *London*; where there is a Corporation under the Title of the *Mint*. See MINT.

Formerly there were here, as there are ſtill in other Countries, what we call the *Rights of Seignorage and Braſſage*; but ſince the XVIIIth Year of K. *Charles* II. there

is nothing taken, either for the King, or for the Expences of *Coining*; it having been ſettled by Act of Parliament, that all Money ſhould be ſtruck at the publick Expence: ſo that Weight is return'd for Weight, to all Perſons who carry their Gold or Silver to the *Tower*. See SEIGNORAGE.

The Species *coin'd* in *England*, are eſteem'd contraband Goods, and not to be exported: All foreign Species are allow'd by Act of Parliament, made in 1673, to be ſent out of the Realm; as well as Gold and Silver in Bars, Ingots, Duſt, &c. Indeed, in the Seſſion of Parliament in 1718, Endeavours were made to put a ſtop to this Licenſe, which drains *England* of its richeſt Metals; but in vain; the Parliament having ſet aſide the Bill, without coming to any Reſolution.

The Spaniſh COINAGE is eſteem'd one of the leaſt perfect in *Europe*: It is ſettled at *Sevil* and *Segovia*, the only Cities where Gold and Silver are ſtruck. 'Tis true, there are brought from *Mexico*, *Peru*, and other Provinces of the *Spaniſh America*, ſuch vaſt Quantities of Pieces of Eight, and other Species, both of Gold and Silver, that, in this reſpect, it muſt be own'd, there is no State in the World where ſo much Money is *coin'd*, as in that of the King of *Spain*.

Muſcovite COINAGE. The Czar ſtrikes no Money but *Silver*, and that only in the Cities of *Moſco*, *Novogrod*, *Twere*, and *Pleſcou*; to which may be now added *Petersburg*, the favourite City of his Czarian Majeſty. The *Coinage* of each of theſe Cities is let out to farm, and makes part of the Royal Revenue.

Perſian COINAGE. All the Money made in *Perſia*, is ſtruck with the Hammer: and the ſame may be underſtood of the reſt of *Aſia* and *America*, and the Coaſts of *Africa*, and even *Muſcovy*; the Invention of the Mill being not yet got out of *Europe*, nor even eſtabliſh'd in every Part of it. The King's Duty, in *Perſia*, is ſeven and a half *per Cent.* for all the Monies *coin'd*; which are now reduced to *Silver* and *Copper*: there being no *Gold* coin'd there, except a kind of Medals at the Acceſſion of a new Sophi.

The COINAGE *of Fez and Tunis* is not under any Diſcipline; each Goldſmith, Jew, and even private Perſon, undertaking it at pleaſure: which renders their Money exceeding bad, and their Commerce very unſafe.

COITION, the Intercourſe between Male and Female in the Act of Generation. See GENERATION.

It is obſerv'd, that Frogs are 40 Days in the Act of *Coition*. *Bartholine*, &c. relate, that Butterflies make 130 Vibrations of the Wings in *Coition*.

COITION is alſo ſometimes uſed for that mutual Attraction, or Tendency toward each other, which is found between Iron and the Magnet. See MAGNET.

COLARBASIANS, a Sect of Hereticks in the IId Century; ſo called from their Leader *Colarbaſus*, a Diſciple of *Valentine*: who, with *Marcus*, another Diſciple of the ſame Maſter, maintain'd the whole Plenitude, and Perfection of Truth and Religion, to be contain'd in the *Greek* Alphabet; and that 'twas upon this account Jeſus Chriſt was called the *Alpha* and *Omega*.

COLARIN, in Architecture, the little Friſe of the Capital of the *Tuſcan* and *Doric* Column; plac'd between the Aſtragal, and the Annulets: called by *Vitruvius*, *Hypotrachelium*. See FRIZE, &c.

COLARIN is alſo uſed for the Orlo, or Ring, a-top of the Shaft of the Column, next the Capital; called alſo *Cincture*. See CINCTURE.

COLATURE, in Pharmacy, the Separation of a Liquor from ſome Mixture, or Impurity, by *percolating*, or ſtraining it thro' the narrow Pores of a Cloth, or other Matter; which will give paſſage to the fine, and pure Part, but intercept the groſſer. See PERCOLATION, and FILTRATION.

COLCOTHAR, in Natural Hiſtory, &c. There are two Kinds of *Colcothar*, *Natural* and *Factitious*.

The *Natural* is otherwiſe called *Chalcitis*; being a red Vitriol, brought from *Germany*; form'd from the common green Vitriol, calcin'd naturally by ſome ſubterraneous Fire. See CHALCITIS.

The *Artificial* is alſo a green Vitriol, calcin'd a long time by an intenſe Fire; and by that means reduc'd to the redneſs of Blood.

COLCOTHAR *Vitrioli*, is particularly us'd for the Dregs, or Remains, left at the Bottom of the Veſſel, after the Diſtillation of Vitriol. See VITRIOL.

COLD, ſomething devoid of Heat, or which contains in it no Particles of Fire. See FIRE.

This Definition is agreeable to the Sentiments of moſt of the modern Philoſophers, who make *Cold* a mere negative Term; and ſuppoſe the Thing to conſiſt in a mere Privation, or Diminution of Heat.

Others define *Cold*, much on the ſame Principle, to be that State of the minute Parts of a Body, wherein they are more ſlowly and faintly agitated than thoſe of the Organs of Feeling: In which Senſe, *Cold* is a mere Term of Relation; and hence the ſame Body becomes liable to be perceiv'd *hot* or *cold*, as its Particles are in a greater or leſs degree of Motion than thoſe of the ſenſible Organs. See SENSE, FEELING, &c.

Heat is ſuppos'd to conſiſt in a particular Motion of the Parts of the *hot* Body; and hence the Nature of *Cold*, which is its oppoſite, is eaſily deducible: For *Cold*, we find, extinguiſhes, or rather abates Heat; whence it ſeems to follow, that thoſe Bodies are *cold*, which check and reſtrain the Motion of the Particles wherein Heat conſiſts. See HEAT.

Now, there are three Kinds of Bodies which may do this, *viz.* either thoſe whoſe Particles are perfectly at reſt; or thoſe whoſe Particles are indeed agitated, but leſs violently than thoſe of the hot Body to which they are applied: or, laſtly, thoſe whoſe Particles have a Motion proper for exciting the Senſation of *Heat*, but move with a different Determination; ſo as to retain and change the Motion of the Particles of the Organ.

Hence, there ariſe three different Kinds of *Cold*, or *cold Bodies*: The 1ſt is, that *Cold* common to all hard Bodies, which conſiſts in the Reſt of their Parts. The 2d is that which ariſes on plunging any Part of the Body in Water; which conſiſts in this, that the Parts of our *Præcordia* being more briſkly agitated than thoſe of the Fluid, communicate part of their Motion to it. The 3d, the *Cold* felt on collecting even warm Air with a Fan, or in blowing hot Breath out of our Mouth, with the Lips cloſe ſhut; which conſiſts in this, that the direct Motion of the Particles of Air, do in ſome meaſure change and rebate the Motion and Determination of the Parts of the Body: And hence it is, that a *cold* Body cannot cool another without heating it ſelf. Hence alſo it is, that the more Parts of a frigid Body are at reſt, the more muſt the Particles of a warm Body applied to heat 'em, loſe of their Motion, and by conſequence of their Heat. Thus a Marble having more quieſcent Parts than Wood, which is full of Pores and Interſtices, is felt *colder* than Wood. Hence alſo we ſee why Air, near Marble and other denſe Bodies, feels ſomewhat *colder* than in other Places.

On this Principle, the two latter Kinds of *Cold* appear ſomewhat more than Privations: The Particles inducing the *Cold*, may be eſteem'd real frigorific Corpuſcles; and *Coldneſs* be deem'd a real Quality as well as Hotneſs. See QUALITY, FRIGORIFIC, &c.

Theſe Particles do not only check the Agitation of thoſe continually diffus'd from the inner Parts of the Animal to the outer; but, having an elaſtick Power, bend and hang about the Filaments of the Body, pinch and ſqueeze them; and hence that acute pungent Senſation called *Cold*.

That *Cold* is more than a mere Relation, or Compariſon, is evident from its having real and poſitive Effects; ſuch as Freezing, Congelation, Condenſation, Rarefaction, Burſting, &c. See FREEZING, &c.

Dr. *Clark* takes *Cold* to be owing to certain nitrous, and other ſaline Particles, endued with particular Figures proper to produce ſuch Effects. Hence, Sal Ammoniac, Salt Petre, or Salt of Urine, and many other volatile and alkalizate Salts, mix'd with Water, increaſe its degree of *cold* very ſenſibly. Hence alſo that popular Obſervation, that *Cold* prevents Corruption; which, however, muſt not be admitted without an Exception: ſince, if a hard, porous Body have its Interſtices fill'd with Water, and this be too much dilated by freezing, the including Body will be burſt. And thus it is, that *Cold* proves deſtructive to the Parts of ſome Plants. See ICE, FROST, CONDENSATION, RAREFACTION, &c.

COLIC, in Medicine, a cruel, ſevere, gnawing Pain, felt in the lower Venter; ſo called, becauſe the ordinary Seat of the Diſorder, was antiently ſuppos'd to be in the Inteſtine *Colon*.

Phyſicians uſually diſtinguiſh three Kinds of *Colic*, the *Bilious*, *Windy*, and *Nephritic*.

The *bilious Colic* has its riſe from certain ſharp, bilious, ſtimulating Humours, which being diffus'd thro' the Inteſtines, vellicate their Fibres, and occaſion a Senſation of Pain. Tho *Willis* takes the Part principally affected to be the Meſentery.

Dr. *Sydenham* obſerves, that the *bilious Colic* uſually attacks about the beginning of Summer; that it's generally attended with a Vomiting of bilious green Liquor; that the Patient complains of exceſſive Heat, great Gripings, Faintneſs, &c. and that if it be not ſoon remedy'd, it is apt to turn into the Iliac Paſſion. See ILIAC *Paſſion*.

Baglivi notes, that if the Patient ſweat much, and be much enfeebled; the Diſeaſe is apt to degenerate into a Palſy. The Cure, he ſays, depends on Bleeding, gentle Cathartics, and Enemas; and if it ariſe from a *Crapula*, an Emetic is to precede: after which, the Cure is to be compleated with proper Anodynes.

The *Wind Colic* is vagabond, never ſtaying in any fixed Place; being produc'd by windy Vapours, which ſwell and diſtend the Inteſtines they are incloſ'd in.

The *Nephritic Colic* is felt particularly in the Reins, whence it has its Name; the *Greek* νεφρὸς ſignifying *Rein*. See NEPHRITIC.

It uſually has its riſe from ſome Stone, or Gravel detach'd from the Kidnies, and fallen into the Pelvis. The *Pareira Brava* is ſaid to be a Specific for *Nephritic Colics*. See PAREIRA BRAVA.

S. Manouchi, a *Venetian* Phyſician at the Court of the Great *Mogul*, gives the following Remedy as infallible in Nephritic Caſes: An Iron Ring, about an Inch and half in Diameter, and thick in proportion, is to be heated red-hot; then, laying the Patient on his Back, the red-hot Ring is to be apply'd to his Navel, ſo, as that the Navel be in the Centre of the Ring: The Patient will preſently feel the Pain, which will occaſion him to ſhrink back very ſuddenly; the ſudden Revulſion thus occaſion'd in the lower Venter, will in a little time diſſipate all his Pains. The ſame Author adds, that he can warrant the Succeſs of the Remedy.

In *Colics* ariſing from Flatulencies, Carminative Waters, Oils, Aromaticks, *&c.* are always to be added to the Compoſitions: And in *Nephritic Colics*, beſides Emollient Clyſters, Solutions of Manna, Cremor Tartari, *&c.* in Whey, *&c.* and proper oleaginous Mixtures, are to be exhibited to relax the Fibres; after which, proper Anodynes take place.

Some, particularly *Sydenham*, mention a *Nervous Colic*, moſtly incident to hyſteric and hypochondriac Perſons; but this appears only a Species of the *Windy Colic*.

Baglivi recommends Camomile as an Antidote againſt the *Colic*, from what Cauſe ſoever it ariſe. Where the Diſeaſe is obſtinate, much riding is of eſpecial Service.

COLIR, an Officer in *China*, who has an Eye over what paſſes in every Court, or Tribunal in the Empire; and tho himſelf not of the Number, yet is aſſiſting at all Aſſemblies, the Proceedings whereof are communicated to him.

He is properly what we may call an *Inſpector*: He gives ſecret Intelligences to the Court; and even, on occaſion, accuſes the Mandarins of their Faults openly; and that not only of Faults in their publick Offices, but even in their private Life. To keep him impartial, he is kept independent; by having the Poſt for Life. Theſe *Colirs* make even the Princes of the Blood tremble.

COLLAR, a particular Ornament, wore by the Knights of ſeveral Military Orders, hanging over their Shoulder, on the Mantle; and its Figure drawn around their Armories. See KNIGHT.

The *Collar* ordinarily conſiſts of a Chain of Gold, enamell'd; frequently ſet with Cyphers, or other Deviſes, and having the Badge of the Order ſuſpended at Bottom.

The *Collar* of the Order of the Garter, conſiſts of SS, with Roſes enamell'd red, within a Garter enamell'd blue, the *George* at the Bottom. See GARTER.

Maximilian is ſaid to have been the firſt of the Emperors who put the *Collar* of an Order around his Arms, upon his being made Chief of that of the Golden Fleece.

Knights of the COLLAR, a Military Order in the Republick of *Venice*; called alſo the *Order of St.* Mark, or *the Medal*.

'Tis the Doge and the Senate that confer this Order: The Knights bear no particular Habit, only the *Collar*, or Chain, which the Doge puts around the Neck; with a Medal, whereon is repreſented the winged Lion of the Republick.

COLLATERAL, in Geography, any Thing, Place, Country, *&c.* ſituate by the Side of another.

The Word is a Compound of *con*, with, and *latus*, ſide; and chiefly applied to the Winds, which blow a-ſide of thoſe in the Cardinal Points of the Horizon; as the North-Eaſt, South-Eaſt, North-Weſt, South-Weſt, and their Subdiviſions.

COLLATERAL *Points*, in Coſmography, the intermediate Points; or thoſe between the Cardinal Points. See CARDINAL *Points*.

The *Collateral Points* are either *Primary*, which are thoſe removed by an equal Angle on each ſide, from two Cardinal Points: or *Secondary*; which, again, are either thoſe of the firſt, or ſecond Order. The firſt, thoſe equally diſtant from a Cardinal and firſt Primary; the latter equally diſtant from ſome Cardinal or Primary, and firſt Secondary. See POINT.

COLLATERAL *Winds*, thoſe blowing from *Collateral* Points. See WIND.

COLLATERAL, in Matters of Genealogy, is underſtood of thoſe Relations which proceed from the ſame Stock, but not in the ſame Line of Aſcendants, or Deſcendants; but being, as it were, aſide of each other.

Thus, Uncles, Aunts, Nephews, Nieces, and Couſins, are *Collaterals*, or in the *Collateral* Line. Thoſe in a higher Degree, and nearer the common Root, repreſent a kind of Paternity with regard to thoſe more remote; but there is a kind of Equality between *Collaterals* in the ſame Degree.

Thus, *collateral* Deſcent ſtands in oppoſition to *direct* Deſcent to Poſterity; the former paſſing to Brothers Children, but the latter only from Father to Son.

COLLATERAL *Aſſurance*, is a Bond, made over, and beyond the Deed it ſelf, for the Performance of Covenants between Man and Man; thus called, as being external, and without the Nature and Eſſence of the Covenant.

Crompton ſays, that to be ſubject to the feeding of the King's Deer, is *collateral* to the Soil within the Foreſt. It may be added, that liberty to pitch Booths in a Fair, or another Man's Ground, is *collateral* to the Ground.

COLLATERALIS *Penis*, in Anatomy, a Muſcle, otherwiſe called *Errigens*, or *Erector Penis*. See ERECTOR.

COLLATION, in the Canon Law, the conferring, or beſtowing of a Benefice by a Biſhop, who has it in his own Gift, or Patronage. See BENEFICE, and PATRONAGE.

Collation differs from *Inſtitution*, in that the latter is perform'd by the Biſhop, at the Motion or Preſentation of another: (ſee INSTITUTION.) And the former on his own Motion.

Collation alſo differs from *Preſentation*, in that the latter is properly the Act of a Patron, offering his Clerk to the Biſhop, to be inſtituted into a Benefice; whereas the former is the Act of the Biſhop himſelf. See PRESENTATION.

The *Collator* can never confer a Benefice on himſelf.

In the *Romiſh* Church, the Pope is the *Collator* of all Benefices, even elective ones, by Prevention; ſetting aſide Conſiſtorial Benefices, and thoſe in the Nomination of Lay-Patrons. Prelates and Biſhops are call'd *Ordinaries*, or ordinary *Collators*. See ORDINARY, *&c.*

If the Ordinary *Collator* neglect to exerciſe his Right for ſix Months, the ſuperior *Collator* may *collate* by Devolution. Thus, if the Biſhop neglect, the Metropolitan may confer; then the Primate; and ſo on from degree to degree.

In *France*, the King is the *Collator* of all Benefices, whereof he is Patron, excepting Conſiſtorial ones; to which he has only the Nomination; and the Pope, by Virtue of the *Concordat*, is oblig'd to confer on whomſoever the King nominates. For the reſt, he is direct and abſolute *Collator*; and may confer 'em, by Virtue of a kind of Prieſthood annex'd to the Royalty.

Other Lay-Patrons have ſeldom more than a mere Preſentation; the *Collation* properly belonging to the Biſhop: yet there are Abbots who have the full Right of *Collation*.

The Canoniſts reckon two Kinds of *Collation*; the one *Free*, and Voluntary, the other *Neceſſary*. The firſt depending on the mere Will of the *Collator*, who may chuſe whom he pleaſes to fill the Vacancy. In the latter, the *Collator* is not at his liberty: which is the Caſe where a Benefice has been reſign'd, or chang'd, and that Reſignation or Permutation allow'd of by the Superior; for here the *Collator* is oblig'd to grant the Proviſion to the Reſignatory, or Compermutant.

'Tis a Maxim in the New Canon Law, *Collationes ſunt in fructibus*; 'Thoſe who have the Fruits of a Benefice have 'the *Collation*.' But in that Caſe, the Word *Collation* is us'd for Preſentation. See PRESENTATION, *&c.*

A *collated* Act is equivalent to an Original; provided all the Parties concern'd were preſent at the *Collation*.

COLLATION, in Common Law, is the Compariſon, or Preſentation of a Copy to its Original, to ſee whether or no it be conformable: or the Report, or Act of the Officer who made the Compariſon.

COLLATION is alſo uſed among the *Romaniſts* for the Meal or Repaſt made on a Faſt-Day, in lieu of a Supper. See FAST.

Fruits are not allow'd in a *Collation*: F. *Lobineau* obſerves, that antiently there was not allow'd, even, bread in the *Collations* in Lent; nor any thing beſide a few Confitures and dried Herbs, and Fruits: which Cuſtom, he adds, obtain'd till the Year 1513.

Cardinal *Humbart* obſerves further, that in the middle of the XIth Century, there were no *Collations* at all allow'd in the *Latin* Church in the time of Lent; and that the Cuſtom of *Collations* was borrow'd from the *Greeks*; who themſelves did not take it up till about the XIth Century. See LENT.

COLLATION is alſo popularly us'd for a Repaſt between Dinner and Supper.

The Word *Collation*, in this Senſe, *Du Cange* derives from *Collocutio*, Conference; and maintains, that originally, *Collation* was only a Conference, or Converſation on Subjects of Piety, held on Faſt-Days in Monaſteries; but that, by degrees, the Cuſtom was introduced of bringing in a few Refreſhments: and that by the Exceſſes to which thoſe ſober Repaſts were at length carried, the Name of the Abuſe was retain'd, but that of the Thing loſt.

COLLEAGUE, a Companion, Partner, or Aſſociate in the ſame Office, or Magiſtrature.

The Word is particularly us'd in ſpeaking of the *Roman* Conſuls, and Emperors.

COLLECT, or COLLECTION, a voluntary gathering of Money, for ſome pious, or charitable Purpoſe.

Some ſay, the Name *Collect*, or *Collection*, was uſed, by reaſon thoſe Gatherings were antiently made on the Days of *Collects*, and in *Collects*, *i. e.* in Aſſemblies of Chriſtians; but, more probably, *quia colligebatur pecunia*.

The Word is ſometimes alſo uſed for a Tax, or Impoſition, rais'd by a Prince for any pious Deſign. Thus, Hiſtories ſay, that in 1166, the King of *England*, coming into *Normandy*, ap-

appointed a *Collect* for the Relief of the Holy Land, at the Desire, and after the Example of the King of *France*.

COLLECT, in the Liturgy of the Church of *England*, and the Mass of the *Romanists*, a Prayer accommodated to any particular Day, Occasion, or the like. See LITURGY, and MASS.

In the general, all the Prayers in each Office are call'd *Collects*; either because the Priest speaks in the Name of the whole Assembly, whose Sentiments and Desires he sums up by the Word *Oremus*, Let us pray; as is observ'd by Pope *Innocent* III. or, because those Prayers are offer'd when the People are assembled together; which is the Opinion of *Pamelius* on *Tertullian*.

The Assembly it self is in some antient Authors called *Collect*. The Popes *Gelasius* and *Gregory* are said to have been the first who establish'd *Collects*. *Despense*, a Doctor of the Faculty of *Paris*, has an express Treatise on *Collects*, their Origin, Antiquity, Authors, *&c.*

COLLECTIVE, in Grammar, a Term applied to a Word that expresses a multitude; tho it self be singular.

Thus, Troop, Company, Army, are Nouns *Collective*.

COLLECTOR, a Person nominated by the Commissioners of any Duty, the Inhabitants of a Parish, or the like, to raise or gather any Tax, *&c.*

COLLEGATARY, in the Civil Law, a Person to whom is left a Legacy in common with one or more other Persons. See LEGACY.

If the Thing be bequeath'd *in solido*, the Portion of the deceased *Collegatory* accrues to the rest.

COLLEGE, an Assemblage of several Bodies, or Societies; or, even of several Persons into one Society. See SOCIETY.

The Term *College*, among the *Romans*, was used for an Assemblage of several Persons employ'd in the same Functions, and as it were bound together to act, or serve in concert. It serv'd indifferently for those employ'd in the Offices of Religion, of Government, the Liberal Arts, and even Mechanical Arts, or Trades: So that the Word properly signified what we call a *Corporation*, or *Company*. See CORPORATION.

In the *Roman* Empire, there were not only the *College of Augurs*, and the *College of Capitolini*, *i. e.* of those who had the Superintendence of the *Capitoline* Games; but also the *College* of Artificers, *Collegium Artificum*; the *College* of Carpenters, *Fabricorum*, or *Fabrorum Tignariorum*; of Potters, *Figulorum*; of Founders, *Ærariorum*; the *College* of Locksmiths, *Fabrorum Serrariorum*; of Engineers, for the Army, *Tignariorum*; of Butchers, *Laniorum*; of Dendrophori, *Dendrophorum*; of Centonaries, *Centonariorum*; of Makers of Military Casaques, *Sagariorum*; of Tent-makers, *Tabernaculariorum*; of Bakers, *Pistorum*; of Musicians, *Tibicinum*, &c.

Plutarch observes, that it was *Numa* who first divided the People into *Colleges*; which he did, to the End that each consulting the Interests of their *College*, whereby they were divided from the Citizens of the other *Colleges*, they might not enter into any general Conspiracy against the publick Repose.

Colleges were distinguish'd from other Societies, not form'd into *Colleges* by publick Authority, in this, that those who compos'd a *College* were qualify'd to treat of the common Interests of their *College*, which was, as it were, a Member of the State, and had a common Purse, an Agent to negotiate their Affairs, sent Deputies to the Magistrates when they wanted to treat with them; might make Statutes and By-Laws for the Administration of their *College*, &c. (See *Plutarch*, *Pliny*, *Cicero*, *Aul. Gellius*, the *Pandects*, *Code*, &c.)

There are various *Colleges* on foot among the Moderns, built on the Model of those of the Antients; as the *Three Colleges of the Empire*, viz. the *College of Electors*, *College of Princes*, and *College of Cities*, &c.

COLLEGE *of Electors*, is the Body of Electors, or their Deputies, assembled in the Diet at *Ratisbon*. See ELECTOR.

Antiently, the King of *Bohemia* had no Deputy in their *College*; at present he has. See DIET.

College of Princes, is the Body of Princes, or their Deputies, at the Diet of *Ratisbon*.

College of Cities, is, in like manner, the Body of Deputies which the several Imperial Cities send to the Diet.

COLLEGE *of Cardinals*, or the *Sacred* COLLEGE, is a Body compos'd of the three Orders of Cardinals, *viz.* Cardinal-Bishops, Cardinal-Priests, and Cardinal-Deacons. See CARDINAL.

Each Order has its Dean, or Chief. The Dean of the Cardinal-Bishops is always the Bishop of *Ostia*.

COLLEGE is also us'd for a publick Place, endow'd with certain Revenues; where the several Parts of Learning, both Divine and Human, are taught, in Schools, Halls, or Classes, appointed for that Purpose.

An Assemblage of several of these *Colleges* constitute an University. See UNIVERSITY.

The University of *Oxford* consists of 18 *Colleges*; that of *Cambridge* of 16; that of *Paris* of 50 *Colleges*.

The Erection of *Colleges* is part of the Royal Prerogative, and not to be done without the King's Consent.

Among the *Greeks*, the *Lyceum* and *Academy* were the celebrated *Colleges*; the latter of which has given its Name to our Universities, which in *Latin* are called *Academiæ*. With them, the House, or Apartment of each Philosopher, or Rhetor, might be esteem'd a kind of *College* of it self. See LYCEUM, and ACADEMY.

The *Romans* came late into the Institution of such *Colleges*: They had, however, several, founded by their Emperors; especially in *Gaul*; the chief whereof were those of *Marseilles*, *Lions*, *Besancon*, and *Bourdeaux*.

The *Jews*, and *Egyptians* too, have had their *Colleges*; the Chief of the first were those of *Jerusalem*, *Tiberias*, *Nardea*, *Pompodita*, *Sura*, and *Babylon*: this last is said to have been instituted by *Ezekiel*, and to have subsisted in the Time of *Mahomet*.

Colleges of this kind have been generally in the Hands of those consecrated to the Offices of Religion: The *Magi* in *Persia*, the *Gymnosophists* in the *Indies*, the *Druids* in *Gaul* and *Britain*, had the Care of educating Youth in the Sciences. After Christianity became establish'd, there were almost as many *Colleges* as Monasteries; *Charlemaign*, in his *Capitularies*, enjoining the Monks to instruct Youths in Musick, Grammar, and Arithmetick: But, this, calling the Monks from their Solitude, and taking up too much of their time, the Care of the *Colleges* was at length put into the Hands of those who had nothing else to do. See SCHOOL.

In the Canon Law, 'tis said, Three Persons make a *College*, *Tres Collegium faciunt*.

The *Colleges* in *London* are,

Sion-COLLEGE, or the *College* of the *London* Clergy; which has been a Religious House time out of Mind: sometimes under the Denomination of a Priory, or *College*; sometimes under that of a Spittal, or Hospital; as, at its Dissolution under 31 *Hen.* VIII. it was called *Elsyn's Spittle*, from the Name of its Founder, a Mercer, in 1329.

At present it is a Composition of both, *viz.* a *College* for the Clergy of *London*, who were incorporated in 1631, at the Request of Dr. *White*, under the Name of the *President and Fellows of* Sion COLLEGE; and an Hospital for ten poor Men, and as many Women. See HOSPITAL.

The Officers of the Corporation are the President, two Deans, and four Assistants; who are annually chosen from among the Rectors and Vicars of *London*; subject to the Visitation of the Bishop. They have a good Library, built and stock'd by Mr. *Simson*, chiefly for the Clergy of the City, without excluding other Students on certain Terms; and a Hall, with Chambers for Students, generally filled with the Ministers of the neighbouring Parishes.

COLLEGE *of Civilians*, commonly call'd *Doctors-Commons*; a *College* founded by Dr. *Harvey*, Dean of the Arches, for the Professors of the Civil Law residing in this City; where usually, likewise reside the Judge of the Arches Court of *Canterbury*, Judge of the Admiralty, of the Prerogative Court, *&c.* with other Civilians; who all live, as to Diet and Lodging, in a *Collegiate* manner, commoning together: whence the Appellation of *Doctors-Commons*.

Their House being consum'd in the great Fire, they all resided at *Exeter-House* in the *Strand*, till 1672; when their former House was rebuilt, at their own Expence, in a very splendid manner. To this *College* belong 34 Proctors; who make themselves Parties for their Clients, manage their Causes, *&c.* See PROCTOR.

COLLEGE *of Physicians*, a Corporation of Physicians, in *London*; who, by several Charters and Acts of Parliament of *Henry* VIII. and his Successors, have certain Privileges, whereby no Man, tho a Graduate in Physick of any University, may, without License under the said *College*-Seal, practise Physick, in, or within seven Miles of *London*; nor even in any other part of *England*, unless he have taken the Degree in one of our own Universities: with Power to administer Oaths, fine and imprison Offenders, in that and several other Particulars: to search the Apothecaries Shops, *&c.* in and about *London*, to see if their Drugs, *&c.* be wholesom, and their Compositions according to the Form prescrib'd by the said *College* in their Dispensatory.

By the said Charter they are also freed from all troublesom Offices; as to serve on Juries, be Constable, keep Watch, provide Arms, *&c.*

This Society had antiently a *College* in *Knightrider-street*, the Gift of Dr. *Linacre*, Physician to King *Henry* VIII. Since that, they have had a House built 'em by the famous Dr. *Harvey*, in 1652, at the end of *Amen-street*, which he endow'd with his whole Inheritance in his Lifetime; but this being burnt in the great Fire in 1666, a new one was erected at the Expence of the Fellows, in *Warwick Lane*; with a noble Library; given partly by the Marquis of *Dorchester*, and partly by Sir *Theodore Mayerne*.

Of this *College* there is a President, four Censors, and 12 Electors: The Censors have, by Charter, Power to survey, govern, and arrest all Physicians, or others practising Physick,

in,

in, or within ſeven Miles of *London*; to fine, amerce, and impriſon them at diſcretion.

The Number of Fellows was antiently 30, till King *Charles* II. increas'd their number to 40; and King *James* II. giving 'em a new Charter, allow'd the Number of Fellows to be enlarg'd, ſo as not to exceed fourſcore; reſerving to himſelf and Succeſſors, the Power of placing and diſplacing any of 'em for the future.

The *College* are not very rigorous in aſſerting their Privileges; there being a great Number of Phyſicians, ſome of very good Abilities, who practiſe in *London*, &c. without their Licenſe; and are conniv'd at by the *College*: yet, by Law, if any Perſon, not expreſly allow'd to practiſe, take on him the Cure of any Diſeaſe, and the Patient die under his hand, 'tis deem'd Felony in the Practicer.

In 1696, the *College* made a Subſcription, to the Number of 42 of their Members, to ſet on foot a Diſpenſatory, for the Relief of the ſick Poor: ſince that, they have erected two other Diſpenſatories. See DISPENSATORY.

Greſham COLLEGE, or COLLEGE *of Philoſophy*; a *College* founded by Sir *Tho. Greſham*, and endow'd with the Revenue of the *Royal-Exchange*: One Moiety of this Endowment the Founder bequeath'd to the Mayor, and Aldermen of *London*, and their Succeſſors, in truſt, that they ſhould find four able Perſons to read within the *College*, Divinity, Geometry, Aſtronomy, and Muſick; and to allow each, beſides Lodging, 50 Pounds *per Ann.*

The other Moiety he left to the Company of Mercers, to find three more able Perſons, to read Civil Law, Phyſick, and Rhetorick, on the ſame Terms; with this Limitation, that the ſeveral Lecturers ſhould read in Term-time, every Day in the Week, except Sundays; in the Morning in *Latin*, in the Afternoon the ſame in *Engliſh*: that in Muſick to be only read in *Engliſh*.

In this *College* formerly met the *Royal Society*, that noble Academy, inſtituted by K. *Charles* II. and celebrated thro'-out the World, for their Improvements in Natural Knowledge. *See their Hiſtory and Policy, under* SOCIETY.

COLLEGE *of Heralds*, or COLLEGE *of Arms*, a Corporation founded by Charter of King *Richard* III. who granted 'em ſeveral Privileges; as, to be free from Subſidies, Tolls, Offices, &c. See HERALD.

They had a ſecond Charter from King *Edward* VI. and a Houſe built near *Doctors-Commons*, by the Earl of *Derby*, in the Reign of King *Henry* VII. was given 'em by the Duke of *Norfolk*, in the Reign of Queen *Mary*; which Houſe is now rebuilt.

Of this *Collegiate* Society, are three Officers ſtiled *Kings of Arms*, *Reges Armorum Anglicorum*. See KING *at Arms*. Six Heralds. See HERALD. And four Purſuivants. See PURSUIVANT.

COLLEGES *of Common Law*. See INNS *of Court*, and *Chancery*.

COLLEGES *for diſabled Soldiers*, *Seamen*, &c. See HOSPITALS.

COLLEGIANS, a Religious Sect, form'd among the *Arminians* and *Anabaptiſts* in *Holland*; ſo called, becauſe of their *Colleges*, or Meetings the firſt Sunday in each Month; where every one has the ſame Liberty of expounding the Scripture, Praying, &c.

They are ſaid to be all either *Arians*, or *Socinians*: They never Communicate in the *College*, but meet twice a Year from all Parts of *Holland* at *Rinsbourgh*, a Village two Miles from *Leyden*, where they Communicate together; admitting every one that preſents himſelf, without regard to his Sect or Opinion. They have no particular Miniſters, but each officiates as he is diſpos'd. They never baptize without plunging.

COLLEGIATE, or COLLEGIAL *Churches*, are thoſe which have no Biſhop's See; yet have the antient Retinue of the Biſhop, the Canons and Prebends. See CHURCH, CANON, &c.

Such are, among us, *Weſtminſter*, *Rippon*, *Windſor*, &c.

Of theſe *Collegiate* Churches there are two Kinds; ſome of Royal Foundation, others of Eccleſiaſtical Foundation: each of them, in Matters of Divine Service, are regulated in the ſame manner as the Cathedrals. See CATHEDRAL.

There are even ſome *Collegiate* Churches which have the Epiſcopal Rights. Some of theſe Churches were antiently Abbies; which, in time, were ſeculariz'd. See ABBY.

The Church of *St. Peter's Weſtminſter* was antiently a Cathedral; but the Revenues of the Monaſtery being by Act of Parliament 1° *Eliz.* veſted in the Dean and Chapter, it commenc'd a *Collegiate* Church.

In ſeveral Cauſes, the ſtiling it *Cathedral*, inſtead of *Collegiate Church of Weſtminſter*, has occaſion'd Error in the Pleadings.

COLLETICS, in Medicine, ſuch Remedies as join, and glue together the ſeparated Parts, or Lips of a Wound, or Ulcer; in order to re-eſtabliſh 'em in their natural Union. See AGGLUTINANT, WOUND, &c.

Colleticks are more deſiccative than Sarcotics; but leſs ſo than Epulotics. See SARCOTICS, and EPULOTICS.

Among *Colletics* are rank'd Litharge, Aloes, Myrrh, &c.

The Word comes from the *Greek* κολλητικὸς, ſomething that has the Virtue of gluing together.

COLLIQUATION, in Pharmacy, the Action of melting together two, or more ſolid Subſtances; or rendring 'em liquid by Fuſion, or Diſſolution; as Wax, Mucilages, &c. by Heat; Gums, &c. by Moiſture. See FUSION, DISSOLUTION, &c.

COLLIQUATION is alſo us'd to expreſs ſuch a Temperament, and Diſpoſition of the Animal Fluids, as proceeds from a too lax Compages; whereby they flow off thro' the ſeveral Glands, and particularly thro' thoſe of the Skin, faſter than they ought; which occaſions Fluxes of many Kinds, but moſtly, profuſe greaſy, clammy Sweats.

If this *Colliquation* continue, it generally terminates in an Hectic Fever, and is uſually a Concomitant of one. See HECTIC.

The curative Intention in this Caſe, is the giving a better Conſiſtence to the Juices by Balſamicks and Agglutinants; and the hardening of the Solids by Subaſtringents. Hence,

COLLIQUATIVE *Fever*, is a Fever attended with a Diarrhæa, or profuſe Sweats, from too looſe a Contexture of the Fluids. See COLLIQUATION; ſee alſo FEVER.

COLLISEUM, or COLISEUM, in the antient Architecture, an oval Amphitheater, built at *Rome* by *Veſpaſian*, in the Place where ſtood the Pond of *Nero*'s gilded Houſe.

In this were ſeen Statues, repreſenting all the Provinces of the Empire; in the middle whereof ſtood that of *Rome*, holding a golden Apple in her Hand. The ſame Term, *Coliſeum*, is alſo given to another Amphitheatre of the Emperor *Severus*.

In theſe *Coliſea* were repreſented Games, and Combats of Men and wild Beaſts: There is now little remaining of either of them; Time and War having reduc'd 'em to Ruins. See AMPHITHEATRE.

The Word is form'd from *Coloſſæum*, on account of the *Coloſſus* of *Nero*, that ſtood near it: or, according to *Nardini*, from the Italian *Coliſeo*.

COLLISION, the Friction, or Percuſſion of two Bodies moving violently with different Directions, and daſhing againſt each other.

For *the Laws of the Colliſion of Bodies*, ſee PERCUSSION.

COLLUSION, a ſecret Underſtanding between two Parties, who plead, or proceed fraudulently againſt each other, to the prejudice of a third.

In the Canon Law, *Colluſion*, in Matters of Benefices, vacates the Benefice; and incapacitates the Perſon from holding any Benefice at all.

COLLUTHIANS, a Religious Sect, who aroſe about the Beginning of the IVth Century; on occaſion of the Mildneſs and Indulgence ſhewn to *Arius*, by *Alexander* Patriarch of *Alexandria*.

Several People being ſcandaliz'd at ſo much Condeſcenſion; and among the reſt *Colluthus*, a Prieſt of the ſame City; he hence took a Pretence for holding ſeparate Aſſemblies, and by degrees proceeded to the Ordination of Prieſts; as if he had been a Biſhop: pretending a Neceſſity for this Authority, in order to oppoſe *Arius*.

To his Schiſm he added Hereſy; teaching, that God did not create the Wicked; that he was not Author of the Evils that befal Men, &c.

He was condemn'd in a Council held at *Alexandria* by *Oſius*, in the Year 335.

COLLYRIDIANS, antient Hereticks, denominated from a little Cake, call'd by the Greeks *Collyra*, which they offer'd to the Virgin *Mary*.

This Sect, it ſeems, conſiſted chiefly of *Arabian* Women, who, out of an Extravagance of Devotion to the Virgin, met on a certain Day in the Year, to celebrate a ſolemn Feaſt, and to render Divine Honours to *Mary* as to a Goddeſs; eating the Cake which they offer'd in her Name. St. *Epiphanius*, who relates the Hiſtory of this ſuperſtitious Ceremony, laughs at it.

COLLYRIUM, in Medicine, an external Remedy, particularly appropriated to Diſeaſes of the Eyes. See EYE.

There are two Kinds of *Collyriums*; the one *liquid*, the other *dry*.

Liquid Collyriums are compos'd of Ophthalmic Pouders, or Waters; as Roſe-Water, Plantain-Water, that of Fennel, Eyebright, &c. wherein they diſſolve Tutty, White Vitriol, or ſome other proper Pouder.

The *Dry*, are Troches of Rhaſis, Sugar-candy, Iris, Tutty prepar'd, &c. blown into the Eye with a little Pipe.

The ſame Name is alſo given to Unguents uſed for the ſame Purpoſe; as Unguent of Tutty, and ſeveral others.

Laſtly, the Name is given, tho improperly, to ſome liquid Medicines uſed againſt Venereal Ulcers.

The Word *Collyrium* comes from the *Greek* κολλύριον; and that, according to *Martinius*, from κολλᾷν τὸν ῥῦν; becauſe it glues up, and prevents Defluxions.

COLON,

COLON, in Grammar, a Point, or Character form'd thus [:] ſerving to mark a Pauſe, and to divide the Members of a Period. See POINTING; ſee alſo PERIOD, and COMMA.

Grammarians generally aſſign the Uſe of a *Colon* to be to mark the Middle of a Period; or to conclude a Senſe leſs perfect than the Dot, or Period: But, *a Senſe leſs perfect than the Period*, is an Expreſſion infinitely vague and indeterminate. See PERIOD.

Others ſay, a *Colon* is to be uſed when the Senſe is perfect, but the Sentence not concluded: but neither is this over clear and expreſs. Add to this, that in Practice our beſt Writers confound the *Colon* with the Semicolon.

F. *Buffier*, with his uſual accuracy, attempts to fix the Uſe of the *Colon*; but does not much diſtinguiſh it from the Semicolon: he preſcribes the uſe of either, indifferently; and calls 'em by a common Name, *Intermediate Pointings*; as being Mediums between the Comma and Full-point, or Period. Their Uſe, according to this Author, is to diſtinguiſh the ſupernumerary Members of a Period.

By *ſupernumerary Members*, are meant, ſuch as the precedent ones don't raiſe any Expectation of; *i. e.* ſuch Parts, as have indeed a Dependence on what goes before, even tho what goes before has a compleat Senſe, independent hereon: v. g. *The Auguſtan Age was ſo eminent for good Poets, that they have ſerv'd as Models to all others: yet did it not yield any good Tragic Poets.* Where the ſupernumerary Member, and the Uſe of the *Colon* are obvious.

The moſt obvious and ſenſible Uſe of the *Colon*, he adds, is when the ſupernumerary Member is diſtinguiſh'd by ſome Conjunctions; as notwithſtanding, however, but, except that, unleſs, inaſmuch as, yet, ſince, the rather as, provided that, *&c.*

Some, indeed, uſe the *Colon* in the Middle of long Periods, without any regard to ſupernumerary Members: which Cuſtom was probably introduc'd, to mark that the Breath is here to be taken almoſt as much as in a common Period, in the Place where the ſupernumerary Period commences. But this, at beſt, is arbitrary; and the intermediate Pointings may always be omitted in a Period, if there be no ſupernumerary Member; *i. e.* if there be no ſubſequent Member, but what is expected from the precedent.

As to the Occaſions where the *Colon* is to be uſed, rather than the Semicolon, there is nothing preciſe to be ſaid of it; except that the *Colon* ſhews the ſupernumerary Member more detach'd, and ſets it at a greater diſtance from the reſt; and therefore marks a longer pauſe than the Semicolon.

Accordingly, it ſeems preferable to the Semicolon before Conjunctions Adverſative, Reſtrictive, Conditional, *&c.* as, nevertheleſs, but, excepting that, however, otherwiſe, provided that. Again, where the ſupernumerary Phraſes not only ſuppoſe the precedent, but depend on 'em for their Regimen; and are, as it were, new Parts thereof: there the Semicolon ſeems preferable to the *Colon*. v. g. *You are regardleſs of the Goodneſs of God, who firſt choſe you; a God who is only jealous of your Heart for your own Happineſs; a God who could be equally glorious in deſtroying you by his Juſtice, as in ſaving you by his Mercy.* Or thus: *The Diſcourſe conſiſted of two Parts; in the firſt was ſhewn the Neceſſity of fighting; in the ſecond, the Advantages that wou'd redound from it.*

But this Difference, it muſt be own'd, has a Dependence on ſomething that influences all the Points, and ſways the whole Doctrine of Punctuation; *viz.* the length, or ſhortneſs of the Members and Periods: For when the Phraſes are long, we point higher than when ſhort.

A late Author, in a very ingenious little Diſcourſe, *de Ratione Interpungendi*, marks the Office of the *Colon*, and where in it differs from the Semicolon, *&c.* much more preciſely: A *Colon*, on his Principles, ſerves to diſtinguiſh thoſe conjunct Members of a Sentence, which are capable of being divided into other Members; whereof one, at leaſt, is conjunct. See SENTENCE.

Thus, in the Sentence, *As we cannot diſcern the Shadow moving along the Dial-plate, So the Advances we make in Knowledge are only perceiv'd by the Diſtance gone over*; the two Members being both ſimple, are only ſeparated by a Comma: In this, *As we perceive the Shadow to have moved, but did not perceive it moving; So our Advances in Underſtanding, in that they conſiſt of ſuch minute Steps, are only perceivable by the Diſtance*; the Sentence being divided into two equal Parts, and thoſe conjunct ones, ſince they include others; we ſeparate the former by a Semicolon, and the latter by Commas: But in this, *As we perceive the Shadow to have moved along the Dial, but did not perceive it moving; and it appears the Graſs has grown, tho no body ever ſaw it grow: So the Advances we make in Knowledge, as they conſiſt of ſuch minute Steps, are only perceivable by the Diſtance.* The Advancement in Knowledge is compar'd to the Motion of a Shadow, and the Growth of Graſs; which Compariſon divides the Sentence into two principal Parts: But ſince what is ſaid of the Movement of the Shadow, and likewiſe of the Growth of Graſs, contains two ſimple Members, they are to be ſeparated by a Semicolon; conſequently, a higher Pointing is requir'd to ſeparate 'em from the other Part of the Sentence, which they are oppoſed to: And this is a *Colon*. See PUNCTUATION.

COLON, in Anatomy, is the ſecond of the thick Inteſtines. See INTESTINE.

The *Colon* is placed between the *Cæcum* and *Rectum*; and is wider than either of them: In length it is eight or nine Hands. It begins where the *Ilion* ends, *viz.* in the Cavity of the *Os Ilium*, on the right Side; whence, aſcending by the Kidney on the ſame ſide, it paſſes under the concave Side of the Liver, to which it is ſometimes ty'd, as likewiſe to the Gall-Bladder, which tinges it yellow in that place: Then it runs under the bottom of the Stomach to the Spleen in the left Side, to which it is alſo knit; from thence it turns down to the left Kidney; and thence paſſing in form of an S, it ends at the upper Part of the *Os Sacrum* in the *Rectum*.

At the Beginning of this Gut, there is a Valve form'd by the Production of the inmoſt Coat of the Inteſtines in this place; which hinders the Excrements, when once fallen into the *Colon*, from returning again to the *Ilium*.

It has a ſtrong Ligament, which running along its upper Side, from the *Ilium* to the *Rectum*, ſtrengthens it againſt the Weight of the Excrements, and draws it together into Cells; which, with the *Valvulæ Conniventes*, retard the Paſſages of the Excrements, that we may not be continually oblig'd to be going to Stool. See EXCREMENTS.

The fleſhy Fibres of its ſecond Coat are greater and ſtronger than thoſe of the other Inteſtines; becauſe a greater Strength is requiſite to cauſe the Excrements to aſcend.

The chief Deſign of the *Colon*'s ſurrounding the Abdomen, and, with the *Rectum*, touching all the Parts contain'd in it, ſeems to be, that by immediate Fomentation with Clyſters, they might be eas'd of their Maladies. See CLYSTER.

Some derive the Word from κωλύειν, *to retard*; in regard 'tis in the Folds of this Inteſtine that the Excrements are ſtopp'd and form'd. Others fetch it from κοῖλον, *hollow*; on account of its Capacity: Others again from κολάζεσθαι, *to be tormented*; in regard of the grievous Pain it frequently undergoes.

'Tis from this Part that the Colic takes its Name. See COLIC.

COLONEL, an Officer in the Army, who has the Command of a Regiment, either of Horſe, Foot, or Dragoons. See REGIMENT.

In the *French* Army, *Colonel* is confin'd to the Infantry and Dragoons: the commanding Officer of a Regiment of Horſe, they uſually call *Meſter de Camp*.

Skinner derives the Word from *Colony*; being of Opinion, the Chiefs of Colonies might give their Name to the Chief of Forces.

COLONEL *Lieutenant*, is he who commands a Regiment of Guards, whereof the King, Prince, or other Perſon of the firſt Eminence is *Colonel*. See GUARDS.

Theſe *Colonels Lieutenants* have always a *Colonel*'s Commiſſion, and are uſually General Officers.

Lieutenant COLONEL, is the ſecond Officer in the Regiment; who is at the Head of the Captains, and commands in the abſence of the *Colonel*. See LIEUTENANT.

Lieutenant Colonel of Horſe, or Dragoons, is the firſt Captain of the Regiment. See CAPTAIN.

COLONNADE, a Periſtyle, of a circular Figure; or a Series of Columns, diſpos'd in a Circle, and inſulated within-ſide. See PERISTYLE.

Such is that of the little Park at *Verſailles*, which conſiſts of 32 *Ionic* Columns; all of ſolid Marble, and without Incruſtation.

A *Polyſtyle* COLONNADE, is that whoſe number of Columns is too great to be taken in by the Eye at a ſingle View. Such is the *Colonnade* of the Palace of St. *Peter* at *Rome*; which conſiſts of 284 Columns of the *Doric* Order, each above four Foot and an half Diameter; all in *Tiburtine* Marble.

COLONY, a *Plantation*, or Company of People, of all Sexes and Conditions, tranſported into a remote Province, in order to cultivate and inhabit it. See PLANTATION.

We may diſtinguiſh three Kinds of *Colonies*: The firſt ſerves to eaſe, or diſcharge the Inhabitants of a Country; where the People are become too numerous, ſo that they cannot any longer conveniently ſubſiſt.

The ſecond are thoſe eſtabliſh'd by victorious Princes and People, in the middle of vanquiſh'd Nations, to keep 'em in awe and obedience.

The third may be call'd *Colonies of Commerce*; becauſe, in effect, 'tis Trade is the ſole Occaſion and Object thereof.

'Twas by means of the firſt kind of *Colonies*, that ſome Ages after the Deluge, the Eaſt, firſt, and ſucceſſively all the other Parts of the Earth became inhabited: And without mentioning any thing of the *Phenician* and *Grecian Colonies*, ſo famous in antient Hiſtory, 'tis notorious that it was for the Eſtabliſhment of ſuch *Colonies*, that during the Declenſion of the Empire, thoſe Torrents of barbarous Nations, iſſuing, for the generality, out of the North, overrun the

Gauls, *Italy*, and the other Southern Parts of *Europe*; and after ſeveral bloody Battels, divided it with the antient Inhabitants.

For the ſecond kind of *Colonies*, the *Romans* us'd 'em more than any other People; and that to ſecure the Conqueſts they had made from the Weſt to the Eaſt. Every one knows how many Cities in *Gaul*, *Germany*, *Spain*, and even *England*, value themſelves on their having been of the Number of *Roman Colonies*.

Laſtly, the *Colonies of Commerce*, are thoſe eſtabliſh'd by the *Engliſh*, *French*, *Spaniards*, *Portugueſe*, and other Nations within theſe two laſt Centuries, and which they continue ſtill to eſtabliſh, in ſeveral Parts of *Aſia*, *Africa*, and *America*; either to keep up a regular Commerce with the Natives, or to cultivate the Grounds, by planting Sugar-Canes, Indigo, Tobacco, and other Commodities. See COMMERCE.

The principal of this Kind of *Colonies*, are in the one and the other *America*, Northern and Southern; particularly *Peru*, *Mexico*, *Canada*, *Virginia*, *New-England*, *Carolina*, *la Louiſiane*, *l'Acadia*, *Hudſon's Bay*, the *Antilles Iſlands*, *Jamaica*, *Domingo*, and the other Iſlands.

In *Africa*, *Madagaſcar*, *Cape of Good Hope*, *Cape Verd*, and its Iſlands, and all thoſe vaſt Coaſts, extended thence as far as to the Red Sea.

Laſtly, in *Aſia*, the famous *Batavia* of the *Dutch*; *Goa*, *Diu* of the *Portugueſe*; and ſome other leſs conſiderable Places of the *Engliſh*, *French*, and *Danes*.

M. *Vaillant* has fill'd a Volume in Folio with Medals ſtruck by the ſeveral *Colonies*, in honour of the Emperors who founded 'em. The ordinary Symbol they engrav'd on their Medals, was, either an Eagle; as when the Veteran Legions were diſtributed in the *Colonies*: or a Labourer, holding a Plough drawn by a pair of Oxen; as when the *Colony* conſiſted of ordinary Inhabitants. On all the Medals are ſeen the Names of the Decemvirs; who held the ſame Rank, and had the ſame Authority there, as the Conſuls had at *Rome*. See DECEMVIR.

There were two Kinds of *Colonies* among the *Romans*; thoſe ſent by the Senate; and the Military ones, conſiſting of old Soldiers, broken and diſabled with the Fatigues of War, who were thus provided with Lands, as the Reward of their Services. See BENEFICE.

The *Colonies* ſent by the Senate, were either *Roman*, or *Latin*; *i. e.* compos'd either of *Roman* Citizens, or *Latins*.

The *Colonies* of *Roman* Citizens had the Right of Suffrages; but had no part in the Offices or Honours of the Republick. The Inhabitants of *Latin Colonies*, had no Right of Suffrages without an expreſs Permiſſion. See CITIZEN, *&c.*

According to *Ulpian*, *(lib. de Cenſ.)* there were other *Colonies*, which had little more than the Name; only enjoying what they call'd *Jus Italicum*; *i. e.* they were free from the Tributes and Taxes paid by the Provinces: Such were the *Colonies* of *Tyre*, *Berytus*, *Heliopolis*, *Palmyra*, &c.

Originally, the Word *Colony* ſignify'd no more than a Farm; *i. e.* the Habitation of a Peaſant, with the Quantity of Land ſufficient for the Support of his Family; *Quantum Colonus unus arare poterat.*

COLOPHONY, a kind of Gum; being only a finer Turpentine, boil'd in Water till it be reduc'd into a ſolid Conſiſtence. See TURPENTINE.

The chief Uſe of this Drug is in the Cure of Venereal Ailings, Seminal Weakneſſes, the Whites in Women, *&c.* The Apothecaries make it into Pills, which they roll in Liquorice-Powder, or cover over with Gold-Leaf, and call them *Turpentine Pills*.

It is alſo uſed by Muſicians, to rub the Hairs of their Bow withal; the Effect whereof is, that the Gum cleaning the Hairs, and communicating to 'em a tenacious Quality, prevents their ſliding too eaſily over the Strings; and promotes that trembling which forms the Sound.

COLOPHONY is alſo an oleaginous Subſtance, of a yellowiſh Colour, dry, and friable, compos'd of the Remains of Reſins of Fir, and Fir-Apples, condens'd by Coction, and harden'd by Cold.

To be good, it muſt be ſhining and odoriferous; and when thrown on the Fire, render a Smoke like that of Incenſe.

Pliny ſays, *Colophony* took its Name from *Colophon*, a City of *Ionia*, whence it was firſt brought.

'Tis now frequently called *Spaniſh Wax*, or *Grecian Reſin*; as it is brought from the one or the other of thoſe Countries. It is found to warm, dry, ſoften, and agglutinate, and uſually enters the Compoſition of Plaiſters and Unguents.

COLOPHONY is alſo uſed for the Remains of Turpentine diſtilled; or the groſs Part reſting at the bottom of the Veſſel. See DISTILLATION.

COLOQUINTIDA, or COLOCYNTHIS, uſually call'd *Bitter Apple*; the Fruit of a Plant of the ſame Name, brought from the *Levant*; about the bigneſs of a large Orange.

Its Colour is that of a golden brown: Its inſide is full of Kernels, which are to be taken out before the *Colocinthis* be us'd. Both the Seed and Pulp are intolerably Bitter.

Coloquintida is of conſiderable uſe in Medicine, but moſtly in officinal Compoſitions; the Violence of its Operation rendring it unſafe to be given inwardly in extemporaneous Preſcriptions, except with great Caution.

It enters, as an Ingredient, in the *Confectio Hamec.* and moſt purging Pills; and in ſuch Caſes as require purging, is attended with great ſucceſs. It is one of the moſt violent purgative Drugs known; inſomuch that it excoriates the Paſſages to that degree, as ſometimes to bring away Blood, and induce a Superpurgation. Sometimes it is taken boil'd in Water, or Small Beer, in Obſtruction of the Menſes; which, in ſtrong Conſtitutions, is often attended with Succeſs. Some Women have got a trick of taking it, in the ſame manner, in the beginning of Pregnancy, to procure Abortion; which it often effects by the Violence of its Operation.

The Pouder of *Coloquintida* is ſometimes uſed externally, with Aloes, *&c.* in Unguents, Emplaiſters, *&c.* with remarkable Succeſs againſt Worms; and ſome, for the ſame purpoſe, recommend the Pulp, given Clyſter-wiſe. In the Iliac Paſſion, Clyſters of *Coloquintida* have been found of ſervice, after moſt other Medicines have fail'd.

Troches made of *Colocynth*, are called *Troches of Alhandal*: They are prepared by cutting the *Coloquintida* very ſmall, and reducing it to a fine Pouder in a Mortar, rubb'd with Oil of ſweet Almonds; adding Gum Tragacanth, and Maſtic afterwards. See TROCHES.

The Word comes from the *Greek* κολοκύνθη, which was given it, in regard it κοιλίαν κινει, *agitates the Belly*.

COLORBASIANS, a Branch of *Gnoſticks*; ſo called from *Colorbaſus*, who improv'd on the Viſions of the *Gnoſticks* that had preceeded 'em. St. *Epiphanius* enumerates and confutes their Errors. See GNOSTICS.

COLORISATION, or COLORATION, in Pharmacy, a Term applied to the ſeveral Changes of Colour which Bodies undergo in the various Operations of Nature, or Art; as by Fermentations, Lotions, Coctions, or Calcinations, *&c.* See COLOUR, and COLOURING.

COLOSSAL *Column*. See COLUMN.

COLOSSUS, a Statue of a prodigious Size, repreſenting a Giant. See STATUE.

The moſt eminent of this kind was the *Coloſſus of Rhodes*, a Statue of *Apollo*, ſo high, that Ships paſs'd with full Sails betwixt its Legs. It was the Workmanſhip of *Chares*, a Diſciple of *Lyſippus*; who ſpent twelve Years in making it: 'Twas at length overthrown by an Earthquake, after having ſtood 1360 Years. Its Height was ſixſcore and ſix Foot: There were few People could fathom its Thumb, *&c.*

Some Criticks obſerve, that the *Coloſſus* of *Rhodes* gave its own Name to the People among whom it ſtood; and that many, at leaſt among the antient Poets, call the *Rhodians*, *Coloſſians*: Hence they advance an Opinion, that the *Coloſſians* in Scripture, to whom St. *Paul* directs his Epiſtle, are, in reality, the Inhabitants of *Rhodes*. Of this Sentiment are *Suidas*, *Calepin*, *Munſter*, &c.

When the *Saracens* became poſſeſs'd of the Iſland, the Statue was found laid along the ground: They ſold it to a *Jew*, who loaded 900 Camels with the Braſs.

The Baſis that ſupported it was of a triangular Figure, its Extremities were ſuſtain'd with 60 Pillars of Marble. There was a winding Stair-caſe to go up to the top of it; from whence one might diſcover *Syria*, and the Ships that went into *Egypt*, in a great Looking-Glaſs, that was hung about the Neck of the Statue.

Among the Antiquities of *Rome*, there are ſeven famous *Coloſſus*'s: two of *Jupiter*, as many of *Apollo*; one of *Nero*, one of *Domitian*, and one of the Sun.

The Term *Coloſſus* takes its riſe παρα το κολόειν τα ὄσσα, *quod minuat & retundat oculos*.

COLOSTRUM, or COLOSTRA, in Medicine, Milk coagulated in Womens Breaſts. See MILK.

The Name is alſo given to a Diſeaſe which this coagulated Milk occaſions.

COLOUR, in Philoſophy, a Property inherent in Light, whereby, according to the different Sizes, or Magnitudes of its Parts, it excites different Vibrations in the Fibres of the Optick Nerve; which propagated to the *Senſorium*, affects the Mind with different Senſations.

Or, *Colour* may be defin'd a Senſation of the Soul, excited by the Application of Light to the *Retina* of the Eye; and different, as that Light differs in the degree of its Refrangibility, and the Magnitude of its component Parts. See SENSATION.

In the former View, therefore, Light is the Subject of *Colour*; in the latter it is the Agent. *See its Properties under the Article* LIGHT.

Various are the Opinions of antient and modern Authors, and of the ſeveral Sects of Philoſophers, with regard to the Nature and Origin of the Phænomenon *Colour*: The moſt popular

popular Opinion, is that of the *Ariſtotelians*; who maintain *Colour* to be a Quality reſiding in the *colour'd* Body; and to exiſt, independently of Light. See QUALITY.

The *Carteſians* come nearer the Matter: They own, that as the *colour'd* Body is not immediately applied to the Organ, to occaſion the Senſation, and that as no Body can affect the Senſe but by immediate contact; the *colour'd* Body does not excite the Senſation of it ſelf, or contribute any thing to it, otherwiſe than by moving ſome interpos'd Medium, and by that the Organ of Sight.

They add, that, as we find that Bodies don't affect the Senſe in the dark, Light only occaſions the Senſe of *Colour*, by moving the Organ; and that *colour'd* Bodies are no further concern'd than as they reflect the Light with a certain Modification: the differences in their *Colours* ariſing from a difference in the Texture of their Parts, whereby they are diſpos'd to reflect the Light with this or that Modification.

But 'tis to Sir *Iſaac Newton* we are owing for a ſolid and conſiſtent Theory of *Colours*; built on ſure Experiments, and ſolving all the Phænomena thereof: His Doctrine is as follows.

'Tis found by Experience, that Rays, or Beams of Light, are compos'd of Particles very heterogeneous, or diſſimilar to each other: *i. e.* ſome of them, as 'tis highly probable, are larger, and others leſs. For a Ray of Light, as F E, (Tab. *Optics*, Fig. 5.) being receiv'd on a refracting Surface, as A D, in a dark Place, is not wholly refracted to L; but ſplit, as it were, and diffuſed into ſeveral little Rays, ſome whereof are refracted to L, and others to the other intermediate Points between L and G; *i. e.* thoſe Particles of the Light which are the moſt minute, are of all others the moſt eaſily and moſt conſiderably diverted, by the Action of the refracting Surface, out of their rectilinear Courſe towards L: and the reſt, as each exceeds another in Magnitude, ſo is it with more difficulty, and leſs conſiderably turn'd out of its right Line to the Points between L and G. See REFRANGIBILITY.

Now, each Ray of Light, as it differs from another in its degree of Refrangibility, ſo does it differ from it in *Colour*: this is warranted by numerous Experiments. Thoſe Particles, *v. g.* which are moſt refracted, are found to conſtitute a Ray of a violet *Colour*; *i. e.* in all probability, the moſt minute Particles of Light, thus, ſeparately impell'd, excite the ſhorteſt Vibration in the *Retina*; which are thence propagated by the ſolid Fibres of the Optic Nerves into the Brain, there to excite the Senſation of violet *Colour*; as being the moſt duſky and languid of all *Colours*. See VIOLET.

Again, thoſe Particles which are the leaſt refracted, conſtitute a *Radiolus*, or Ray of a red Colour; *i. e.* the largeſt Particles of Light excite the longeſt Vibrations in the *Retina*; ſo as to excite the Senſation of red *Colour*, the brighteſt and moſt vivid of all others. See RED.

The other Particles being in like manner ſeparated, according to their reſpective Magnitudes, into little Rays; excite the intermediate Vibrations, and thus occaſion the Senſations of the intermediate *Colours*; much in the ſame manner as the ſeveral Vibrations of the Air, according to their reſpective Magnitudes, excite the Senſations of different Sounds. See VIBRATION.

To this it may be added, that not only the more diſtinct and notable *Colours* of red, yellow, blue, *&c.* have thus their riſe from the different Magnitude and Refrangibility of the Rays; but alſo the intermediate Degrees or Teints of the ſame *Colour*; as of yellow up to green, of red down to yellow, *&c.*

Further, the *Colours* of theſe little Rays, not being any adventitious Modifications thereof, but connate, primitive, and neceſſary Properties; as conſiſting, in all probability, in the Magnitudes of their Parts, muſt be perpetual and immutable; *i. e.* cannot be chang'd by any future Refraction or Reflection, or any Modification whatſoever.

This is confirm'd by abundance of Experiments; all endeavours having been us'd, after ſeparating a *colour'd* Ray from thoſe of other Kinds, to change it into ſome other *Colour* by repeated Refractions, but to no effect. Apparent Tranſmutations of *Colours*, indeed, may be effected; *viz.* where there is an Aſſemblage, or Mixture of Rays of different Kinds; the component *Colours* never appearing in their natural Hue in ſuch Mixtures, but always allay'd and temper'd with each other: whence reſults a middling Kind of *Colour*, which, by Refraction, may be ſeparated into the component ones: and thoſe, after Separation, being remix'd, return to their former *Colour*.

Hence, the Tranſmutations of *Colours*, by mixing thoſe of different Kinds, are not real; but mere Appearances or Deceptions of the Sight: For the Rays being again ſevered, exhibit the ſame *Colours* as at firſt. Thus, blue and yellow Pouders, well mix'd, appear to the naked Eye green; yet, without having paſs'd any Alteration, when view'd thro' a Microſcope, the blue and yellow Particles ſtill appear diſtinct.

Hence there ariſe two Kinds of *Colours*; the one *original*, and *ſimple*, produced by homogeneal Light; or by Rays that have the ſame degree of Refrangibility, and the ſame Magnitude of their Parts: Such are red, yellow, green, blue, a violet purple, orange, and indigo; with all their intermediate Teints and Gradations.

The other Kind of *Colour* is *ſecundary*, or *heterogeneous*; compounded of the primary ones, or of a Mixture of Rays differently refrangible, *&c.*

There may alſo be ſecondary *Colours* produced by Compoſition, like the primary ones, or thoſe conſiſting of homogeneal Light, as to the Species or Appearance of the *Colour*; but not as to the Permanency, or Immutability thereof. Thus, yellow and blue make green; red and yellow, orange; orange and yellowiſh green, yellow: And in the general, if any two *Colours* be mix'd, which in the Series of thoſe generated by the Priſm, are not too far apart, from their Mixture reſults that *Colour*, which in the ſaid Series is found in the mid-way between 'em: but thoſe ſituated at too great a diſtance do not ſo.

Indeed, the more any *Colour* is compounded, the leſs perfect and vivid it is: by too much Compoſition they may be diluted and weaken'd till they ceaſe. By Compoſition there may likewiſe be produced *Colours*, not like any of thoſe of homogeneal Light.

The moſt extraordinary Compoſition is that of *Whiteneſs*; for to this, all the primary *Colours* abovementioned are requir'd; and thoſe to be mix'd in a certain degree. Hence it is that White is the ordinary *Colour* of Light; Light being nothing elſe but a confuſed Aſſemblage of Rays of all *Colours*. See WHITENESS.

If the Rays of different *Colours* do thus begin to be ſeparated by one Refraction of one ſingle Surface; that Separation is much promoted, ſo as even to become ſenſible to the Eye by a double Refraction. This is obſerv'd in the two Surfaces of any Glaſs; provided thoſe Surfaces be not parallel: but, of all others, it is moſt ſenſible in the two Faces of a triangular Priſm; the Phænomena whereof, as they are the Touchſtone of all Theories of *Colours*; and as they contain the Foundation of that here deliver'd, we ſhall lay down as follows.

1. The Rays of the Sun, tranſmitted thro' a triangular Priſm, exhibit an Image of various *Colours*, (the chief whereof are red, yellow, green, blue, and violet) on the oppoſite Wall.

The Reaſon is, that the differently *colour'd* Rays are ſeparated by Refraction: For the blue Rays, *v. g.* mark'd with the dotted Line, (Plate *Optics*, Fig. 6.) which begin to be ſeparated from the reſt by the firſt Refraction in *d d*, of the Side *c a* of the Priſm *a b c*, (as alſo in the firſt Surface of the Globe of Water *a b c*, Fig. 7.) are ſtill further ſeparated in the other Side of the Priſm *b c*, (as alſo in their egreſs out of the Globe *a b c*) by a ſecond Refraction in *c e*, in the ſame Direction as the former: whereas, on the contrary, in the plane Glaſs *a b c f*, Fig. 9. (as alſo in the Priſm *g l o*, Fig. 8. now placed in another Situation) thoſe blue Rays which begin to be ſeparated from the reſt in the firſt Surface, in *d d*, by a ſecond Refraction, the contrary way, paſs out parallel, *i. e.* remix'd with all the *Colours* of the other Rays.

2. That Image is not round, but oblong; its length, when the Priſm is an Angle of 60 or 65 Degrees, being five times its breadth.

The Reaſon is, that ſome of the Rays are refracted more than others; and by that means, exhibit ſeveral Images of the Sun, extended lengthwiſe, inſtead of one.

3. Thoſe Rays which exhibit yellow, are turn'd further from the rectilinear Courſe, than thoſe which exhibit red; thoſe which exhibit green, than thoſe which exhibit yellow: but, of all others, thoſe which exhibit violet the moſt: Accordingly, if the Priſm thro' which the Light is tranſmitted be turn'd about its Axis, ſo as the red, yellow, green, *&c.* Rays be projected, in order, thro' a narrow Aperture into another Priſm, placed at the Diſtance of about 12 Feet; the yellow, green, *&c.* Rays, tho falling thro' the ſame Aperture, in the ſame manner, and on the ſame Point of the ſecond Priſm, will not be refracted to the ſame Place as the red, but to a Point at ſome diſtance from it; on that ſide to which the Rotation is made.

This is what Sir *I. Newton* calls the *Experimentum Crucis*: being that which led him out of the Difficulties into which the firſt Phænomenon, *&c.* had thrown him; and plainly ſhew'd a different Degree of Refrangibility, and a different *Colour* correſponding thereto in the Rays of Light: and that yellow Rays, *v. g.* are more refracted than red ones, green ones more than yellow ones; and blue and violet ones moſt of all.

4. The *Colours* of *colour'd* Rays, well ſeparated by the Priſm, are not at all chang'd or deſtroy'd by paſſing an illuminated Medium, nor by their mutual Decuſſation; their bordering on a deep Shadow; nor their being reflected from

any

any natural Body, or refracted thro' any one, in a Place howſoever obſcure.

The reaſon is, that *Colours* are not Modifications ariſing from Refraction, or Reflection, but immutable Properties; and ſuch as belong to the Nature of the Rays.

5. An Aſſemblage of all the Kinds of *colour'd* Rays, collected either by ſeveral Priſms, by a convex Lens, or a concave Mirror, or in any other manner, form what we call *Whiteneſs*; yet each of theſe, after Decuſſation, becoming ſeparated, again exhibits its proper *Colour*: For, as the Ray was white before its Parts were ſeparated by Refraction; ſo, the Parts being remix'd, it becomes white again: And *colour'd* Rays, when they meet together, don't deſtroy one another, but are only interſpers'd.

Hence, a red, green, yellow, blue, and violet *Colour*, being mix'd in a certain Proportion, appear whitiſh; *i. e.* are of ſuch a *Colour* as ariſes from white and black mix'd together: and if there were not ſome Rays abſorb'd and loſt, wou'd be plainly white. In like manner, if a Paper cut into a Circle, be ſtain'd with each of thoſe *Colours*, ſeparately, and in a certain Proportion; then ſwiftly turn'd round its Centre, ſo as the Species of *Colours* be mix'd together in the Eye, by the briſkneſs of the Motion; the ſeveral *Colours* will diſappear, and the whole Paper appear of one continued *Colour*; which will be a Mean between white and black.

6. If the Rays of the Sun fall very obliquely on the inner Surface of a Priſm, thoſe that are reflected will be violet; thoſe tranſmitted, red.

For, the Rays were *colour'd* before any Separation; and by how much they are the more refrangible, by ſo much they are the more eaſily reflected; and by that means are ſeparated.

7. If two hollow Priſms, the one fill'd with a blue Fluid, the other with a red one, be join'd together, they will be opake; tho each, apart, be tranſparent.

For, the one tranſmitting none but blue Rays, and the other none but red ones; the two together will tranſmit none at all.

8. All natural Bodies, eſpecially white ones, view'd thro' a Priſm held to the Eye, appear fimbriated, or border'd, on one ſide with red and yellow, and on the other with blue and violet.

For, thoſe *Fimbriæ* are the Extremes of entire Images, which the Rays of any kind, as they are more or leſs refracted, would exhibit, nearer, or at a greater diſtance from the real Place of the Object.

9. If two Priſms be ſo placed, as that the red of the one, and the purple of the other meet together, in a Paper fit for the purpoſe, incompaſs'd with darkneſs; the Image will appear pale: and if view'd thro' a third Priſm, held to the Eye at a proper diſtance, it will appear double; the one red, the other purple.

In like manner, if two Pouders, the one perfectly red, the other blue, be mix'd; any little Body cover'd pretty deeply with this Mixture, and view'd thro' a Priſm held to the Eye, will exhibit a double Image, the one red, and the other blue: in regard, the red and purple, or blue Rays, are ſeparated by their unequal Refraction.

10. If the Rays tranſmitted thro' a convex Lens, be receiv'd on a Paper ere they meet in a *Focus*; the Confines or Boundary of Light and Shadow will appear ting'd with a red *Colour*: but if they be receiv'd beyond the *Focus*, with a blue one.

Becauſe, in the firſt Caſe, the red Rays, being ſomewhat more refracted, are the higher; but, in the ſecond, after Decuſſation in the *Focus*, the blue ones.

Laſtly, if the Rays about to paſs thro' either ſide of the *Pupilla*, be intercepted by the Interpoſition of any opake Body near the Eye; the Extremes of Bodies, placed as if view'd thro' a Priſm, will appear ting'd with *Colours*; tho thoſe not very vivid.

For then, the Rays tranſmitted thro' the reſt of the Pupil, will be ſeparated by Refraction into *Colours*; without being diluted with the admixture of the intercepted Rays, which would be refracted in a different manner.

And hence it is, that a Body view'd thro' a Paper pierc'd with two Holes, appears double, and alſo tinged with *Colours*.

Of the Colours *of thin Plates.* As Rays of different *Colours* are ſeparated by the Refraction of Priſms, and other thick Bodies; ſo are they ſeparated, tho in a different manner, in the thin *Lamellæ*, or Plates of any pellucid Matter, *v. g.* the Bubbles rais'd in Water, thicken'd by Soap, &c. For all *Lamellæ*, under a determinate thickneſs, tranſmit Rays of all *Colours*, without reflecting any at all: but, as they increaſe in thickneſs, in arithmetical Proportion, they begin to reflect, firſt blue Rays; then, in order, green, yellow and red, all pure: then, again, blue, green, yellow, red, more and more mix'd and diluted; till, at length, arriving at a certain thickneſs, they reflect Rays of all *Colours* perfectly intermix'd, *viz.* white.

But, in whatſoever Part a ſlender *Lamella* reflects any one *Colour*, *v. g.* blue; in that Part it always tranſmits the oppoſite *Colour*, *v. g.* red, or yellow.

'Tis found, by Experiment, that the difference of *Colour* of a Plate does not depend on the Medium that incompaſſes it; but the degree of Vividneſs does: *cæteris paribus*, the *Colour* will be more vivid, if the denſer Medium be incompaſs'd with the rarer. A Plate, *cæteris paribus*, reflects more Light as it is thinner; as far as a certain Degree of thinneſs, beyond which it reflects no Light at all.

In Plates whoſe thickneſſes increaſe in an arithmetical Proportion of the natural Numbers 1,2,3,4,5, &c. If the firſt, or thinneſt, reflect any homogeneal Ray, the ſecond will tranſmit it; the third, again, will reflect it: And thus is the ſame Ray alternately reflected and tranſmitted; *i. e.* the Plates correſponding to the odd Numbers, 1, 3, 5, 7, &c. will reflect the ſame Rays that thoſe correſponding to the even ones, 2, 4, 6, 8, &c. tranſmit.

Hence, an homogeneous *Colour* in a Plate, is ſaid to be of the *firſt Order*; if the Plate reflect all the Rays of that *Colour*. In a Plate whoſe thinneſs is triple the firſt, it is ſaid to be of the *ſecond Order*: in another, whoſe thinneſs is five times that of the firſt, it is ſaid to be of the *third Order*, &c.

A *Colour* of the firſt Order is the moſt vivid of any; and, ſucceſſively, the Vividneſs of the *Colour* increaſes, as the Quantity of the Order increaſes: The more the Thickneſs of the Plate is increas'd, the more *Colours* it reflects; and thoſe of more different Orders. In ſome Plates, the *Colour* will vary as the Poſition of the Eye varies; in others it is permanent.

Colours *of Natural Bodies.* Bodies only appear of different *Colours*, as their Surfaces are diſpos'd to reflect Rays of this or that *Colour* alone; or of this or that *Colour* more abundantly than any other: hence Bodies appear of that *Colour* which ariſes from the Mixture of the reflected Rays. See Body.

All Natural Bodies conſiſt of very thin, tranſparent *Lamellæ*; which, if they be ſo diſpos'd, with regard to each other, as that there happen no Reflections or Refractions in their Interſtices, thoſe Bodies become pellucid, or tranſparent: but if their Intervals be ſo large, and thoſe filled with ſuch Matter; or, ſo empty, (with regard to the Denſity of the Parts themſelves) as that there happen a Number of Reflections and Refractions within the Body; the Body, in that Caſe, becomes opake. See Transparency, and Opacity.

The Rays which are not reflected from an opake Body, penetrate into it; and there, ſuffering innumerable Reflections and Refractions, at length, unite themſelves to the Particles of the Body it ſelf.

Hence, an opake Body grows hot the ſooner, as it reflects Light leſs copiouſly: Whence, we ſee why a white Body, which reflects almoſt all the Rays that ſtrike upon it, heats much more ſlowly than a black one, which reflects ſcarce any. See Heat, Blackness, &c.

To determine that Conſtitution of the Surface of Bodies wherein their *Colour* depends; it muſt be obſerv'd, that the ſmalleſt Corpuſcles, or firſt Particles whereof Surfaces are made up, are moſt thin and tranſparent; and ſeparated by a Medium of a different Denſity from the Particles themſelves. In the Surface, then, of every *colour'd* Body, are innumerable ſmaller thin Plates, correſponding to thoſe of Bubbles: wherefore, what has been obſerv'd of thoſe, may be underſtood of theſe.

Hence we gather, that the *Colour* of a Body depends on the Denſity and Thickneſs of the Parts of the Body, between the Pores of the Surface: that the *Colour* is more vivid and homogeneous, as the Parts are thinner; that *cæteris paribus*, the ſaid Parts are the thickeſt when the Body is red; and the thinneſt when violet: That the Parts of Bodies are uſually much denſer, than the Medium contain'd in their Interſtices; but that in the Tails of Peacocks, in ſome Silks, and generally, in all Bodies whoſe *Colour* varies according to the Situation of the Eye, it is leſs: and that the *Colour* of a Body is the leſs vivid to the Eye, as it has a denſer Medium within its Pores.

Now, of the ſeveral opake Bodies, thoſe conſiſting of the thinneſt *Lamellæ* are *black*; thoſe conſiſting either of the thickeſt *Lamellæ*, or of *Lamellæ* very different from each other in thickneſs, and on that account fitted to reflect all *Colours*, as the Froth of Water, &c. are *white*: Thoſe, again, conſiſting of *Lamellæ*, moſt of which are of ſome intermediate thickneſs, are *blue*, *green*, *yellow*, or *red*; inaſmuch as they reflect the Rays of that particular *Colour*, much more copiouſly than that of any other *Colour*; moſt of which laſt they either abſorb and extinguiſh, by intercepting them, or elſe tranſmit.

Hence it is, that ſome Liquors, *v. g.* an Infuſion of Lignum Nephriticum, appear red, or yellow, if view'd by reflected Light; and blue by tranſmitted Light: and gold Leaves yellow in the former Circumſtances, but green or blue in the latter.

To this may be added, that ſome of the Pouders uſed by Painters, have their *Colour* changed by being very finely ground; which muſt be occaſion'd by the Comminution or Breaking of their ſmall Parts into others ſtill ſmaller; juſt as a *Lamella* has its *Colour* alter'd, by altering its Thickneſs.

In fine, thoſe odd Phænomena ariſing from the Mixture of Liquors of different *Colours*, can no way be better accounted for, than from the various Actions of the ſaline, &c. Corpuſcles of one Liquor, with the *colour'd* Corpuſcles of another: if they unite, the Maſs will either ſwell or ſhrink, and thereby its Denſity will be alter'd; if they ferment, the Size of the Particles may be diminiſh'd, and thereby *coloured* Liquors may become tranſparent: If they coagulate, an opake Liquor may be produc'd of two tranſparent ones.

Hence, 'tis eaſy to ſee why a *colour'd* Liquid, in a Glaſs of a conical Figure, placed between the Eye and the Light, appears of a different *Colour* in different Parts of the Veſſel; there being more and more Rays intercepted, as they paſs thro' a longer or a ſhorter Section of the Veſſel: till, at the Baſe, they are all intercepted; and none ſeen but thoſe reflected.

From the various *Colours* of Natural Bodies, Sir *I. Newton* obſerves, the Bigneſs of their component Parts may be eſtimated: For that the Parts of Bodies do properly exhibit the ſame *Colour* with a *Lamella* of equal thickneſs, provided the Denſity in both be the ſame: See BODY, PARTICLE, &c.

For the diſtinct Properties, &c. *of the ſeveral* COLOURS. See BLACK, WHITE, BLUE, &c. ſee alſo RAINBOW, &c.

COLOUR, in Painting, is applied both to the Drugs, and to the Teints produced by thoſe Drugs, variouſly mix'd and applied.

The principal *Colours* uſed by Painters, are *red*, and *white Lead* or *Ceruſſe*; *yellow* and *red Ocres*; ſeveral Kinds of Earth, as *Umber*; *Orpiment*, *black Lead*, *Cinnabar* or *Vermillion*, *Gambouche*, *Lacca*, *blue* and *green Aſhes*, *Indigo*, *Verdegreaſe*, *burnt Ivory*, *Biſtre*, *Lampblack*, *Smalt*, *Ultramarine*, and *Carmine*; *each of which, with the manner of preparing them, their Uſes*, &c. ſee under their reſpective Heads, LEAD, CERUSSE, OCRE, &c.

Of theſe *Colours*, ſome are uſed ground in *Oil*, others only in *Freſco*, others in *Water*, and others for *Mignature*. See FRESCO, and MIGNATURE; ſee alſo PAINTING, COLOURING, &c.

Dark, and Light COLOURS. Under theſe two Claſſes, the Painters reduce all the *Colours* they uſe: Under *Light Colours* are comprehended *white*, and all thoſe which approach neareſt it; and under *Dark Colours*, *black*, and all thoſe which are obſcure and earthy, as *Umber*, *Biſtre*, &c.

Simple, and Mineral COLOURS, is another Diviſion among the Painters: Under *ſimple Colours*, they range all thoſe us'd by Limners, Illuminers, &c. extracted from Vegetables; and which will not bear the Fire: as the yellow made of Saffron, of *French* Berries, &c. Lacca, and other Tinctures extracted from Flowers. The reſt are *Mineral*, drawn from Metals, &c. and able to bear the Fire: theſe alone are us'd in Enamelling. See ENAMELLING.

Changing and Permanent COLOURS; another Diviſion of *Colours*: By *changeable*, are meant thoſe which depend on the Situation of Objects with regard to the Eye; as that of Taffetas, of a Pidgeon's Neck, &c. The laſt, however, being attentively view'd with a Microſcope, each Fibre of the Feathers appears compos'd of ſeveral little Squares, alternately red and green; ſo that they are fix'd *Colours*.

Kircher ſays, that the *changing Colours* obſerv'd in the Wings of Pidgeons, Peacocks, &c. ariſe from the Feathers being tranſparent, and of a Figure reſembling a Priſm; and conſequently the Light's being differently refracted from 'em. On the contrary, the fix'd and *permanent Colours*, are not exhibited by Refraction but Reflection.

M. *Mariotte* obſerves, that there are two different Gradations, or Series of *Colours*, from white, to black; the one white, yellow, red, and black; the other white, blue, violet, and black. See PAINTING.

COLOUR, in Dying. There are five ſimple, primary, or Mother-*Colours*, uſed by the Dyers; from the Mixture whereof all the other *Colours* are form'd: Theſe are *blue*, *red*, *yellow*, *brown*, and *black*; each of which ſee under their proper Head, BLUE, RED, &c.

Of theſe *Colours*, variouſly mix'd and combin'd, they form the following *Colours*; *panſy*, *blue*, and *red*: from the Mixture of blue and ſcarlet, are form'd *amaranth*, *violet*, and *panſy*: From the ſame Mixture of blue and crimſon-red, are form'd the *colombine* or *dove-colour*, *purple*, *crimſon*, *amaranth*, *panſy*, and *crimſon-violet*.

It may be obſerv'd, that they give the Name *Crimſon*, to all *Colours* made with Cochineal. See CRIMSON, COCHINEAL, &c.

Of blue and red Madder, they likewiſe make *purple*, *pepper-colour*, *tan-colour*, and *dry roſe*: The ſame blue, with red half in grain, makes *amaranth*, *tan-colour*, and *dry roſe*. Blue, and half red crimſon, compoſe *amaranth*, *tan-colour*, *dry roſe*, a *brown panſy*, and *ſur-brun*.

Blue and Yellow. Theſe two *Colours*, mix'd together, compoſe a yellow-green, ſpring-green, graſs-green, laurel-green, brown-green, dark-green; as well as ſea-green, parrot-green, and cabbage-green, &c. Theſe three laſt *Colours* are to be leſs boil'd than the firſt.

Note, with regard to *green*, there's no Ingredient or Drug in Nature that will dye it; but the Stuffs are dy'd twice, firſt in blue, then yellow.

Blue and Brown. Theſe two *Colours* are never mix'd alone; but with the addition of red, either of Madder or Cochineal, they form ſeveral *Colours*.

Red and Yellow. All the Shades compos'd of theſe two *Colours*, as gold-yellow, aurora, marigold, orange, nacarat, granat-flower, flame-*colour*, &c. are made with yellow, and red of Madder; ſcarlet being leſs proper, as well as too dear.

Red and Brown. Of theſe two *Colours* are form'd cinnamon-*colour*, cheſnut, muſk, bears-hair, and even purple; if the red be that of Madder.

Yellow and Brown. The *Colours* form'd from theſe two are all the Shades of *Feuille-morts*, and Hair-*Colours*.

It may be obſerv'd, that tho we ſay, there are no *Colours*, or Shades, made from ſuch and ſuch Mixtures: 'tis not that none can be made; but only that they are more eaſily form'd from the Mixture of other *Colours*. See DYING.

For the Method of proving the Goodneſs, or Falſeneſs of COLOURS, *or Dyes*; ſee DYE.

COLOUR, in Heraldry. The *Colours* generally uſed in Heraldry, are red, blue, black, green, and purple; which, by the Learned in that Science are called *Gules*, *Azure*, *Sable*, *Vert* or *Sinople*, and *Purpure*. *Tenne*, or tawny, and *Sanguin*, are not ſo common. See each *Colour* under its proper Article GULES, AZURE, VERT, &c.

As to yellow and white, call'd *Or* and *Argent*; they are Metals, not *Colours*. See OR, and ARGENT.

Theſe *Colours* and Metals are ſometimes alſo expreſs'd in blazon by the Names of precious Stones; and ſometimes by thoſe of Planets, or Stars. Thus, Or is call'd *Sol*, and *Topaz*; Argent, *Luna*, and *Pearl*; Gules, *Mars*, and *Ruby*; Azure, *Jupiter*, and *Saphir*; Sable, *Saturn*, and *Diamond*; Vert, *Venus*, and *Emerald*; Purpure, *Mercury*, and *Amethiſt*; Tenne, the *Dragon's-Head*, and *Hyacinth*; and *Sanguin*, the *Dragon's-Tail*, and *Sardonix*. See SABLE, SOL, ARGENT, &c.

It is a general and fundamental Rule in Blazon, not to place *Colour* upon *Colour*, nor Metal upon Metal. That is, if the Field be of a *Colour*, the Bearing muſt be of a Metal: tho this Rule, on ſome Occaſions, and in ſome Circumſtances, is diſpens'd withal; as in the Diminutions and Differences which diſtinguiſh the younger from the elder Families; and in the Extremities of Animals Tongues, Claws, Horns, &c. In which Caſes, *Colour* may be on *Colour*, and Metal on Metal, without falſe Heraldry.

Onomaus is ſaid to have firſt invented the Diſtinction of *Colours*, to diſtinguiſh the *Quadrillæ* of Combatants at the *Circenſian* Games: the green for thoſe who repreſented the Earth; and the blue for thoſe who repreſented the Sea. See FACTION.

Hence, the antient Cavaliers took occaſion to diſtinguiſh themſelves in their Tournaments, by Habits, Plumes, and Ribbands of different *Colours*; which were ordinarily thoſe of their Miſtreſſes, and were the Symbol of ſome Paſſion, or Quality.

Hence alſo the Origin of *Colours* in Liveries. See LIVERY.

COLOURS, in the Military Art, include the Banners, Flags, Enſigns, &c. of all Kinds, bore in an Army, a Fleet, or the like. See BANNER, FLAG, STANDARD, &c.

COLOURS, are alſo uſed both in the *Latin* and *Greek* Churches, to diſtinguiſh ſeveral Myſteries and Feaſts celebrated therein.

In the *Latin* Church are only regularly admitted five *Colours*, viz. *white*, *red*, *green*, *violet*, and *black*; the *white* for the Myſteries of our Saviour, the Feaſts of the Virgin, thoſe of the Angels, Saints, and Confeſſors; the *red* for the Myſteries and Solemnities of the Holy Sacrament, the Feaſts of the Apoſtles and Martyrs; *green* for the Time between Pentecoſt and Advent, and from Epiphany to Septuageſima; *violet* in Advent, Chriſtmas, in Vigils, Rogations, and in votive Maſſes in time of War: Laſtly, *black* for the Dead, and the Ceremonies thereto belonging. Clothes of Gold and Silver, and Embroideries, ſerv'd indifferently for all Solemnities.

In the *Greek* Church, the uſe of *Colours* is almoſt obliterated, as well as among us: *Red*, among them, was the *Colour* for Chriſtmas and the Dead; as *black* is ſtill in the laſt among us. See MOURNING.

COLOUR, in Law, is a probable, or plauſible Plea; tho in reality falſe at bottom; and only calculated to draw the Trial of the Cauſe from the Jury to the Judge.

Thus, *v. g.* in an Action of Treſpaſs for taking away the Plaintiff's Beaſts, the Defendant urges, That before the Plaintiff had any thing in them, he himſelf was poſſeſs'd of 'em, as his proper Goods; and deliver'd them to *A. B.* to deliver to him again, when &c. and *A. B.* gave them to the

Plaintiff: and the Plaintiff, ſuppoſing the Property to be in *A. B.* at the Time of the Gift, took them; and the Defendant took 'em again from the Plaintiff; whereupon the Plaintiff brings his Action. This is a good *Colour*, and even a good Plea. See *Doct. and Stud.*

COLOUR *of Office*, is when ſome unjuſt Action is done, under countenance of Office, or Authority.

To Colour Strangers Goods, is when a Freeman allows a Foreigner to enter Goods at the Cuſtom-houſe in his Name.

COLOURING, in Painting, the manner of applying, and conducting the *Colours* of a Picture: Or, it is the Mixture of Lights and Shadows, form'd by the various *Colours*, employ'd in a Painting. See CLAIR-OBSCURE.

The *Colouring* is one of the principal Branches of Painting. M. *Felibien* divides the Painter's Art into three Parts; the Deſign, the Compoſition, and the *Colouring*. The *Colouring* ſtrikes the moſt; but among Maſters it always gives place to the Exactneſs of the Deſign. See PAINTING.

De Piles obſerves, that the Word *Colouring*, in its confined Senſe, is chiefly applicable to a Hiſtory-piece; ſcarce at all to a Landſkip. He adds, that the Term *Colouring* relates more immediately to the Carnations than any thing elſe.

The *Colouring*, in its general Senſe, takes in what relates to the Nature and Union of *Colours*; their Agreement, or Antipathy; how to uſe them to advantage in Light and Shadow, ſo as to ſhew a Relievo in the Figures, and a ſinking of the Ground: What relates to the aerial Perſpective, *i. e.* the Diminution of *Colours*, by means of the Interpoſition of Air; the various Accidents and Circumſtances of the Luminary and the Medium; the different Lights, both of the Bodies illuminating and illuminated; their Reflections, Shadows, different Views, with regard either to the Poſition of the Eye, or the Object: What produces the Strength, Fierceneſs, Sweetneſs, *&c.* in Paintings well *colour'd*: The various Manners of *colouring*, both in Figures, Landſkips. *&c.*

The Doctrine of COLOURING *is compriſed under the following Rules.*

Colours are conſider'd, either in reſpect of their Uſe, or their Oeconomy and Diſpoſition.

1ſt, With regard to their *Uſe*. They are either in Oil, or Water: Thoſe in Oil, again, are either conſider'd with a View to their Preparation, or Application.

In the Preparation of Oil Colours, care muſt be taken that they be ground fine; that in putting them on the Pallet, thoſe which won't dry of themſelves, be mix'd with Oil, or other Dryers; and that the ting'd *Colours* be mix'd in as ſmall Quantities as poſſible.

For their *Application*, it is conſider'd either with regard to the Kinds of Painting in Works of various *Colours*, or in thoſe of one ſingle *Colour*.

For the *firſt*: in the larger Pieces, the *Colours* are either laid on full, ſo as they may be *impaſted*, or incorporated together, which makes them hold the more firmly.

Or elſe we mix thoſe more agreeable ones, which dry too hard, and too haſtily, with a little *Colour*, and the cleareſt of the Oil: But, in both Caſes, the *Colours* are to be laid on ſtrong at firſt; it being eaſy to weaken thoſe that are to be thruſt back, and to heighten the others: The Touches to be bold, by the Conduct of a free and ſteady Pencil; that the Work may appear the moſt finiſh'd at a proper diſtance, and the Figures animated with Life and Spirit.

For glazed Colours, care muſt be taken that the Under-*Colour* be painted ſtrong, and that it be a Body-*Colour*, and laid ſmooth.

In finiſh'd Works, which are to be view'd near at hand, they proceed, either by applying each *Colour* in its place; preſerving their Purity, without fretting or tormenting them, but ſweetly ſoftening off their Extremities: Or by filling up all the great Parts with one ſingle *Colour*; and laying the other *Colours*, which are to form the little Things, upon it: which is the more expeditious way, but more apt to decay.

For the *ſecond*: the Kinds of Pictures in one *Colour* are two, *viz. Camieux*, where the Degradations of *Colours* of Objects afar off, are uſually manag'd by Lights, as with Crayons; and *Baſſo-Relievo*, which is an Imitation of Sculpture, of whatſoever Matter and Colour: in both theſe, the *Colours* are wrought dry. See CAMIEUX, *&c.*

For Water-Colours, they are wrought various ways; *viz.* in *Diſtemper*, where the *Colours* are prepar'd in Size; which Method is uſed on all kinds of Matter: in *Freſco*, or Painting on freſh Mortar; where the *Colouring* muſt be quick, that the Matter dry not; and with much Care and Neatneſs, laying each Colour in its place, and intermingling them by Parcels: In *Agouache*, where the *Colours* are mix'd with Gum, and the Pencil dragg'd; as in Paint and Waſhings: In *Miniature*, for ſmall and delicate Works; where the *Colours* are to be very fine and clean, mix'd with Gums and wrought in Dots or Points. See DISTEMPER, MINIATURE, *&c.*

But in all the Kinds of Painting, both in Oil and Diſtemper, eſpecially the latter, care muſt be taken that the Deſign be fix'd, and all the Parts mark'd out, ere any *Colours* be applied.

For the 2d Part of *Colouring*, or the *Oeconomy* and diſpenſing thereof in Paintings; regard is either had, firſt, to the Qualities of the *Colours*, to appropriate them according to their Value and Agreement: or, ſecondly, to their Effect, in the Union and Oeconomy of the Work.

For the firſt, it muſt be obſerv'd, that *white* repreſents Light, and gives the briſkneſs and heightening; *black*, on the contrary, like Darkneſs, obſcures and effaces the Objects: again, black ſets off the light Parts; and by that they ſerve each other to looſen the Objects. A proper Choice to be made of *Colours*, and the too much charg'd manner to be avoided; both in *Carnations*, where red *Colours* are not to be affected, as rather reſembling the Fleſh when ſlead than the Skin; and all bright glowing *Colours*: the Skin, how delicate ſoever, being always of a Down-*Colour*. In the *Drapery*, where the Painter has his whole ſtock of *Colours* to chuſe out of, to procure a good effect; and in the *Landskip*, to diſpoſe thoſe *Colours* near one another, which mutually aſſiſt and raiſe each other's Force and Briſkneſs; as red and green, yellow and blue.

To manage 'em ſo, as that they be accommodated to the Effects of the great Parts of Light and Colour: that the ſtrong *Colours* lead to the ſoft ones, and make 'em more look'd at; bringing 'em forwards, or keeping 'em back, according to the Situation, and the degree of Force requir'd.

For the *Effects* of *Colours*, they either regard the Union, or the Oeconomy: With reſpect to the firſt, care muſt be taken that they be laid ſo as to be ſweetly united, under the briſkneſs of ſome principal one; that they participate of the prevailing Light of the Piece; and that they partake of each other by the communication of Light, and the help of Reflection.

For the Oeconomy in managing their degrees, regard is to be had to the *Contraſt*, or Oppoſition intervening in the Union of the *Colours*; that by a ſweet Interruption, the briſkneſs, which otherwiſe fades and palls, may be rais'd to the Harmony which makes the Variety of *Colours* agree; ſupplying and ſuſtaining the Weakneſs of ſome by the Strength of others; neglecting ſome Places, on purpoſe to ſerve as a Baſis or Repoſe to the Sight, and to enhance thoſe which are to prevail thro' the Piece: To the *Degradation*; where, the better to proportion the *Colours* that fall behind, ſome of the ſame Kind are to be preſerv'd in their purity, as a Standard, for thoſe carried afar off to be compar'd by, in order to juſtify the Diminution: regard being always had to the quality of the Air, which, when loaded with Vapours, weakens the *Colours* more than when clear: To the *Situation* of the *Colours*; where care muſt be taken, that the pureſt and the ſtrongeſt be placed before, or in the Front of the Piece; and that by their force, the compound ones, which are to appear at a diſtance, be kept back; particularly, the glazed *Colours* to be uſed in the firſt Rank: Laſtly, to the *Expreſſion* of the Subject, and the Nature of the Matters, or Stuffs; whether ſhining or dull, opake or tranſparent, poliſh'd or rough. See CARNATION, CONTRAST, DEGRADATION, *&c.*

COLOURING *and Non*-COLOURING *Drugs*: Thus the Dyers diſtinguiſh their Drugs: the *firſt* are applicative, and communicate their *Colours* to the Matters boil'd in them, or paſs'd thro' them; as Woods, ſcarlet Grain, Cochineal, Indigo, Madder, Turmeric, *&c.* The *ſecond* ſerve to prepare and diſpoſe the Stuffs, and other Matters; and to extract the Colour out of the *colouring* Ingredients; as Allum, Salt or Cryſtal of Tartar, Arſenic, Realgal, Salt-Petre, common Salt, Sal Armoniac, Sal Gemmæ, Agaric, Spirit of Wine, Bran, Peaſe-flour, Wheat, Starch, Lime, and Aſhes.

COLUMBINE, a kind of Violet-colour, call'd alſo *Dove-colour*. See COLOUR.

S. COLUMBUS, a Congregation of Regular Canons, formerly of great Extent in *Ireland*; having under it an hundred Abbies, or Monaſteries, in the *Britiſh* Iſlands. See CONGREGATION, and CANON.

The principal Monaſtery, or Chief of the Order, according to ſome, was at *Armagh*; according to others, at *Londonderry*: others will have it in the Iſland of *Ha*, or *Hi*, or *Iona*, now called *Ycolmkil*, to the North of *Ireland*, not far from *Scotland*.

There is a Rule in *Iriſh* Verſe, ſuppoſed to have been dictated by S. *Columbus* to his Canons.

COLUMN, in Architecture, a round Pillar, made to ſupport or adorn a Building. See PILLAR, BUILDING, *&c.*

The *Column* is the principal, or reigning Part of an Order. See ORDER.

The principal Laws and Properties of this eminent Member of Architecture are thus deduc'd:

Every *Fulcrum*, or Support, is ſo much the more perfect as it is the firmer, or carries the greater appearance of firmneſs: and hence all *Columns*, or Pillars, ought to have their Baſe, or Foot, broader than themſelves. See BASE.

Again,

Again, as a Cylinder and a quadrangular Prism are more eaſily remov'd out of their place than a truncated Cone, or Pyramid, on the ſame Baſe, and of the ſame Altitude: The Figure of *Columns* ought not to be cylindrical; nor, that of a Pilaſter, pyramidical; but both the one and the other to be contracted or diminiſh'd, *i. e.* to grow leſs and leſs, like a truncated Cone and a truncated Pyramid. See DIMINUTION.

For the ſame Reaſons, the loweſt Parts of the *Columns* to be cylindrical, that of Pilaſters pyramidical: Hence, again, as *Columns* are more firm, if their Diameter bears a greater proportion to their Height, than if it bore a leſs: The greater Ratio is to be choſen, where a large weight is to be ſuſtain'd; and leſs where a leſs.

Further, as the Deſign of a *Column* is to ſupport a weight, it muſt never be ſuppoſed without an Entablature: tho a *Column* rais'd on an eminent Place, ſo as to leave no room to fear its being thruſt out of its place, needs no Pedeſtal. See ENTABLATURE, and PEDESTAL.

The entire *Column*, in each Order, is compos'd of three principal Parts, the *Baſe*, the *Shaft*, and the *Capital*. See the Proportions of each under its reſpective Head, BASE, SHAFT, *&c.*

Each of theſe Parts, again, is ſubdivided into a great Number of leſſer, called *Members*, or *Mouldings*: ſome whereof are eſſential, and found in all *Columns*; others are only accidental, and found in particular Orders. See MOULDING, ORNAMENT, *&c.*

Columns are made different, according to the ſeveral *Orders* they are uſed in; and likewiſe, not only with regard to their *Order*, but alſo to the *Matter*, *Conſtruction*, *Form Diſpoſition* and *Uſe*.

COLUMNS, *With regard to* Order.

Tuſcan COLUMN, is the ſhorteſt, and moſt ſimple of all the *Columns*. See TUSCAN.

Its height, according to *Vitruvius*, *Palladio*, and *Vignola*, is 7 Diameters, or 14 Modules; according to *Scamozzi*, 15 Modules; to *De Lorme*, 12; to *Trajan's Column*, 16. Its Diminution, according to *Vitruvius*, is one fourth of the Diameter; according to *Vignola*, a fifth; and according to *Trajan's Column*, a ninth.

Its ſeveral Parts, Mouldings, *&c.* ſee under their proper Heads, SHAFT, CAPITAL, *&c.* See it repreſented in Plate *Architecture*, Fig. 6.

Doric COLUMN, is ſomewhat more delicate. See DORIC.

Its Shaft is adorn'd with Flutings: its Height, according to *Vitruvius*, is from 14 to 15 Modules; to *Scamozzi*, 17; to *Vignola*, 16; in the *Coliſeum*, 19; in the *Theatre of Marcellus*, $15\frac{2}{3}$. Its Diminution, according to the Theatre of *Marcellus*, 12 Minutes; to the *Coliſeum*, 4 Min. and a half. See Plate *Architecture*, Fig. 7.

Ionic COLUMN, is more delicate ſtill. See IONIC.

It is diſtinguiſh'd from the reſt by the Volutes in its Capital; and by its Baſe. See VOLUTE.

Its Height, according to *Palladio*, is 17 Modules $\frac{1}{3}$; according to *Vignola*, 18. Its Diminution, in the Temple of *Concord*, $10\frac{1}{2}$; of *Fortuna Virilis*, $7\frac{1}{2}$; *Coliſeum*, 10 Min. See Plate *Architecture*, Fig. 8.

Corinthian COLUMN, is the richeſt and moſt delicate of all the *Columns*. See CORINTHIAN.

Its Capital is adorn'd with two rows of Leaves, and with Caulicoles; whence ſpring out little Volutes. Its Height, according to *Vitruvius*, and many Remains of antique Porticos, Temples, *&c.* is 19 Modules; according to *Serlio*, 18; to the *Coliſeum*, 17.17; to the three *Columns* in the *Campo Vaccino*, 20; the Baſiliſk of *Antoninus*, 20. Its Diminution, according to the Temple of *Peace*, $6\frac{1}{2}$ Minutes; the Pantheon, $6\frac{1}{8}$; Temples of *Sibyl* and *Fauſtina*, 8; *Conſtantine*'s Arch, 7; Portico of *Septimius*, $7\frac{1}{2}$. See Plate *Architecture*, Fig. 9.

Compoſite COLUMN, has two rows of Leaves in its Capital, like the *Corinthian*; and angular Volutes, like the *Ionic*. See COMPOSITE.

Its Height, according to *Vignola*, and the Arch of *Titus*, is 20 Modules; to *Scamozzi*, and the Temple of *Bacchus*, $19\frac{1}{2}$; the Arch of *Septimius*, 19.09. Its Diminution, according to *Titus*'s and *Septimius* Arch, 7 Minutes; Baths of *Diocletian*, 11 Min. $\frac{1}{3}$; Temple of *Bacchus*, $6\frac{1}{2}$. See Plate *Architecture*, Fig. 10.

It may be here obſerv'd, that there ſeems more of Caprice than Reaſon in that Diverſity found in the Heights of *Columns* of the ſame Order, in different Authors; each of whom frequently takes the liberty of diſpenſing with his own Rules.

Vitruvius, for Inſtance, makes the *Doric Columns* of Temples, ſhorter than thoſe of Porches behind Theaters; *Palladio* gives a greater height to *Columns* ſtanding on Pedeſtals, than to thoſe which have none; and *Serlio* makes his *Column* a third ſhorter, when inſulate, or detach'd, than when contiguous to the Wall.

But notwithſtanding the diverſity of Height in *Columns* of the ſame Order in different Authors; they ſtill bear a true Proportion in the ſeveral Orders compar'd with each other; by which they go increaſing, as the Orders are leſs maſſive.

But this Augmentation is greater in ſome Ordonnances than in others; for in the Antique it is but of 5 Modules, or Semidiameters, for the five Orders: the ſhorteſt *Column*, *viz.* the *Tuſcan*, being 15 Modules; and the longeſt, the *Compoſite*, 20. In *Vitruvius*, this Increaſe is alſo of 5 Modules; but commences from 14 Modules, and ends at 19. The Moderns uſually make it greater: *Scamozzi* makes it 5 Modules and a half; *Palladio* and *Serlio*, 6.

From the ſeveral Proportions of *Columns* aſſign'd by ſeveral Authors, M. *Perrault* has drawn a new one; which is a Mean, between the Extremes of the reſt. Thus, he makes the *Tuſcan Column* 14 Modules $\frac{2}{3}$; which is a Mean between the *Tuſcan* of *Vitruvius*, 14, and that of *Trajan's Columns*, 18: The height of the *Doric Column* he makes 16 Modules; which is a Mean between the 14 of *Vitruvius*, and the 19 of the *Coliſeum*: The *Ionic* he makes 17 Modules $\frac{2}{3}$; which is a Mean between the 16 of *Serlio*, and the 19 of the *Coliſeum*: The *Corinthian Column* he makes 18 Modules $\frac{2}{3}$; as being a Medium between the 16 Modules 6 Minutes of the Temple of the *Sibyl*, and the 20 Modules 6 Minutes of the three *Columns* of the *Roman Forum*: Laſtly, the *Compoſite Column*, by the ſame Rule, he makes 20 Modules; that height being a Mean between the Arch of *Titus*, and the Temple of *Bacchus*.

Indeed, the Rule he proceeds by ſeems very reaſonable; *viz.* that the progreſſional Advance of each *Column* in the different Orders be equal: ſo that having ſettled the whole Progreſſion, from the *Tuſcan* to the *Compoſite*, at 5 Modules 10 Minutes; this being a Mean between the 5 Modules of the Antique, and the $5\frac{1}{2}$ of the Moderns; he divides this Sum, which is 160 Minutes, into four equal Parts, giving 40 Minutes to the Progreſſion of each Order: This makes the *Tuſcan Column* 14 Modules 20 Minutes; the *Doric* becomes 16, the *Ionic* 17, 10 Min. the *Corinthian* 18, 20 Min. and the *Compoſite* 20 Modules. See PROPORTION.

For the diſtinguiſhing Characters of each Order of Columns; ſee ORDER.

For the Matter; ſee STONE, MARBLE, *&c.*

For the Uſe and Application; ſee BUILDING.

For the ranging of COLUMNS, *and the Spaces to be obſerv'd between each*; See INTERCOLUMNATION.

COLUMNS, *with regard to their different* Matter.

Water-COLUMN, is a *Column* whoſe Shaft is form'd of a large *Jet d'Eau*; which ſpouting out Water violently from the Baſe, drives it within the Tambour of the Capital, which is made hollow; whence falling down again, it has the Effect of a liquid cryſtal *Column*. See FOUNTAIN.

An Inſtance of this we have at *Quinta d'Aveiro* near *Lisbon*.

Fuſible COLUMN. Under this Term are comprehended, not only *Columns* of various Metals, and other fuſible Matters, as Glaſs, *&c.* but alſo thoſe of Stone, ſaid to have been caſt; the Secret of which, ſome will have us believe to have been known to the Antients.

Tranſparent COLUMN, any *Column* made of tranſparent Matter; as were thoſe of Cryſtal in the Theater of *Scaurus*, mention'd by *Pliny*; and thoſe of tranſparent Alabaſter, in the Church of St. *Mark*, at *Venice*.

Hydraulic COLUMN, is that whoſe Shaft appears to be of Cryſtal, being form'd by a number of little Threads of Water, falling from Holes made in Girts of Metal, at equal diſtances, by means of a Pipe mounting thro' the middle thereof; as in the Gardens at *Verſailles*.

Hydraulic COLUMN, is alſo a *Column* from whoſe top proceeds a *Jet d'Eau*, to which the Capital ſerves as a Baſon; whence the Water deſcends by a little Pipe, which turns ſpirally around the Shaft.

Such are the *Ionic Columns* of the Caſcade of the *Belvidera* at *Freſcati*; and thoſe of the Vineyard *Mathei* at *Rome*.

Molded COLUMN, is that made by Impaſtation, of Gravel and Flints of divers Colours, bound together with a Cement, which grows perfectly hard, and receives a poliſh like Marble.

The Secret of making theſe, it appears the Antients were Maſters of, by the *Columns* lately diſcover'd near *Algiers*; which are doubtleſs the Ruins of the antient *Julia Cæſarea*: on theſe are found the very ſame Inſcription in antique Characters, the Contours, Accents, and even Faults, being repeated in every Shaft: an inconteſtable Proof of their being molded.

COLUMNS *with regard to their* Conſtruction.

COLUMN *of Joinery*, is made of ſtrong timber boards, join'd, glu'd, and pinn'd together; is hollow, turn'd in the Lath, and uſually fluted. Such are the *Columns* in moſt Altar-pieces.

Incruſtated COLUMN, is made of ſeveral Ribs, or thin Shells of fine Marble, or other rare Stone, cemented upon a Mold of Stone, Brick, or the like. This is done with deſign both to ſave the precious Matter, as Oriental Jaſper, Lapis, Agat, *&c.* or to repreſent pieces of ſuch Matters of an extraordinary ſize, by the neatneſs and cloſeneſs of the Incruſtation, which renders the Joints imperceptible.

Gemi-

Geminated COLUMN, that whoſe Shaft is form'd of three ſimilar and equal Sides, or Ribs of Stone, fitted within one another; and faſten'd at bottom with Iron Pins, and a-top with Cramp-Irons. This is to be fluted, that the Joints may be the leſs diſcernible.

COLUMN *of Maſonry*, is made of rough Stone, well laid and cover'd with Plaiſter; or of Bricks molded triangular-wiſe, and cover'd with Stuc.

COLUMN *with Bands, or Tambours*; that whoſe Shaft is form'd of ſeveral Courſes of Stone, or Blocks of Marble; leſs high than the Diameter of the *Column*: This is what *Ulpian* means by *Columna ſtructilis*, or *adpacta*; which is oppoſite to the *Columna ſolida*, or *integra*, *i.e.* of one piece.

COLUMN *in Truncheons*, or *Pieces* conſiſts of three, four, or five pieces of Stone, or Metal; differing from the Tambours, as being higher than the Diameter of the *Column*.

COLUMNS, *with regard to their* Form.

Fluted COLUMN, called alſo *channell'd*, and *ſtriated Column*; that whoſe Shaft is adorn'd with Flutes, or Channelings; either from top to bottom, or only two thirds of its height. See FLUTING.

Cabled, or *Rudented* COLUMN, is a *Column* having Projectures in form of Cables, or Canes, in the Naked of the Shaft; each Cable having an Effect oppoſite to that of a Fluting; and accompany'd with a little Liſt on each ſide. See CABLING.

Fluted and Cabled COLUMN, is that whoſe Flutes are fill'd up with Cables, Reeds, or Staves; beginning from the bottom of the Shaft, and reaching one third of its height.

Fluted COLUMN *enrich'd*, is that whoſe Flutings are fill'd up with Ornaments of Foliages, Rinds, Ribbons, *&c.* inſtead of Cables.

Twiſted COLUMN, is that whoſe Shaft is twiſted round, in manner of a Screw, with ſix Circumvolutions; being, ordinarily of the *Corinthian* Order: *Vignola* firſt found a Method of drawing it by Rule.

A twiſted fluted COLUMN, is that whoſe Flutes follow the Contour of the Shaft, in a ſpiral Line throughout the whole length; whereof there are ſome antique ones of Porphyry, and hard Marble.

COLUMN *twiſted and enrich'd*, is that, one third of whoſe Shaft is fluted, and the reſt adorn'd with Branches and other Enrichments: and which being all of Marble, is enrich'd with Sculpture from bottom to top.

Sometimes, again, the *twiſted Column* is form'd of two or three ſlender Shafts, twiſted round, ſo as to leave a Cavity in the middle. Sometimes the Flutings are Spiral, yet the Shaft ſtrait; which ſucceeds very well in the more delicate Orders.

Coloſſal COLUMN, a *Column* of enormous ſize, too large to enter any Ordonnance of Architecture; to be placed ſolitary, in the middle of a Square, *&c.* See COLOSSUS.

Such is the *Trajan Column*, whoſe Proportions are *Doric*, and its Profile *Tuſcan*; 12 Feet and $\frac{3}{8}$ in Diameter, and 100 in Height, including the Baſe and the Capital: The Pedeſtal has 18 Feet, and the Crowning 16 and an half. It ſupports a brazen Statue of St. *Peter*, 13 Foot high: The whole making 147 antient *Roman* Feet.

It was built by *Apollodorus*; and conſiſts of 34 Tambours, or Blocks, or Pieces of white Marble, taking in the Crowning.

The *Antonine Column*, which is alſo of white Marble, is inferior to the *Trajan* in beauty of Sculpture, but exceeds it in height; being 168 Feet to the Capital, beſides the Feet of the Pedeſtal under ground.

Laſtly, the *London Column*, or Monument, is of Stone, 15 Foot in Diameter, and 202 high; taking in the Pedeſtal and Crowning. See MONUMENT.

Carolitic COLUMN, that adorn'd with Foliages, or Leaves and Branches turn'd ſpirally around the Shaft; or in Crowns and Feſtoons.

Theſe were uſed by the Antients for raiſing Statues on; which hence took the Denomination of *Carolitic*.

They are very ſuitable in triumphal Arches, and Decorations of Theaters.

Swell'd COLUMNS, are thoſe which have a buldging, or ſwelling, in proportion to the height of the Shaft.

Authors are much divided on the Subject of this *Swelling*; Sir *H. Wotton* treats it as a moſt ridiculous Abuſe: yet the Practice obtains among the modern Architects; who generally make their *Columns* a little bigger at one third of their height, than at the Baſe; *i. e.* they diminiſh the *Column* near the Baſe; which makes the Part appear big, and occaſions a Swelling at about one third of the height.

This Swelling appears to have been unknown to the Antients. M. *le Clerc* obſerves, it ought not to exceed one Minute and a half at moſt. He thinks it ought never to be us'd, excepting where there is a particular occaſion for it; as where *Columns* are to be placed over one another.

Diminiſh'd COLUMN, is that which has no ſwelling, but begins to taper, or diminiſh, from the Baſe; in imitation of Trees. See DIMINUTION.

Such are moſt of the Antique *Columns* of *Granate*; particularly the *Corinthian* ones in the Porch of the Pantheon.

Gothic COLUMN, a round Pillar, either too ſhort for its bulk, or too ſlender for its height; as having, ſometimes, 20 Diameters; and this without either Diminution, or Swelling: yet, its Ornaments, and the Characters of its work, being as far from thoſe of the Antique as its Proportions. See GOTHIC.

Hermetic COLUMN, a kind of Pilaſter, in manner of a Terminus; having the Head of a Man, in lieu of a Capital. It had its Name from a Cuſtom among the Antients, of placing *Mercury*'s Head, whom the *Greeks* call *Hermes*, a-top of *Columns*. See HERMES.

Maſſive COLUMNS, are thoſe too ſhort for the Order whoſe Capital they bear; as the Pillars in *Gothic* Churches uſually are. See MASSIVE.

Under the Term *Maſſive*, are, likewiſe, frequently comprehended *Ruſtic* and *Tuſcan Columns*. See RUSTIC.

Cylindrical COLUMN, is that which has neither Swelling nor Diminution.

Oval COLUMN, that whoſe Shaft has a Flatneſs; its Plan being made oval, to reduce the Projecture.

Polygonous COLUMN, has ſeveral Sides, or Faces: The moſt Regular of theſe have eight Faces.

Theſe three laſt, *Daviler* regards as Abuſes in Architecture.

Paſtoral COLUMN, that whoſe Shaft is form'd in imitation of the Trunk of a Tree, with Bark and Knots.

This Kind of *Column*, in the *Tuſcan* Proportion, may be uſed in the Gates of Parks and Gardens; in the Decoration of Paſtoral Scenes, *&c.*

Serpentine COLUMN, a *Column* form'd of three Serpents, twiſted together; the Heads whereof ſerve as a Capital.

An Inſtance of this is at *Conſtantinople*, in the Square called *Atmeidan*, antiently the *Hippodrome*. *P. Gilles* calls this the *Delphic Column*; as imagining it antiently ſerv'd for the Tripod of *Apollo*, in the Temple at *Delphos*. It is now ordinarily called the *Taliſman*, or *Enchanted Column*.

COLUMNS, *with regard to their* Diſpoſition.

Inſulated COLUMN, is that ſtanding free, and detach'd, on all Sides, from any other Body.

COLUMN *inſerted*, or *back'd*, is that attach'd to a Wall, by a third or fourth Part of its Diameter.

COLUMN *Nich'd*, is that whoſe Shaft enters, with half its Diameter, into a Wall, which is hollowed for its Recepion; with its Plan parallel to the Projecture of the Tore.

Such is that in the Portal of St. *Peter* at *Rome*.

Angular COLUMN, is an inſulated *Column*, placed in the Coin, or Corner of a Portico; or inſerted into the Corner of a Building: Or, even a *Column* that flanks an Angle, either acute or obtuſe, of a Figure of many Sides.

Attic COLUMN, according to *Pliny*, is a Pilaſter inſulated; having four equal Faces, or Sides; and of the higheſt Proportion, *v. g. Corinthian*.

Flank'd COLUMN, according to M. *Blondel*, is a *Column* engag'd with one half, or at leaſt, one third of its Diameter, between two Demi-Pilaſters.

Doubled COLUMN, is an Aſſemblage of two *Columns*; join'd in ſuch a manner, as that the two Shafts penetrate each other with a third of their Diameter. Such are thoſe of the four Angles in the Court of the *Louvre*.

Coupled COLUMNS, are thoſe diſpoſed by two and two; ſo as almoſt to touch each other at their Baſes, and Capitals.

Canton'd COLUMNS, thoſe engag'd in the four Corners of a ſquare Pillar, to ſupport four Springs of an Arch.

Grouped COLUMNS, thoſe placed on the ſame Pedeſtal, or Socle; either by three and three, or by four and four.

Median COLUMNS. *Vitruvius* gives the Name *Columnæ Medianæ*, to the two *Columns* in the middle of a Porch, which have their Intercolumniation larger than the reſt: So that if theſe laſt, for inſtance, be *Pycnoſtyles*; the *Medianes* are *Euſtyle*.

The Term may alſo be applied to the middle Row of *Columns*, in a Frontiſpiece adorn'd with three Orders.

COLUMNS, *with regard to their* Uſe.

Aſtronomical COLUMN, is a kind of Obſervatory, in form of a very high Tower; built hollow, and with a ſpiral Aſcent to an Armillary Sphere; placed a-top, for obſerving the Courſes of the heavenly Bodies.

Such is that, of the *Doric* Order, erected at the *Hotel de Soiſſons* at *Paris*, by *Catherine de Medicis*, for the Obſervations of *Orontius Fineus*, a celebrated Aſtronomer of that Time.

Chronological COLUMN, that which bears ſome hiſtorical Inſcription, digeſted according to the Order of Time: as by Luſtra, Olympiads, Faſti, Epochas, Annals, *&c.*

At *Athens* there were *Columns* of this kind, whereon were inſcrib'd the whole Hiſtory of *Greece*, digeſted into Olympiads.

Hollow COLUMN, that which has a ſpiral Stair-caſe within-ſide, for the Convenience of aſcending to the top: As the *Trajan Column*, the Stair-caſe whereof conſiſts of 185 Steps, and is illumin'd by 43 little Windows: The *Antonine Column*,

lumn has 198 Steps, with 56 Windows; each of these is cut in Tambours of white Marble. The *Monument*, or *Fire-Column* at *London*, has also a Stair-case; but it does not reach to the top.

These kind of *Columns* are called also *Columnæ Cochlides*, or *Cochlidea*, *q. d.* a Stair-case in form of a Snail.

Funeral COLUMN, that which bears an Urn, wherein are supposed to be inclos'd the Ashes of some deceas'd Hero; and whose Shaft is sometimes overspread with Tears, or Flames; which are Symbols of Sorrow, and of Immortality.

Gnomonic COLUMN, a Cylinder, whereon the Hour of the Day is represented by the Shadow of a Style.

Of these there are two Kinds: in the one, the Style is fix'd, and the Hour-Lines are no more than the Projection of a vertical Dial, on a cylindrical Surface.

In the other, the Style is movable; and the Hour-Lines are drawn to the different Heights of the Sun, in the different Seasons of the Year.

Historical COLUMN, is that whose Shaft is adorn'd with a Basso-Relievo, running in a spiral Line its whole length; and containing the History of some great Personage.

Such are the *Trajan* and *Antonine Columns*, at *Rome*.

Historical Columns may likewise be divided by Bands, or Tambours, into separate Basso-Relievos, containing distinct Subjects; by which means, the same *Columns* may likewise be made to answer the End of Chronological ones.

This Manner *Vignola* prefers to the former; which, he thinks, appears too much confused.

Indicative COLUMN, that which serves to shew the Tides, *&c.* along the Sea-Coasts. Of this kind, there is one at *Grand Cairo*, of Marble, whereon the Overflowings of the *Nile* are express'd: By this they form a Judgment of the succeeding Season: when the Water, for instance, ascends to 23 Foot, 'tis a Sign of great Fertility in *Egypt*. See NILOMETER.

Instructive COLUMN, that rais'd, according to *Josephus*, Lib. I. cap. 3. by the Sons of *Adam*, whereon were engraven the Principles of Arts and Sciences.

Baudelot tells us, that the Son of *Pisistratus* rais'd another of this kind, of Stone; containing the Rules and Precepts of Agriculture.

Itinerary COLUMN, a *Column* with several Faces, placed in the Cross-ways in large Roads; serving to shew the different Routs, by the Inscriptions thereupon.

Lactary COLUMN, at *Rome*, according to *Festus*, was a *Column* erected in the Herb-Market, now the *Platea Montanara*; which had a Cavity in its Pedestal, wherein young Children, abandon'd by their Parents, out of Poverty or Inhumanity, were exposed, to be brought up at the publick Expence.

Legal COLUMN. Among the *Lacedemonians*, there were *Columns* rais'd in publick Places, whereon were engraven the fundamental Laws of the State.

Limitrophous, or *Boundary* COLUMN, that which shews the Limits of a Kingdom, or Country conquer'd. Such was that, which, *Pliny* says, *Alexander* the Great erected at the Extremities of the *Indies*.

As to those of *Hercules*, ordinarily call'd his *Columns*, or *Pillars*; they are only two very steep Mountains in the Straights of *Gades*, now *Gibraltar*.

Luminous COLUMN, a sort of *Column* form'd on a cylindrical Frame, mounted and cover'd over with oil'd Paper, or Gawze; so that Lights being dispos'd in ranks over each other, the whole appears as on fire.

This sort of *Column* is likewise made with rows of Lamps, or Torches, running round its Shaft; either in horizontal Belts, or Bands; or in a spiral Line, continued over a Festoon of Flowers.

Manubiary COLUMN, from the Latin *Manubiæ*, Spoils of the Enemy; a *Column* adorn'd with Trophies, built in imitation of Trees, whereon the Spoils of Enemies were antiently hung. See TROPHY.

Memorial COLUMN, that rais'd on occasion of any remarkable Event; as the *Monument* in *London*, built to perpetuate the Memory of the Burning of that City, in 1666.

It is of the *Doric* Order, fluted, hollow, with a winding Stair-case; and terminated a-top with waving Flames.

There is, also, another of the like Kind, in form of an Obelisk, on the Banks of the *Rhine* in the *Palatinate*, in memory of the famous Passage of that River, by the great *Gustavus Adolphus* and his Army.

Menian COLUMN, any *Column* which supports a Balcony, or Meniane. See MENIANE.

The Origin of this kind of *Column*, *Suetonius* and *Ascanius* refer to one *Menias*; who having sold his House to *Cato* and *Flaccus*, Consuls, to be converted into a publick Edifice; reserv'd to himself the Right of rasing a *Column* without side, to bear a Balcony; whence he might see the Shews.

Military COLUMN, among the *Romans*, a *Column* whereon was engraven a List of the Forces in the *Roman* Army, ranged by Legions, in their proper order; with design to preserve the Memory of the Number of Soldiers, and of the Order observ'd in any Military Expedition.

The *Romans* had another kind of *Military Column*, which they called *Columna Bellica*, standing before the Temple of *Janus*; at the Foot whereof the Consul declar'd War, by throwing a Javelin towards the Enemies Countries.

Miliary COLUMN, was a *Column* of Marble, rais'd by order of *Augustus*, in the middle of the *Roman Forum*; from whence, as a Centre, the Distances of the several Cities, *&c.* of the Empire were reckon'd, by other *Miliary Columns*; dispos'd at equal distances, on all the grand Roads. See MILIARY.

This *Column* was of white Marble; the same with that which is now seen on the Balustrade of the Perron of the Capital at *Rome*.

Its proportion is massive; being a short Cylinder, with a *Tuscan* Base and Capital, and a Brass Ball for a Crowning, the Symbol of the Globe of the Earth.

It was called *Miliarium Aureum*; as having been gilt, at least the Ball, by order of *Augustus*. It was restor'd by the Emperors *Vespasian* and *Adrian*; as appears by the Inscriptions.

Phosphorical COLUMN, a *Lighthouse*; or a hollow *Column*, built on a Rock, or the Tip of a Mole, or other Eminence, to serve as a Lanthorn to a Port.

Rostral COLUMN, that adorn'd with the Beaks, or Prows of Ships and Galleys, with Anchors and Grapplers; erected, either in memory of a Naval Victory; as the *Tuscan Column*, in the Capitol: or, in honour of some Admiral; as the *Doric* ones, at the Entrance of the Castle *de Richlieu*.

Sepulchral COLUMN, antiently, was a *Column* erected on a Tomb or Sepulchre; with an Inscription on its Base. See TOMB, *&c.*

Those over the Tombs of Persons of Distinction were very large; those for the common People small: these last are called *Stelæ* and *Cippi*. See CIPPUS, *&c.*

Statuary COLUMN, that which supports a Statue. Such was that erected by Pope *Paul* V. on a Pedestal before the Church of St. *Maria major* at *Rome*; to support a Statue of the Virgin, which is of gilt Brass. See STATUE.

This *Column* was dug up in the Temple of *Peace*; its Shaft is a single Block of white Marble 49 Foot and an half high, and 5 Foot 8 Inches Diameter; of the *Corinthian* Order, fluted.

The Term *Statuary Column*, may likewise be apply'd to Caryatides, Persians, Termini, and other human Figures, which do the Office of *Columns*; and which *Vitruvius* calls *Telamones*, and *Atlantes*. See CARYATIDES, *&c.*

Symbolical COLUMN, is a *Column* representing some particular Country, by the Attributes proper thereto: As that of the *French* Order, set with Flower de Lis's, in the Frontispiece of the Jesuits Church at *Rouen*: or some memorable Action; as the *Corvinian Column*, on which was a Crow; erected to *Valerius Maximus*, Sirnam'd *Corvinus*, in memory of his Defeat of a Giant in the Army of the *Gauls*, by the Assistance of a Crow.

Under the Title of *Symbolic Columns*, may also be comprehended those which serve for Symbols. Such is that in a Medal of *Nero*, which expresses the Stability of the *Roman* Empire. See SYMBOL.

Triumphal COLUMN, a *Column* erected among the Antients in honour of an Hero; the Joints of the Stones, or Courses whereof, were cover'd with as many Crowns, as he had made different Military Expeditions. See TRIUMPH.

Each Crown had its particular Name; as *Palissaris*, which was set with Spikes, in memory of having forced a Palisade. *Muralis*, adorned with little Turrets, or Battlements; for having mounted to an Assault. *Navalis*, of Prows and Beaks of Vessels; for having overcome at Sea. *Obsidionalis*, or *Graminalis*, of Grass; for having rais'd a Siege. *Ovans*, of Myrtle; which express'd an Ovation, or little Triumph: And *Triumphalis*, of Laurel; for a grand Triumph. See CROWN.

Procopius tells us of a *Column* of this Kind, erected in the place called *Augusteum*, before the Imperial Palace of *Constantinople*, supporting an *Equestrian* Statue of the Emperor *Justinian*.

Zophoric COLUMN, a kind of Statuary *Column*, whereon is placed a Figure of some Animal. Such is one of the two *Columns* of the Gate of *Venice*; whereon is the Lion of St. *Mark*, and the Arms of the Republick: or that at *Sienna*, which bears the Wolf that suckled *Romulus* and *Remus*.

COLUMN, in War, a deep File, or Row of Troops; or a Division of an Army, which marches at the same Time, and towards the same Place, at Intervals large enough to avoid Confusion.

An Army marches in one, two, three, or more *Columns*; according as the Ground will allow, and the General sees expedient.

The Word is also used in speaking of Vessels at Sea, following each other in the same Line.

'Tis difficult to form *Columns* at Sea, unless the Wind be in Stern.

COLUMN, among Printers, is half a Page, when the Page is divided into two Parts, from top to bottom See PAGE.

COLUMNA *Naſi*, is uſed by ſome Writers of Anatomy, for the fleſhy Part of the Noſe jutting out over the upper Lip. See NOSE.

COLUMNA *Oris*, is ſometimes uſed for the *Uvula*. See UVULA.

COLUMNÆ *Carneæ*, in Anatomy, called alſo *Lacertuli*, and *Columnæ Cordis*; are ſeveral ſmall Muſcles in the Ventricles of the Heart; derived, and, as it were, detach'd from the Parietes of the Ventricles, and connected by tendinous Extremities to the Valves of the Heart. See HEART.

Theſe little *Columns*, or Pillars, being faſten'd to the Parietes of the Heart on one ſide, and the Tricuſpid and Mitral Valves on the other; do, by their Contraction in the Syſtole of the Heart, draw out the Valves; and by that means, not only ſhut the Orifices of the Veins, but more exactly cloſe the Ventricles in their Syſtole. See SYSTOLE, and DIASTOLE.

COLURES, in Geography and Aſtronomy, two great Circles, imagined to interſect each other at right Angles, in the Poles of the World. See CIRCLE.

The *Colures* paſs, one of 'em thro' the *Solſtitial*, and the other thro' the *Equinoctial* Points of the Ecliptic: whence the firſt is denominated the *Solſtitial* and the ſecond the *Equinoctial Colure*. See SOLSTITIAL, and EQUINOCTIAL.

The Equinoctial *Colure* determines the Equinoxes; and the Solſtitial, the Solſtices. See EQUINOX, and SOLSTICE.

By thus dividing the Ecliptic into four equal Parts, they mark the four Seaſons of the Year. See SEASON.

The Word is deriv'd from the *Greek* κόλος, *mutilus*, or *truncatus*, and οὐρὰ *tail*; as appearing with the *Tail cut off*; becauſe never ſeen entire above the Horizon.

COLYBA, a Term in the *Greek* Liturgy, ſignifying an Offering of Grains, and boil'd Pulſe; made in honour of the Saints, and for the ſake of the Dead.

Balſamon, *P. Goar*, *Leo Allatius*, and others, have wrote on the Subject of *Colybas*: the Subſtance of what they have ſaid, is as follows.

The *Greeks* boil a quantity of Wheat, and lay it in little Heaps on a Plate; adding beaten Peas, Nuts cut ſmall, and Grape-ſtones, which they divide into ſeveral Compartments, ſeparated from each other by Leaves of Parſley. A little Heap of Wheat thus ſeaſon'd, they call κολύβα.

They have a particular *Formula* for the Benediction of the *Colybas*; wherein, praying that the Children of *Babylon* may be fed with Pulſe, and that they may be in better Plight than other People, they deſire God to bleſs thoſe Fruits, and thoſe who eat them, becauſe offer'd to his Glory, to the honour of ſuch a Saint, and in memory of the faithful Deceaſed.

Balſamon refers the Inſtitution of that Ceremony to S. *Athanaſius*; but the *Greek Synaxary* to the Time of *Julian* the Apoſtate.

Many of the *Latin* Divines having ſpoke injuriouſly of this Ceremony, *Gabriel* Archbiſhop of *Philadelphia*, has wrote a Diſcourſe in its Vindication; wherein he endeavours to ſhew, that the Deſign of the *Colyba* is only to repreſent the Reſurrection of the Dead, and to confirm the Faithful in the Belief thereof.

The *Colybæ*, he ſays, are Symbols of a general Reſurrection; and the ſeveral Ingredients added to the Wheat, ſignify ſo many different Virtues.

COMA, in Medicine, a ſort of a ſleepy Diſeaſe, otherwiſe called *Cataphora*; conſiſting in a violent propenſity to ſleep, whether Sleep enſue, or not. See SLEEP.

If Sleep do enſue, the Diſeaſe is called *Coma Somnolentum*, wherein the Patient continues in a profound Sleep; and when awak'd, immediately relapſes, without being able to keep open his Eyes.

If he do not ſleep, but is continually awak'd with frightful Dreams, 'tis called *Coma Vigil*: and here too his Eyes are ſhut, and he appears aſleep.

The Cauſe of the *Coma Somnolentum*, may be any thing that prevents the Courſe of the Spirits; as a cold, humid temperature of the Brain; hot putrid Vapours aſcending into the Head, and ſtopping the Canals of the Animal Spirits; narcotick Vapours, &c.

The *Coma Vigil* is ſuppoſed to ariſe from the Conflict, or jarring Mixture of Bile with *Pituita*; the one urging to ſleep, the other to waking. Hence, the Patient ſleeps either not at all; or, at moſt, but for a moment; is uneaſy, ſtarts, riſes up, and ſometimes throws himſelf on the Perſons near him; his Eyes, all the time faſt cloſed.

The Remedies for a *Coma*, are thoſe which occaſion great Evacuations; as violent Clyſters, or Vomitives; Medicines that purge, and dry the Brain; and thoſe which occaſion Revulſion of Humours; as Veſicatories, Cauteries, &c. to which may be added volatile Spirits, Salts, and moſt Cephalicks.

COMA, in Grammar. See COMMA.

COMA BERENICES, *Berenice's Hair*, in Aſtronomy, a Conſtellation of the Northern Hemiſphere. See CONSTELLATION.

The Stars in the Conſtellation *Coma Berenices*, in *Ptolomy*'s Catalogue are 3; in *Tycho*'s 13; in the *Britannic Catalogue* 40. The Order, Names, Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow.

Stars in the Conſtellation COMA BERENICES.

Names and Situations of the Stars.	Signs.	Longitude. ° ′ ″	Latitude. ° ′ ″	Magn.
	♍	16 53 24	20 21 46	7
		17 44 9	20 2 11	6
		21 14 30	16 27 0	6
		17 21 15	24 45 23	6
		19 56 6	19 59 7	6
5				
First of all in the Circle of the Hair, to the South		23 16 44	15 13 55	5
		19 18 19	23 28 33	4 5
		20 24 1	22 56 57	7
		17 56 28	27 34 35	6
		17 50 59	27 51 56	6
10				
		23 5 51	18 19 53	4 5
3d of the prec. from the Cuſp, or Point		19 45 29	25 57 32	5
2d of the preced.		20 2 23	26 11 47	5
That preced. in the Cuſp		19 55 40	27 26 54	5
In the Cuſp towards the North		19 32 24	28 24 2	4 5
15				
That under this		20 16 55	27 6 50	5
That following this		21 10 29	26 29 11	6
Firſt of 3 contiguous ones behind this		22 10 36	24 55 18	6
		23 43 26	22 2 38	6
Middle of the contiguous ones		22 18 15	25 29 10	4 5
20				
Subſeq. and leſs		23 1 59	25 29 11	7
Anoth. following all theſe, and more S.		24 7 1	24 7 9	4
That preced. ſeveral under the Hair		26 7 23	20 17 57	5
		27 6 49	19 19 12	6
		25 48 38	23 8 10	5
25				
		29 34 59	19 48 42	5
	♎	1 16 5	17 12 57	6
		1 10 30	17 48 0	5
	♍	24 57 52	29 58 24	6
Preced. in the Hair		25 30 24	30 12 24	5
30				
	♎	0 39 2	20 48 10	7
More South in the Hair	♍	28 59 44	24 42 42	4 5
	♎	2 3 55	21 46 56	5
	♍	25 43 4	33 56 36	5 6
	♎	2 42 23	21 45 14	6
35				
		2 5 7	25 55 56	5
		1 22 51	27 14 39	6
Former of 2 in Extrem. of the Hair	♏	29 1 29	31 49 22	5
	♍	4 38 35	22 59 12	4 5
Poſterior in the Extremity of the Hair		0 6 31	32 28 33	4
40				

All theſe Stars *Ptolomy* ranks among the *Informes* of *Leo*; and the Cluſter of little Stars, in form of a Nebulous one, between the Lion and Bear, he calls ſimply πλόκαμον; as reſembling an Ivy-leaf: the pointed Part whereof is turn'd towards the North, and the Sides, bounded by the 7th and 22d Stars. *Bayer*, inſtead of Hair, gives a Sheaf of Corn.

COMBAT, an *Engagement*; or a Difference decided by way of Arms.

Authors diſtinguiſh in an Army, between a *Combat* and a Battel; the latter expreſſing the general Action of the whole Army: the former a particular Skirmiſh, or Engagement of a ſingle part: ſo that the *Combat* is properly a Part of a Battel. See BATTEL.

COMBAT, in Law; or, *Single*-COMBAT; a formal Trial, between two Champions, of ſome doubtful Cauſe or Quarrel, by the Sword, or Batoons. See TRIAL.

This form of Proceeding was antiently very popular; and obtain'd not only in Criminal, but alſo in Civil Cauſes: being built on a Preſumption, that God would never grant the Victory, but to him who had the beſt right. See DUEL.

We find the *Combat* as early as the Time of *Otho*: The laſt admitted in *England*, was 6 *Car.* I. between *Donald* Lord *Rhee*, or *Rey*, and *David Ramſey* Eſq; in the *Painted Chamber*.

The Form and Ceremony of the *Combat*, is deſcrib'd in the *Grand Coutumier of Normandy*: The Accuſer, firſt, ſwore to the Truth of his Accuſation; the Accuſed gave him the Lye: upon which, each threw down a Gage, or Pledge of Battel; and the Parties were committed Priſoners till the Day of *combat*. See CHAMPION.

Hiſtorians tell us, that *Alphonſo* King of *Caſtile*, deſiring to aboliſh the *Moſarabic* Rite, and to introduce the *Roman* Office: the People oppoſing it, 'twas agreed to terminate the Difference by *Combat*, and to leave the Cauſe to the Deciſion of Heaven.

COMBAT is alſo uſed for the ſolemn Games of the antient *Greeks* and *Romans*, in honour of their Gods; as the *Olympic* Games, *Pythian*, *Iſthmæan*, and *Nemæan* Games; the *Ludi Actiaci*, *Circenſes*, &c. which ſee in their Places, OLYMPIC, ISTHMÆAN, &c.

The *Combats* here celebrated, were *Running*, *Wreſtling*, *Boxing*, *Ceſtus*, &c.

The Combatants, who were called *Athletæ*, prepar'd themſelves for it from their youth, by conſtant Exerciſe, and a very rigid Regimen: they only eat certain Things, and at certain Hours; drank no Wine, had no commerce with Women: both their Labour and their Reſt were regulated. See ATHLETÆ, GLADIATOR, *&c.*

COMBATANT, is the Heralds Word for two Lions, *&c.* born in a Coat of Arms in a fighting poſture, rampant; and their Faces towords each other.

COMBINATION, is properly underſtood of an Aſſemblage of ſeveral Things by two, and two.

COMBINATION is alſo uſed for the Variation, or Alternation of any Number of Quantities, Letters, Sounds, or the like, in all the different Manners poſſible. See CHANGES.

P. Merſenne gives us the *Combinations* of all the Notes and Sounds in Muſick, as far as 24; the Sum whereof amounts to 90 Figures, or Places.

The Number of *Combinations* of the 24 Letters of the Alphabet, taken firſt two by two, then three by three, *&c.* M. *Preſtet* has calculated to be 139172428888725299942 5128493402200. See LETTER, and ALPHABET.

The Words in the following Verſe may be *combin'd* a thouſand twenty two ſeveral ways.

Tot tibi ſunt Dotes, Virgo, quot ſidera Cœlo.

Doctrine of COMBINATIONS.

Any Number of Quantities being given, together with the Number in each Combination; *to find the Number of* Combinations.

One Quantity, we obſerve, admits of no *Combination*; two, *a* and *b*, of one; of three *a b c*, there are three *Combinations*, viz. *a b*, *a c*, *b c*; of four, ſix, *a b*, *a c*, *b c*, *a d*, *b d*, *c d*; of five, ten, *a b*, *a c*, *b c*, *a d*, *b d*, *c d*, *a e*, *b e*, *c e*, *d e*.

Whence it appears, that the Numbers of *Combinations* proceed as 1, 3, 6, 10, *&c. i. e.* are triangular Numbers, whoſe Side differs by Unity from the Number of given Quantities: if that, *v. g.* be *q*, the Side of the Number of *Combinations* will be $q-1$; and therefore the Number of *Combinations* $\frac{q-1}{1}\cdot\frac{q+0}{2}$. See TRIANGULAR *Number*.

If three Quantities are to be *combin'd*, and the Number in each *Combination* be three, there will only be one *Combination*, *a b c*; if a fourth be added, the *Combinations* will be found *a b c*, *a b d*, *b c d*, *a c d*; if a fifth, ten, *a b c*, *a b d*, *b c d*, *a c d*, *a b e*, *b d e*, *b c e*, *a c e*, *a d e*; if a ſixth, twenty, *&c.* The Numbers of *Combinations*, therefore, proceed as 1, 4, 10, 20, *i. e.* are the firſt pyramidal triangular Numbers, whoſe Sides differ by two Unites from the Number of given Quantities. See PYRAMIDAL *Number*.

Hence, if the Number of given Quantities be *q*, the Side will be $q-2$; and therefore, the Number of *Combinations* $\frac{q-2}{1}\cdot\frac{q-1}{2}\cdot\frac{q+0}{3}$.

Hence is eaſily deduced a general Rule of determining the Number of *Combinations* in any Caſe: For, ſuppoſe the Number of Quantities to be combined, *q*, the Exponent of the *Combination* will be the Number of *Combinations* $\frac{q-n+1}{1}\cdot\frac{q-n+2}{2}\cdot\frac{q-n+3}{3}\cdot\frac{q-n+4}{4}\cdot\frac{q-n+5}{5}$, *&c.* till the Number to be added be equal to *n*.

Suppoſe, *v. g.* the Number of Quantities to be *combined* $=6$; the Exponent of the *Combination* 4; the Number of *Combinations* will be $\frac{6-4+1}{1}\cdot\frac{6-4+2}{2}\cdot\frac{6-4+3}{3}\cdot\frac{6-4+4}{4}=\frac{6-3}{1}\cdot\frac{6-2}{2}\cdot\frac{6-1}{3}\cdot\frac{6+0}{4}=\frac{3}{1}\cdot\frac{4}{2}\cdot\frac{5}{3}\cdot\frac{6}{4}=15$.

Coroll. If it be deſir'd to have all the poſſible *Combinations* of the given Quantities beginning with the *Combinations* of the ſeveral Twos, proceeding to threes, *&c.* there muſt be added $\frac{q-1}{1}\cdot\frac{q+0}{2}\cdot\frac{q-2}{1}\cdot\frac{q-1}{2}\cdot\frac{q+0}{3}\cdot\frac{q-3}{1}\cdot\frac{q-2}{2}\cdot\frac{q-1}{3}\cdot\frac{q+0}{4}$, *&c.* Whence the Number of *Combinations* poſſible will be $\frac{q.q-1.}{1.2}+\frac{q.q-1.q-2}{1.2.3.}+\frac{q.q-1.}{1.2.}\cdot\frac{q-2.q-3}{3.4.}+\frac{q.q-1.q-2.q-3.q-4.}{1.2.3.4.5}$, *&c.* which is the Sum of the *Unciæ* of the Binomial, rais'd to the Power *q*, and abridg'd of the Exponent of the Power increas'd by Unity, $q+1$. Wherefore, ſince thoſe *Unciæ* come out $1+1$, by being rais'd to the Power *q*; and ſince $1+1=2$; 2^q-q-1 is the Number of all the poſſible *Combinations*, *v. g.* If the Number of Quantities be 5, the Number of poſſible *Combinations* will be $2-6=32-6=26$.

Any Number of Quantities being given, to find the Number of Changes and Alternations, which thoſe Quantites, combin'd *in all the Manners poſſible, can undergo.*

Suppoſe two Quantities, *a* and *b*; their Variations will be 2; conſequently, as each of thoſe may be *combined*, even with it ſelf, to theſe there muſt be added two Variations. The whole Number, therefore, will be $2+2=4$. If there were three Quantities, and the Exponent of the Variation 2; the *Combinations* will be 3, and the Changes 9: to which, if the three *Combinations* of each Quantity with it ſelf *a a*, *b b*, *c c*, be added, we ſhall have the Number of Changes, $3+3+3=9$.

In like manner, 'tis evident, if the given Quantities were 4, and the Exponent 2, the Number of Changes would be 16; if 5, 25, *&c.* and, in general, if *n*, n^2.

Suppoſe the Quantities 3, and the Exponent of Variation 3; the Number of Changes is found $27=3^3$; *viz. a a a*, *a a b*, *a b a*, *b a a*, *a b b*, *a a c*, *a c a*, *c a a*, *a b c*, *b a c*, *b c a*, *a c b*, *c b a*, *a c c*, *c a c*, *c c a*, *b b a*, *b a b*, *b b b*, *b b c*, *c b b*, *b c b*, *b c c*, *c b c*, *c c c*.

After the ſame manner, it will appear, if the Quantities were 4, and the Exponent 3, the Number of Changes would be $64=4^3$: and, in general, if the Number of Quantities be $=n$, and the Exponent 3, tho Number of Changes will be n^3. By thus proceeding, it will be found, that if the Number of Quantities be *n*, and the Exponent *n*, the Number of Changes will be n^n: wherefore, if all the Antecedents be added, where the Exponent is leſs, the Number of poſſible Changes will be found $n^n+n^{n-1}+n^{n-2}+n^{n-3}+n^{n-4}+n^{n-5}+n^{n-6}$, *&c.* Till at length, the Number ſubtracted from *n*, leaves 1; becauſe the beginning is from ſingle Quantities taken once.

Since then the Number of poſſible Changes is a geometrical Progreſſion, whoſe firſt or ſmalleſt Term is n^1, the greateſt n^n, and the Denominator *n*; it will be $=(n^{n+1}-n)\div(n-1)$.

Suppoſe, *v. g.* $n=4$. the Number of poſſible Changes $(4^5-4)\div 4-1=1020\div 3=340$. Suppoſe, again, $n=24$, the Number of poſſible Changes will be $(24^{25}-24)\div(24-1)=$ 32009658644406818986777955348272600 $\div$ 23 $=$ 1391724288887252999425128493402200. In ſo many various manners, therefore, may the 24 Letters of the Alphabet be varied and *combined* among themſelves.

F. *Truchet*, in the *Memoirs of the French Academy*, ſhews, that two ſquare Pieces, each divided diagonally by two Colours, may be arranged and *combin'd* 64 different ways, ſo as to form ſo many different Kinds of Chequer-work; which appears ſurprizing enough, when one conſiders that two Letters, or Figures, can only be *combined* twice.

This Note mayy be of uſe to Maſons, Paviours, *&c.* See PAVEMENT.

COMBING *of Wool*, in Commerce, the drawing, or paſſing it acroſs the Teeth of a kind of Card, called a *Comb*, to diſpoſe it for ſpinning. See WOOL, CLOTH, SPINNING, *&c.*

COMBS. See HONEY-COMBS.

COMBUST, in Aſtronomy. When a Planet is not above 8 Degrees and 30 Minutes diſtant from the Sun, either before or after him, it is ſaid to be *Combuſt*, or in *Combuſtion*.

COME. The ſmall Fibres or Tails of Malt, upon it firſt ſhooting forth is thus called. See MALT.

COMEDY, in its proper Senſe, a Dramatic Piece, repreſenting ſome agreeable and diverting Tranſaction: or, it is an allegorical Repreſentation of ſomething in private Life; for the Amuſement and Inſtruction of the Spectators. See DRAMA.

In this Senſe, *Comedy* is oppos'd to Tragedy; the Subjects whereof are grave, and violent; and the Perſons of the firſt Rank. See TRAGEDY.

Scaliger defines *Comedy* a Dramatic Poem, very buſy, pleaſant in the Concluſion, and writ in a popular Style.

Ariſtotle calls it an *Imitation of the worſt*, or, rather, *of the loweſt Claſs of Perſons, by way of ridicule*: This Definition *Corneille* finds fault with, and maintains, that the Actions of Kings themſelves may enter *Comedy*; provided they be ſuch as are not very momentous, nor attended with any conſiderable danger. He adds, that a Poem wherein the greateſt Peril is the Loſs of a Miſtreſs, has no right to any higher Appellation than that of *Comedy*: But then he makes a Diſtinction in *Comedies*, and dignifies thoſe where great Perſonages are introduc'd, with the Epithet of *Heroic Comedies*, to diſtinguiſh them from ordinary ones.

Mr. *Congreve* ſeems pretty much of the ſame Sentiment: he underſtands *Ariſtotle*'s Definition of the *worſt* Men; on which bottom, 'tis ſufficient to conſtitute a *Comedy*, that the Action repreſented be that of ſome ill Man brought on the Stage to be expos'd.

M. *Dacier* is of a contrary Opinion: He maintains, that *Comedy* allows of nothing grave, or ſerious, unleſs it be turn'd to ridicule; and that Raillery and Ridicule are its only proper and genuine Characteriſtics: In which Opinion he is warmly ſeconded by Mr. *Dennis*.

Thus different are Critics and Comic Authors on the Nature of *Comedy*: ſome diſtinguiſhing it from Tragedy by the low-

lowneſs of the Subject; others by the ridiculous Light it is ſet in.

The accurate F. *Boſſu* fixes the Notion of *Comedy* much better: according to that excellent Critic, *Comedy* differs from Tragedy in this, that the Comic Writer invents both the Names of his Perſons, and the Actions he preſents; whereas the Tragic Writers only invent the latter; the former they are to take from Hiſtory.

Upon the whole, *Comedy* may be defined an Image, or Repreſentation of the ordinary Life of Men: it exhibits their common Actions and Paſſions; expoſes, and ridicules their Failings, to preſerve the Spectators from 'em, or to correct 'em. *Cicero* defines it the Imitation of Life, the Mirror of Cuſtom, and the Image of Truth.

There is a Diſpute among the Critics, whether *Comedy* be a Poem, or a mere Converſation. They who maintain the latter, do it on the foot of this general Opinion, that a Poem is a Diſcourſe in Verſe: F. *Boſſu* inſiſts on the former, and ſhews, that as *Comedy* has the Fable, or Allegory, it has every thing eſſential to Poetry. See POEM, and FABLE.

Comedy and Tragedy were originally one and the ſame Thing: *Their common Origin ſee under* TRAGEDY.

M. *Boileau* ſays, *Comedy* took its riſe at *Athens*, from the happy Iſſues or Concluſions of Tragedies. On this Principle, the Cataſtrophe ſhould have been the proper Criterion, or diſtinguiſhing Mark between Tragedy and *Comedy*; and all other differences only accedental.

Des ſuccès fortunez du ſpectacle tragique
Dans Athènes naquit la Comédie *antique.*

After the Grave and Serious became ſeparated from the Ridiculous, and Tragedy and *Comedy* became two diſtinct Arts; People applied themſelves to cultivate the former, and neglected the latter: So that *Comedy* continued in its Infancy, with little Improvements, while Tragedy grew up to a perfect Art: this, once arrived at its height, they began to think of cultivating *Comedy*.

With regard to the various Changes and Revolutions *Comedy* has undergone, it is commonly diſtinguiſh'd into three Kinds, *viz.* the *Antient*, wherein there was nothing feign'd; the *Mean*, where the Subject was real, but the Names fictitious; the *New*, where both Names and Things are fictitious.

The *Antient* was that firſt in uſe, when the ſupreme Power was in the Hands of the People; and when, on that account, the Poets were at their full liberty to ſay what they pleas'd, and of whom they pleas'd; by Name to rail at People in Authority, and openly charge Magiſtrates with Crimes; ſparing no Age, Sex, or Quality.

This is very obſervable in the *Frogs*, and the *Clouds* of of *Ariſtophanes*; where it is to be noted, that tho the railing Part was occaſionally diſtributed among all the Actors, yet the chief was laid on the Chorus.

When the *Athenian* Liberties became ſunk up in the Tyranny of a few, it was no longer ſafe for the Poets to uſe their old Licenſe; Men of Office being now to be ſkreen'd from reproach. The Chorus, therefore, became uſeleſs, and was therefore dropp'd; and thus commenc'd what we call *Comœdia media*, μεση, or the *Mean Comedy*. See CHORUS.

Under this, the Poets were not allow'd to name the Perſons; and therefore Names were to be invented: but then the Perſons were ſo well pointed out, that 'twas no difficult matter to know 'em.

At length, however, they were oblig'd to repreſs even this Licenſe: and this Reform gave occaſion to the *New Comedy*; which only brought upon the Stage feign'd Adventures, and imaginary Names.

This laſt Kind alone was receiv'd among the *Romans*; who yet made a new Subdiviſion thereof, into *Antient*, *Mean*, and *New*; according to the various Periods of the Commonwealth. Among the antient *Comedies* were rank'd thoſe of *Livius Andronicus*; among the *Mean*, thoſe of *Pacuvius*; and among the *New* ones thoſe of *Terence*.

Comedy, as well as Tragedy, has its *Eſſential*, and its *Integrant* Parts.

Its Eſſential Parts, in the Language of the Antients, are the *Protaſis*, *Epitaſis*, *Cataſtaſis*, and *Cataſtrophe*.

The *Protaſis* is the beginning, or opening; where the Subject is juſt enter'd upon, the Character of the Perſons ſhewn, and the Intereſt, or part, each has in the Action. See PROTASIS.

In the *Epitaſis*, the Intrigues begin: they are carry'd on, and heighten'd in the *Cataſtaſis*; and unravell'd in the *Cataſtrope*. See EPITASIS, CATASTROPHE, &c.

The Integrant Parts are the five *Acts* into which the *Comedy* is divided, agreeable to that Precept of *Horace*;

Neve minor quinto neu ſit productior Actu.

The Acts are divided into *Scenes*; the Number whereof is not fix'd, either by Reaſon or Experience, but depends on the Things to be done in each Act, and the Number of Perſons to be employ'd. See ACT, SCENE, &c. ſee alſo MANNERS, HUMOUR, &c.

Among the antient *Romans*, *Comedies* were diſtinguiſh'd according to the Quality of the Perſons repreſented, and the Dreſs they wore, into *Togatæ*, *Prætextæ*, *Trabeatæ*, and *Tabernariæ*; which laſt were thoſe where the Scene lay in Colleges, or among People of the loweſt Rank, agreeing pretty nearly with our Farces.

In the Repreſentation, *Comedy* was diſtinguiſh'd from the Tragedy, by the *Sock* wore in the former, and the *Buskin* in the latter. See SOCK, and BUSKIN.

Among us, *Comedy* is diſtinguiſh'd from Farce, in that the former repreſents Nature as ſhe is; the other diſtorts or overcharges her. They both paint from the Life, but with different Views: the one to make Nature known, the other to make her ridiculous. See FARCE.

Scaliger derives the Word *Comedy* from κώμαι, *Villages*, or *Conventicles of Peaſants*; by reaſon, ſays *Varro*, the *Attic* Youth us'd to travel thro' the Country, and pick up Money by their *Comic* Repreſentations; or from ἀπὸ τὸν κωμωδεῖον, *i. e. viculus*; becauſe the Scene was laid in ordinary Houſes: whereas, in Tragedy, it lay in Palaces, and the Houſes of the Great.

COMET, popularly call'd a *blazing Star*, a heavenly Body, riſing ſuddenly, and again diſappearing, and during the Time of its Appearance, moving in its proper Orbit, like a Planet. See STAR, and PLANET.

Comets have this to diſtinguiſh them from the other *Stars*, that they are uſually attended with a long Train, or Tail of Light, always oppoſite to the Sun, and which is of the fainter Luſtre, the further it is from the Body. Hence ariſes a popular diviſion of *Comets* into three Kinds, *viz. bearded*, *tail'd*, and *hairy Comets*; tho, in effect, this diviſion rather relates to the ſeveral Circumſtances of the ſame *Comet*, than to the Phænomena of ſeveral.

Thus, when the *Comet* is Eaſtward of the Sun, and moves from it, the *Comet* is ſaid to be *bearded*, *barbatus*; becauſe the Light marches before it, in manner of a Beard.

When the Light is Weſtward of the Sun, and ſets after it, the *Comet* is ſaid to be *tailed*, *caudatus*; becauſe the Train follows it, in manner of a Tail.

Laſtly, when the *Comet* and the Sun are diametrically oppoſite, (the Earth between them) the Train is hid behind the Body of the *Comet*, excepting a little that appears around it, in form of a Border of Hair, hence called *Crinitus*.

Nature of COMETS.

As to the Nature of *Comets*, the unfrequency of their appearing, together with the ſeeming Irregularities of their Phænomena, have left Philoſophers much in the dark: Thoſe who liv'd before *Ariſtotle*, accounted for 'em by ſuppoſing the heavenly Spaces full of an infinite Number of Stars; and many of theſe too remote, or too ſmall to have ever come under the Notice of Aſtronomers: Theſe inviſible Stars, they further ſuppos'd to move by their own proper Motion every way; finiſhing their Courſes in very unequal Times. Now, a *Comet*, according to them, was a vaſt heap or aſſemblage of theſe little Stars meeting together, by reaſon of the Inequality of their Motions, and uniting into a viſible Maſs; which muſt again diſappear, as thoſe Stars ſeparate, and each proceed in its Courſe.

But how theſe Stars ſhould thus meet, coaleſce, and form a Body, which in all Poſitions of the Sun ſhould reſemble a Tail, and again ſeparate, is a Myſtery.

This Opinion, therefore, *Ariſtotle* eaſily overturn'd; ſubſtituting another in its ſtead: According to him, *Comets* were only a kind of tranſient Fires, or Meteors, conſiſting of Exhalations rais'd to the upper Region of the Air, and there ſet on fire; far below the Moon's Courſe.

But neither is this Hypotheſis more juſt than the other: For on this Principle, the Light of the *Comet* being independent of the Sun, would be diſpers'd every way alike, without any appearance of a Train, or Tail, which is contrary to the Phænomena. Beſides, that the modern Aſtronomers, who have meaſur'd the diſtance between the *Comets* and the Earth, find that the *Comets* have no ſenſible Parallax; which could not be, were they not much more remote than the Moon, whoſe Parallax is ſenſible. See PARALLAX.

Hevelius from a great Number of Obſervations, propoſes it as his Opinion, that the *Comets*, like the Solar *Maculæ* or Spots, which they pretty much reſemble, are form'd and condens'd out of groſſer Exhalations of his Body. In which Notion he agrees nearly with *Kepler*, who maintains, that *Comets* are generated in the Æther in vaſt Numbers, like Fiſhes in the Ocean; tho they don't all become viſible, either becauſe of their ſmallneſs, or becauſe they lay a long time under the Horizon.

But Sir *I. Newton* has ſhewn the Fallacy of this Hypotheſis, by proving that the *Comet* of 1680, in its paſſage thro' the Neighbourhood of the Sun, would have been diſſipated, had it conſiſted of Exhalations of the Sun and Planets:

nets: For the Heat of the Sun, 'tis allow'd, is as the Denſity of his Rays, *i. e.* reciprocally as the Squares of the Diſtances of Places from the Sun: Wherefore, ſince the Diſtance of that *Comet* in its Perihelion, *December* the 8th, was obſerv'd to be to the Diſtance of the Earth from the Sun, nearly as 6 to 1000; the Sun's heat in the *Comet*, at that time, was to his heat with us at *Midſummer*, as 1000000 to 36, or 28000 to 1.

And again, finding by Experiment, that the Heat of boiling Water, is little more than three times the heat of our dry Earth, when expos'd to the *Midſummer's* Sun; and aſſuming the heat of red-hot Iron to be about three or four times as great as that of boiling Water: he concludes, that the heat of the dry'd Earth, or body of the *Comet* in its Perihelion, muſt be near 2000 times as great as that of red-hot Iron.

Such an immenſe heat once acquir'd in its Perihelion, the *Comet* muſt be a long time in cooling again. The ſame Author computes, that a Globe of red-hot Iron, of the Dimenſions of our Earth, would ſcarce be cool in 50000 Years. If then the *Comet* be ſuppos'd to cool 100 times as faſt as red-hot Iron; yet, ſince its Heat was 2000 times greater, ſuppoſing it of the bigneſs of the Earth, it would not be cool in a Million of Years.

James Bernoulli, in his *Syſtema Cometarum*, ſuppoſes ſome primary Planet, revolving round the Sun in the Space of four Years and 157 Days; and at the diſtance, from his Body, of 2583 Semidiameters of the *magnus Orbis*: This Planet, he concludes, either from its vaſt diſtance, or ſmallneſs, to be inviſible to us; but, however, to have, at various Diſtances from him, ſeveral Satellites moving round him, and ſometimes deſcending as low as the Orbit of *Saturn*; and that theſe becoming viſible to us, when in their *Perigæum*, are what we call *Comets*.

Des Cartes advances another Opinion: He conjectures that *Comets* are only Stars, formerly fix'd, like the reſt, in the Heavens; but which, becoming by degrees cover'd with *Maculæ*, or Spots, and at length wholly robb'd of their Light, cannot keep their place, but are carried off by the Vortices of the circumjacent Stars; and, in proportion to their Magnitude and Solidity, mov'd in ſuch manner, as to be brought nearer the Orb of *Saturn*; and thus coming within reach of the Sun's Light, render'd viſible. See CARTESIANISM.

But the Vanity of all theſe Hypotheſes abundantly appears from the Phænomena of *Comets*; the chief of which we ſhall enumerate: as being the Teſt by which all Theories are to be tried.

Firſt, then, thoſe *Comets* which move according to the Order of the Signs, do all, a little before they diſappear, either advances lowlier than uſual, or elſe go retrograde, if the Earth be between them and the Sun; and more ſwiftly, if the Earth be ſituate in a contrary Part: On the contrary, thoſe which proceed contrary to the Order of the Signs, proceed more ſwiftly than uſual, if the Earth be between them and the Sun; and more ſlowly, or go retrograde, when the Earth is in a contrary Part.

2dly, So long as their Velocity is encreas'd, they move, nearly, in great Circles; but towards the end of their Courſe, deviate from thoſe Circles; and as often as the Earth proceeds one way, they go the contrary way.

3dly, They move in Ellipſis's, having one of their *Foci* in the Centre of the Sun; and by Radii drawn to the Sun, deſcribe Areas proportionable to the Times.

4thly, The Light of their Bodies, or *Nuclei*, increaſes in their Receſs from the Earth towards the Sun; and, on the contrary, decreaſes in their Receſs from the Sun towards the Earth.

5thly, The Tails appear the largeſt and brighteſt, immediately after their Tranſit thro' the Region of the Sun.

6thly, The Tails always decline from a juſt oppoſition to the Sun towards thoſe Parts which the Bodies, or *Nuclei* paſs over, in their progreſs thro' their Orbits.

7thly, This Declination, *cæteris paribus*, is the ſmalleſt, when the Heads, or *Nuclei* approach neareſt the Sun: and leſs, ſtill, near the *Nucleus* of the *Comet* than towards the Extremity of the Tail.

8thly, The Tails are ſomewhat brighter, and more diſtinctly defined in their convex than in their concave Part.

9thly, The Tails always appear broader at their upper Extreme than near the Centre of the *Comet*.

10thly, The Tails are tranſparent, and the ſmalleſt Stars appear thro' 'em.

Theſe are the chief Phænomena of *Comets*; which, how ill they conſiſt with the wild Notions of the Antients, and the weak Conjectures of moſt of the Moderns, is pretty evident. Indeed, there were ſome, *Pliny* tells us, among the Antients, who 'had juſter Notions, who took theſe Stars 'to be perpetual, and believ'd they moved in their proper 'Orbs; but were never ſeen unleſs when left by the Sun:' And more fully *Seneca*, *Quæſt. Nat.* Lib. VII. 'I am not 'of the common Opinion, nor do I take a *Comet* to be a 'ſudden Fire, but eſteem it among the Eternal Works of 'Nature. ——*Quid autem miramur Cometas, tam rarum mundi ſpectaculum nondum teneri legibus certis, nec initia illorum fineſque noteſcere, quorum ex ingentibus intervallis recurſus eſt?——Veniet Tempus quo iſta quæ nunc latent, in lucem dies extrahat & longioris Ævi diligentia. Veniet Tempus quo poſteri noſtri tam aperta nos neſciiſſe mirentur. ——Erit qui demonſtret aliquando, in quibus Cometæ partibus errent; cur tam ſeducti a cæteris eant, quanti qualeſque ſint——*

This Prediction we have ſeen accompliſh'd in our Days, by the great Sir *I. Newton*; whoſe Doctrine is as follows.

The *Comets* are compact, ſolid, fix'd, and durable Bodies; in one word, a kind of Planets; which move in very oblique Orbits, every way with the greateſt freedom; perſevering in their Motions, even againſt the Courſe and Direction of the Planets: And their Tail is a very thin, ſlender Vapour, emitted by the Head, or *Nucleus* of the *Comet*, ignited or heated by the Sun.

This at once ſolves all the Phænomena: For 1ſt, 'Tis evi'dent, that thoſe which proceed according to the Order of the 'Signs, a little before they diſappear, muſt move more ſlowly, 'or appear retrograde, if the Earth be betwixt them and the 'Sun; and ſwifter, if the Earth be in a contrary Part: on the 'contrary, thoſe proceeding againſt the Order of the Signs, '*&c.*' For ſince their Courſe is not among the fix'd Stars, but among the Planets; as the Motion of the Earth either conſpires with 'em, or goes againſt 'em; their Appearance, with regard to the Earth, muſt be changed; and, like the Planets, they muſt ſometimes appear ſwifter, ſometimes ſlower, and ſometimes retrograde. See DIRECTION, RETROGRADATION, *&c.*

2dly, 'When the *Comets* move the ſwifteſt, they muſt 'proceed in ſtrait Lines, but in the end of their Courſe de'cline, *&c.*' Becauſe in the end of their Courſe, when they recede almoſt directly from the Sun, that part of the apparent Motion which ariſes from the Parallax, muſt bear a greater proportion to the whole apparent Motion.

3dly, 'The *Comets* muſt move in Ellipſis's, having one of 'their *Foci* in the Centre of the Sun.' Becauſe they don't wander precariouſly from one fictitious Vortex to another; but, making a part of the ſolar Syſtem, return perpetually, and run a conſtant round. See ORBIT.

Hence, their elliptic Orbits being very long and eccentric, they become inviſible, when in that Part moſt remote from the Sun.

From conſidering the Curvity of the Paths of *Comets*, Sir *I.* concludes, that when they diſappear, they are much beyond the Orb of *Jupiter*; and that in their Perihelion they frequently deſcend below the Orbits of *Mars* and the inferior Planets.

4thly, 'The Light of their *Nuclei* muſt increaſe in their 'Receſs from the Sun, and *vice verſa*:' Becauſe, as they are in the Regions of the Planets, their Acceſs toward the Sun, bears a conſiderable proportion to their whole diſtance.

From Obſervations of the *Comet* of 1680, Sir *I. Newton* found that the Vapour in the Extremity of the Tail, *Jan.* 25. began to aſcend from the Head before *December* the 11th; and had therefore ſpent more than 45 Days in its Aſcent: but that all the Tail which appear'd *December* 10. aſcended in the Space of thoſe two Days, then juſt paſt, ſince its Perihelion. The Vapour, therefore, at the beginning, when the *Comet* was near the Sun, aſcended prodigiouſly ſwift; and afterwards continu'd to aſcend with a Motion retarded by the Gravity of the Particles; and by that Aſcent increas'd the length of the Tails: But the Tail, notwithſtanding its length, conſiſted almoſt wholly of Vapours, which had aſcended from the Time of the Perihelion; and the Vapour which aſcended firſt, and compos'd the Extreme of the Tail, did not vaniſh, till it was too far from the Sun to be illumin'd by him, and off us to be viſible. Hence, alſo, the Tails of *Comets* that are ſhorter, do not aſcend with a quick and continual Motion from the Head, and then preſently diſappear; but are permanent Columns of Vapours and Exhalations, gather'd from the Head by a very gentle Motion, and in a great ſpace of time; which yet, by participating of that Motion of their Heads they had at the beginning, continue eaſily to move along with their Heads thro' the celeſtial Regions: whence alſo the Vacuity of thoſe Regions is argued. See VACUUM.

5thly, 'Their Tails muſt appear the largeſt and brighteſt 'immediately after their Tranſit thro' the Region of the 'Sun:' Becauſe, then, their Heads being the moſt heated, will emit the moſt Vapours.

From the Light of the *Nucleus*, or apparent Star, we infer their Vicinity to the Earth, and that they are by no means in the Region of the Fix'd Stars, as ſome have imagin'd; ſince in that caſe, their Heads would be no more illumin'd by the Sun, than the Planets are by the Fix'd Stars.

6thly, 'The Tails muſt ſtill decline from a ſtrict oppoſi'tion to the Sun, towards thoſe Parts which the Heads paſs 'over, in their progreſs thro' their Orbits:' Becauſe, all Smoke, or Vapour emitted from a Body in Motion, tends up-

wards obliquely, ſtill receding from that Part towards which the ſmoaking Body proceeds.

7thly, 'That Declination will be ſtill the leaſt near the 'Nucleus of the *Comet*; and when the *Comet* is neareſt the 'Sun:' Becauſe the Vapour aſcends more ſwiftly near the Head of the *Comet*, than in the higher Extremity of its Tail; and when the *Comet* is at a leſs diſtance from the Sun, than when at a greater.

8thly, 'The Tail is brighter, and better defin'd in its 'convex Part, than in its concave:' Becauſe the Vapour in the convex Part, which goes firſt, being ſomewhat nearer and denſer, reflects the Light more copiouſly.

9thly, 'The Tail muſt appear broader towards the high-'er Extremity of the *Comet*, than towards the Head:' Becauſe, the Vapour in a free Space perpetually rarefies and dilates.

10thly, 'The Tails muſt be tranſparent:' Becauſe conſiſting of infinitely thin Vapour, *&c.*

Thus accurately does the Hypotheſis tally to the Phænomena.

Phaſes of Comets.

The *Nuclei*, which we alſo occaſionally call the *Heads* and *Bodies* of *Comets*, view'd thro' a Teleſcope, ſhew a very different Face from thoſe of the Fix'd Stars, or Planets. *Sturmius* tells us, that obſerving the *Comet* of 1680 with a Teleſcope, it appear'd like a Coal dimly glowing, or a rude Maſs of Matter illumin'd with a duſky fumid Light, leſs ſenſible at the Extremes than in the middle; rather than as a Star which appears with a round Diſk, and a vivid Light.

Hevelius obſerv'd of the *Comet* of 1661, that its *Nucleus* was of a yellowiſh Colour, bright and conſpicuous, but without any glittering Light: in the middle was a denſe ruddy *Nucleus*, almoſt equal to *Jupiter*, incompaſs'd with a much fainter thinner Matter. 5 *Feb.* its Head was ſomewhat bigger and brighter, of a gold-colour; but its Light more duſky than the reſt of the Stars: Here, the *Nucleus* appear'd divided into ſeveral Parts. 6 *Feb.* the Diſk was leſſen'd; the *Nuclei* ſtill exiſted, tho leſs than before: one of 'em, on the lower Part of the Diſk, on the left, much denſer and brighter than the reſt; its Body round, and repreſenting a very lucid little Star: The *Nuclei* ſtill incompaſs'd with another kind of Matter. 10 *Feb.* the Head ſomewhat more obſcure, and the *Nuclei* more confuſed, but brighter at top than bottom. 13 *Feb.* the Head diminiſh'd much, both in Magnitude and brightneſs. 2 *March* its roundneſs a little impair'd, its Edges lacerated, *&c.* 28 *March* very pale and exceeding thin; its Matter much diſpers'd; and no diſtinct *Nucleus* at all appearing.

Weigelius, who ſaw the *Comet* of 1664, the Moon, and a little Cloud illumin'd by the Sun at the ſame time; obſerv'd, that the Moon, thro' the Teleſcope, appear'd of a continued luminous Surface; but the *Comet* very different; being perfectly like the little Cloud in the Horizon, illumin'd by the Sun. From theſe Obſervations it was, that *Hevelius* concluded *Comets* to be like *Maculæ*, or Spots form'd out of the ſolar Exhalations.

The Length of the Tails of *Comets* is various: That of 1680, according to *Sturmius*, about the 20th of *November*, was but ſmall, at moſt not exceeding 20 Degrees in length: in a little time it grew to a length of 60 Degrees; after which it dwindled very ſenſibly.

Formation of the Tails of Comets.

Sir *Iſaac Newton* ſhews, that the Atmoſpheres of *Comets* will furniſh Vapour ſufficient to form their Tails: This he argues from that wonderful Rarefaction obſerv'd in our Air, at a diſtance from the Earth: a Cubic Inch of common Air, at the diſtance of half the Earth's Diameter, or 4000 Miles, would expand it ſelf ſo as to fill a ſpace larger than the whole Region of the Stars. Since then the *Coma*, or Atmoſphere of a *Comet* is ten times higher than the Surface of the *Nucleus*, counting from the Centre thereof; the Tail, aſcending much higher, muſt needs be immenſely rare: ſo that 'tis no wonder the Stars ſhould be viſible thro' it.

Now, the Aſcent of Vapours into the Tail of the *Comet*, he ſuppoſes occaſion'd by the Rarefaction of the Matter of the Atmoſphere at the Time of the Perihelion. Smoke, 'tis obſerv'd, aſcends the Chimney by the Impulſe of the Air wherein it floats; and Air, rarefy'd by heat, aſcends by the Diminution of its ſpecific Gravity, taking up the Smoke along with it: Why then ſhould not the Tail of a *Comet* be ſuppos'd to be rais'd after the ſame manner by the Sun? For the Sun-Beams don't act on the Mediums they paſs thro', any otherwiſe than by Reflection and Refraction.

The reflecting Particles, then, being warm'd by the Action, will again warm the Æther wherewith they are compounded; and this, rarefy'd by the Heat, will have its ſpecific Gravity, whereby it before tended to deſcend, diminiſh'd by the Rarefaction; ſo as to aſcend, and to carry along with it thoſe reflecting Particles, whereof the Tail of the *Comet* is compos'd.

This Aſcent of the Vapours will be promoted by their circular Motion round the Sun; by means whereof, they will endeavour to recede from the Sun, while the Sun's Atmoſphere, and the other Matters in the celeſtial Spaces, are either at reſt, or nearly ſo; as having no Motion but what they receive from the Sun's Circumrotation.

Thus are the Vapours rais'd into the Tails of *Comets* in the neighbourhood of the Sun, where the Orbits are moſt curve; and where the *Comets* being within the denſer Atmoſphere of the Sun, have their Tails of the greateſt length.

The Tails thus produced, by preſerving that Motion, and at the ſame time gravitating towards the Sun, will move round his Body in Ellipſes, in like manner as their Heads; and by this means, will ever accompany, and freely adhere to their Head. In effect, the Gravitation of the Vapours towards the Sun, will no more occaſion the Tails of the *Comets* to forſake their Heads, and fall down towards the Sun, than the Gravitation of their Heads will occaſion them to fall off from their Tails: but by their common Gravitation, they will either fall down together to the Sun, or be together ſuſpended, or retarded. This Gravitation, therefore, does not at all hinder, but that the Heads and Tails of *Comets* may receive and retain any poſition towards each other, which either the abovemention'd Cauſes, or any other, may occaſion.

The Tails, therefore, thus produced in the Perihelion of *Comets*, will go off along with their Head into remote Regions; and either return thence, together with the *Comets*, after a long Series of Years; or, rather, be there loſt, and vaniſh by little and little, and the *Comet* be left bare; till at its return, deſcending towards the Sun, ſome little ſhort Tails be gradually and ſlowly produc'd from the Heads; which afterwards, in the Perihelion, deſcending down into the Sun's Atmoſphere, will be immenſely increas'd.

The Vapours thus dilated, rarefy'd, and diffus'd thro' all the celeſtial Regions, the ſame Author obſerves, may probably, by little and little, by means of their own Gravity, be attracted down to the Planets, and become intermingled with their Atmoſpheres.

He adds, that for the Conſervation of the Water, and Moiſture of the Planets, *Comets* ſeem abſolutely requiſite; from whoſe condens'd Vapours and Exhalations, all that Moiſture which is ſpent in Vegetations and Putrefactions, and turn'd into dry Earth, *&c.* may be reſupply'd and recruited. For all Vegetables grow, and increaſe wholly from Fluids; and, again, as to their greateſt part, turn, by Putrefaction, into Earth again; an earthy Slime being perpetually precipitated to the bottom of putrefying Liquors. Hence, the quantity of dry Earth muſt continually increaſe, and the Moiſture of the Globe decreaſe, and at laſt be quite evaporated; if they have not a continual Supply from ſome part or other of the Univerſe. And I ſuſpect, adds our great Author, that the Spirit, which makes the fineſt, ſubtileſt, and beſt part of our Air, and which is abſolutely requiſite for the Life and Being of all Things, comes principally from the *Comets*.

On this Principle, there ſeems to be ſome Foundation for the popular Opinion of Preſages from *Comets*: ſince the Tail of a *Comet* thus intermingled with our Atmoſphere may produce Changes very ſenſible in Animal and Vegetable Beings.

M. *Facio* has ſuggeſted, that ſome of the *Comets* having their Nodes ſo very near the annual Orbit of the Earth; ſhould the Earth happen to be found in that Part next the Node, at the Time of a *Comet*'s paſſing by; as the apparent Motion of the *Comet*, will be incredibly ſwift, ſo its Parallax will become very ſenſible; and the Proportion thereof to that of the Sun will be given: whence, ſuch Tranſits of *Comets* will afford the beſt Means of determining the diſtance of the Earth and Sun.

The *Comet* of 1472, *v. g.* had a Parallax above twenty times greater than the Sun's: and if that of 1618 had come down in the beginning of *March* to its deſcending Node, it would have been much nearer the Earth, and its Parallax much more notable. But, hitherto, none has threaten'd the Earth with a nearer Appulſe than that of 1680: For, by Calculation, Dr. *Halley* finds, that *November* 11, 1 H. 6 Min. P. M. that *Comet* was not above one Semidiameter of the Earth, to the Northwards of the Way of the Earth; at which time, had the Earth been in that part of its Orbit, the *Comet* would have had a Parallax equal to that of the Moon: What might have been the conſequence of ſo near an Appulſe, a Contact, or laſtly, a Shock of the celeſtial Bodies?

Motion of Comets.

If their Paths be ſuppoſed directly parabolic, as ſome have imagin'd, it would follow, that being impell'd towards the Sun by a centripetal Force, they deſcend as from Spaces infinitely diſtant; and by their Falls acquire ſuch a Velocity, as that they may again run off into the remoteſt Regions; ſtill moving upwards, with ſuch a perpetual Tendency as never to return. But the frequency of their Appearance, and their degree of Velocity, which does not exceed what they might acquire by their Gravity towards the Sun; ſeem to put it paſt doubt that they move, Planet-like, in elliptic Orbits, tho thoſe exceedingly eccentric; and ſo return again, tho after very long Periods. See Ellipsis.

Apollonius Myndianus was the firſt who took *Comets* for regular Stars; and ventur'd to foretel, that one day the Periods and Laws of their Motion would be diſcover'd.

Aſtronomers, however, are ſtill divided on that Head: *Newton*, *Flamſtead*, *Halley*, and the *Engliſh* Aſtronomers, *&c.* ſeem ſatisfy'd of the Return of *Comets*: *Caſſini*, and others of the *French*, think it highly probable; *de la Hire*, and others, oppoſe it.

Thoſe on the affirmative Side, ſuppoſe the *Comets* to deſcribe Circles prodigiouſly eccentric, inſomuch as we can only ſee 'em in a very ſmall part of their Revolution: Out of this, they are loſt in the immenſe Spaces; hid not only from our Eyes, but our Teleſcopes. That little part of their Circle next us, M. *Caſſini*, &c. have found to paſs between the Orbits of *Venus* and *Mars*.

For the Reaſons of the Return of Comets, M. *Caſſini* gives theſe that follow.

1. In conſidering the Courſe of the *Comets*, with regard to the Fix'd Stars, they are found to keep a conſiderable time in the Arch of a great Circle, *i. e.* a Circle whoſe Plane paſſes thro' the Centre of the Earth: Indeed, they deviate a little from it, chiefly towards the end of their Appearance; but this Deviation is common to them with the Planets.

2. *Comets*, as well as Planets, appear to move ſo much the faſter as they are nearer the Earth; and when they are at equal Diſtances from their Perigee, their Velocities are nearly the ſame.

By ſubtracting from their Motion the apparent Inequality of Velocity occaſion'd by their different diſtance from the Earth, their equal Motion might be found; but we ſhould not be certain this Motion were their true one; in regard they might have conſiderable Inequalities, not diſtinguiſhable in that ſmall Part of their Orbit viſible to us. 'Tis, indeed, probable, their real Motion, as well as that of the Planets, is unequal in it ſelf: and hence we have a Reaſon why the Obſervations made during the Appearance of a *Comet* cannot give the juſt Period of their Revolution. See Period.

3. There are no two different Planets whoſe Orbit cuts the Eclyptic in the ſame Angle, whoſe Nodes are in the ſame Points of the Eclyptic, and whoſe apparent Velocity in their Perigee is the ſame: Of conſequence, two *Comets* ſeen at different Times, yet agreeing in all thoſe three Circumſtances, can only be one and the ſame *Comet*.

And this were the *Comets* of 1577 and 1680 obſerv'd to do; and thoſe of 1652, and 1698: Not that this exact agreement in theſe Circumſtances is abſolutely neceſſary to determine 'em the ſame *Comet*. M. *Caſſini* finds the Moon her ſelf irregular in 'em all: Accordingly, he is of Opinion, there are ſeveral which diſagree herein, yet may be accounted the ſame.

The great Objections againſt the Return of Comets, are, the rarity of their Appearance, with regard to the number of Revolutions aſſign'd to 'em.

In 1702 was a *Comet*, or rather the Tail of one, ſeen at *Rome*, which M. *Caſſini* takes to be the ſame with that obſerv'd by *Ariſtotle*, and that ſince ſeen in 1668; which would imply its Period to be 34 Years. Now, it may ſeem ſtrange, that a Star which has ſo ſhort a Revolution, and of conſequence ſuch frequent Returns, ſhould be ſo ſeldom ſeen. Again, in *April* of the ſame Year, 1702, a *Comet* was obſerv'd by Meſſ. *Bianchini* and *Maraldi*, ſuppoſed by the latter to be the ſame with that of 1664, both by reaſon of its Motion, Velocity, and Direction. M. *de la Hire* took it to have ſome relation to another he had obſerv'd in 1698; which M. *Caſſini* refers to that of 1652: On this Suppoſition its Period appears to be 43 Months, and the Number of Revolutions between 1652 and 1698, fourteen: But 'tis hard to ſuppoſe, that in this Age, wherein the Heavens are ſo narrowly watch'd, a Star ſhould make 14 Revolutions unperceiv'd: eſpecially ſuch a Star as this, which might appear above a Month together; and of conſequence be frequently diſengag'd from the Crepuſcula.

For this, reaſon M. *Caſſini* is very reſerv'd in maintaining the Hypotheſis of the Return of *Comets*, and only propoſes thoſe for Planets, where the Motions are eaſy and ſimple, and are ſolv'd without ſtraining, or allowing many Irregularities.

M. *de la Hire* propoſes one general Difficulty againſt the whole Syſtem of the Return of *Comets*, which would ſeem to hinder any *Comet* from being a Planet; and 'tis this: that, by the Diſpoſition neceſſarily given to their Courſes, they ſhould appear as ſmall at firſt as at laſt; and always increaſe, till they arrive at their greateſt Proximity to the Earth: or, if they ſhould chance not to be obſerv'd as ſoon as they become viſible, for want of Attention thereto; at leaſt, 'tis impoſſible but they muſt frequently ſhew themſelves ere they have arriv'd at their full Magnitude and Brightneſs: But he adds, that none were ever yet obſerv'd till they had arrived at it.

But the Appearance of a *Comet* in this preſent Month of *October* 1723, while yet at a great diſtance, ſo as to be too ſmall and dim to be view'd without a Teleſcope, may ſerve to remove this Obſtacle, and ſet the *Comets*, ſtill, on the ſame footing with the Planets.

Sir *Iſaac Newton* ſuppoſes, that as thoſe Planets which are neareſt the Sun, and revolve in the leaſt Orbits, are the ſmalleſt; ſo among the *Comets*, ſuch as in their Perihelion come neareſt the Sun, are the ſmalleſt, and revolve in leſſer Orbits.

Dr. *Halley* has given us a Table of the Aſtronomical Elements of all the *Comets* that have been yet obſerv'd with due care; whereby, whenever a new *Comet* ſhall appear, it may be determin'd, by comparing it therewith, whether it be any of thoſe which have yet appear'd; and conſequently its Period, and the Axis of its Orbit determin'd, and its Return foretold.

For there are many things in the *Comet* of 1531, obſerv'd by *Appian*, which intimate its being the ſame with that of 1687, obſerv'd by *Kepler* and *Longomontanus*; and which Dr. *Halley* himſelf again obſerv'd in 1682. All the Elements agree, and there is nothing contradicts the Opinion, but that inequality in the periodic Revolution; which, however, he thinks, is no more than may be accounted for from phyſical Cauſes: no more, in effect, than is obſerv'd in *Saturn*; the Motion of which Planet is ſo diſturb'd by the reſt, eſpecially *Jupiter*, that its Period is uncertain for ſeveral Days together: To what Errors then may not a *Comet* be liable, which riſes almoſt four times the height of *Saturn*; and whoſe Velocity, if but a little increas'd, would change its Elliptic Orb into a parabolic one?

What further confirms the Identity is the Appearance of another *Comet* in the Summer of 1456; which, tho obſerv'd by none with accuracy, yet by its Period, and the manner of its Tranſit, he concludes it to be the ſame: and thence ventures to foretel its return in the Year 1758. See Solar *Syſtem, and the Plate it refers to; where the Orbits of the ſeveral* Comets *are delineated, and their Periods, ſo many of them as are known, expreſs'd.*

To determine the Place and Courſe of a Comet.

Obſerve the diſtance of the *Comet* from two Fix'd Stars, whoſe Longitudes and Latitudes are known: from the Diſtances thus found, calculate the Place of the *Comet* by Trigonometry, after the manner deliver'd under Planet.

By repeating the Obſervations and Operations for ſeveral Days ſucceſſively, the Courſe of the *Comet* will be had.

To determine the Courſe of a Comet *mechanically, and without any Apparatus of Inſtruments.* The following ingenious Method, by a Thread, we owe to *Longomontanus*: Obſerve four Stars round the *Comet*, ſuch, as that the *Comet* may be in the Interſection of the right Lines that join the two oppoſite Stars; which is eaſily found, by means of a Thread plac'd before the Eye, and extended over againſt the Stars and *Comet*.

Suppoſe, *v. g.* the *Comet*'s place in the Heavens A, (Tab. *Aſtronomy*, Fig. 23.) between the four Stars, B, C, D, E; where the Line joining the Stars B and D, paſſes thro' the Body of the *Comet*; and ſo of the Lines paſſing thro' C and E.

On a Globe, wherein theſe four Stars are found, extend a Thread thro' B and D, and another thro' C and E; the Point of Interſection will give the place of the *Comet*. This Practice being repeated for ſeveral Days, the *Comets* Courſe will be had on the Globe; which Courſe will be found to be a great Circle: from any two Points whereof, it will be eaſy to find its Inclination to the Eclyptic, and the Place of the Nodes; only by obſerving where a Thread ſtretch'd thro' the two Points cuts the Eclyptic.

To determine the Parallax of a Comet. See Parallax.

COMITIA, an Aſſembly of the *Roman* People, either in the *Comitium*, or *Campus Martius*; for the Election of Magiſtrates, or for conſulting on the important Affairs of the Republic. See Campus *Martius*, &c.

There were certain Days fix'd for theſe Aſſemblies, call'd *Dies Comitiales*; mark'd with a c in the Calendar of *Julius Cæſar*.

Comitial Aſſemblies held for the Election of Conſuls, were called *Conſular Comitia*: in like manner, the other *Comitia* took their Name from the Officer to be created; whether a Tribune, a Pontiff, Ædile, *&c.*

There were three Kinds of *Comitia*, viz. *Curiata*, *Centuriata*, and *Tributa*; ſo diſtinguiſh'd, from the manner wherein the People voted, and gave their Suffrages, *viz.* by *Curiæ* or Pariſhes, Tribes or Centuries. See Curiæ, Tribe, *&c.*

Authors make the difference between *Comitia* and *Concilia* to conſiſt in this; that in the former the *whole* People were call'd together, in the latter only a *part*.

The *Comitium*, or Place where the *Comitia* were ordinarily held, was a large Hall in the *Roman Forum*: It was a long time open at top; on which account, the Aſſemblies were often interrupted by the ill Weather: 'Twas firſt cover'd over in the time of the ſecond *Punic* War. See Forum.

Roſinus obſerves, that the Conſuls and Tribunes were not created in the *Comitium*, but the *Campus Martius*.

The Word comes from the Verb *Coeo*, or *Comeo*, to go together.

COMITIALIS *Morbus*, an antient Term for the Epilepſy, or Falling-Sickneſs; ſo call'd, becauſe if any Perſon was ſeiz'd with it in the *Roman Comitia*, the Aſſembly was immediately diſſolv'd: this being eſteem'd an evil Omen. See EPILEPSY.

COMMA, in Grammar, a Virgula, Point, or Character form'd thus [,]; ſerving to mark a ſhort Stop, or Pauſe; and to divide the Members of a Period. See POINT, *&c.*

'Tis very difficult to fix the preciſe Uſe of the *Comma*; different Authors define and uſe it differently: The ordinary Doctrine is, that the *Comma* ſerves to diſtinguiſh Nouns, Verbs, Adverbs, and the ſeveral Parts of a Period, that are not neceſſarily join'd together. But this conveys no clear, preciſe Idea; for what is it *to diſtinguiſh the Parts of a Period not neceſſarily join'd together?*

F. *Buffier* has carried the Doctrine of the *Comma* much further: The *Comma* ſerves to diſtinguiſh thoſe Members of a Period, in each whereof is a Verb, and the Nominative Caſe of the Verb. Thus, *That ſo many People are pleas'd with Trifles, is owing to a Weakneſs of Mind, that makes 'em love things eaſy to be comprehended.*

Beſides this, the *Comma* is uſed to diſtinguiſh, in the ſame Member of a Period, ſeveral Nouns Subſtantives, or Nouns Adjectives, or Verbs not united by a Conjunction. Thus, *Virtue, Wit, Knowledge, are the chief Advantages of a Man*: Or, *a Man never becomes learned without ſtudying conſtantly, methodically, with a Guſt, Application*, &c.

If thoſe Words be united in the ſame Phraſe by a Conjunction, the *Comma* is omitted: Thus, *The Imagination and the Judgment don't always agree.* The *Comma* may alſo be omitted between two Phraſes that are very ſhort, eſpecially if they depend on the ſame Regimen, and are united by a Conjunction: Thus, Alexander *conquer'd* Aſia *and eſtabliſh'd the Monarchy of the* Greeks.

The Author of the Treatiſe *de Ratione Interpungendi*, printed with *Voſſius*'s *Element. Rhetor.* Lond. 1724. lays down the Uſe of a *Comma* to be, to *diſtinguiſh the ſimple Members of a Period, or Speech*; *i. e.* ſuch as only conſiſt of one Subject, and one definite Verb. See SENTENCE.

Thus *Cicero*, *Venio nunc ad voluptates agricolarum, quibus ego incredibiliter delector, quæ nec ulla impediuntur ſenectute, & mihi ad ſapientis vitam proxime accedere videntur.*

But this Rule does not go throughout; the ſame Author inſtancing many particular Caſes, not included herein, where yet the *Comma* is adviſable. See POINTING.

Sometimes, *e. gr.* a Propoſition includes another, which may be called *Partitive*, as being only a Part of the entire Phraſe; in which caſe, the two are to be divided from each other by *Commas*. Thus, *He always ſays, as he tells us, the fineſt Things in the World.*

The Points, or Pauſes in Diſcourſe, 'tis obſerv'd, are in a kind of muſical Proportion: The *Comma* ſtops the Reader's Voice while he may privately tell one; the Semicolon, two; the Colon, three; and the Period or Full-ſtop, four.

The Antients only made two Kinds of Points, or Pauſes in a Period; the larger they called *Members*, the Greeks *Cola*, thus [:] the ſmaller *Inciſa*, the Greeks *Commata*, thus [,].

The Moderns, refining on the Antients, have ſubdivided the firſt into a Colon and Semicolon; ſome ſay, without any good Foundation in Nature; tho others ſtand up for the uſefulneſs of the Diviſion. See COLON.

As the Member, or Colon divides the Period into two Parts, each containing a Senſe, tho that imperfect; thus, *Antequam de Republica, patres conſcripti, dicam ea quæ dicenda hoc tempore arbitror*; where the Senſe does not reſt, nor is the Period or Sentence perfect, without the Addition of, *exponam vobis breviter & profectionis & reverſionis meæ*: The *Comma* ſubdivides each Member into intermediate Diviſions, which, of themſelves, have no preciſe meaning at all; *v. g. Nihil eſt, mihi crede, virtute formoſius, nihil pulchrius, nihil amabilius.*

Frequent *Commas*, as on other occaſions they promote perſpicuity and diſtinctneſs, and eaſe the Reader, both in the Rehearſal and Comprehenſion of his Author; ſo, in Oratory, are they of eſpecial uſe and effect; particularly where an Adverſary is to be cloſely and pointedly attack'd, upbraided, reprehended, wounded, *&c.* witneſs that of *Cicero* againſt *Verres*; *Non enim nos color iſte ſervilis, non piloſæ genæ, non dentes putridi deceperunt: oculi, ſupercilia, frons, vultus denique totus, qui ſermo quidam tacitus mentis eſt, hic in fraudem, homines impulit: hic, eos, quibus eras ignotus, decepit, ſefellit, in fraudem induxit: pauci tua iſta lutulenta vitia novimus; pauci tarditatem ingenii, ſtuporem, debilitatemque linguæ*, &c. See PERIOD.

COMMA, in Muſick, is the ſmalleſt of all the ſenſible Intervals of Tune. See INTERVAL.

The *Comma* is about the tenth Part of a Tone: or, it is the Interval whereby a perfect Semitone ſurpaſſes an imperfect one; or a perfect Tone, an imperfect one. See TONE.

M. *Sauveur* ſays, a *Comma* is the Difference between a Tone-major and minor. It is ſeldom in uſe, except in the Theory of Muſick, to ſhew the Juſtneſs of the Conſonances; for in the Practice, the Diviſion is drown'd and loſt. Each leſſer Tone ordinarily contains ten *Commas*.

Lancelot only divides his Tone into nine Parts, or *Commas*; ſo that according to him, a *Comma* is the ninth Part of a Tone.

The proportion of the greater *Comma* in Numbers, is as 80 to 81; that of the ſmaller, as 2025 to 2048. See TUNE.

The Word *Comma* is *Greek* form'd of κόπτω, *ſeco*, I cut.

COMMANDING *Ground*, in Fortification, is ſuch as overlooks any Poſt, or ſtrong Place.

Of this they reckon three ſorts; firſt, *A Front Commanding Ground*; which is an Height oppoſite to the Face of the Poſt, which plays upon its Front. See FRONT.

2d, *A Reverſe Commanding Ground*, which is an Eminence that can play upon the Back of any Place or Poſt.

3d, *An Enfilade Commanding Ground*, or *Curtin Commanding Ground*; which is an high Place, that can with its Shot ſcour all the length of a ſtrait Line. See ENFILADE.

COMMANDMENT, in a Legal Senſe, has various Uſes: as, *Commandment of the King*, when, on his own mere Motion, and from his own Mouth he caſts a Man into Priſon.

Commandment of the Juſtices, is either *abſolute*, or *ordinary*: *Abſolute*, as when on their own Authority, and their own Diſcretion, they commit a Man to Priſon for Puniſhment.

Ordinary, as when they commit him rather for ſafe Cuſtody than Puniſhment. A Man committed on an ordinary *Commandment* is repleviſable.

Commandment is alſo uſed for the Offence of him who directs or wills another to tranſgreſs the Law; as by Murder, Theft, and the like.

COMMANDRY, a kind of Benefice, or certain Revenue belonging to a Military Order, and conferr'd on antient Knights who had done Services to the Order. See KNIGHT.

There are *ſtrict*, or *regular Commandries*, obtain'd in Order, and by Merit: there are others of *grace* or *favour*; conferr'd at the pleaſure of the Grand Maſter.

There are alſo *Commandries* for the Religious in the Orders of S. *Bernard* and S. *Anthony*. The Kings of *France* have converted ſeveral of the Hoſpitals for Lepers into *Commandries* of the Order of S. *Lazarus*. See LEPERS.

Commandries may be compar'd to Conventual Priories; which, at firſt, were no more than Adminiſtrations of the Revenue of certain Places at a diſtance from the principal Monaſtery: As there was a neceſſity for having Monks diſpos'd in theſe Houſes to take care of the Effects: ſo there was the like neceſſity for ſending Knights into thoſe Places where the Order had Lands.

The Commandries of Malta are of different Kinds; for as the Order conſiſts of Knights, Chaplains, and Brothers Servitors, there are peculiar *Commandries* or Revenues attach'd to each. See MALTA.

The Knight to whom one of theſe Benefices or *Commandries* is given, is call'd *Commander*: which agrees pretty nearly with the *Præpoſitus* ſet over the Monks in Places at a diſtance from the Monaſtery, whoſe Adminiſtration was call'd *Obedientia*; becauſe depending entirely on the Abbot who gave him his Commiſſion. Thus it is with the ſimple *Commanders* of *Malta*, who are rather Farmers of the Order than Beneficiaries; paying a certain Tribute or Rent, called *Reſponſio*, to the common Treaſure of the Order.

COMMEMORATION, the Remembrance of any one; or ſomething done in honour of his Memory.

Among the *Romaniſts*, 'tis a Practice for dying Perſons to leave a Legacy to the Church for the rehearſing ſo many Maſſes in *Commemoration* of them. See OBIT, *&c.*

The Euchariſt is a *Commemoration* of the Sufferings of Jeſus Chriſt; and is not, therefore, Jeſus Chriſt himſelf. See EUCHARIST.

COMMEMORATION is alſo the Name of a Religious Feaſt in the *Romiſh* Church, held on the ſecond of *November*, in memory of all the Faithful deceaſed; inſtituted in the XIth Century, by *Odillon* Abbot of *Clugny*. See FEAST.

The occaſion of its Inſtitution is variouſly related; the moſt plauſible account is this: A Religious Knight returning from a Pilgrimage to the Holy Land, and loſing his Road, met a Hermit; who hearing that he was a *Franc*, aſk'd him if he knew the Monaſtery of *Clugny*, and the Abbot *Odillon*; the Pilgrim profeſſing his Knowledge of both, the Hermit told him, that God had diſcover'd to him, that he was to have the Credit of delivering the Souls from the Pains they ſuffer in the other Life; charging him, at his return, to exhort *Odillon*, and thoſe of his Community, to continue their Prayers and Alms for the Dead. See CLUNY.

COMMENDAM, in the Canon Law, the Charge, Truſt, and Adminiſtration of the Revenues of a Benefice, given to a Layman to enjoy, by way of *Depoſitum*, for the Space of ſix Months; in order to its being repair'd, *&c.* or to another Biſhop, or Eccleſiaſtic to perform the Paſtoral Offices thereof; till ſuch time as the Benefice is provided of a regular Incumbent. See BENEFICE.

Anti-

Antiently, the Adminiſtration of vacant Biſhopricks belong'd to the neareſt neighbouring Biſhop; which is ſtill practis'd between the Archbiſhoprick of *Lyons*, and the Biſhoprick of *Autun*: on this account they were call'd *Commendatory Biſhops*.

This Cuſtom appears to be very antient: S. *Athanaſius* ſays of himſelf, according to *Nicephorus*, that there had been given him *in Commendam*, *i. e.* in Adminiſtration, another Church beſides that of *Alexandria*, whereof he was ſtated Biſhop.

The Care of Churches, it ſeems, which had no Paſtor, was committed to a Biſhop, till they were provided of an Ordinary: The Regiſter of Pope *Gregory* I. is full of theſe Commiſſions, or *Commendams*, granted during the Abſence or Sickneſs of a Biſhop, or the Vacancy of the See.

Some ſay, that Pope *Leo* IV. firſt ſet the modern *Commendams* on foot, in favour of Eccleſiaſtics who had been expell'd their Benefices by the *Saracens*; to whom the Adminiſtration of the vacant Churches was committed for a time, in expectation of their being reſtor'd: tho S. *Gregory* is ſaid to have uſed the ſame, while the *Lombards* deſolated *Italy*.

In a little time, the practice of *Commendams* was exceedingly abus'd; and the Revenues of Monaſteries given to Laymen for their Subſiſtence. The Biſhops alſo procur'd ſeveral Benefices, or even Biſhopricks *in Commendam*; which ſerv'd as a Pretext for holding 'em all; without directly violating the Canons. Part of the Abuſe has been retrench'd; but the Uſe of *Commendams* is ſtill retain'd, as an Expedient to take off the Incompatibility of the Perſon, by the Nature of the Benefice.

When a Parſon is made Biſhop, his Parſonage becomes vacant; but if the King give him Power, he may ſtill hold it *in Commendam*.

COMMENDAM, in many *Romiſh* Countries, is a real Title of a Regular Benefice; as an Abby or Priory given by the Pope to a Secular Clerk, or even to a Layman, with Power to diſpoſe of the Fruits thereof during his Life. See ABBOT.

No Benefice that has a Cure of Souls, *i. e.* no Curacy, or Biſhoprick can be given *in Commendam*. This Practice being entirely contrary to the Canons, none but the Pope, who has a Power of diſpenſing with the Canons, can confer it.

When the *Commendam* becomes vacant by the Death of the *Commendatary*, it is not eſteem'd vacant by his Death; but as it was vacant before the *Commendam* was granted, that making no Alteration in the Thing: Yet the Pope gives the ſame Benefice *in Commendam* again, by a Privilege which he ſtill continues.

By the Pope's Bulls, a *Commendatary* Abbot has the full Authority of the Regular Abbot to whom he is ſubſtituted: This is expreſs'd in plain Terms, *Curam Monaſterii ac regimen & adminiſtrationem tibi in ſpiritualibus & temporalibus plene committendo.* For this reaſon, the Bulls expreſly require, that he be a Prieſt; or, that if he han't yet attain'd the Age of Prieſthood, he ſhall take Orders as ſoon as he has. But this is a mere Formality, or matter of Style; the Thing is never executed.

Indeed, the ſpiritual Direction of the Abby, while in *Commendam*, is lodg'd wholly in the Clauſtral Prior. The *Commendatary* Abbots have not any Authority over the Religious *in ſpiritualibus*: they even cannot either appoint or ſet aſide the Clauſtral Priors, who are nominated in the Bulls the Adminiſtrators of the Spiritualty; in which, however, this Reſtriction is added, *viz.* till the Abbot arrive at the Age of 25 Years, to aſſume the Prieſthood. The Bull given the Prince of *Neubourg* for the Abby of *Feſcamp* runs thus: *Et ne ob defectum Ætatis primo-dictum Monaſterium, aliquod in ſpiritualibus patiatur detrimentum; priorem-Clauſtralem pro tempore exiſtentem, primo-dicti Monaſterii in ſpiritualibus, donec tu 25 tuæ Ætatis annum perveneris, duntaxat conſtituimus ac deputamus.* The Words *Adminiſtration in Spirituals*, are underſtood principally of the Monaſtic Rule, or Diſcipline; from which the Abbots are excluded, even when they are promoted to the Prieſthood, unleſs they become Regulars.

The Popes grant Benefices *in Commendam*, not only to Clerks, by diſpenſing with their Age, and other Qualifications requir'd; but alſo diſpenſe with the Clericate in Children yet in the Cradle, till they become of age to take the Tonſure: It being ſufficient to obtain a Bull, that it be repreſented at *Rome*, that the Child is deſtin'd for the Eccleſiaſtical State.

In this Caſe there is an *Oeconomus*, or Steward, appointed to take care of the temporal Concerns.

COMMENSURABLE *Quantities*, in Geometry, are ſuch as have ſome common aliquot Part, or which may be meaſur'd by ſome common Meaſure, ſo as to leave no Remainder in either. See MEASURE.

Thus, a Foot and a Yard are *Commenſurable*; there being a third Quantity which will meaſure each, *viz.* an *Inch*; which taken 12 times makes a *Foot*, and 36 times a *Yard*. See QUANTITY.

Commenſurables are to each other, either as Unites to a Rational Whole Number; or as one Rational Whole Number to another. See NUMBER.

In *Incommenſurables* 'tis otherwiſe. The Ratio of *Commenſurables* therefore is Rational; that of *Incommenſurables* Irrational: Hence, alſo, the Exponent of the Ratio of *Commenſurables* is a Rational Number. See RATIO.

COMMENSURABLE *Numbers*, whether Integers or Fractions, are ſuch as have ſome other Number which will meaſure or divide them without any Remainder. See NUMBER.

Thus, 6 and 8, $\frac{8}{12}$ and $\frac{3}{4}$ are reſpectively *Commenſurable* Numbers.

COMMENSURABLE *in Power*. Right Lines are ſaid to be *Commenſurable in Power*, when their Squares are meaſur'd by one and the ſame Space, or Superficies. See LINE.

COMMENSURABLE *Surds*, are ſuch Surds as being reduc'd to their leaſt Terms, become true figurative Quantities of their Kind; and are therefore as a Rational Quantity to a Rational. See SURD.

COMMENTARY, or COMMENT, an Interpretation, Gloſs, or Addition, made to an antient, obſcure, or difficult Author, to render him more intelligible, or to ſupply what he has left undone.

Sir *Hen. Savil* has wrote a *Commentary* of 300 Pages in Quarto, to explain the firſt eight Propoſitions in *Euclid*.

S. Evremond obſerves, that *Commentators* commonly ſpend a great part of their time in finding out Beauties the Author never dreamt of, and in enriching him with their own Thoughts.

COMMENTARY is alſo uſed for a ſort of Hiſtory, written by the Perſon who had the chief hand in the Tranſactions related. See HISTORY.

Such are the *Commentaries* of *Cæſar*, of *Montluc*, &c.

The Word is alſo uſed for certain Books wrote on ſome particular Subject: Thus, *Kepler* has wrote an excellent Book of *Commentaries on Mars*; containing Obſervations on the Motion of that Planet.

COMMERCE, *Trade*, the Exchange of Commodities; or, the buying, ſelling, or trafficking of Merchandiſe, Money, or even Paper; in order to profit by the ſame. See MERCHANDISE.

There is no doubt but *Commerce* is nearly as antient as the World it ſelf: Neceſſity ſet it on foot, the Deſire of Conveniency improv'd it, and Vanity, Luxury, and Avarice, have brought it to its preſent Pitch. At firſt it only conſiſted in the Exchange of Things neceſſary for Life: The Plowman gave his Grain and his Pulſe to the Shepherd, and receiv'd Milk and Wool in exchange: Which Method of *Commerce* by Exchange ſubſiſts ſtill in many Places; as about the Coaſts of *Siberia*, and the *Daniſh* and *Muſcovite Lapland*; among ſeveral Nations on the Coaſts of *Africa*; among moſt of thoſe of *America*, and many of *Aſia*. See EXCHANGE.

'Tis not preciſely known when the Commerce by buying and ſelling firſt began, nor when Coins, and the ſeveral Species of Gold, Silver, and Copper had their riſe. The firſt Monies were Wood, Leather, and Iron; and even at this day, 'tis the Cuſtom in ſome Places of both *Indies*, to give a certain Value in Sea-Shells and Coco-Nuts, for Merchandiſes, Drugs, &c. See MONEY, and COIN.

The firſt Inſtance of this kind of *Commerce* in the *ſacred Writing*, is in the Time of the Patriarch *Abraham*. For profane Authors, they uſually fix its Epocha to the Reign of *Saturn* and *Janus* in *Italy*; and the antient Authors, according to *Cæſar*, attribute its Invention to the God *Mercury*.

The *Egyptians*, *Phœnicians*, and *Carthaginians*, who were a *Tyrian* Colony, were the firſt, the moſt daring and expert Traders of all Antiquity: at leaſt, 'tis evident they were the firſt who run the Hazard of long Voyages; and who ſet on foot a Traffick by Sea between Coaſts very remote. See NAVIGATION.

Among the Antients, *Commerce* did not appear unworthy the Application of Perſons of the firſt Rank: *Solomon*, we are told, frequently join'd his Merchant-Fleets with thoſe of the King of *Tyre*, for their Voyage to *Ophir*; and by this means render'd himſelf, tho in a little Kingdom, the richeſt King in the Univerſe. Under the *Aſiatic* and *Grecian* Empires, antient Hiſtory gives us from time to time the Traces of a Commerce cultivated by ſeveral Nations: but it flouriſh'd more conſiderably under the Dominion of the *Romans*; as appears from that vaſt Number of Colleges and Companies of Merchants in the ſeveral Cities, mention'd in Hiſtorians and antient Inſcriptions. See COLLEGE.

The Deſtruction of the *Roman* Empire by the Irruptions of the Barbarians, brought that of *Commerce* along with it; or at leaſt ſuſpended its ordinary Operation for ſome time: By degrees it began to recover it ſelf, and made a new progreſs; eſpecially in *Italy*.

Hence, the *Piſans*, *Florentines*, *Genoeſe*, and *Venetians*, who abounded in Shipping, took occaſion to ſpread themſelves thro' all the Parts of the *Levant* and *Egypt*; bringing thence Silk, Spices, and other Merchandizes; and furniſhing the greateſt part of *Europe* therewith. And thus was the

modern *Commerce* founded on the Ruins of that of the antient *Greeks* and *Romans* to the ſame Places: And thus did thoſe famous Republics acquire their Luſtre.

The *Germans*, however, had a long time carried on a ſeparate *Commerce*; which was not borrowed from the *Romans*, nor did it fall with theirs. Towards the End of the XIIth Century, the *German* Cities ſituate on the Coaſts of the *Baltic*, and the Rivers that run into it, had a conſiderable Traffick with the neighbouring States.

As their *Commerce* was much interrupted by Pirates, 72 of them united together for their mutual Defence; and were thence called *Hanſeatic*, or *Hans Towns*. See HANS *Town*.

Thus they flouriſh'd till the Beginning of the XVIth or End of the XVth Century; when a Diviſion ariſing among them, and about the ſame time a new Paſſage to the *Indies*, by the Cape of *Good Hope*, being diſcover'd by the *Portugueze*; and Settlements made on the Coaſts of *Africa*, *Arabia*, and the *Indies*; the antient *Italian* and *Hanſeatic Commerce* ſunk; and the chief Trade came into the Hands of the *Portugueze*.

The *Portugueze* had not poſſeſs'd thoſe different Trades above 100 Years, when, about the Beginning of the XVIIth Century, the *Dutch* began to ſhare it with 'em; and in a little time diſpoſſeſs'd 'em of almoſt the whole. The *Engliſh*, *French*, *Danes*, and *Hamburghers*, excited by their Succeſs, have likewiſe made Settlements in the *Indies*, and on the Coaſts of *Africa*; tho much leſs conſiderable ones, excepting thoſe of the *Engliſh*.

Laſtly, *America*, diſcover'd by the *Spaniards* ſoon after the *Portugueze* had diſcover'd the new Way to the *Indies*, likewiſe became the Object of a new, vaſt, and important *Commerce*, for all the Nations of *Europe*; whereof *Cadiz* and *Sevil* were made the Centre.

'Tis true, the firſt Conquerors of this new World ſtill poſſeſs the greateſt and richeſt Part of it; and preſerve the *Commerce* thereof to themſelves with a world of Jealouſy: yet, beſides that, the *Engliſh*, *French*, *Portugueze*, and *Dutch*, have ſeveral rich and flouriſhing Colonies, both in the Iſlands and the Continent; 'tis certain, that 'tis as much for other Nations as themſelves, that the *Spaniards* every Year ſend their Flota's for the Treaſures of *Peru* and *Mexico*. See COLONY, FLOTA, and GALLION.

The Trade of *Europe* was no Sufferer by this new one of *America*; the North and South have ſtill the ſame mutual occaſion for each other as before.

The Navigation from the *Baltic* to the *Mediterranean* was tedious and difficult: The Situation of *Flanders*, and the Manufactures which there flouriſh'd from the Xth Century, together with the free Fairs of that Country, engag'd the Merchants, both of the North and South, to eſtabliſh their Magazines firſt in *Bruges*, and then in *Antwerp*. See FAIR, *&c.*

The Eſtabliſhment of the Republic of *Holland*, the favourable Reception it gave to Strangers, and the Refuge it afforded to Religionaries, drew ſtore of Manufacturers to it, as well as Manufactures; and ſoon ſunk the *Commerce* of *Antwerp*.

And the ſame Reaſons, the Convenience and Multitude of the Ports of *England*, the Goodneſs of the Wools, and the Induſtry of the Workmen, have brought thither a conſiderable Part of the *Commerce* of *Europe*. See WOOLLEN *Manufacture*.

In *France*, the Nobility are allow'd to exerciſe *Commerce*, without derogating from their Nobility: By an Ordonnance of *Louis* XIII. Merchants are allow'd to take on 'em the Quality of Nobles; and by another of *Louis* XIV. are declared capable of being Secretaries of State, without laying aſide their *Commerce*. It may be added, for the honour of *Commerce*, that ſome of the *Italian* Princes, looking on themſelves as the chief Merchants of their States, don't diſdain to make their own Palaces ſerve as Magazines: And there are ſeveral Kings in *Aſia*, as well as moſt of thoſe on the Coaſts of *Africa* and *Guinea*, who negotiate with the *Europeans* by their Factors, and frequently by themſelves. See MERCANTILE *Profeſſion*.

Commerce, on the foot it now ſtands, is divided into *Commerce by Land*, and *by Sea*; that by *long Voyages*, and by *ſhort*; *Inland* or *Domeſtick*, and *Foreign*; by *Wholeſale* and *Retail*.

A great part of the Foreign *Commerce* of *England* is now carried on by *Companies*: ſome incorporated by the King's Charters, with an excluſive Privilege, as the *Eaſt-India* and *South-Sea* Companies; others only private Aſſociations, as the *Turky* and *Hamburgh* Companies. See COMPANY.

COMMINATORY, a Clauſe inſerted in a Law, Edict, Patent, *&c.* importing a Puniſhment wherewith Delinquents are menac'd; which, however, is not executed in its rigour. See CLAUSE.

Thus, in ſome Countries, when an Exile is enjoin'd not to return on Pain of Death, it is deem'd a *Comminatory* Penalty; ſince, if he do return, it is not ſtrictly executed; but a ſecond Injunction is laid on him, which is more than *Comminatory*, and from the Day of the Date thereof, imports Death without remedy.

COMMINUTION, the Act of grinding, or breaking any Matter into ſmaller Particles. Thus, we ſay, the Effect of chewing, or maſticating our Food, is the *Comminution* thereof. See MASTICATION, *&c.*

COMMISSARY, an Officer of the Biſhop, who exerciſes Eccleſiaſtical Juriſdiction in thoſe Parts of the Dioceſs which are ſo far remote from the See, that the Chancellor cannot call the Subjects thereof to the Biſhop's principal Conſiſtory, without their too great Moleſtation. See BISHOP's *Court*, CHANCELLOR, *&c.*

This Officer, call'd by the Canoniſts *Commiſſarius*, or *Officialis foraneus*, is appointed to ſupply the Biſhop's Office in the Out-parts of the Dioceſs, and in ſuch Pariſhes as are peculiar to the Biſhop, and exempted from the Juriſdiction of the Archdeacon: for where the Archdeacons have Juriſdiction, as in moſt Places they have, either by Preſcription or Compoſition, the *Commiſſary* is ſuperfluous, and frequently vexatious. See ARCHDEACON.

COMMISSARY, in an Army. There are two ſorts of *Commiſſaries*: The *Commiſſary-General* of the Muſters, or Muſter-Maſter General; who takes an account of the Strength of every Regiment, reviews them, ſees that the Horſe are well mounted, and all the Men well arm'd and accouter'd. See MUSTER.

And the *Commiſſary-General of Proviſions*, who hath the Charge of furniſhing the Army with all Things of that kind.

COMMISSION, in our common Law, is the ſame with *Delegation* among the Civilians; and is taken for the Warrant, or Patent which any Man exerciſing Juriſdiction, either ordinary or extraordinary, hath to authorize him to hear or determine any Cauſe or Action.

The Term, however, is ſometimes extended further than to Matters of Judgment; as in the *Commiſſion of Purveyors and Takers*, which ſeems to be null by the Statute, for taking away Purveyance, 12 *Car.* II. and the *Commiſſion-Court*, which was founded on the Statute 1° *Eliz.* and is alſo aboliſh'd by Act of Parliament 17 *Car.* I.

The Perſons charged with a *Commiſſion* are hence call'd *Commiſſioners*; ſometimes, *Committees*. See COMMISSIONER, and COMMITTEE.

COMMISSION *of Anticipation*, was antiently a *Commiſſion* under the Great Seal, to collect a Subſidy before the Day. See ANTICIPATION.

COMMISSION *of Aſſociation*, is a *Commiſſion* under the Great Seal, to aſſociate two, or more learned Perſons, with the ſeveral Juſtices in the ſeveral Circuits and Counties in *Wales*. See ASSOCIATION.

COMMISSION *of Bankruptcy*, a *Commiſſion* under the Great Seal, directed to five or more *Commiſſioners*, to inquire into the Particulars of a Man's Circumſtances, who hath failed, or broke; and to act according to certain Statutes made in that behalf. See BANKRUPT.

COMMISSION *of Peace*. See JUSTICE *of Peace*.

COMMISSION *of Rebellion*, or *Writ of Rebellion*, is iſſu'd out when a Man, after Proclamation iſſu'd out of the Chancery, or the Exchequer, and made by the Sheriff, to preſent himſelf, under Pain of his Allegiance, to the Court by a certain Day; does not appear. See REBELLION.

This *Commiſſion* is directed, by way of Command, to certain Perſons; three, two, or one of 'em, to apprehend, or cauſe to be apprehended, the Party as a Rebel, and to bring him to the Court on a Day aſſign'd. See OUTLAWRY.

COMMISSION, in Commerce. See FACTORAGE.

COMMISSIONER, he who has a *Commiſſion*, *e. gr.* a Patent, or other legal Warrant, to execute any publick Office.

Such are, *Commiſſioners of the Office of Licences*, *Commiſſioners of Alienation*, &c. See ALIENATION, *&c.*

COMMISSIONERS *of the Cuſtoms.* } See { CUSTOMS.
COMMISSIONERS *of Exciſe.* } See { EXCISE.

Lords COMMISSIONERS *of the Treaſury*. See TREASURY, and EXCHEQUER.

COMMISSURE, *Commiſſura*, a Term uſed by Mr. *Boyle*, and ſome other Authors, for the ſmall *Meatus*'s, or Interſtices of Bodies; or the little Clefts between the Particles; eſpecially when thoſe Particles are broadiſh and flat, and lie contiguous to one another, like thin Plates, or *Lamellæ*. See PORE.

The Word literally ſignifies *a joining*.

COMMISSURE, in Architecture, *&c.* the Joint of two Stones; or, the Application of the Surface of the one to that of the other. See MASONRY.

Among Anatomiſts, *Commiſſure* is ſometimes uſed for a *Suture* of the Cranium, or Skull. See SUTURE.

COMMITTEE, in Law, one or more Perſons, to whom the Conſideration of any Matter is referr'd, either by a Court, or by Conſent of the Parties concern'd.

COMMITTEE *of Parliament*, is a Board conſiſting of a certain Number of Members, appointed by the whole Houſe for

for the examining of a Bill, the making Report of an Inquiry, or a Proceſs of the Houſe. See PARLIAMENT, BILL, &c.

Sometimes, the whole Houſe is reſolv'd into a *Committee*; on which Occaſion each Perſon has a right to ſpeak, and reply as much, and as often as he pleaſes: an Expedient they uſually have recourſe to in extraordinary Caſes, and where any thing is to be thoroughly canvaſs'd.

When the Houſe is not in a *Committee*, each gives his Opinion regularly, and is only allow'd to ſpeak once.

COMMITTEE *of the King*, is uſed for a Widow of one of the King's Tenants; thus call'd, as being by the antient Law of the Realm *committed* to the King's Care and Protection.

COMMODATE, *Commodatum*, in the Civil Juriſprudence, the Loan, or free Conceſſion of any thing moveable or immoveable, for a certain time, on condition of reſtoring again the ſame Individual after a certain time.

The *Commodate* is a kind of *Loan*, or Contract: there is this difference, however, between a Loan and a *Commodate*, that the latter is *gratis*, and does not transfer the Property: the thing muſt be return'd in Eſſence, and without Deterioration: So that Things which conſume by Uſe, or Time, can't be Objects of a *Commodate*, but of a Loan; in regard they may be return'd in Kind, tho not in Identity. See LOAN.

COMMODORE, in the Navy, an Under-Admiral, or Perſon commiſſion'd by an Admiral to command a Squadron of Ships in Chief. See ADMIRAL, and SQUADRON.

COMMON, ſomething that belongs to all alike; own'd, or allow'd by all; and not affected to this more than that. In which Senſe *Common* ſtands oppoſed to *proper*, *peculiar*, &c.

Thus, the Earth is ſaid to be our *common* Mother; in the firſt, or golden Age, all things were in *common*, as well as the Sun and Elements: The Name *Animal* is *common* to Man and Beaſt; that of *Subſtance* to Body and Spirit.

Philoſophers diſpute whether there be any ſuch thing as *common* Notions, innate, or impreſs'd on the Mind by Nature her ſelf; or whether our Ideas are all adventitious. See *Innate* IDEA.

COMMON, in Grammar, that Gender of Nouns which is equally applicable to both Sexes, Male and Female. See GENDER.

Such is that of *parens*, Parent; which is either Maſculine, or Feminine, as it is uſed to ſignify either Father or Mother.

The *Latin* Grammarians, beſide this, which they call the *Common of two*, do alſo make a *Common of three*; which extends to Maſculine, Feminine, and Neuter.

COMMON, in Geometry, is applied to an Angle, Line, or the like, which belongs equally to two Figures, or makes a neceſſary Part of both.

COMMON *or Double Time*, in Muſick. See TIME.

COMMON *Diviſor*, is a Quantity, or Number, which exactly divides two, or more other Quantities, or Numbers, without leaving any Remainder. See DIVISOR.

COMMON, in Law, is that Soil, or Water, the uſe whereof lies open to the ſeveral Inhabitants, or Holders of a particular Town, or Lordſhip: In this Senſe, we ſay, *Common* of Paſture, *Common* of Fiſhing, *Common* of Turfery, *Common* of Eſtovers, &c.

Common is divided into *Common in groſs*, *Common appendant*, *Common appurtenant*, and *Common by way of neighbourhood*.

COMMON *in groſs*, is a Liberty to have *Common* alone; that is, without any Land or Tenement in another Man's Land; to himſelf for Life, or to him and his Heirs. This is commonly paſſed by Deed, or Grant, or Specialty.

COMMON *Appendant*, and COMMON *Appurtenant*, are in a manner confounded; both being defined to be a Liberty of *Common* appertaining to, or depending on ſuch or ſuch a Freehold; which *Common* muſt be taken with Beaſts *commonable*; as Horſes, Oxen, &c. being accounted fitteſt for the Plowman; and not of Goats, Geeſe, and Hogs.

Others diſtinguiſh between the two, thus; *Common Appurtenant* may be ſevered from the Land whereto it appertains; but not *Common Appendant*; which, according to my Lord *Coke*, had its original in the following manner.

'When a Lord enfeoffed another in Arable Lands to hold 'of him in Soccage; the Feoffee, to maintain the Service 'of his Plow, had at firſt, by Courteſy of his Landlord, '*Common* in his Waſtes, for neceſſary Beaſts, to ear, and 'compoſt his Lands: and that for two Cauſes; 1ſt, becauſe 'it was tacitly implied in the Feoffment; by reaſon the Feoffee could not till, or compoſt his Land, without Cattel; 'and Cattel could not be ſuſtain'd without Paſture: By 'conſequence, therefore, the Feoffee had, as a thing neceſſary, or incident, *Common* in the Waſtes, or Lands of the 'Lord. 2d, For the Maintenance and Advancement of 'Tillage.

COMMON *per Cauſe de Vicinage*, *i. e.* by reaſon of Neighbourhood; is a Liberty that the Tenants of one Lord in one Town, have to a *Common*, with the Tenants of another Lord in another Town.

But it is to be obſerv'd, that thoſe who claim this kind of *Common* (which is uſually call'd *Intercommoning*) may not put their Cattel into the *Common* of the other Town, for then they are diſtrainable; but, turning them into their own Fields, if they ſtray into their neighbour *Common*, they muſt be ſuffered. See INTERCOMMONING.

COMMON *Duct*, in Anatomy. See DUCTUS *Communis*.

COMMON *Fine*, in Law, a certain Sum of Money which the Reſiants within the View of ſome Leets pay to the Lord thereof; call'd, in ſome Places, *Head-ſilver*; in others *Cert-Money*, or *Certum Letæ*, and *Head-pence*. See CERT-*Money*.

It was firſt granted to the Lord towards the Charge of his Purchaſe of the Court-Leet; whereby the Reſiants have now the Conveniency of doing their Suit-Royal near home, without being compell'd to go to the *Sheriff's Turn*.

COMMON *Intendment*, in Law, the *common* Underſtanding, Meaning, or Conſtruction of any thing; without ſtraining it to any foreign, remote, or particular Senſe.

Bar to Common Intendment, is an ordinary or general Bar, which commonly diſables the Declaration of the Plaintiff. See BAR, and INTENDMENT.

COMMON LAW, *Lex non ſcripta*, that Body of Rules generally receiv'd, and held as *Law* in this Nation, before any Statute, or *Lex ſcripta* was made to alter the ſame. See LAW.

Origin of the COMMON *Law*. After the Decay of the *Roman* Empire, *Britain* became invaded by three Kinds of *German* People, *viz.* the *Saxons*, *Angles*, and *Jutes*. From the *Jutes* deſcended the Men of *Kent*, and thoſe of the *Iſle of Wight*; from the *Saxons* came the People call'd the *Eaſt*, *South*, and *Weſt-Saxons*; and from the *Angles* came the *Eaſt-Angles*, *Mercians*, and *Northumbrians*. See HEPTARCHY.

Now, as each People had its peculiar Cuſtoms, ſo each inclin'd to different Laws; whereof, thoſe of the *Weſt-Saxons*, and *Mercians*, who inhabited the midland Countries, were, upon the Diſſolution of the Heptarchy, and Eſtabliſhment of a Monarchy, preferr'd to the reſt, and acquir'd the common Appellation of *Jus Anglorum*. Their particular Names were *Weſt-Saxonlage*, and *Merchenlage*. See MERCHENLAGE, &c.

By theſe Laws the Nation was govern'd for ſeveral Ages, till being at length ſubdued by the *Danes*, the Cuſtoms of thoſe People were introduced, and incorporated with the reſt; and thus a new form of *Common* Law aroſe, call'd *Danelage*. See DANELAGE.

The *Danes* being, in their turn, overcame by the *Normans*; the Conqueror, on a Review of the ſeveral Laws and Cuſtoms that then obtain'd, abrogated ſome, and abliſh'd others; adding ſome of his own Country Laws: and the Syſtem, or Aſſemblage of theſe, is what we call the *Common Law*.

The *Common Law* of *England*, is properly, the common Cuſtoms of this Kingdom; which, by length of time, have obtain'd the force of Laws. See CUSTOM.

It is call'd the *Unwritten Law*: not but that we have moſt of it written in the old *Norman* Dialect, but becauſe it cannot be made by Charter, or Parliament: for thoſe are always Matters of Record; whereas Cuſtoms are only Matter of Fact, and ſubſiſt no where but in the Memory of the People.

From the common Reaſon of Things, therefore, *Common Law* ſhould appear the beſt, moſt beneficial, and eaſy to the People; in regard it conſiſts of ſuch Rules and Practices as they themſelves ſpontaneouſly, and as it were by the Impulſe and Direction of their own Intereſts, were led to: Whereas, the Written Laws, made in *England* by the King and Parliament, are impoſed on the Subject at once, and without any Trial, or Foreknowledge how they ſhall anſwer; and whether or no they are like to prove beneficial to the Nation, and agreeable to the Nature of the People: Excepting ſuch as are firſt made temporary; and for their approved Utility, afterwards perpetuated.

The firſt *Saxon* Laws publiſh'd in *England*, were thoſe of King *Ethelbert* in the VIth Century. 300 Years after, King *Alfred*, whom our Hiſtorians call *Magnus Juris Anglicani Conditor*, having united the Heptarchy, and render'd himſelf Maſter of the whole Nation; made a Collection from among the ſeveral Laws of the ſeveral Provinces of his Domains; and commanded 'em to be obſerv'd throughout his Kingdom. This Collection was denominated the *Folk-Right*, and ſoon after, the *Common Law*; as being *common* to the whole Nation.

Beſide the *Common Law* of *England* in general; there are in divers Parts of the Nation particular Cuſtoms, and common Uſages, which have the force of *Common Law* among thoſe People who have retain'd 'em: Such as the *Borough-Engliſh*, *Gavel-kind*, &c. See BOROUGH-*Engliſh*, and GAVEL-KIND.

Where the *Common Law* is ſilent, there the Statute Law ſpeaks. See STATUTE *Law*.

All

All Trials of *Common Law* are by a Jury of twelve Men. See JURY.

COMMON-PLACES, *Adverſaria*, among the Learned, are a Regiſter, or orderly Collection of what things occur worthy to be noted, and retain'd in the Courſe of a Man's reading, or Study; ſo diſpos'd, as that among a Multiplicity of Heads, and Things of all Kinds, any one may be found, and turn'd to at pleaſure. See PLACE.

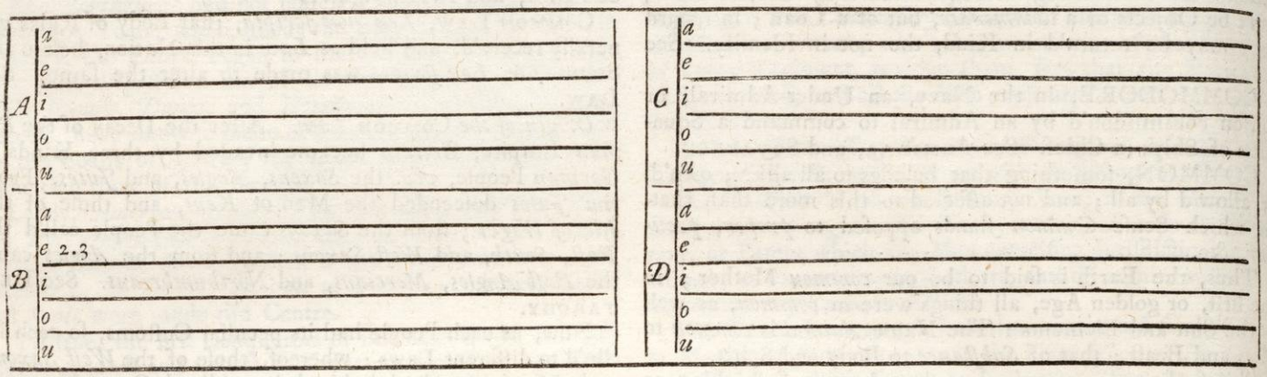
Common-places are things of infinite ſervice: they are a Kind of Promptuaries or Storehouſes, wherein to repoſit the choiceſt and moſt valuable Parts of Authors, to be ready at hand when wanted. Several Perſons have their ſeveral Methods of ordering them: but that which comes beſt recommended, and which many learned Men have now given into, is the Method of that great Maſter of Order Mr. *Locke*. He has thought fit to publiſh it in a Letter to M. *Toiſnard*; determin'd thereto, by the great Conveniency and Advantage he had found from it in 20 Years experience; as well as by the Recommendations and Intreaties of many of his Friends, who had likewiſe prov'd it.

The Subſtance of this Method we ſhall here give the Reader; whereby he will be eaſily inabled to execute it himſelf.

The firſt Page of the Book you intend to keep the *Common-places* in, is to ſerve as a kind of Index to the whole; and to contain References to every *Place* or Matter therein: In the commodious Contrivance of which Index, ſo as it may admit of a ſufficient *Copia*, or Variety of Materials, without any Confuſion; all the Secret of the Method conſiſts.

In order to this, the firſt Page, as already mention'd, or, for more room, the two firſt Pages that front each other, are to be divided, by parallel Lines, into 25 equal Parts; whereof, every fifth Line to be diſtinguiſh'd, by its Colour or other Circumſtance. Theſe Lines are to be cut perpendicularly by others, drawn from top to bottom; and in the ſeveral Spaces thereof, the ſeveral Letters of the Alphabet, both Capital and Minuſcule, are to be duly wrote.

The form of the Lines and Diviſions, both horizontal and perpendicular, with the manner of writing the Letters therein, will be conceiv'd from the following Specimen; wherein, what is to be done in the Book for all the Letters of the Alphabet, is here ſhewn in the firſt four *A*, *B*, *C*, and *D*.



The Index of the *Common-place Book* thus form'd, Matters are ready for the taking down any thing therein.

In order to this, conſider to what Head, the thing you would enter is moſt naturally referr'd; and under which, one would be led to look for ſuch a thing: in this Head, or Word, regard is had to the initial Letter, and the firſt Vowel that follows it; which are the characteriſtic Letters whereon all the Uſe of the Index depends.

Suppoſe, *e. g.* I would enter down a Paſſage that refers to the Head *Beauty*; *B*, I conſider, is the initial Letter, and *e* the firſt Vowel: Then, looking upon the Index for the Partition *B*, and therein the Line *e*, (which is the Place for all Words whoſe firſt Letter is *B*, and firſt Vowel *e*; as *Beauty*, *Beneficence*, *Bread*, *Bleeding*, *Blemiſhes*, &c.) and finding no Numbers already down to direct me to any Page of the Book where Words of this Characteriſtic have been enter'd, I turn forward to the firſt blank Page I find, which in a freſh Book, as this is ſuppos'd to be, will be Page 2, and here write what I have occaſion for on the Head *Beauty*; beginning the Head in the Margin, and indenting all the other ſubſervient Lines that the Head may ſtand out and ſhew it ſelf: This done, I enter the Page where 'tis wrote, *viz.* 2, in the Index, in the Space *B e*; from which time, the Claſs *B e* becomes wholly in Poſſeſſion of the 2d and 3d Pages, which are conſign'd to Letters of this Characteriſtic.

Had I found any Page or Number already enter'd in the Space *B e*, I muſt have turn'd to the Page, and have wrote my Matter in what room was left therein: ſo, if after entering the Paſſage on *Beauty*, I ſhould have occaſion for *Benevolence*, or the like, finding the Number 2 already poſſeſs'd of the Space of this Characteriſtic, I begin the Paſſage on *Benevolence* in the Remainder of the Page, which not containing the whole, I carry it on to Page 3, which is alſo for *B e*; and add the Number 3 in the Index.

An *Example* will make the Method of writing down Heads obvious.

BEAUTY. 'The Power of perceiving the Ideas of *Beauty* 'is juſtly call'd a *Senſe*, becauſe of its affinity to 'the other Senſes in this, That the Pleaſure does 'not ariſe from any Knowledge of Principles, Pro'portions, Cauſes, or of the Uſefulneſs of the Ob'ject; but ſtrikes us at firſt with the Idea of *Beau'ty*: nor does the moſt accurate Knowledge increaſe 'this Pleaſure of *Beauty*; however, it may ſu'peradd a diſtinct rational Pleaſure from Proſpects 'of Advantage, or from the Increaſe of Knowledge. 'And further, the Ideas of Beauty, like other ſenſi'ble Ideas, are neceſſarily pleaſant to us, as well as 'immediately ſo; neither can any Reſolution of 'our own, nor any Proſpect of Advantage or Diſad'vantage, vary the Beauty or Deformity of an Ob'ject: For as in the external Senſations, no View 'of Intereſt will make an Object grateful; nor De'triment, diſtinct from immediate Pain in the Per'ception, make it diſagreeable to the Senſe; ſo, 'propoſe the World as a Reward, or threaten the 'greateſt Evil, to make us approve a deformed Ob'ject, or diſapprove a beautiful one; Diſſimulation 'may be procur'd by Rewards, or Threatnings; or 'we may in external Conduct abſtain from any Pur'ſuit of the Beautiful, and purſue the deformed; 'but our Sentiments of the Forms, and our Percep'tions would continue invariably the ſame. Hence, 'it plainly appears, that ſome Objects are immedi'ately the Occaſions of this Pleaſure of *Beauty*; 'and that we have Senſes fitted for perceiving it; 'and that it is diſtinct from that Joy which ariſes 'from Self-love, upon proſpect of Advantage. Nay, 'do not we often ſee Conveniency and Uſe neglect'ed to obtain *Beauty*, without any other Proſpect 'of Advantage in the beautiful Form, than the 'ſuggeſting the pleaſant Ideas of *Beauty*? Now this 'ſhews us, that however we may purſue beautiful 'Objects from Self-love, with a View to obtain the 'Pleaſures of *Beauty*; as in Architecture, Garden'ing, &c. yet there muſt be a Senſe of *Beauty* an'tecedent to Proſpects of even this Advantage: 'without which Senſe, theſe Objects would not be 'thus advantageous; nor excite in us this Pleaſure 'which conſtitutes 'em advantageous. Our Senſe 'of *Beauty*, from Objects by which they are conſti'tuted good to us, is very diſtinct from our Deſire 'of 'em, when they are thus conſtituted: Our De'ſire of *Beauty* may be counterbalanc'd by Re'wards and Puniſhments, but never our Senſe of it. 'Had we no ſuch Senſe of *Beauty*, Houſes, Gardens, 'Dreſs, Equipage, might be recommended to us as 'convenient, fruitful, warm, eaſy; but never as beau'tiful: And in Faces, I ſee nothing that cou'd pleaſe 'us, but Livelineſs of Colour, and Smoothneſs of 'Surface.—*Inquiry into the Original of our Ideas of 'Beauty*, &c. 8*vo*. Lond. 1725. p. 10, 11, 12.

BENEVOLENCE. 'The true Spring of all Actions called '*Virtuous*, is ſome Determination of our Nature to 'ſtudy the Good of others; or ſome Inſtinct, ante'cedent to all Reaſon from Intereſt; which influ'ences us to the Love of others.—The ſame Cauſe 'which determines us to purſue Happineſs for our 'ſelves, determines us to Eſteem and *Benevolence* 'for others: even the very Frame of our Nature, or 'a generous Inſtinct.—This univerſal *Benevolence* 'towards all Men, we may compare to that Princi'ple of Gravitation; which extends to all Bodies in 'the Univerſe, but like the Love of *Benevolence*, 'increaſes as the Diſtance is diminiſh'd; and is 'ſtrongeſt when Bodies come to *touch* each other. '*Id. Ib.* p. 131, 143, 199.—As all Men have Self-love, 'as well as *Benevolence*; thoſe two Principles may 'jointly excite a Man to the ſame Action: and then 'they are to be conſider'd as two Forces impelling 'the ſame Body to Motion: Sometimes they con-

'ſpire; ſometimes are indifferent to each other; 'and ſometimes are oppoſite. Thus, if a Man have 'ſuch ſtrong *Benevolence* as would have produced 'an Action without any Views to Self-Intereſt; that 'ſuch a Man has alſo in view private Advantage, 'does no way diminiſh the *Benevolence* of the Ac'tion. When he would not have produc'd ſo much 'publick Good, had it not been for proſpect of 'Self-Intereſt; then the Effect of Self-Love is to be 'deducted; and his *Benevolence* is proportion'd to 'the Remainder of Good, which pure *Benevolence* 'would have produced. When a Man's *Benevo*'*lence* is hurtful to himſelf, then Self-Love is op'poſite to *Benevolence*; and the *Benevolence* is 'proportion'd to the Sum of the Good produc'd, 'and the Reſiſtance of the Self-Love ſurmounted 'thereby.——The Morality of any Perſon, or the 'Quantity of publick Good produc'd by him, is 'in a compound Ratio of his *Benevolence* and Abi'lities: Or, (by ſubſtituting the initial Letters for 'the Words, as M = Moment of Good, and μ = 'Moment of Evil) $M = B \times A$. *Idem ib.* p. 130, '131, 143, 199.'

When the two Pages deſtin'd for one Claſs are full, look forwards for the next Backſide that is blank; if it be that which immediately follows, write at the bottom of the Margin of the Page fill'd, the Letter *V.* for *Verte*, turn over; and the ſame at the top of the next Page; and continue from this new Page as before. If the Pages immediately following be already fill'd with other Claſſes; write at the bottom of the Page laſt fill'd the Letter *V.* with the Number of the next blank Page; and at the top of that Page, the Number of the Page laſt fill'd: Then entering that Head in this new Page, proceed as before. By theſe two Numbers of reference, the one at the top, and the other at the bottom of the Page, the diſcontinued Matters are again connected. It may not be amiſs, too, every time you put a Number at the bottom of a Page, to put it likewiſe in the Index. Note, if the Head be a Monoſyllable beginning with a Vowel, the Vowel is at the ſame time both the initial Letter and the characteriſtic Vowel: Thus, the Word *Art* is to be wrote in *A a*.

Mr. *Locke* omits three Letters of the Alphabet in his Index, *viz. K*, *Y*, and *W*; which are ſupplied by *C*, *J*, *U*, equivalent to them: And as for *Q*, ſince it is always follow'd by an *u*, he puts it in the fifth Place of Z; and ſo has no Z *u*, which is a Characteriſtic very rarely occurs. By thus making *Q* the laſt in the Index, its Regularity is preſerv'd, without diminiſhing its Extent.

Others chuſe to retain the Claſs Z *u*, and aſſign a Place for *Q u* below the Index.

If any imagine that thoſe hundred Claſſes are not ſufficient to comprehend all kinds of Subjects without Confuſion, he may follow the ſame Method, and yet augment the Number to 500, by taking in one more Characteriſtic to 'em.

But the Inventor aſſures us, that in all his Collections, for a long Series of Years, he never found any deficiency in the Index as above laid down.

COMMON PLEAS, *Communia Placita*, or *Bancus Communis*, one of the King's Courts, now conſtantly held in *Weſtminſter-Hall*; but antiently moveable. See COURT.

Gwin obſerves, that till the granting of *Magna Charta* there were but two Courts called the King's Courts, *viz.* the *Exchequer*, and the *King's-Bench*; and that upon the Grant of that Charter the Court of *Common-Pleas* was erected, and fix'd to a Place certain, *viz. Weſtminſter-Hall*: whence the Writs which before ran *Coram me vel Juſticiariis meis*, ſimply; were now chang'd, and run *Coram Juſticiariis meis apud Weſtmon.* See BENCH.

All Civil Cauſes, both Real and Criminal, are, or were in former Times, tried in this Court, according to the ſtrict Law of the Realm: *Forteſcue* repreſents it as the only Court for Real Cauſes.

The Chief-Juſtice hereof is call'd the *Lord Chief-Juſtice of the Common Pleas*; who is accompanied with three or four his Aſſociates, created by Letters Patent, and as it were in-Judges ſtall'd or placed on the *common Bench* by the Lord Chancellor, and the Lord Chief-Juſtice of the Court. See JUSTICE.

The reſt of the Officers belonging to this Court, are the *Cuſtos Brevium*; three *Prothonotaries*, or Prænotaries; *Chirographer*; 14 *Filazers*; 4 *Exigenters*; *Clerk of the Warrants*; *Clerk of the Juries*, or *Jurata Writs*; *Clerk of the Treaſury*; *Clerk of the King's Silver*; *Clerk of the Eſſoigns*; *Clerk of the Outlawries*; *Clerk of the Errors*; whoſe ſeveral Functions ſee in their Places CUSTOS *Brevium*, PROTHONOTARY, EXIGENTER, CLERK, *&c.*

COMMON *Bench.* } See { COMMON *Pleas.*
COMMON *Council.* } See { *Common* COUNCIL.

COMMON-*Hunt*, the Chief-Huntſman belonging to the Lord Mayor and the City of *London*. See MAYOR.

COMMON *Receptacle.* } See { RECEPTACLE.
COMMON *Senſory.* } See { SENSORY.

COMMONER, is uſed for a Student in an Univerſity, enter'd on the Foundation, and not as a *Servitor*. See UNIVERSITY.

The Word is alſo apply'd to a Member of the Houſe of *Commons*; in contradiſtinction to a *Peer*. See COMMONS.

COMMONS, in Parliament, are the lower Houſe, conſiſting of Knights elected by the Counties, and of Citizens, and Burgeſſes by the Cities and Borough-Towns. See KNIGHT, and BURGESS; ſee alſo COUNTY, BOROUGH, *&c.*

In theſe Elections, antiently, all the People had Votes; but King *Henry* VI. to avoid Tumults, firſt appointed, that none ſhould vote for Knights but ſuch as were Freeholders, did reſide in the County, and had 40*s.* yearly Revenue: The Perſons elected for Counties to be *Milites notabiles*, at leaſt Eſquires, or Gentlemen fit for Knighthood; native *Engliſhmen*, at leaſt naturaliz'd; and 21 Years of Age: No Judge, Sheriff, or Eccleſiaſtical Perſon, to ſit in the Houſe for County, City, or Borough.

All Members of either Houſe, with their menial Servants, and neceſſary Goods brought with 'em, are privileg'd from all Attachments and Impriſonments; except for Treaſon, Felony, or breach of Peace, all the time of the Seſſion, and till they arrive at home, *eundo, morando, ad propria redeundo.*

The *Commons* ſit in their Houſe promiſcuouſly; only the *Speaker* has a Chair, or Seat, fix'd towards the upper End; and the Clerk, with his Aſſiſtant, ſits near him.

The Members have no Robes, as the Lords ever had; excepting the Speaker and Clerks; and ſometimes the Profeſſors of Law in Term-time, and the Members of the City of *London*.

On the firſt Day of the new Parliament, ere any Affair is meddled with, all the Members take the Oaths; uſually, before the Lord Steward, and in the Court of Wards. See OATHS.

They then proceed to the Choice of a *Speaker*. See SPEAKER.

After the Election of a Speaker, they take the Oaths a ſecond time.

Power and Privileges of the Houſe of COMMONS. All Bills for levying Money on the Subject, begin in the Houſe of *Commons*; in regard, 'tis from them the greateſt Part of the Monies ariſe: nor will they allow the Lords to make any alteration in a Money-Bill.

They have the Privilege to propoſe Laws; and are, in effect, the grand Inqueſt of the Realm; preſent publick Grievances; impeach publick Delinquents, even the higheſt Officers of the Kingdom; and proſecute 'em before the Houſe of Lords, who are a Court of Judicature, tho the *Commons* are not.

The *Commons* are allow'd their Expences during Parliament-time, *rationabiles expenſas*, as the Words of the Writ are; *i. e.* ſuch Allowance as the King, conſidering the Prices of Things, ſhall think proper to impoſe on the People they repreſent. In 17 *Edw.* II. the Allowance was ten Groats for Knights, and five for Burgeſſes, *per* Day; afterwards it was rais'd to four Shillings a Day for dubbed Knights, and two Shillings for all the reſt: But all Allowance is now grown into diſuſe; and the Courſe of the Money turn'd the other way. See PARLIAMENT.

COMMONS is alſo uſed in oppoſition to *Nobles*, or *Peers*; *viz.* for all ſorts of Perſons under the degree of a Baron; including the Orders of Knights, Eſquires, Gentlemen, the Sons of the Nobility, and Yeomen. *See each under its proper Article* ESQUIRE, GENTLEMAN, YEOMAN, *&c.*

COMMONS is alſo uſed for the ſtated and ordinary Diet, or Eating of a College, Inns of Court, or other Society. See INN, *&c.*

COMMONWEALTH. See REPUBLICK.

COMMOTE, an antient Term in *Wales*, as appears from *Stat. Walliæ*: a *Commote* was half a *Cantred*, or Hundred; containing 50 Villages. See HUNDRED.

Wales was antiently divided into three Provinces; each of theſe ſubdivided into *Cantreds*; and every *Cantred* into Hundreds.

Sylveſter Girald, however, tells us in his *Itinerary*, that a *Commote* is but a quarter of a Hundred.

COMMOTION, an inteſtine Motion, or Luctation in the Parts of any thing.

In Medicine, the Term is chiefly uſed for a blow, or ſhake of the Brain. Thus, we ſay, a Convulſion is a *Commotion* of the fine medullary Fibres of the Brain. A fall occaſions a *Commotion*, whence frequently ariſes a counter-ſtroke on the oppoſite Part; which occaſions ſometimes a Contrafiſſure, and at other times a Rupture of the Veſſels, and an Apoſthume, by ſhaking the whole Maſs of the Brain.

COMMUNIBUS *Locis*, a *Latin* Term, in frequent uſe among Philoſophical, *&c.* Writers, implying ſome Medium, or mean Relation between ſeveral Places.

Thus, Dr. *Keil* ſuppoſes the Ocean to be one quarter of a Mile deep, *communibus locis*, *q. d.* at a Medium, or taking one place with another.

COMMUNIBUS *Annis*, has the ſame Import with regard to Years, that *Communibus locis* has with regard to Places.

Thus, Mr. *Derham* obſerves, that the Depth of Rain, *communibus annis*, *i. e.* one Year with another, were it to ſtagnate on the Earth, would amount to, at *Townly* in *Lancaſhire*, 42½ Inches; at *Upminſter* in *Eſſex* 19¼; at *Lurick* 32¼; at *Piſa* 43¼; and at *Paris* to 19 Inches.

COMMUNICATING, in Theology, the Act of receiving the Sacrament of the Euchariſt. See EUCHARIST.

Thoſe of the *Reform'd* and of the *Greek* Churches *communicate* under both Kinds; thoſe of the *Romiſh* only under one.

From the ſecond Book of *Tertullian* to his Wife, it appears, that antiently they communicated faſting. S. *Auguſtin* ſays expreſly, that in ſome Churches, in his Time, they *communicated* every Day.

Among the *Greeks*, M. *Fleury* obſerves, the Laity ſtill *communicate* every Sunday; thoſe who omit it three Sundays together are excommunicated.

The Oriental Communicants receive the Species of Wine by a Spoon; antiently, they ſuck'd it thro' a Pipe, as has been obſerv'd by *Beat. Rhenanus* on *Tertullian*.

COMMUNICATION, the Act of imparting a thing to another, or making him a Sharer with us therein.

Thus, God is ſaid to *communicate* his Grace to us by means of his Sacraments. The Uſe of Speech is for the communicating of our Ideas and Sentiments to each other.

Philoſophers are at a Loſs as to the manner of the *Communication*, or Intercourſe between Soul and Body. See SOUL, CAUSE, &c.

COMMUNICATION is alſo uſed for the Connection of one thing with another; or the Paſſage from one Place to another.

Antiently, it was frequent to have ſubterraneous *Communications* between one Place and another. Such a Gallery makes a *Communication* between ſuch two Apartments.

Lines of COMMUNICATION, in War, call'd alſo ſimply *Lines*; are Ditches ſix or ſeven Foot deep, and 12 broad, made between one Fort, or Work, and another; in order for a Paſſage between one Quarter and another; eſpecially in Sieges. See LINE, &c.

COMMUNICATION *of Idioms*, in Theology, the *Communication* of the Attributes of one Nature in Jeſus Chriſt to that of the other.

The *Communication of Idioms*, is founded on the Unity of two Perſons in Jeſus Chriſt: By this *Communication of Idioms* it is, that we ſay, God ſuffer'd, died, &c. which is ſtrictly underſtood of the Human Nature; and ſignifies, that God ſuffer'd in his Humanity, that he died as to his Human Nature. For the Denominations which ſignify Natures, or Properties of Nature, the Schoolmen tell us, are Denominations of *Suppoſitums*, or Perſons, and are to be attributed to 'em: Thus, the two Natures only ſubſiſting in Jeſus Chriſt by the ſole Perſon of the Word, to this Perſon muſt be attributed the Denominations of both Natures, and of their Properties. But we may not by *Communication of Idioms* attribute to Jeſus Chriſt what would ſuppoſe him not to be God; ſince that would deſtroy the Hypoſtatical Union, which is the Foundation of the *Communication of Idioms*. Thus, we may not ſay that Jeſus Chriſt is mere Man; that he is fallible, &c.

The *Lutherans* carry the *Communication of Idioms* ſo far, as to ſay, that Jeſus Chriſt is not only in his Divine Nature, and by reaſon of his Divine Perſon, but alſo really and properly in his Humanity, Immortal, Immenſe, &c.

COMMUNICATION *of Motion*, the Action of a moving Body, whereby a Body at reſt is put in Motion, or a Body already in Motion accelerated. See MOTION.

F. *Mallebranch* looks on the *Communication of Motion* as ſomething Metaphyſical; *i. e.* as not neceſſarily ariſing from any phyſical Principles, or any Properties of Bodies, but flowing from the immediate Agency of God: there being, according to him, no more Connection, or Dependence between the Motion or Reſt of one Body, and that of another, than between the Form, Colour, Magnitude, &c. of one Body and thoſe of another. The Motion of one Body, therefore, on his Principle, is not any phyſical Cauſe of that of another. See CAUSE.

Laws of the COMMUNICATION *of Motion.*

Action, and Reaction, Sir *Iſaac Newton* demonſtrates, are equal and oppoſite; ſo that one Body ſtriking againſt another, and thereby occaſioning a Change in its Motion, does it ſelf undergo the very ſame Change in its own Motion, the contrary way.

Hence, a moving Body ſtriking directly againſt another at reſt, the one loſes juſt as much of its Motion as it *communicates* to the other; and they will proceed with the ſame Velocity as if grown into one Maſs.

If, therefore, the Body in Motion be triple that at reſt againſt which it ſtrikes, it will loſe a fourth Part of its Motion; and whereas, before, it would have run over (*v. g.*) a Line of 20 Foot, in a given time, it will now only run over 18; *i. e.* it will loſe a fourth part of its Velocity.

If the moving Body ſtrike on another already in Motion, the firſt will augment the Velocity of the latter; but will loſe leſs of its own Motion, than had the latter been abſolutely at reſt.

Thus, *v. g.* if a Body in Motion be triple of another at Reſt, and ſtrike againſt it with 32 degrees of Motion; it will *communicate* eight degrees of its Motion to the other, and retain 24 to it ſelf. If the other Body had already four degrees of Motion, the firſt would only *communicate* five, and retain 27: ſince thoſe five were ſufficient, in regard of the Inequality of the Bodies, to make 'em proceed with equal Velocity.

After the ſame manner may the other Laws of *Communication* of Motion in Bodies perfectly hard, and void of all Elaſticity, be determin'd. But all hard Bodies that we know of have an elaſtick Power; and in elaſtick Bodies, the Laws are different, and much more intricate. See ELASTICITY; and *the Laws of Percuſſion in elaſtick Bodies*, ſee under PERCUSSION.

If a Body, when moved by another, happen to decline out of the way, ſo as to leave a free Paſſage to the Body whereby it was moved; yet, that will only proceed with the Velocity which it had after its *Communication* to the other, not with that it had before: It being a Rule, that every thing endeavours to perſevere; not in the State wherein it was formerly, but in that wherein it is at that Juncture: therefore, a Body which has already loſt part of its Motion, by its meeting with another; may loſe ſtill more by a ſecond and a third; ſo as at length to become perfectly quieſcent.

Hence, 1ſt, if two unequal homogeneous Bodies move in a right Line with the ſame Velocity, the greater muſt perſevere in Motion longer than the ſmaller: for the Motions of Bodies are as their Maſſes; but each *communicates* of its Motion to the circumjacent Bodies which touch its Surface, in proportion to the Magnitude of its Surface; the larger Body, therefore, tho it has more Surface than the ſmaller, yet having leſs, in proportion to its Maſs or Quantity of Matter, than the ſmaller, will loſe a leſs Portion of its Motion every Moment than the ſmaller.

Suppoſe, *e. g.* a Cube, A, to be 2 Foot every way, and another, B, one Foot: the Surfaces here will be as 4 to 1, but their Maſſes as 8 to 1. If therefore thoſe Bodies move with the ſame Velocity, the Cube A will have 8 times as much Motion as the Cube B (the Quantity of Motion being ever as the Quantity of Matter). That each of 'em, therefore, may become quieſcent at the ſame time, the Cube A muſt loſe 8 times as much Motion every Moment as the Cube B: But that is impoſſible, becauſe as their Surfaces are to each other as 4 to 1; the Bodies againſt which they ſtrike, will only be as 4 to 1: Therefore, when the Cube B is become perfectly quieſcent, A will have half its Motion.

Hence, 2dly, we ſee the Reaſon why any long Body, as a Dart, thrown lengthwiſe, continues its Motion longer than when thrown tranſverſly: it meeting fewer Bodies in the way to *communicate* its Motion to in the one Caſe than in the other.

Hence alſo, 3dly, if a Body be moved almoſt wholly within it ſelf, ſo as to *communicate* little of its Motion to the ambient Bodies, it muſt continue its Motion a long time. Thus, a ſmooth braſs Ball of half a foot Diameter, ſupported on a ſlender ſmooth Axis, with a very weak impulſe, is found to revolve, for the Space of three or four Hours. See RESISTANCE, &c.

COMMUNION, in Theology, an uniform Belief in ſeveral Perſons; whereby they are united under one Head, in one Church.

In this Senſe, the *Lutherans*, *Calviniſts*, &c. are ſaid to have been cut off from the *Romiſh Communion*.

This is the primitive uſe of the Word *Communion*, as appears from the Canons of the Council of *Elvira*.

COMMUNION is alſo uſed for the Act of *communicating* in, or participating of the Sacrament of the Euchariſt. See COMMUNICATING.

The fourth Council of the *Lateran*, decrees, that each Believer ſhall receive the *Communion*, at leaſt, at *Eaſter*; which ſeems to import a tacit Deſire that they ſhould do it oftner; as, in effect, they did do it much oftner in the primitive Days. *Gratian*, and the *Maſter of the Sentences*, preſcribe it as a Rule for the Laity, to *Communicate* three times a Year, at *Eaſter*, *Whitſontide*, and *Chriſtmas*. But, in the XIIIth Century, the Practice was got on foot, never to approach the Euchariſt except at *Eaſter*; and the Council thought fit to enjoin it then by a Law, leſt their Coldneſs and Remiſſneſs ſhould go farther ſtill.

COM-

COMMUNION *under both Kinds*; in the XIth Century, the *Communion* was ſtill receiv'd by the Laity in both Kinds; or, rather, the Species of Bread was dipp'd in the Wine, as is own'd by the *Romaniſts* themſelves, *Acta SS. Benedict. Sec.* III.

M. *de Marca* obſerves, that they receiv'd it at firſt in their Hands; *Hiſt. de Bearn.* and believes the *Communion* under one Kind alone, to have had its Riſe in the Weſt under Pope *Urban* II. in 1096, at the Conqueſt of the Holy Land.

The XXVIIIth Canon of the Council of *Clermont*, enjoins the *Communion* to be receiv'd under both Kinds, diſtinctly: adding, however, two Exceptions; the one of Neceſſity, the other of Caution, *niſi per neceſſitatem, & cautelam*; the firſt in favour of the Sick, the ſecond of the Abſtemious, or thoſe who had an Averſion for Wine.

It formerly was a kind of Canonical Puniſhment, for Clerks guilty of any Crime, to be reduc'd to *Lay-Communion*, *i. e.* only to receive it as the Laity did, *viz.* under one Kind.

They had another Puniſhment of the ſame Nature, tho under a different Name, called *Foreign Communion*; to which the Canons frequently condemn'd their Biſhops and other Clerks. This Puniſhment was not any Excommunication, or Depoſition; but a kind of Suſpenſion of the Function of the Order, and a Degradation from the Rank they held in the Church.

It had its Name, becauſe the *Communion* was only granted to the Criminal on the Foot of a Foreign Clerk, *i. e.* being reduc'd to the loweſt of his Order, he took place after all thoſe of his Rank, as all Clerks, *&c.* did in the Churches to which they did not belong. The ſecond Council of *Agda*, orders every Clerk that abſents himſelf from the Church, to be reduc'd to foreign *Communion*.

COMMUNITY, a Society, or Body of Men united together under certain common Laws, agreed on among themſelves, or impos'd by a Superior. See SOCIETY, and CORPORATION.

The *Romans*, who ſeem to have given the firſt hint of *Communities* to the ſeveral Nations into which their Empire was divided, doubtleſs borrow'd it from ſome Rules of their Neighbours: They call'd 'em *Colleges*; which Term, among them, had nearly the ſame Signification with *Community* among us. See COLLEGE.

Communities are of two Kinds, *Eccleſiaſtick* and *Laick*: The firſt are either *Secular*, as Chapters of Cathedral and Collegiate Churches; or *Regular*, as Convents, Monaſteries, *&c.* See CHAPTER, CONVENT, *&c.*

Lay Communities are of various Kinds; ſome contracted by a fix'd Abode of a Year and a Day in the ſame Place; others form'd by the Diſcharge of the ſame Office, the Profeſſion of the ſame Art, or attending the ſame Place of Worſhip; as thoſe of *Pariſhes*, *Fraternities*, &c. See FRATERNITY, PARISH, *&c.*

Accordingly, the Word is commonly underſtood of pious Foundations for the Support of ſeveral Perſons, either in a Secular or Regular Life; as *Colleges*, *Abbies*, *Convents*, *Priories*, *Conventual Seminaries*, *Hoſpitals*, *Inns*, &c.

COMMUNITY, alſo, is particularly uſed for the joint Property in Effects between Husband and Wife: The Reſult of which *Community* is, that during Marriage they are equally intitled to all Effects, and liable to all Debts, contracted either before or under Marriage.

Community is a Species of Succeſſion, and the Acceptation of *Community* reſembles an hereditary Addition.

Community was ſet on foot in favour of the Wives, to enter 'em in as Sharers in the Husband's Effects.

In Countries where the Civil Law obtains, this *Community* has no place; nor even in ſeveral Cuſtomary Countries; as being reputed a Burden on the Man.

Antiently, the Woman's Share in the *Community* was only one third: and this appears ſtill the Senſe of the Law among us; the Widow, at the Deceaſe of her Husband, being only intitled to one third Part of the Moveables.

COMMUNITY *continu'd*, is that which ſubſiſts between the Survivor of two Perſons join'd in Marriage, and the minor Children of that Marriage: when the Survivor has not made any Inventory of the Effects in Poſſeſſion during Marriage, the Widow may either renounce *Community* with her Children, or continue it.

COMMUNITY *tacit*, is a *Community* contracted between a Man and Woman, by the mere mingling of their Effects; provided they have liv'd together the Space of a Year and a Day: This *Community* being odious, is now aboliſh'd.

COMMUTATION, in Law, a Change of Penalty, or Puniſhment, *viz.* of a greater for a leſs, *&c.* as when Death is *commuted* for, by perpetual Impriſonment, *&c.* See PUNISHMENT.

Some doubt whether the Word be properly applied to any Change but that of Puniſhment: others will have it indifferently ſerve for the exchanging, or trucking of any thing. See PERMUTATION.

COMMUTATION, in Aſtronomy. The *Angle of Commutation*, is the Diſtance between the Sun's true Place ſeen from the Earth, and the Place of a Planet reduc'd to the Eclyptic. See PLACE.

Thus is the Angle E S R, (Tab. *Aſtronomy*, Fig. 24.) ſubtended between the Sun's true Place E, view'd from the Earth; and that of a Planet reduc'd to the Eclyptic, R, is the *Angle of the Commutation*.

The *Angle of Commutation*, therefore, is found by ſubtracting the Sun's true Place E, from the heliocentrical Place of the Planet R; or contrarily.

COMPACT, in Phyſicks, denotes a Body to be cloſe, denſe, and heavy; having few Pores, and thoſe ſmall ones. See BODY, PORE, *&c.*

The heavieſt Metals, as Gold and Silver, are the moſt *compact*. See WEIGHT.

COMPACT, in a Legal Senſe, ſignifies an Agreement, or Contract ſtipulated between ſeveral Parties. See PACT, CONTRACT, *&c.*

COMPACT is alſo the Name of a celebrated Bull, confirm'd by Pope *Paul* IV. relating to the Cardinals.

In virtue of the Bill of *Compact*, Cardinals can only confer Benefices in their natural State; *i. e.* Regular Benefices on Regulars. See BENEFICE, CARDINAL, REGULAR, *&c.*

COMPANY, a collective Term, underſtood of ſeveral Perſons aſſembled together in the ſame Place, or with the ſame Deſign. See SOCIETY.

The Word is form'd of the French *Compagnie*, and that of *Companio*; and *Companies*, which, *Chifflet* obſerves, are found in the *Salic Law*, Tit. 66. and are properly Military Words, underſtood of Soldiers who, according to the modern Phraſe, are *Comrades*, or Meſs-mates, *i. e.* lodge together, eat together, *&c.* of the Latin *cum*, with, and *panis*, Bread.

It may be added, that in ſome *Greek* Authors under the Weſtern Empire, the Word κομπανια occurs in the Senſe of *Society*: but 'tis more probable, that the *Greeks* borrow'd it from the *French* or *Italians*.

COMPANY, in Commerce, is an Aſſociation of ſeveral Merchants, or others, who unite in one common Intereſt, and contribute by their Stock, their Counſel, and their Cares, to the ſetting on foot, or ſupporting of ſome profitable Eſtabliſhment. See COMMERCE.

Tho *Company* and *Society* be, in effect, the ſame thing, yet Cuſtom has made a difference between 'em: Society being underſtood of two, or three Dealers, or not many more; (ſee SOCIETY:) and *Company* of a greater Number.

A ſecond difference between *Companies* and Societies, is, that the firſt, eſpecially when they have excluſive Privileges, cannot be eſtabliſh'd without the Conceſſion of the Prince; and need Letters Patent, Charters, *&c.* See CHARTER, CORPORATION, PRIVILEGE, *&c.*

Whereas, for the latter, 'tis ſufficient to have the Conſent of the Members, fix'd, and certify'd by Acts and Contracts, and authoriz'd by By-Laws.

Laſtly, the Word *Company* ſeems more peculiarly appropriated to thoſe grand Aſſociations, ſet on foot for the Commerce of the remote Parts of the World; as the *Engliſh* and *Dutch Eaſt-India Company*, *South-Sea Company*, *Miſſiſippi Company*, &c. The Riſe and Eſtabliſhment whereof, we ſhall here ſet before the Reader.

Engliſh COMPANIES.

Eaſt-India COMPANY, was form'd towards the latter end of the Reign of Queen *Elizabeth*; their Charter being dated in 1599.

Their firſt Fleet, ſent out in 1600, brought back ſo rich a Cargo, that in a few Years they number'd 20 Ships. K. *James* I. to ſhew how much he had its Intereſt at heart, ſent ſeveral Embaſſies to the Great *Mogul*, Kings of *Perſia*, *Japan*, and other Princes, to make Treaties of Commerce in his Name, and that of the *Company*; ſome of which ſubſiſt ſtill: The King of *Perſia*, in particular, granted the *Company* ſeveral extraordinary Favours, in recompence for that Service the *Engliſh* had done him, in aſſiſting him to expel the *Portugueze* from *Ormus*; who by means of their Lodgment there, uſurp'd the whole Commerce of the *Perſian* Gulf.

But its chief Favours the *Company* receiv'd at the hands of King *Charles* II. who, by a Charter in 1669, granted 'em the Port and Iſland of *Bombay*, with all the Rights thereof, as ſurrender'd to him by the *Portugueze*: only reſerving to himſelf the Sovereignty and Homage thereof, with a yearly Acknowledgment of 10 *l. per Annum* in Gold.—By another Charter in 1674, he granted 'em, in like manner, the Iſland of St. *Helena*, belonging to him by Right of Conqueſt, from the *Dutch*, who had before taken it from the *Engliſh*.—By a third Charter, he granted them a Power to erect a Court of Judicature, compos'd of a Legiſt, and two Merchants, in all their Places, Settlements, Factories, *&c.* to judge of Seizures, and all marine Diſputes; as alſo about Bargains, Exchange, *&c.* and even of all Crimes committed on the high Seas, or in the Countries and Territories of the *Company*, in

in *Asia*, *Africa*, and *America*; the whole, however, agreeable to the Usages and Customs of Merchants, and the Laws of *England*. In 1662, the same Prince granted the *Company* a Charter, which contain'd a Confirmation of the antient ones of King *James* I. and Queen *Elizabeth*; or rather, a new Charter, granting 'em abundance of Privileges which they had not before enjoy'd: This Charter is properly the Basis of the Company, and the Foundation, wherein are founded all the Rights, and the Policy of the *New Company*, establish'd in 1698.

This Charter consists of 28 Articles: In the first, the King erects the *Company* into a Corporation, or Body Politick, under the Name of the *Governor and Company of Merchants trading to the* East-Indies. The 3d grants 'em a common Seal: the 4th a Governor, and 24 Directors, or Assistants, chose out of the Proprietors, or Actionaries; the 6th, 7th, 8th, and 9th, regulate the Order and Policy of the *Company*, settle the Officers, manner of Election, Authority, General Meetings, &c. The 10th fixes the Extent of the Grant; permits all those of the Company, their Children if 21 Years of Age, their Apprentices, Factors, and Domesticks, to trade to the *Indies*, and any Part of *Asia*, *Africa*, and *America*, beyond the *Cape of Good Hope*, and the *Straits of Magellan*. The 11th grants 'em Power to make By-Laws, to be observ'd by the Officers, Factors, &c. and to enjoin Penalties; provided those Laws be not contrary to the standing Laws of *England*. By the 12th, the Payment of the Duties, Customs, &c. of Goods imported or exported is delay'd; one half of it for half a Year, the other half a whole one: Providing, withal, that if the Goods thus imported, be exported again in the Space of 13 Months, no Duties shall be paid for such Export, provided it be done aboard *English* Vessels. The 13th Article grants 'em a Power of exporting foreign Gold for their Service abroad, and even *English* Gold coin'd in the Tower; provided the Sum do not exceed 50000 Pounds Sterling at a Voyage. By the 14th and 15th, they are allow'd six large Ships, and six Pinks, to pass freely thro' all the Limits of their Grant, without the King's being able to lay any Imbargo on 'em on any occasion. The 16th grants 'em an exclusive Privilege; to have the sole Right of dealing to the *Indies*: ordering the Seizure and Confiscation of all Vessels, &c. which shall interfere. The 19th obliges 'em to bring, at least, as much Gold and Silver into the Kingdom, as they carry out each Voyage. The 21st fixes the Sum in the Capital Stock necessary to have a Vote in the Meetings, at 500 *l.* Sterling: allowing, however, several of those who have less, to join several together to form a Voice. Lastly, the 26th allows 'em to send Vessels of War, and even to make Peace and War with all the Nations not Christian, in the Extent of their Grant.

All these four Charters of King *Charles* II. were confirm'd by King *James* II. especially the last, which was enforc'd with new Sanctions; particularly the Article of Exclusion; which, in the Time of King *Charles*, had been but little regarded, but was now enforc'd with such rigorous Prohibitions, that all Interlopers seem'd for ever excluded.

The Actions, or Subscriptions of the *Company* were originally only of 50 Pounds Sterling: but the Directors having a considerable Dividend to make in 1676, it was agreed to join the Profit to the Original, instead of withdrawing it; and thus the Actions were doubled, and became of 100 Pounds Sterling.

The first Capital was only 369891 *l.* Sterling, and 5 *s.* which being thus doubled, amounted to 739782 *l.* Sterling, and 10 *s.* to which, if the Profits of the *Company* to the Year 1685, *viz.* 963639 *l.* Sterl. be added, the whole Stock will be 1703422 *l.* Sterling.

The *Company* had from time to time undergone great Losses; first, in 1680, by the Loss of *Bantam*, out of which they were driven, and their Magazines plunder'd by the *Dutch*; under Pretence of assisting Sultan *Agui* against Sultan *Agom*, his Father. 2dly, In 1682, when the great Numbers of Interlopers, to whom King *Charles* II. too easily granted Permissions, lower'd their Actions *Cent. per Cent.* 3dly, By the War which the *Company* maintain'd in the *Indies* against the Great *Mogul*; wherein it was oblig'd to abandon the Factory of *Surat*, and to retire to *Bombay*. But still, she had repair'd her Stock, and supported the Reputation of her Commerce till the Revolution, which happen'd soon after: when the War, and the incredible Losses the *Company* sustain'd by the *French* Privateers, &c. put it into so desperate a Condition, that appearing scarce possible to be supported, a new one was erected: to which, however, the old one was in a little time united.

The Charter of the *New East-India Company* is of the Year 1698: its Stock was so considerable, and the Subscriptions so very ready, that in two Years time, the *Company* had 49 Vessels equipp'd in its Service; which was double of what the old one ever had: and sent to the *Indies (communibus annis)* a Million Sterling in Silver: Whereas the former had never sent above 500000 *l.* This *New Company* stands on the same Footing with the old one; its Charter is the same, in effect: and having enter'd with it, the Propriety of all the Factories and Effects in the *Indies*, has adopted most of its Regulations: So that this is rather to be esteem'd a Continuation of the same *Company*, than a new Corporation.

For the Policy of the COMPANY: To be a Member thereof, the Candidate must be an *Englishman*, at least naturaliz'd, and pay 5 Pounds Sterling at his admittance. To be a Director, the Candidate must have 2000 *l.* Sterl. Capital Stock: The Deputy and Sub-Governor not to be continued above two Years successively. Seven of the Directors to be chosen new every Year.

The Court of Directors, which meet twice a Week, is ordinarily divided into several Committees, or Offices; first, for the buying of Goods to be sent to the *Indies*; a second for the freighting of Vessels; a third for the examining of what passes in the *Indies*; a fourth to take Care of the Magazines; and a fifth for the soliciting of Affairs. The *Company* has a Secretary and a Book-keeper; under the first is 12 Clerks, and under the second 6. They have also a Cashier, and Warehouse-keepers; under the first are six Clerks, and under the second several Porters, &c.

The *Company* has, properly, only a few little Vessels of its own, used in the *Indies*: the rest, which make the Commerce, belong to other Persons; ordinarily, to three or four of the richest Directors, or other great Merchants, who build 'em on purpose, to let 'em out, on freight, to the Company for each Voyage, according to a Charter-Party agreed on between 'em.

The Cargo the *Company* sends to the *Indies*, is chiefly Ingots of Gold, Gold-Dust, *French* Louis d'Ors, *Spanish* Pistoles, Pieces of Eight, and even *English* Money, but under certain Restrictions: This Gold and Silver ordinarily makes $\frac{1}{4}$ or $\frac{1}{5}$ of the whole Cargo. The rest is Lead, *Swedish* and *Spanish* Iron, Guns, Pouder, *English* Cloths, Serges, and other Manufactures of the Country; Cochineal, Quicksilver, Vermilion, Coral, Amber, &c.

The Returns from the *Indies* are, Pepper, Drugs, Coffee, Cotton, Saltpeter, Cloths of Gold and Silver, Raw Silks from *Persia* and *China*, *China* and *Japan* Ware, and other Curiosities. These Returns usually amount to 900000 *l.* Sterling *per Annum*.

Tho the whole Commerce of the *Indies* belongs to the *Company*, exclusive of all other Subjects of *England*; yet private Persons are admitted to trade thither in two manners.

1st, By obtaining a Permission of the *Company*, on the Terms of a Charter-Party: *e. gr.* whereof the Principal are, that they shall carry a certain proportion of Silver, Merchandize, and even Recruits of Soldiers, for the *Company*, &c. and that they pay a Consideration to the *Company*, for the Manufactures, Gold, Silver, &c. These Vessels of Allowance are not at liberty to bring home any Kinds of Merchandize at pleasure, but only such as are permitted by the Regulation of 1686: the chief of which is Pepper, and other Commodities, from *China*, *Japan*, and *Tonquin*. At their Return, the Cargo must be consign'd to the *Company*, who sell it by Inch of Candle, at their next general Sale.

The 2d way is by means of Allowances of Luggage, which the *Company* grants to the Proprietors of the Ships it freights to the *Indies*, and the Officers and Crew of the same.

The *Company* has four principal Establishments, or Factories in the *Indies*; *viz.* at *Surat* in the Gulf of *Bengal*, the Coast of *Coromandel*, and in *Persia*: that at *Priaman* in the Island of *Sumatra*, is inconsiderable. See FACTORY.

Royal African COMPANY, establish'd for the Commerce of the Coasts of *Guinea*, is govern'd like that of the *East-Indies*.

Its Privilege is exclusive: It sends out, yearly, ten or a Dozen Ships, of about 150 Ton, loaden with Iron-Works, Scissars, Knives, Muskets, Cottons, and other less considerable Merchandizes.

The Returns are in Gold-Dust, Elephants Teeth, Wax, and Leathers: But the best Article of its Commerce is the Negroes, which it sends to *Jamaica*, *Barbadoes*, and other *English* Isles in *America*; frequently, even to the Parts of *New Spain*. See NEGRO, ASSIENTO, &c.

Its publick Sales are five or six times in a Year, in the manner of those of the *East-India Company*.

The first Establishment of this Company, was by a Charter granted in 1661, in favour of the Duke of *York*; securing to him the Commerce of all the Country, Coasts, Islands, &c. belonging to the Crown of *England*, or not possess'd by any other Christian Prince; from *Cape Blanc* in 20° Nor. Lat. to the *Cape of Good Hope* in 34°30′ Sou. Lat. The Charter was soon after return'd into the King's Hands by the Duke, and revok'd, by consent of the Parties associated with him in the Enterprize; and a new Charter granted in 1663, with ampler Privileges than the former.

The principal Adventurers here, were Queen *Katherine* of *Portugal*, Queen *Mary* of *France*, the Duke of *York*, *Henrietta Maria* Ducheſs of *Orleans*, Prince *Rupert*; in brief, the whole Court came into it. The other Adventurers, *i. e.* thoſe who were to be charg'd with the Management of Affairs, were choſen from among the wealthieſt and ableſt Merchants; eſpecially thoſe who had already dealt to thoſe Countries. By this Charter the Grant was enlarg'd, and the *Company* put in poſſeſſion of all the Countries, *&c.* between the Port of *Salley* in S. *Barbary* to the *Cape of Good Hope*, for a thouſand Years; only reſerving to the Crown the Homage thereof, with the Acknowledgment of two Elephants to be preſented the King, or his Succeſſors, every time any of 'em ſhould ſet foot within the Countries and Colonies in their Grant.

The Privileges granted by the Charter, are, 1ſt, That the *Company* ſhall be a Corporation, or Body Politick; ſhall have a common Seal, bearing on one ſide an Elephant, ſupported by two Negro's; on the other, the King's Portrait. That the Governor, with his Deputy, with 7 of the 24, or 13 of the 36 Directors, be authoriz'd to take on 'em the Direction of Affairs: That they may hold Courts, make Laws, inflict Puniſhments, *&c.* provided, ſtill, they be equitable, and conſiſtent with the Laws of *England*. That the Adventurers may transfer their Stock at pleaſure; provided the Transfer be made in open Court, and be regiſter'd. That it may equip and ſend out what Veſſels it pleaſes, for Commerce or War; but that it pay the Duties and Cuſtoms. That no Veſſels but thoſe of the *Company*, and thoſe authoriz'd by it, ſhall traffick within the Limits of its Grant; on Pain of Confiſcation. That the *Company* may make War, in defence of its Colonies, againſt Invaders, *&c.* That it have the Benefit of all the Mines in its Territories; the King only reſerving to himſelf two thirds of the Gold Mines, upon bearing two thirds of the Expence. Laſtly, that the King reſerves for himſelf and his Succeſſors, the Right of intervening, and being admitted at any time a Sharer in the Stock, upon contributing a proportionable Sum to the reſt.

This Charter was confirm'd by new Letters Patent in 1673; follow'd by a Proclamation, inforcing the Obſervance of the Article of Excluſion: But neither Charter nor Proclamation being able to ſecure 'em from Interlopers, they had recourſe to the Protection of King *James* II. who had been twice among the number of Merchants Adventurers; of whom they obtain'd a moſt ſevere Declaration on their behalf, in the Year 1685.

On this foot the Company has ſtood ever ſince, till the Year 1720; when a *New African Company* being form'd by the Duke of *Chandois*, and others; and a Charter purchas'd at the Expence of 250000 *l.* Sterling; the two *Companies* ſoon became united.

Hamburgh Company, is the oldeſt trading Eſtabliſhment in the Kingdom; tho not always known by that Name, nor reſtrain'd to thoſe narrow Bounds under which it is now confined.

It was, firſt, call'd the *Company of Merchants trading to Calais, Holland, Zealand, Brabant, and Flanders:* Then it acquir'd the general Title of *Merchant-Adventurers of England*; as being compos'd of all the *Engliſh* Merchants who traded to the *Low-Countries*, the *Baltic*, and the *German* Ocean. Laſtly, it was call'd *the Company of Merchant-Adventurers of England trading to Hamburgh.*

This *Company*, as well as ſome others in *England* built on its Model, is very different from thoſe abovemention'd; and differs widely from the ordinary Plan and Syſtem of ſuch Societies. In effect, this is not a Society of Dealers, each furniſhing a part of the Sum to conſtitute the Capital Stock of the *Company*; but a mere Aſſociation, or Body of Merchants, who have nothing in common but the Grant and Privilege of trading to *Hamburgh*, and ſome other Cities of *Germany*; each managing his own Commerce, and on his own Bottom: only obſerving a certain Diſcipline, and ſome Regulations, which none but the *Company* can eſtabliſh or change.

The firſt Charter whereby the *Hamburgh Company* was eſtabliſh'd, was in 1406, under the Reign of K. *Henry* IV. It was afterwards confirm'd, and augmented with divers Privileges by many of his Succeſſors; among the reſt, by *Henry* V. in 1413, *Henry* VI. in 1422, *Henry* VII. in 1493, 1505, and 1506; *Henry* VIII. in 1509, 1517, and 1531; *Edward* VI. in 1547; Queen *Mary* in 1553, *Elizabeth* in 1564 and 1586; *James* I. in 1605, and *Charles* II. in 1661.

But of all theſe Charters, there are, properly, none but thoſe of *Henry* IV. *Henry* VII. *Elizabeth*, *James*, and *Charles*, that are of any importance, or that give the *Company* any thing new; the reſt being only ſimple Confirmations.

Before the Charter of *Henry* IV. all the *Engliſh* Merchants who traffick'd out of the Realm, were left to their own Conduct; and manag'd Affairs with Foreigners, as might be moſt for their reſpective Intereſts; without any regard to the general Commerce of the Nation.

Henry, obſerving this Diſorder, endeavour'd to remedy it, by uniting all the Merchants in his Dominions into one Body; wherein, without loſing the liberty of trading each for himſelf, they might be governed by a *Company* ſtill ſubſiſting; and be ſubject to Regulations, which ſhould ſecure the general Intereſt of the National Commerce, without prejudice to the Intereſt of Particulars.

With this View, he granted all the Merchants of his States, particularly thoſe of *Calais*, then in his Hands, a Power of aſſociating themſelves into a Body Politick, with Directors and Governors, both in *England* and abroad; to hold Aſſemblies, both for the Direction of Buſineſs, and the deciding of Controverſies among Merchants; make Laws; puniſh Delinquents; and impoſe moderate Duties and Taxes on Merchandizes, and Merchants, to be employ'd in the Service of the Corporation.

Theſe few Articles of the Charter of *Henry* IV. were much augmented by *Henry* VII. who firſt gave 'em the Title of *Merchant-Adventurers to Calais, Holland*, &c. gave 'em a Power of proclaiming and continuing free Fairs at *Calais*; and order'd, that to be reputed a Member of the Society, each Perſon pay 20 Marks Sterling; and that the ſeveral Members ſhould attend the General Meetings appointed by the Directors, whether at *London*, *Calais*, or elſewhere.

The Inexecution of this laſt Article, and contempt of ſome of the reſt, occaſioning great Inconveniencies to the *Company*'s Affairs, another Charter was procur'd; whereby, the Pain of Impriſonment was menaced, for thoſe who ſhould abſent themſelves from the Aſſemblies without lawful Cauſe, or ſhould diſobey the Laws.

A Requeſt being made to Queen *Elizabeth*, in 1564, for an Explanation of certain Articles in the Charter of *Henry* VII. and a Confirmation of the reſt granted by other Kings; that Princeſs, by a Charter of the ſame Year, declares, That to end all Diſputes, they ſhall be incorporated a-new, under the Title of *the Company of Merchant-Adventurers of England*; that all who were Members of the former *Company*, ſhould, if they deſir'd it, be admitted Members of this: that they ſhould have a common Seal; that they ſhould admit into their Society what other Perſons, and on what Terms they pleas'd; and expel 'em again on misbehaviour: that the City of *Hamburgh*, and neighbouring Cities, ſhould be reputed within their Grant, together with thoſe of the *Low-Countries*, &c. in that of the former *Company*. That no Member ſhould marry out of the Kingdom; nor purchaſe Lands, *&c.* in any City beyond Sea: and that thoſe who do, ſhall be, *ipſo facto*, excluded for ever.

Twenty two Years after this firſt Charter, Queen *Elizabeth* granted 'em a ſecond; confirming the former, and further, granting 'em a Privilege of Excluſion; with a Power of erecting in each City within their Grant a ſtanding Council.

After theſe Privileges, the woollen Manufactures became the principal Object of their Application; wherein they were diſturb'd in the following Reign: King *James* I. having erected a Corporation in 1616, in favour of ſome private Perſons, who offer'd to ſet up a Manufacture for dying and preſſing Cloths, *&c.* under pretence whereof, the *Company* of Merchant-Adventurers were prohibited dealing therein. But that Project not ſucceeding, and the Charter being revok'd two Years afterwards, the Merchant-Adventurers were reſtor'd to their antient Privileges, and a new Charter was given 'em, confirming their excluſive Right; and allowing 'em to have Officers in the ſeveral Cuſtom-houſes, to have an Eye that they were not prejudic'd in their Woollens, under pretence of the like Merchandizes, which others were allow'd to ſend to other Parts. This Charter of King *James*, is the laſt of thoſe confirm'd by *Charles* II. in the Grand Charter of 1661.

The Revolutions which had happen'd in the *Low-Countries* towards the end of the XVIth Century, and which laid the Foundation of the Republick of *Holland*, having hinder'd the *Company* from continuing their Commerce with their antient freedom; it was oblig'd to turn it almoſt wholly to the Side of *Hamburgh*, and the Cities on the *German* Ocean: From which Change, ſome People took occaſion to change its Name to that of the *Hamburgh Company*; tho the antient Title of *Merchant-Adventurers* is ſtill retain'd in all their Writings.

Muſcovy Company, was firſt projected towards the End of the Reign of King *Edward* VI. executed in the firſt and ſecond Years of *Philip* and *Mary*; but had not its Perfection, till its Charter was confirm'd by Act of Parliament under Queen *Elizabeth*, in 1566.

It had its riſe from certain Adventurers, who were ſent in three Veſſels on the Diſcovery of new Countries; and to find out a North-Eaſt Paſſage to *China*: Theſe falling into the White Sea, and making up to the Port of *Archangel*, being exceedingly well receiv'd by the *Muſcovites*, at their

return, ſolicited Letters Patent to ſecure to themſelves the Commerce of *Ruſſia*, for which they had form'd an Aſſociation.

The Charter was promis'd 'em by *Edward* VI. but he dying, was firſt diſpatch'd by Queen *Mary*, in 1555. By this Charter, the Aſſociation was declar'd a Body Politick, under the Name of the *Company of Merchants Adventurers of England, for the Diſcovery of Lands, Territories, Iſlands, &c. unknown, or unfrequented.* Their Privileges were, to to have a Governor, 4 Conſuls, and 24 Aſſiſtants, for their Commerce; for their Policy, to make Laws, inflict Penalties, ſend out Ships to make Diſcoveries, take Poſſeſſion of 'em in the King's Name, ſet up the Banner-Royal of *England*, plant them; and, laſtly, the excluſive Privilege of trading to *Archangel*, and other Parts of *Muſcovy*, not yet frequented by the *Engliſh*.

This Charter, not being ſufficiently guarded, was confirm'd by Parliament in the eighth Year of Queen *Elizabeth*; wherein 'twas enacted, that in regard the former Name was too long, they ſhould now be call'd the *Company of Engliſh Merchants for diſcovering new Trades*; under which Name, they ſhould be capable of acquiring and holding all kinds of Lands, Manors, Rents, *&c.* not exceeding 100 Marks *per Annum*, and not held of her Majeſty. That no part of the Continent, Iſland, Harbour, *&c.* not known or frequented before the firſt Enterpriſe of the Merchants of their *Company*, ſituate to the North, or North-Weſt, or North-Eaſt of *London*; nor any part of the Continent, Iſland, *&c.* under the Obedience of the Emperor of *Ruſſia*, or in the Countries of *Armenia*, *Media*, *Hircania*, *Perſia*, or the *Caſpian* Sea; ſhall be viſited by any Subjects of *England*, to exerciſe any Commerce, without the Conſent of the ſaid *Company*, on Pain of Confiſcation. The ſaid *Company* ſhall uſe no Ships in her new Commerce, but thoſe of the Nation; nor tranſport any Cloths, Serges, or other Woollen Stuffs, till they have been dyed and preſs'd. That in caſe the *Company* diſcontinue of it ſelf to unload Commodities in the Road of the Abbey of *S. Nicholas* in *Ruſſia*, or ſome other Port on the North Coaſts of *Ruſſia*, for the Space of three Years; that the other Subjects of *England* ſhall be allow'd to traffick to *Narva*, while the ſaid *Company* diſcontinues its Commerce into *Ruſſia*; only uſing *Engliſh* Veſſels.

This *Company* ſubſiſted with Reputation almoſt a whole Century; till the Time of the Civil Wars. 'Tis ſaid, the Czar hearing of the Murder of King *Charles*, order'd all the *Engliſh* in his States to be expell'd; which the *Dutch* taking the advantage of, ſettled in their room. After the Reſtoration, the Remains of the *Company* re-eſtabliſh'd part of their Commerce at *Archangel*, but never with the ſame Succeſs as before; the *Ruſſians* being now well accuſtom'd to the *Dutch* Merchants and Merchandizes.

This *Company* ſubſiſts ſtill, nearly on the Foot of that of *Hamburgh*, and the Northern and *Turky Companies*, *i. e.* each Member thereof trafficks for himſelf, and on his own bottom; only paying a Duty of 12 or 13 Pounds Sterling, beſide ſome other Dues impos'd from time to time for the Occaſions of the *Company* and the Commerce in general.

North Sea Company, or, as ſome, more agreeably to its Charter, call it, *Eaſt-land Country*, is eſtabliſh'd on the Foot of that of *Hamburgh*; from whence it appears to have been diſmember'd.

Its Charter is dated in the Year 1579. By the firſt Article the *Company* is erected into a Body Politick, under the Title of the *Company of Merchants of the Eaſt*; to conſiſt of *Engliſhmen*, all real Merchants, who have exercis'd the Buſineſs thereof, and traffick'd thro' the Sound, before the Year 1568, into *Norway*, *Sweden*, *Poland*, *Livonia*, *Pruſſia*, *Pomerania*, &c. as alſo *Revel*, *Coningsberg*, *Dantzic*, *Copenhagen*, &c. excepting *Narva*, *Muſcovy*, and its Dependencies. Moſt of the following Articles grant 'em the uſual Prerogatives of ſuch *Companies*; as a Seal, Governor, Courts, Laws, *&c.*

The Privileges peculiar to this *Company*, are, That none ſhall be admitted a Member, who is already a Member of any other *Company*; nor anyRetail-dealer at all. That noMerchant qualify'd, be admitted without paying 6 Pounds 13 Shillings 6 Pence. That a Member of another *Company*, deſiring to renounce the Privileges thereof, and to be receiv'd into that of the *Eaſt*, ſhall be admitted *gratis*: provided he procures the ſame Favour for a Merchant of the *Eaſt*, willing to fill his Place. That the Merchant-Adventurers who never dealt in the Eaſt, in the Places expreſs'd in the Charter, may be receiv'd as Members of the *Company* on paying 40 Marks: That notwithſtanding this Union of the *Adventurers of England*, with the *Company of the Eaſt*, each ſhall retain its Rights and Privileges. That they ſhall export no Cloths but what are dy'd and preſs'd; except 100 Pieces *per Ann.* which are allow'd 'em *gratis*.

This Charter was confirm'd by *Charles* II. in 1661, with this Addition; That no Perſon of what Quality ſoever, living in *London*, ſhould be admitted a Member unleſs he were free of the City.

Turky Company, or *Levant* Company. This *Company* is eſtabliſh'd on the Foot of the *Hamburgh Company*, *i. e.* there is no common Fund, wherein the Adventurers depoſit their Stock, to make one ſingle Commerce; but the Commerce thither is free, each Member trafficking for himſelf; but obſerving, withal, the Rules and Orders of the *Company*; and contributing, occaſionally, towards the common Expences.

This flouriſhing Body had its riſe under Queen *Elizabeth*: *James* I. confirm'd its Charter in 1606; adding new Privileges. During the Civil Wars, there happening ſome Innovations in the Government of the *Company*, many Perſons having been admitted Members, not qualified by the Charters of Queen *Elizabeth* and King *James*, or that did not conform to the Regulations preſcrib'd; *Charles* II. upon his Reſtoration, endeavour'd to ſet it upon its antient Baſis: to which End, he gave 'em a Charter, containing not only a Confirmation of their old one, but alſo ſeveral new Articles of Reformation.

By this, the *Company* is erected into a Body Politick, capable of making Laws, *&c.* under the Title of the *Company of Merchants of England trading to the Seas of the Levant*. The Number of Members is not limited but is ordinarily about three hundred. The principal Qualification requir'd, is, that the Candidate be a wholeſale Merchant, either by Family, or by ſerving an Apprenticeſhip of ſeven Years. Thoſe under 25 Years of Age, pay 25 *l.* Sterl. at their Admiſſion; thoſe above, twice as much. Each makes Oath, at his entrance, not to ſend any Merchandizes to the *Levant*, but on his own account; and not to conſign 'em to any but the *Companies* Agents, or Factors. The *Company* governs it ſelf by a plurality of Voices.

It has a Court, or Board at *London*, compos'd of a Governor, Sub-Governor, and twelve Directors, or Aſſiſtants; who are all actually to live in *London*, or the Suburbs. They have alſo a Deputy-Governor, in every City, and Port, where there are any Members of the *Company*. This Aſſembly at *London* ſends out the Veſſels, regulates the Tarif for the Price at which the *European* Merchandizes ſent to the *Levant* are to be ſold; and for the Quality of thoſe return'd. It raiſes Taxes on Merchandizes, to defray Impoſitions, and the common Expences of the *Company*; preſents the Embaſſador which the King is to keep at the Port, elects two Conſuls for *Smyrna* and *Conſtantinople*, &c. One of the beſt Regulations of the *Company*, is, not to leave the Conſuls, or even Embaſſador, to fix the Impoſitions on Veſſels for defraying the common Expences; (a thing fatal to the *Companies* of moſt other Nations) but to allow a Penſion to the Embaſſador and Conſuls, and even to the chief Officers; as Chancellor, Secretary, Chaplain, Interpreters, and Janiſaries; that there mayn't be any Pretence for their raiſing any Sum at all on the Merchants or Merchandizes: 'Tis true, the Embaſſador and Conſul may act alone on theſe occaſions; but the Penſion being allow'd 'em on condition of declining 'em, they chuſe rather to ſit ſtill.

In extraordinary Caſes, the Conſuls, and even Embaſſador himſelf, have recourſe to two Deputies of the *Company*, reſiding in the *Levant*: or, if the Affair be very important, aſſemble the whole Nation. Here are regulated the Preſents to be given, the Voyages to be made, and every thing to be deliberated: and on the Reſolutions here taken, the Deputies appoint the Treaſurer to furniſh the Monies, *&c.* requir'd. The ordinary Commerce of this *Company*, employs from 20 to 25 Veſſels, of between 25 and 30 Pieces of Cannon.

The Merchandizes exported thither, are Cloths of all Kinds and Colours, Pewter, Lead, Pepper, Cochineal, and a great deal of Silver, which they take up at *Cadix*: The Returns are in raw Silk, Galls, Camelots, Wools, Cottons, Maroquins, Aſhes for making Glaſs and Soap, and ſeveral Gums and medicinal Drugs.

The Commerce of this *Company* to *Smirna*, *Conſtantinople*, and *Scandaroon*, is not eſteem'd much leſs conſiderable than that of the *Eaſt-India Company*; but is, doubtleſs, much more advantageous to *England*; in regard, it takes off much more of the *Engliſh* Manufactures than the other, which is chiefly carried on in Money.

The Places reſerv'd for the Commerce of this *Company*, are all the States of *Venice*, in the Gulf of *Venice*; the State of *Raguſa*; all the States of the Grand Seignior, and the Ports of the *Levant* and *Mediterranean*; excepting *Carthagena*, *Alicant*, *Barcelona*, *Valencia*, *Marſeilles*, *Toulon*, *Genoa*, *Leghorn*, *Civita Vecchia*, *Palermo*, *Meſſina*, *Malta*, *Majorca*, *Minorca*, and *Corſica*; and other Places on the Coaſts of *France*, *Spain*, and *Italy*.

South-Sea Company. Many take this *Company*, eſtabliſh'd towards the Cloſe of the XVIIth Century, to have been originally intended, rather as a Political Contrivance for raiſing a Fund of Money, to ſerve in the preſſing Affairs of the State, than as a real Eſtabliſhment for the ſake of Commerce. For the Nation being exhauſted of Money by the

the long Wars with *France*, 'tis no wonder the Phantom of a new *Company* ſhould be rais'd, to bring in the Subſcriptions of the money'd Men; as the only Expedient to be ſupply'd with Money, without diſſatisfying the People, already wore out with Subſidies, &c.

Be this as it will, 'tis certain the Miniſtry never thought ſeriouſly, during the whole Courſe of the War, about making any Settlement on the Coaſts of *South America*; which was the Thing wherewith the People were firſt flatter'd: Beſides that, the Fund having been apparently perverted to defray the Expences of the War, its Value was ſo lower'd, that it muſt in all probability have ſunk outright, but for the unexpected Help it met with in 1713.

By the Treaty of *Utrecht*, the Buſineſs of the *French Aſſienta Company*, which was to furniſh the *Spaniſh Weſt-Indies* with Negroes, was reſign'd to the *Engliſh*, in favour of the *South-Sea Company*; which by this Turn reliev'd it ſelf from its languiſhing Condition, and put it in a Condition to vie with the moſt flouriſhing *Companies* of Commerce in *England*.

The Treaty of this *Company* with the *Spaniards*, commences from *May* 1713; and is to hold 30 Years; during which time, the *Company* is to furniſh the *Spaniſh America* with 144000 Negroes, of both Sexes, between fifteen and twenty five Years of Age, ſound, &c. and at the Rate of 4800 *per Annum*; and for all they furniſh beſides, only to pay half the Dues to the King of *Spain*, for the firſt 25 Years of the Farm, or *Aſſienta*. It may be added, that in conſideration of 200000 Piaſters, paid in Advance to the King of *Spain*, to be reimburs'd as the Dues riſe during the firſt ten Years, the *Company* is only to pay Dues for the 4000: The King's Due is 33 Piaſters $\frac{1}{3}$ *per* Head. See Assienta.

The chief Eſtabliſhment of the *French Aſſienta Company* was at *Buenos Ayres*, a Town of conſiderable Trade on the Coaſt of *South America*. The *South-Sea Company*, who without changing their Name, took on 'em the *Aſſienta*, or Farm of Negroes, preſerves the ſame Eſtabliſhment; and 'tis here their Veſſels diſembark their Negroes, which they had negotiated thro' all the Coaſts of *Africa* within their Grant.

The *Company*, 'tis certain, ſet out with good Succeſs; and there was room to hope ſtill better: ſince, beſides that the Value of their Stock the firſt five Years, roſe faſter, in proportion, than that of any other *Company*; his Majeſty, after purchaſing 10000 *l.* Sterling therein, was pleas'd to condeſcend to be their Governor, or firſt Director. For what remains of the Hiſtory of this *Company*, with that fatal Train of romantic *Companies* it drew after it, we chuſe to refer to the Article Bubble.

Harborough Company. This *Company* is yet, *Anno* 1722, only in Embryo: Its Deſign is to ſet on foot an immediate Commerce between the Subjects of *England*, and thoſe of his Majeſty's *German* Territories. The firſt Scheme was laid in 1717; a Charter obtain'd ſome time after: The reſt is *in futuro*.

The Weſt-India Companies, or thoſe of the *Engliſh Colonies* in *North America*, are of a lower Claſs than thoſe abovementioned; and too numerous to be here deſcrib'd.

Their Names are, the *Hudſon's Bay Company*, *Virginia Company*, *New England*, *New York*, *Penſylvania*, *New Scotland*, *Maſſachuſet*, *Connecticut*, *Bermudas*, *Tobago*, and *Carolina Companies*. See Colony, and Plantation.

Scotch Darien Company, was eſtabliſh'd with a good Proſpect at *Edinburgh*, in 1699, for the Commerce of *S. America*. They ſent an Armament and a Colony, which they endeavour'd to eſtabliſh in the Iſthmus of *Darien*, which parts *N.* and *S. America*: But the *Engliſh* Miniſtry not thinking proper to avow and ſupport the firſt Succeſſes of the *Company*, which had alarm'd *Spain*, ever jealous of this part of her Territories, the *Scotch* Colony was diſpers'd by the *Spaniards* in 1700: And thus vaniſh'd the beſt Project that ever was form'd, for diſputing with that Nation the Poſſeſſion of thoſe Countries, from which ſhe pretends to exclude all other Nations.

Dutch Companies.

Dutch Eaſt-India Company, had its riſe in the midſt of the Struggle that People had for their Liberty: For the *Spaniards* having forbid all Commerce with 'em, and ſhut up all their Ports; neceſſity inſpir'd ſome *Zealanders* to ſeek a new North-Eaſt Paſſage to *China*.

This Enterprize proving unſucceſsful to three ſeveral Armaments in 1594, 1595; a ſecond *Company* was form'd, under the Name of the *Company of remote Parts*; which, in 1595, took the ordinary Rout of the *Portugueze* to the *Indies*, and return'd in two Year and a half's time with little Gain, but good Hopes.

This *Company*, and a new one now juſt eſtabliſh'd at *Amſterdam*, being united, equipp'd other Fleets; and theſe occaſion'd other *Companies* at *Amſterdam*, *Rotterdam*, in *Zealand*, &c. inſomuch, that the States began to apprehend they might be prejudicial to each other: Under this Concern, they call'd all the Directors of the ſeveral *Companies* together, who all conſented to an Union, the Treaty whereof was confirmed by the States in 1602: A very remarkable Epocha, as being that of the moſt ſolid and celebrated Eſtabliſhment of Commerce that ever was in the World.

Its firſt Capital was ſix Millions ſix hundred thouſand Florins. It has 60 Directors divided into ſeveral Chambers; 20 in that of *Amſterdam*, 12 in that of *Zealand*, 14 in that of *Delpht* and *Rotterdam*, and a like Number in thoſe at *Sluys* and *Hor*. As each Grant expires, the *Company* is oblig'd to procure a new one, which it has already done four times ſince the firſt; *viz.* one in 1622, for 21 Years, like the firſt; another for 21 Years, commencing in 1647; and a third in 1665, for 25 Years; a fourth in Advance, commencing in 1698, to end in 1740. Each Grant coſts the *Company* a conſiderable Sum; that of 1647 coſt 1600000 Livres, and the two following ones more. The laſt of 1698 was confirm'd by a Placard of the States General, granting 'em a Privilege excluſive.

Their Factories, Reſidences, &c. in the *Eaſt-Indies*, are almoſt infinite; reaching from the *Perſian* Gulf to the Coaſts of *China*: the principal is that of *Batavia*, the Centre of their Commerce: Here reſides their General, with the State and Splendor of a ſovereign Prince; making War and Peace with the Eaſtern Kings and Emperors at pleaſure.

The other more conſiderable Factories, are *Taiounam* on the Coaſt of *China*, *Nangiſac* in *Japan*, *Malaca*, *Surat*, *Amboyna*, *Banda*, *Siam*, *Moluccos*, &c. Several on the Coaſt of *Coromandel*, and at *Iſpahan*, *Cape of Good Hope*, &c. In all, they number 40 Factories and 25 Fortreſſes. They have the whole Trade of the Spicery in their own Hands. See Spicery.

Dutch Weſt-India Company, eſtabliſh'd in 1621, with an excluſive Privilege to trade 24 Years along the Coaſts of *Africa*, between the Tropic of *Cancer*, and the *Cape of Good Hope*; and in *America*, from the South Point of *Newfoundland*, thro' the Streights of *Magellan*, that of *Maire*, or others, to the Streights of *Anian*, both in the North and South Sea.

The Directors are divided into five Chambers, (as in the *Eaſt-India Company*) out of which, 19 are choſen for the general Direction of Affairs. In 1647 the *Company* renew'd its Grant for 25 Years, but was ſcarce able to hold out the Term; by reaſon of its great Loſſes, and Expences in taking the Bay of *Todos los Santos*, *Fernambouc*, and the greateſt Part of *Braſil* from the *Portugueze*. The Weakneſs of this *Company*, which had ſeveral times in vain attempted to be join'd to that of the *Eaſt-Indies*, occaſion'd its Diſſolution at the Expiration of its Grant.

In 1674, a new *Company*, compos'd of the antient Proprietors and their Creditors, was ſettled in the ſame Rights and Eſtabliſhment with the former; and ſtill ſubſiſts with Honour: Their firſt Capital was about ſix Millions of Florins. Its principal Eſtabliſhments, are, one at *Cape Verd*, another in the Gold Coaſt of *Africa*, at *Tabago*, *Curaſſao*, &c. in *America*.

Dutch North Company has no excluſive Privilege; the Advantages of its Patent being of another kind, and very inconſiderable.

There are alſo in *Holland*, *Companies* for the *Baltic* Sea, the Fiſhery of *Nova Zembla*, *David's Streights*, and *Greenland*: yet, none of their Fiſheries are interdicted to private Traders; all the difference between theſe and the *Companies* conſiſting in this; that the former may not go aſhore to cut their Fiſh in pieces, and melt their Lard; but muſt bring their Luggage to *Holland*. See Fishery.

Dutch Levant Company. In ſtrictneſs, there is no *Levant Company* in *Holland*: but the Commerce of the private Traders is ſo conſiderable, that the State has taken the Regulation thereof on it ſelf.

To this End, they have eſtabliſh'd a Chamber of Direction at *Amſterdam*, compoſed of ſix Deputies and a Regiſter; who, under the Bourgomaſters, take care of every thing relating to the Commerce of the *Mediterranean*: eſpecially that of *Smirna* and *Conſtantinople*.

This *Company* names the Conſuls, appoints the Number and Strength of Convoys, terminates Differences among the Traders; and has a Right, on occaſion, to add new Regulations to the old ones; tho thoſe be of no force, till confirm'd by the States-General.

French Companies.

French Eaſt-India Company, was eſtabliſh'd in 1664, with an excluſive Privilege, to trade for 30 Years in all the Seas of the *Eaſt-Indies* and *South-Sea*: No Adventurer to be admitted without 1000 Livres in Stock; and Foreigners who had 20000 Livres in Stock, to be reputed *Regnicoles*.

The Patent grants 'em the Iſland of *S. Madagaſcar*; and the King to be at one fifth of the Expence of the three firſt Armaments, without Intereſt; the Principal to be refunded in ten Years: or, if the *Company* find it loſes on the whole, the Loſs to fall on the King's ſide.

The Capital Fund of the *Company*, which was moſtly furniſh'd by the King, was ſeven or eight Millions of Livres, but was to have been 15 Millions.

In effect, tho no means were wanting to ſupport the *Company*, yet it ſtill droop'd, and ſtill ſtruggled; till having ſubſiſted ten Years without any change in its Form, and being no longer able to diſcharge its Engagements, there were new Regulations concerted; but to little purpoſe. At length, Things not being diſpoſed for a new *Eaſt-India Company*, nor much good to be expected from the old one; in 1708, the Miniſtry allow'd the Directors to treat with the rich Traders of *S. Malo*, and reſign 'em their Privilege under certain Conditions. Under the Hands of theſe laſt, the *Company* began to flouriſh.

Its chief Factory is at *Ponichery*, or *Pondichery*, on the Coaſt of *Coromandel*: This is the Reſidence of the Director-General; the other Factories are inconſiderable. The Merchandizes the *Company* brings into *France*, are Silks, Cottons, Spices, Coffee, Rice, Salt-petre; ſeveral Kinds of Gums and Drugs, Woods, Wax, printed Callicos, Muſlins, *&c.*

French Weſt India COMPANY, eſtabliſh'd in 1664: their Charter gave 'em the Property and Seigniory of *Canada*, *Acadia*, *Antilles Iſlands*, *Iſle of Cayonne*, and the *Terra firma* of *America*, from the River of the *Amazons* to that of *Oroonoko*; with an excluſive Privilege for the Commerce of thoſe Places, as alſo of *Senegal* and the Coaſts of *Guinea*, for forty Years, only paying half the Duties.

The Stock of the *Company* was ſo conſiderable, that in leſs than 6 Months, 45 Veſſels were equipp'd; wherewith they took poſſeſſion of all the Places in their Grant, and ſettled a Commerce: yet it only ſubſiſted nine Years. In 1674 the Grant was revok'd, and the Countries above reunited to the King's Dominions, as before; the King reimburſing the Actions of the Adventurers. This Revocation was owing partly to the Poverty of the *Company*, occaſion'd by its Loſſes in the Wars with *England*, which had neceſſitated it to borrow above a Million; and even to alienate its excluſive Privilege for the Coaſts of *Guinea*: but alſo to its having in good meaſure anſwer'd its End; which was to recover the Commerce of the *Weſt-Indies* from the *Dutch*, who had tore it from 'em: For the *French* Merchants being now accuſtom'd to traffick to the *Antilles*, by permiſſion of the *Company*, were ſo attach'd to it, that it was not doubted they would ſupport the Commerce after the Diſſolution of the *Company*.

French Miſſiſippi COMPANY, was firſt eſtabliſh'd in 1684, in favour of the Chevalier *de la Salle*; who having projected it in 1660, and being appointed Governor of the Fort of *Frontignac*, at the Mouth of that River, travell'd over the Country in the Year 1683, and return'd to *France* to ſollicit the Eſtabliſhment. This obtain'd, he ſet ſail for his new Colony, with four Veſſels loaden with Inhabitants, *&c.* but entering the Gulf of *Mexico*, did not, it ſeems, know the River that had coſt him ſo much fatigue; but ſettled on another River, unknown; where his Colony periſh'd by degrees: ſo that in 1685 there were not 100 Perſons remaining. Making ſeveral Expeditions to find the *Miſſiſippi*, he was kill'd in one of 'em by a Party who mutiny'd againſt him: whereupon the Colony was diſpers'd and loſt. M. *Haberville* afterwards ſucceeded better; he found the *Miſſiſippi*, built a Fort, and ſettled a *French* Colony: But he being poiſon'd, 'tis ſaid, by the Intrigues of the *Spaniard*, who fear'd ſuch a Neighbour; in 1712, M. *Crouzat* had the whole Property of trading to the *French* Territories, call'd *Louiſiana*, granted him for 15 Years.

COMPANY *of the Weſt*. In 1717, the Sieur *Crouzat* ſurrender'd his Grant; and in the ſame Year a new *Company* was erected, under the Title of *Company of the Weſt*: To which, beſides every thing granted to the former *Company*, was added the Commerce of *Caſtor*, enjoy'd by the *Canada Company* from the Year 1706, but expiring in 1717. In this Eſtabliſhment, an equal View was had to the Finances, and the Commerce of the Nation: And accordingly, part of the Conditions of its Eſtabliſhment regarded the ſettling a Colony, a Trade, *&c.* the other the venting part of the Bills, call'd *Bills of State*; which could no longer ſubſiſt on their preſent Footing. The former are no more than are uſual in ſuch Eſtabliſhments: for the latter, the Actions are fix'd at five hundred Livres; each payable in Bills of State: The Actions to be eſteem'd as Merchandize; and in that Quality to be bought, ſold, and traffick'd. The Bills of State, which make the Fund of the Actions, to be converted into yearly Revenue. To put the finiſhing hand to the *Company*, in 1717 its Fund was fix'd at an hundred Million of Livres: which being fill'd, the Caſh was ſhut up.

India COMPANY. The Junction of the former *Company* with that of *Canada*, was immediately follow'd by its Union with that of *Senegal*; both, in the Year 1718, by an Arret of Council, which at the ſame time granted the new *Company* the Commerce of *Caſtor*, and made it Miſtreſs of the Negro, or *Guinea* Trade, to the *French* Colonies in *America*.

Nothing was now wanting to its Perfection, but an Union with the *Eaſt-India Company*, and with thoſe of *China* and *S. Domingo*, which were effected; the two firſt in 1719, and the third in 1720. This Union of the *Eaſt-India* and *China Company* with the *Company of the Weſt*, occaſion'd an Alteration of the Name, and it was henceforth call'd the *India Company*.

The Reaſons of the Union, were the Inability of the two former to carry on their Commerce, the immenſe Debts they had contracted in the *Indies*, eſpecially the *Eaſt-Company*; Complaints whereof had been ſent to Court by the *Indians*, which diſcredited the *Company* ſo, that they durſt not appear any longer at *Surat*: Laſtly, the little Care they took to diſcharge their Engagements; and their having transferr'd their Privilege to the private Traders of *S. Malo*, in conſideration of a tenth in the Profits of the Returns of their Ships.

The antient Actions of the *Company of the Weſt*, which were not at Par when this Engraftment was projected, ere it was compleated, were riſen to 300 *per Cent.* which unexpected Succeſs, gave occaſion to conclude the new Actions of the united *Companies* would not bear leſs Credit. The Concourſe of Subſcribers was ſo great, that in a Month's time there were above fifty Millions ſubſcrib'd for: The firſt twenty five Million Actions which were granted to the *India Company*, beyond the 100 Millions of Stock allow'd the *Company of the Weſt*, being fill'd as ſoon as the Books were open'd; to ſatisfy the Earneſtneſs of the Subſcribers, the Stock was increas'd by ſeveral Arrets to three hundred Millions. Credit ſtill increaſing, the new Actions roſe to 1200 *per Cent.* and thoſe of the antient *Company of the Weſt* to 1900 *per Cent.* an exorbitant Price, to which no other *Company* ever roſe.

Its Condition was now ſo flouriſhing, that in 1719 it offer'd the King to take a Leaſe of all his Farms for nine Years, at the Rate of three Millions five hundred thouſand Livres *per Annum*, more than had been given before; and to lend his Majeſty twelve hundred Millions to pay the Debts of the State: Theſe Offers were accepted: and the King, in conſideration hereof, granted 'em all the Privileges of the ſeveral Grants of the *Companies* united to that *Company*, to the Year 1770: On condition, however, of diſcharging all the Debts of the old *Eaſt-India Company*, without any Deduction at all. The Loan of twelve hundred Millions not being ſufficient for the Occaſions of the State, was augmented, three Months afterwards, with three hundred Million more; which, with the former Loan, and another of one hundred Million before, made ſixteen hundred Millions: for which the King was to pay Intereſt at the Rate of three *per Cent.*

The Duke of *Orleans*, in *February* 1720, did the *Company* the Honour to preſide in their Aſſembly, where he made ſeveral Propoſals to 'em on the Part of the King: the principal was, that they ſhould take on 'em the Charge and Adminiſtration of the Royal Bank. This was accepted of, and Mr. *Law*, Comptroller-General of the Finances, was named by the King, *Inſpector-General of the India-Company and Bank united.*

This Union, which, it was propoſed, would have been a mutual help to both thoſe famous Eſtabliſhments, proved the fatal Point from whence the Fall of both commenc'd: From this time, both the Bank-Bills and the Actions of the *Company* began to fall: in effect, the firſt periſh'd abſolutely, and the other had been drawn along with it, but for the prudent Precautions taken for its Support.

The firſt Precaution was the revoking the Office of Inſpector-General, and obliging Mr. *Law* to quit the Kingdom: The antient Directors were diſcarded, and new ones ſubſtituted; and, to find the bottom of the *Companies* Affairs, it was order'd, they ſhould give an account of what they had receiv'd, and diſburs'd; both on the account of the *Company*, and of the Bank, which they had had the Management of near a Year. Another Precaution to come at the State of the *Company*, was by endeavouring to diſtinguiſh the lawful Actionaries from the *Miſſiſippi* Extortioners; whoſe immenſe Riches, as well as their criminal Addreſs in realiſing their Actions, either into Species or Merchandize, were become ſo fatal to the State; in order, if poſſible, to ſecure the honeſt Adventurers their Stock. To this end, an Inquiſition was made into their Books, *&c.* by Perſons appointed by the King: And the new Directors, or, as they were called *Regiſſeurs*, began ſeriouſly to look about for their Commerce abroad.

The *French* have had ſeveral other *Companies*; ſome whereof have fallen of themſelves, the reſt upon the Expiration of their Grants: as, the

Baſtion COMPANY *of France*, which was, at firſt, a ſimple Aſſociation of two Merchants of *Marſeilles*, in the XVth Century, for fiſhing of Coral in the Gulf of *Stora-Courcoury* on the Coaſt of *Barbary*, on the Frontiers of *Algier* and *Tunis*. Having obtained leave of the Sultan *Solyman* II. to make an Eſtabliſhment, and having likewiſe treated with the *Mooriſh* Princes of the Country; in 1561 they built a little Fort, called the *Baſtion of France*, whence the *Company* took its Name.

The

The firſt Undertakers not being ſucceſsful, a new Grant was obtain'd of *Mahomet* III. in 1604, to new Undertakers: In 1628 it began to flouriſh, and the Colony conſiſted of 800 People: but the Death of their Governor in 1633, gave them a Blow they never recover'd.

Several of the *Companies* have ſince endeavour'd to ſet the fiſhing of Coral on its antient Foot, but hitherto in vain.

Guinea COMPANY, was eſtabliſh'd in 1685: Its Grant expir'd in 1705, but it continued its Trade of Negroes, by the King's Permiſſion, under the Name of *Aſſienta Company*, to the Year 1713; when, by the Treaty of *Utrecht*, that Trade was ſurrender'd to the *Engliſh South-Sea Company*; which ſee.

Aſſienta COMPANY. See *Guinea* COMPANY, and ASSIENTA.

Cape Verd COMPANY, the ſame with that of *Senegal*, under another Name: It was eſtabliſh'd in 1664, before the *Company of the Weſt*; but the Coaſts of *Africa* being included in the Grant of this laſt, we hear no more of the *Cape Verd Company* till the Year 1673, when it roſe afreſh under the Title of *Company of Senegal*.

French South-Sea COMPANY, the ſame with the *Aſſienta Company*; which ſee.

Canada COMPANY, eſtabliſh'd in 1628, for the Commerce of Caſtor-Skins, *&c.* Its Grant expiring in 1717, it was united to the *Company of the Weſt*; which ſee.

Accadie COMPANY, eſtabliſh'd in 1683. Its Grant expiring in 1703, and the War, *&c.* preventing a new one, the Colony was neglected; and was taken by the *Engliſh* in 1710, and confirm'd to 'em by the Treaty of *Utrecht*.

French Levant COMPANY, eſtabliſh'd in 1670; but its Privilege revok'd in 1684.

French North COMPANY, eſtabliſh'd in 1669, and expiring with its Grant in 1690.

S. Domingo COMPANY, eſtabliſh'd in 1698, for fifty Years; carry'd on with honour to the Year 1720, and then united to the *India Company*.

Daniſh, &c. COMPANIES.

Daniſh North COMPANY, was eſtabliſh'd at *Copenhagen*, in 1647: Its Eſtabliſhments are very conſiderable in *Norway*; beſides which, it ſends Veſſels to *Varanger*, whence they convey their Merchandizes by Land into the *Daniſh Lapland*; and by Sledges drawn by Rein-Deer, into the *Muſcovite Lapland*. It ſends others for *Borandai* and *Siberia*; where its Agents take 'em up, and convey 'em, in like manner, on Sledges, to *Panigorod*, the Capital of this Part of the *Muſcovite* Empire.

The Commodities it ſends thither are Rixdollars, Tobacco, and Linnens; it returns nothing but Furs and Skins.

Daniſh Iſland COMPANY, eſtabliſh'd in the ſame Year with the *North Company*: Its chief Factory is *Kirkebar*, a large Town in that Iſland.

Daniſh Eaſt-India COMPANY, eſtabliſh'd in the middle of the XVIIth Century; their chief Factory is at *Trinquebaſt*, whither they ſend two or three Veſſels every Year.

Levant COMPANY *of the Genoeſe*, eſtabliſh'd in 1664, and confirm'd by the Port; notwithſtanding the Oppoſition of the *French*.

Its chief Commerce was to be in Pieces of 5 Sols, which the *Genoeſe* had before furniſh'd the *Turks* withal; tho in the *French* Name, and under their Banner; they were now to do it under their own Banner: And accordingly, while the Humour of theſe Pieces laſted, as they ſerv'd not only for Money, but were likewiſe uſed by the *Greek* and *Turkiſh* Women of the Iſlands, as Ornaments in their Head-dreſs, at the bottom of their Veſts, or Petticoats, which were cover'd with 'em; the *Company* ſucceeded well enough: But that Money being decried in 1670, the *Company* has languiſh'd ever ſince; and can now ſcarce ſupport a miſerable Commerce.

COMPANY *of Ships*, is a ſort of Fleet of ſeveral Merchant-Veſſels, who make a kind of Charter-Party among themſelves; whereby, under ſeveral Clauſes and Conditions tending to their common Safety, they engage not to quit one another, but to defend each other reciprocally, during their Voyage.

Theſe Aſſociations, in the *Mediterranean*, are call'd *Conſerves*. See CONSERVE.

The chief Conditions of the Charter-Party, are, that ſuch and ſuch ſhall be own'd Admiral, Vice-Admiral, and Counter-Admiral. That thoſe which bear no Guns, ſhall pay ſo much *per Cent.* of their Cargo, for the Expences of the Admiral, *&c.* that ſuch and ſuch Signals ſhall be obſerved; that if they be attack'd, the Damages ſhall be reimburs'd by the *Company* in general, *&c.* See CHARTER-*Party*.

Rule of COMPANY, or *Fellowſhip*, in Arithmetick, is a Rule whereby we diſcover, or aſcertain the Share of the Profits, or Loſſes, belonging to the ſeveral Partners, or Aſſociates in any Enterprize, in proportion to the Stock each contributed thereto, and the time that Stock was in Bank. See FELLOWSHIP.

COMPANY, in War, is a little Body of Infantry, commanded by a Captain. See CAPTAIN.

The *French* uſe the Word indifferently for Horſe, or Foot; but the *Engliſh* appropriate the Term *Troop* to a Company of Horſe. See TROOP.

The Number of Men in a *Company* is uncertain; in the ordinary Regiments 'tis 50, in the Guards more. See REGIMENT, and GUARD.

In the *French* Guards the *Company* is 120, in the *Swiſs Guards* 200.

Companies not imbodied into Regiments, are called *Independent Companies*.

The *French* have their *Free Companies*, who never enter the Body of any Regiment; and *Companies of Ordonnance*, who in like manner never enter the Body of a Regiment, but conſiſt of the *Gens d'Armes* and Light-Horſe. They were inſtituted by *Charles* VII. who choſe out fifteen Captains, under each of whom was to be 100 Lances, or Men at Arms, each Man at Arms to receive Pay for ſix Perſons, himſelf among the Number; the reſt to three Archers on Horſeback, a Cutler, and a Servant.

COMPARATES, COMPARATA, in Logic, the Terms or Subjects of a *Compariſon*; or the two Things compared to each other. See COMPARISON.

COMPARATIVE *Anatomy*, is that Branch of Anatomy which conſiders the ſame Parts of different Animals, with relation to the particular Structure, and Formation which is moſt ſuited to the manner of living, and the Neceſſities of every Creature. See ANATOMY.

Thus, in the *Comparative Anatomy* of Stomachs, for inſtance, it is remarkable, that thoſe Creatures which have the Opportunities of frequent feeding, have their Stomachs very ſmall, in compariſon to ſome Creatures of prey, which, probably, may be under a neceſſity of faſting a long time; and therefore have Stomachs large enough to hold Food ſufficient for ſuch a time. See STOMACH, RUMINATION, *&c.*

However, in the common uſe of the Term, *Comparative Anatomy* is underſtood of any Anatomy of Brutes; whether with any immediate reference of their Structure to that of other Animals, or not.

COMPARATIVE *Degree*, in Grammar, is an Inflexion between the Poſitive and Superlative Degrees; whoſe effect is, to ſet a thing above or beneath the Level of another. See DEGREE.

The *Latins* expreſs'd their *Comparative Degree* by a particular Termination of their Adjectives, and Participles; wherein they are follow'd by the *Engliſh*, tho by few other of the modern Languages.

The *French* form moſt of their *Comparatives*, by adding the Participles *plus*, *moins*, and *auſſi*; the *Italians* by *piu*, *meno*, &c. as the Thing is to be rais'd, lower'd, or equall'd to another.

COMPARISON, *parallel*; the Relation of two Perſons or Things, conſider'd as oppoſed, or ſet before each other, in order to find wherein they agree or differ; or wherein one has the Advantage of the other.

COMPARISON, in Rhetorick, is a Figure, or rather Place, in Speech, whereby two Things are conſider'd with regard to ſome third, which is common to them both. See FIGURE, and PLACE.

Thus, *Cicer. Topic. Catoni licuit ſequi bellum civile, igitur & Ciceroni licebit.* *'Twas allow'd* Cato *to engage in the Civil Wars, therefore it may be allow'd* Cicero: where, to *engage in the Civil Wars* is common to both.

There are three Kinds of *Compariſon*; the firſt *à majori*, *i. e.* from the Major to the Minor, as that of *Cicero* againſt *Anthony*, *Quid feceris domi tuæ, cum alienæ tam ſis inſolens.* Or that of *Terence*; *Quem feret, ſi parentem non fert ſuum.* From the ſame Place, *Ovid* endeavours to appeaſe *Cæſar*.

Cur ego poſſe negem leniri Cæſaris iras,
Cum videam mites hoſtibus eſſe Deos?

The ſecond *à minori*, *i. e.* from the Minor to the Major: Thus *Cicero*, *Majores noſtri ſæpe mercatoribus, ac naviculatoribus injurioſius tractatis, bella geſſerunt; vos tot civium Romanorum millibus uno nuntio atque uno tempore necatis quo tandem animo eſſe debetis?*

The third *à pari*; as when we contend that what obtains in one Thing, ought to obtain in another of the ſame Kind: Thus, *'Twas a Law, that he who kill'd his Father ſhould be ſew'd up in a Sack and thrown into a River; therefore, he who kill'd his Mother deſerves the ſame Puniſhment.*

Capto tuam, pudet heu, ſed capto, Maxime, cœnam
Tu captas alterius; jam ſumus ergo pares.
Mane ſalutatum venio, tu diceris eſſe,
Ante ſalutatum: jam ſumus ergo pares, &c.
Mart. *Lib.* II.

COMPARISON *of Ideas*, an Act of the Mind, whereby it *compares* its Ideas one with another, in reſpect of Extent, Degree, Time, Place, or any other Circumſtances. See IDEA.

This Operation of the Mind is the Ground of *Relations*. See RELATION.

Brutes ſeem not to have this Faculty in any great degree: They have, probably, ſeveral Ideas diſtinct enough; but cannot *compare* them farther than as to ſome ſenſible Circumſtances annexed to the Objects themſelves: The Power of *comparing* general Ideas, which we obſerve in Men, we may probably conjecture they have not at all. See ABSTRACT, GENERAL *Terms*, &c.

COMPARTIMENT, or COMPARTMENT, a Deſign compos'd of ſeveral different Figures, diſpos'd with Symmetry; to adorn a Parterre, Plafond, Panes of Glaſs, or Pannels of Joinery, the Squares of a Cieling, *&c.*

A Compartiment of Tiles, is an Arrangement of white and red Tiles varniſh'd, for the Decoration of the Covering of a Roof.

The Term *Compartiment* is alſo uſed in Painting: Thus, we ſay, all the *Turkiſh* and *Mooriſh* Paintings are only *Compartiments*: The fine Bindings of Books are in *Compartiments*, &c.

COMPARTIMENT, in Heraldry. See PARTITION.

COMPARTITION, in Architecture, the uſeful and graceful *Diſtribution* of the whole Ground-Plot of an Ediſice, into Rooms of Office, of Reception, or Entertainment. See DISTRIBUTION, HOUSE, *&c.*

Compartition makes one of the great Diviſions of the Art of Building. See BUILDING.

COMPASS. The *Mariner's*, or *Nautical* COMPASS, is an Inſtrument uſed by Pilots, to direct the Courſe of their Ships. See COURSE, NAVIGATION, *&c.*

It conſiſts of a Box, which includes a magnetical Needle, that always turns to the North; excepting for a little Declination, which is various in various Places, and even at various Times, in the ſame Place. See NEEDLE, and VARIATION.

In the middle of the Box is fix'd a perpendicular Pivot, which bears a Card, or Paſtboard, on whoſe upper Surface are deſcrib'd ſeveral concentric Circles; the outmoſt of which is divided into 360 Degrees; the other into 32 Points, anſwering to the 32 Winds. See WIND.

In the Centre of this Card is fitted a Braſs Cone, or Cap, a little concave, which plays at liberty on the Pivot; and along, in the Thickneſs of the Card, is fitted the Needle, which is cover'd over with a Glaſs, that its Motions may be obſerv'd: The whole is inclos'd in another Box; where it is ſuſtain'd by braſs Hoops, to keep the Needle horizontal. See it repreſented, Tab. *Navigation*, Fig. 1.

The Needle, which is, as it were, the Soul of the *Compaſs*, is made of a thin Plate of Steel, in form of a Lozenge: the middle being cut out, ſo as to leave nothing but the Extremities and an Axis in the middle, to which the Cap is fitted. To animate, or touch it, it muſt be rubb'd on a good Loadſtone: that End intended for the North Point on the North Pole of the Stone, and that for the South Point on the South Pole. In rubbing it, care muſt be taken to begin firſt in the middle of the Lozenge, drawing it gently to the acute Angle of the Lozenge intended for the North; never ſuffering it to ſtay at the End when arrived there, nor drawing it back again from the End to the Middle, but rubbing it a ſecond, and even a third time, in the ſame manner as the firſt, only beginning a little further and further from the North Point: Some ſay, the Stone and Needle muſt be ſo diſpoſed as that the Line of the Rub be in the Direction of the Meridian. See MAGNET.

The Invention of the COMPASS is uſually aſcrib'd to *Flavio de Melphe*, or *Flavio Gioia* a *Neapolitan*, about the Year 1302: and hence it is, that the Territory of *Principato*, which makes a part of the Kingdom of *Naples*, where he was born, bears a *Compaſs* for its Arms.

Others ſay, that *Marcus Paulus* a *Venetian*, making a Journey to *China*, brought back the Invention with him in 1260: What confirms this Conjecture, is, that at firſt they uſed the *Compaſs* in the ſame manner as the *Chineſe* ſtill do; *i. e.* they let it float on a little piece of Cork, inſtead of ſuſpending it on a Pivot. 'Tis added, that their Emperor *Chiningus*, a celebrated Aſtrologer, had the Knowledge of it 1120 Years before Chriſt. The *Chineſe* only divide their *Compaſs* into 24 Points.

Fauchet relates ſome Verſes of *Guyot de Provence*, who lived in *France* about the Year 1200, which ſeem to make mention of the *Compaſs* under the Name of *Marrinette*, or *Mariner's Stone*; which ſhews it to have been uſed in *France* near 100 Years before either the *Melphite* or *Venetian*. The *French* even lay claim to the Invention from the Flower de Lis, wherewith all Nations ſtill diſtinguiſh the North Point of the Card.

With as much Reaſon Dr. *Wallis* aſcribes it to the *Engliſh*, from its Name *Compaſs*, whereby moſt Nations call it; and which he obſerves, is uſed in many Parts of *England* to ſignify a *Circle*.

*The Uſe of the Sea-*COMPASS *is obvious.* For, the Courſe a Ship is to ſail in, being known by the Chart; and the *Compaſs* ſo placed, as that the two parallel Sides of the ſquare Box be diſpos'd according to the length of the Ship, *i. e.* parallel to a Line drawn from the Head to the Stern; the Rudder is to be directed accordingly; *v. g.* If the Courſe be found on the Chart between the South-Weſt and South-South-Weſt, *i. e.* South-Weſt $\frac{1}{4}$ to the South: turn the Stern ſo as that a Line from the South-Weſt, $\frac{1}{4}$ South exactly, anſwer the Mark on the middle of the ſide of the Box. This is all that is requir'd. See SAILING, CHART, *&c.*

COMPASS is alſo an Inſtrument of conſiderable uſe in ſurveying Land, Dialling, *&c.* See SURVEYING, DIALLING, *&c.*

Its Structure, in the main, is the ſame with that of the *Mariner's Compaſs*; conſiſting, like that, of a *Box* and *Needle*: The principal difference conſiſts in this, that inſtead of the Needle's being fitted into the Card, and playing with it on a Pivot, it here plays alone; the Card being drawn on the bottom of the Box, and a Circle divided into 360 Degrees on the Limb. See Tab. *Surveying*, Fig. 15.

This Inſtrument is of obvious uſe to Travellers, to direct 'em in their Road; and to Miners, to ſhew them what way to dig, *&c.* But it has other Uſes, tho leſs eaſy, yet more conſiderable.

1. *To take the Declination of a Wall by the* COMPASS. Apply that ſide of the *Compaſs* whereon the North is mark'd along the ſide of the Wall; the Number of Degrees o'er which the North End of the Needle fixes will be the Declination of the Wall, and on that ſide: *v. g.* if the North Point of the Needle tends towards the Wall; that Wall may be ſhone on by the Sun at Noon; if it fix over 50 Degrees, counting from the North towards the Eaſt, the Declination is ſo many Degrees from South towards Eaſt.

But ſince the Needle it ſelf declines from the North towards the Weſt, with us, 13°; it muſt be noted, that to retrieve the Irregularity, 13° be always added to the Degrees ſhewn by the Needle, when the Declination of the Wall is towards the Eaſt: on the contrary, when the Declination is towards the Weſt, the Declination of the Needle to be ſubtracted. See DECLINATION.

2. *To take an Angle with the* COMPASS. Suppoſe the Angle requir'd be D A E, (Tab. *Surveying*, Fig. 11.) apply that ſide of the *Compaſs* whereon the North is mark'd to one of the Lines A D; when the Needle reſts, obſerve the Degrees at which its North Point ſtands, which ſuppoſe 80: ſo many Degrees does the Line decline from the Meridian.

In the ſame manner take the Declination of the Line AE, which ſuppoſe 215°; ſubtract 80° from 215, the Remainder is 135; which ſubtracted from 180, there will remain 45°; the quantity of the Angle requir'd.

But if the difference between the Declination of the two Lines exceed 180°; in that Caſe, 180° muſt be ſubtracted from that difference: the Remainder is the Angle requir'd.

For the Method of laying this down on Paper. See PLOTTING.

Note, In meaſuring Angles by the *Compaſs*, there needs not any regard be had to the Variation; that being ſuppos'd the ſame in all the Lines of the Angles.

3. *To take the Plot of a Field by the* COMPASS. Suppoſe the Field A, B, C, D, E, (Fig. 12.) for the greater accuracy let there be two Sights fitted to the Meridian Line of the *Compaſs*, place it horizontal, and thro' the Sights look along the Side A B, or a Line parallel to it; applying the Eye to the Sight at the South-Point of the *Compaſs*. Draw a rough Sketch of the Field by the Eye, and on the correſponding Line enter down the Degree to which the Needle points, which ſuppoſe 90; meaſure the length of the Side, and enter that too, which ſuppoſe 10 Chain.

In this manner proceed with all the reſt of the Sides of the Field; the Sides which ſuppoſe 70,65,70,50,94 Chains; and the Angles which ſuppoſe 30,100,130,240,300 Degrees.

To *protract* the Field, ſet down the ſeveral Angles obſerv'd, one after another, and ſubtract the leſſer from the next greater: thus will you have the quantity of the ſeveral Angles, and the length of the Lines that include them. For the reſt ſee PLOTTING, and PROTRACTING.

Note, All the Angles of the Figure taken together, muſt make twice as many right Angles, abating two; if no Miſtake have been committed.

Azimuth COMPASS, differs from the common Sea-*Compaſs* in this; that there is faſten'd, on the round Box wherein the Card is, a broad Circle A B, (Tab. *Navigation*, Fig. 12.) one half whereof is divided into 90 Degrees, and thoſe ſubdivided diagonally into Minutes: *b c* is an Index moveable on *b*, having a Sight, *b a*, erected thereon, and moving on a Hinge. From the upper part of the Sight, to the middle of the Index, is faſten'd a fine hypothenuſal Lute String *d e*, to give a Shadow on a Line in the middle of the Index. The Circle A B is croſs'd at right Angles with two Threads, from the Extremities whereof are drawn four Lines on the inſide of the round Box: there are alſo four Lines drawn at right Angles to each other on the Card. The round Box fitted with its Card, graduated Circle, and Index, is hung in the braſs Hoops B B, and thoſe Hoops faſten'd to the ſquare Box C C.

The Uſe of the Azimuth COMPASS, is for finding the Sun's magnetical Azimuth, or Amplitude; and thence the Variation of the *Compaſs*.

If the Obſervation be for an Amplitude at Sun-riſing, or an Azimuth before Noon, apply the Centre of the Index *b c* on the Weſt Point of the Card, within the Box; ſo that the four Lines on the Edge of the Card, and thoſe on the inſide of the Box may meet. If the Obſervation be for the Sun's Amplitude ſetting, or an Azimuth in the Afternoon, turn the Centre of the Index right againſt the Eaſt Point of the Card, and make the Lines within the Box concur with thoſe on the Card: The Inſtrument thus fitted for Obſervation, turn the Index *b c* towards the Sun, till the Shadow of the Thread *d e* fall directly on the Slit of the Sight, and on the Line that is along the middle of the Index; then will the inner Edge of the Index cut the Degree and Minute of the Sun's magnetical Azimuth from the North or South.

But note, that if, when the *Compaſs* is thus placed, the Azimuth is leſs than 45° from the South, and the Index *b c* turn'd towards the Sun, it will paſs off the Diviſions of the Limb: the Inſtrument, therefore, in this Caſe, muſt be turn'd juſt a quarter of the *Compaſs*; *i. e.* the Centre of the Index muſt be plac'd on the North or South Point of the Card, according as the Sun is from you; and then the Edge will cut the Degree of the magnetic Azimuth, or Sun's Azimuth from the North, as before. See AMPLITUDE.

The Sun's magnetical Amplitude thus found, the Variation of the Needle is thus determin'd.

Being out at Sea the 15th of *May* 1715, in 45° N. Lat. the Tables give me the Sun's Latitude 19° North, and his Eaſt Amplitude 27° 25′ North: By the *Azimuth Compaſs*, I find the Sun's magnetical Amplitude at his riſing and ſetting; and find he riſes, *v. g.* between the 62d and 63d Deg. reckoning from the North towards the Eaſt Point of the *Compaſs*, *i. e.* between the 27th and 28th Deg. reckoning from the Eaſt.

The magnetical Amplitude, therefore, being here equal to the true one, the Needle has no Variation: But if the Sun at his riſing ſhould have appear'd between the 52d and 53d Deg. from the North towards the Eaſt; his magnetical Amplitude would then be between 37 and 38 Deg. *i. e.* about 10 Deg. greater than the true Amplitude: therefore, the Needle would vary about 10 Deg. North-Eaſterly.

If the magnetical Eaſt Amplitude found by the Inſtrument, ſhould be leſs than the true Amplitude, their Difference would ſhew the Variation of the Needle Eaſterly.

If the true Eaſt-Amplitude be Southwardly, as alſo the magnetical Amplitude and this laſt be the greater; the Variation of the Needle will be North-Weſt, and *vice verſa*.

What has been ſaid of North-Eaſt Amplitudes, holds alſo of South-Weſt Amplitudes. And what of South-Eaſt Amplitudes, holds of North-Weſt Amplitudes. See AMPLITUDE.

Laſtly, if Amplitudes be found of different Denominations, *v. g.* if the true Amplitude be 6 Deg. North, and the magnetical Amplitude 5 Deg. South; the Variation, which in this Caſe is North-Weſt, will be equal to the Sum of the magnetical and true Amplitudes: Underſtand the ſame for Weſt Amplitudes.

The Variation may likewiſe be found from the Azimuth: but in that Caſe, the Sun's Declination, Latitude of the Place, and his Altitude muſt be given, that his true Azimuth may be found. See AZIMUTH.

COMPASS *of Proportion*. See SECTOR.

COMPASS-*Dials*, are ſmall Dials, fitted in Boxes, for the Pocket, to ſhew the Hour of the Day by direction of the Needle; which ſhews how to place them right by turning the Dial about, till the Cock or Style ſtand directly over the Needle, and point up to the Northward; but theſe can never be very exact, becauſe of the Variation of the Needle it ſelf. See DIAL.

COMPASSES, or *Pair of* COMPASSES, a Mathematical Inſtrument, uſed for the deſcribing of Circles, meaſuring the Diſtances of Points, Lines, *&c.* See CIRCLE, LINE, *&c.*

The common *Compaſſes* conſiſt of two *Branches* or *Legs*, of Iron, Braſs, or other Metal, pointed at bottom; and a-top join'd by a Rivet, whereon they move, as on a Centre.

The Invention of *Compaſſes* is aſcrib'd to *Calus*, Nephew of *Dædalus* by his Siſter, whom the Poets ſay, *Dædalus* kill'd out of envy.

We have *Compaſſes* now of various Kinds and Contrivances, accommodated to the various Uſes they are intended for: As,

Hair-COMPASSES, ſo contrived within-ſide, as to take an Extent to a Hair's-breadth.

Geman COMPASSES, whoſe Legs are a little bent outwards towards the top: ſo that when ſhut, only the Points meet.

The Points are uſually made to take off, and on; and other Points for particular occaſions put in their Places; as Drawing-pen Point, Dotting-wheel Point, Porte-crayon Point, *&c.*

Spring-COMPASSES, or *Dividers*, made of harden'd Steel, the Head arch'd; which, by its Spring, opens the *Compaſſes*; the opening being directed by a circular Screw, faſten'd to one Leg and let thro' the other, work'd with a Nut.

Clock-makers COMPASSES are very ſubſtantial, ſerving to cut Paſtboard, Braſs, *&c.* jointed like the common *Compaſſes* with a Quadrant, or Bow, as the *Spring Compaſſes*; only its uſe different; as ſerving here, to keep the Inſtrument firm at any opening.

Turn-up COMPASSES, a late Contrivance to ſave the trouble of changing the Points: The Body is like the common *Compaſſes*; towards the bottom of the Legs, without-ſide, are added two other Points, beſides the uſual ones; the one carrying a drawing Pen-point, the other a Porte Craion; both adjuſted ſo as to turn round, and ſo be in the way of uſe, or out of it, as occaſion requires.

The Points of ſmall *Compaſſes* are temper'd by a Lamp and Blow-pipe, heating 'em red-hot; when cold they are hard: The larger are temper'd by a charcoal Fire and a Blow-pipe, heating them to a Cherry-colour, then plunging them in Water. See TEMPERING.

COMPASSES *of three Branches*. Their Structure is like that of the common *Compaſſes*, ſetting aſide the Exceſs of a Leg: Their uſe is to take three Points at once; and ſo to form Triangles; to lay down three Poſitions of a Map to be copied at once, *&c.*

Triſſecting COMPASSES, the Invention of M. *Tarragon*, for the Triſſection of Angles, geometrically. See TRISSECTION.

The Inſtrument conſiſts of two central Rules, and an Arch of a Circle of 120 Deg. immoveable, with its Radius: The Radius is faſten'd with one of the central Rules, like the two Legs of a Sector, that the central Rule may be carried thro' all the Points of the Circumference of the Arch. The Radius and Rule to be as thin as poſſible, and the Rule faſten'd to the Radius hammer'd cold, to acquire an Elaſticity: The breadth of the other central Rule, to be triple the breadth of the Radius. In this Rule to be a Groove, with a Dove-tail, to be faſten'd on it, for its Motion: In the Centre of each Rule muſt likewiſe be a Hole. See the *Journ. de Scavans*, *Sept.* 1688.

Beam COMPASSES, conſiſt of a long Branch, or Beam, carrying two braſs *Curſors*; the one fix'd at one end, the other ſliding along the Beam, with a Screw to faſten it, on occaſion. To the Curſors may be ſcrew'd Points of any kind; whether Steel, for Pencils, or the like. It is uſed to draw large Circles, take great Extents, *&c.*

Elliptick COMPASSES. Their uſe is to draw Ellipſes, or Ovals of any kind: They conſiſt of a Beam A B, (Plate *Geom.* Fig. 2.) about a Foot long, bearing three Curſors; to one of which may be ſcrew'd Points of any kind: to the bottom of the other two are rivetted two ſliding Dove-tails, adjuſted in Grooves made in the croſs Branches of the Beam. The Dove-tails having a Motion every way, by turning about the long Branch, go backwards and forwards along the Croſs: ſo that when the Beam has gone half way about, one of theſe will have mov'd the whole length of one of the Branches; and when the Beam has got quite round, the ſame Dove-tail has got back the whole length of the Branch. Underſtand the ſame of the other Dove-tail.

Note, the Diſtance between the two ſliding Dove-tails, is the Diſtance between the two *Foci* of the Ellipſis; ſo that by changing that diſtance, the Ellipſis will be rounder or ſlenderer. Under the Ends of the Branches of the Croſs, are placed four Steel Points to keep it faſt.

The uſe of this *Compaſs* is eaſy; by turning round the long Branch, the Ink, Pencil, or other Point, will draw the Ellipſis requir'd. Its Figure ſhews both its Uſe and Conſtruction.

Cylindrick and Spherick COMPASSES, uſed in taking the Diameter, Thickneſs, or Calliber of round, or cylindrick Bodies; as, Cannons, Pipes, *&c.* They conſiſt of four Branches join'd in a Centre; two of 'em circular, two flat, a little bent at the Ends.

To uſe 'em, one of the flat Points is put within the Cannon, the other without: the two oppoſite Points ſhew the Thickneſs. See CALLIPER.

There are alſo *Spherical Compaſſes*, differing in nothing from the common ones, but that their Legs are arch'd; ſerving to take the Diameters of round Bodies, *&c.*

Proportional COMPASSES, conſiſt of two Branches, (Plate *Geom.* Fig. 3.) each pointed at either end with Steel: the length of the Branches is cut thro', for a Curſor to ſlide up and down; in the middle of which Curſor is a Screw, ſerving to join the Branches, and to fix 'em at any Point requir'd.

On the one Leg are Diviſions, ſerving to divide Lines into any number of equal Parts, for reducing of Figures, *&c.* On the other are Numbers, for the inſcribing any regular Polygon in a Circle propos'd.

The Uſe of the firſt is eaſy: Suppoſe, *v. g.* a right Line to be divided into three equal Parts; puſh the Curſor till the Screw be juſt on the Figure 3; where fixing it, take the length of the given Line between the longeſt Parts of the Legs: the diſtance between the two ſhorteſt, will be

one

one third of the given Line. In the ſame manner may the Line be divided into another number of Parts.

For the Uſe of the Line of Polygons: Suppoſe, *v. g.* a Pentagon requir'd to be inſcrib'd in a Circle; puſh the Curſor till the middle of the Screw be againſt 5, the number of Sides in a Pentagon; between the ſhorteſt Parts of the Legs take the Semidiameter of the Circle: the Legs thus open'd, the diſtance between the Points of the longeſt Parts, will be the ſide of the Pentagon to be inſcrib'd in the Circle. And thus for a Figure of any other number of Sides.

Proportional COMPASSES *with the Sector Lines.* The Structure of theſe is ſo like that of the common *Proportional Compaſſes*, only a little nicer, that it needs no particular Deſcription. See Plate *Geometry*, Fig. 4.

The Lines on the firſt Face, are the Line of Lines, mark'd *Lines:* it is divided into 100 unequal Parts, every tenth number'd: And the Line of Chords, which goes to 60°; and is mark'd *Chords.* On the other Face are a Line of Sines to 90°, and a Line of Tangents to 45°. On the firſt ſide are the Tangents from 45° to 71°.34′; on the other Secants from 0° to 70°.30′.

For the Uſe of theſe Compaſſes. 1. To divide a Line into any number of equal Parts, leſs than 100: Divide 100 by the number of Parts requir'd; ſlip the Curſor till the Line on the ſliding Dove-tail be againſt the Quotient on the Line of Lines: Then, the whole Line being taken between the Points of the *Compaſſes* moſt remote from the Centre; the Aperture of the other will be the Diviſion requir'd. 2. A right Line given, ſuppoſed to be divided into 100 Parts, to take any number of thoſe Parts: Slip the Line on the ſliding Dove-tail to the number of Parts requir'd: the whole Line being taken between the Points furtheſt from the Centre, the Aperture of the other two will include the number of Diviſions requir'd. 3. The Radius being given, to find the Chord of any Arch under 60°: Slip the Line on the ſliding Dove-tail to the Degrees requir'd on the Line of Chords: the Radius being taken between the Points furtheſt from the Centre of the Curſor; the Aperture of the other Line will be the Chord requir'd; provided the number of Degrees be greater than 29: if it be leſs, the Aperture taken from the Radius will leave the Chord requir'd. 4. If the Chord of an Arch under 60° be given, and the Radius requir'd; ſlip the Line on the Dove-tail to the Degrees given on the Line of Chords: the given Chord being taken between the two Points next the Curſor, the Aperture of the other will be the Radius requir'd. 5. The Radius being given, to find the Sine of any number of Degrees. Slip the Line on the Dove-tail to the Degree on the Line of Sines whoſe Sine is requir'd: The Radius taken between the Points furtheſt from the Curſor; the Aperture of the other will give the Sine of the Angle requir'd. But if the Sine ſought be leſs than 30°, the Difference of the Apertures of the oppoſite Points, will be the Sine requir'd. 6. The Radius being given, to find the Tangent of any number of Degrees under 71: If the Tangent requir'd be under 26°.30′, ſlip the Line on the Dove-tail to the Degree propoſed on the Tangent-Line: the Radius taken between the Points furtheſt from the Curſor; the Aperture of the others, will be the Tangent of the Degrees requir'd: If the Tangent requir'd be above 26°.30′, but under 45°; the Line on the Curſor muſt be ſlip'd to the Degrees given on the Tangent-Line: then the Radius being taken between the Points furtheſt from the Curſor; the Aperture of the others will be the Tangent. If the Tangent requir'd be greater than 45°, but leſs than 56°.20′; ſlip the Notch on the Tangent-ſide of the turn'd Cheek to the Degree 0 in the Tangent-line on the Side of the *Compaſs:* the Radius taken between the Points furtheſt from the Curſor; the difference between the Aperture of the other, and theſe, added together, will be the Tangent requir'd. Thus, for the Tangents of other Degrees under 71. After the like manner may the Secant of any number of Degrees under 71 be found.

Lapidary's COMPASSES, a piece of Wood in form of the Shaft of a Plane, cleft a-top, as far as half its length; wherewith they meaſure the Angles, *&c.* of the precious Stones as they cut 'em.

In the Cleft is a little braſs Rule, faſten'd there, at one end, by a Pin; but ſo as it may be mov'd in the manner of a Bevel: with this kind of Square they take the Angles of the Stones, laying 'em on the Shaft as they cut them.

COMPATIBLE, ſomething that may ſuit, or conſiſt with another. See INCOMPATIBLE.

COMPENDIUM, an Abſtract, Epitome, or Reduction of a large Matter into a little compaſs. See EPITOME.

COMPENSATION, an Action whereby any thing is admitted as a Parallel, or an Equivalent to another.

Compenſation, in the Civil Law, is a kind of Right, whereby a Debtor purſu'd by his Creditor, for the Payment of a Debt, demands that the Debt may be *compenſated* with what is owing him by the Creditor.

Compenſation is equivalent to Payment.

COMPETENCE, in Law, the Authority, or Right, of a Judge for taking Cognizance of any certain Matter. See JURISDICTION.

COMPITALITIA, Feaſts held among the Antients in honour of the *Lares.* See FEAST, and LARES.

The Word comes from the Latin *Compitum*, a Croſs-way; by reaſon the Feaſt was held in the Meetings of ſeveral Roads.

This Feaſt is more antient than the building of *Rome. Dionyſius Halicarnaſſæus* and *Pliny*, indeed, ſay, they were inſtituted by *Servius Tullius*; but this only ſignifies that they were then introduc'd into *Rome.*

Notwithſtanding what *Dion* relates, that the *Compitalitia* were celebrated a little after the *Saturnalia*; and that the *Roman* Calendar fixes 'em on the 12th of *January*; it appears that they had not any fix'd Day; at leaſt, not in the time of *Varro*, as is obſerv'd by *Caſaubon.*

The Feaſt being thus moveable, the Day whereon it was to be held, was proclaim'd every Year. It was ordinarily held on the 4th of the Nones of *February*, *i. e.* on the 2d of that Month.

Macrobius obſerves, that they were held not only in honour of the *Lares*, but alſo of *Mania*, Madneſs. The Prieſts who officiated at 'em were Slaves and *Liberti*; and the Sacrifice a Sow.

They were re-eſtabliſh'd, after a long neglect, by *Tarquin* the Proud; and on occaſion of an anſwer of the Oracle, *That they ſhould ſacrifice Heads for Heads, i. e.* for the Health and Proſperity of each Family, Children were ordain'd to be ſacrificed: But *Brutus*, after expelling the Kings, in lieu of thoſe barbarous Victims, ſubſtituted the Heads of Garlick and Poppy; thus ſatisfying the Oracle which had enjoin'd Heads, *Capita.*

During the Celebration of this Feaſt, each Family placed at the Door of their Houſe, the Statue of the Goddeſs *Mania:* They alſo hung up at their Doors Figures of Wool, repreſenting Men and Women; accompanying them with Supplications that the *Lares* and *Mania* would be contented with thoſe Figures, and ſpare the People of the Houſe.

As for Slaves, in lieu of the Figures of Men, they offer'd Balls, or Fleeces of Wool. *Servius Tullius* order'd, that the Slaves who aſſiſted at the *Compitalitia*, ſhould be free during the whole Time of the Feaſt. *Auguſtus* order'd the Statues of the *Lares*, placed in the Croſs-way, to be adorn'd with Flowers twice a Year.

COMPLAINANT, in Law, a Plaintiff, or one who prefers a *Complaint* againſt another, to be reliev'd by Juſtice, or Equity. See PLAINTIFF.

COMPLEMENT, in Geometry, is what remains of a Quadrant of a Circle, or of 90 Deg. after a certain Arch has been retrench'd from it. See ARCH.

Thus, if an Arch or an Angle be 30 Deg. we ſay its *Complement* is 60 Deg. ſince $60+30=90$.

The Arch and its *Complement* are Relatives; and are only uſed with regard to each other.

The Sine of the *Complement* of an Arch, is call'd the *Coſine*; of a Tangent, the *Co-tangent*, &c. See CO-SINE, CO-TANGENT, *&c.*

We ſometimes alſo ſay, the *Complement of an Angle*; meaning ſo much as it wants of a right Angle, or 90 Deg. See ANGLE.

COMPLEMENT *of the Courſe*, in Navigation, is the Number of Points the Courſe wants of 90 Deg. or 8 Points, *viz.* of a Quarter of the Compaſs. See COURSE.

COMPLEMENT, in Aſtronomy, is uſed for the diſtance of a Star from the Zenith; or the Arch comprehended between the Place of a Star above the Horizon, and the Zenith. See ZENITH, STAR, *&c.*

COMPLEMENT *of the Curtain*, in Fortification. The inner Polygon conſiſts of the Curtain and two Demigorges: The *Complement of the Curtain*, therefore, to the inner Polygon, is the Demigorges. See CURTAIN, and DEMIGORGE.

COMPLEMENT *of the Line of Defence*, is the Remainder of the Line of Defence, after you have taken away the Angle of the Flank. See DEFENCE.

COMPLEMENTS *of a Parallelogram*, are the two leſſer Parallelograms, made by drawing two right Lines parallel to each ſide of the Figure, thro' a given Point in the Diagonal.

Such are the Parallelograms C and M, (Plate *Geometry*, Fig. 5.)

'Tis demonſtrated, that in every Parallelogram, the *Complements* C and M are equal: For $Z+C+O=R+M+X$; as making up on each ſide the great Triangle, made $=$ by the Diagonal; of which, $Z=R$, and $O=X$, (becauſe the Diagonal makes them ſo;) wherefore, the remaining Parallelogram $C=M$.

COMPLEX, a Term ordinarily uſed as ſynonymous with *Compound*; tho, ſtrictly ſpeaking, there be ſome difference between 'em.

Complex may be applied where a thing contains divers others, or conſiſts of divers Parts, not really diſtinct from one another; but only imaginarily, or in our Conception.—

In

In this Senſe, the Soul may be ſaid to be *Complex*, in reſpect of the Underſtanding and Will, which are two things our Reaſon alone diſtinguiſhes in it. See COMPOUND.

A *Complex Term*, or *Idea*, is a Term or Idea compounded of ſeveral *ſimple*, or *incomplex* ones. See TERM, and IDEA.

Thus, in the Propoſition, *A juſt God cannot leave the Crime unpuniſh'd*; the Subject of this Propoſition, *viz. a juſt God*, is a *Complex Term*, or ſtands for a *Complex Idea*, compos'd of two ſimple, or *incomplex* ones, *viz. God* and *Juſt*.

A *Complex Propoſition*, is either that which has at leaſt one of its Terms *complex*, as that juſt mention'd; or ſuch a one as contains ſeveral Members, as cauſal Propoſitions.

Thus, *e.g. If God be almighty, the Wicked can never eſcape him.* See PROPOSITION.

Mr. *Locke* obſerves, that tho the Mind be perfectly paſſive in the Formation of ſimple Ideas; yet it exerts ſeveral Actions of its own about them, when once form'd: and that by this means it is, they become the Materials and Foundation out of which all our Knowledge is framed. See KNOWLEDGE.

Theſe Acts are chiefly three, *viz.* the combining of ſeveral ſimple Ideas into one compound one: And thus it is that all *Complex Ideas* are made.

2dly, It brings two Ideas, whether *ſimple* or *complex*, together; ſets 'em by each other, and ſo views 'em, without uniting 'em into one: And thus it gets its Ideas of Relation. See RELATION.

Laſtly, It ſeparates ſeveral Ideas from all other Ideas that accompany them in their real Exiſtence: And thus all its general Ideas are form'd. See GENERAL, and ABSTRACT.

As ſimple Ideas are obſerv'd to exiſt in ſeveral Combinations united together; ſo the Mind may conſider them as united, not only as they are really united in external Objects, but as it ſelf has join'd them: Ideas thus made up of ſeveral ones put together, we call *Complex*; as Man, Beauty, Army, Gratitude, *&c.* *Complex Ideas*, however compounded and decompounded, tho their Number be infinite, and their Variety endleſs, may be all reduc'd under theſe three Heads, *viz. Modes*, *Subſtances*, and *Relations*; *which ſee under their proper Heads*, MODE, SUBSTANCE, and RELATION.

COMPLEXIO, COMPLEXION, in Metaphyſicks, the Union or Coalition of ſeveral Things different from each other; either really, or only in our Conception. See COMPLEX.

COMPLEXIO, in Logicks, is ſometimes applied to the ſecond Operation of the Mind, *viz.* the Judgment; conſider'd as it affirms or denies any thing: ſuch Affirmation, *&c.* importing a Combination of ſeveral things.

COMPLEXIO, is ſometimes alſo uſed by Logicians in the Senſe of *Dilemma*. See DILEMMA.

COMPLEXIO, in Rhetorick, *&c.* is a Figure including a Repetition, and a Converſion at the ſame time; the Sentence both beginning and ending with the ſame Word.

Thus *Tully*, *Quis legem tulit? Rullus. Quis majorem partem populi ſuffragiis privavit? Rullus. Quis comitiis præficit? Rullus*, See CONVERSION, and REPETITION.

COMPLEXION, in Phyſicks, is uſed for the Temperature, Habitude, or natural Diſpoſition of the Body. See CONSTITUTION.

Some Philoſophers diſtinguiſh four general and principal *Complexions* in Man, *viz.* the *ſanguine Complexion*, which, according to them, anſwers to the Air; having the Qualities thereof, as being hot and moiſt. It takes its Name from *Sanguis*; becauſe the Blood is there ſuppos'd to be predominant. See SANGUINE.

The *phlegmatic Complexion* takes its Name from the *Pituita*, or *Phlegm*, in which it abounds, and correſponds to Water; being cold, and moiſt. See PHLEGMATIC.

The *bilious*, or *choleric Complexion*, takes its Name from the Bile, or Choler: it is ſuppos'd of the Nature of Fire, hot and dry. See CHOLERIC.

Laſtly, the *melancholy Complexion* partakes of the Nature of Earth, being cold and dry. See MELANCHOLY.

COMPLEXUS, or *Par* COMPLEXUM, in Anatomy, is a Pair of Muſcles, ariſing with ſix thin ſmall Tendons from the tranſverſe Proceſſes of the *Vertebræ* of the Neck and Thorax; growing fleſhy in its Aſcent; again becoming tendinous about the middle; and again fleſhy, where it is inſerted laterally into the upper Part of the *Os Occipitis*, and the hind Part of the *Proceſſus Maſtoides*.

When they act together, they pull the Head directly backwards, but either of 'em acting alone, draws it obliquely back.

COMPLICATION *of Diſeaſes*, a Mixture, or Junction of ſeveral Diſeaſes; eſpecially where they have any affinity to one another; as the Dropſy, Aſthma and Jaundice happening together. See DISEASE.

What perplexes the Phyſicians, is, when with a Fever there is a *Complication* of ſome other Diſorder. See FEVER.



COMPONE, or COMPONED, or *Gobony*, in Heraldry. A *Bordure Compone*, is that form'd or compos'd of a row of angular Parts, or Chequers of two Colours; as in the Figure adjoining.

COMPONED, or COMPOSED, is alſo uſed in the general for a Border, a Pale or a Feſs, compos'd of two different Colours, or Metals, diſpos'd alternately, ſeparated and divided by Fillets, excepting at the Corners; where the Junctures, are made in the form of a Goats-foot.

COMPOSITE *Order*, in Architecture, the laſt of the five Orders of Columns; ſo called, becauſe its Capital is *compos'd* out of thoſe of the other Columns. See ORDER.

It borrows a Quarter-round from the *Tuſcan*, and *Doric*; a double Row of Leaves, from the *Corinthian*; and Volutes from the *Ionic*: Its Cornice has ſimple Modillions or Dentils. See CAPITAL.

The *Compoſite* is alſo called the *Roman* and *Italic* Order; as having been invented by the *Romans*; conformably to the reſt, which are denominated from the People among whom they had their riſe. See its Figure in Tab. *Architecture*.

Moſt Authors rank this after the *Corinthian*; either as being the richeſt, or as the laſt that was invented: *Scamozzi* alone places it between the *Ionic* and *Corinthian*; out of a view to its delicacy and richneſs, which he eſteems inferior to that of the *Corinthian*; and therefore makes no ſcruple to uſe it under the *Corinthian*: wherein he is follow'd by M. *le Clerc*. See CORINTHIAN.

The Proportions of this Order are not fix'd by *Vitruvius*; he only marks its general Character, by obſerving that its Capital is compos'd of ſeveral Parts taken from the *Doric*, *Ionic*, and *Corinthian*: He does not ſeem to regard it as a particular Order; nor does he vary it at all from the *Corinthian*, except in its Capital. In effect, it was *Serlio* who firſt added the *Compoſite* Order to the four of *Vitruvius*, forming it from the Remains of the Temple of *Bacchus*, the Arches of *Titus*, *Septimius*, and the Goldſmiths: Till then, this Order was eſteem'd a Species of the *Corinthian*, only differing in its Capital.

The Order being thus left undetermin'd by the Antients, the Moderns have a kind of a Right to differ about its Proportions, *&c.* *Scamozzi*, and after him M. *le Clerc*, make its Column 19 Modules and an half; which is leſs by half a Module than that of the *Corinthian*: as, in effect, the Order is leſs delicate than the *Corinthian*. *Vignola* makes it 20; which is the ſame with that of his *Corinthian*: but *Serlio*, who firſt form'd it into an Order, by giving it a proper Entablature and Baſe, and after him M. *Perrault*, raiſe it ſtill higher than the *Corinthian*.

This laſt does not think different Ornaments and Characters ſufficient to conſtitute a different Order, unleſs it have a different Height too: Agreeably, therefore, to his Rule of augmenting the Heights of the ſeveral Columns by a Series of two Modules in each; he makes the *Compoſite* 20 Modules, and the *Corinthian* 18; which, it ſeems, is a Medium between the Porch of *Titus* and the Temple of *Bacchus*. See PROPORTION.

For the Parts of the Order, ſee COLUMN, ENTABLATURE, CAPITAL, BASE, *&c.*

M. *Perrault*, in his *Vitruvius*, diſtinguiſhes between the *Compoſite* and *Compoſed* Order.

The latter, he ſays, is any Compoſition whoſe Parts and Ornaments are extraordinary and unuſual; but have, withal, ſomewhat of Beauty; both on account of their Novelty, and in reſpect of the Manner or Genius of tho Architect: So that a *Compoſed* Order is an arbitrary, humourous Compoſition, whether regular, or irregular.

The ſame Author adds, that the *Corinthian* Order is the firſt *Compoſite* Order, as being compos'd of the *Doric* and *Ionic*; which is the Obſervation of *Vitruvius* himſelf, *Lib.* 4. cap. 1.

COMPOSITION, in a Phyſical Senſe, is the uniting or joining of ſeveral different Things, ſo as to form one whole, call'd a *Compound*. See COMPOUND.

The Schoolmen diſtinguiſh two Kinds of *Compoſition*; the one *Entitative*, which is between Things of the ſame Nature, *e.g.* two or more Drops of Water: the other *Eſſential*, when Things of different Kinds are join'd, and thus conſtitute new Things, or Eſſences, different from any of the Parts; and thus, ſay they, from the Matter and the Form of Wood, ariſes Wood; whoſe Eſſence is very different from either of thoſe Ingredients taken ſeparately.

COMPOSITION *of Ideas*, is an Operation of the Mind, whereby it combines ſeveral of its Simple Ideas into Complex ones. See COMPLEX *Idea*.

Under the ſame Operation may likewiſe be reckon'd that of enlarging; whereby we put ſeveral Ideas together of the ſame Kind, as ſeveral Unites to make a Dozen.

In this, as in others, Brutes come far ſhort of Men; for tho they take in and retain ſeveral Combinations of Simple

Ideas; as, poſſibly, a Dog does the Shape, Smell, and Voice of his Maſter: yet theſe are rather ſo many diſtinct Marks whereby he knows him, than one Complex Idea, made out of thoſe Simple ones.

COMPOSITION, in Grammar, the joining of two Words together; or prefixing a Particle to another Word, to augment, diminiſh, or change its Signification.

COMPOSITION, in Oratory, the proper Order of the Parts of a Diſcourſe, adhering to each other.

To *Compoſition* belongs both the artful joining of the Letters whereof the Style is form'd, and whereby it is render'd ſoft and ſmooth, gentle and flowing, or full and ſonorous; or the contrary. See STYLE.

And the *Order*, which requires the Grave to be placed after the Humble, and Things firſt in Nature and Dignity, before thoſe of inferior Conſideration. See PERIOD.

COMPOSITION, in Painting, includes the Invention and Diſpoſition of the Figures, the Choice of Attitudes, &c. *Compoſition*, therefore, conſiſts of two Parts; one of which finds out, by means of Hiſtory, proper Objects for a Picture; and the other diſpoſes 'em to advantage. See PAINTING.

COMPOSITION, in Muſick, the Art of diſpoſing muſical Sounds into Airs, Songs, &c. either in one, or more Parts; to be ſung with the Voice, or play'd on Inſtruments. See MUSICK, and SONG.

Zarlin defines it the Art of joining and combining Concords together, which are the Matter of Muſick: But this Definition is too ſcanty; in regard, Diſcords are always uſed with Concords in the *Compoſition* of Parts. See CONCORD, and DISCORD.

Under *Compoſition* are comprehended the Rules, firſt, of *Melody*, or the Art of making a ſingle Part; *i. e.* of contriving and diſpoſing the ſimple Sounds, ſo as that their Succeſſion and Progreſs may be agreeable. See MELODY.

2dly, Of *Harmony*, or the Art of diſpoſing and concerting ſeveral ſingle Parts ſo together, that they may make one agreeable Whole. See HARMONY.

It may be here obſerv'd, that Melody being chiefly the Buſineſs of the Imagination, the Rules of its *Compoſition* ſerve only to preſcribe certain Limits to it; beyond which, the Imagination, in ſearching out the Variety and Beauty of Airs, ought not to go: But Harmony, being the Work of Judgment, its Rules are more certain, extenſive, and more difficult in practice.

In the Variety and Elegancy of the Melody, the Invention labours a great deal more than the Judgment; ſo that Method has but little place: but in Harmony 'tis otherwiſe; the Invention, here, has nothing to do; and the *Compoſition* is conducted from a nice Obſervation of the Rules of Harmony, without any Aſſiſtance from the Imagination at all.

COMPOSITION, in Logic, is a Method of reaſoning, wherein we proceed from ſome general ſelf-evident Truth, to particular and ſingular ones. See METHOD.

The Method of *Compoſition*, call'd alſo *Syntheſis*, is juſt the reverſe of that of *Reſolution*, or *Analyſis*. See RESOLUTION.

Reſolution is the Method whereby we ordinarily ſearch after Truth; *Compoſition*, that whereby a Truth found, is diſcover'd and demonſtrated to others: Reſolution is the Method of Inveſtigation; *Compoſition* of Demonſtration.

The Method of *Compoſition* is that uſed by *Euclid*, and other Geometricians; Reſolution that uſed by Algebraiſts and Philoſophers. The two Methods differ, juſt as the Methods of ſearching a Genealogy; which are either by deſcend- from the Anceſtors to the Poſterity, or by aſcending from the Poſterity to their Anceſtors; each have this in common, that their Progreſſion is from a thing known, to another unknown.

The Method of *Compoſition* is beſt obſerv'd by the Mathematicians: The Rules hereof are, 1ſt, to offer nothing but what is couch'd in clear expreſs Terms; and to that End, to begin with Definition. 2dly, To build only on evident and clear Principles; to that End, to proceed from Axioms or Maxims. 3dly, To prove demonſtratively all the Concluſions they draw hence; and to this purpoſe, to make uſe of no Arguments or Proofs, but Definitions already laid down, Axioms already granted, and Propoſitions already proved; which ſerve as Principles to Things that follow.

COMPOSITION *of Motion*, is an Aſſemblage of ſeveral Directions of Motion, reſulting from Powers acting in different, tho not oppoſite Lines. See MOTION.

If a Point move or flow according to one and the ſame Direction; whether that Motion be equable or not, yet it will ſtill keep the ſame right Line; the Celerity alone being chang'd, *i. e.* increas'd, or diminiſh'd according to the Forces with which it is impell'd.

If the Directions be oppoſite, as one, *e. g.* directly downward, the other upward, &c. yet ſtill the Line of Motion will be the ſame.

But if the *compounding* Motions be not according to the ſame Line of Direction, the compound Motion will not be according to the Line of Direction of either of 'em, but a different one from them both; and this either ſtrait or crooked, according as the Directions or Celerities ſhall require.

If two *compounding* Motions be each of them equable, the Line of the compound Motion will ſtill be a ſtrait Line; and this, tho the Motions be neither at right Angles one to another, nor equally ſwift, nor (each to its ſelf) equable; provided that they be but ſimilar; that is, both accelerated and retarded alike.

Thus, if the Point *a*, (Tab. *Mechanics*, Fig. 4.) be impell'd equally with two Forces; *viz.* upwards towards *b*, and forwards towards *d*; 'Tis plain, that when it is gone forwards as far as *a e*, it muſt of neceſſity be gone upwards as far as *e e*; ſo that were the Motions both equable, it would always go on in the Diagonal *a e c*.

Nay, ſuppoſe the Motions unequal as to Celerity, ſo *v. g.* as that it move twice as faſt upwards as forwards, &c. yet ſtill it muſt go on in the Diagonal *a c*; becauſe the Triangles *a e e*, *a e c*, &c. and *a c d* will ſtill be ſimilar, being as the Motions are.

But, if the Motions be diſſimilar, then the compound Motion muſt be a Curve. See CIRCULAR *Motion*.

Thus, if a Body, as *b*, (Fig. 5.) be impell'd or drawn by three different Forces, in the three different Directions *b a*, *b c*, and *b d*, ſo that it yields to none of them, but continues *in Æquilibrio*: then will thoſe three Powers or Forces be to one another, as three right Lines drawn parallel to thoſe Lines, expreſſing the three different Directions, and terminated by their mutual Concourſes.

Let *b e* repreſent the Force by which the Body *b* is impell'd from *b* to *a*, then will the ſame right Line *b e*, repreſent alſo the contrary equal Force, by which it is impell'd from *b* to *e*; but by what hath been ſaid before, the Force *b e* is reſolvable into the two Forces acting according to the two Directions *b d* and *b c*, to which the other impelling from *b* to *e*, is as *b e* to *b d*, and *b c* or *d e*, reſpectively.

So likewiſe two Forces, acting without the Directions *b d*, *b c*, and being equipollent to the Force acting without the Direction *b e*, from *b* to *e*; will be to the Force acting according to the Direction *b e*, from *b* to *e*, as *b d*, *b c*, to *b d*: and therefore, the Forces acting in the Directions *b d*, *b c*, and equipollent to the Force acting in the Directions *b e*, are to the Force acting in the Direction, as *b d*, *b c*, or *d c* to *b e*: That is, if a Body be urg'd by three different equipollent Powers in the Directions *b a*, *b d*, and *b c*; theſe three Forces ſhall be to one another as *b e*, *b d*, and *d e*, reſpectively. *Q. E. D.*

This Theorem, with its Corollaries, Dr. *Keil* obſerves, is the Foundation of all the new Mechanicks of M. *Varignon*: By help hereof, may the Force of the Muſcles be computed, and moſt of the mechanick Theorems in *Borelli*, *de Motu Animalium*, be immediately deduced.

COMPOSITION *of Proportion*, ſignifies the comparing of the Sums of the Antecedent and Conſequent, with the Conſequent in two equal Ratios. See RATIO; ſee alſo COMPOUND *Ratio*.

Suppoſe 4 : 8 : : 3 : 6; by *Compoſition of Proportion* we ſay, 12 is to 8 : as 9 to 6.

There is, however, a great difference between *Compoſition of Proportion* by *Addition*, and by *Multiplication*: the Inſtance above is of *Compoſition* by *Addition*. If it had been 4 × 8, it would have been *Compoſition* by *Multiplication*.

In a word, *Compoſition of Proportion* by Addition, is by Addition of the Indices of the Ratios; but by Multiplication, it is when the Ratios are multiplied into one another.

COMPOSITION, in Pharmacy, the Art, or Act of mixing many Ingredients together into a Medicine; ſo as they may aſſiſt each other's Virtues, ſupply each others Defects, or correct any ill Qualities thereof. See PHARMACY.

COMPOSITION, in Printing, ordinarily call'd *Compoſing*, is the arranging of ſeveral Types, or Letters in the Compoſing-Stick, in order to form a Line; and of ſeveral Lines rang'd in order in the Galley, to make a Page; and of ſeveral of thoſe to make a Form. See PRINTING, PAGE, FORM, &c.

The Compoſing-Stick is made of Iron generally, ſometimes Braſs, or Wood; of more or leſs length and depth, according to the Page to be compos'd, or the Compoſer's Fancy: It hath two ſliding Pieces, to be faſten'd by means of a Nut and Screw, which are ſlipp'd forwards or backwards, at the Pleaſure of the Compoſitor, and according to the Space which the Lines, Notes, &c. are to take up.

The *Compoſing-Stick* ordinarily contains ſeven or eight Lines of a middle-ſiz'd Letter; which, when ſet, are taken out, by help of a thin ſlip of Braſs, term'd a Rule, and diſpos'd in the Galley; and others compos'd, till a Page be form'd. The Page being compos'd, is ty'd up, and ſet by; and the reſt of the Pages of the Sheet prepar'd in the ſame manner: When done, they are carry'd to the Impoſing or Correcting-Stone; there rang'd in order, and diſpos'd in a Chaſe, or Iron Frame, fitted with wooden Furniture; then, the Quoins being ſtruck in, 'tis carried to the Preſs to be printed. See PRESS, CASE, CHASE, &c.

COMPOSITION, in Commerce, a Contract between an insolvent Debtor and his Creditors; whereby the latter agree to accept of a Part of the Debt, in compensation for the Whole, and give a general Acquittance accordingly.

COMPOSSIBLES, *Compossibilia*, in Logick, such Things as are compatible, or capable of subsisting together.

COMPOST, in Agriculture and Gardening, a Compound, or Mixture of Earths, Dungs, &c. applied, by way of Manure, for the meliorating and improving of Soils, and assisting the natural Earth in the Work of Vegetation. See MANURE.

The Gardeners have Magazines, or Laystalls of *Composts*, adapted to the different sorts of Soil. Light loose Land requires a *Compost* of a heavy Nature; such as the scouring of Ditches, Ponds, &c. mix'd with Earth, Dung, &c. A heavy, clayey, or cloddy Land requires a *Compost* of a more sprightly and active Kind, to insinuate into the heavy, lumpy Clods; as Dungs, Sand, Ashes, and natural Mould.

Mr. *Bradley* prescribes seven different sorts of *Composts*, to forward the growth of Trees; *viz.* a quantity of stiff Soil, broke, and mix'd with sharp Sand, and Ashes of burnt Furzes, Weeds, &c. or stiff Soil with Sand and burnt Grass-turf, and rotten Wood; or stiff Soil with Sand and Rape-seed, after the Oil is press'd out, with burnt Turf; or stiff Soil with Sand and Malt-grains; or Sheeps Dung, with Wood Ashes and Loam, or Mother Earth. See SOIL.

The same Author recommends a Mixture or Preparation of Soils answering to Loam, or Mother Earth, as preferable for planting or sowing Forest-Trees in, to any of these richer *Composts*; which, tho they hasten the Growth of the Tree, will not make the Timber near so firm and durable. See TIMBER.

COMPOUND, the Result or Effect of a Composition of different Things; or that which arises therefrom. See COMPOSITION.

Strictly speaking, every new *Composition* does not produce a new natural *Compound*; but only that from which a new Essence arises. Thus, when one drop of Water is added to another, there does not arise a new physical *Compound*; the Essence being the same now, as before the Union.

COMPOUND *Flowers*, call'd also *Composite*, and *Aggregate*; are such as consist of many little Flowers, concurring to make up one whole one; each of which hath its Style, Stamina, and adhering Seed, but are all contained within one and the same Calyx, or Perianthium. See FLOWER.

This *compounded* Flower distinguishes a large Genus of Plants, which Mr. *Ray* divides thus:

Herbs of *compounded* or *aggregated* Flowers, are,

1st, Such as have a plain-leav'd Flower naturally, and for the most part full; and having their whole Body milky, (yielding a milky Juice on cutting them;) and these have their Seeds,

First, *Pappous*, or *Winged*; that is, having a little Lanugo adhering to each Seed, by which the Wind can easily carry it from place to place: Such as the *Lactuca*, *Tragopogon*, *Scorzonera*, *Dens Leonis*, *Hieracium*, and the *Piloſella*.

Secondly, Such as have a solid Seed, without any *Pappus* or Down upon them; as the *Eringium Luteum*, *Cichorium*, *Lampsana*.

2d, Such as have a *discous* Flower; *i. e.* one composed of many short, thick, compressed, small *Flosculi* (which some, by mistake, call *Stamina*) set together, so as to make one flat, or hollowish Superficies: And these are also either such as have their Seeds,

First, *Pappous*, as the *Tussilago*, *Petasites*, *Carlina*, *Helenium*, *Doronicum*, *Conyza*, *Aster*, *Virga Aurea*, *Jacobæa*, *Stœchas Citrini*, *Jacea*, *Senecio*, *Eupatorium Avicennæ*, *Cacalia Valgaris*, *Gnaphalium Maritimum*, and *Monspelienſium*.

Secondly, Such whose Seeds are solid, and not pappous; as the Corymbiferous Herbs.

COMPOUND *Motion*, that effected by several conspiring Powers. See POWER.

Now, Powers are said to conspire, if the Direction of the one ben't directly opposite to that of the other; as when the Radius of a Circle is conceiv'd to revolve about a Centre; and at the same time a Point to move strait along it.

All curvilinear Motion is *compound*.

'Tis a popular Theorem, in Mechanicks, that in an uniform *compound* Motion, the Velocity produc'd by the conspiring Powers, is to that of either of the Powers separately, as the Diagonal of a Parallelogram, according to the Direction of whose Sides, they act separately; to either of the Sides. See MOTION, and DIAGONAL.

COMPOUND *Pendulum*, in Mechanicks, that which consists of several Weights constantly keeping the same Distance, both from each other, and from the Centre about which they oscillate. See PENDULUM.

COMPOUND *Ratio*, or *Proportion*. A Proportion is said to be *compounded* of two or more others, which the *Factum* of two or more Antecedents of Ratios has to the *Factum* of their Consequents: Thus, 6 to 72 is in a Ratio *compounded* of 2 to 6, and 3 to 12. See PROPORTION.

COMPOUND *Quantities*, in Algebra, are such as are connected together by the Signs + and −; and are express'd by the same Letters equally or unequally repeated: Thus, $a+b-c$, and $bb-b$ are *compound Quantities*. See QUANTITY.

COMPOUND *Numbers*, are those which may be measur'd, or exactly divided, by some other Number beside Unity. See NUMBER.

Such is 15; which is measured by 3 and also by 5.

COMPOUND *Interest*, call'd also *Interest upon Interest*, is that which is reckon'd not only upon the Principal, but upon the Interest it self forborn; which hereby becomes a sort of secondary Principal. See INTEREST.

COMPOUND *Machine*. See MACHINE.

COMPOUND *Rule of Three*. See RULE *of Three*.

COMPREHENSION, in Metaphysicks, the Act of the Mind, whereby it apprehends or knows any Object presented to it, on all the Sides whereon it is capable of being apprehended, or known. See APPREHENSION, and KNOWLEDGE.

To comprehend a thing, is defined by the Schoolmen, *rem aliquam totam & totaliter cognoscere*: And, in this Sense, 'tis a popular Point of Controversy among the School-Divines, *whether the Blessed in Heaven* comprehend *God*? The more Orthodox maintain the Negative, by reason such Knowledge must be infinite.

COMPREHENSION, in Rhetorick, a Trope, or Figure whereby the Name of a Whole is put for a Part; or that of a Part for a Whole: or a definite number of any Thing for an indefinite. See METONYMIA.

COMPRESS, in Chirurgery, a *Bolster* of linen Cloth, folded in several Doubles, and laid under the Bandages, to prevent a Wound from bleeding or swelling; or to retain the Medicines applied thereto. See WOUND.

Scultetus, in his *Arsenal of Chirurgery*, observes, that the Antients compos'd their *Compresses* of carded Flax, or of Feathers, sew'd between two Linens; and called them *Pillows*, or *Plumages*.

The Word comes from *Comprimere*, to press hard.

COMPRESSION, the Act of pressing or squeezing something, so as to set its Parts nearer each other, and make it possess less space. See PRESSION.

Compression differs from *Condensation*, in that the latter is perform'd by the Action of Cold, the former by some external Violence. See CONDENSATION.

Thus, we say, that Pumps, which the Antients imagin'd to act by Suction, do, in reality, act by *Compression*; the *Embolus*, or Sucker, in going and returning in the narrow Pipe, *compresses* the Air inclos'd therein, so as to enable it by the Force of its Elasticity to raise the Valve, and make its escape: upon which, the Balance being destroy'd, the Pressure of the Atmosphere on the stagnant Surface, drives up the Water into the Pipe thus evacuated of its Air. See PUMP.

Water is incapable of *Compression*; after the Air has been purg'd out of it, no Art or Violence is able to bring its Parts closer, or make it take up less compass. In an Experiment made by the Academy *de el Cimento*, Water, when violently squeez'd, made its way thro' the infinitely fine Pores of a Ball of Gold, rather than undergo *Compression*. See WATER.

The COMPRESSION *of the Air*, by its own weight, is surprizingly great: It appears, by Calculation, that the common Air we breathe, near the Surface of the Earth, is *compress'd* by the Weight of the super-incumbent Atmosphere, into $\frac{1}{13789}$ part of the space it would take up were it at liberty. See ATMOSPHERE.

But the Air may be still further *compress'd* by Art; and it appears from Mr. *Boyle*'s Experiments, that the Space which the Air takes up, when at its utmost Dilatation, is to that it takes up when most *compress'd*, as five hundred and fifty thousand to one. See AIR.

This immense *Compression* and Dilatation, Sir *Isaac Newton* observes, cannot be accounted for from supposing the Particles of the Air elastick and branched, or in form of slender Twigs interwoven into Circles; nor any other way, but by a repelling Force, wherewith they are endued; by virtue whereof, when at liberty, they mutually fly each other. See ATTRACTION.

This repelling Power, he adds, is stronger and more sensible in Air, than in other Bodies; in regard Air is generated out of very fix'd Bodies, but not without great difficulty, and the help of Fermentation: Now those Particles always recede from each other with the greatest violence, and are *compress'd* with the greatest difficulty, which, when contiguous, cohere the most strongly. See LIGHT.

That there is such a *repelling Power*, appears from this; that Flies walk on the Water without wetting their Feet; that the Object-Glasses of Telescopes laid on each other do not touch; that dry Dust is not brought to touch or cohere

without difficulty, *v. g.* unleſs either liquify'd by Fire, or wet with Water; and that two poliſh'd Pieces of Marble, which as often as they touch cohere, are yet very hardly preſs'd ſo cloſely and join'd ſo aptly as to cohere. See REPELLING *Force*; ſee alſo COHESION, DILATATION, *&c.*

COMPROMISE, an *Arbitration*, or a Treaty, or Contract, whereby two contending Parties eſtabliſh one or more *Arbitrators*, to judge of and terminate their Differences in an amicable way. See ARBITRATOR.

The regular way of appointing a *Compromiſe*, is by a Writing, expreſſing the Names of the Arbitrators, the Power of chuſing a Super-Arbitrator in caſe of need, a Time limited for the Arbitrage, and a Penalty on the Party who does not abide by the Deciſion.

By the Civil Law, a Slave cannot make a *Compromiſe* without the Leave of his Maſter, nor a Pupil without the Authority of his Guardian, or a Wife without that of her Husband. So a Slave, a deaf or dumb Man, a Minor, and the Perſon who is a Party in the Cauſe, are incapable of being choſen Arbitrators in a *Compromiſe*.

The Occaſions on which a *Compromiſe* is not allow'd of, are Reſtitutions, Marriage Cauſes, Criminal Affairs, Queſtions of State; and, generally, any thing wherein the publick Intereſt is more concern'd than that of private Perſons.

In our Law, *Compromiſe* is not of ſo much extent: *Weſt* defines it the Faculty, or Power of pronouncing Sentence between Perſons at Controverſy, given to Arbitrators by the Parties mutual private Conſent, without publick Authority.

The Word is alſo uſed in Beneficiary Matters; where it ſignifies an Act, whereby thoſe who have the Right of Election, transfer it to one or more Perſons, to elect a Perſon capable of the Office or Dignity.

Thus, we have ſeen Members of Parliament elected by *Compromiſe*; when the Electors, not being able to agree among themſelves, give the Power of electing, at leaſt of nominating, to two Perſons; obliging them by Oath, or otherwiſe, to chuſe ſuch as they think the moſt capable, and beſt diſpos'd.

COMPTING, or COUNTING-*Houſe*, an Office in the Houſhold, under the Direction of the Lord Steward; ſo called, becauſe the Accompts for all Expences of the King's Houſhold are there taken daily, by the Lord Steward, Comptroller, Cofferer, Maſter of the Houſhold, the two Clerks of the Green-Cloth, and the two Clerks Comptrollers. See HOUSHOLD.

They alſo make Proviſion for the Houſhold, and make Payments, and Orders for the good Government thereof.

In the *Compting-Houſe* is the Board of *Green-Cloth*. See GREEN-*Cloth*.

COMPULSOR, an Officer under the *Roman* Emperors, diſpatch'd from Court into the Provinces, to force the Payments of Taxes, *&c.* not pay'd within the time preſcrib'd.

Theſe were charg'd with ſo many Exactions, under Colour of their Office, that *Honorius* caſhier'd 'em by a Law in 412.

The Laws of the *Viſigoths* mention Military *Compulſors*; which were Officers among the *Goths*, whoſe Buſineſs was to oblige the tardy Soldiers to go into the Fight, to run to an Attack, *&c.*

Caſſian mentions a kind of Monaſtick *Compulſors*, whoſe Buſineſs was to declare the Hours of Canonical Office, and to take care the Monks went to Church at thoſe Hours.

The Word is *Latin*, form'd of the Verb *Compellere*, to oblige, conſtrain.

COMPUNCTION, in Theology, an inward Grief in the Mind, for having offended God. See REPENTANCE.

The *Romaniſts* own their Confeſſion inſignificant, unleſs attended with *Compunction*, or pricking of Heart. See CONFESSION.

Among Spiritualiſts, *Compunction* carries a more extenſive Signification; and implies not only a Grief for having offended God, but alſo a pious Senſation of Grief, Sorrow, and Diſpleaſure on other Motives. Thus, the Miſeries of Life, the Danger of being loſt in the World, the Blindneſs of the Wicked, *&c.* are to pious People Motives of *Compunction*.

The Word comes from *pungere*, *compungere*, to prick.

COMPURGATOR, in Law, one that by Oath juſtifies or clears another's Innocence. See LAW, and OATH.

COMPUTATION, or *Supputation*, the manner of accounting and eſtimating Time, Weights, Meaſures, and Monies. See TIME, WEIGHT, MEASURE, MONEY, *&c.*

The Word is ſometimes alſo uſed among Mathematicians in the like Senſe as *Calculation*. See CALCULATION.

COMPUTATION is particularly uſed in Law, in reſpect of the true Account or Conſtruction of Time, ſo underſtood, as that neither Party do wrong to the other, nor the Determination of Time be left at large; ſo as to be taken otherwiſe than according to the Judgment and Intention of Law.

If Indentures of Demiſe be ingroſſed, bearing Date 11 *May* 1679, to have and to hold the Land in *S.* for three Years from henceforth; and the Indentures be deliver'd the 4th of *June* following: In this Caſe, *from henceforth* ſhall be accounted from the Day of the Delivery, and not from the Date. And if the Indenture be deliver'd at four of the Clock in the Afternoon, the ſaid 4th of *June*, the Leaſe ſhall end the third Day of *June* in the third Year: the Law, in ſuch *Computation*, rejecting all Fractions or Diviſions of the Day, on account of that uncertainty which is the Mother of Contention.——In Writings order'd by the Stat. 27 *Hen.* VIII. to be inroll'd within ſix Months; if ſuch Writings have Date, the ſix Months ſhall be accounted from the Date, and not from the Delivery: If they want Date, it ſhall be accounted from the Delivery. *Coke*, Lib. V.

If a Deed be ſhew'd to a Court at *Weſtminſter*, it ſhall remain in Court (by Judgment of Law) all the Term in which it is ſhew'd: for all the Term is but as one Day in Law. *Coke* Ibid.——If a Church be void, and the Patron does not preſent within ſix Months, the Biſhop of the Dioceſs may collate his Chaplain: But theſe *ſix Months* ſhall be *computed* according to twenty eight Days of the Month; and not according to the Calendar. See CALENDAR.

COMPUTO, a Writ, thus called from its Effect, which is to compel a Bailiff, Chamberlain, or Receiver to yield his Accompts.

The ſame lyes for Executors of Executors; and againſt the Guardian in Soccage, for Waſte made in the Minority of the Heir.

CONARION, or CONOIDES, called alſo *Glandula Pinealis*, is a ſmall Gland, about the bigneſs of a Pea, placed in the upper Part of that Hole in the third Ventricle of the Brain, called the *Anus*; and ty'd by ſome Fibres to the *Nates*. See GLAND, BRAIN, ANUS, and NATES.

It is compoſed of the ſame Subſtance as the reſt of the Brain; and has this peculiar, that it is ſingle; whereas all the other Parts are double: Hence, *Des Cartes* takes occaſion to ſuppoſe it the immediate Place, or Seat of the Soul. See PINEAL *Gland*, SENSORY, *&c.*

CONATUS, *Endeavour*, a Term frequently uſed in Philoſophical and Mathematical Writers; and ſometimes alſo called *Niſus*.

The *Conatus* ſeems to be the ſame, with reſpect to Motion, that a Point is with reſpect to a Line; at leaſt, the two have this in common, that as the Point is inceptive of the Line, or the Term from which it commences; ſo is the beginning of all Motion call'd the *Conatus*. Add, that as in Mathematical Demonſtrations, the Extenſion of the Point is conceiv'd as if it were nothing at all; ſo, in the *Conatus* of Motion, there is no regard to the Time wherein, or the length which it advances. See *Laws of* NATURE.

Hence, ſome define a *Conatus* to be a quantity of Motion, not capable of being expreſs'd by any time or length.—Accordingly, all Motion tends preciſely the ſame way wherein the moveable is acted on, or determined by the moving Power. See MOTION.

CONCATENATION, in Philoſophy, the connecting of Things, in manner of a *Chain*, *Catena*.

The *Concatenation* of Second Cauſes, is an Effect of Providence. See SECOND CAUSE, PROVIDENCE, *&c.*

CONCAVE, is applied to the inner Surface of a hollow Body; eſpecially if it be circular. See CONVEX.

Concave is particularly underſtood of Mirrors and Lenſes: *Concave* Lenſes, are either *concave* on both Sides, called *Concavo-Concave*; or *concave* on one ſide, and Plane on the other, called *Plano-Concave*; or *Concave* on one ſide, and convex on the other, call'd *Concavo-Convex*, or *Convexo-Concave*, as the one or the other Surface is a Portion of a leſs Sphere.

The Properties of all *concave* Lenſes are, that the Rays of Light, in paſſing thro' them are deflected, or made to recede from one another; as in *convex* Lenſes they are inflected towards each other; and that the more, as the *Concavity* or *Convexity* are Portions of leſs Circles. See LENS.

Hence, parallel Rays, as thoſe of the Sun, by paſſing thro' a *concave* Lens, become diverging; diverging Rays are made to diverge the more, and converging Rays either made to converge leſs, or become parallel, or go out diverging. See RAY.

Hence, Objects view'd thro' *concave* Lenſes, appear diminiſh'd; and the more ſo, as they are Portions of leſs Spheres; and this in oblique, as well as in direct Rays. See REFRACTION.

Concave Mirrors have the contrary Effect to Lenſes: They reflect the Rays which fall on 'em, ſo, as to make them approach more to, or recede leſs from each other than before; and that the more as the *Concavity* is greater, or the Spheres whereof they are Segments, leſs. See MIRROR.

Hence, *Concave* Mirrors magnify Objects preſented to them; and that in a greater proportion, as they are Portions of greater Spheres. See REFLECTION, MICROSCOPE, *&c.*

Hence alſo, *Concavé* Mirrors have the Effect of burning Objects, when plac'd in their *Focus*. See BURNING *Glaſs*.

CONCEALERS, in Law, ſuch as find out *conceal'd* Lands, *i. e.* Lands kept privily from the King, by common Perſons

Perſons ; having nothing to ſhew for their Title, or Eſtate therein.

They are thus called *per Antiphraſin, à concelando* ; as *Mons* is *à movendo*, &c. My Lord *Coke* calls 'em *turbidum hominum genus.*

CONCENTRATION, the retiring, or withdrawing of a thing inwards ; or driving toward the *Centre*, the Middle.

Thus, external Cold is ſaid to *concentrate* the Heat within Bodies. After Meals, the natural Warmth retires, and as it were *concentrates*, to promote the Digeſtion. See HEAT, and COLD.

CONCENTRATION is alſo uſed by Dr. *Grew* for the higheſt degree of Mixtion, *viz.* that wherein two or more Atoms or Particles touch, by a Reception, and Intruſion of the one within the other. See MIXTION.

This he takes to be the Caſe of all Fix'd Bodies without Taſte or Smell ; their Conſtitution being ſo firm, that till the Particles be detach'd from each other by ſome extraordinary means, they cannot affect thoſe Senſes. See SMELL, and TASTE.

CONCENTRIC, in Geometry and Aſtronomy, ſomething that has the ſame common Centre with another. See CENTRE.

The Word is principally uſed in ſpeaking of round Bodies, and Figures, *viz.* Circular, Elliptical ones, *&c.* but may be likewiſe uſed for Polygons, drawn parallel to each other, upon the ſame Centre. See CIRCLE, POLYGON, *&c.*

Concentric ſtands oppoſed to *excentric*. See ECCENTRIC, and ECCENTRICITY.

CONCEPTION, in Logicks, the ſimple Apprehenſion, Perception, or Idea which we have of any Thing, without proceeding to affirm or deny any thing about it. See PERCEPTION.

The Schoolmen uſually make two Kinds of *Conception* ; the one *formal*, the other *objective*.

The *firſt* is defined the immediate and actual Repreſentation of any thing propoſed, to the Mind ; on which footing, it ſhould be the ſame thing to the Underſtanding, that a Word or Voice is to the Ear: whence ſome call it *Verbum Mentis*. See NOTION.

The *ſecond* is the Thing it ſelf repreſented by a formal *Conception*. But others explode the Notion of an *objective Conception*, as being, in reality, no *Conception* at all ; excepting where the Mind contemplates its own Acts, *&c.*

Formal, or *proper Conceptions*, are ſubdivided into *Univocal*, where ſeveral Things are diſtinctly repreſented as under ſome common Ratio, or in the ſame degree of Perfection ; *Analogous*, where ſeveral Things are repreſented as under ſome proportional Likeneſs ; and *Equivocal*, where they are repreſented immediately as ſuch, without regard to any common Ratio or Likeneſs.

CONCEPTION, in Medicine, the firſt Formation of the Embryo, or *Fœtus*, in the Womb. See FOETUS, and EMBRYO.

Conception is no other than ſuch a Concourſe and Commixture of the prolific Seed of the Male, with that of the Female, in the *Cavity* of the *Uterus*, as immediately produces an Embryo. See EMBRYO.

The Symptoms of *Conception*, or Pregnancy, are, when in a few Days after the Conjugal Act, a ſmall Pain is perceiv'd about the Navel, attended with ſome gentle Commotions in the bottom of the Abdomen ; and within one, two, three, or even four Months, the Menſes ceaſe to flow, or prove in leſs quantity than uſual. Upon the firſt Failure of this kind, the Woman begins to count the Series of her Weeks, without taking any notice of the Time before elapſed: After this, or between the ſecond and third Months, but generally about the third, the Motions of the Embryo become perceivable to the Mother ; who hereupon becomes troubled with a *Nauſea*, Vomiting, Loathing, Longing, *&c.* About this time, the Breaſts begin to ſwell, grow hard and painful, and contain a little Milk ; the Nipples alſo become larger, firmer, and darker colour'd, a livid Circle appearing around 'em : The Eyes ſeem ſunk and hollow. During the two firſt Months pregnancy, the Woman grows thinner, and ſlenderer ; the Abdomen being alſo depreſs'd ; tho it afterwards diſtends, and grows gradually larger. See GESTATION.

The Manner wherein Conception is effected, is thus laid down by the modern Writers: In the Superficies of the *Ovaries* of Women, are found little pellucid Spherules, conſiſting of two concentric Membranes, fill'd with a lymphatic Humour, and connected to the Surface of the *Ovaria*, underneath the Tegument, by a thick Calix, contiguous to the Extremities of the minute Ramifications of the Fallopian Tubes. See OVARY.

Theſe Spherules, by the uſe of Venery, grow, ſwell, raiſe, and dilate the Membrane of the Ovary into the form of *Papillæ* ; till, the Head propending from the Stalk, it is at length ſeparated from it ; leaving behind it a hollow Cicatrix, in the broken Membrane of the Ovary ; which, however ſoon grows up again.

Now, in theſe Spherules, while ſtill adhering to the Ovary, *Fœtus*'s have been frequently found : whence it appears, that theſe are a kind of *Ova*, or *Eggs*, deriving their Structure from the Veſſels of the Ovary, and their Liquor from the Humours prepar'd therein. See EGG.

Hence, alſo, it appears, that the Fallopian Tubes being ſwell'd, and ſtiffen'd by the Act of Venery, with their muſcular *Fimbriæ*, like Fingers, may embrace the Ovaries, compreſs 'em, and by that Compreſſion expand their own Mouths : And thus the Eggs, now mature, and detach'd as before, may be forced into their Cavities ; and thence convey'd into the Cavity of the *Uterus* ; where they may either be cheriſh'd and retain'd, as when they meet with the Male Seed ; or, if they want that, again expell'd. See FALLOPIAN *Tube*.

Hence the Phænomena of *falſe Conceptions*, *Abortion*, *Fœtus*'s found in the Cavity of the Abdomen, the Fallopian Tubes, *&c.* See ABORTION, *&c.*

For, in Coition, the Male Seed, abounding with living *Animalculas*, agitated with a great Force, a briſk Heat, and, probably, with a great quantity of Animal Spirits, is violently impell'd thro' the Mouth of the *Uterus*, which on this occaſion is opener ; and thro' the Valves of the Neck of the *Uterus*, which on this occaſion are laxer than ordinary, into the *Uterus* it ſelf ; which now, in like manner, becomes more active, turgid, hot, inflam'd, moiſten'd with the Flux of its Lymph and Spirits, by means of the Titillation excited in the nervous *Papillæ* by the Attrition againſt the *Rugæ* of the *Vagina*. See SEED.

The Semen thus diſpos'd in the *Uterus*, is retain'd, heated, agitated by the convulſive Conſtriction of the *Uterus* it ſelf ; till meeting with the *Ova*, the fineſt and moſt animated Part enters thro' the dilated Pores of the *Membranula* of the *Ovum*, now become glandulous, is there retain'd, nouriſh'd, dilated, grows to its *Umbilicus*, or Navel ; ſtifles the other leſs lively *Animalculas :* and thus is *Conception* effected.

Hence, it appears, that *Conception* may happen in any Part where the Semen meets with an *Ovum :* Thus, whether it be carried thro' the Fallopian Tube to the Ovary, and there caſt upon the *Ovum* ; or whether it meet in ſome Receſs of the Tube it ſelf ; or, laſtly, whether it join it in the Cavity of the *Uterus*, it may ſtill have the ſame Effect ; as it appears from Obſervation it actually has. But 'tis probable that *Conception* is then moſt perfect, when the two, *viz.* the *Semen* and *Ovum*, are carried at the ſame time into the *Uterus*, and there mix'd, *&c.*

Other Anatomiſts chuſe to ſuppoſe the Male Seed taken up, ere it arrive in the *Uterus*, by the Veins which open into the *Vagina*, &c. and thus mix'd with the Blood ; by which, in the Courſe of Circulation, it is carried, duly prepared, into the Ovary, to impregnate the Eggs. See GENERATION.

For the Progreſs of the Fœtus *after* Conception, ſee NUTRITION, CIRCULATION, *&c.* ſee alſo UTERUS, UMBILICAL *Veſſels*, &c.

CONCEPTION *Immaculate* of the Holy Virgin, is a Feaſt in honour of the Holy Virgin ; particularly with regard to her having been conceiv'd and born *Immaculate*, *i. e.* without Original Sin ; held in the *Romiſh* Church on the 8th of *December*. *Allatius*, in his *Prologomena* on *Damaſcenus*, endeavours to prove this Feaſt to have been celebrated by ſeveral Churches in the *Eaſt*, as early as the VIIIth Century. See FEAST.

The *Immaculate Conception* is the great Head of Controverſy between the *Scotiſts* and *Thomiſts* ; the former maintaining, and the latter impugning it. See SCOTIST, and THOMIST.

The *Jacobins* eſpous'd the Party of S. *Thomas*, and held out a long time, in defence of the Virgin's being conceiv'd in Original Sin : They were condemn'd by Pope *Clement* VII. in 1308, at the Proſecution of the Univerſity of *Paris*, and oblig'd to retract.

The Council of *Trent*, Seſſ. V. in the Decree of *Original Sin*, declares it not to be the Intention of the Council to include the Virgin under it ; Her *Conception* it calls *Immaculate* ; and appoints the Conſtitutions of *Sixtus* IV. to be obſerv'd with regard thereto.

Some Authors have obſerv'd ſeveral Paſſages diſpers'd in the old Editions of S. *Thomas*'s Works, which aſſert the *Immaculate Conception* in expreſs Terms ; but many of them are corrupted in the later Editions, ſay ſome : tho others will have the Corruption lie on the ſide of the old ones.

In the three *Spaniſh* Military Orders of *S. James of the Sword*, *Calatrava*, and *Alcantara* ; the Knights take a Vow, at their Admiſſion, to defend the *Immaculate Conception*. This Reſolution was firſt taken in 1652. See CALATRAVA, *&c.*

Peter d'Alva, and *Aſtorga*, have publiſh'd 48 huge Volumes in Folio on the Myſteries of the *Conception*.

For Religious of the Order of the CONCEPTION, ſee THEATINES.

CONCERT, or CONCERTO, popularly CONSORT, a Number, or Company of Muſicians playing, or ſinging the ſame Song, or piece of Muſick together. See MUSICK.

The Word *Concert* may be applied where the Muſick is only Melody, *i. e.* the Performers are all in Uniſon; but it is more properly, as well as more uſually underſtood of Harmony, or where the Muſick conſiſts of divers Parts; as Baſs, Tenor, &c. See MELODY, HARMONY, PART, &c.

CONCESSI, a Term much uſed in Conveyances, &c. its Effect is to create a Covenant, as *Dedi* does a Warranty. See COVENANT.

CONCESSION, in Rhetorick, a Figure whereby ſomething is granted, or allow'd the Adverſary, either to prevent being detain'd by unneceſſary Incidents, or to make ſome Advantage of. *I will not conteſt with you the Reality of the Contract; what I plead for is relief againſt the Injuſtice of it.——True, ſhe is fair, but ought ſhe not to ſhew her Acknowledgments to Heaven for the Favour, by making a virtuous uſe of her Beauty?*

CONCHA, *Shell*, in Anatomy, a Name given the ſecond, or inward Cavity of the Auricle, or external Ear; reaching to the Entrance of the Auditory Duct. See EAR, and AURICLE.

Some alſo give the ſame Name to the firſt Cavity of the inward Ear, which others call the *Drum*; and others to the *Veſtibulum* of the Labyrinth, which is the ſecond Cavity of the internal Ear. See TYMPANUM, and VESTIBULUM.

The Name has its Origin from a reſemblance theſe Cavities bear to a *Concha*, or *Sea-ſhell*.

CONCHILIS, or CONCHOID, in Geometry, a Curve Line, which always approaches nearer a ſtrait Line to which it is inclined, but never meets it. See CURVE.

It is deſcrib'd thus: Draw a right Line B D, (Plate *Analyticks*, Fig. 1.) and another A C, perpendicular to it in E; draw any Number of right Lines, as C M, C M cutting B D in Q; make Q M = Q N = A E = E E; the Curve wherein the Points M M are found, is the *Conchilis*, or *Conchois prima*; ſo called by its Inventor *Nicomedes*.

The others, wherein the Points N N are found, is the *Conchois ſecunda*; the right Line B D the *Rule*, the Point C the *Pole*.

The Inventor alſo contriv'd an Inſtrument, whereby the firſt *Conchois* may be deſcribed mechanically: Thus, in the Rule A D, (Plate *Analyticks*, Fig. 2.) is a Channel or Groove cut, ſo as a ſmooth Nail, firmly fix'd in the moveable Rule C B, in the Point F, may ſlide freely within it: Into the Rule E G is fix'd another Nail in K, for the moveable Rule C B to ſlide upon.

If then the Rule B C be ſo mov'd, as that the Nail F paſſes along the Canal A D; the Style, or Point in C, will deſcribe the firſt *Conchoid*.

Now let A P = x, (Fig. 1.) A E = a; P E = M R = $a - x$; wherefore, as x increaſes, $a - x$ or M R will decreaſe: and therefore the Curve continually approaches nearer to the Rule B D.

In the ſame manner it appears, that the right Line N O muſt continually decreaſe; and therefore, the ſecond *Conchoid*, alſo, muſt continually approach nearer the Rule.

But inaſmuch as between each *Conchoid* and the right Line B D, there will ſtill be the right Line Q M or Q N, equal to A E; neither of the *Conchoids* can concur with the right Line B D: conſequently, B is an Aſſymptote of each *Conchoid*. See ASSYMPTOTE.

There will be other Kinds of *Conchoids* produced, if C E: C Q:: Q M: A E, or indefinitely, if O E^m: C Q^m:: Q M^m: A E^m; wherefore, if C E = b, E A = a, C Q = x, Q M = y; then, $a^m b = x^m y$: and for infinite *Conchoids*, $a^m b^m = x^m y^m$.

CONCINNOUS *Intervals*, in Muſick. Diſcords are diſtinguiſh'd into *Concinnous* and *Inconcinnous* Intervals: The *Concinnous* are ſuch as are fit for Muſick, next to, and in Combination with Concords; being neither very agreeable nor diſagreeable in themſelves; but having a good Effect, as by their oppoſition they heighten the more eſſential Principles of Pleaſure; or as by their mixture and combination with 'em, they produce a Variety neceſſary to our being better pleaſed. See HARMONY.

The other Diſcords, that are never uſed in Muſick, are called *Inconcinnous*. See DISCORD.

Syſtems are alſo divided into *Concinnous* and *Inconcinnous*. A Syſtem is ſaid to be *concinnous*, or *concinnouſly* divided, when the Parts thereof, conſider'd as ſimple Intervals, are *concinnous*; and are, beſides, placed in ſuch an Order, between the Extremes, as that the Succeſſion of Sounds from one Extreme to the other, may have an agreeable Effect. See SYSTEM.

Where the ſimple Intervals are *inconcinnous*, or ill-diſpoſed between the Extremes, the Syſtem is ſaid to be *inconcinnous*.

CONCLAVE, an Aſſembly, or Meeting of all the Cardinals that are at *Rome*, for the Election of a Pope. See POPE, ELECTION, &c.

The *Conclave* had its riſe in the Year 1270, and on this occaſion: *Clement* IV. being dead at *Viterbo*, in 1268; the Cardinals were two Years without being able to agree on the Election of a Succeſſor: In effect, things were carried to that paſs, that they were upon the Point of breaking up, without coming to any Concluſion at all.

The Inhabitants of *Viterbo*, then, being appriz'd of their Deſign, by the Advice of S. *Bonaventure*, then at *Viterbo*, ſhut the Gates of their City, and lock'd up the Cardinals in the Pontifical Palace adjoining to the Cathedral, till they were brought to a better underſtanding.

Hence aroſe the Cuſtom which has ſince prevail'd, of ſhutting up the Cardinals in a ſingle Palace, till they have elected the Pope. Such was the Origin of the *Conclave*, as related by *Onuph. Panvinius*, *Ciaconius*, and *Papebroch*. See CARDINAL.

CONCLAVE is alſo uſed for the Place wherein the Election of the Pope is perform'd; which is, now, at St. *Peter's* in the Vatican; tho *Gregory* X. and *Clement* V. appointed it ſhould always be held in the Place where the laſt Pope ſhould die.

While the Affair is in hand, if it be in Winter, the Walls and Windows are all mured up, excepting a ſingle Pane, to give a little Light: In Summer the Windows are not cloſed; but the great Door of the Hall is ſecured with four Locks, and four Bolts; an Aperture being, however, left, to ſupply the impriſon'd Prelates with Victuals thro'.

In the Hall, which is very ample, there are Cells or Stalls erected for as many Cardinals as are to be preſent at the Election; the Cells being only ſeparated by Deal Boards.

The Cells are mark'd with Letters of the Alphabet, and are diſtributed to the Cardinals by Lot: Each Cardinal puts his Arms on the Cell that falls to his ſhare. See CELL.

After the Aſſembly has held three Days, they are only allow'd one Diſh for a Meal; after five Days, only Bread and Water: Tho this Rule is not over-religiouſly regarded.

Each Cardinal is allow'd two *Conclaviſts*, or Servants to attend him, and to be ſhut up with him.

Mathew Paris ſays, the Word *Conclave* antiently ſignify'd the Pope's Wardrobe.

'Tis a popular Proverb in *Italy*, *Chi entra Pape, eſce Cardinale*; He who enters Pope, comes out Cardinal; *q. d.* He who according to common Report will be elected Pope, ordinarily is not.

CONCLUSION, in Logick, the laſt Part of an Argument; or the Conſequence drawn from ſomething either aſſumed or proved before.

The *Concluſion* of an Argument contains two Parts; the *Conſequent*, which is the Matter of it; and the *Conſequence*, which is its Form; and which, of a ſimple abſolute Propoſition, renders the *Concluſion* relative to the Premiſes whence it is drawn. See CONSEQUENT.

The Queſtion, and *Concluſion*, ſay the Schoolmen, are the ſame Ideas, only conſider'd in different Views, or Relations: In the *Queſtion* they are conſider'd as doubtful; in the *Concluſion* as void of doubt.

CONCLUSION, in Oratory, conſiſts of two Parts; the *Recapitulation* or *Enumeration*, and the *Paſſions*. See RHETORICK.

The Recapitulation conſiſts in a Repetition of the principal Arguments. See RECAPITULATION; ſee alſo PASSION.

CONCOCTION, in Medicine, the Change which the Food undergoes in the Stomach, &c. to become Chyle. See CHYLIFICATION.

This Change conſiſts in deſtroying the Texture and Coheſion of the Parts of the Food; preparing part of it for ſome particular Service of the animal Frame, and the reſt to be carried off as Excrements, by proper Emunctories. See FOOD, EXCREMENT, &c.

The Antients gave the Term *Concoction*, to what we now ordinarily call *Digeſtion*; from a Notion of the Food's being, as it were, *boil'd* in the Stomach; and its nutritious Juice expreſs'd by the Heat of the adjacent Parts. See DIGESTION.

They aſſign'd two *Concoctions*, *viz.* one in the Stomach, and a ſecond in the ſmall Inteſtines, &c. which latter they attributed to the Admixture of the Bile and pancreatick Juice.

The ſeveral *Concoctions* in the Body, with regard to the Propagation of the Species, and the Preſervation of the Individual, have been ſince reduced to five; *Chyloſis* for Chyle, *Chymoſis* for Chyme, *Hematoſis* for Blood, *Pneumatoſis* for Spirits, and *Spermatoſis* for Seed. See CHYLOSIS, CHYMOSIS, HEMATOSIS, &c. ſee alſo COCTION.

CONCOMITANT, in Theology, ſomething that accompanies, or goes along with, another.

Concomitant Grace, is that which God affords us during the Courſe of our Actions to enable us to perform 'em; and as the *Romiſh* Schoolmen ſay, to render 'em meritorious. See GRACE.

Concomitant Grace differs, at leaſt with regard to its Effect, from preventing Grace: the latter is given us to prevent an Action, the former to accompany it.

According to the *Romiſh* Doctrine, the Blood of Jeſus Chriſt is under the Accidents of Bread, as his Body is under the Accidents of Wine, by *Concomitance*.

CONCORD, in Grammar, that part of Syntax, or Conſtruction, whereby the Words of a Sentence *agree* among themſelves, *i. e.* whereby Nouns are put in the ſame Caſe, Number, Gender, *&c.* and Verbs in the ſame Number and Perſon with Nouns and Pronouns. See SYNTAX.

The Rules of *Concord* are generally the ſame in all Languages, as being of the Nature of what is in uſe almoſt every where for the better diſtinguiſhing of Diſcourſe.

Thus, the Diſtinction of the two Numbers Singular and Plural, obliges us to make the Adjective agree with the Subſtantive in Number; that is, to put the one either in this or that Number, as the other is: For the Subſtantive being the Thing confuſedly, tho directly mark'd by the Adjective; if the Subſtantive Word mark ſeveral, there are ſeveral Subjects of the Form mark'd by the Adjective, and of conſequence it ſhould be in the Plural, *Homines Docti*, &c. See NUMBER.

Again, the Diſtinction of Maſculine and Feminine, renders it neceſſary to put the Subſtantive and Adjective in the ſame Degree. See DEGREE.

And Verbs ſhould have a *Concord* or Agreement with Nouns and Pronouns in Number and Perſon. See PERSON, PRONOUN, *&c.*

If any thing occur apparently contrary to thoſe Rules, 'tis by a Figure, *i. e.* ſomething is implied, or the Ideas are conſider'd more than the Words themſelves. See FIGURE.

CONCORD, in Law, is the Agreement between two Parties who intend the levying a Fine of Lands to one another, how and in what manner it ſhall paſs. See FINE.

CONCORD is alſo an Agreement made upon any Treſpaſs committed, (betwixt two, or more) and is divided into *Concord executory*, and *Concord executed*.

Plowden obſerves, that the firſt binds not, being imperfect; but the latter is perfect, and binds the Party.

Others are of Opinion, that *Concords executory* are perfect, and bind no leſs than thoſe *executed*.

CONCORD, in Muſick, is the Relation of two Sounds that are always agreeable to the Ear, whether applied in Succeſſion or Conſonance. See SOUND.

If two ſingle Sounds be in ſuch a Relation, or have ſuch a difference of Tune, as that being ſounded together, they make a Mixture, or compound Sound, which affects the Ear with pleaſure; that Relation is called *Concord*: and whatever two Sounds make an agreeable Compound in conſonance, thoſe ſame will always be pleaſing, in Succeſſion, or will follow each other agreeably. See TUNE.

The Reverſe of a *Concord*, is what we call a *Diſcord*; which is a Denomination of all the Relations or Differences of Tune that have a diſpleaſing Effect. See DISCORD.

Concord and Harmony are, in effect, the ſame thing; tho Cuſtom has applied them differently. As *Concord* expreſſes the agreeable Effect of two Sounds in Conſonance; ſo Harmony expreſſes that Agreement in a greater Number of Sounds in Conſonance: Add, that Harmony always implies Conſonance; but *Concord* is ſometimes applied to Succeſſion: tho never but when the Terms will make an agreeable Conſonance: whence it is that Dr. *Holder*, and ſome other Writers, uſe the Word *Conſonance* for what we call *Concord*. See CONSONANCE.

Uniſonance, then, being the Relation of Equality between the Tunes of two Sounds, all Uniſons are *Concords*, and in the firſt Degree: but an Interval being a Difference of Tune, or a Relation of Inequality between two Sounds, becomes a *Concord* or Diſcord, according to the Circumſtances of that particular Relation. Indeed, ſome reſtrain *Concord* to Intervals, and make a difference of Tune eſſential thereto; but that is precarious: and Mr. *Malcolm* thinks, that as the Word implies Agreement, 'tis applicable to Uniſon in the firſt degree. See UNISON.

'Tis not eaſy to aſſign the Reaſon or Foundation of *Concordance*: The differences of Tune, we have already obſerv'd, take their riſe from the different Proportions of the Vibrations of the ſonorous Body, *i. e.* of the Velocity of thoſe Vibrations in their recourſes; the frequenter thoſe recourſes are, the more acute being the Tune, and *vice verſa*. See GRAVITY, *&c.*

But the eſſential difference between *Concord* and Diſcord lies deeper: there does not appear any natural Aptitude in the two Sounds of a *Concord*, to determine it to give us a pleaſing Senſation, more than in the two Sounds of a Diſcord: Theſe different Effects are merely arbitrary, and muſt be reſolv'd into the divine good pleaſure. See SENSATION.

We know by experience what Proportions and Relations of Tune afford Pleaſure, what not; and we know alſo how to expreſs the Differences of Tune by the Proportion of Numbers; we know what it is pleaſes us, tho we don't know why: We know, *v. g.* that the Ratio of 1 : 2 conſtitutes *Concord*, and 6 : 7 Diſcord; but on what original Grounds agreeable or diſagreeable Ideas are connected with thoſe Relations, and the proper Influence of the one on the other, is above our reach.

By Experience, we know that the following Ratios of the Lengths of Chords are all *Concord*, *viz.* 2 : 1, 3 : 2, 4 : 3, 5 : 4, 6 : 5, 5 : 3, 8 : 5; that is, take any Chord for a Fundamental, which ſhall be repreſented by the Number 1, and the following Diviſions thereof will be all *Concord* with the whole, *viz.* $\frac{1}{2}\ \frac{2}{3}\ \frac{3}{4}\ \frac{4}{5}\ \frac{5}{3}\ \frac{3}{5}$ So that the diſtinguiſhing Character between *Concords* and Diſcords, muſt be look'd for in theſe Numbers, expreſſing the Intervals of Sound; not abſtractedly, and in themſelves, but as expreſſing the Number of Vibrations.

Now, Uniſons are in the firſt Degree of *Concord*, or have the moſt perfect Likeneſs or Agreement in Tune; and therefore have ſomething in 'em acceſſory to that Agreement, which is found, leſs or more, in every *Concord*: but 'tis not true, that the nearer two Sounds come to an Equality of Tune, the more Agreement they have; therefore, 'tis not in the Equality or Inequality of the Numbers that this Agreement lies.

Further, if we conſider the Number of Vibrations made in any given time by two Chords of equal Tune; on the Principle laid down, they are equal: And therefore, the Vibrations of the two Chords coincide, or commence together as frequently as poſſible, *i. e.* they coincide at every Vibration; in this frequency of which Coincidence, or united Mixture of the Motions of the two Chords, and of the Undulations of the Air occaſion'd thereby, it is, that the Difference of *Concord* and Diſcord muſt be ſought.

Now, the nearer the Vibrations of two Strings approach to a Coincidence as frequent as poſſible, the nearer they ſhould approach the Condition and, conſequently, the Agreement of Uniſons; which agrees with Experience.

For if we take the natural Series 1, 2, 3, 4, 5, 6, and compare each Number to the next, as expreſſing the Number of Vibrations in the ſame time of two Chords, whoſe Lengths are reciprocally as thoſe Numbers; the Rule will be found exact, for 1 : 2 is beſt, then 2 : 3; after 6 the Conſonance is unſufferable; the Coincidences being too rare: tho there are other Ratios that are agreeable, beſides thoſe found in that continued Order, *viz.* 3 : 5, and 5 : 8, which, with the preceding five are all the *concording* Intervals within, or leſs than an Octave, or 1 : 2; that is, whoſe acuteſt Term is greater than half the Fundamental.

On this Principle, 3 : 5 will be preferable to 4 : 5; becauſe being equal in the number of Vibrations of the acuter Term, there is an advantage on the Side of the Fundamental in the Ratio 3 : 5, where the Coincidence is made at every third Vibration of the Fundamental, and every fifth of the acute Term: So alſo the Ratio 5 : 8 is leſs perfect than 5 : 6; becauſe, tho the Vibrations of each Fundamental are equal; yet in the Ratio 5 : 6, the Coincidence is at every ſixth of the acute Term, and only at every eighth in the other Caſe.

Thus, we have a Rule for judging of the Preference of *Concords*, from the Coincidence of their Vibrations: agreeable to which Rule, they are diſpos'd into the Order of the following Table; to which the *Names of the Concords* in Practice, the *Ratio of their Vibrations*, the *Lengths of the Chords*, and the *Number of Coincidences* in the ſame, are expreſs'd.

Table of CONCORDS.

	Ratio's, or Vibrations.	Coincid.
	Grave Term. : *Acute Term.*	
Uniſon ——	1 : 1	
Octave, 8ve ——	2 : 1	60
Fifth, 5th ——	3 : 2	30
Fourth, 4th ——	4 : 3	20
Sixth, gr. ——	5 : 3	20
Third, gr. ——	5 : 4	15
Third, leſſer ——	6 : 5	12
Sixth, leſſer —	8 : 5	12
	Grave Lengths. : *Acute Lengths.*	

Tho this Order be ſettled by Reaſon, yet it is confirm'd by the Ear. On this bottom, *Concords* muſt ſtill be the more perfect, as they have the greateſt Number of Coincidences, with regard to the Number of Vibrations in both Chords; and where the Coincidences are equal, the Preference will fall on that Interval, whoſe acuteſt Term has feweſt Vibrations to each Coincidence; which Rule, however, is in ſome Caſes contrary to Experience; and yet it is the only Rule yet diſcover'd.

F. *Mer-*

F. *Merſenne*, indeed, after *Kircher*, gives us another Standard for ſettling the comparative Perfection of Intervals with regard to the Agreement of their Extremes in Tune: And 'tis this.

The Perception of *Concordance*, ſay they, is nothing but the comparing of two or more different Motions which in the ſame time affect the auditory Nerve: Now we can't make a certain Judgment of any Conſonance, till the Air be as oft ſtruck in the ſame time by two Chords, as there are Unites in each Member expreſſing the Ratio of that *Concord*, *v. g.* we can't perceive a Fifth, till two Vibrations of the one Chord, and three of the other are accompliſh'd together; which Chords are in length as 3 to 2: The Rule then is, that thoſe *Concords* are the moſt ſimple and agreeable, which are generated in the leaſt time; and thoſe, on the contrary, the moſt compound and harſh, which are generated in the longeſt time.

For inſtance, let 1, 2, 3, be the Lengths of 3 Chords 1:2 is an Octave; 2:3 a Fifth; and 1:3 an Octave and Fifth compounded, or a Twelfth. The Vibrations of Chords being reciprocally as their Lengths, the Chord 2 will vibrate once, while the Chord 1 vibrates twice, and then exiſts an Octave; but the Twelfth does not yet exiſt, becauſe the Chord 3 has not vibrated once, nor the Chord 1 thrice, which is neceſſary to form a Twelfth.

Again, for generating a Fifth, the Chord 2 muſt vibrate thrice, and the Chord 3 twice; in which time, the Chord 1 will have vibrated 6 times; and thus the Octave will be thrice produc'd, while the Twelfth is only produced twice; the Chord 2 uniting its Vibration ſooner with the Chord 1, than with the Chord 3; and they being ſooner conſonant than the Chord 1 or 2 with that 3.

Whence, that Author obſerves, many of the Myſteries of Harmony, relating to the Performance of Harmonious Intervals and their Succeſſion, are eaſily deduced.

But this Rule, upon examining it by other Inſtances, Mr. *Malcolm* has ſhewn defective, as it does not anſwer in all Poſitions of the Intervals with reſpect to each other; but a certain Order, wherein they are to be taken, being requir'd: and there being no Rule, with reſpect to the Order, that will make this Standard anſwer to Experience in every Caſe: So that at laſt we are left to determine the Degrees of *Concord* by Experience and the Ear.

Not but that the Degrees of *Concord* depend much on the more or leſs frequent uniting the Vibrations, and the Ear's being more or leſs uniformly mov'd, as above; for that this Mixture or Union of Motion, is the true Principle, or, at leaſt, the chief Ingredient in *Concord*, is evident: But becauſe there ſeems to be ſomething further in the Proportion of the two Motions, neceſſary to be known, in order to fix à catholick Rule for determining all the Degrees of *Concord*, agreeable to Senſe and Experience.

The Reſult of the whole Doctrine is ſumm'd up in this Definition.

Concord is the Reſult of a frequent Union, or Coincidence of the Vibrations of two ſonorous Bodies, and, by conſequence, of the undulating Motions of the Air, which, being caus'd by theſe Vibrations, are like and proportionable to 'em; which Coincidence, the more frequent it is, with regard to the number of Vibrations of both Bodies, perform'd in the ſame time, *cæteris paribus*, the more perfect is that *Concord*: till the Rarity of the Coincidence, in reſpect of one or both the Motions, commence *Diſcord*. *See ſome of the remarkable Phænomena of Sounds accounted for from this Theory, under the Word* UNISON; ſee alſo INTERVAL, *&c.*

Concords are divided into *ſimple*, or original, and *compound*.

A *ſimple*, or original *Concord*, is that whoſe Extremes are at a Diſtance leſs than the Sum of any two other *Concords*.

On the contrary, a compound *Concord* is equal to two or more *Concords*.

Other Muſical Writers ſtate the Diviſion thus: An Octave 1:2 and all the inferior *Concords* above expreſs'd are all ſimple and original *Concords*: and all greater than an Octave, are called *compound Concords*; as being compos'd of, and equal to the Sum of one or more Octaves, and ſome ſingle *Concord* leſs than an Octave, and are uſually, in practice, denominated from that *ſimple Concord*.

As to the Compoſition and Relations of the original Concords, by applying to them the Rules of the Addition and Subtraction of Intervals, they will be divided into *ſimple* and *compound*, according to the firſt and more general Notion; as in the following Table.

Simple *Concords*.	Compound *Concords*.	
5 : 6 a 3d leſſ.	5th { 3d g. and 3d l.	8ve. compos'd of { 5th 4 or 6th g. 3d l. or 3d g. 3d l: 4th.
4 : 5 a 3d gr.	6th l. { 4th 3d l.	
3 : 4 a 4th.	6th g. { 4th 3d g.	

The Octave is not only the firſt *Concord* in point of Perfection, the Agreement of whoſe Extremes is greateſt, and the neareſt to Uniſon; inſomuch that when ſounded together, 'tis impoſſible to perceive two different Sounds; but 'tis alſo the greateſt Interval of the ſeven original *Concords*; and as ſuch, contains all the leſſer, which derive their ſweetneſs from it, as they ariſe more or leſs directly out of it; and which decreaſe gradually, from the Octave to the leſſer Sixth, which has but a ſmall degree of *Concord*. See OCTAVE.

What is very remarkable, is the manner wherein theſe leſſer *Concords* are found in the Octave, which ſhews their mutual Dependencies.

For, by taking both an Harmonical and Arithmetical Mean between the Extremes of the Octave, and then both an Harmonical and Arithmetical Mean betwixt each Extreme, and the moſt diſtant of the two Means laſt found, *viz.* betwixt the leſſer Extreme and the firſt Arithmetical Mean, and betwixt the greater Extreme and the firſt Harmonical Mean, we have all the leſſer *Concords*.

Thus, if betwixt 360 and 180 the Extremes of Octave, we take an Arithmetical Mean, it is 270; and an Harmonical Mean is 240: then, betwixt 360 the greateſt Extreme, and 240 the Harmonical Mean, take an Arithmetical Mean, it is 300; and an Harmonical Mean, is 288. Again, betwixt 180 the leſſer Extreme of the Octave, and 270 the firſt Arithmetical Mean, it is 225, and an Harmonical one 216.

Thus have we a Series of all the *Concords*, both aſcending towards Acuteneſs from a common Fundamental, 360; and deſcending towards Gravity from a common acute Term, 180: which Series has this Property, that taking the two Extremes, and any other two at equal Diſtances, the four will be in Geometrical Proportion.

The Octave, by immediate Diviſion, reſolves it ſelf into a Fourth and Fifth; the Fifth, again, by immediate Diviſion, produces the two Thirds; the two Thirds are therefore found by Diviſion, tho not by immediate Diviſion; and the ſame is true of the two Sixths. Thus do all the original *Concords* ariſe out of the Diviſion of the Octave; the Fifths and Fourths immediately and directly, the Thirds and Sixths mediately.

From the Perfection of the Octave ariſes this remarkable Property, that it may be doubled, tripled, *&c.* and yet ſtill perſevere a *Concord*, *i. e.* the Sum of two or more Octaves are *concord*; tho the more compound will be gradually leſs agreeable: But it is not ſo with any other *Concord* leſs than Octave; the Doubles, *&c.* whereof, are all Diſcords.

Again, whatever Sound is *concord* to one Extreme of the Octave is *concord* to the other alſo: and if we add any other ſimple *Concord* to an Octave, it agrees to both its Extremes; to the neareſt Extreme it is a ſimple *Concord*, and to the fartheſt a compound one.

Another thing obſervable in this Syſtem of *Concords*, is, that the greateſt Number of Vibrations of the Fundamental cannot exceed five; or that there is no *Concord* where the Fundamental makes more than five Vibrations, to one Coincidence with the acute Term. It may be added, that this Progreſs of the *Concords* may be carried on to greater degrees of Compoſition, even *in infinitum*; but the more compound, the leſs agreeable.

So a ſingle Octave is better than a double one, and that than a triple one; and ſo of Fifths, and other *Concords*. Three or four Octaves is the greateſt length we go in ordinary Practice: The old Scales went but to two; no Voice or Inſtrument will well go above four. See THIRD, FOURTH, FIFTH, *&c.*

CONCORDANCE, a Dictionary or Index to the Bible, wherein, all the Words, uſed in the Courſe of the inſpir'd Writings, are rang'd alphabetically; and the various Places where they occur referr'd to; to aſſiſt in finding out Paſſages, and comparing the ſeveral Significations of the ſame Word.

Cardinal *Hugbs* is ſaid to have employ'd 500 Monks at the ſame time in compiling a Latin *Concordance*: Beſide which, we have ſeveral other *Concordances* in the ſame Language; one, in particular, called the *Concordance of England*, compiled by *J. Darlington* of the Order of *Predicants*; another more accurate one, by *Zamora*.

R. *Mardochai Nathan* has furniſh'd us with a Hebrew *Concordance*, printed at *Baſil* in 1541; containing all the *Hebrew* Roots branch'd into their various Significations, and under each Signification all the Places in Scripture wherein it occurs: But the beſt and moſt uſeful Hebrew *Concordance* is that of *Buxtorf*.

The Greek *Concordances* are only for the New Teſtament: indeed we have one of *Kircher*'s on the Old; but this is rather a *concordantial* Dictionary than a *Concordance*; containing all the *Hebrew* Dictions in an alphabetical Order; and underneath, all the Interpretations or Senſes the Seventy give 'em; and in each Interpretation, all the Places where they occur in that Verſion.

Calaſius, an *Italian* Cordelier, has given us *Concordances* of the *Hebrew*, *Latin*, and *Greek*, in two Columns; the firſt, which is *Hebrew*, is that of R. *Mardochai*, word for word, and according to the Order of the Books and Chapters: On the other Column is a *Latin* Interpretation of each Paſſage of Scripture quoted by R. *Mardochai*: This Interpretation is *Calaſius*'s own; but in the Margin he adds that

of

of the Seventy and the Vulgate, when different from his. The Work is in four Volumes Folio, printed at *Rome* in 1621.

CONCORDANT *Verſes*, ſuch as have ſeveral Words in common; but which, by the addition of other Words, convey an oppoſite, at leaſt, a different Meaning. Such are thoſe,

Et { *Canis* / *Lupus* } *in ſilva* { *venatur* / *nutritur* } *& omnia* { *ſervat.* / *vaſtat.* }

CONCORDAT, in the Canon Law, a Covenant, or Agreement in ſome beneficiary Matter; as, relating to a Reſignation, Permutation, or other Eccleſiaſtical Cauſe.

The Council of *Trent*, Seſſ. VI. *de Reform.* Cap. 4. ſpeaking of *Concordats* made without the Authority and Approbation of the Pope, calls 'em *Concordias quæ tantum ſuos obligant Authores, non Succeſſores.* And the Congregation of Cardinals, who have explained this Decree, declares, that a *Concordat* cannot be real, or deſcend to the Succeſſors, unleſs confirm'd by the Pope.

CONCORDAT is uſed, abſolutely, among the *French*, for an Agreement concluded at *Boulogn* in 1516, between Pope *Leo* I. and *Francis* I. of *France*, for regulating the manner of nominating to Benefices.

The *Concordat* ſerves in lieu of the *Pragmatic Sanction*, which had been abrogated; or, rather, it is the *Pragmatic Sanction* ſoften'd and reform'd.

There is alſo a *German Concordat*, made between Pope *Nicholas* V. and the Emperor *Frederick* III. and the Princes of *Germany*, in 1448, relating to Beneficiary Matters.

CONCORDIÆ *Vaſa*. See VESSELS *of Concord*.

CONCOURSE, or CONCURRENCE, the reciprocal Action of divers Perſons or Things, co-operating toward the ſame Effect or End.

Divines generally hold, that the Actions and Operations of all Creatures are continually dependent on the immediate *Concurrence* of the divine Mind: For ſecond Cauſes to act, or produce Effects, God himſelf muſt *concur*, and by his Influence give 'em the Efficacy they themſelves are deſtitute of: If they did not need the immediate *Concurrence* of God to make 'em act, they would have a ſort of Independency, which muſt be injurious to the immediate Creator to ſuppoſe. See CAUSE.

The Schoolmen diſtinguiſh two Kinds of *Concurrence*, viz. *mediate*, which conſiſts in the giving a Power or Faculty to act; and *immediate*, which is a cotemporary Influence of one Cauſe along with another, to produce an Effect: Thus, the Grandfather *concurs* mediately to the Production of a Grandſon, as he gives the Power of generating to the Father: but the Father *concurs* immediately with the Mother to the Production of the ſame Child. Now 'tis allow'd that God *concurs* mediately with all his Creatures, to enable them to act: but whether this be ſufficient; or whether it be farther requir'd that he *concur* with 'em immediately by a new Influence, for the Production of every act, in the ſame manner as the Father *concurs* with the Mother toward producing the young, is controverted: The generality of Scholaſtic Writers are for the Affirmative; *Durandus* and his Followers maintain the Negative.

Point of CONCOURSE. See FOCUS.

CONCRETE, in the School Philoſophy, an Aſſemblage, or Compound. See COMPOUND.

A *Phyſical Concrete*, or *concrete Body*, may denote any *mix'd* Body, or Body compos'd of different Principles; and conſequently, all ſenſible Bodies whatever, as all Bodies ariſe from a Coalition of divers Elements, or at leaſt of divers Principles, Matter and Form. See BODY, ELEMENT, and PRINCIPLE.

But, in ſtrictneſs, *Concrete* is only uſed for thoſe Compounds wherein the Ingredients ſtill retain their diſtinct Natures, nor are wholly converted into any new common Nature. See MIXT.

Authors diſtinguiſh *Natural Concretes* and *Artificial* ones: Thus Antimony is a *natural Concrete*, and Soap a *factitious Concrete*.

A *Logical Concrete*, or *concrete Word*, called alſo *Paronymus*, is that which has a compound kind of Signification; as ſignifying both the Subject, and ſome Quantity or Accident of the Subject, which gives it its Denomination: As *Man*, *learned*, *white*: for Man ſignifies as much as *having human Nature*; *learned*, as much as *having learning*, &c.

Hence, the Word *Concrete* is chiefly uſed to expreſs the Union of Qualities or Quantities with the Bodies or Subjects, without ſeparating them in Idea. The oppoſite Term, whereby the Things are ſeparated in Thought, is *Abſtract*. *Concrete* properly ſignifies a Subject with its Form or its Quality; as a *pious Man*, *hard*, *white*: *Abſtract*, on the contrary, expreſſes the Form and Quality without the Subject, as, *Piety*, *Hardneſs*, *Whiteneſs*. See ABSTRACTION.

CONCRETE *Numbers*, are thoſe which are applied to expreſs or denote any particular Subject; as, two Men, three Pounds, two thirds of a Shilling, &c.

Whereas, if nothing be connected with a Number, it is taken abſtractly or univerſally: Thus, three ſignifies only an aggregate of three Unites; let thoſe Unites be Men, Pounds, or what you pleaſe.

CONCRETION, the Act whereby ſoft Bodies are render'd hard: Or, it is an inſenſible Motion of the Particles of a Fluid or ſoft Body, whereby they come to a Conſiſtence.

The Word is uſed indifferently for *Induration*, *Condenſation*, *Congelation*, and *Coagulation*. See INDURATION, CONDENSATION, COAGULATION, &c.

CONCRETION is alſo uſed for the Coalition of ſeveral little Particles into a ſenſible Maſs, called a *Concrete*; by virtue of which Union, the Body acquires this or that Figure, and theſe or them Properties. See CONCRETE.

CONCUBINAGE, ſometimes expreſſes a criminal or prohibited Commerce between the two Sexes; in which Senſe it comprehends *Adultery*, *Inceſt*, and *ſimple Fornication*. See ADULTERY, INCEST, and FORNICATION.

In its more reſtrain'd Senſe, *Concubinage* is uſed for a Man and a Maid's cohabiting together in the way of Marriage; without having paſs'd the Ceremony thereof. See CONCUBINE.

Concubinage was antiently tolerated: The *Roman* Law calls it an allowed Cuſtom, *licita conſuetudo*. When this Expreſſion occurs in the Conſtitutions of the Chriſtian Emperors, it ſignifies what we now call a *Marriage in Conſcience*.

The *Concubinage* tolerated among the *Romans* in the Time of the Republick, and of the Heathen Emperors, was that between Perſons not capable of contracting Marriage together: Nor did they even refuſe to let Inheritances deſcend to Children ſprung from ſuch a tolerated Cohabitance.

Concubinage between ſuch Perſons they look'd on as a kind of Marriage, and even allow'd it ſeveral Privileges: but then this *Concubinage* was confin'd to a ſingle Perſon, and was of perpetual Obligation, as Marriage it ſelf.

Hottoman obſerves, that the *Roman* Laws had allow'd of *Concubinage* long before *Julius Cæſar* made that Law whereby every one was allow'd to marry as many Wives as he pleas'd. The Emperor *Valentinian*, *Socrates* tells us, allow'd every Man two. See MARRIAGE.

CONCUBINAGE is alſo uſed for a Marriage perform'd with leſs Solemnity than the formal Marriage; or a Marriage with a Woman of inferior Condition, and to whom the Husband does not convey his Rank or Quality.

Cujas obſerves, that the antient Laws allow'd a Man to eſpouſe, under the Title of *Concubines*, certain Perſons, ſuch as were eſteem'd unequal to 'em, on account of the want of ſome Qualities requiſite to ſuſtain the full Honour of Marriage. He adds, that tho *Concubinage* was beneath Marriage, both as to Dignity and to Civil Effects; yet was *Concubine* a reputable Title, very different from that of Miſtreſs among us.

The Commerce was eſteem'd ſo lawful, that the *Concubine* might be accuſed of Adultery in the ſame manner as a Wife. See CONCUBINE.

This kind of *Concubinage* is ſtill in uſe in ſome Countries, particularly *Germany*, under the Title of a Half-Marriage, or Marriage with the left Hand; alluding to the manner of its being contracted, *viz.* the Man's giving the Woman his left Hand inſtead of the right. See MARRIAGE.

This is a real Marriage, tho without Solemnity: the Parties are both bound for ever; tho the Woman be thus excluded from the common rights of a Wife, for want of Quality or Fortune.

CONCUBINE, a Woman whom a Perſon takes to cohabit with him, in the manner, and under the Character of a Wife, without being authoriz'd thereto by a legal Marriage. See CONCUBINAGE.

CONCUBINE is alſo uſed for a real, legitimate, and only Wife, diſtinguiſh'd by no other Circumſtance, but a Diſparity of Birth or Condition, between her and the Husband.

Du Cange obſerves, that one may gather from ſeveral Paſſages in the Epiſtles of the Popes, that they antiently allow'd of ſuch *Concubines*. The XVIIth Canon of the firſt Council of *Toledo*, declares, that he who with a faithful Wife, keeps a *Concubine*, is excommunicated; but that if the *Concubine* ſerv'd him as Wife, ſo that he had only one Woman, under the Title of *Concubine*, he ſhould not be rejected from Communion: Which ſhews that there were legitimate Wives under the Title of *Concubines*.

In effect, the *Roman* Laws did not allow a Man to eſpouſe whom he pleas'd; there was requir'd a kind of parity, or proportion between their Conditions: but a Woman of inferior Condition, who could not be eſpouſed as a Wife, might be kept as a *Concubine*; and the Laws allow'd of it, provided he had no other Wife.

The Children of *Concubines* were not reputed either Legitimate or Baſtards, but Natural Children, and were capable only of Donations.

They were deem'd to retain the low Rank of the Mother; and were on this ground unqualify'd for inheriting the Effects of the Father.

'Tis certain the Patriarchs had a great Number of Wives, and that theſe did not all hold the ſame Rank; ſome being ſubaltern to the principal Wife; which were what we call *Concubines*, or Half-Wives. The *Romans* prohibited a plurality of *Concubines*, and only had regard to the Children iſſuing from a ſingle *Concubine*, becauſe ſhe might become a legitimate Wife. *Solomon* had 700 Wives and 300 *Concubines*: The Emperor of *China* has ſometimes two or three thouſand *Concubines* in his Palace. *Q. Curtius* obſerves, that *Darius* was follow'd in his Army by 365 *Concubines*, all in the Equipage of Queens.

CONCUPISCENCE, among Divines, an irregular Deſire, Appetite, or Luſt after divers Things, inherent in human Nature ever ſince the Fall.

F. *Malebranch* defines *Concupiſcence*, on his Syſtem, to be a natural Effort, which the Traces or Impreſſions of the Brain make on the Mind, to attach it to ſenſible Things. The Dominion or Prevalency of *Concupiſcence*, according to him, is what we call *Original Sin*. See ORIGINAL *Sin*.

The Origin of *Concupiſcence* he aſcribes to thoſe Impreſſions made on the Brain of our firſt Parents at their fall; which are ſtill tranſmitted and continued on thoſe of their Children: For as Animals produce their like, and with like Traces in the Brain; (whence the ſame Sympathies and Antipathies in the ſame Kind; and whence the ſame Conduct on the ſame Occaſions:) So our firſt Parents, after their fall, receiv'd ſuch deep Traces in the Brain, by the Impreſſion of ſenſible Objects, that they might well be ſuppoſed to communicate them to their Children.

The Schoolmen uſe the Term *Concupiſcible Appetite*, for the Deſire we have of enjoying any Good; in oppoſition to the *Iraſcible Appetite*, whereby we eſchew what is Evil. See APPETITE.

CONDEMNATION, the Act of paſſing or pronouncing Sentence, or giving Judgment againſt a Man; whereby he is ſubjected to ſome Penalty or Puniſhment; either in reſpect of Fortune, Reputation, or Life. See SENTENCE, and PUNISHMENT.

CONDENSATION, the Act whereby a Body is render'd more denſe, compact, and heavy. See DENSITY, *&c.*

Condenſation conſiſts in bringing the Parts cloſer to each other, and increaſing their Contact: in oppoſition to *Rarefaction*; which renders the Body lighter and looſer, by ſetting the Parts further aſunder, and diminiſhing their Contact, and of conſequence their Coheſion. See RAREFACTION.

Wolfius, and ſome of the more accurate Writers, reſtrain the uſe of the Word *Condenſation* to the Action of Cold: what is done by external Application, they call *Compreſſion*. See COMPRESSION.

Air eaſily *condenſes*, either by Cold, or by Art: Water congeals, but never *condenſes*; can never be brought into a leſs ſpace, but will penetrate the moſt ſolid Body, even Gold, rather than loſe of its bulk. See WATER.

A Syrup *condenſes* in Ebullition.

It was found, in the Obſervatory of *France*, during the great Cold of the Year 1670, that the hardeſt Bodies, even Metals, Glaſs, and Marble it ſelf, were ſenſibly *condens'd* by the Cold, and became much harſher and more brittle than before; till their former State was retriev'd by the enſuing Thaw. See FROST.

Water alone ſeems to expand by Cold; inaſmuch as when congeal'd, the Ice takes up more ſpace than the Water before. But this muſt be rather owing to the Intromiſſion of ſome foreign Matter; as the nitrous Particles of the ambient Air, than to proper Rarefaction of the Water by the Cold. See COLD, and FREEZING.

The *Carteſians*, indeed, taking it for granted there is no Vacuum, deny any ſuch thing as proper *Condenſation*, or Rarefaction. According to them, when a Body takes up more ſpace than it did before, its Parts are diſtended by the Intruſion of a ſubtil Matter thro' its Pores: And when its bulk, again, is reduced into leſs Space, this is owing to the Extruſion or Egreſs of that Matter thro' the ſame Pores; by virtue whereof, the Parts of the Body, tho not the Parts of Matter, come nearer each other. For as Extenſion and Matter, according to them, are the ſame thing; a Body can never take up more or leſs place, any otherwiſe than by the Acceſſion or Diminution of Matter: And thus they conclude there is no Vacuum.

Now, that, in the Rarefactions of groſs Bodies, their Parts are diſtended by the acceſſion of Air, is frequently manifeſt; but this does not follow from the Plenitude of the World, but from the fluid and elaſtick Nature of Air; or from its Gravity and Preſſure. See MATTER, VACUUM, *&c.*

That there is ſuch a thing as *Condenſation*, without the Loſs of any Matter, is evident from *Galileus*'s Experiment: A Cock, being with a female Screw fitted to a hollow braſs Ball, or Cylinder, ſo as a Syringe, by means of a male Screw, may be applied to it; by working the Syringe, the Air will be forc'd into the Ball, and turning the Cock, will be retain'd; inſomuch, that upon the examining the Veſſel by the Balance, its weight will be found increas'd. If the Cock be re-turn'd, the Air will burſt out with violence, and the Ball ſink to its former weight.

From the Experiment it follows, firſt, that Air may be crouded into a leſs Volume and Bulk than it ordinarily takes up, and is therefore compreſſible. *For the Quantity of its Compreſſion*, ſee COMPRESSION.

2dly, That from the Recovery of its weight, juſt ſo much Air is expell'd as was injected; and that, therefore, compreſs'd Air returns to its primitive Expanſion, if the compreſſing Force be removed; and has therefore an elaſtick Force. See ELASTICITY.

3dly, That 'tis a certain Sign of Compreſſion, if, upon opening the Orifice of a Veſſel, any portion of Air be obſerv'd to fly out.

4thly, That ſince the Weight of the Veſſel is increas'd by injecting Air; the aerial Maſs muſt have a *Niſus* downwards, in Lines perpendicular to the Horizon; and is therefore heavy, and preſſes ſubject Bodies in Lines perpendicular to the Horizon; according to the Conditions of Gravity. See GRAVITY.

Condens'd Air, has Effects juſt oppoſite to thoſe of rarefy'd Air; Birds, *&c.* appear briſker and more lively therein than in the common Air, *&c.* See VACUUM, RAREFACTION, *&c.*

CONDENSER, a pneumatick Engine, whereby an unuſual quantity of Air may be crouded into a given Space.

They can throw in 3, 4, 5, or 10 Atmoſpheres into the *Condenſer*, *i. e.* twice, thrice, four, *&c.* times as much Air as there is in the ſame compaſs without the Engine. See CONDENSATION.

CONDERS, or *Huers*, in our Cuſtoms, are Perſons who ſtand on high Places near the Sea Coaſt, in time of Herring-fiſhing, to make Signs with Boughs, *&c.* to the Fiſhers which way the Shoal of Herrings paſſes: their Courſe being more diſcernable to thoſe who ſtand on high Cliffs, by means of a blue Colour they cauſe in the Water, than to thoſe aboard the Veſſels. See *Herring*-FISHERY.

They are alſo called *Balkers*, *Directors*, &c.

CONDITION, in the Civil Law, an Article of a Treaty, or Contract; or a Clauſe, Charge, or Obligation, ſtipulated in a Contract; or added in a Donation, Legacy, Teſtament, *&c.*

The Donee does not loſe his Donative, if it be charg'd with any diſhoneſt or impoſſible *Conditions*. The Doctors diſtinguiſh three Kinds of *Conditions*, under which a Legacy or Donation may be made: the *Caſual*, which depends merely on chance; the *Poteſtative*, which is abſolutely in our Power; and the *Mixt Condition*, which is both Caſual and Poteſtative together.

CONDITION, in Common Law, is a Manner, Quality, or Reſtriction, annex'd to an Act; qualifying or ſuſpending the ſame; and making it precarious and uncertain, whether or no it ſhall it take effect.

In a Leaſe there may be two ſorts of *Conditions*, *Condition collateral*, and *Condition annex'd to the Rent*.

Collateral Condition is that annex'd to a *collateral* or foreign Act; as, *v. g.* that the Leſſee ſhall not go to *Paris*.

Condition is alſo divided into *Condition in Deed*, and *Condition implied*.

Condition in Deed, is that knit and annex'd by expreſs Words to the Feoffement, Leaſe, or Grant, either in writing or without: As if I infeoffe a Man in Lands, reſerving a Rent to be paid at ſuch a Feaſt; *upon Condition*, if the Feoffee fail of payment, it ſhall be lawful for me to re-enter.

Condition implied, call'd alſo *Condition in Law*, is when a Man grants to another the Office of a Steward, Bailiff, Keeper of a Park, *&c.* for Life: tho there be no *Condition* expreſs'd in the Grant, yet the Law makes one covertly; which is, if the Grantee do not juſtly execute all Things belonging to his Office, it ſhall be lawful for the Granter to diſcharge him.

A CONDITION *without which, ſine qua non*, is uſed in Philoſophy, in ſpeaking of ſome Accident or Circumſtance, which is not eſſential to the Thing, but is yet neceſſary to its Production.

Thus, Light is a *Condition without which* a Man can't ſee Objects, tho he have good Eyes; and thus Fire, tho conſider'd in it ſelf it may burn without Wood; yet is its Preſence a *Condition without which* the Wood can't be burnt.

CONDITIONAL, ſomething not abſolute, but ſubject to Charges and *Conditions*. See CONDITION.

Thus, we ſay, *Conditional* Legacies are not due till the *Conditions* are accompliſh'd. The Right of Conqueſt does not ſuppoſe any *conditional* Conſent on the Part of the People.

The *Arminian* Divines maintain, that all the Decrees of God, relating to the Salvation and Damnation of Man are *conditional*; and the *Calviniſts*, that they are abſolute. See DECREE.

In Logick, we ſay, *Conditional Propoſitions* admit all kinds of Contradictions, *v. g.* If my *Tranſalpin* Mule flew; my *Tranſalpin* Mule had Wings.

CONDI-

CONDITIONAL *Conjunctions*, in Grammar, are thoſe which ſerve to make Propoſitions *Conditional*; as, *if*, *unleſs*, *provided that*, *in caſe of*, &c.

CONDITIONAL *Propoſitions*, are ſuch as conſiſt of two Parts, connected together by the *conditional* Particle *if*. See PROPOSITION.

Of theſe, the firſt, wherein the *Condition* lies, is call'd the *Antecedent*, and the other the *Conſequent*. See ANTECEDENT, and CONSEQUENT.

Thus, if the Soul be ſpiritual, it is immortal; is a *conditional Propoſition*, wherein, *if the Soul*, &c. is the Antecedent, and *is immortal* the Conſequent.

In Theology, we call the *Knowledge of Conditionals*, *i. e.* of *conditional Truths*, that Knowledge which God has of Things, conſider'd, not according to their Eſſence, their Nature, or their real Exiſtence; but under a certain Suppoſition, which imports a Condition never to be accompliſh'd.

Thus, when *David* aſk'd of God whether the People of *Ceila* would deliver him up to his Enemies; God, who knew what would befal in caſe *David* ſhould continue at *Ceila*, told him they wou'd deliver him: which he knew by the *Knowledge of Conditionals*.

Some of the Schoolmen deny that God has the *Knowledge of Conditionals*: The *Thomiſts* maintain, that God's Knowledge of *Conditionals* depends on a predeterminating Decree: Others deny it.

F. *Daniel* obſerves, that the Truths which compoſe the Knowledge of *Conditionals*, being very different from thoſe which compoſe the Knowledge of Intuition, and that of Underſtanding; a third Claſs muſt be added, and the Knowledge of God be divided into *Intuitive*, *Intellective*, and *Conditional*. See KNOWLEDGE.

CONDORMANTES, Religious Sectaries, whereof there have been two Kinds: The firſt aroſe in *Germany*, in the XIIIth Century; their Leader a Native of *Toleda*. They held their Meetings near *Cologne*; where they are ſaid to have worſhip'd an Image of Lucifer, and to have receiv'd Anſwers and Oracles from him: The Legend adds, that an Eccleſiaſtick having brought the Euchariſt to it, the Idol broke into a thouſand Pieces; which put an end to the Worſhip.

They had their Name from their lying all together, Men and Women, young and old.

The other Species of *Condormantes*, were a Branch of *Anabaptiſts* in the XVIth Century; ſo called, becauſe they lay, ſeveral of both Sexes, in the ſame Chamber; on pretence of Evangelical Charity.

Safe-CONDUCT. See SAFE-*Conduct*.

CONDUCTOR, a Surgeon's Inſtrument, which being put up into the Bladder, ſerves to *conduct* the Knife, in the Operation of cutting for the Stone. See LITHOTOMY.

CONDUIT, a Canal, or Pipe, for the Conveyance of Water, or other fluid Matter. See TUBE, *&c.*

In the Earth are ſeveral ſubterraneous *Conduits*, thro' which the Waters paſs that form the Sources of Springs; and thro' which alſo paſs the Vapours, which form Metals and Minerals. See SPRING, METAL, *&c.*

Artificial Conduits for Water, are made of Lead, Stone, caſt Iron, Pottery, *&c.* See PIPE, and PLUMBERY.

In the Province of *New Mexico*, there is ſaid to be a ſubterraneous *Conduit*, in form of a Grotto, extending 600 Miles in length. See DUCT.

CONDYLOMA, in Anatomy, the knitting of the Bones together in a Jonćture or Articulation; from the *Greek* κόνδυλος, *Jonćture*, *Joining*.

The Word is particularly uſed for the Jonctures of the Fingers, popularly called *Knuckles*. See FINGER.

CONDYLOMA, in Medicine, is a ſoft, painleſs Tumor, of the Oedematous kind, ariſing on the internal Coat of the *Anus*, and the Muſcles of that Part, or in the Neck of the Matrix. See OEDEMA.

By long continuance it grows fleſhy, and ſhooting out as from a Stalk, takes the Denomination *Ficus*. See FICUS.

Condolymata are frequently the Effects of Venereal Ailments, and, if neglected, ſometimes prove Cancerous: Their Cure depends on Mercurial Unctions, and proper Eſcharoticks to conſume them; tho Extirpation either by Ligature or Inciſion, if the Nature of the Part will admit, is the moſt expeditious. A Salivation is often neceſſary, in order to facilitate and compleat the Cure.

The Word comes from κονδυλος; in regard the *Condyloma* has uſually *Rugæ*, or Wrinkles, like the Joints of the Body.

CONDYLUS, a Name Anatomiſts give to a little round Eminence or Protuberance at the Extremity of a Bone. See BONE.

Such is that of the lower Jaw, receiv'd within the Cavity of the *Os Petroſum*. See MAXILLA.

When this Eminence is large, 'tis called the *Head* of the Bone. See BONE.

The Word comes from the *Greek* κονδυλος, *Article*, *Joint*.

CONE, in Geometry, a ſolid Body, having a Circle for its Baſis, and terminated a top in a Point, or Vertex. See Tab. *Conicks*, Fig. 2. ſee alſo SOLID.

The *Cone* is generated by the Motion of a right Line, K L, round an immoveable Point K, called its *Vertex*, along the Circumference of a Plane, called its *Baſe*, M N: or it may be conceiv'd as generated by the Revolution of the Triangle K L M, about the right Line K L, which is call'd the *Axis* of the *Cone*; and K M its *Latus*, or Side.

If the Axis be perpendicular to the Baſe, it is ſaid to be a *right Cone*; and if inclined, or oblique, a *ſcalenous Cone*.

Scalenous Cones are again divided into *obtuſe-angled* and *acute-angled*.

Euclid defines a *Cone* a ſolid Figure, whoſe Baſe is a Circle, as C D, (Fig. 3.) and is produced by the entire Revolution of the Plane of a right-angled Triangle C A B, about the perpendicular Leg A B.

If this Leg, or Axis, be greater than C B, half the Baſe; the Solid produced is an *acute-angled Cone*: If leſs, an *obtuſe-angled Cone*; and, if equal a *right-angled Cone*.

But, *Euclid*'s Definition only extends to a *right Cone*: that is, a *Cone* whoſe Axis is at right Angles to the Baſe; and not to *oblique* ones, whoſe Axis is not at right Angles to the Baſe.

For a more general and comprehenſive Deſcription of a *Cone*, which may take in both right and oblique ones, Suppoſe, an immoveable Point A, (Fig. 4.) without the Plane of the Circle B D E C; and ſuppoſe a right Line A E, drawn thro' that Point, and produced infinitely both ways, to be mov'd quite about the Circumference of the Circle; the two Superficies that will ariſe from this Motion, are each called *Conic Superficies*; but, taken conjunctly, are called *Superficies vertically oppoſite*, or only *oppoſite Superficies*: The immoveable Point A, common to both the Superficies, is called the *Vertex*; the Circle B D E C the *Baſe*; the right Line A C, drawn thro' the Vertex A and C, the *Centre of the Baſe*; and if infinitely produced, the *Axis*; and the Solid comprehended under the *conical* Superficies and the Baſe, is a *Cone*.

Properties of the CONE.

1. *The Area or Surface of every right* Cone, *excluſive of its Baſe, is equal to a Triangle whoſe Baſe is the Periphery, and its height the ſide of the* Cone. See TRIANGLE.

Or, the curve Superficies of a right *Cone*, is to the Area of its circular Baſe, as A C, (Fig. 5.) the length of the Hypothenuſe of the right-angled Triangle deſcribing it, to C B, the Baſe of the ſame Triangle: that is, as the ſlant height of the *Cone*, to the Semidiameter of the Baſe.

Hence, the Surface of a right *Cone* is equal to a Sector of a Circle deſcrib'd on the ſide of the *Cone*, as a Radius, whoſe Arch is equal to the Periphery of the *Cone*; and has therefore the ſame Proportion to its Periphery which the Diameter of the Baſe has to the Sides of the *Cone*. See CIRCLE.

Coroll. *Hence we have a Method of deſcribing a Rete or Cage that ſhall juſt cover a* Cone.

Thus, with the Diameter of the Baſe A B, (Plate *Conics*, Fig. 6.) deſcribe a Circle, and produce the Diameter to C, till A C be equal to the ſide of the *Cone*. To 2 A C and A B, determin'd in Numbers, and 360°, find a fourth proportional; and with the Radius C A, on the Centre C, deſcribe an Arch D E equal to the Number of Degrees found: the Sector C D E with the Circles A B will be a Rete for the right *Cone*.

If, then, the ſide of a truncated *Cone* be transferr'd from A to F, and an Arch G H be deſcrib'd with the Radius G F; by finding a fourth proportional to 360°, to the number of Degrees of the Arch G H, and to F C; and thence determining the Diameter of the Circle I F, we ſhall have a Net or Cover for the truncated *Cone*.

For C D B A E is a Net for the entire *Cone*; C G F I H for the *Cone* cut off; therefore, D B E H for the truncated *Cone*.

2. *Cones and Pyramids, having the ſame Baſes and Altitudes, are equal to each other.*

Now, 'tis ſhewn, that every triangular Priſm may be divided into three equal Pyramids; and therefore, that a triangular Pyramid is one third of a Priſm, ſtanding on the ſame Baſe, and having the ſame Altitude.

Hence, ſince every multangular Body may be reſolv'd into triangular ones, and every Pyramid is a third part of a Priſm, having the ſame Baſe and Altitude; ſince a *Cone* may be eſteem'd an infinite-angular Pyramid, and a Cylinder an infinite-angular Priſm; a *Cone* is a third part of a Cylinder, which has the ſame Baſe and Altitude.

Coroll. *Hence we have a Method of meaſuring the Surface and Solidity of a Cone and a Cylinder.*

Thus, *for the Solidity*: find the Solidity of a Priſm, or Cylinder, having the ſame Baſe with a *Cone*, or Pyramid. See PRISM, and CYLINDER.

Which found, divide by 3: the Quotient will be the Solidity of a *Cone*, or a Pyramid.

Thus, *v. g.* if the Solidity of a Cylinder be 605592960, the Solidity of the *Cone* will be found 201864320.

For the Surfaces; that of a right *Cone* is had by multiplying the Periphery of the Baſe into the Side, and adding the Product to the Baſe.

Suppoſe, *e. gr.* the Diameter of the *Cone* N M, (Fig. 2.) 56, its Periphery will be 17584, and the Baſe 246176. Suppoſe the Altitude of the Axis K L, 246; ſince L M = $\frac{1}{2}$ N M = 28, and K M^2 = K L^2 + L M^2 = 60516 + 784 = 61300, K M = 2474. Conſequently, the Superficies of the *Cone* excluſive of the Baſe is 4310 = 816,0; and the whole together 45564576o.

As to the Meaſure of the Surface, and Solidity of a truncated Cone, A B C D, (Fig. 7.) Its Altitude C H, and the Diameter of its Baſis A B and C D being given, find their Circumferences. To the Square of the Altitude C H, add the Square of the Semi-difference of the Radii A H, and from the Aggregate extract the ſquare Root, which will give the ſide A C: The Semi-ſum of the Peripheries, multiplied by that ſide, gives the Superficies of the *truncated Cone*.

To find the Solidity: As the difference of the Semidiameter A H is to the Altitude of the truncated *Cone* C H, ſo is the greater Semidiameter A F, to the Altitude of the entire *Cone* F E. This found, ſubtract the Altitude of the truncated *Cone* G F, which will leave that of the *Cone* taken off E G.

Find the Solidity of the *Cone* C E D and A E B; ſubtract the other from this; the Remainder will be the Solidity of the truncated *Cone* A C D B.

For the Sections of the Cone, ſee Conic *Section*.

For the Ratio of Cones *and Cylinders*, ſee Cylinder.

For the Centres of Gravity and of Oſcillation of a Cone, ſee Centre.

Cones *of the higher Kinds*, are thoſe whoſe Baſes are Circles of the higher Kinds; and are generated by ſuppoſing a right Line fix'd in a Point, on high, tho conceiv'd capable of being extended more or leſs, on occaſion; and moved or carried round a Circle. See Circle.

Cone *of Rays*, in Opticks, includes all the ſeveral Rays which fall from any Point of an Object, on the Surface of a Glaſs. See Ray.

Cone, or Conn, in the Sea Language, ſignifies to guide or conduct a Ship in her right Courſe. See Course.

He that *Conns* her, ſtands aloft with a Compaſs before him, and gives the Word of Direction to the Man at Helm how to ſteer. See Steerage.

If the Ship go before the Wind, or, as they call it, betwixt the Sheets, the Word is either *Starboard*, or *Port the Helm*; according as the *Conder* would have the Helm put to the right or left ſide of the Ship, upon which the Ship always goes the contrary way.

If he ſays, *Helm a Mid-ſhip*, he would have the Ship go right before the Wind, or directly between her two Sheets.

If the Ship ſail by a Wind, or on a quarter Wind, the Word is, *Aloof*, *Keep your Luff*, *fall not off*, *Veer no more*, *Keep her to*, *Touch the Wind*, *Have a care of the Lee-Latch*: All which Expreſſions are of the ſame import, and imply that the Steerſman ſhould keep the Ship near the Wind.

On the contrary, if he would have her ſail more large, or more before the Wind, the Word is, *Eaſe the Helm*, *No near*, *Hear up*.

If he cries *Steady*, it means, keep her from going in and out, or making Yaws, (as they call it) howſoever ſhe ſails, whether large by a Wind: and when he would have her go juſt as ſhe does, he cries, *Keep her thus*, *thus*, &c.

CONFARREATION, a Ceremony among the antient *Romans*, uſed in the Marriage of Perſons whoſe Children were deſtin'd for the Honour of the Prieſthood.

Confarreation was the moſt ſacred of the three manners of contracting Marriage among that People; and conſiſted, according to *Servius*, in this, that the *Pontifex Maximus* and *Flamen Dialis* join'd and contracted the Man and Woman, by making them eat of the ſame Cake of ſalt Bread.

Ulpian ſays, it conſiſted in the offering up of pure wheaten Bread; rehearſing, withal, a certain *Formula*, in preſence of ten Witneſſes. *Dionyſius Halicarnaſſæus* adds, that the Husband and Wife did eat of the ſame wheaten Bread, and threw part on the Victims.

CONFECTION, in Pharmacy, a kind of compound Remedy of the Conſiſtence of a ſoft Electuary.

There are four Electuaries, which bear the Name of *Confections*; three whereof, in the Phyſicians Language, are *corroborative*, and one *purgative*.

The corroborative *Confections* are thoſe of *Alkermes*, of *Hyacinth*, and the *Anacardine*: The purgative one is the *Confection Hamech*.

The *Confection of Alkermes* has its Name from the principal Ingredient therein; which is the *Kermes*, or *Alkermes*, or Scarlet-Grain. See Kermes, &c.

The other Ingredients are Pearls, Muſk, Cinnamon, Ambergris, Leaf Gold, Juice of Pippins, and Roſe-Water.

It is rank'd among the beſt Cardiacks, and is frequently uſed for the Palpitation of the Heart, or Syncope; ſometimes in the Small-Pox and Meaſles.

The *Confection of Hyacinth* has nearly the ſame Virtues with that of Alkermes; but, beſide, is frequently uſed as an Aſtringent. It conſiſts of near triple the Number of Drugs; whereof the precious Stone, called the *Hyacinth*, is the Baſe: the chief of the reſt are red Coral, Bole Armoniac, *Terra Sigillata*, Myrrh, the Santals, burnt Hartſhorn, Camphire, Saphire, Emerald, Topaz, and moſt of the Ingredients of the *Confection* of Alkermes.

The *Anacardine Confection*, now diſuſed in *England*, is compos'd chiefly of *Anacardines*, whence the Name: the other Drugs are Long Pepper, Black Pepper, moſt Kinds of Myrobalans, Caſtoreum, &c. It is uſed to purge the Blood, and is proper in cold Diſeaſes.

The *Confection Hamech* takes its Name from that of its Inventor, an *Arabian* Phyſician. Its Ingredients are Polypody, Myrabolans, Agaric, Senna, Tamarinds, red Roſes, Manna, Colocynth, &c. It is applied as a Draſtic for the purging of the groſſer Humors and Viſcidities; 'tis alſo of ſome reputation in Vertigoes and Cancers.

CONFECTOR, among the antient *Romans*, a ſort of Gladiator, hired to fight in the Amphitheatre againſt Beaſts; thence alſo denominated *Beſtiarius*. See Gladiator.

The *Confectores* were thus called *à conficiendis beſtiis*, from their diſpatching and killing Beaſts. See Bestiarii.

The *Greeks* call'd 'em Παραβολοι, *q. d.* daring, raſh, deſperate; whence the *Latins* borrow'd the Appellations *Parabolani*, and *Parabolarii*. See Parabolani.

CONFECTS, or CONFITS, a Denomination given to Fruits, Flowers, Herbs, Roots, and Juices, when boil'd and prepar'd with Sugar, or Honey, to diſpoſe them to keep; or render 'em more agreeable to the Taſte.

The Antients only *confited* with Honey; at preſent, Sugar is more frequently us'd.

Confects half ſugar'd, are thoſe cover'd with a little Sugar, to leave more of the natural Taſte of the Fruit.

Confects are reduced to eight Kinds, *viz. Liquid Confects*, *Marmalades*, *Jellies*, *Paſts*, *Dry Confects*, *Conſerves*, *Candies*, and *Dragees*.

Liquid Confects, are thoſe whoſe Fruits, either whole, in pieces, in grains, or in cluſters, are *confited* in a fluid tranſparent Syrup, which takes its colour from that of the Fruits boil'd in it.

There is a good deal of Art in preparing theſe well; if they be too little ſugar'd they turn; and if too much, candy. The moſt eſteem'd of the liquid *Confects* are Plums, eſpecially thoſe call'd Mirabels, Barberries, Quinces, Apricots, Cherries, Orange-Flowers, little green Citrons from *Madera*, green Caſſia from the *Levant*, Myrabolans, Ginger, Cloves, &c.

Marmalades are a kind of Paſts, half liquid, made of the Pulp of Fruits, or Flowers, that have ſome conſiſtence; as Apricots, Apples, Pears, Plumbs, Quinces, Orange-Flowers, and Ginger. Marmalade of Ginger is brought from the *Indies* by way of *Holland*: 'tis eſteem'd good to revive the natural Heat in old Men. See Marmalade.

Jellies are Juices of ſeveral Fruits, wherein Sugar has been diſſolv'd, and the whole, by boiling, reduced into a pretty thick Conſiſtence; ſo as, upon cooling, to reſemble a kind of thin tranſparent Glue, or Size. *Jellies* are made of various Kinds of Fruits, eſpecially Goosberries, Apples, and Quinces: There are other Jellies, made of Fleſh, Fiſh, Hartſhorn, &c. but they are not to be kept, being very ſubject to corrupt. See Jelly.

Paſts are a kind of Marmalades, thicken'd to that degree by boiling, as to aſſume any form, when put into little Molds and dried in the Oven. The moſt in uſe are thoſe of Gooſberries, Quinces, Apples, Apricots, and Orange-Flowers: Thoſe of Piſtaches are much eſteem'd; thoſe of Ginger are brought from the *Indies*. See Past.

Dry Confects, are thoſe whoſe Fruits, after having been boiled in the Syrup, are taken out again, drain'd, and put to dry in an Oven. Dry *Confits* are made of ſo many kind of Fruits, that it would be hard to explain 'em all: the moſt conſiderable are Citron and Orange-Peel, Plumbs, Pears, Cherries, Apricots, &c.

Conſerves are a kind of dry *Confects*, made with Sugar, and Paſts of Flowers or Fruits, &c. the moſt ordinary are thoſe of Betony, Mallows, Roſemary; of the Capillary Herbs; of Orange-Flowers, Violets, Jeſſamin, Piſtacho's, Citrons and Roſes.

Note, The Apothecaries, under the Title of *Conſerves*, comprehend all kind of *Confects*, both dry and liquid; whether of Flowers, Fruits, Seeds, Roots, Barks, Leaves, prepared with Sugar or Honey, to preſerve, &c. See Conserve.

Candies are ordinarily entire Fruits, candied over with Sugar, after having been boil'd in the Syrup; which renders 'em like little Rocks, cryſtalliz'd; of various Figures and Colours, according to the Fruits incloſed within 'em.

The beſt Candies are brought from *Italy*. See Candy.

Dragees, or *Sugar-Plumbs*, are a kind of little dry *Confects*, made

made of ſmall Fruits, or Grains, little Pieces of Bark, or odoriferous and aromatick Roots, &c. incruſtated and cover'd over with a very hard Sugar, ordinarily very white.

Of theſe there are various Kinds, diſtinguiſh'd by various Names: Some made of Rasberries, others of Barberries, Melon-Seeds, Piſtachoes, Filberds, Almonds, Cinnamon, Orange-Peel, Corianders, Aniſeed, Carroways, &c.

CONFEDERACY, an Alliance or League between divers Princes and States. See LEAGUE and ALLIANCE.

CONFEDERACY, in Law, is when two or more Perſons combine to do any damage to another, or to commit any unlawful Act.

Confederacy is puniſhable, tho nothing be put in execution: but then it muſt have theſe four Incidents; 1ſt, that it be declared by ſome matter of Proſecution; as by making of Bonds or Promiſes to one another: 2d, that it be malicious, as for unjuſt Revenge: 3d, that it be falſe, *i. e.* againſt the Innocent: and laſtly, that it be out of Court, voluntary.

CONFESSION, in a Civil Senſe, a Declaration, or Acknowledgment of ſome Truth, tho againſt the Intereſt of the Party who makes it; whether it be in a Court of Juſtice or out of it.

'Tis a Maxim, that in Civil Matters the *Confeſſion* is never to be divided; but always taken entire. A Criminal is never condemn'd on his ſimple *Confeſſion*, without other collateral Proofs: nor is a voluntary extrajudicial *Confeſſion* admitted as any Proof. A Perſon is not admitted to accuſe himſelf, according to that Rule in Law, *non auditur perire volens*.

CONFESSION, in a Theological Senſe, is a Declaration of a Perſon's Sins, made to a Prieſt, in order to obtain Abſolution for the ſame. See ABSOLUTION.

The *Romiſh* Church makes *Confeſſion* a part of the Sacrament of Penance. See PENANCE.

Confeſſion was antiently publick and general, in the Face of the Church; tho the *Romaniſts* have ſince alter'd it, and made it private, and *auricular*.

Confeſſions are to be buried in eternal ſilence, under Pain of the laſt Puniſhment to the Prieſt who reveals 'em.

Bellarmin, *Valentia*, and ſome other *Romiſh* Controverſy-Writers, endeavour to trace up auricular *Confeſſion* to the earlieſt Ages; and thus contend for a Point given up by the reſt. M. *Fleury* owns that the firſt Inſtance of auricular *Confeſſion* he can meet with, is that of S. *Eloi*, who being grown old, made a *Confeſſion* to a Prieſt of all his Sins from his youth upwards.

The *Indians*, according to *Tavernier*, have a kind of *Confeſſion*: and the ſame may be ſaid of the *Jews*; theſe laſt have *Formulas* for thoſe who are not capable of making a Detail of all their Sins: The ordinary Form is in an alphabetical Order, each Letter containing a Capital Sin; this they uſually rehearſe on Mondays and Thurſdays, and on Faſt Days and other occaſions: ſome, every Night and Morning. When any of 'em find themſelves near Death, he ſends for ten Perſons, more or leſs, one of 'em a Rabbin; and in their Preſence recites the *Confeſſion*. See *Leon de Modena*.

CONFESSION *of Faith*, is a Liſt, or Enumeration and Declaration of the ſeveral Articles of Belief, in a Church. See FAITH.

The *Augsburg Confeſſion* is that of the *Lutherans*, preſented to *Charles* V. in 1530.

In the Council of *Rimini*, the Catholick Biſhops found fault with Dates in a *Confeſſion of Faith*, and obſerv'd that the Church never us'd to date 'em.

CONFESSIONAL, or CONFESSIONARY, in Church-Hiſtory, a Place in Churches, uſually under the main Altar, wherein were depoſited the Bodies of deceas'd Saints, Martyrs, and Confeſſors.

Confeſſional is alſo uſed in the *Romiſh* Church for a little Bench, or Deſk in the Church, where the Confeſſor takes the Confeſſions of the Penitent.

CONFESSOR, a Chriſtian who has made a ſolemn and reſolute Profeſſion of the Faith, and has endured Torments in its defence.

A ſimple Saint is call'd a *Confeſſor*, to diſtinguiſh him from the Roll of dignify'd Saints; as, *Apoſtles*, *Martyrs*, *Prelates*, &c. See SAINT, MARTYR, &c.

In Eccleſiaſtical Hiſtory, we frequently find the Word *Confeſſors* uſed for Martyrs: In after-times, it was confin'd to thoſe, who after having been tormented by the Tyrants, came to live and die in Peace. At laſt it was alſo uſed for thoſe, who after having lived a good Life, died under an Opinion of Sanctity.

According to S. *Cyprian*, he who preſented himſelf to Torture, or even Martyrdom, without being call'd thereto, was not call'd a *Confeſſor*, but a *Profeſſor*: And if any out of a want of Courage abandon'd his Country, and became a voluntary Exile for the ſake of the Faith, he was call'd *Extorris*.

CONFESSOR is alſo a Prieſt, in the *Romiſh* Church, who has a Power to hear Sinners in the Sacrament of Penance, and to give 'em Abſolution. The Church calls him in *Latin Confeſſarius*, to diſtinguiſh him from *Confeſſor*, which is a Name conſecrated to Saints.

The *Confeſſors* of the Kings of *France*, from the Time of *Henry* IV. have been conſtantly Jeſuits: before him, the *Dominicans* and *Cordeliers* ſhar'd the Office between them. The *Confeſſors* of the Houſe of *Auſtria* have alſo, ordinarily, been *Dominicans* and *Cordeliers*, but the laſt Emperors have all taken Jeſuits.

CONFIGURATION, the exterior Surface, that bounds Bodies, and gives 'em their particular Figure. See FIGURE.

That which makes the ſpecifick Difference between Bodies, is the different *Configuration*, and the different Situation of their Parts. See BODY.

A ſhort, or a long Sight, depend on the different *Configuration* of the Cryſtalline. See CRYSTALLINE, SIGHT, &c.

CONFIGURATION, or *Aſpect of the Planets*, in Aſtrology, is a certain Diſtance, or Situation of the Planets in the Zodiack, whereby they are ſuppos'd to aid, or oppoſe each other. See ASPECT.

CONFIRMATION, the Act of ratifying, or rendering a Title, Claim, Pretenſion, Report, or the like, more ſure and indiſputable.

CONFIRMATION, in Law, is particularly uſed for the ſtrengthning or homologating an Eſtate of one already in poſſeſſion of it by a voidable Title.

Thus, if a Biſhop grant his Chancellorſhip by Patent, for term of the Patentee's Life; this is no void Grant: yet is it voidable by the Biſhop's Death, except it be ſtrengthen'd by the Dean and Chapter's *Confirmation*.

CONFIRMATION, in Rhetorick, is the third Part of an Oration, wherein the Orator undertakes to prove, by Laws, Reaſons, Authorities, and other means, the Truth of the Propoſitions advanc'd in his Narration. See ORATION.

Confirmation is either *direct*, or *indirect*; the firſt *confirms* what the Orator has to urge for ſtrengthning his own Cauſe: the ſecond, properly call'd *Confutation*, refels the oppoſite arguing of the Adverſaries. See CONFUTATION.

The two Parts together are ſometimes placed under the Head or Title of *Contention*. See CONTENTION.

The *Confirmation* is, as it were, the Life and Soul of the Oration: In this the main ſtreſs of the Argumentation lies. Whence *Ariſtotle*, properly enough, calls it πίστις, *fides*.

CONFIRMATION, in Theology, the Ceremony of laying on of Hands, for the Conveyance of the Holy Ghoſt.

The Antients call'd it *Chriſma* and *Unction*; among them it was conferr'd immediately after Baptiſm; and was eſteem'd, in ſome meaſure, a part thereof: whence the Fathers call it the *Accompliſhment* of Baptiſm. See CHRISMA.

Among the *Greeks*, and throughout the *Eaſt*, it ſtill accompanies Baptiſm; but the *Romaniſts* make it a diſtinct independent Sacrament. See SACRAMENT.

It appears that *Confirmation* has all along been ordinarily conferr'd by the Biſhop: S. *Cyprian*, and moſt of the Fathers, ſpeak of it in ſuch Terms as imply it to have been confin'd to the Biſhop alone; and *Fleury*, and moſt of the Moderns, from them, lay it down as a diſtinguiſhing Character between the Offices of a Prieſt or Deacon, and that of a Biſhop, that the former might baptize, but the latter alone might anoint and confirm; by virtue of their Succeſſion to the Apoſtles, to whom it originally belong'd.

But from ſome Paſſages in S. *Gregory*, &c. others gather, that the Prieſts, on occaſion, had likewiſe the Power of *confirming*. 'Tis certain, among the *Greeks*, the Prieſt who baptizes alſo *confirms*: Which Practice, *Lucas Holſtenius* ſhews, is of ſo old a ſtanding among them, that it is now generally look'd on, as belonging properly and of right to the Prieſt: tho ſome will have it to have been borrow'd by them from the Biſhops.

Hence, ſome of the *Latin* Divines acknowledge that tho the Biſhop be the ordinary Miniſter of *Confirmation*, yet, that the Prieſt, in his abſence, may alſo confer it, in quality of Miniſter Extraordinary.

The Council of *Rouen*, held in 1072, decrees, that *Confirmation* be confer'd faſting, both on the ſide of the Giver and Receiver.

CONFISCATE, in Law, is applied to Goods forfeited to the Exchequer, or publick Treaſury. The Word is deriv'd from *Fiſcus*, a Hamper, Panier, or Baſket, wherein the Emperor's Money uſed to be kept. See FISC.

The Title to thoſe Goods is given by the Law to the King, when they are not claimed by any other. If a Man indicted for ſtealing the Goods of another, in which Caſe they become, in effect, the proper Goods of him indicted, be aſk'd about 'em in Court, and diſclaim 'em; he thereby loſes the Goods, tho he be afterwards acquitted of the Theft, and the King ſhall have 'em as *Confiſcate*: but otherwiſe, had he not diſclaim'd them. See CONFISCATION.

CONFISCATION, a Legal Adjudication of Goods or Effects to the *Fiſc*, or Treaſury. See TREASURY.

Thus, the Bodies and Effects of Criminals, Traitors, &c. and Merchandizes that are contraband, prohibited, or brought

aboard or aſhore without paying the Duties, when ſeiz'd, are *confiſcated*.

'Tis an Axiom in Law, that he who *confiſcates* the Body *confiſcates* the Effects, to the Profits of the King, or the Lord of the Fee; *i. e.* he who is condemn'd to loſe his Life, muſt alſo loſe his Effects: Yet the Widows of Criminals don't loſe their Dowries, nor their ſhare in the Goods of the Community, by the Forfeiture of their Husbands.

CONFLAGRATION, a general burning of a City, or other conſiderable Place: In this Senſe, we ſay, *Nero* procured the Chriſtians to be accus'd of the *Conflagration*, or burning of *Rome*, which was done by his own order.

But the Word is ordinarily reſtrain'd to that grand Period, or Cataſtrophe of our World; wherein the Face of Nature, is to be chang'd by a deluge of Fire, as it was antiently by that of Water. See DELUGE.

The antient *Pythagoreans*, *Platoniſts*, *Epicureans*, and *Stoicks* appear to have had a Notion of the *Conflagration*; tho whence they ſhould derive it, unleſs from the ſacred Books, is difficult to conceive, unleſs, perhaps, from the *Phœnicians*, who themſelves had it from the *Jews*.

Seneca ſays expreſly, *Tempus advenerit quo ſidera ſideribus incurrent, & omni flagrante materia uno igne, quicquid nunc ex diſpoſito lucet, ardebit.* This general Diſſolution the *Stoicks* call ἐκπύρωσιν, *Ecpyroſin*. Mention of the *Conflagration* is alſo made in the Books of the *Sibyls*, *Sophocles*, *Hyſtaſpes*, *Ovid*, *Lucan*, &c.

Dr. *Burnet*, after F. *Tachard* and others, relates that the *Siameſe* believe that the Earth will at laſt be parch'd up with heat; the Mountains melted down; the Earth's whole Surface reduc'd to a Level, and then conſum'd with Fire. And the *Bramans* of *Siam* do not only hold that the World ſhall be deſtroy'd by Fire; but alſo, that a new Earth ſhall be made out of the Cinders of the old.

Various are the Sentiments of Authors on the Subject of *Conflagration*; the Cauſe whence it is to ariſe, and the Effects it is to produce.

The Divines ordinarily account for it Metaphyſically; and will have it take its riſe from a Miracle, as a Fire from Heaven.

The Philoſophers contend for its being produced from Natural Cauſes; and will have it effected according to Laws of Mechanicks: Some think an Eruption of the central Fire ſufficient for the Purpoſe; and add, that this may be occaſion'd ſeveral ways, *viz.* either by having its Intenſion increas'd; which, again, may be effected either by being driven into leſs Space by the Incroachments of the ſuperficial Cold, or an increaſe of the Inflammability of the Fuel whereon it is fed: or by having the Reſiſtance of the impriſoning Earth weaken'd; which may happen, either from the Diminution of its Matter, by the Conſumption of its central Parts, or by weakening the Coheſion of the conſtituent Parts of the Maſs by the Exceſs or the Defect of Moiſture.

Others look for the Cauſe of the *Conflagration* in the Atmoſphere; and ſuppoſe, that ſome of the Meteors there engender'd in unuſual Quantities, and exploded with unuſual Vehemence, from the Concurrency of various Circumſtances; may effect it, without ſeeking any further.

The Aſtrologers account for it from a Conjunction of all the Planets in the Sign *Cancer*; as the Deluge, ſay they, was occaſion'd by their Conjunction in *Capricorn*.

Laſtly, Others have recourſe to a ſtill more effectual and flaming Machine, and conclude the World is to undergo its *Conflagration* from the near approach of a *Comet*, in its return from the Sun.

Thoſe wandering Bodies do indeed ſeem to menace us a little; being able, both by their tranſverſe Motion acroſs the Earth's way, by the hugeneſs of their Size, and the intenſe Fire wherewith they glow in their receſs from the Perihelion, to produce the moſt ſignal Changes and Revolutions in the Syſtem of Things. See COMET.

Mr. *Whiſton* has ſhewn, that they are extremely well fitted to produce the Phænomena of the Deluge; and has gone a good way towards proving, that the Comet of 1668 was the very Body to which that Event was owing; as being then in its approach toward the Sun, and its Atmoſphere crouded with the watery Vapours it had gather'd in thoſe inconceivably cold Regions, into which it had fled off in its Aphelion. See DELUGE.

This ſame Comet, Sir *I. Newton* has calculated, when in its Perihelion, *December* the 8th, was heated by the Vicinity of the Sun, to a degree 2000 times more hot than red hot Iron: he ſhews, likewiſe, that it would ſcarce be cool again in 50000 Years. See HEAT.

This ſame Comet, again, Dr. *Halley* obſerv'd *November* 11. was not above a Semidiameter of the Earth from the Earth's Way: So that had the Earth at that time been in that Part of its Orbit, ſomething very extraordinary might have been apprehended: but whether in the way of Fire or Water, may, perhaps, to ſome, leave room to doubt: To us 'tis none; it being ſcarce conceivable the Comet ſhould bring any vehement degree of heat, out of thoſe bleak Regions it comes from, whatever heat it might carry thither.

CONFLUENCE, CONFLUX, the Place where two Rivers join, and mix their Waters. See RIVER.

CONFLUENT, in Medicine, an Epithet added to that Species of Small-Pox wherein the Puſtules run into one another. See SMALL-POX.

CONFORMATION, the particular Texture and Conſiſtence of the Parts of a Body, and their diſpoſition to make a Whole: Thus, we ſay, Light of different Colours is reflected from Bodies according to their different *Conformation*; in oppoſition to the *Carteſians*, who ſay, that reflected Light becomes of different Colours, according to the different *Conformation* of the Bodies that reflect it. See LIGHT, and COLOUR.

Again, we ſay, that the *Conformation* of the Members of an Embrio, is not perfect enough to allow of a Diſſection.

CONFORMATION, in Medicine, is uſed to expreſs that Make and Conſtruction of the Body which is peculiar to every Individual: Hence, a *mala Conformatio* ſignifies ſome Fault in the firſt Rudiments; whereby a Perſon comes into the World crook'd, or with ſome of the *Viſcera*, or Cavities unduly proportion'd.

Thus, many are ſubject to incurable Aſthma's, from too ſmall a Capacity of the Thorax, and the like vitious *Conformations*.

CONFORMIST. } See NONCONFORMISTS, and NON-
CONFORMITY. } CONFORMITY.

Occaſional CONFORMITY. See OCCASIONAL *Conformity*.

CONFORMITY, in the Schools, is the *Congruency*, or Relation of Agreement between one thing and another: as between the Meaſure and the Thing meaſur'd; the Object and the Underſtanding; the Thing and the Conception; the Thing and the Diviſion thereof, &c. See CONGRUENCY.

CONFRONTATION, the Action of ſetting two People in preſence of each other, to diſcover the Truth of ſome Fact which they relate differently.

The Word is chiefly uſed in criminal Matters; where, the Witneſſes are *confronted* with the Accuſed; the Accuſed with one another, or the Witneſſes with one another.

Confrontation of Witneſſes, by the Civil Law, is not to be out of Priſon.

CONFUSION, in its Metaphyſical Senſe, is oppoſed to *Order*; in a Perturbation whereof, *Confuſion* conſiſts, *e. g.* when things prior in Nature do not precede; or poſterior do not follow, &c.

In a Logical Senſe, *Confuſion* is oppoſed to Diſtinctneſs, or Perſpicuity; and may happen, either in *Words*, as when miſconſtru'd or miſapply'd; or in Ideas, as when the Idea of any thing preſents ſomething along with it, which does not properly belong to that thing. See IDEA, and NOTION.

In a Phyſical Senſe, *Confuſion* is a ſort of Union, or Mixture by mere Contiguity. Such is that between Fluids of contrary Nature, as Oil and Vinegar, &c.

CONFUTATION, in Rhetorick, &c. a Part of an Oration, wherein the Orator ſeconds his own Arguments, and ſtrengthens his Cauſe, by refelling and deſtroying the oppoſite Arguments of the Antagoniſt. See ORATION.

Confutation makes a Branch of what we call the *Confirmation*. See CONFIRMATION.

The *Confirmation* and *Confutation* are ſometimes call'd the Head of *Contention*.

CONGE, a Licence, or Permiſſion, granted by a Superior to an Inferior, which gives him a Diſpenſation from ſome Duty to which he was before oblig'd.

Thus, we ſay, a Woman cannot obligate her ſelf without the *Conge* or Licence of her Husband: A Monk cannot go out of his Convent, without the *Conge* of his Superiors.

The Word is *French*: *Menage* derives it from the *Latin Commiatum*, uſed for *Commeatum*, and *Commeare*, often ſeen among antient Writers: The *Italians* ſay *Congedo*.

CONGE *d'Elire*, is the King's Permiſſion Royal to a Dean and Chapter, in time of a Vacancy, to chuſe a Biſhop. See CHAPTER, CANON, and COLLATION.

Gwin obſerves, that the King of *England*, as Sovereign Patron of all Biſhopricks and other Benefices, had antiently the free Appointment of all Eccleſiaſtical Dignities; inveſting, firſt, *per Baculum & Annulum*; See INVESTITURE.

And afterwards by Letters Patent.

But that, in proceſs of Time, he made the Election over to others, under certain Forms and Conditions: As, that they ſhould at every Vacancy, ere they choſe, demand of the King *Conge d'Elire*, *i. e.* leave to proceed to Election; and after Election to crave his Royal Aſſent, &c.

He adds, that King *John* was the firſt who granted this; which was afterwards confirm'd by Stat. *Weſtm.* and again *Articuli Cleri*.

CONGE, in Architecture, a Moulding either in form of a Quarter-Round, or of a Cavetto; which ſerves to ſeparate two Members from one another.

Such is that which joins the Shaft of the Column to the Cincture, call'd alſo *Apophyge*; which, in *Greek*, ſignifies *Flight*; the Column ſeeming to ariſe hence: By the *Latins* it

it is called *Scapus*, the Shaft of the Column. See APOPHYGE.

CONGELATION, *Freezing*, the Act of fixing the Fluidity of any Liquid, by Cold, or the Application of cold Bodies; in which it differs from Coagulation, which is produced by other Cauſes. See COLD, &c.

Thus, Salt-petre *congeals* Water in Summer. See ICE.

Metals and Minerals are ſaid to be Juices *congeal'd* in the Veins of the Earth, by their intermixing with one another, or with other heterogeneous Bodies, or by the Conſumption and Evaporation of their fineſt Parts. See METAL.

Rock Cryſtal is uſually held to be nothing but Water *congeal'd* in the Mountains. See CRYSTAL.

The Bites of Aſpicks are mortal, by the ſudden *Congelation* which they induce on the Blood, which ſtops its Circulation. See POISON, BLOOD, &c.

CONGERIES, a *Latin* Word, ſometimes uſed for a collection, or heap of ſeveral Particles, or Bodies, united into one Maſs.

CONGESTION, in Medicine, a Maſs, or Collection of Humours, crouded together, and harden'd, in any Part of the Body; and there forming preternatural Tumors. See TUMOR.

Congeſtion is effected by little and little; in which it differs from a Defluxion, which is more ſudden. See DEFLUXION.

CONGIARIUM, CONGIARY, among Medaliſts, a Gift, or Donative repreſented, on a Medal.

The *Congiary* was properly a Preſent made by the Emperors to the People of *Rome*: Thoſe made the Soldiers were not called *Congiaries*, but *Donatives*. See DONATIVE.

Tiberius gave a *Congiary* of three hundred Pieces of Money to each Citizen: *Caligula* twice gave three hundred Seſterces a head: *Nero*, whoſe *Congiaries* are the firſt that we find repreſented on Medals, gave four hundred. See SESTERCE.

The Legend on Medals repreſenting *Congiaries* is CONGIARIUM, or LIBERALITAS.

The Word comes from the Latin *Congius*; in regard, the firſt Preſents made the People of *Rome* conſiſted in Wine and Oil, which were meaſur'd out to them in *Congii*.

CONGIUS, an antient *Roman* Meaſure for things Liquid; containing ſix Sextaries; equal to about a Gallon and a Pint *Engliſh* Meaſure. See MEASURE.

The *Congius* was uſed in *England*, as appears by a Charter of King *Edmund* in 946. See SEXTARY.

CONGLOBATE *Glands*, in Anatomy, thoſe Glands whoſe Subſtance is not divided, but firm, entire, and continu'd; and their Surface ſmooth and uniform. See GLAND.

They are thus call'd, in oppoſition to *conglomerate* Glands. See CONGLOMERATE.

Conglobate Glands have each of 'em an Artery which brings 'em Blood, a Vein which carries it back again, after the proper Juice has been filtrated; and ſeveral excretory Ducts.

Some of 'em have a Cavity in the middle, with Lymphatick Veſſels, which diſcharge themſelves into a common Reſervoir, or Canal. See LYMPHATICKS.

CONGLOMERATE *Glands*, are thoſe which are compos'd of ſeveral little ones; or they are glandulous Bodies join'd together under the ſame common Membrane. See GLAND.

Such are the Salival Glands, Lachrymal Glands, the Pancreas, &c. which ſee.

The *Conglomerate Glands*, beſides their Arteries, Veins, and Nerves, are alſo each furniſh'd with an excretory Veſſel, ramify'd throughout their own Subſtance; by means whereof they diſcharge the Liquors they have filtrated into Reſervoirs.

CONGLUTINATION, the Act of *gluing*, or faſtening two Bodies together, by the Intervention of ſome third, whoſe Parts are unctuous and tenaceous, in the Nature of a Glue, *Gluten*; from whence the Word is form'd. See GLUE.

Thus, in the Animal Oeconomy, the Parts of the Body are ſaid to be *conglutinated* by means of their natural Moiſture; by the help of Bandages, as in ſeveral Caſes of Surgery; or by the Supply of viſcid Particles. In which laſt Acceptation, *Conglutination* differs little from Accretion, or Nutrition. See NUTRITION.

CONGREGATION, an Aſſembly of ſeveral Eccleſiaſticks, united ſo as to conſtitute a Body.

The Term is principally uſed for Aſſemblies of Cardinals, appointed by the Pope, and diſtributed into ſeveral Chambers, to diſcharge ſeveral Offices, or Juriſdictions, after the manner of our Offices, or Courts. See CARDINAL.

The firſt, the *Congregation* of the *Holy Office*, or the *Inquiſition*: The ſecond, the Juriſdiction over *Biſhops* and *Regulars*: The third that of *Councils*; this has Power to interpret the Council of *Trent*: The fourth that of *Cuſtoms*, *Ceremonies*, *Precedences*, *Canonizations*; call'd the *Congregation* of *Rites*: The fifth that of *St.* Peter's *Fabrick*; which takes cognizance of all Cauſes relating to Piety and Charity part whereof, is due to the Church of St. *Peter*: The ſixth that of *Waters*, *Rivers*, *Roads*: The ſeventh of *Fountains*, *Streets*: The eighth that of the *Index*, which examines the Books to be printed or corrected: The ninth that of the Government of the whole *State of the Church*: The tenth *de bono Regimine*; of which two laſt, the Cardinal-Nephew is chief. The eleventh that of *Money*: The twelfth that of *Biſhops*; wherein thoſe who are to be promoted to Biſhopricks in *Italy* are examin'd: This is held before the Pope. The thirteenth that of *Conſiſtorial Matters*; the Chief whereof is the Cardinal-Dean. There is alſo a *Congregation* of *Alms*, which takes care of what relates to the Subſiſtence of *Rome*, and the State of the Church.

CONGREGATION is alſo uſed for a Company or Society of Religious; canton'd out of this or that Order; and making, as it were, an inferior Order, or a Subdiviſion of the Order it ſelf. See ORDER, and MONASTERY.

Such are the *Congregations* of the *Oratory* of *Cluny*, &c. among the *Benedictins*. See ORATORY, CLUNY, BENEDICTINS, &c.

Alſo for Aſſemblies of pious Perſons, in manner of Fraternities; frequent among the Jeſuits, in honour of the Virgin, &c. See FRATERNITY.

CONGREGATION, in Phyſicks, is uſed by Dr. *Grew* for the leaſt degree of Mixture; or that wherein the Parts of the Mixt do not conſiſt with, or adhere to each other, but only touch in one Point. See MIXTURE.

That Author declares himſelf of Opinion, that the Particles of all Fluids only touch in this manner; or that their Coheſion only amounts to a *Congregation*. See FLUID, and COHESION.

CONGRESS, *Congreſſus*, is uſed for an Aſſembly of Commiſſioners, Deputies, Envoys, &c. from ſeveral Courts, meeting to concert Matters for their common Good.

The *Congreſs* at the *Hague*, which held during the Courſe of the War, terminated in 1697, by the Treaty of *Reſwick*, was compoſed of the Envoys of all the Princes in the Confederacy againſt *France*.

CONGRESS is alſo uſed in an obſcene Senſe, for an Eſſay, or Trial, made by Appointment of a Lay or a Spiritual Judge, in the Preſence of Chirurgeons and Matrons, to prove whether or no a Man be impotent; in order for the diſſolving of a Marriage. See IMPOTENCE.

Neither the Civil nor Canon Law make any mention of this Trial of Virility by *Congreſs*: It had its Origin in *France*, from the Boldneſs of a young Fellow, who in open Court, being hard preſs'd by his Wife, demanded the *Congreſs*. The Judge, ſurpriz'd with the Novelty of the Demand, found it could not be deny'd, as being the ſureſt Evidence the Caſe could admit of.

In time it became a Branch in their Juriſprudence, and was authoriz'd by Decrees and Arrets. It obtain'd for about the Space of 120 Years, and was annull'd by an Arret of Parliament in 1677, as being found precarious; ſome having fail'd under the Experiment out of mere Modeſty and Shame, which is found to have the ſame Effect with actual Impotency.

CONGRUITY, or CONGRUENCY, in the Schools, a Suitableneſs or Relation between Things; whereby we come at a Knowledge of what is to come to paſs therein.

The Syſtem of *Congruity* in Matters of Grace conſiſts in this; that God, who knows perfectly the Nature of Grace, and the Diſpoſitions of the Will in all the Circumſtances that ſhall befal a Man, gives Graces, wherewith, by Virtue of their *Congruity* with the Will of Man, conſider'd in thoſe Circumſtances, Man will always infallibly, but not neceſſarily, do, what God would have him do: In regard, the Will, in the Language of the *Congruiſts*, does always infallibly, tho voluntarily, follow what appears beſt.

CONGRUITY, in Geometry, is applied to Figures, Lines, &c. which exactly correſpond when laid over one another; as having the ſame Terms, or Bounds.

Thoſe Things between which there is a *Congruity*, are equal and ſimilar. See EQUALITY, and SIMILAR.

Euclid, and by his Example, moſt other Geometricians, demonſtrate all their Elements from the ſole Principle of *Congruency*: M. *Leibnitz*, and after him *Wolfius*, ſubſtitute the Notion of Similitude in lieu of that of *Congruency*. See SIMILITUDE.

CONGRUITY, in a lax Senſe, is alſo us'd to expreſs an Aptitude in ſome Bodies, to unite, or incorporate, from ſome ſimilitude or fitneſs of their Figures: as *Incongruity* denotes an Unfitneſs of their Surfaces for joining together.

Thus, Quickſilver will unite with Gold, and many other Metals, but will roll off from Wood, Stone, Glaſs, &c. and Water, which will wet Salt and diſſolve it, will ſlip off from Tallow without adhering to it; as alſo from a duſty Surface, and from the Feathers of Water-Fowl.

Two drops of Water, or of Mercury, will, on contact, immediately join and coaleſce; but Oil of Tartar, pour'd upon Quickſilver, and Spirit of Wine and Oil of Turpentine on that, and Air over all, will remain in the ſame Veſſel without any manner of Union, or Mixture with each other.

And the Cauſe hereof, is, that the Figures of ſome Bodies will not admit other Bodies near enough to be within their Spheres of Attraction, whence they cannot join, and cohere;

cohere; but where their Fitneſs of Figure will let them approach near enough to feel each others attractive Power, then they cloſe and hold together. See COHESION.

CONIC *Section*, a curve Line ariſing from the Section of a *Cone*. See CONE, and SECTION.

The *Conic Sections* are three, *viz.* the *Ellipſis*, *Hyperbola*, and *Parabola*; beſide the *Circle*, which tho it ariſe from the Section of a Cone by a Plane parallel to the Baſe, is not uſually conſider'd in that Capacity. See CIRCLE.

Tho the Equations, Geneſis, and many of the Properties, with the Ratio's, Dimenſions, *&c.* of each of the *Conic Sections*, be ſeparately given under their reſpective Articles in this Work, ELLIPSIS, HYPERBOLA, and PARABOLA; yet, to make the Doctrine of *Conics*, which is ſo conſiderable a Part of the higher Geometry, and of ſuch frequent uſe in the new Aſtronomy, the Motion of Projectiles, *&c.* more complete, we ſhall here put the whole in a new Light, and bring it together into one contracted view.

The common Interſection, then, of any Plane with a *Conic* Superficies, we obſerve, is called a *Conic Section*: And this Section varies, and acquires a different Name, according to the different Inclinations of the cutting Plane. For,

1ſt, If ABC, (Tab. *Conics*, Fig. 12.) be a Cone any how cut by a Plane ADE, thro' the Vertex; and again by another Plane parallel to the former Plane ADE: then, the Section BFGH, made in the Superficies thereof, is called an *Hyperbola*; the Plane of which being produced to meet the oppoſite Superficies, will make the Section *fhg*; which is likewiſe call'd an *Hyperbola*: and both theſe, conjunctly, are called *oppoſite Sections*.

2dly, If thro' the Vertex A of a Cone, a Plane DAE, paſſes without the Superfices thereof, that is, neither cutting nor touching it; and the Cone be again cut by a Plane parallel to the Plane DAE, the Section FHG made in the Superficies thereof, is called an *Ellipſis*.

3dly, If a Plane ADE touches the Superficies of a Cone, and the Cone be cut by a Plane, the Section is a *Parabola*.

But inſtead of conſidering theſe Curves as ariſing by Section of the Cone it ſelf, their Deſcription, Nature, and Properties, are found more eaſy of Conception, when conſider'd as drawn on a Plane: For which Reaſon, after *Des Cartes* and moſt of the later Writers, we ſhall rather chuſe to lay 'em down in this ſecond manner.

Geneſis, or Conſtruction of the Ellipſis.

To conceive the Production and Nature of an Ellipſis, then, let H and I, (Fig. 13.) be two Points, Nails, or little Pegs, about which put a Thread BHI, then putting your Finger to the Thread, and keeping the ſame always in an equal Tenſion, move the Finger round from the Point B, till you return to the ſame Point B again.

By this Revolution of the Point B, is deſcrib'd the curve Line, called the *Ellipſis*; which differs from the Delineation of a Circle only in this, That a Circle hath only one Centre, but the Ellipſis two; which, if the Points H and I ſhould come together, into one, the elliptic Curve would become perfectly *circular*.

But by how much greater the diſtance is betwixt thoſe Points, the ſame length of the Thread ſtill remaining; ſo much the farther is this Figure removed from the Circular. So that according to the diverſe Proportion of the Diſtance HI to the Thread BHI, or to the Line DK, which is equal to the ſame Thread, divers Species of Ellipſes will be deſcrib'd.

But then, if the Length of the Thread be increas'd or diminiſh'd, in the ſame Proportion as the Diſtance of the Points H and I is increaſed, or diminiſh'd, there will indeed be deſcrib'd divers Ellipſes, but all of the ſame Species: whence it appears, that Ellipſes are not only innumerable in Magnitude, but in Species alſo; and reach from a Circle to a right Line: For, as when the Points H and I meet together, the Ellipſis becomes a Circle; ſo, when they are removed from each other half the length of the Thread, it becomes a right Line, both ſides meeting together.

Whence alſo it appears, that every Species of Ellipſes is no leſs different from any other, than the Extremes of them are different on this ſide from a Circle, and on that from a right Line. It alſo appears from this Delineation, that if from a Point taken at pleaſure in the Elliptick Periphery, as the Point B, you draw two Lines to the two central Points; theſe two Lines BH and BI, taken together, will be equal to the greateſt Diameter DK; and conſequently, that the Sum of them is always given.

In the Ellipſis DFKR, (Fig.14.) the Point C is call'd the *Centre*, the Points H and I the *Foci*, DK the *greater Axis*, or *tranſverſe Axis*, or the *principal Diameter*, or *Latus tranſverſum*; and FR is the *leſſer Axis*: All the right Lines paſſing through the Centre C are *Diameters*; and all right Lines terminated at the Periphery, and divided into two equal Parts by any Diameter, are called *Ordinates*. That Part of every Diameter intercepted betwixt the Vertex thereof, and the Ordinate as Mμ, is called the *Abſciſs* thereof. A Line drawn from the Vertex of the Diameter, parallel to the Ordinates thereof, as $\nu\theta$, is a *Tangent* to the Ellipſis in that Vertex. A Diameter parallel to the Ordinates of another Diameter, is term'd a *Conjugate Diameter*; and the Ordinate to the greater Axis, which paſſeth thro' either of the *Foci*, as MA is termed the *principal Latus Rectum*, or the *Parameter* of the greater Axis. See CENTRE, FOCUS, AXIS, DIAMETER, ORDINATE, PARAMETER, *&c.*

Properties of the Ellipſis.

1. The Ordinates of every Diameter are demonſtrated to be parallel to each other.

2. The Ordinates of the Diameters or Axes are perpendicular to the Axes themſelves; but the Ordinates of the reſt of the Diameters are oblique to their Diameters; and in Ellipſes of divers Species, ſo much the more oblique, at equal Diſtance from the Axis, by how much the Proportion of the greater Axis to the leſſer is the greater; but in the ſame Ellipſis, ſo much the more oblique, by how much the more remote the Diameters are from the Axes.

3. There are only two Conjugate Diameters, which are equal each to other; *viz.* thoſe whoſe Vertices are at equal Diſtances from the Vertices of the Axes: Thus, the Diameter VT is conjugate, and equal to that other GM; where VF is equal to MF, and VD equal to MK.

4. The obtuſe Angle VCM of theſe two Diameters, which are conjugate and equal, is greater and the acute Angle VCG is leſs than every other Angle contain'd by the reſt of the Diameters that are conjugate to each other.

5. If the Lines μP and νB be Semi-ordinates to any Diameter, as MG, the Square of the Semi-ordinate μP is to the Square of the Semi-ordinate νB, as is the Rectangle M$\mu\times\mu$G, to the Rectangle M$\nu\times\nu$G; that is, μPq is to the Rectangle comprehended under the two Parts, into which the Diameter is divided by the Ordinate KP, as νBq is to the Rectangle under the Parts of the Diameter made by the Ordinate AB.

6. The Parameter, or *Latus Rectum* of any Diameter, is a third Proportional to that Diameter and its conjugate: That is, (in Fig. 1.) if the Diameter DK is to its conjugate Diameter EF, as EF is to Y; then Y is the Parameter or *Latus Rectum* of the Diameter DK: whence AM, an Ordinate to the Axis thro' the *Focus* is, as above, equal to the principal Parameter, and is a third Proportional after the greater and leſſer Axis.

7. The Square of every Semi-ordinate, as MI, (Fig. 13.) is leſs than the Rectangle made of any Abſciſs whatever; as IK drawn into the *Latus Rectum* of its own Diameter, or than IK$\times y$. And in the other Figure, Pμq is leſs than the Rectangle made of the Abſciſs Mμ, and the *Latus Rectum* of MG: From which *Defect*, or ἔλλειψις, this Section hath its Name.

8. If from any Point, as B in the firſt Figure, you draw the right Lines BH and BI to the *Foci*, the Sum of them will be equal to the greater Axis, as was ſhew'd above: And if the Angle IBH, comprehended by thoſe Lines, be biſected by the right Line *ba*, the Line A is perpendicular to the Tangent VB in the Point B; that is, to the Curve in the Point of Contact.

9. The Diſtance of a Body turn'd round in an Ellipſis, about the *Focus* H, from the ſame *Focus*, is the greateſt of all in the Point K; leaſt of all in the Point D; and mean in the Points E and F; and that mean Diſtance HF is equal to the greater Half-Axis DC or CK; as is manifeſt from the Production of the Ellipſis.

10. The vaniſhing Subtenſe of the Angle of Contact, parallel to the Diſtance from the *Focus*, at an equal perpendicular Interval from that diſtance, always remains given and unvaried in the ſame Ellipſis, yea, and in the ſame Parabola, and Hyperbola too. Thus if *d*Z be always given, *gd* alſo will always remain given in a diſtance infinitely ſmall.

11. The Area of the Ellipſis is to the Area of the Circle circumſcrib'd, as the leſſer Axis is to the greater; and ſo are all correſpondent Parts whatſoever among themſelves, as MIK, *m*IK: and the Ordinates to the greater Axis, as *m*I, are divided by the elliptick Periphery always in the ſame Proportion, ſo that MI is to *m*I always in the ſame Proportion; to wit, that of the leſſer Axis to the greater. And we are to reaſon in the ſame manner concerning a Circle inſcrib'd in an Ellipſis.

12. All Parallelograms deſcrib'd about the conjugate Diameters of the Ellipſis, and comprehending the Ellipſis, are equal. Thus, the Parallelogram $\alpha\beta\gamma\delta$ is equal to the other $\varepsilon\zeta\eta\vartheta$: And thus it is every where.

13. If a right Line always paſſing thro' one of the *Foci* be ſo moved, that the Elliptic Area deſcrib'd by the ſame, is proportional to the Time; the angular Motion of a right Line drawn from the other *Focus* to the former Line, will be almoſt equable: Thus, in the former Figure, if the angular Motion of the Line HB be ſo attemper'd, that the ſame being according to the reciprocal proportion of the Diſtance accelerated or retarded, doth deſcribe the Area DHB,

TAB: CONICK S

Fig 1 Latus Transversum

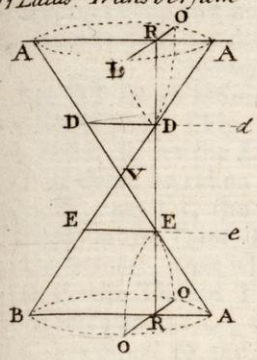


Fig. 2 Cone

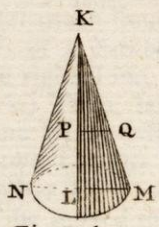


Fig. 3 & 5 Cone

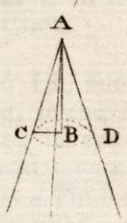


Fig. 4 Cone

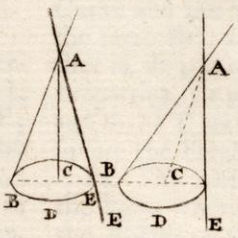


Fig. 5 Sectiones Sequentes

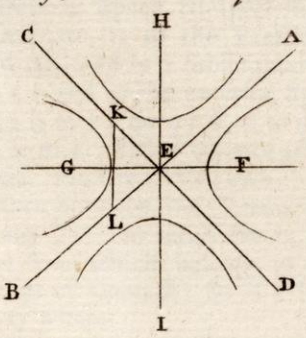


Fig. 5 Curve & Diameter

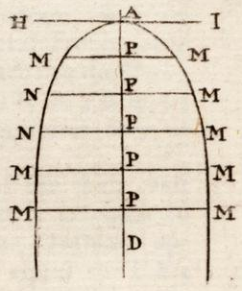


Fig. 6 Cone

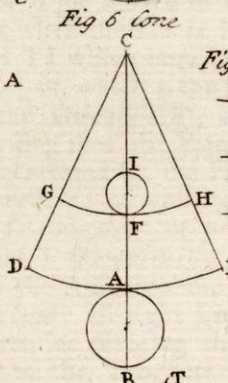


Fig. 6 Diameter of a Curve

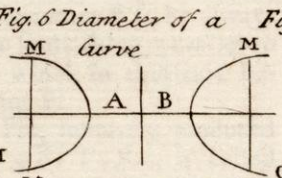


Fig. 7 Cone

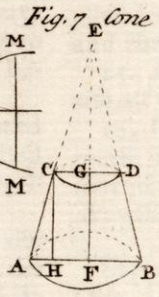


Fig. 8 Parabola

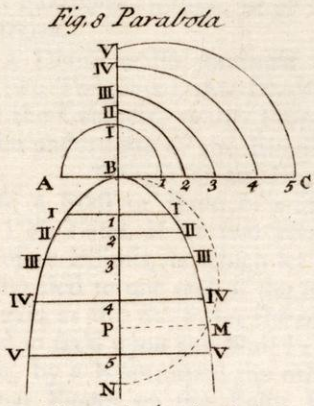


Fig. 9 Parabola

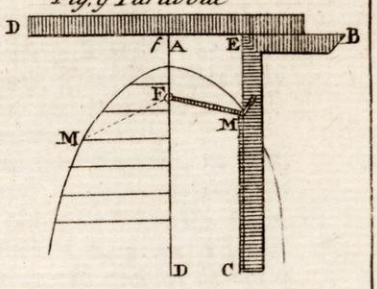


Fig. 10 Parabolic Cuneus

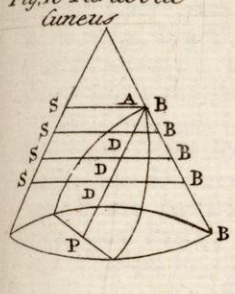


Fig. 11 Helicoid Parabola

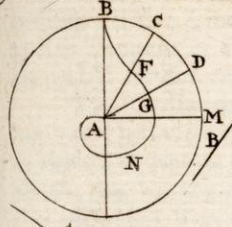


Fig 12 Asymptote

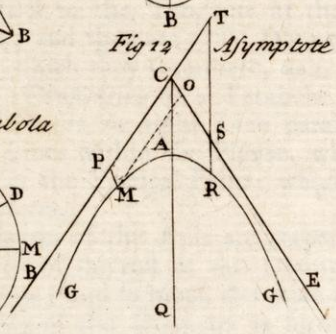


Fig. 13 Conick Section

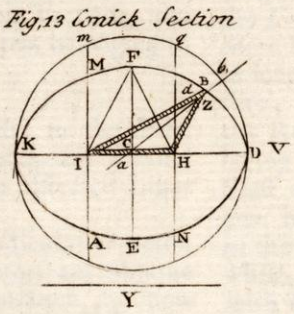


Fig. 14 Conic Section

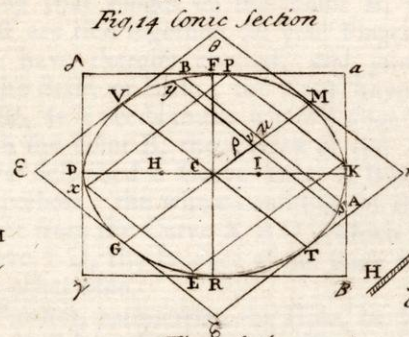


Fig. 15 Conic Section

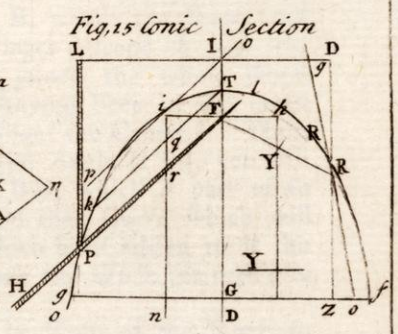


Fig. 16 Conic Section

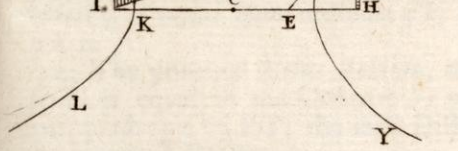


Fig. 17 Conic Section

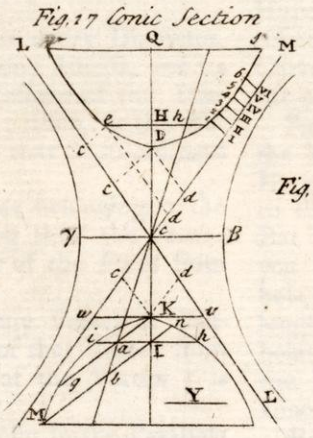


Fig. 18 Focus

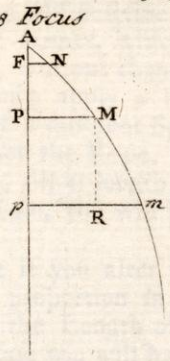


Fig. 19 Sub normal.

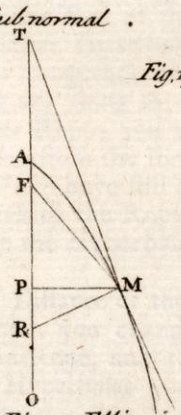


Fig. 19 Focus

Fig. 21 Ellipsis

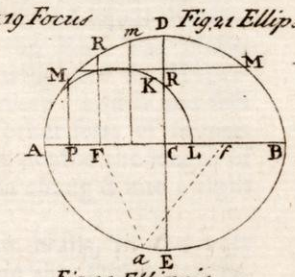


Fig. 20 Equilateral Hyperbola Asymptote

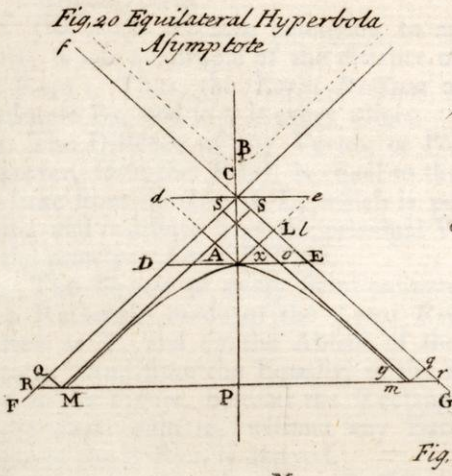


Fig. 21 Ellipsis

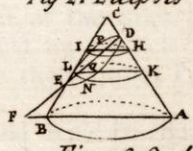


Fig. 22 Ellipsis

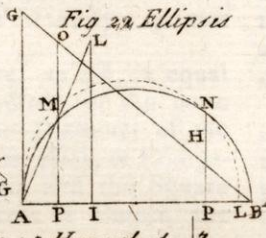


Fig. 24 Ellipsis

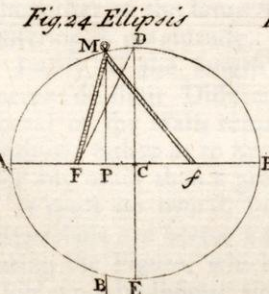


Fig. 25 Ellipsis

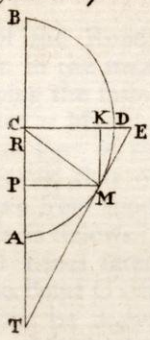


Fig. 26 Ordinate

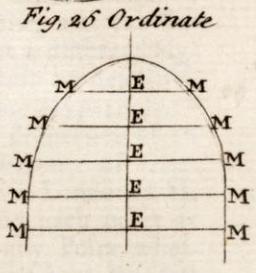


Fig. 28 Hyperbola

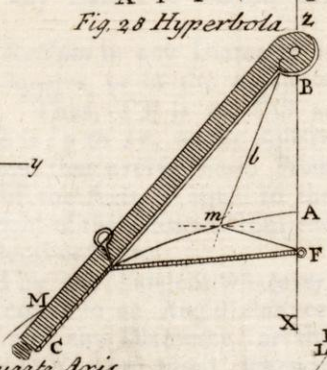


Fig. 27 Hyperbola

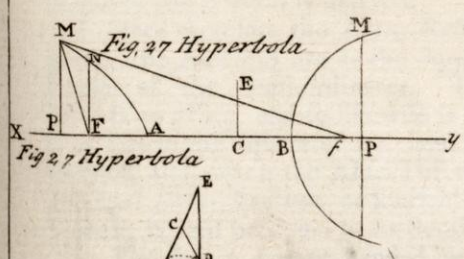


Fig 27 Hyperbola

Fig. 29 Hyperbola

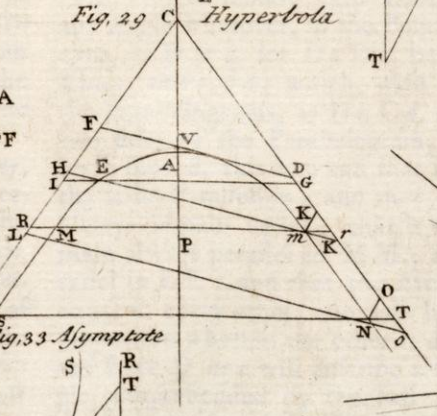


Fig 31 Conjugate Axis

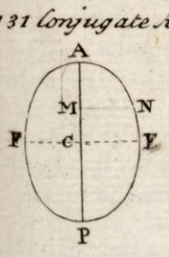


Fig. 32 Conjugate Axis of the Hyperbola

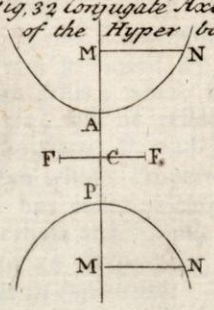
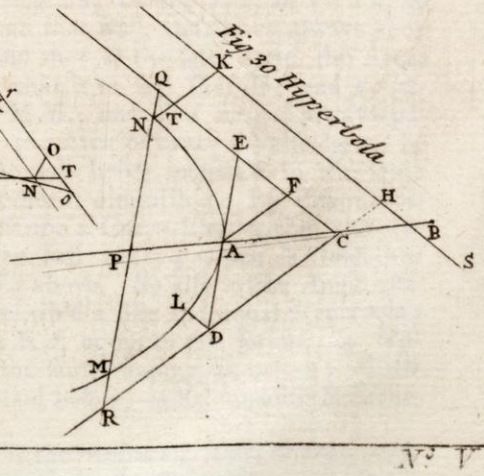


Fig. 33 Asymptote



Fig. 30 Hyperbola



D H B, proportional to the Time; the angular Motion K I B about the other *Focus* I, will be almoſt proportional to the Time, and conſequently without any notable Acceleration or Retardation, and nearly equable; that is to ſay, where the Ellipſis doth not differ much from a Circle.

Geneſis of a Parabola.

Let D I be an infinite right Line, and I L another perpendicular to it; (Fig. 15.) Then, taking, in the Line D I, any Point, F, let the Line F I be biſſected in the Point T; and let there be taken two Threads joined together in the Point T, one T I, the other T F: and let a Pin fixed to the Threads in the Point T be moved to the right and left, in ſuch a manner, that when the Pin is in any other Poſition, as in P, the Thread T I which here becomes P L, be always perpendicular to I L; or, which is the ſame thing, parallel to D I, but equal to the Thread T F; which in this caſe becomes P F, ever paſſing thro' the Point F.

The Curve thus generated by the Pin, infinitely produced both ways, is a *Parabola*: in which *g* P *i* T *s* R *o*, is called the *Periphery*; I D the *Axis*, or *principal Diameter*; F the *Focus*; the Point T the *principal Vertex*.

An Ordinate to the Axis thro' the *Focus*, is equal to the principal *Latus Rectum*: all right Lines *n i*, parallel to the Axis, are Diameters, as dividing the Lines P and K T, which are parallel to the Tangents at their Vertices, into two equal Parts; and they are call'd Diameters belonging to the Vertices in which they terminate, as *i*.

Properties of a Parabola.

1. Every Diameter, or right Line parallel to the Axis, biſſects all the Lines within the Figure, which are parallel to the Tangent of the Vertical Point: which biſſected Lines are call'd *Ordinates*.

2. The Ordinates of the Axis are perpendicular thereto; but the Ordinates of the reſt of the Diameters are oblique to their Diameters; and ſo much the more oblique, by how much the Vertex of the Diameter is further remov'd from the principal Vertex of the Parabola.

3. The *Latus Rectum*, or Parameter to every Diameter, is a third Geometrical Proportional after any Abſciſs, and its Semi-ordinate; that is, if the *Latus Rectum* of the Diameter *i n*, or that of the Vertex *i*, be *y*; then, as the Abſciſs *i q* is to the Semi-ordinate *q k*, ſo is that Semi-ordinate *q k* to *y*.

4. The principal *Latus Rectum*, or that belonging to the Axis, is equal to the Ordinate *h i* paſſing thro' the *Focus*; and quadruple of F T, the leaſt Diſtance of the *Focus* from the principal Vertex.

5. The *Latus Rectum* belonging to any Vertex or Diameter, is alſo quadruple of the diſtance of that Vertex from the *Focus*: Thus, the *Latus Rectum* of the Vertex *s* is quadruple F *s*, and ſo it is every where.

6. The Diſtance of any Vertex or Point in the Parabola whatever, from the *Focus*, is equal to the leaſt Diſtance of the ſame from the Line L L, which is perpendicular to the Axis; and is diſtant from the principal Vertex, by a quarter of the principal *Latus Rectum*.

7. The Square of every Semi-ordinate, as *q k*, is equal to a Rectangle made of the *Latus Rectum*, of the ſame Vertex as Y, and *i q* the Abſciſs of the Diameter of the Vertex. And from the Equality of the παραβολη, or Compariſon in the Figure, betwixt the Rectangle and the Square of the Semi-ordinate, without any Exceſs or Defect, the Name of the Section is derived.

8. Since therefore the *Latus Rectum* in any Diameter is given, the Abſciſſes are as the Squares, or in the duplicate Ratio of the Semi-ordinates. Thus, T F is to T G as *i* F *q* is to *g* G *q*, and ſo likewiſe is *i q* to *i r*, as the Square of *q* T is to the Square of *r l*: and thus every where. From whence, alſo, when the Abſciſs of the Axis is equal to the principal *Latus Rectum*, or fourfold of the Diſtance from the Vertex, it will be equal to its Semi-ordinate.

9. The Angle, comprehended by any Tangent whatever, and a Line from the *Focus*, is equal to an Angle comprehended by the ſame Tangent, and any Diameter, or the Axis. Thus, the Angles I *i* F, and *p i n* are equal: whence, by the way, all the Rays of Light which fall on the Concave part of the Surface, produced by the Convolution of the Parabola about the Axis; which fall, we ſay, on the ſame Parallel to the Axis; will be reflected from a concave paraboloid Figure to the *Focus* F, and there beget a moſt vehement burning: from which Property, the Point F has the Name *Focus*, and has communicated the ſame to the like Points in the Hyperbola and Ellipſis. See Focus.

10. A Parabola, like an Hyperbola, does not incloſe a Space, but ſtretches out *in infinitum*.

11. A Parabolic Curve always tends more and more, *in infinitum*, to a Parallelism with its Diameters; but can never arrive thereat.

12. If two Parabolas be deſcribed, with the ſame Axis and Vertex; the Ordinates to the common Axis will be cut off by the Parabola in a given proportion; and the Areas comprehended by the ſame Axis and Ordinate, and the reſpective Curves, will be in the ſame given Proportion to one another.

13. Every Parabolic Space comprehended betwixt the Curve and the Ordinate, is to the Parallelogram made of the ſame Baſe and Altitude in a ſubſeſquialteral Proportion; that is, as 2 is to 3; and to the external Space in a duplicate Proportion, or as 2 is to 1: So *q i* T is to *q i* I, as 2 is to 3; and to *i* I T as 2 is to 1. From whence it becomes eaſy to ſquare the Parabola. See QUADRATURE.

14. The Diſtance between the Vertex of the Axis, and the Point where any Tangent interſects it, as I, is equal to the Abſciſs of the Axis which belongs to the Ordinate applied from the Point of Contact: So T I is equal to T F; and thus it is every where.

15. All Parabolas are like, or of the ſame Species; as are alſo all Circles.

16. If a Diameter be continu'd thro' the Point of Concourſe of two Tangents; this Diameter will biſſect the Line that joins the Contacts: which Property of the Parabola may likewiſe be underſtood of the Ellipſis, and Hyperbola.

Geneſis of an Hyperbola.

Suppoſe a Staff or Rule of a ſufficient Length, as I B, (Fig. 16.) let I and H be two central Points, anſwering to the *Foci* of an Ellipſis, in which let Nails be faſten'd; then, there being tied to one end of the Stick, a Rope or Thread as long again as the Stick, let the other end thereof be bor'd thro', and ſo fix'd upon the Nail I; and fix the other end of the Rope, by a Knot, upon the other Nail H: which done, laying your Finger on the Point B, where the Rope and Staff are tied together, let your Finger deſcend ſo long, till you have thereby applied, and joined the whole Rope to the Staff, or Rule; the Staff having been in the mean while, as it needs muſt, wheel'd about the Centre I. Thus, with the Point B, the Vertex of the Angle H B I, you will have deſcribed a Curve Line X B D, which is part of an Hyperbola; the whole conſiſting of that Curve which will reſult from the Curve X B D; which hath added to it the Curve Y D, the Produce of the Rule and Work, as turn'd to the other Side.

Further, transferring the Hole, or Knot of the Rope to the Nail I, and faſtening the End of the Staff on the Nail H, you will deſcribe another Hyperbola, vertically oppoſite to the former, which is altogether like and equal thereto. But if, without changing any thing in the Rule and Nails, you only apply a longer Rope; you will have an Hyperbola of a different Species from the former: and if you ſtill lengthen the Rope, you will have ſtill other ſorts of Hyperbolas; till at length, making the Rope double the length of the Rule, you will have the Hyperbola chang'd into a right Line.

But if you alter the Diſtance of the Nails, in the very ſame proportion in which you change the Difference betwixt the Length of the Rope, and that of the Stick; in this Caſe you will have Hyperbolas mark'd out, which are altogether of the ſame Species, but have their ſimilar Parts differing in magnitude.

Laſtly, If the length of the Rope and Rule be equally increas'd, their Difference in the mean while, and the Interval of the Nails remaining the ſame; not a different Hyperbola, either as to Species or Magnitude, will be deſcrib'd, nor any other than a greater Part of the ſame Hyperbola.

It muſt be own'd, however, that many Properties of an Hyperbola are better known from another manner of generating the Figure, which is as follows: Let L L and M M, (Fig. 17.) be infinite right Lines interſecting each other at any Angle whatever, in the Point C: from any Point whatever, as D or *e*, let D *c* D *d* be drawn parallel to the firſt Lines; or *e c*, *e d*; which, with the Lines firſt drawn, make the Parallelograms, as D *c* C *d*, or *e c* C *d*. Now, conceive two ſides of the Parallelogram, as D *c* D *d*, or *e c* *e d*, to be ſo moved, this way and that way, that they always keep the ſame Parallelism; and that at the ſame time the Areas always remain equal; that is to ſay, that D *c* and *e c* remain always parallel to M M; and D *d* or *e d* always parallel to L L; and that the Area of every Parallelogram be equal to every other, one Side being increas'd in the ſame Proportion wherein the other is diminiſh'd: By this means, the Point D or *e* will deſcribe a Curve-Line within the Angle comprehended by the firſt Lines; which is altogether the ſame as that deſcrib'd above. So alſo in the Angle vertically oppoſite will be deſcrib'd a like and equal Hyperbola; if the Parallelogram C *c* K *d*, equal to the former, be ſuppoſed to be moved, in the ſame manner as before: which Hyperbolas are, as was ſaid before, called oppoſite *Sections*, or oppoſite Hyperbola's.

In each Figure, D K is the *tranſverſe Axis*, or *tranſverſe Diameter of the Hyperbola of the oppoſite Sections*; the Point C the *Centre*; H and I the *Foci*. In the latter Figure, all the Lines paſſing thro' the Centre C, as *i b*, are *Diameters*: but if Hyperbola's be deſcrib'd in the following Angles, as

LCM, MCL, thoſe Sections will be called the *following Sections*: And if the Diſtance of the primary Vertex of thoſe Hyperbola's from the common Centre C, as C β, or C γ, be equal to the Semi-tangent K ν or K ω; at the primary Vertex of theſe, thoſe Sections are called *conjugate Sections*: And all the Figures together are named the *Hyperbolic Syſtem*.

Further, *i h* the Ordinate to the Axis thro' the *Focus*, is equal to the principal *Latus Rectum*, or the Parameter of the Axis; and an indeterminate Diameter, which is parallel to the Ordinates of any determinate Diameter, is called the *conjugate Diameter* of the ſame.

Properties of the Hyperbola.

1. Any Diameter or right Line paſſing thro' the Centre, biſſects all its Ordinates; that is, all the right Lines terminated on both Sides by the Hyperbolic Periphery.

2. The Ordinates of the Axis are perpendicular to the ſame; but the Ordinates of the reſt of the Diameters are oblique to their Diameters: and ſo much the more in divers Species, at equal Diſtances from the Axis, by how much the Difference of the Angles including the Hyperbola's is the greater: and in the ſame Hyperbola, ſo much the more oblique, by how much the Diameters are remov'd from the Axis.

3. If any Lines, as H *h* and Q *s*, be Semiordinates to any Diameter whatever, as K D; the Square of the Semi-ordinate H *h*, is to the Square of the Semi-ordinate Q *s*, as the Rectangle K H D H is to the Rectangle K Q D Q: and ſo the Square *b n* is to the Square *a* K, as the Rectangle *i b h b* is to the Rectangle *i a h a*: And thus every where.

4. The *Latus Rectum*, or Parameter of every Diameter, is a third Geometrical Proportional, after the Diameter, and the Conjugate thereof, (or its Tangent, which is equal to it:) That is, if the *Latus Rectum* of any Diameter, as D K, be *y*; then, as the Diameter D K is to its conjugate $\beta\nu$, or its equal $\omega\nu$; ſo that Conjugate $\beta\gamma$, or that Tangent $\omega\nu$ is to *y*. And as the Ordinate to the Axis thro' the *Focus* is the principal *Latus Rectum*, ſo it is more than double of the leaſt Diſtance of the *Focus* from the Vertex.

5. The Square of any Semi-ordinate, as Q *r*, is greater than a Rectangle made of the Abſciſs D Q, drawn into the *Latus Rectum* of its own Diameter, as *y*: And, in like manner, the Square of the Semi-ordinate *b n*, is greater than the Rectangle of the Abſciſs *i b*, into the *Latus Rectum* of the Diameter *h i*. From which ὑπερβολή, or Exceſs, this Section hath its Name.

6. If from any Point of the Hyperbola, as B, (Fig. 16.) there be drawn right Lines to both the *Foci*, as B H, B I, the Difference of theſe Lines will be equal to the Axis D K; as will eaſily appear from the Delineation it ſelf.

7. If the Angle B H I, comprehended by Lines drawn to the *Foci*, be biſſected by the right Line E B, that right Line will be a Tangent to the Hyperbola in the Point B.

8. The right Lines L L and M M, which incloſe the Hyperbola's, are Aſymptotes of the Hyperbola's; that is, they are ſuch, to which, on both ſides, the Curve approaches nearer and nearer, but is never able to touch or coincide therewith.

9. The Species of Hyperbola's are various, according to the different Magnitude of the Angle L C M, comprehended by the Aſymptotes: but that Angle remaining the ſame, the Species of the Hyperbola remains unchang'd; but according to the different Magnitudes of the Parallelograms, by which Hyperbola's are deſcrib'd, Hyperbola's of divers Magnitudes do ariſe: If the Angle contained by the Aſymptotes be a right Angle, the Hyperbola is called *Equilateral*, or *Rectangular*; and the *Latus Rectum* of all the Diameters will (as in a Circle) be equal to their Diameters. And, laſtly, if Hyperbola's be deſcrib'd about the ſame Axis in divers Angles of the Aſymptotes, the right Lines perpendicular to the Axis will be cut off in a given Proportion by them all; and the Spaces likewiſe incloſed by the right Lines, or Ordinates, the produced Axis, and the Curves, will be in the ſame given Proportion.

10. If the Diſtances from the Centre of the Hyperbola, be taken in a Geometrical Proportion in one of the Aſymptotes, ſo that C I, C II, C III, C IV, C V, C VI, be in continued Geometrical Proportion; and if from thoſe Points there be drawn parallel to the other Aſymptote the Lines, I 1, II 2, III 3, IV 4, V 5, VI 6, the Spaces I 2, II 3, III 4, IV 5, V 6, will be equal among themſelves. And conſequently, if that Aſymptote C M be ſuppoſed to be divided, according to the Proportion of Numbers exceeding one another in a natural Series, thoſe Spaces will be proportional to the Logarithms of all thoſe Numbers.

Common Properties of all the Conic Sections.

From the whole it may be gather'd, 1ſt, That the *Conic Sections* are in themſelves a Syſtem of regular Curves, allied to each other; and that one is chang'd into another perpetually, when it is either increas'd, or diminiſh'd, *in infinitum*.

Thus, the *Circle*, the Curvature thereof being never ſo little increas'd or diminiſh'd, paſſeth into an *Ellipſis*; and the Ellipſis, its Centre going away infinitely, and the Curvature being by that means diminiſh'd, is turn'd into a *Parabola*: And when the Curvature of the Parabola is never ſo little chang'd, there ariſeth the firſt of the *Hyperbola's*; the Species whereof, which are innumerable, will all of them ariſe orderly by a gradual Diminution of the Curvature; until the Curvature vaniſhing away, the laſt Hyperbola ends in a *right Line* perpendicular to the Axis. From whence it is manifeſt, that every regular Curvature, like to that of a Circle, from the Circle it ſelf into a right Line, is a *conical* Curvature, and is diſtinguiſh'd with its peculiar Name, according to the divers Degrees of that Curvature.

2dly, That the *Latus Rectum* of a Circle, is double to the Diſtance from the Vertex: That all the *Latera Recta* of the Ellipſes, are in all Proportions to that diſtance betwixt the Double and Quadruple, according to their different Species: That the *Latus Rectum* of the Parabola is juſt quadruple to that Diſtance; and, laſtly, that the *Latera Recta* of Hyperbola's are in all Proportions beyond the Quadruple, according to their various Kinds.

3dly, That all Diameters in a Circle and Ellipſis, interſect one another in the Centre of the Figure within the Section: That in the Parabola they are all parallel amongſt themſelves, and to the Axis; but that in the Hyperbola they interſect one another, but this without the Section, in the common Centre of the oppoſite Sections.

4thly, That the Curvature, with reſpect to the *Focus*, in all theſe Figures, is increas'd or diminiſh'd proportionably.

CONICKS, that Part of the higher Geometry, or Geometry of Curves, which conſiders the *Cone*, and the ſeveral Curve Lines ariſing from the *Sections* thereof. See Geometry; ſee alſo Cone, and Conic *Section*.

CONIFEROUS, a Term applied to ſuch Trees, Shrubs, or Herbs, as bear a ſquammous or ſcaly Fruit, of a woody Subſtance, and a Figure approaching to that of a Cone; in which there are many Seeds, and when they are ripe, the ſeveral Cells or Partitions in the Cone gape or open, and the Seed drops out: Of this kind are the Firr, the Pine, Beach, and the like. See Plant.

CONJOINT, *Conjunctus*, is applied in the antient Muſick, in the ſame Senſe as *Conſonant*, to two or more Sounds. See Consonance.

Conjoint *Degrees*, are two Notes which immediately follow each other in the Order of the Scale; as *Ut* and *Re*. See Degree.

Conjoint *Tetrachords*, are two Tetrachords, where the ſame Chord is the higheſt of the one, and the loweſt of the other. See Chord.

CONISOR, or COGNISOR, in Law, is uſed in the paſſing of Fines, for him that acknowledges the Fine. See Fine. He to whom the Fine is acknowledg'd, is called the *Cognizee*.

CONJUGATE *Diameter*, or *Axis*, in Conicks, or the Sections of the Cone, is a right Line biſſecting the tranſverſe Diameter. See Diameter, and Conic *Section*.

Conjugate *Diameter*, or *Axis*, of an Ellipſis, is the ſhorteſt Diameter, or Axis, biſſecting the longer, or tranſverſe Axis. See Ellipsis.

'Tis demonſtrated, 1ſt, That in an Ellipſis, the *Conjugate* Axis is a Mean Proportional between the Tranſverſe Axis and the Parameter. 2dly, The Square of the *Conjugate* Axis, is to that of the Tranſverſe, as the Square of the Semi-ordinate is to the Rectangle of the Segments of the Axis. 3dly, That a right Line drawn from the *Focus* to the Extremity of the Half-*conjugate* Axis, is equal to the tranſverſe Semi-axis.

Hence, the *Conjugate* Axes being given, the *Focus* is eaſily determin'd. See Focus. And the Ellipſis thence eaſily deſcrib'd.

Conjugate *Axis*, in an Hyperbola, is a Mean Proportional between the tranſverſe Axis and the Parameter. See Hyperbola.

It is thus called, becauſe the *Conjugate Axis* of an Ellipſis has the ſame Ratio.

In an Hyperbola, the Square of the *Conjugate Axis*, is to the Square of the Tranſverſe, as the Parameter to the tranſverſe Axis. See Parameter.

CONJUGATION, in Grammar, an orderly Diſtribution of the ſeveral Parts of Verbs; or, a different Inflection of Verbs, made according to their different Moods and Tenſes, to diſtinguiſh 'em from each other. See Verb.

The *Latins* have four *Conjugations*, diſtinguiſh'd by the Terminations of their Infinitive, *are*, *ere*, *ere*, *ire*; and moſt of the *French* Grammarians reduce the *Conjugations* of their Language to the ſame Number; ending in *er*, *re*, *ir*, and *oir*.

In *Engliſh*, where the Verbs have ſcarce any natural Inflections, but derive all their Variations from additional Particles, Pronouns, &c. we have ſcarce any ſuch thing as ſtrict *Conjugations*. See Mood, Tense, &c.

CONJUGATION, in Anatomy, is underſtood of a *Pair* of Nerves; or two Nerves, ariſing together, and ſerving for the ſame Operation, Senſation, or Motion; there being ſcarce any Nerve without its fellow. See NERVE.

The antient Phyſicians only knew of Seven Pairs, or *Conjugations* of Nerves; the Moderns have diſcover'd thirty new ones. See PAIR.

CONJUNCTION, in Aſtronomy, the Concourſe, or Coition of two Stars, or Planets, in the ſame optical Point of the Heavens, *i. e.* in the ſame degree of the Zodiack. See PLANET, PHASIS, *&c.*

If the two Bodies concur both in the ſame degree of Longitude and Latitude, a right Line drawn from the Eye thro' the Centre of one of them, paſſes thro' that of the other; and the *Conjunction* is ſaid to be *true:* if the lower hides the upper, the *Conjunction* is ſaid to be *corporal*; and if the ſame right Line, continu'd back from the two Centres thro' the Eye, do alſo paſs thro' the Centre of the Earth, the *Conjunction* is ſaid to be *central:* If the Line paſs wide of the Centre of the Earth, the *Conjunction* is ſaid to be *Partile:* And if the Bodies don't meet preciſely in the ſame Degree, but are join'd with ſome Latitude, the *Conjunction* is ſaid to be *apparent.*

Conjunctions are alſo divided into *great* and *greateſt: Great Conjunctions* are thoſe which only happen at conſiderable diſtances of Time from each other; as that of *Saturn* and *Jupiter*, which happens every 20 Years. *Greateſt*, are thoſe which happen in Times very remote; as that *Conjunction* of the three ſuperior Planets, *Mars*, *Jupiter*, and *Saturn*, which only returns once in 500 Years. But this Diviſion has little place in Aſtronomy; being founded on the Notion of the particular Influences, *&c.* of the heavenly Bodies in ſuch and ſuch Aſpects.

The Aſtrologers maintain, that the Deluge was owing to a *Conjunction* of all the Planets in *Capricorn*; and that the Conflagration will be occaſion'd by their *Conjunctions* in *Cancer:* whence they pretend to foretel the End of the World.

The *Conjunction* is the firſt, or the principal of all the Aſpects; and that whence the other Aſpects commence; as Oppoſition is the laſt, where they terminate. See ASPECT, and OPPOSITION.

The Moon is in *conjunction* with the Sun every Month. See MOON.

Her *Conjunctions* and Oppoſitions are called by a general Name, *Syzygies.* See SYZYGY.

The Eclipſes of the Sun never happen, but when there is a *Conjunction* of the Sun and Moon in the Nodes of the Ecliptic. See ECLIPSE.

CONJUNCTION, in Grammar, a Particle which expreſſes a Relation, or Dependance between Words and Phraſes; thus called, becauſe ſerving to *join*, or connect the Parts, or Members of a Diſcourſe. See PARTICLE, SENTENCE, *&c.*

The *Conjunction* is the ſixth of the eight vulgar Parts of Speech. See SPEECH.

Conjunctions render the Diſcourſe more ſmooth and fluent; and ſerve very good Purpoſes in the Argumentative and Narrative Style: but muſt ever be omitted where a Perſon ſpeaks with Emotion; as only ſerving to weaken and enervate it. *Boileau* obſerves, that nothing gives more heat and motion to a Diſcourſe, than to drop the *Conjunctions* or Copulatives: A Paſſion, adds he, embarraſs'd with *Conjunctions* and uſeleſs Particles, loſes all the Fire and Vehemence it would get in its progreſs.

Conjunctions are of various Kinds: *Copulative* or *conjunctive Conjunctions*, expreſs a Relation of Union, or Compariſon between Things; as *and*, *et*; *only*, *tantum*; *as much as*, *tantum quantum*; *in the ſame manner as*, *quemadmodum*; *neither more nor leſs*, *tantundem*; *inaſmuch as*, *quippe*; *not only*, *but alſo*, *&c. non modo*, *ſed etiam*, &c. See COPULATIVE.

Conjunctions Disjunctive, expreſs a Relation of Separation or Diviſion; as, *neither*, *nec*; *whether*, *ſive*; *or*, *vel.* See DISJUNCTIVE.

Conjunctions Adverſative, expreſs a Reſtriction, or Contrariety; as, *but*, *ſed*; *nevertheleſs*, *tamen*; *altho*, *etiamſi*; *far from*, *adeo non.*

Conjunctions Conditional, are, *if*, *ſi*; *if not*, *ſi minus*; *on Condition that*, *ea lege ut*; *provided that*, *dummodo*; *in caſe of*, *ſi vero.* See CONDITION.

Conjunctions Continuative, expreſs a Succeſſion, or Continuation of the Diſcourſe; as, *in effect*, *reipſa*; *even*, *etiam*; *whatever it be*, *quicquid ſit.*

Conjunctions Cauſal, ſhew that the Reaſon of ſomething is brought: *for*, *nam*; *becauſe*, *quia*; *ſeeing*, *quippe*; *the rather ſince*, *eo magis quo*; *inaſmuch as*, *quatenus.* See CAUSAL.

Conjunctions Dubitative, expreſs ſome Doubt, or Suſpenſion of Opinion; as, *if*; *that is to ſay*, *if*, &c.

Exceptive Conjunctions, are, *if it ben't*, *niſi ſi*; *unleſs that*, *niſi*, &c.

Conjunctions Concluſive, denote a Conſequence drawn; as, *for which reaſon*, *quapropter*; *but then*, *atqui*; *of conſequence*, *ideoque*; *ſo that*, *ita ut*, &c.

CONJUNCTIVA *Tunica*, or *Adnata*, in Anatomy, the firſt Coat, or Membrane of the Eye; ſo called, becauſe it incloſes all the reſt; or becauſe it faſtens the Eye in its Orbit. See ADNATA, and EYE.

It is very ſmooth, when ſound, of a white Colour, like Alabaſter; whence it is ordinarily called the *White of the Eye.*

It is ſaid to have its riſe from the *Pericranium*, and to be only a Continuation or Extenſion thereof. See PERICRANIUM.

The *Conjunctiva* does not inveſt the Globe of the Eye intire; but terminates at the Edge of the *Sclerotica.* See SCLEROTICA.

It is cover'd with a Million of fine Veins and Arteries, which never appear, unleſs when the Motion of the Blood is more than uſually rapid, as in Opthalmia's; or when the Veſſels are more full and diſtended than ordinary, as in Drunkenneſs.

CONJURATION, Magick Words Characters or Ceremonies, whereby evil Spirits, Tempeſts, *&c.* are ſuppos'd to be rais'd, and driven away. See MAGICK.

The *Romiſh* Prieſts pretend to expel Devils, by preparing Holy Water in a particular manner, and ſprinkling it over the poſſeſs'd, with a number of *Conjurations*, and Exorciſms. See EXORCISM.

Some Authors make the difference between *Conjuration* and *Witchcraft* to conſiſt in this; that the former effects its Ends by Prayers, and Invocation of God's Name, *&c.* to compel the Devil to do what is deſir'd; ſo that the *Conjurer* is ſuppos'd to be at War with the Devil, and that evil Spirit to act merely out of Conſtraint: whereas the latter attains its End by an immediate Application to the Devil himſelf; and the Devil's Complaiſance is ſuppos'd to be the Conſequence of ſome Agreement between 'em: So that the Devil and the Witch have a good Underſtanding between 'em. See WITCHCRAFT.

Both theſe, again, differ from *Enchantment* and *Sorcery*; in that theſe latter operate ſecretly, and ſlowly, by Spells, Charms, *&c.* without ever calling on the Devil, or having any conference with him. See CHARM, *&c.*

CONNECTION, or CONNEXION, *binding*, a Relation whereby one thing adheres to, or depends on another.

Euclid's Propoſitions have ſuch a *Connection* among themſelves, that the latter cannot ſubſiſt without the former.

Philoſophers are at a loſs as to the Manner of the *Connection* between Soul and Body; between Cauſes and Effects *&c.* See SOUL, CAUSE, *&c.*

CONNECTION, in the Drama, conſiſts in the joining of the ſeveral Scenes together. See SCENE.

When the Scenes ſucceed one another immediately; and are ſo joined as that the Stage is never left empty, the *Connection* is ſaid to be obſerv'd. See TRAGEDY, *&c.*

CONNIVENTES *Valvulæ*, in Anatomy, are Wrinkles, or Corrugations in the inner Coat or Membrane of the two large Inteſtines, the *Jejunum* and *Ileum.* See INTESTINES.

They are formed as the *Rugæ* of the Stomach, *viz.* by the inner Coats being larger than the outer. See STOMACH.

Theſe Folds, or Corrugations, ſome Anatomiſts imagine in ſome meaſure to do the Office of Valves; by ſtraitning the Paſſages, and conſequently impeding the Motion of their Contents: by which means, the Lacteals have the more time to imbibe the Chyle. See LACTEAL, CHYLE, DIGESTION, *&c.*

CONNOISSEUR, a *French* Term, of late uſed in *Engliſh:* It literally denotes a Perſon well ſeen and verſed in any thing; being form'd of the Verb *Connoitre*, *to know*, *underſtand.*

Hence it comes to be uſed in our Language for a *Critick*, or a Perſon who is a thorow Judge or Maſter in any way; particularly in Matters of Painting, *&c.*

CONOID, CONOIDES, in Geometry, a ſolid Body, reſembling a *Cone*, except in this, that inſtead of a perfect Circle for its Baſe, it has an Ellipſis, or ſome other Curve approaching thereto. See CONE.

The *Conoid* is produced by the entire Circumvolution of a Conic Section around its Axis; and according to the Denomination of the Section from whence it is generated, it is differently denominated: If, *v. g.* the Solid be produced by the Motion of a Parabola, it is called a *Parabolic Conoid*; if by that of an Hyperbola, an *Hyperbolic Conoid*; and an *Elliptic Conoid*, or a *Spheroid*, when produced by the Rotation of an Ellipſis, around one of its Axes. See HYPERBOLIC, PARABOLIC, *&c.*

The famous Solid of the leaſt Reſiſtance, Sir *I. Newton*, M. *Fatio*, and the Marquis *de l'Hopital*, have demonſtrated to be a *Conoid*, whoſe Reſiſtance is only one 67th Part of that of the great Baſe.

Anatomiſts alſo give the Name *Conoid*, or *Conarium*, to a Gland found in the third Ventricle of the Brain, reſembling a Pine-

a Pine-Apple; whence M. *Des Cartes* call'd it *Pinealis*, and fix'd there the Seat of the Rational Soul. See PINEAL *Gland*.

CONSANGUINITY, the Relation of *Kinſhip*, between Perſons of the ſame Blood, or iſſu'd from the ſame Root.

Marriage is prohibited by the Church to the fourth Degree of *Conſanguinity*, incluſive; but by the Law of Nature, *Conſanguinity* is no obſtacle to Marriage, except in a direct Line. See AGNATION, and COGNATION.

Conſanguinity terminates in the ſixth or ſeventh Degree, excepting in the Succeſſion to the Crown; in which Caſe, *Conſanguinity* is continu'd to infinity.

The Civilians call *Fratres Conſanguinei*, thoſe born of the ſame Father; in oppoſition to *Fratres Uterini*, who are only born of the ſame Mother. See BROTHER.

According to the common Opinion, theſe, and Brothers-German were not allow'd to complain of an inofficious Teſtament, *i. e.* of being diſinherited without cauſe; excepting from the Turpitude of the Perſon appointed Heir in their place. But *Van Water* endeavours to ſhew the contrary; and urges, that the *Conſanguinei* might plead Inofficioſity, even where the Teſtament was not made in favour of a Perſon incapable.

CONSCIENCE, *Conſciouſneſs*, in Ethicks, a ſecret Teſtimony or Judgment of the Soul, whereby it gives its Approbation to Things it does that are naturally good; and reproaches it ſelf for thoſe that are evil. See JUDGMENT, GOOD, and EVIL.

Or, *Conſcience* is a Dictate of the underſtanding Power, concerning Moral Actions; conſider'd as it has the Knowledge of Laws; and conſequently as conſcious of what is to be done, or not done to the Legiſlator. See MORAL.

In the more popular Senſe of the Word, *Conſcience* is a Judgment, either true or falſe, whereby we pronounce a Thing good or evil. This makes what we call the *Inner Forum*, or Tribunal.

Some Divines maintain, that *Conſcience* is infallible; and hold it to be that immutable Law whereby God will judge Men: They deny that the Underſtanding can be the Source of Errors, and lay 'em all at the door of the Will. A Man, ſay they, may ſecure himſelf from Error, by forbearing to judge of Things till he have a clear and diſtinct Perception thereof. See LIBERTY.

Some of the Schoolmen diſtinguiſh between the *Conſcience* antecedent to an Action, and that conſequent thereto: The firſt, called *antecedent Conſcience*, determines what is good and what evil; and conſequently preſcribes what is to be done, and what avoided. *Conſequent Conſcience* is a kind of ſecondary or reflex Judgment, with regard to the Goodneſs, &c. of Things already done or committed.

The *Rule of Conſcience* is the Will of God; ſo far as it is made known to us, either by the Light of Nature, or by that of Revelation. See REASON, and REVELATION.

With reſpect to the Knowledge of this Rule, *Conſcience* is ſaid to be *rightly informed*, or *miſtaken*; *firm*, or *wavering*, or *ſcrupulous*, &c.

With reſpect to the Conformity of our Actions to this Rule when known, *Conſcience* is ſaid to be *good*, or *evil*, &c.

The Philoſophers, in lieu of the Word *Conſcience*, which ſeems appropriated to Theological Matters, ordinarily uſe that of *Conſciouſneſs*; whereby they mean an inner Sentiment of a Thing, whereof one may have a clear and diſtinct Notion. In this Senſe, they ſay, that we don't know our own Soul, nor are aſſur'd of the Exiſtence of our own Thoughts, otherwiſe than by *Self-conſciouſneſs*. See EXISTENCE.

CONSCRIPT, CONSCRIPTUS, a popular Term in the *Roman* Hiſtory, uſed in ſpeaking of Senators, who were called *Conſcript*-Fathers, *Patres-Conſcripti*; in regard their Names were written in the Regiſter, or Catalogue of the Senate. See SENATOR.

Plutarch obſerves, that thoſe only were properly denominated *Conſcript*, whoſe Names were added to thoſe of the Antients; as being new-created from among the Knights. See FATHER.

CONSECRATION, the Action of converting or ſetting apart any profane or common Thing, to a pious Purpoſe; with the Ceremonies, Prayers, Benedictions, &c. uſed therein.

Conſecration is the reverſe of Sacrilege; which conſiſts in the perverting a Thing ſet apart for a pious Purpoſe, to a profane and popular one. See SACRILEGE.

Thus, we ſay, the Biſhop *conſecrates* a Church, or a Chalice; the Pope *conſecrates* Medals, *Agnus Dei's*, Loaves, Cakes, *i. e.* he grants Indulgences to thoſe who bear 'em about 'em with Devotion.

The *Conſecration* or Dedication of a Church, is an Epiſcopal Ceremony, conſiſting in a great number of Benedictions, with Aſperſions, and Unctions of Chriſm, &c. on the Walls, both withinſide and without. See CHURCH.

The Cuſtom of *conſecrating* Perſons, Temples, Altars, Veſtments, Utenſils, &c. is very antient; and all the Ceremonies thereof are preſcrib'd under the Old Law. Under the New Law, when thoſe *Conſecrations* relate to Men, and are perform'd by appointment of Jeſus Chriſt, they are properly call'd *Ordinations*; excepting thoſe perform'd to Biſhops and Kings, which ſtill retain the Name of *Conſecration*. See BISHOP, and KING; ſee alſo ORDINATION.

Thoſe which only conſiſt in a Ceremony inſtituted by the Church, are more properly call'd *Benedictions*. See BENEDICTION.

When they regard Churches, Altars, Veſſels, &c. they are ſtrictly called *Dedications*. See DEDICATION.

CONSECRATION is particularly uſed for the Benediction of the Elements in the Euchariſt.

The *Romaniſts* define it the Converſion of the Bread and Wine into the real Body and Blood of Jeſus Chriſt; and that this is the Sentiment of that Church, is evident from the Prieſt's elevating the Hoſt immediately after *Conſecration*, for the People to adore it.

There is a great Controverſy between the *Latin* and *Greek* Churches, touching the Words of *Conſecration*: The common Opinion among the *Romaniſts*, agreeable to St. *Thomas* and the Schoolmen, is, that the *Conſecration* of the Bread and Wine conſiſts in theſe Words, *This is my Body*; *this is my Blood*. The *Greeks*, on the contrary, attribute the Change of the Elements to a certain Prayer which they call the *Invocation of the Holy Ghoſt*, rehears'd after the Words *This is my Body*, *this is my Blood*, which the *Greeks* maintain are only neceſſary in the Proceſs of the *Conſecration*, as they contain the Hiſtory of the Inſtitution; not as they contribute any thing to the Change.

CONSECRATION, among Medaliſts, is the Ceremony of the *Apotheoſis* of the Emperors; or their Tranſlation into Heaven, and Reception among the Gods: The Proceſs whereof, ſee under APOTHEOSIS.

On Medals, the *Apotheoſis* is thus repreſented; On one ſide is the Emperor's Head, crown'd with Laurel, ſometimes veil'd, and the Inſcription gives him the Title of *Divus*: on the Reverſe is a Temple, a *Buſtum*, an Altar, or an Eagle taking its Flight towards Heaven, either from off the Altar, or from a *Cippus*: At other times the Emperor is ſeen in the Air, bore up by the Eagle; the Inſcription always, *Conſecratio*.

Theſe are the uſual Symbols: yet on the Reverſe of that of *Antoninus*, is the *Anthonine* Column.

In the *Apotheoſis* of Empreſſes, inſtead of an Eagle is a Peacock.

For the Honours render'd them after Death, they were explain'd by the Words *Conſecratio*, *Pater*, *Divus*, and *Deus*. Sometimes, around the Temple or Altar are put, *Memoria felix*, or *Memoriæ Æternæ*: For Princeſſes, *Æternitas*, and *Sideribus recepta*; on the Side of the Head *Dea*, or Θέα.

CONSECTARY, is a Propoſition that follows, or is deduced from ſome preceding Definitions, *Lemmata*, Axioms, Concluſions, or the like: Whence ſome chuſe rather to call it a *Conſequence*; and others a *Corollary*, &c. See COROLLARY, and CONSEQUENT.

CONSECUTIVELY, CONSECUTIVE, in the School-Philoſophy, is ſometimes uſed in oppoſition to *antecedently*, and ſometimes to *effectively*, or *cauſally*.

Thus, ſay the Schoolmen, the Corruption of one Thing is the Generation of another, not *effectively*, but *conſecutively*: That is, ſince Matter cannot be without Form, 'tis neceſſary that the Generation of one Thing follow upon the Corruption of another.

CONSENT *of Parts*, in the Animal Oeconomy, a certain Agreement, or Sympathy, by means whereof, when one Part is immediately affected, another, at a diſtance, becomes affected in like manner. See SYMPATHY.

This mutual Accord, or *Conſent*, is doubtleſs effected by the Commerce of the Nerves, and their artful Diſtribution and Ramification throughout the Body. See NERVE.

The Effect is ſo ſenſible, as even to come under the Phyſicians cognizance: Thus, the Stone in the Bladder, by vellicating the Fibres there, will pain and draw them ſo much into Spaſms, as to affect the Coats of the Bowels in the ſame manner, by the Intermediation of nervous Threads, and make a Cholic there; and alſo extend their Twitches ſometimes ſo far as the Stomach, and occaſion grievous Vomitings: The Remedy therefore, in ſuch Caſes, is to regard the Part originally affected, how remote and grievous ſoever may be the Conſequences and Symptoms in other Places.

The fifth Conjugation of Nerves branch'd to the Parts of the Eye, the Ear, thoſe of the Mouth, Cheeks, *Præcordia*, and Parts adjacent, &c. are ſuppos'd by Naturaliſts to be the Inſtruments of that extraordinary *Conſent* between thoſe Parts. Hence it is, that a ſavoury Thing ſeen or ſmelt, excites the Appetite, and affects the Glands and Parts of the Mouth; that a ſhameful thing ſeen or heard, affects the Cheeks with Bluſhes; on the contrary, if it pleaſe, it affects the *Præcordia*, and excites the Muſcles of the Mouth and Face to laughter; if it grieve, affects the Glands of the Eyes, ſo as to occaſion

occaſion Tears, and the Muſcles of the Face, putting them into an Aſpect of crying.

Dr. *Willis*, quoted by the Reverend Mr. *Derham*, imputes the Pleaſure of Kiſſing, and its Effects in exciting Love, and even Lechery, to this Pair of Nerves; which being branch'd both to the Lips and the genital Parts, when the former are affected, an Irritation is occaſion'd in the latter: And Dr. *Sachs* judges it to be from the Conſent of the *Labia Uteri* with the *Labia Oris*, that a breeding Lady, frighted with the ſight of ſcabby Lips, had Puſtules of the like kind broke out in the *Labia Uteri*.

CONSEQUENCE, in Philoſophy, the Concluſion of a Reaſoning, or Argument. See CONCLUSION.

Thus, we ſay, two Premiſes of a Syllogiſm being granted, the *Conſequence* muſt alſo be granted. See SYLLOGISM.

In a more reſtrain'd Signification, *Conſequence* is uſed for the Relation or Connection between two Propoſitions, whereof one follows, or is infer'd from the other. Thus: *It is an Animal, and therefore perceives.*

CONSEQUENT, the laſt Propoſition of an Argument; being ſomething deduced or gather'd from a preceding Argumentation.

An *Enthymeme* only contains two Propoſitions, the *Antecedent*, and *Sequela*, or *Conſequent*: If the Antecedent be abſurd, the *Conſequent* muſt be ſo too. See ENTHYMEME.

CONSEQUENT, in a more preciſe Senſe, is uſed for the Propoſition which contains the Concluſion, conſider'd in it ſelf, and without any regard to the Antecedent: In which Senſe, the *Conſequent* may be true, tho the Conſequence be falſe.

For Inſtance; Virtue ought to be rewarded; therefore Temperance is a Virtue. See PROPOSITION.

CONSEQUENT *of a Ratio*, in Arithmetick, the latter of two Terms of a Ratio; or that to which the Antecedent is refer'd. See RATIO, and PROPORTION.

Thus, in *a* : *b*, or *a* to *b*, *b* is the *Conſequent*, *a* the Antecedent. See ANTECEDENT.

CONSERVATOR, an Officer eſtabliſh'd for the Security and Preſervation of the Privileges granted ſome Cities, Bodies, and Communities; or, a Perſon who has a Commiſſion to judge of and decide the Differences ariſing among them.

In moſt Catholick Univerſities, there are two *Conſervators*; the *Conſervator* of Royal Privileges, or thoſe granted by Kings; and the *Conſervator* of Apoſtolical Privileges, or thoſe granted by the Pope.

The firſt takes cognizance of Perſonal and Mixt Cauſes, between the Regents, Students, &c. and the latter of Spiritual Matters between Eccleſiaſticks.

Antiently, there were appointed *Conſervators* of Treaties of Peace between Princes; which *Conſervators* became Judges of the Infractions made on a Treaty, and were charg'd with the procuring Satisfaction to be made. Theſe were uſually Feudatories of each Prince.

In lieu of *Conſervators*, Princes now have recourſe to other indifferent Princes to Guarantee the Treaties. See GUARANTEE.

CONSERVATOR *of the Peace*, in our antient Cuſtoms, was a Perſon who had an eſpecial Charge, by Virtue of his Office, to ſee the King's Peace kept. See PEACE.

Till the Erection of Juſtices of the Peace by King *Edward* III. there were ſeveral Perſons, who by Common Law were intereſted in keeping the ſame: Some having that Charge as incident to other Offices; others ſimply, or of itſelf, called *Cuſtodes*, or *Conſervators of the Peace*. See JUSTICE.

The Chamberlain of *Cheſter* is ſtill a *Conſervator* in that County; and Petty Conſtables are, by the Common Law, *Conſervators*, &c. in the firſt Senſe.

CONSERVATORY, in Gardening. See GREEN-*Houſe*.

CONSERVE, in Pharmacy and Confectionry, a dry Confect, or Form of Medicine, or Food, contrived to preſerve the Flowers, Herbs, Roots, Peels, or Fruits of ſeveral Simples, as near as poſſible to what they were when freſh gather'd; and to give them an agreeable Taſte. See CONFECT.

Conſerves are made by beating up the Thing to be preſerv'd with a quantity of Sugar; *viz.* a triple Quantity thereof to thoſe which are moſt moiſt and corruptible, and a double Quantity to ſuch as are leaſt ſo.

The Phyſicians, under the Name of *Conſerves*, commonly comprehend all Kinds of Confects of Flowers, Fruits, Roots, Seeds, Barks, &c. both liquid and dry.

Thus, *e. gr.* to make *Conſerve* of Roſes, Roſemary Flowers, Sage Flowers, or the like; they pound 'em in a ſtone Mortar, and when pounded, put to 'em fine Sugar, in a Glaſs cloſe ſtop'd up.

For Fruits, as Currants, &c. they ſet 'em on the Fire to make 'em caſt their Juice, then drain and ſtrain 'em, and thicken what comes from 'em over the Fire, and add it to the Sugar. See PRESERVE.

CONSIDERATION, in Law, the Material Cauſe, the *quid pro quo* of any Contract, and without which no Contract binds. See CONTRACT, PACT, &c.

This *Conſideration* is either *expreſs'd*; as if a Man bargain to give ten Guineas for a Horſe: or *implied*, when the Law it ſelf enforces a *Conſideration*; as if a Man coming into an Inn, take Meat, Drink, and Lodging for himſelf and Horſe, the Law preſumes he intends to pay for 'em, tho there be no expreſs Contract between him and his Hoſt; and if he diſcharge not the Houſe, the Hoſt may ſtop his Horſe. See ASSUMPSIT.

CONSIGNMENT, or CONSIGNATION, the depoſiting any Sum in Money, Bills, Papers, or Commodities, in ſure Hands; either by order of a Court of Juſtice, in order to their being deliver'd to the Perſons to whom they are adjudg'd; or voluntarily, in order to their being remitted to the Perſons they belong to, or ſent to the Places they are deſtin'd for.

CONSIGNMENT *of Goods*, is the delivering or making them over: Thus, Goods are ſaid to be *conſign'd* to a Factor, when they are ſent to him to be ſold, &c. or when a Factor ſends back Goods to his Principal, they are ſaid to be *conſign'd* to him. See FACTOR.

CONSISTENCE, a State of Reſt, wherein Things capable of Growth, or Decreaſe, continue for ſome time at a ſtand, without either.

The Term is particularly uſed with regard to Trees, for the Age beyond which they don't grow, and yet at which they don't decline. See TREE, &c.

The *Conſiſtence* of the Age of an Oak, is from 50 to 160 Years: Some, however, hold that their *Conſiſtence* only commences from 100 Years; aſſerting that they grow till that time, and that they continue in that State of Perfection to 200 Years of Age.

Thus we diſtinguiſh three States or Stages of a Tree; its Growth, *Conſiſtence*, and Return: and theſe are common to all Trees, even Fruit-Trees.

CONSISTENCE, in Phyſicks, is that State of a Body wherein its component Particles are ſo connected, or intangled among themſelves, as not to ſeparate or recede from each other. See COHESION.

Conſiſtence only differs from Continuity in this, that *Conſiſtence* implies a regard to Motion or Reſt, which Continuity does not; it being ſufficient to denominate a thing continuous, that its Parts are contiguous to each other. See CONTINUITY.

Conſiſtence is particularly uſed with regard to Bodies, conſider'd as they are more ſoft or more hard, more liquid or more dry. See HARDNESS, SOFTNESS, FLUIDITY, &c.

Thus, Forms of Medicine, as Electuaries, Lambatives, Bolus's, Syrups, Unguents, &c. differ chiefly in *Conſiſtence*. See ELECTUARY, &c.

CONSISTENT *Bodies*, is a Term much uſed by Mr. *Boyle* for ſuch as we ordinarily call *firm*, or *fix'd Bodies*; in oppoſition to *fluid* ones. See FIXEDNESS, FIRMNESS, and FLUIDITY.

That Author has a particular Eſſay of the *Atmoſphere of Conſiſtent Bodies*; wherein he ſhews, that all, even ſolid, hard, ponderous, and fix'd Bodies, do exhale or emit *Effluvia* to a certain Space all around 'em. See ATMOSPHERE, EFFLUVIA, &c.

CONSISTORY, or *the Roman* CONSISTORY, is the College of Cardinals; or the Pope's Senate, and Council. See POPE.

The *Conſiſtory* is the firſt Court or Tribunal of *Rome*: it never meets but when the Pope pleaſes to convoke it: The Pope preſides in it in Perſon, mounted on a magnificent Throne, and habited in his *Pontificalia*; on the right are the Cardinal-Biſhops and Prieſts, and on the left the Cardinal-Deacons. See CARDINAL.

The Place where it is held, is a large Hall in the Apoſtolical Palace, where Princes and Embaſſadors of Kings are receiv'd.

The other Prelates, Protonotaries, Auditors of the *Rota*, and other Officers, are ſeated on the Steps of the Throne; the Courtiers ſit on the Ground; Embaſſadors on the right, and *Conſiſtorial* and Fiſcal Advocates behind the Cardinals.

Here are pleaded Judiciary Cauſes before the Pope.

Beſides the publick *Conſiſtory*, there is alſo a private one, held in a retir'd Chamber, call'd the Chamber of *Papegay*; the Pope's Throne here being only rais'd two Steps high.

No Body is here admitted but the Cardinals, whoſe Opinions are collected, and call'd *Sentences*. Here are firſt propos'd and paſs'd all Bulls for Biſhopricks, Abbies, &c. See BULL.

Hence, *Conſiſtorial* Biſhopricks and Abbies, are ſaid to be *Conſiſtorial Benefices*; in regard, they muſt be propos'd in the *Conſiſtory*, the Annates be paid to the Pope, and his Bulls taken. See BENEFICE.

Antiently they were Elective; but by the *Concordate*, which aboliſhes Elections, they are appointed to be collated by the Pope alone, on the Nomination of the Prince. See CONCORDATE.

Du Cange derives the Word from *Conſiſtorium*, i. e. *locus ubi conſiſtitur*; uſed chiefly for a Veſtibule, Gallery, or

Antichamber, where the Courtiers wait for Admiſſion; and called *à conſiſtente multitudine*.

Consistory was alſo the Name of a Court under *Conſtantine*, where he ſat in Perſon, and heard Cauſes: The Members of this Court were called *Comites*. See Count.

Consistory is alſo uſed among the Reform'd, for a Council or Aſſembly of Miniſters and Elders, to regulate their Affairs, their Diſcipline and Policy.

Consistory, or *Court Chriſtian*, in the *Engliſh* Laws, is a Council-houſe of Eccleſiaſtical Perſons, or the Place of Juſtice in the Eccleſiaſtical or Spiritual Court. See Court.

Every Archbiſhop and Biſhop has a *Conſiſtory* Court, held before his Chancellor or Commiſſary, either in his Cathedral, in ſome Chapel, Iſle, or Portico belonging thereto; or in ſome other convenient Place of his Dioceſs, for Eccleſiaſtical Cauſes. See Ecclesiastical.

The Spiritual Court was antiently, in the Time of the *Saxons*, joined with the County or Hundred Court: And the Original of the *Conſiſtory* Court, as divided from thoſe Courts, is found in a Law of the Conqueror, quoted by my Lord *Coke*.

CONSOLATION, is one of the Places in Rhetorick, whereby the Orator endeavours to abate and moderate the Grief or Concern of another. See Place.

In *Conſolation*, a principal Regard is to be had to the Circumſtances and Relations of the Parties. *Scaliger* conſiders this exceeding well, *de Arte Poetica*: 'The *Conſolator*, ſays he, is either a Superior, an Inferior, or an Equal; 'with regard, either to Preferment, Honour, Wealth, Wiſdom, or Age. Now, *Livia* is to comfort *Ovid*, in a manner very different from that wherein *Ovid* comforts *Livia*. 'Thus, as to Authority, a Father and Son, *Cicero* and *Pompey* are to conduct their *Conſolations* very differently: So 'in Wealth; as if a Client ſhould undertake to comfort *Craſſus*: In Wiſdom; as when *Seneca* comforts *Polybius* 'and his Mother: As to Age, there needs no Examples.

'A Superior may interpoſe his Authority, and may 'even chide: A wiſe Man may even diſpute; Sentences 'will become him. An Inferior is to ſhew Reſpect and Affection, and own he had this from ſome wiſe or learned 'Perſon: An Equal to appeal to their common Friendſhip.'

CONSOLE, in Architecture, or Joinery, a Part or Member projecting in manner of a Bracket, or Shoulder-piece; ſerving to ſupport a Corniche, Buſt, Vaſe, Beam, little Vault, &c. See Projecture.

Theſe are alſo, upon occaſion, call'd *Mutules*, *Modillions*, &c. according to their form. See Mutule, &c.

Some of them are ſtriated, or fluted; others in form of Cartouches; others have Drops, in the manner of Triglyphs.

Vitruvius calls all thoſe of Gates *Prothyrides*; of *Thyra*, Gate. See Prothyrides.

Thoſe made of the End of a Plank of Wood, cut triangular-wiſe, are called *Ancones*. See Anco.

Conſoles are frequently uſed as Keys of Arches, projecting out, to ſupport a Vaſe, or other Ornament. See Key.

The Word is deriv'd from the French *Conſolider*, to reunite, join, &c. agreeable to the Office of this Member.

CONSOLIDATION, in Law, the combining and uniting two Benefices into one. See Benefice.

The Term is borrow'd from the Civil Law; where it properly ſignifies an Union of the Poſſeſſion Occupation or Profit, with the Property.

Thus, if a Man have by Legacy *uſum-fructum fundi*, and afterwards buy the Property, or Fee-ſimple of the Heir; this is called a *Conſolidation*.

Consolidation, in Medicine, the Action of uniting ſtrongly the Fractures of broken Bones, or the Lips of a Wound, by means of *conſolidating Remedies*, as they are call'd; which cleanſing with a moderate heat and force, taking Corruption out of the Wounds, and preſerving the Temperature of the Parts, cauſe the Nouriſhment to be fitly applied to the Part affected. See Wound, and Fracture.

CONSONANCE, in Muſick, is ordinarily uſed in the ſame Senſe with *Concord*, *viz.* for the Union or Agreement of two Sounds produced at the ſame time, the one Grave, the other Acute; which mingling in the Air, in a certain Proportion, occaſion an Accord agreeable to the Ear. See Concord.

Dr. *Holder*, on this Principle, defines *Conſonancy*, 'A Paſſage of ſeveral tunable Sounds thro' the Medium, frequently mixing and uniting in their undulated Motions cauſed 'by the well-proportion'd commenſurate Vibrations of the 'ſonorous Bodies, and conſequently arriving ſmooth, and 'ſweet, and pleaſant to the Ear; as, on the contrary, *Diſſonancy*, he maintains to ariſe from diſproportionate Motions of Sounds, not mixing, but jarring and claſhing as 'they paſs, and arriving in the Ear grating and offenſive.'

Which Notion of a *Conſonance*, exactly quadrates with that we have already laid down for a *Concord*. Accordingly, moſt Authors confound the two together: Tho ſome of the more Accurate diſtinguiſh 'em; making *Conſonance* to be what the Word implies, a mere *ſounding of two or more Notes together*, or *in the ſame time*; in contradiſtinction to the Motion of thoſe Sounds *in Succeſſion*, or one after the other. See Succession.

In effect, the two Notions coincide; for two Notes, thus play'd in *conſonance*, conſtitute a Concord; And two Notes that pleaſe the Ear in *Conſonance*, will likewiſe pleaſe it in Succeſſion.

Notes in *Conſonance* conſtitute *Harmony*, as Notes in Succeſſion *Melody*. See Harmony, and Melody; ſee alſo Tune.

In the popular Senſe, *Conſonances* are either *Simple*, or *Compound*, &c. The moſt perfect *Conſonance* is Uniſon; tho many, both among the Antients and Moderns, diſcard it from the Number of *Conſonances*; as conceiving *Conſonance* an agreeable Mixture of different Sounds, grave and acute; not a Repetition of the ſame Sound. See Unison.

The ſecond *Conſonance* is the Octave; then the Fifth, the Fourth, the Thirds, and the Sixths: The reſt are Multiples, or Repetitions of theſe. See Octave, &c.

Consonance, in Grammar, is underſtood of like Cadences, or Cloſes of Words, Periods, &c.

Conſonances are ordinarily Faults in Diſcourſe, eſpecially in *Engliſh* Proſe: tho the *Latins* make a Figure of 'em, which they call ὁμοιοτέλευτον. Too great a *Conſonance* in the Rhymes has always an ill effect.

CONSONANT, a Letter which produces no Sound alone, or without ſome other Letter either Vowel or *Conſonant*, join'd along with it. See Letter.

And hence the Name *Con-ſonant*, q. d. *quæ ſonant cum alia*.

A *Conſonant*, conſidering it philoſophically, is nothing elſe but the Modification of a Sound, produc'd by means of the Organs of the Voice, not a Production of a Sound it ſelf: Thus, *v. g.* the Sounds ſignify'd by the Characters *a*, *e*, *i*, *o*, *u*, &c. are differently modify'd when we ſay *ab*, than when we ſay *ac* or *ca*, *ad* or *da*; and thoſe Modifications are call'd *Conſonants*.

The Letters of the Alphabet are divided into Vowels and *Conſonants*. See Vowel.

Conſonants, again, are divided into *ſingle*, as *b h m q*, &c. and *double*, as *x* in *axillary*, &c. correſponding to the ξ of the *Greeks*.

Again, they are divided into *liquid*, as *l r m n*; and *mute*, as *b*, *d*, and the reſt, which make no Sound at all without a Vowel. See Liquid, Mute, &c.

But the moſt natural Diviſion of *Conſonants* is that of the *Hebrew* Grammarians; who have been imitated therein by the Grammarians of the other Oriental Languages: Theſe divide the *Conſonants* into five Claſſes, with regard to the five principal Organs of the Voice; which all contribute, 'tis true, but one more notably than the reſt, to certain Modifications, which make five general Kinds of *Conſonants*. Each Kind, or Claſs, comprehends ſeveral *Conſonants*, which reſult from the different Degrees of the ſame Modification, or from the different Motions of the ſame Organs.

Theſe Organs are the *Throat*, *Palate*, *Tongue*, *Teeth*, and *Lips*; whence the five Claſſes of *Conſonants* are denominated *Guttural*, *Palatal*, *Lingual*, *Dental*, and *Labial*. See Guttural, Palatal, &c.

We account ſeventeen *Conſonants* in the *Engliſh* Alphabet, *viz. b*, *c*, *d*, *f*, *g*, *k*, *l*, *m*, *n*, *p*, *q*, *r*, *ſ*, *t*, *x*, *z*; to which there are three others to be added, *viz.* the *h*, the *j Conſonant*, and *v Conſonant*, which makes the whole Number of *Conſonants* twenty: one whereof is *Guttural*, *viz.* the Aſpirate *h*; five *Palatal*, *viz. c*, as when pronounced before *a*, *o*, and *u*, as in *Cavern*, *Corn*, *Curioſity*; *g*, as in *Geneva*; *j Conſonant*, in *Julep*; *k* in *kernel*, and *q* in *query*.

The four *Lingual Conſonants* are *d*, *l*, *n*, *t*; the four *Dental*, are *r*, *ſ*, *x*, *z*, the three laſt whereof are Hiſſers; and five *Labial*, *b*, *f*, *m*, *p*, and *v Conſonant*.

With regard to which Diviſion, it may be obſerv'd, that tho the *g* be modify'd in three different manners, as it comes before an *a*, an *o*, or a *u*; yet is it ſtill a *Conſonant* of the Palate; that the *j Conſonant* differs in nothing but its Figure from the *g* before *e* or *i*; that *k* has the ſame Pronunciation with the *c*; that *x* comprehends the Sound of two Letters in its Sound, *viz. c* or *k*, and *ſ* or another *c*, as in *Alexander*, and *Alexis*, which we pronounce as if wrote *Alecſander*, and *Aleccis*, or *Alecſis*; and that the *c* before an *e* or *i*, is no *Conſonant* of the Palate, becauſe in that Caſe it loſes its proper Sound, and aſſumes the hiſſing Sound of the *ſ*.

The Abbot *de Dangeau* thinks the Nature of the Diviſion of the *Hebrew* Grammarians very reaſonable; but does not acquieſce in the Diſtribution they have made of 'em: To find a natural and juſt Diviſion of the *Conſonants*, he obſerves, no regard muſt be had to the Character that repreſents 'em; nor any thing be conſider'd but their Sound, or the Modification they give the Sound.

On this Principle, the ſame Author finds five *Labial Conſonants*, *b*, *p*, *v*, *f*, and *m*; five *Palatal* ones, *d*, *ſ*, *g*, *k*, *n*; four *Hiſſers*, *i*, *z*, *j*, *ch*; two *Liquids*, *l* and *r*; two that run into and mix with each other, as *ll*, and *gn*; which laſt, however, is peculiar to the *French* Language, and the *h* Aſpirate.

He adds, 1ſt, that *m* and *n* are properly two Naſal *Conſonants*; the *m*, a *b* paſs'd thro' the Noſe, and the *n* a *d*, in like manner, pronounc'd thro' the Noſe; and in effect, People in a Cold pronounce *barket* for *market*, *deed* for *need*, &c.

2dly, That among the *Conſonants*, ſome are *weak*, others *ſtrong*; their difference conſiſting in this, That the former are preceded with a ſmall Emiſſion of the Voice which ſoftens 'em; which the latter have not. The weak are *b*, *c*, *d*, *g*, *z*, *i*; the ſtrong, *p*, *f*, *t*, *k*, *ſ*, *ch*.

It may be here obſerv'd, that when we ſpeak of a Perſon's talking thro' the Noſe; it muſt be underſtood in a Senſe quite different from what the Words ſeem naturally to import: Since the Noſe in this Caſe concurs leſs to the Pronunciation than if he did not ſpeak thro' the Noſe; in regard the Air not being able to make its way thro' the Noſe, is return'd into the Mouth, where it forms a dull obtuſe Sound, call'd *Naſal*. See VOICE.

From the whole we may conclude, that the Exceſs of *Conſonants* in one Language above another only conſiſts in this, that there are more Modifications of Sound receiv'd and eſtabliſh'd in the one than the other: For all Men having the ſame Organs, may form the ſame Modifications; ſo that 'tis entirely owing to Cuſtom, nothing to Nature, that the *Engliſh* have not the θ of the *Greeks*, the *Ain* and *Heth* of the *Hebrews*, the *ch* of the *Germans*, the *gn* of the *French*, the *gl* of the *Italians*, the *ll* of the *Welch*, &c.

That the *Chineſe* have no *r*, the *Iroquois* no Labial *Conſonants*, the *Huros* abundance of Aſpirates; and the *Arabs* and *Georgians* abundance of Double *Conſonants*: which laſt is owing to this, that they make ſeveral Organs concur ſtrongly and equally to the Modification of a Sound; whereas, in the reſt, only one Organ is moved very ſtrongly and ſenſibly, and the reſt weakly.

'Tis hence alſo viſible, that in all Languages the Aſpirates, or Guttural Letters, are real *Conſonants*; ſince the Throat modifies the Sound as much as the Palate, Tongue, or Lips. See ASPIRATE.

Laſtly, to find all the *Conſonants* that may be form'd in any Language; there needs nothing but to obſerve all the Modifications that the Sound of Speech will admit of, by which we ſhall have all the *Conſonants* practicable.

CONSORT, in Muſick. See CONCERT.

CONSPIRACY, in Law, is taken for a Combination or Confederacy to do ſomething evil, or illegal: tho in the original Senſe of the Word, and in its uſe in other Languages, it ſignifies an Agreement, either for good, bad, or Matters indifferent.

In our Statutes and Law-Books, *Conſpiracy*, in a general Senſe, is confounded with *Maintenance* and *Champarty*. See MAINTENANCE, and CHAMPARTY.

In its ſpecial Signification, it is uſed for a *Confederacy* of two, at leaſt, falſly to indict one, or procure one to be indicted of Felony. See INDICTMENT.

The Puniſhment of this Confederacy, at the King's Suit, antiently was: that the Party attainted loſe his Frank-Law; to the End that he mayn't be impannel'd on Juries, and the like; that his Lands, Goods, and Chattels be eſtreated; his Trees raſed, and his Body committed to Priſon.

Even *Conſpiracies* in Caſes of leſs moment, as thoſe of Victuallers, touching ſelling of Victual, ſhall be grievouſly puniſh'd 37 *Hen.* VIII.

CONSPIRING *Powers*, in Mechanicks, are all ſuch as act in Directions not oppoſite to one another. See POWER, and MOTION.

CONSTABLE, or *Lord High* CONSTABLE, an antient Officer of the Crown; now diſuſed in *England*, but ſtill ſubſiſting in *France*, where the *Conſtable* commands the Mareſchals, and is the firſt Officer in the Army.

Some derive the Word from the *Saxon*, and make it originally ſignify the Stay or Hold of the King. But others, with more probability, derive it from *Comes Stabuli*, the Maſter of the Stables, or perhaps of the Horſe, (ſee COUNT) and ſuppoſe that the Dignity which at firſt was Civil, in time became Military, and the Maſter of the Stables made General of the Army. See MASTER.

The Function of the *Conſtable* of *England*, conſiſted in the Care of the common Peace of the Land, in Deeds of Arms, and Matters of War. To the Court of the *Conſtable* and that of the Marſhals, belong'd the cognizance of Contracts, Deeds of Arms without the Realm, Combats, Blaſonry of Arms, &c. within it. See MARSHAL.

The firſt *Conſtable* of *England* was created by the Conqueror: The Office continu'd hereditary till the 13th of *Henry* VIII. when it was laid aſide, as being ſo powerful as to become troubleſom to the King. Since that time, the *Conſtable* is only created occaſionally.

From thoſe mighty Magiſtrates, the *Conſtables of England*, are derived thoſe inferior ones, ſince call'd the *Conſtables of Hundreds and Franchiſes*; firſt ordain'd in the 13th Year of *Edward* I. by the Statute of *Wincheſter*; which, for the Conſervation of the Peace, and View of Armour, appointed that two *Conſtables* ſhould be choſe in every Hundred and Franchiſe. See HUNDRED, and FRANCHISE.

Theſe are what we now call *Conſtabularii Capitales*, or *High Conſtables*; in regard, continuance of Time and increaſe of People, &c. have occaſion'd others of like nature, but inferior Authority, in every Town, call'd *Petty-Conſtables*, or *Sub-Conſtabularii*.

The appointing of a Petty-*Conſtable* belongs to the Lords of divers Mannors, *Jure Feudi*.

Beſides theſe, we have *Conſtables* denominated from particular Places, as *Conſtable of the Tower*, *of Dover Caſtle*, *of Windſor-Caſtle*, *of the Caſtle of Carnarvan*, and many other of the Caſtles of *Wales*; whoſe Office is the ſame with that of the *Caſtellani*, or Governors of Caſtles. See TOWER, &c.

CONSTAT, in Law, a Certificate given out of the Court of Exchequer, of all there is upon record relating to any Matter in queſtion.

It is alſo uſed for an Exemplification or Copy of the Inrolment of Letters Patent.

CONSTELLATION, in Aſtronomy, an Aſſemblage or Syſtem of ſeveral Stars, expreſs'd and repreſented under the Name and Figure of ſome Animal or other thing; call'd alſo an *Aſteriſm*. See STAR.

The Antients portion'd out the Firmament into ſeveral Parts, or *Conſtellations*; reducing a certain number of Stars under the Repreſentation of certain Images, in order to aid the Imagination and the Memory to conceive and retain their Number, Diſpoſition, and even to diſtinguiſh the Virtues which they attributed to 'em: In which Sence, a Man is ſaid to be born *under a happy Conſtellation*, *i. e.* under a happy Configuration of the heavenly Bodies.

The Diviſion of the Heavens into *Conſtellations* is very antient; and, for ought appears, as old as Aſtronomy it ſelf; at leaſt, it was known to the moſt antient Authors extant, whether ſacred or profane. In the moſt antient Book of *Job*, mention is made of the Names of ſome of 'em; witneſs that ſublime Expoſtulation, *Canſt thou reſtrain the ſweet Influence of the* Pleiades, *or looſen the Bands of* Orion? And the ſame may be obſerv'd of the oldeſt among the Heathen Writers *Homer* and *Heſiod*.

The Diviſion of the Antients only took in the viſible Firmament, or ſo much as came under their notice: This they diſtributed into 48 *Conſtellations*; twelve whereof took up the Zodiack: The Names they gave them are *Aries*, *Taurus*, *Gemini*, *Cancer*, *Leo*, *Virgo*, *Libra*, *Scorpius*, *Sagittarius*, *Aquarius*, *Capricornus*, *Piſces*; from whence the Signs of the Ecliptick and Zodiack take their Names; tho now no longer contiguous to the *Conſtellations* which denominate them. See SIGN.

The other Stars, on the Northern Side of the Zodiack, were diſpos'd into 21 *Conſtellations*, viz. *Urſa Major* and *Minor*, *Draco*, *Cepheus*, *Bootes*, *Corona Septentrionalis*, *Hercules*, *Lyra*, *Cygnus*, *Caſſiopeia*, *Perſeus*, *Andromeda*, *Triangulum*, *Auriga*, *Pegaſus*, *Equuleus*, *Delphinus*, *Sagitta*, *Aquila*, *Ophiuchus* or *Serpentarius* and *Serpens*: To which have been ſince added *Antinous*, and *Coma Berenices*.

The Stars on the South Side of the Zodiack, were diſtributed into fifteen *Conſtellations*; their Names, *Cetus*, *Eridanus Fluvius*, *Lepus*, *Orion*, *Canis Major* and *Minor*, *Argo*, *Hydra*, *Crater*, *Corvus*, *Centaurus*, *Lupus*, *Ara*, *Corona Meridionalis*, and *Piſcis Auſtralis*: To which have been ſince added twelve others; *viz.* *Phœnix*, *Grus*, *Indus*, *Pavo*, *Piſces Auſtralis*, *Piſces Volans*, *Toucan*, *Hydrus*, and *Xiphias*. *See each* Conſtellation, *and the Stars contain'd in it, under its proper Head.*

Of theſe *Conſtellations*, the fifteen laſt, with the greateſt Part of *Argo*, *Navis*, *Centaurus*, and *Lupus* are not viſible in our Horizon.

The other Stars, not comprehended under theſe *Conſtellations*, yet viſible to the naked Eye, the Antients called *Informes*, or *Sporades*, ſome whereof the modern Aſtronomers, have ſince reduced into new Figures, or *Conſtellations*. See INFORMES.

Thus, *Hevelius*, *v. g.* between *Leo* and *Urſa Major*, makes *Leo Minor*; and between *Urſa Minor* and *Auriga*, over *Gemini*, makes *Lynx*; under the Tail of *Urſa Major*, *Canes Venatici*, &c.

In theſe *Conſtellations*, the Stars are ordinarily diſtinguiſh'd by that Part of the Image wherein they are found. *Bayer* diſtinguiſhes 'em further by the Letters of the *Greek* Alphabet: And many of 'em, again, have peculiar Names, as *Arcturus*, between the Feet of *Bootes*; *Gemina*, or *Lucida*, in the *Corona Septentrionalis*; *Palilitium*, in the *Bull's* Eye,

Eye; *Pleiades* in the Back, and *Hyades* in the Forehead of the *Bull*: *Caſtor* and *Pollux* in the Heads of *Gemini*; *Capella*, with the *Hædi* in the Shoulder of *Auriga*; *Regulus*, or *Cor Leonis*; *Spica Virginis* in the Hand, and *Vindemiatrix* in the Shoulder of *Virgo*; *Antares*, or *Cor Scorpii*; *Fomahaut*, in the Mouth of *Piſcis Auſtralis*; *Regal*, in the Foot of *Orion*; *Sirius*, in the Mouth of *Canis Major*; and the *Pole-Star*, the laſt in the Tail of *Urſa Minor*.

The *Greek* and *Roman* Poets, out of the antient Theology, give us wild and romantick Fables about the Origin of the *Conſtellations*; which may be ſeen in *Hyginus*, *Natalis Comes*, and *Ricciolus*. Hence, ſome out of a vain Zeal, rather than any Love for the Science, have been mov'd to alter either the Figures of the *Conſtellations*, or at leaſt their Names.

Thus, Venerable *Bede*, inſtead of the profane Names and Figures of the twelve *Conſtellations* of the Zodiack, ſubſtituted thoſe of the twelve Apoſtles; whoſe Example being follow'd by *Julius Schillerus*, in 1627, he compleated the Reformation, and gave Scripture-Names to all the *Conſtellations* in the Heavens.

Thus, *Aries*, or the Ram, became converted into St. *Peter*; *Taurus*, or the Bull, into St. *Andrew*; *Andromeda* into the Sepulchre of Chriſt; *Lyra* into the Manger of Chriſt; *Hercules* into the Magi coming from the Eaſt; *Canis Major* into *David*, &c.

Weigelius, a Profeſſor of Mathematicks in the Univerſity of *Jena*, made a new order of *Conſtellations*; converting the Firmament into a *Cælum Heraldicum*; and introducing the Arms of all the Princes in *Europe*, by way of *Conſtellations*.

Thus, *Urſa Major*, he transform'd into the Elephant of the Kingdom of *Denmark*; the *Swan* into the Ruta with Swords of the Houſe of *Saxony*; *Ophiuchus* into the Croſs of *Cologne*; the *Triangle* into the Compaſſes, which he calls the *Symbol of Artificers*; and the *Pleiades* into the *Abacus Pythagoricus*, which he calls that of Merchants, &c.

But the more knowing among Aſtronomers never approv'd of theſe Innovations; as ſerving for no Purpoſe but to introduce Quarrels and Confuſion into Aſtronomy. The old *Conſtellations*, therefore, are ſtill retain'd; both becauſe better could not be ſubſtituted, and likewiſe to keep the greater Correſpondence and Uniformity between the old Aſtronomy and the new. See CATALOGUE.

CONSTIPATION, in Medicine, a hardneſs of the *Alvus*, or Belly, with a difficulty of diſcharging the ſame; otherwiſe call'd *Coſtiveneſs*. See COSTIVENESS.

Riding Poſt, eating of Medlars or Quinces, ſeveral Preparations of Milk, hard-roaſted Eggs, &c. *conſtipate* the Belly.

A *Conſtipation* of the Belly, if it continue long, ſometimes degenerates into the Iliac Paſſion. See ILIAC *Paſſion*.

Moſt Perſons of a hot and dry Conſtitution are afflicted with a Coſtiveneſs, or *Conſtipation*: But this is ſeldom attended with any ill Effect.

The proper Remedy for a *Conſtipation* is a Clyſter; if this fail, lenient Catharticks; and when they alſo fail, we muſt exhibit others of a more draſtick or powerful Effect. See CLYSTER, and PURGATIVE.

CONSTITUTION, an Eſtabliſhment, Ordinance, Deciſion, Regulation, or Law, made by Authority of a Prince or other Superior, Eccleſiaſtical or Civil. See LAW, &c.

The *Conſtitutions* of the *Roman* Emperors make a Part of the Civil Law. See CIVIL *Law*.

The *Conſtitutions* of the Church, part of the Canon Law. See CANON *Law*.

Some of the Papal *Conſtitutions* are in form of Bulls, others of Briefs. See BULL, BRIEF, &c.

Apoſtolical CONSTITUTIONS, are a Collection of Regulations attributed to the Apoſtles, and ſuppoſed to have been collected by S. *Clement*, whoſe Name they likewiſe bear.

They are divided into eight Books; conſiſting of a great Number of Rules and Precepts, relating to the Duties of Chriſtians, and particularly to the Ceremonies and Diſcipline of the Church.

Authors are divided about their Genuineneſs: The generality hold them ſpurious, and endeavour to prove them poſterior to the Apoſtolical Age, and maintain they were unknown till the fourth Century; which, if ſo, ſhews S. *Clement* had no hand in 'em.

Mr. *Whiſton* has ventur'd to oppoſe the general Opinion; and with ſome Reaſon, much Learning, and more Warmth, aſſerted the *Apoſtolical Conſtitutions* to be one of the Sacred Writings, dictated by the Apoſtles in their Meetings, written down from their Mouths by S. *Clement*, and intended as a Supplement to the New Teſtament; or, rather, as a Scheme and Syſtem of Chriſtian Faith and Polity. See his *Eſſay on the Apoſtolical Conſtitutions*, and his *Hiſtorical Preface*; wherein the ſeveral Steps he made in his fancied Diſcovery are traced.

What makes the *Conſtitutions* more ſuſpected by the Orthodox, is, that they ſeem to ſavour of *Arianiſm*.

CONSTITUTION, is alſo uſed in a phyſical Senſe, for the *Temperament* of the Body, or that Diſpoſition of the Whole ariſing from the Quality and Proportion of its Parts. See TEMPERAMENT.

Phyſicians have conſider'd the *Conſtitution*, as depending chiefly on the Humors or Juices of the Body; and hence, as this, or that Humour was ſuppoſed to predominate, the Bile, *e. gr.* or the Blood, Phlegm, Choler, or Mercury; the Perſon was denominated of a *Bilious*, *Sanguine*, *Phlegmatic*, *Choleric*, or *Mercurial Conſtitution*. See SANGUINE, CHOLERIC, &c. ſee alſo HUMOUR, BILE, CHOLER, BLOOD, &c.

CONSTRICTION, the Act of binding, or drawing the Parts of a Thing cloſe together. See CONSTRICTOR.

CONSTRICTOR *Labiorum*, or *Orbicularis*, a Muſcle proper to the Lips. See LIP.

Its Fibres make a kind of Ring about the Mouth; and ſerve to conſtringe and draw up the Lips, as in Kiſſing, &c. whence ſome call it *Baſiator*.

This, *Verheyen* will not have to be one Muſcle, but a Pair, whoſe Fibres meet and join at both Corners of the Mouth; each acting on one Lip only, tho concurrently.

Other Authors are unanimous in calling it one Muſcle; and will have it of the Sphincter kind; tho Dr. *Drake* thinks improperly: in regard, it is not like the other Sphincters in conſtant Action, but at the Command of the Will: The diſtinguiſhing Mark between a Sphincter and another Muſcle. See SPHINCTER.

CONSTRICTOR *Palpebrarum*. See ORBICULARIS.

CONSTRICTORES *Naſi*, a Pair of Muſcles common to the *Alæ* of the Noſe, and the upper Lip. See NOSE, &c.

They ariſe fleſhy from the Forepart of the fourth Bone of the upper Jaw; and after a ſtrait aſcent, are inſerted into the Roots of the *Alæ naſi*, and ſuperior Parts of the upper Lip.

Their uſe is to draw the *Alæ* downwards, nearer each other; and at the ſame time draw the upper Lip alſo downwards: an Action we uſe in taking of Snuff, or ſmelling of any thing.

CONSTRUCTION, in Geometry, the Art or Manner of drawing, or deſcribing a Figure, Scheme, the Lines of a Problem, or the like. See DESCRIPTION, FIGURE, &c.

The Equality of the Lines of ſuch a Triangle, &c. is demonſtrated from their *Conſtruction*. See PROBLEM.

CONSTRUCTION *of Equations*, is the Method of reducing a known Equation into Lines and Figures; whereby the Truth of the Rule, Canon, or Equation, may be demonſtrated geometrically. See EQUATION.

This Method of *conſtructing* Equations is different, according to the Diverſity of Equations. For *Simple* and *Quadratick* Equations the Methods ſhall be here ſubjoin'd; As to *Cubic* Equations, Geometrical *Conſtructions* are of no uſe, in Practice; their Intent being better anſwer'd by the Method of extracting Roots by Approximation.

To Conſtruct a ſimple Equation: The whole Myſtery conſiſts in this; that the Fractions, to which the unknown Quantity is equal, be reſolved into proportional Terms: The Method of which will be better ſhewn by Examples than taught by many Rules.

1. Suppoſe $x=\frac{ab}{c}$; then will $c:a::b:x$, to be determin'd by the Method of finding a fourth Proportional.

2. Suppoſe $x=\frac{abc}{dc}$; let $d:a::b:\frac{bc}{d}$. This fourth Proportional found, being call'd g; $x=\frac{gc}{e}$ which is therefore found as in the former Caſe.

3. Suppoſe $x=\frac{aa-bb}{c}$. Since $aa-bb=(a+b)(a-b)$; $c:a+b::a-b:x$.

4. Suppoſe $x=\frac{a^2b-bcc}{ad}$. By the firſt Caſe we find $g=\frac{ab}{d}=\frac{a^2b}{ad}$, and $h=\frac{bc}{d}$; Again, by Caſe 1, $i=\frac{hc}{d}$: and $x=g-i$, the Difference of the Lines g and i.

5. Suppoſe $x=\frac{ab}{c}+\frac{adc}{bc}$. Find, as in the preceding Caſe, $g=\frac{ab}{c}$, and $f=\frac{adc}{bc}$. Then will $x=g+f$ be the Sum of the Lines g and f.

6. Suppoſe $x=\frac{a^2b+bcd}{af+cg}$. Seek $\frac{cg}{a}$, and let $f+\frac{cg}{a}=h$; then will $af+cg=ah$; conſequently, $x=\frac{a^2b+bcd}{ab}$. Thus is the preſent Caſe brought to the preceding one.

7. Suppoſe $x=\frac{a^2b-bad}{af+bc}$. Find $\frac{af}{b}$, and make $\frac{af}{b}+c=h$; Then will $af+bc=bh$. Hence, $x=\frac{a^2b+bad=a^2-ad}{bh}{h}$. Conſequently, $h:a::a-d:x$.

8. Suppoſe $x=(a^2+b^2):c$. Conſtruct the Triangle ABC, (Plate *Algebra*, Fig. 1.) whoſe Side $AB=a$, $BC=b$;

$=b$; then will $AC=\sqrt{(a^2+b^2)}$. Let $AC=m$; then will $a^2+b^2=m^2$. And therefore $x=\frac{m^2}{c}$; consequently, $c:m::m:x$.

9. Suppose $x=\frac{a^2-b^2}{c}$. On AB, (Fig. 2.) describe a Semicircle, and therein set off $AC=b$. Since the Triangle ACB is rectangular; $CB=\sqrt{a^2-b^2}$. Let $CB=m$: then will $x=\frac{m^2}{c}$; consequently, $c:m::m:x$.

10. Suppose $x=\frac{a^2b+bcd}{af+bc}$. Say, $b:a::f:\frac{fa}{b}$; and let $fa+c=h$; Then will $bc+af=bh$. Hence, $x=\frac{a^2b+bcd}{bh}=(a^2+cd):h$. Find betwixt $AC=c$, (Fig. 3.) and $CB=d$, a Mean Proportional $CD=\sqrt{cd}$. Let $CE=a$; then will $DE=V(a^2-cd)$. Call this m; then will $x=\frac{m^2}{h}$; consequently, $h:m::m:x$.

To Construct a quadratic Equation Geometrically. Since Quadratick Equations may be reduced to simple ones, (see EQUATION;) those may likewise be *constructed* from the Methods already laid down: For if the Equation be pure, $x^2=ab$; then will $a:x::x:b$; wherefore, we shall find $x=\sqrt{ab}$; if between $AC=a$, (Fig. 4.) and $BC=b$, we find a Mean Proportional DC. If this Equation be adfected, $x^2.\ ax=b^2$; Then will $x=\frac{1}{2}a(\sqrt{\frac{1}{4}a^2b^2})$ that is, either $x=\frac{1}{2}a+\sqrt{(\frac{1}{4}a^2+b^2)}$ or, $x=\sqrt{(\frac{1}{4}a^2+b^2)}\frac{1}{2}a$, or $x=\frac{1}{2}a+\sqrt{(\frac{1}{4}a^2-b^2)}$ or $x=\frac{1}{2}a-\sqrt{(\frac{1}{4}a^2-b^2)}$.

The whole Mystery, therefore, of *constructing* Quadraticks comes to this; that the Value of $\sqrt{\frac{1}{4}a^2+b^2}$, and also the Value of $\sqrt{\frac{1}{4}a^2-b^2}$ be found; both of which are shewn in the preceding Article. For, if in the Rectangular Triangle, (Fig. 1.) $AB=\frac{1}{2}a$ and $BC=b$; then will $AC=\sqrt{\frac{1}{4}a^2+b^2}$. But if on $AB=\frac{1}{2}a$, (Fig. 2.) be described a Semicircle; and therein applied $AC=b$; $CB=\sqrt{\frac{1}{4}a^2-b^2}$, as was shewn in the Article preceding. See EQUATION.

CONSTRUCTION, or *Syntax*, in Grammar, the arranging and connecting the Words of a Sentence; according to the Rules of the Language. See GRAMMAR, WORD, SENTENCE, SYNTAX, &c.

The *Construction* is generally more simple, easy, and direct in the modern Tongues than in the antient: we have very few of those Inversions which occasion so much Embarras and Obscurity in the *Latin*; our Thoughts are usually deliver'd in the same Order wherein the Imagination conceives 'em: The Nominative Case, for Instance, always precedes the Verb, and the Verb goes before the oblique Cases it governs.

The *Greeks* and *Latins*, M. *St. Evremont* observes, usually end their Periods, where, in good Sense and Reason, they should have begun; and the Elegance of their Language consists, in some measure, in this capricious Arrangment, or rather in this transposal and disorder of the Words. See LANGUAGE.

Construction is either *Simple* or *Figurative*: Simple, is that wherein all the Terms, or Parts of the Discourse are placed in their natural Order.

Figurative *Construction*, is that wherein we recede from this Simplicity, and use certain Expressions, shorter, and more elegant than Nature affords. See FIGURE.

The Syntax, or *Construction* of Words, is distinguish'd into two Parts, *Concord*, and *Regimen*, or *Government*. See CONCORD, and REGIMEN.

CONSUALIA, Feasts held among the Antients, in honour of the God *Consus*, i. e. *Neptune*. See FEAST.

They were introduced with a magnificent Cavalcade, or Procession on Horseback; by reason *Neptune* was reputed to have first taught Men the use of Horses; whence his Sirname of Ἱππιος, *Equestris*.

Evander is said to have first instituted this Feast: It was re-establish'd by *Romulus*, under the Name of *Consus*; in regard it was some God under the Denomination of *Consus*, that suggested to him the Rape of the *Sabines*.

'Tis said, that it was with a View to this Rape, that he made that Establishment. This, however, is certain, that it was to this Feast all his Neighbours were invited; when, taking advantage of the Solemnities and Sacrifices, he seiz'd the Women. To draw the greater Concourse of People, he gave out, that he had found an Altar hid under Ground, which he intended to consecrate, with Sacrifices to the God to whom it had been originally erected.

Those who take on 'em to explain the Mysteries of the Heathen Theology, say, That the Altar hid under Ground is a Symbol of the secret Design of *Romulus* to seize his Neighbour's Wives.

The *Consualia* were of the Number of Feasts call'd *Sacred*; as being consecrated to a Divinity.

Originally, these Feasts and Games were not distinguish'd from those of the Circus: whence it is, *Valerius Maximus* says, that the Rape of the *Sabines* was effected at the Games of the Circus. See CIRCUS.

Plutarch observes, that during the Days of this Solemnity, Horses and Asses were left at rest, and were dress'd out with divers Crowns, &c. on account of its being the Feast of *Neptunus Equestris*. *Festus* says, the Cavalcade was perform'd with Mules; it being an Opinion, that this was the first Animal used to draw the Car.

Servius gives us to understand, that the *Consualia* fell on the 13th of *August*; but *Plutarch* and *Dionysius* place it in the Month of *March*.

The *Consualia* differ'd from other Feasts of the same Deity, call'd *Neptunalia*. See NEPTUNALIA.

CONSUBSTANTIAL, in Theology, a Term of equal import with *Co-essential*; denoting something of the same Substance with another. See SUBSTANCE.

Thus, the Orthodox believe, the Son of God to be *consubstantial* with the Father. See TRINITY, FATHER, &c.

The Term ὁμόουσιος, *Consubstantial*, was first adopted by the Fathers of the Council of *Nice*, to express the Orthodox Doctrine the more precisely, and to serve as a Barrier and Precaution against the Errors and Subtilties of the *Arians*; who own'd every thing excepting the *Consubstantiality*.

The *Arians* declared that the Word was God, as having been made God; but denied that he was the same God, and of the *same Substance* with the Father: Accordingly, they exerted themselves to the utmost to abolish the Use of the Word. The Emperor *Constantine* used all his Authority with the Bishops, to have it expung'd out of the Symbols; but it still maintain'd it self, and is at this Day, as it was then, the distinguishing Criterion between an *Athanasian* and an *Arian*.

Sandius will have it, the Word *Consubstantial* was unknown till the Time of the Council of *Nice*; but 'tis certain it had been before propos'd to the Council of *Antioch*, wherein *Paulus Samosatanus* had been before condemn'd; tho it had there the fortune to be rejected. *Courcel*, on the other hand, maintains, that it was an Innovation in Doctrine in the Council of *Nice*, to admit an Expression, the use whereof had been abolish'd by the Council of *Antioch*.

According to S. *Athanasius*, the Word *Consubstantial* was only condemn'd in the Council of *Antioch*; inasmuch as it contain'd the Idea of a pre-existent Matter, prior to the Things form'd thereof: Now, in this Sense, 'tis certain, the Father and the Son are not *Consubstantial*, there having been no pre-existent Matter.

CONSUBSTANTIATION, a Tenet of the *Lutheran* Church, with regard to the manner of the Change made in the Bread and Wine in the Eucharist. The Divines of that Profession maintain, that after Consecration, the Body and Blood of our Saviour are substantially present, together with the Substance of the Bread and Wine; which is call'd *Consubstantiation*, or *Impanation*. See IMPANATION, TRANSUBSTANTIATION, LUTHERANISM, &c.

CONSUETUDINIBUS & *Servitiis*, in Law, a Writ of Right, which lies against the Tenant that deforceth his Lord of the Rent or Service due to him.

CONSUL, the chief Magistrate of the *Roman* Commonwealth.

The *Consuls* were the chief of the Senate; they commanded the Armies of the Republick, and were supreme Judges of the Differences between the Citizens. In regard, however, they had made some abuse of this Power, it was allow'd, by the *Valerian Law*, for the Party aggriev'd to appeal from their Tribunal to the People; especially in Cases where the Life of a *Roman* Citizen was concern'd.

In progress of Time, the *Consuls* being too much taken up with the grand Affairs of State, or at the Heads of Armies, there were other Magistrates created for the Distribution of Justice to the People, in lieu of the *Consuls*. See PRÆTOR.

After the *Romans* had expell'd their Kings, they were govern'd by two *Consuls*, establish'd in the Year of *Rome* 240; having their Name *à consulendo*. *Brutus* and *Collatinus* were the first, elected by an Assembly of the People: Their Office was to hold a Year; and if either of 'em died in the Course of the Year of their *Consulate*, a new one was elected.

To be elected *Consul*, it was requir'd that the Candidate should be at least 43 Years old. The Election was held in the Month of *January*, in the *Campus Martius*; afterwards in the Capitol.

Consuls were even continu'd under the Emperors, after the Republick was destroy'd: But the Office of *Consul* was here little else but an honourable Title; which, however, the People were fond of keeping up; as esteeming it some Remain of their antient Liberty.

It dwindled for a long time; and at last, became absolutely extinct in the Time of *Justinian*: after whom, no Emperor either created any *Consul*, or assumed the Dignity himself.

Basil is the last in the Consular List, for the Year 541. By this time, the Dignity was depretiated to that degree, that it was confer'd on the meanest Persons: Indeed, *Justinian* endeavour'd to retrieve it 25 Years after, and created himself *Consul*, but without effect.

From the Establishment of the Republick, and the *Consulate* under *L. Jun. Brutus* and *L. Tarq. Collatinus*, to the *Consulate* of *Basil*, *i. e.* from the Year of *Rome* 244 or 245; 509 Years before Jesus Christ; to the Year of *Rome* 1293, the Space of 1049 the Years were accounted by the *Consuls*: But from the Time of *Basil*, in the Year of Christ 540, we find no mention made of *Consuls* or *Consulates*; but the Time was computed by the Years of the Emperors Reigns, and the Indictions.

Indeed, for some time after the *Consulate* of *Basil*, the Years are mark'd thus; *Post consulatum Basilii*, 1, 2, 3, &c. *See the* Fasti Consulares *of M.* d'Almelooven. That Author reckons 1060 *Consuls*, beside the substitute *Consuls*, *Suffecti*, elected to supply Vacancies by Death; and yet there were but 1049 Years, and consequently only so many *Consulates*. See FASTI.

The perpetual *Consulates* of the Eastern Emperors, which compose the *Fasti Bizantini*, commenced in the Year of Christ 567, and ended in 668, in the last Year of *Constans*.

Constantine Pogonates would have the *Consulate* inseparable from the Empire; which it continued to be till the Time of *Constantine Porphyrogenetes*.

In this form of Government, the Empire and *Consulate* were so closely united, that the Empress *Irene* would needs assume the *Consulate*, when she was only Regent of the Empire.

But the *French* Kings, those of *Italy*, and the *Sarazen* Princes who commanded in *Spain*, taking on 'em the Title of *Consuls*, as well as Emperors of *Constantinople*; these last despis'd it, and laid it aside: so that the Name was only continu'd to the Magistrates of some Cities, and certain other Officers, as is shewn by F. *Pagi*.

Under the Emperors there were *Ordinary Consuls*, *Honorary Consuls*, and *Suffecti*; which last were also on foot in the Time of the Republick.

In the middle Age, we find the Word *Consul* used for *Comes*, Count, and Proconsul or Viconsul, for Vicount; as is observ'd by *Spelman*, and M. *de Marca*. See COUNT.

CONSUL, at present, is used for an Officer establish'd by virtue of a Commission from the King, and other Princes, in the Ports and Factories of the *Levant*, on the Coasts of *Africa*, *Barbary*, *Spain*, and other foreign Countries of any considerable Trade; to facilitate and dispatch Business, and protect the Merchants of the Nation. See COMMERCE, and FACTORY.

These Commissions are never granted to Persons under the Age of 30 Years. When the *Consulate* is vacant, the most antient of the Deputies of the Nation are to discharge the Function thereof, till the Vacancy be filled up by the King.

The *Consuls* are to keep up a Correspondence with the Ministers of *England* residing in the Courts whereon their *Consulates* depend. Their Business is to support the Commerce, and the Interest of the Nation; to dispose of the Sums given, and the Presents made to the Lords and Principals of Places; to obtain their Protection, and prevent the Insults of the Natives on the Merchants of the Nation. See COMPANY.

There are *Consuls* of other Nations establish'd in the *Levant*, especially *French* and *Dutch*.

CONSULS are also Judges, elected among Merchants and Dealers, in Ports and trading Towns chiefly in *France*; to terminate, *gratis*, and on the Spot, without any Process, such Differences and Demands as shall arise relating to their Merchandizes, Bills of Exchange, and other Articles of Commerce.

The first Jurisdiction of *Consuls* establish'd in *France*, is that of *Tholouse*; the Edict of whose Establishment bears date 1549, under the Reign of King *Henry* II. that of *Paris* follow'd fourteen Years afterwards. By degrees, they were establish'd in most of the considerable trading Towns in that Kingdom.

CONSUL, in our Law-Books, signifies an *Earl* or *Count*, *Comes*. See EARL, and COUNT.

In the Laws of *Edward* the Confessor, Cap. 2. it is express'd, That what we now call a *County*, *Comitatus*, was by the antient *Britons* nam'd *Consultate*, *Consultatus*; and those now call'd *Vicounts*, *Vicecomites*, were then called *Viceconsuls*.

CONSULTATION, in Law, a Writ whereby a Cause formerly removed by Prohibition from the Ecclesiastical Court to the King's Court, is return'd thither again.

If the Judges of the King's Court, upon comparing the Libel with the Suggestion of the Party; find the Suggestion false, or not prov'd; and therefore the Cause to be wrongfully call'd from the Court-Christian: Then, upon such Deliberation, or *Consultation*, they decree it to be return'd again. And the Writ obtain'd hereon is call'd a *Consultation*.

CONSUMMATION, the End, Period, or Completion of any Work.

Thus, we say, the *Consummation* of all Things; meaning the End of the World. See CONFLAGRATION.

By the Incarnation, all the Prophesies are said to be *consummated*. See PROPHECY.

Consummation of a Marriage, is the last Act of Marriage, which makes its Accomplishment; or the most intimate Union between the married Pair. See MARRIAGE, DIVORCE, &c.

CONSUMPTION, *Tabes*, in Medicine, a Disease arising from a Defect of Nourishment; or, a preternatural Decay of the Body, and particularly by a gradual waste of muscular Flesh.

It is frequently attended with an Hectic Fever; and is divided by Physicians into several Kinds, according to the Variety of its Causes; as *Universal*, or *Scorbutic Consumption*, where it arises from a *Cacochymia*, or Scorbutic Habit; and a *Pulmonic Consumption*, or *Consumption of the Lungs*, where it arises from some Cause in the Lungs, properly call'd a *Phthisis*. See PHTHISIS, and SCORBUTUS.

A *Consumption* may either be *Accidental*, *Natural*, or *Hereditary*: *Accidental*, which may arise, 1st, from Ulcers, Chalky Stones, or Polypus's in the Lungs; caused by something that obstructs the Circulation in the Pulmonary Vessels, or renders the Blood viscid; as a Suppression of any natural Evacuations. 2d, From Intemperance, occasioning either a Cacochymia, or Plethora. 3d, From Peripneumonies, Pleurisies, Asthma's, Coughs, Catarrhs, Diarrhæas, Venereal Disorders, and Excess of Venery. 4th, From Grief, hard Study, &c.

A *Natural Consumption* may arise from the Straitness of the Thorax, or an ill Conformation of the Parts. An *Hereditary* one may be communicated from the Parents, without any other visible Cause.

A *Consumption* usually begins with flying Pains, and Stitches; Pain at the Pit of the Stomach, or in the Diaphragm; frequent Spitting, loss of Appetite, a quick Pulse, a Sweetness or Saltness in the Saliva, Heat and Flushings in the Face and Palms of the Hands after Meals, an Hectic Fever toward the Evening, Heaviness, Faintness, Night-Sweats; and where the Lungs are first disorder'd, a Cough, Catarrh, or Asthma usually precede it.

When these Symptoms are violent, 'tis confirm'd; and then comes on an Expectoration of purulent or bloody Matter, and the *Vomica Pulmonum*; at length, the Feet swell, the Expectoration stops, a Diarrhæa comes on; then the *Facies Hippocratica*, and Death.

The Cure of an *Universal*, or *Muscular Consumption*, depends principally upon Removal into a proper Air, and the using of a regular nourishing Diet: the Appetite is to be excited by proper Bitters, and other Stomachics.

In a *Pulmonary Consumption*, or *Phthisis*, Balsamicks, and oleaginous Medicines are to be added. See PHTHISIS.

Dr. *Wainwright*, indeed, takes the Particles of oily Medicines to be too gross and viscid to enter the small Orifices of the Lacteals; and thinks, that their Operation or Effect being confin'd to the first Passages, they are not only of no service in the Cure, but are apt to pall the Appetite, occasion Obstruction in the Mouths of the Lacteals, and Diarrhæas.

But this is contrary to common Experience: That their Particles are small enough to enter the Lacteals, is evident from the sudden relief Nephritic Persons find in violent Paroxysms of the Stone, by the Passages being relax'd soon after their Exhibition. That Diarrhæas, and blunting the Appetite, in some Constitutions, will be the Consequence of their Continuance, or Exhibition in too great Quantities, must be allow'd; but then this is either accidental to some Kinds of Constitutions, or from some Error in using 'em.

As to the Lacteals being obstructed by their use, 'tis a mere Notion, and as much unsupported by Experience as that other Hypothesis, which a late Author, Dr. *Quincy*, has been fond of asserting, *viz.* that the Use of Butter is apt to foul the Glands. See HECTIC.

CONTACT, the relative State of two Things that *touch* each other, or whose Surfaces join to each other without any Interstice.

Thus, we say, the *Contact* of two spherical Bodies, is only in one Point: and the same holds of the Tangent and the Circle.

Hence, because very few Surfaces are capable of touching in all Points, and the Cohesion of Bodies is in proportion to their *Contacts*, those Bodies will stick fastest together, which are capable of the most *Contact*. See COHESION.

Angle of CONTACT, is the Angle HLM, (Tab. *Geometry*, Fig. 43.) form'd by the Arch of a Circle ML, with the Tangent HL, at the place of their *Contact*.

Euclid demonstrates, that the right Line IL, standing perpendicularly on the Radius CL, cuts the Circle only in one Point: Nor can there be any other right Line drawn between the Tangent and the Circle.

Hence,

Hence, the Angle of *Contact* is leſs than any rectilinear one; and the Angle of the Semicircle between the Radius CL and the Arch ML, greater than any rectilinear acute Angle.

This Paradox of *Euclid* has exercis'd the Wits of Mathematicians: It was the Subject of a long Controverſy between *Peletarius* and *Clavius*; the firſt of whom maintain'd the *Angle of Contact* heterogeneous to a rectilinear one; as a Line is heterogeneous to a Surface: the latter maintain'd the contrary. Dr. *Wallis* has a formal Treatiſe on the *Angle of Contact*, and of the Semicircle; where, with other great Mathematicians, he approves of the Opinion of *Peletarius*. See TANGENT.

CONTAGION, or *Infection*, the communicating or tranſferring of a Diſeaſe from one Body to another. See DISEASE.

Contagion, in ſome Diſeaſes, is only effected by an immediate Contact, or Touch: as the Madneſs of a Dog, which is communicated by biting; and the Venom of the Pox, which is tranſmitted from the infected Perſon in the Act of Copulation. See HYDROPHOBIA, and VENEREAL *Diſeaſe*.

In others it is convey'd by infected Clothes; as the Itch. See ITCH.

In others the *Contagion* is tranſmitted thro' the Air to a great diſtance, by means of Steams or Effluvia expiring from the Sick; as in the Plague, and other peſtilential Diſtempers: in which Caſe, the Air is even ſaid to be *contagious*, *i. e.* full of *contagious* Particles. See PLAGUE, POISON, *&c.*

CONTEMPLATION, an Act of the Mind, whereby it applies it ſelf to conſider, reflect on, and admire the wonderful Works of God, Nature, *&c.*

Contemplation, among the myſtick Divines, is defin'd a ſimple, amorous View of God, as preſent. This *Contemplation* conſiſts in Acts ſo ſimple, ſo direct, ſo uniform and peaceful, that there is nothing for the Mind to take hold on, whereby to diſtinguiſh it. See MYSTICS.

In the *Contemplative* State, the Soul is to be entirely paſſive, with regard to God; to be in a continual Repoſe, without any Preturbation or Motion; free from the Activity of unequal Minds, which muſt agitate themſelves, to have their Operation ſenſible. Hence, ſome call *Contemplation* a Prayer of Silence and Quietude.

Contemplation is not a Raviſhment, or an extatick Suſpenſion of all the Faculties of the Soul; but 'tis ſomething paſſive, 'tis Peace and infinite Pliantneſs; leaving it perfectly diſpos'd to be mov'd by the Divine Impreſſions of Grace, and the better to follow the Divine Impulſe.

Contemplation is the height of Perfection of the myſtic Divines.

CONTEMPORARY, or COTEMPORARY, a Perſon, or Thing of the ſame Time, or that lives in the ſame Age with another.

Thus, we ſay, *Socrates*, *Plato*, and *Ariſtophanes* were *Contemporaries*: the beſt Hiſtories are thoſe of *contemporary* Authors.

CONTENEMENT, a Word in our antient Law-Books, about whoſe Signification Authors are not agreed. According to ſome, it ſhould ſignify the Countenance, Credit, or Reputation a Perſon has, with and by reaſon of his Freehold. And in ſuch Senſe is it uſed in the Stat. 1 *Edw.* III. *&c.* where it ſtands as ſynonymous with Countenance.

Others will have it ſignify what is neceſſary for the Support and Maintenance of Men according to their ſeveral Qualities, Conditions, or States of Life. Thus, *Spelman*, *Contenementum eſt Æſtimatio & Conditionis forma qua quis in Republica ſubſiſtit.*

CONTENT, a Term frequently uſed for the Capacity of a Veſſel, or the Area of a Space; or the Quantity of any Matter or Space included in certain Bounds. See AREA; ſee alſo SUPERFICIES, and SOLID.

The *Content* of a Tun of round Timber is 43 ſolid Feet. A Load of hewn Timber contains 50 Cubic Feet: In a Foot of Timber are *contain'd* 1728 cubic or ſquare Inches, and as often as 1728 Inches are *contain'd* in a Piece of Timber, be it round or ſquare; ſo many Foot of Timber are *contain'd* in the Piece. See TIMBER.

In Gaging, the Gallon for Beer and Ale is allow'd to *contain* 282 Cubic Inches, and the Wine Gallon 231: the Gallon of dry Meaſure 272. See GALLON; ſee alſo MEASURE.

Hence, as oft as 282 Cubic Inches are *contain'd* in any Veſſel round or ſquare, ſo many Gallons of Ale or Beer it holds, and the like may be obſerv'd of the other Meaſures.

Multiply, therefore, one ſide of a Square or Oblong into the other; and divide by one of thoſe Numbers, according to the Quality of the Liquor; the Quotient gives the Area in Gallons, upon an Inch deep.

Tho the Work may be ſhorten'd by only multiplying the Sides of Squares, or the Diameters of Rounds into themſelves; the Product is the Number of Gallons, and Parts the Veſſel *contains*, upon an Inch in Depth: and when that receives an Augmentation, by being 2, 3, or 4 Inches deep, it then commences a ſolid Body, and *contains* as many Gallons and Parts, as 'tis Inches and Parts deep.

A Cubic Foot *contains* 6 Gallons, and almoſt a Pint, of Ale and Beer; and 7 Gallons, 2 Quarts of Wine. A Cubic Foot of dry Meaſure *contains* 6 Gallons and a half, and ſomething more. A Buſhel of Salt *contains* 56 Pound Averdupoiſe.

CONTENTIOUS *Juriſdiction*, in Law, *Forum Contentioſum*, a Court, or Aſſembly, which has a Power to judge and determine Differences between contending Parties.

The Lords Chief Juſtices, Judges, *&c.* have a *Contentious Juriſdiction*: But the Lords of the Treaſury, the Commiſſioners of Cuſtoms, *&c.* have none; being merely Judges of Accompts.

CONTEXT, among Divines and Criticks, that Part of Scripture, or other Writing, which lies about the *Text*; before or after it, or both. See TEXT.

To take the full Senſe of the Text, the *Context* ſhou'd be regarded.

CONTIGNATION, in the antient Architecture, the Act of laying Rafters, *tigna*, together; and particularly, flooring. See FLOORING.

CONTIGUOUS, a Relative Term, underſtood of Things diſpos'd ſo near each other, that they join their Surfaces, or touch. See CONTACT.

The Houſes in antient *Rome* were not *contiguous* as ours are, but all inſolated.

CONTIGUOUS *Angles*, in Geometry, are ſuch as have one Leg common to each Angle; otherwiſe called *adjoining Angles*; in contradiſtinction to thoſe produced by continuing their Legs thro' the Point of Contact, which are called *oppoſite* or *vertical* Angles. See ANGLE, *&c.*

CONTINENT, in Geography, a *Terra firma*, Main-land, or large extent of Country, not interrupted by Seas; in oppoſition to *Iſland*, &c. See EARTH, OCEAN, *&c.*

Thus, *Sicily* is ſaid to have been antiently torn from the *Continent* of *Italy*; and 'tis an old Tradition, which ſome of our Antiquaries have ſtill a regard to, that *Britain* was antiently a part of the *Continent* of *France*.

The World is ordinarily divided into two grand *Continents*, the old and the new: The old comprehends *Europe*, *Aſia*, and *Africa*; the new the two *America's*, North and South.

The antient *Continent* is alſo called the *upper Continent*, from a vulgar Opinion, that it poſſeſſes the upper Part of the Globe. See TERRAQUEOUS *Globe*.

'Tis doubted whether *Japan* be an Iſland, or join'd to the *Continent*; the ſame may be ſaid of *California*.

Some Authors are of Opinion, the two grand *Continents* are in reality no more than one; imagining the Northern Parts of *Tartary* to run out and meet thoſe of N. *America*.

CONTINENT *Cauſe* of a Diſtemper, is that whereon the Diſeaſe depends ſo immediately, that it continues ſo long as that remains, and no longer. See DISEASE.

Thus, a Stone in the Bladder may be the *Continent Cauſe* of the Suppreſſion of Urine. See STONE, *&c.*

CONTINENT *Fever*, is that which goes on to a Criſis without any Intermiſſion, or Remiſſion. See FEVER.

CONTINGENT, ſomething caſual, or uncertain. See CHANCE.

Future CONTINGENT, in Logick, is a conditional Propoſition, which may or may not happen, according as Circumſtances fall.

The *Socinians* maintain, that God cannot ſee *future Contingents*, becauſe depending on the free Motion of the Will.

CONTINGENT is alſo a Term of Relation for the Quota that falls to any Perſon upon a Diviſion.

Thus, we ſay, each Prince of *Germany*, in time of War, is to furniſh ſo many Men, ſo much Money, and Munition for his *Contingent*. By the new Treaty of *Hanover* it is ſtipulated, that in caſe of a Rupture with the Emperor, the Kings of *Great Britain* and *Pruſſia* may furniſh their *Contingents*, as Fiefs of the Empire, at the ſame time they are at War therewith.

CONTINGENT *Uſe*, in Law, is an Uſe limited in a Conveyance of Land, which may or may not happen to veſt, according to the *Contingency* expreſs'd in the Limitation of ſuch Uſe.

CONTINGENT *Line*, or *Line of* CONTINGENCY, in Dialling, is a Line that croſſes the Subſtyle at right Angles. See SUBSTYLE, and DIALLING.

CONTINGENTS is ſometimes uſed by the Mathematicians in the ſame Senſe as *Tangents*. See TANGENT.

CONTINUAL *Claim*. See *Continual* CLAIM.

CONTINUANCE, in Law, the ſame as *Prorogation* among the Civilians. See PROROGATION.

CONTINUANCE *of a Writ*, or *Action*, is from one Term to another, in a Caſe where the Sheriff has not return'd or executed a former Writ iſſued out in the ſaid Action.

CONTINUANCE *of Aſſiſe*. If a Record in the Treaſury be alledg'd by one Party, and deny'd by the other; a *Certiorari* ſhall be ſued to the Treaſurer and Chamberlain of the Exchequer: who, if they certify not that the ſaid Record is there,

there, or likely to be in the Tower; the King ſhall ſend to the Juſtices, repeating the Certificate, and will them to continue the Aſſiſe.

CONTINUANDO, in Law, a Term uſed where a Plaintiff would recover Damages for ſeveral Treſpaſſes in the ſame Action.

For, to avoid multiplicity of Suits, a Man may in one Action of Treſpaſs recover Damages for forty or more Treſpaſſes; laying the firſt to be done, with a *Continuance* to the whole Time wherein the reſt of the Treſpaſſes were done; which is done in this form, *Continuando tranſgreſſionem prædictam*, &c. *a prædicto die*, &c. *uſque*, &c.

CONTINUED *Quantity*. } See CONTINUUM, and CONTINUITY.
CONTINUED *Body*, &c. }

CONTINUED *Fever*, is ſuch an one as does not *intermit*, or go intirely off, and return again, by Fits. See FEVER.

A *continued* Fever, may be defined the *Continuance* of an increas'd Velocity in the Circulation of the Blood, beyond what is natural to the Conſtitution.

If this Velocity often decreaſes, and riſes again to the ſame height, it is called a *Continued periodical Fever*.

And if it intirely ceaſe in the Space of a Day, or two, it is call'd an *Ephemeris*. See EPHEMERIS.

A *Continued Fever*, then, may *remit*, or abate and increaſe again, alternately; but not *intermit*, which would conſtitute it an intermitting Fever, or Ague. See REMITTING, and INTERMITTING *Fever*.

CONTINUED, or *Thorough Baſs*, in Muſick, is that which continues to play, conſtantly; both during the Recitatives, and to ſuſtain the Choir, or Chorus. See BASS.

CONTINUED *Proportion*, in Arithmetick, is that wherein the Conſequent of the firſt Ratio is the ſame with the Antecedent of the ſecond; as, 3 : 6 :: 6 : 12. See PROPORTION.

On the contrary, if the Conſequent of the firſt Ratio be different from the Antecedent of the ſecond, the Proportion is ſaid to be *diſcrete*; as, 3 : 6 :: 4 : 8. See DISCRETE.

CONTINUITY, is uſually defined among the Schoolmen, the immediate Coheſion of Parts in the ſame *Quantum*. Others define it a Mode of Body, whereby its Extremes become one. And others, a State of Body reſulting from the mutual Implication of its Parts. See PART.

There are two Kinds of *Continuity*, *Mathematical*, and *Phyſical*: The firſt is merely imaginary, and fictitious; ſince it ſuppoſes real or phyſical Parts where there are none.

Phyſical Continuity, is, ſtrictly, that State of two or more Parts, or Particles, whereby they appear to adhere, or conſtitute one uninterrupted Quantity, or *Continuum*; or between which we perceive no intermediate Space. See CONTINUUM.

The Schoolmen diſtinguiſh two other ſorts of *Continuity*, viz. *homogeneous* and *heterogeneous*. The firſt, where our Senſes do not perceive the Bounds, or Extremes of the Parts; and this agrees even to Air, Water, &c. The ſecond, where our Senſes do indeed perceive the Extremes of certain Parts, yet at the ſame time obſerve the ſame Parts cloſely link'd to each other; either in virtue of their Situation or Figure, &c. and this is chiefly attributed to the Bodies of Animals and Plants.

The *Continuity* of Bodies, is a State merely relative to our ſight and touch: *e. gr.* if the diſtance of two ſeparate Objects be ſuch, as that the viſual Angle they ſubtend is inſenſible to the Eye, which it will if leſs than 16 Seconds; the two ſeparate Bodies will appear *contiguous*.

Now, the Reſult of ſeveral *contiguous* Objects is a *Continuity*; ſo that any Number of viſible Objects, being plac'd ſo as that their Diſtances ſubtend an Angle of leſs than 16 Seconds, they will appear to form one *Continuum*.

And hence, as we can determine the Diſtance at which any given Magnitude becomes inviſible; 'tis eaſy finding at what diſtance any two Bodies, however remote from each other, will appear as contiguous; and ſeveral, as forming one *Continuum*. See CONTIGUOUS.

For the Phyſical Cauſe of Continuity, *or Coheſion*. See COHESION.

CONTINUUM, or *Continued Quantity*, in Phyſicks, a Quantity or Coextenſion, whoſe Parts are not divided, but join'd and connected together; ſo as to leave no room to determine where one begins and another ends. See CONTINUITY.

'Tis controverted among Philoſophers, whether a *Continuum* be infinitely diviſible, *i. e.* diviſible into infinite proportionable Parts. See DIVISIBILITY.

Mathematicians divide Quantity into *continued* and *diſcrete*. See QUANTITY.

Continued Quantity is that expreſs'd by Lines, and makes the Subject of Geometry. See LINE, and GEOMETRY.

Diſcrete Quantities, are thoſe expreſs'd by Numbers, which make the Subject of Arithmetick. See DISCRETE; ſee alſo NUMBER.

In Medicine and Chirurgery, Wounds, Ulcers, Fractures, &c. are expreſs'd by the Word *Solutio Continui*, or *Solution of Continuity*. See SOLUTIO.

In a critical Senſe, we ſay, there is to be a *Continuity*, i. e. a *Connection* between the Parts of a Diſcourſe.

In the *Epopæa*, particularly, the Action ſhould have a *Continuity* in the Narration; tho the Events or Incidents be not continued. As ſoon as ever the Poet has open'd his Subject, and brought his Perſons on the Stage, the Action is to be continu'd to the End: Every Character muſt be at work; and no ſuch thing as an idle Perſon to be ſeen. See ACTION.

F. *Boſſu* obſerves, that by retrenching dull languiſhing Incidents, and Intervals void of Action, which break the *Continuity*, the Poem acquires a *continu'd* Force, which makes it run equally throughout.

The Antients attributed the Riſe of Water in Pumps, to the love of *Continuity*, and the Abhorrence of a Vacuum; in regard the Weight and Preſſure of the Air was not then known.

CONTOBABDITES, a Sect of Hereticks in the VIth Century.

Their firſt Leader was *Severus* of *Antioch*, who was ſucceeded by *John* the Grammarian, ſirnam'd *Philoponus*, and one *Theodoſius*; whence their Followers were called *Agnoetes* and *Theodoſians*. See AGNOETES.

Part of them, who were willing to receive a Book compos'd by *Theodoſius* on the Trinity, made a ſeparate Body, and were called *Contobabdites*, from I know not what Place, which *Nicephorus* does not mention, but which muſt apparently have been the Place where they held their Aſſemblies.

The *Contobabdites* allow'd of no Biſhops; which is the only Circumſtance that Hiſtorian gives us of them.

CONTORSION, the Action of twiſting, or wreſting a Member of the Body out of its natural Situation.

Thus, we ſee Rope-Dancers accuſtom themſelves to *Contorſions* of their Limbs from their Youth, to render the Fibres of their Articulations lax, and ſupple to all Kinds of Poſtures. See POSTURE.

CONTORSION is alſo uſed paſſively for the State of a Thing, *v. g.* of a Member that is awry.

The *Contorſion of the Neck*, is occaſion'd, according to *Nucke*, by the Relaxation, or Paralyſis of one of the Maſtoidal Muſcles: for hence it happens, that its Antagoniſt, whoſe Power is now no longer balanced, contracting with its proper Force, draws the Head towards its ſide. See PALSY.

He adds, that this Diſorder cannot be remedied too ſpeedily; and preſcribes from the beginning, Liniments capable of relaxing and ſoftening the Fibres; to be uſed, not only to the Muſcle in Contraction, but alſo and principally to the relax'd paralytick Muſcle, which is the Seat of the Diſorder.

CONTOUR, the *Outline*, or that which terminates and defines a Figure. See FIGURE.

A great Part of the Skill of the Painter conſiſts in managing the *Contours* well. See PAINTING.

The *Contour* of a Figure, makes what we call the *Draught*, or *Deſign*. See DESIGN.

The *Contour* of a Face, the *Italian* Painters ordinarily call the *Lineaments* thereof.

CONTOURNE, in Heraldry, is uſed when a Beaſt is ſtanding or running with its Face to the Siniſter-ſide of the Eſcutcheon: they being always ſuppoſed to look to the Dexter-ſide, unleſs it be otherwiſe expreſs'd.

CONTOURNIATED, a Term uſed among Antiquaries for a kind of Medallions, ſtruck with a certain hollowneſs all around, which leaves a Circle on each ſide; and with Figures that have ſcarce any Relievo, in compariſon with the true Medallions. See MEDALLION.

They have their Name from their Edges, which appear as if turned in the Lathe.

All we have remaining of theſe *contourniated* Medals ſeem to have been made about the ſame time. F. *Hardouin* conjectures them to have been ſtruck about the XIIIth Century: other Antiquaries go back as far as the Vth.

The Manner of the Work ſeems to have had its Origin in *Greece*; and to have been appropriated to honour the Memories of great Men: principally, thoſe who had bore away the Prize at the Solemn Games: Such are thoſe remaining of *Homer*, *Solon*, *Euclid*, *Pythagoras*, *Socrates*, *Apollonius Thyaneus*, and ſeveral *Athletæ*, whoſe Victories are expreſs'd by Palms and Chariots, either *Bigæ* or *Quadrigæ*.

CONTRABAND, or CONTRABANDED *Commodity*, in Commerce, a *prohibited* Commodity; or a Merchandiſe bought or ſold, imported or exported, in prejudice and contrary to the Laws and Ordonnances of a State, or the publick Prohibitions of the Prince. See COMMERCE, MERCHANDISE, &c.

The Word comes from the Italian *Contrabando*, *i. e.* contrary to Edict, or Publication of Prohibition.

Contraband Goods are not only liable to Confiſcation themſelves; but do alſo ſubject thereto all other allowed Merchandiſes found with 'em in the ſame Box, or Bale, together with the Horſes, Waggons, &c. which conduct them to the ſame. See CONFISCATION.

There are *Contrabands*, which beſides Confiſcation, are prohibited on Pain of Death; as, *v. g.* in *France*, *India* and *China* Stuffs, Linens, &c.

In *England* there are two principal *Contrabands* for the *Export*, *v. g.* that of Wools and live Sheep, which all Strangers are prohibited from carrying out, on Pain of having the right Hand cut off; the other that of Sheep-ſkins and Calf-ſkins, which all Foreigners are in like manner prohibited from exporting, on Pain alſo of having the right Hand cut off: Yet, the Subjects of *England* are allow'd to tranſport the ſame from *France* to *England*. See WOOL, and WOOLLEN *Manufacture*.

The other *Contrabands* for Exportation are raw Horns, white Aſhes, Stocking Looms, or any Part thereof, Fullers-Earth, and all raw Hides, or Skins.

Of Goods *Contrabanded* as to the *Import*, there are above 50 in the Liſts made in 1662; and yet there are 25 of 'em which now ſtand in the Tariff; the Non-execution of the Acts of Parliament whereby they were impos'd, ſeeming to have reſtor'd 'em to the Freedom of Importation.

The chief of thoſe ſtill *contrabanded*, and not tariff'd, are woollen Caps, woollen Cloths, Saddles and Harneſs, Dice, Billiards, all ſorts of tann'd or dreſs'd Hides, dreſs'd Furs, all ſorts of Shoemakers Ware, Locks, and divers ſorts of Cutlers Ware; all painted Goods; except Paper, Wires, Buckles, Gold and Silver Leaf, and Horns for Lanthorns.

Since the Year 1662, ſeveral other Commodities have been made *contraband*; particularly Silk and Galloons, Laces, Embroideries, Fringes, Buttons, and other Silk and Thread Manufactures; black Taffaties, call'd *Alamodes*, or Luteſtring.

In 1719 and 1720, an Attempt was made in Parliament to paſs a Bill for putting Gold and Silver, whether in Species or otherwiſe, among the Number of *Contraband* Goods for Exportation; but in vain, by reaſon of the ſtrong Oppoſition made by thoſe who enrich themſelves by the Export of theſe Metals; which, by the Laws of the Kingdom, it has always been allow'd to ſend away, upon entering 'em, and paying the Duty of the Export.

It may be judg'd whether thoſe who promoted the Bill were well affected to the Nation, from this, that in the ſingle Month of *September* 1720, there were enter'd at the Cuſtomhouſe in *London* 468119 Ounces of Gold, and 28988 Ounces of Silver; *viz.* 34302 Ounces of Gold, and 4000 Ounces of Silver for *Holland*; 12320 Ounces of Gold for *France*; 197 Ounces of Gold, and 5648 Ounces of Silver for *Portugal*; and 19340 Ounces of Silver for the *Eaſt-Indies*, excluſive of what was exported fraudulently by private Perſons, without paying the Duties.

This ſhews, indeed, the abundance of Gold and Silver in *England*; but ſhews, at the ſame time, the danger it is in of being, at length, exhauſted.

In Heraldry, the Bar is called a *Contre-band*, or *Counter-band*; becauſe it cuts the Shield contrary, and oppoſite ways. See BAR.

They alſo ſay, *Contre-chevron*, *Contre-pal*, &c. when there are two Ordinaries of the ſame Nature oppoſite to each other; ſo as Colour be oppos'd to Metal, and Metal to Colour. And the Coat is ſaid to be *Contre* or *Counter-paled*, *Counter-banded*, *Counter-feſs'd*, *Counter-compon'd*, *Counter-barr'd* when ſo divided. See CONTRE-BANDE, &c.

Counter-quarter'd, when one of the Quarters is quarter'd again; as alſo *Counter-flower'd*, *Counter-colour'd*, &c.

Animals are ſaid to be *Counter-paſſant*, when one paſſes on one ſide, and another on another.

CONTRA *formam Collationis*, is a Writ that lays where a Man has given perpetual Alms to a Religious Houſe, Hoſpital, School, or the like, and the Governor or Managers, have alienated the Lands, contrary to the Intention of the Donor.

CONTRA *formam Feoffamenti*, is a Writ for a Tenant who is infeoffed by the Lord's Charter to make certain Suit and Service to his Court; and is afterwards diſtrain'd for more than is contain'd therein.

CONTRACT, a mutual Conſent of two or more Parties, who promiſe and oblige themſelves, voluntarily, to do ſomething, pay a certain Sum, or the like. See PACT, COVENANT, &c.

Sales, Exchanges, Donations, Leaſes, &c. are ſo many different Species of *Contracts*.

Contract is particularly uſed in Common Law, for an Agreement or Covenant between two, with a lawful Conſideration or Cauſe.

As, if I ſell my Horſe for Money, or Covenant, in Conſideration of 20 *l.* to make you a Leaſe of a Farm; theſe are good *Contracts*, becauſe there is *quid pro quo*.

Uſurious CONTRACT, is a *Contract* to pay more Intereſt for Money than the Laws allow. See USURY.

It is a Devaſtavit in Execution to pay a Debt upon an *Uſurious Contract*. See DEVASTAVIT.

In Marriage, the *Romaniſts* diſtinguiſh the Civil *Contract*, which is the Conſent of the Parties, from the Sacrament, which is the Benediction of the Prieſt. See MARRIAGE.

Thoſe *Contracts* are ſaid to be *null* which the Law prohibits the making of; ſuch are all *Contracts* between Perſons incapable of *contracting*, as Minors, Religious, Lunaticks, Wives without Conſent of their Husbands, &c.

The Word *Contract* is alſo uſed for the Inſtrument in Writing, which ſerves as a Proof of the Conſent granted, and the Obligation paſs'd between the Parties.

Among the antient *Romans*, *Contracts*, and all voluntary Acts, were wrote, either by the Parties themſelves, or by one of the Witneſſes, or by a Domeſtick Secretary of one of the Parties, whom they call'd a *Notary*; but who was no publick Perſon, as among us. See NOTARY.

The *Contract*, when finiſh'd was carry'd to the Magiſtrate, who gave it a publick Authority by receiving it *inter Acta*, into the Number of Acts under his Juriſdiction; giving each of the Parties a Copy thereof, tranſcrib'd by his Clerks or Domeſtick Regiſters, and ſealed with his Seal.

Which Practice paſs'd into *France*, where it obtain'd a long time.

CONTRACTILE *Force*, that Power or Property inherent in certain Bodies, whereby, when extended, they are enabled to draw themſelves up again, to their former Dimenſions.

For the Cauſe of this Property, which is of the utmoſt Conſequence to a right underſtanding of the Animal Oeconomy, ſee FIBRE.

CONTRACTION, in Logicks, is defined a Species of Reduction, wherein the Thing that reduces, *abridges*, or brings the Thing reduced into a leſſer compaſs. See REDUCTION, and ABRIDGMENT.

The deſign of ſuch *Contraction* is to bring Things, which before were too lax and diffuſive, nearer together; that ſo their mutual Relation may appear the more clearly, and may better ſtrengthen and ſupport each other.

Thus, 'following the Argumentation, From that Propoſition, *Therefore, now I am ſtanding*, follows this other, '*Therefore, now I am exiſting*;' may be thus *contracted*, *Exiſto ſequitur ſum*, from ſtanding we conclude exiſting.

To this Head are refer'd the Arguments, as they are called, of Poems and Orations; the Titles and Summaries of Chapters, &c.

CONTRACTION, in Phyſicks, is a diminiſhing of the Extent or Dimenſions of a Body; or a bringing of its Parts cloſer to each other: upon which it becomes heavier, harder, &c. See CONDENSATION.

Contraction, in this Senſe, ſtands oppoſed to *Dilatation*. See DILATATION, &c.

All Bodies *contract* by Cold, and dilate or rarefy by Heat. See COLD, HEAT, RAREFACTION, &c.

CONTRACTION *of the Heart*, *Arteries*, *Lungs*, &c. See SYSTOLE, HEART, ARTERY, PULSE, &c.

CONTRACTION, a Term in Medicine, frequently uſed by Anatomical Writers, to expreſs the ſhrinking up of a Fibre, or Aſſemblage of Fibres, when extended. See FIBRE.

Convulſions and Spaſms proceed from a preternatural *Contraction* of the Fibres of the Muſcles of the Part convuls'd. See CONVULSION.

On the contrary, Paralytic Diſorders generally proceed from a too great laxneſs of the Fibres of the Parts affected; or from the want of that degree of *Contraction* neceſſary to perform the natural Motion or Action of the Part.

In the firſt, therefore, the Animal Spirits are ſuppos'd to flow, either in too great a quantity, or irregularly; and in the laſt, the Animal Spirits are either deny'd a free Paſſage into the Part affected, or the Tenſion of the *Fibrillæ* is ſuppos'd inſufficient to promote the Circulation.

Contraction evidently appears to be the true natural State of all Muſcles: For if a Muſcle be at any time freed from the Power of its Antagoniſt, it is immediately found to *contract*; and is not by any Action of the Will or the Spirits, to be reduced to a State of Dilatation. See MUSCLE.

CONTRACTION, in Grammar, the Reduction of two Vowels or Syllables into one.

The *Greeks* abound in *Contractions*, both in their Verbs and their Nouns; as, ποιῶ of ποίεω, *facio*; βοῶ of βοάω, *clamo*; χρυσῶ of χρυσόω, *inauro*; παῖω of παίεω, *ambulo*; παῖς of παΐεις, *ambulas*; Δημοσθένης, of Δημοσθένεος.

The *French* have ſomething like it too, at leaſt in their Pronunciation; as in *ſaouler*, *baailler*, *paon*, which they pronounce *ſouler*, *bailer*, *pan*.

CONTRADICTION, is a Species of direct oppoſition, wherein one thing is diametrically oppoſed to another. See OPPOSITION; ſee alſo CONTRADICTORY.

The Schoolmen uſually define it, *Oppoſitio inter ens & non-ens medio carens*: where, by *Ens* and *Non-ens*, are underſtood any two Extremes, whereof one affirms and the other denies: and it is ſaid to be *medio carens*, to diſtinguiſh it from the other Species of Oppoſition; the Extremes, here, neither agreeing in Subject, as is the Caſe in Privation; nor in Eſſence and Kind, as in Contrariety. See PRIVATION, CONTRARIETY, &c.

CONTRADICTOR, in a Legal Senſe, a Perſon who has a Right or a Quality to *contradict*, or gainſay: Thus, an Inventory of the Effects of a Minor ought to be made in preſence of his Guardian, or Truſtee, who is the Legal *Contradictor*: A Decree againſt a Farmer has no Effect on the Landlord, the firſt not being the legitimate *Contradictor*.

CONTRADICTORY *Propoſitions*, are Oppoſites, one of which imports a mere and naked denial of the other. See OPPOSITE.

Of theſe, therefore, one muſt be poſitive, and the other negative; as, ſitting, and not ſitting; white, and not white.

Contradictory Propoſitions mutually deſtroy each other. See PROPOSITION.

To have two Propoſitions truly *contradictory*, they muſt be oppoſite both in Quantity and Quality, *i. e.* one muſt be univerſal and the other particular, which makes the Oppoſition of Quantity; and the one Affirmative and the other Negative, which makes the Oppoſition in Quality. See OPPOSITION.

Thus, *v. g. All uſe of Wine and Silver is evil*; 'tis falſe: *Some uſe of Wine and Silver is not evil*; 'tis true.

To this it is neceſſary that the one deny, and the other affirm the ſame thing, of the ſame Subject, conſider'd in the ſame Circumſtances; unleſs the Queſtion be about an eſſential Attribute; in which Caſe, no regard is had to Circumſtances; every thing having always its own Eſſence.

This the Logicians expreſs by *Affirmare & negare idem, de eodem, ſecundum idem.*

There may likewiſe be *Contradictory Propoſitions* on a particular Subject, *e. gr.* an individual: Theſe are called *ſingle Contradictory Propoſitions*; as, *Peter is juſt*; *Peter is not juſt*, or *is a Sinner*. Now, to have theſe Propoſitions *contradictory*, *Peter* muſt be conſider'd at the ſame Time; without which they may be both true: ſince there was a Time wherein *Peter* was juſt, and another wherein he was a Sinner.

CONTRA-FISSURE, in Medicine, a Term apply'd to that Species of Fracture in the Skull, where the Side oppoſite to that where the Blow was receiv'd, is crack'd. See FISSURE.

The uſual Symptoms attending a *Contra-fiſſure*, are a Delirium, ſometimes a bleeding at the Noſe and Mouth, Stupidity, an involuntary paſſing of the Urine and Excrements, Convulſions, *&c.*

If theſe happen, and after ſearch made in the Part where the Injury was receiv'd, no Fracture or Depreſſion of the Skull be found, there is ſuſpicion of a *Contra-fiſſure*; eſpecially if the Patient be apt to point to that Part.

If the Symptoms be by Intervals, and not to a great degree, or there be reaſon to believe the Fiſſure to have reach'd only thro' one of the Tables, 'tis ſufficient to denude the Bone, and uſe a Raſpatory; then to fill the *Rima*, or Crack with proper Pouders, of Iris, Gum, Myrrh, Pouder of Diapente, *&c.* and above all apply a Pledget dipp'd in Tincture of Euphorbium, or of equal Parts of Spirits of Wine, and Honey of Roſes.

If theſe fail, the Trepan muſt be had recourſe to. See TREPANNING.

CONTRA-HARMONICAL *Proportion*, that Relation of three Terms, wherein the Difference of the firſt and ſecond, is to the Differenee of the ſecond and third, as the third is to the firſt. See PROPORTION.

Thus, *e. g.* 3, 5, and 6, are Numbers *contra-harmonically* proportional; for 2 : 1 :: 6 : 3.

To find a Mean contraharmonically *proportional to two given Quantities.* The Rule is; Divide the Sum of the two ſquared Numbers by the Sum of the Roots; the Quotient is a *contraharmonically* mean Proportional between the Roots. See HARMONICAL *Proportion.*

CONTRA-INDICATION, is an Indication which forbids that to be done which the main ſcope of a Diſeaſe points out. See INDICATION.

Suppoſe, *e. g.* in the Cure of a Diſeaſe a Vomit were judg'd proper; if the Patient be ſubject to a vomiting of Blood, 'tis a ſufficient *Contra-Indication* as to its Exhibition.

CONTRAMANDATIO *Placiti*, in our antient Law-Books, ſignifies a reſpiting, or giving the Defendant farther time to anſwer: or, an Imparlance, or countermanding of what was formerly order'd.

Contramandatum is a lawful Excuſe, which the Defendant by his Attorney alledgeth for himſelf, to ſhew that the Plaintiff has no cauſe to complain; *Si dies placiti ſit contramandatus.* 11 *Hen.* I.

CONTRAMURE, in Building, an Out-wall, built about the Wall of a City. See WALL, RAMPART, *&c.*

CONTRAPOSITION, in Logicks. See CONVERSION.

CONTRARIETY, that which denominates two Things *contrary* to each other. See CONTRARY.

Contrariety conſiſts in this, that one of 'em imports a Negation of the other, either mediately or immediately; ſo that *Contrariety* may be ſaid to be the Contraſt or Oppoſition of two Things, one of which implies the abſence of the other. See OPPOSITION.

CONTRARY *Things*, or CONTRARIES, are poſitive *oppoſites*; which being of the ſame Kind, or ſame common Nature, and ſubſiſting by turns in the ſame Subject, are as remote from each other as poſſible, and mutually expel each other. See OPPOSITE.

Such are Whiteneſs and Blackneſs, Cold and Heat, *&c.*

Hence, properly ſpeaking, only Qualities can be *Contraries. Contrariety* only agrees to Qualities *per ſe*; to other things it agrees *per accidens*, or *in ordine ad Qualitatem.* See QUALITY.

Contrary, however, is often uſed in a more extenſive Signification, *viz.* for any inconſiſtence or difference between the Nature and Qualities of Things.

'Tis a popular Maxim in Philoſophy, that *contraria juxta ſe poſita magis eluceſcunt*; Contraries ſet off one another.

In this Senſe, the Word *Contrary* is uſed in the Schools; as, An Argument *à contrario*; *e. g.* If Bodies whoſe Surfaces are rugged don't reflect any Light, poliſh'd Bodies muſt, by the Rule of *Contraries*, reflect it.

This Method of proving Things *à contrario*, is much uſed, and with good Succeſs, by F. *Bourdaloue* in his Sermons.

The Schools uſe the Word *Contraries* in a ſtill more preciſe Signification, as implying two poſitive Things, which cannot ſubſiſt together in the ſame Subject, but deſtroy or expel each other; as Heat and Cold, Dryneſs and Moiſture.

CONTRARY, in Rhetorick. F. *de Colonia* lays down three Kinds of *Contraries* in Rhetorick, *viz. Adverſatives*, *Privatives*, and *Contradictories.*

Adverſatives are thoſe that differ much in the ſame Thing, as Virtue and Vice, War and Peace: Thus *Tully*, *Si ſtultitiam fugimus, ſapientiam ſequamur*; *& bonitatem, ſi malitiam.* Thus *Quintilian*, *Malorum cauſa bellum eſt, erit emendatio pax.* Thus *Drances* argues in *Virgil*, *Nulla ſalus bello: pacem te poſcimus omnes.*

Privatives are Habits, and their Privations. See PRIVATIVE.

Contradictories are thoſe, one whereof affirms, and the other denies the ſame Thing, of the ſame Subject. See CONTRADICTORY.

CONTRAST, in Painting and Sculpture, expreſſes an *Oppoſition*, or difference of Poſition, Attitude, *&c.* of two or more Figures; contriv'd to make Variety in a Painting. See DESIGN.

Thus, when in a Group of three Figures, one is ſhewn before, another behind, and a third ſidewiſe, there is ſaid to be a *Contraſt*. See GROUP.

M. *de Piles* defines *Contraſt* an Oppoſition between the Lines which form the Objects; by means whereof they ſet off one another.

A *Contraſt* well manag'd, is one of the greateſt Beauties of a Painting.

The *Contraſt* is not only to be obſerv'd in the Poſition of ſeveral Figures, but alſo in that of the ſeveral Members of the ſame Figure: Thus, if the right Arm advance the furtheſt, the right Leg is to be hindmoſt; if the Eye be directed one way, the right Arm to go the contrary way, *&c.* See FIGURE.

The *Contraſt* muſt be purſued even into the Drapery. See DRAPERY.

To CONTRAST, in Architecture, is to avoid the Repetition of the ſame Thing, in order to pleaſe by Variety; as is done in the great Gallery of the *Louvre*, where the Pediments are, alternately, arch'd and angular.

The Word comes from the Italian *Contraſtare*, to oppoſe, thwart; and that, according to M. *Huet*, from the Latin *Contraſtatio.*

CONTRAT-*Wheel*, in Clock-work. See WHEEL; ſee alſo CLOCK, and WATCH.

CONTRAVALLATION, or the *Line of* CONTRAVALLATION, in Fortification, is a Trench guarded with a Parapet; uſually cut round about a Place by the Beſiegers, to ſecure themſelves on that ſide, and to ſtop the Sallies of the Garriſon. See LINE.

It is without Muſket-ſhot of the Town; ſo that the Army forming a Siege, lies between the Lines of *Circumvallation* and *Contravallation*. See CIRCUMVALLATION.

CONTRAVENTION, a Man's failure of performing or diſcharging his Word, Obligation, Duty, or the Laws and Cuſtoms of the Place.

The Penalties impoſed in Caſes of *Contravention*, only paſs for Comminatory.

In a more limited Senſe, *Contravention* implies the Non-execution of an Ordinance, or Edict.

Contravention is ſuppos'd to be a degree below Prevarication; and to be only the Effect of Negligence, or Ignorance. See PREVARICATION.

CONTRA-YERVA, a Root brought from *Peru*; eſteem'd an Alexiterial, and a ſovereign Antidote againſt Poiſon.

It is ſaid to take its Name from *Yerva*; which in the *Spaniſh* ſignifies white Hellebore, a Plant whoſe Juice is a violent Poiſon, uſed by the *Peruvians* to poiſon their Arrows

rows withal; in which Senſe, *Contra-yerva* ſignifies *Counter-poiſon.*

The Root is ſmaller than that of the Iris, reddiſh without and white within, knotty, and fibrous. To be good, it muſt be new, heavy, and of a duſky red Colour.

In Smell it reſembles Fig-leaves; its Taſte is Aromatic, accompany'd with ſome Acrimony.

There is an Officinal Compoſition which takes its Name from this Root, prepar'd with the Teſtaceous Pouders, call'd *Lapis Contrayerva.* Both the Root and *Lapis Contrayerva* are of great efficacy in the Small Pox, Meaſles, Fevers, and all Caſes where either a Diaphoreſis or Perſpiration is requir'd: its Succeſs being more to be depended on than the *Gaſcons Pouder*; which, among the more knowing, begins to loſe ground.

It is agreed on, by the generality of Writers, that the *Contra-yerva* Root is one of the beſt Anti-epidemicks yet known. Dr. *Hodges*, in his Treatiſe of the laſt *London-Plague*, has a Receipt which he ſays was attended with great Succeſs, and of which this Root was one of the chief Ingredients. See PLAGUE.

There is another Kind of *Contra-yerva*, brought from *Virginia*, more ordinarily called *Viperine*, very aromatic; ſeldom preſcribed, tho ſaid to have the ſame Succeſs againſt Poiſons and Venoms with the *Contra-yerva* of *Peru.*

CONTRE-COMPONE. } in Heraldry. See { COUNTER-COMPONED.
CONTRE-CHANGED, { COUNTER-CHANGED.
CONTRE-BANDE, { COUNTER-BEND.
CONTRE-BARRE, { COUNTER-BARRED.
CONTRE-CHEVRONNE, { COUNTER-CHEVRON'D.
CONTRE-ERMINE, { COUNTER-ERMINE.
CONTRE-ESCARTELE, *&c.* { COUNTER-ESCARTELE, *&c.*

CONTRIBUTION, the Payment of each Perſon's Quota, or of the Part he is to bear in ſome Impoſition, or common Expence.

Contributions are either *Involuntary*, as thoſe of Taxes and Impoſts; or *Voluntary*, as thoſe of Expences for carrying on ſome Undertaking for the Intereſt of the Community.

In a Military Senſe, *Contributions* are particularly uſed for the Conventions between the Governors of the Frontier Places and the Enemy; in order to ſecure themſelves from being pillag'd and inſulted.

The Peaſants till their Ground under the Faith of *Contributions*, as ſecurely as in time of profound Peace.

CONTRIBUTIONE *facienda*, a Writ which lies where ſeveral Perſons are jointly bound to the ſame Thing, and one or more of 'em refuſe to *contribute* their ſhare.

E. gr. If Tenants in Common, or Joint, hold a Mill *pro indiviſo*, and equally ſhare the Profits thereof; the Mill falling to decay, and one or more of 'em refuſing to *contribute* to its Reparation, the reſt ſhall have this Writ to compel them.

And if there be three Coparceners of Land that owe Suit to the Lord's Court, and the Eldeſt performs the whole; then may ſhe have this Writ to compel the Refuſer to a *Contribution.*

CONTRITION, in Theology, a real Sorrow, reſulting from the Thought of having offended God; from the ſole Conſideration of his Goodneſs; without any regard to the Puniſhment the Sin is intitled to. See REPENTANCE.

Some of the *Romiſh* Doctors avow, notwithſtanding the Practice of their Church, that *Contrition* is valid, and carries with it every thing neceſſary to obtain Pardon, without the Ceremony, or as they call it, the *Sacrament* of Confeſſion and Abſolution. See CONFESSION, and ABSOLUTION.

And in this they make the difference between *Contrition* and Attrition to conſiſt. See ATTRITION.

This Doctrine was lately maintain'd by F. *Sequenot* upon S. *Auguſtin*; but was cenſur'd by the Faculty of *Paris.*

CONTROLL, COMPTROLL, or CONTROLE, is, properly, a double Regiſter, kept of Acts, Iſſues, *&c.* of the Officers or Commiſſioners in the Revenue, Army, *&c.* in order to perceive the true State thereof, and to aſſure the Truth, and the keeping of the Acts ſubject to that Enregiſterment. See REGISTER. Hence,

CONTROLLER, or COMPTROLLER, an Officer eſtabliſh'd to *controll*, or to keep the Regiſter called *Controll*; and to certify, on occaſion, whether the Things have been *controll'd* or not. Thus, we have,

CONTROLLER *of the King's Houſhold*, or *of the Accounts of the Board of Green-Cloth.* See HOUSHOLD, and GREEN-CLOTH.

CONTROLLER *General of the Cuſtoms.* See CUSTOMS.
CONTROLLER *of the Navy.* See NAVY.
CONTROLLER *of the Mint.* } See { MINT.
CONTROLLER *of the Exciſe.* } See { EXCISE.

CONTROLLER *of the Accompt of the Army*; *of the Chamber*, &c. See CHAMBER, *&c.*

CONTROLLER *of the Hamper*, is an Officer in Chancery, attending the Lord Chancellor daily in Term and Seal time. See CHANCERY.

This Officer is to take all Things ſeal'd from the Clerk of the Hamper, incloſ'd in Bags of Leather, and to note the juſt Number and Effect of all Things ſo receiv'd; and to enter 'em in a Book, with all the Duties belonging to the King and other Officers for the ſame, and ſo charge the Clerk of the Hamper with 'em. See HAMPER.

CONTROLLER *of the Pipe*, an Officer of the Exchequer, who writes out Summons twice a Year, to levy the Farms and Debts of the Pipe. See PIPE, and EXCHEQUER.

He was antiently called the *Duplex Ingroſſator.*

CONTROLLERS *of the Pell*, are Officers of the Exchequer, whereof there are two, *viz.* two Chamberlains Clerks, who keep a *Controll* of the Pell, of Receits, and Goings-out: Originally they took Notes of other Officers Accompts, in order to diſcover if they did amiſs. See PELL.

CONTROVER, in Law, he who of his own Head deviſes or invents falſe or feigned News.

CONTROVERSIAL *Divinity.* See POLEMICAL *Divinity.*

CONTUMACY, in Law, *Contempt*; or a Refuſal to appear in Court when legally ſummon'd.

The Word is uſed in Civil, as well as Criminal Matters; but more rarely in the firſt, wherein the Word *Defaut* ordinarily ſupplies its Place: The Refunding of the Charges of a Defaut judg'd at the hearing is alſo the Penalty of *Contumacy.*

In a Criminal Senſe, the *Contumacious* is condemn'd, not becauſe the Crime is proved on him, but becauſe he is abſent. By the *Roman* Laws, there was no Proceſs in caſe of *Contumacy*, during the firſt Year of abſence: they only took an Inventory of the Goods of the Fugitive, and if he died in the Year, he died *integri ſtatus*; but after the Year was expir'd he was deem'd culpable.

In *England*, *Contumacy* is proſecuted to Outlawry. See OUTLAWRY.

In *France*, all *Contumacies* are annull'd, if the Accuſed make his Appearance in five Years; if he die in that Time, his Relations are permitted to purge his Memory.

CONTUSION, *Bruiſe*, in Medicine, a Solution of Continuity, either in Fleſh or Bone, occaſion'd by a Fall, a Blow, or a violent Preſſure, whereby the Fleſh is broke, the Skin ſtill remaining entire; and an Effuſion of Blood enſues, from ſeveral little broken Veſſels, ſo as to diſcolour the Skin, tho it don't make its way thro' the Pores thereof.

Or, *Contuſions* may be defin'd a particular ſort of Tumors, attended with a Stagnation of the Blood in the Part affected; and, generally, with an Inflammation, Diſcolouration, and Pain. See TUMOUR.

Contuſions are either *internal*, or *external.* When from any external Injury, there proceeds an internal Diſorder, *e. gr.* an Aſthma, ſpitting of Blood, or the like, the *Contuſion* is ſaid to be *internal.* If only external Symptoms appear, as a Tumour, Blackneſs, *&c.* it is term'd *external.*

In caſe of inward *Contuſions*, bleeding the Patient is neceſſary, and balſamicks muſt be given internally, ſuch are Spermaceti, Pouder of Rhubarb, Iriſh Slate, oleaginous and pectoral Medicines, *&c.* Externals proper for *Contuſions*, are Liniments or Ointments of Marſhmallows, Oil of ſweet Almonds, Spirit of Wine with Camphire; proper Fomentations and ſtrengthning Emplaiſters; as that of Oxycraceum, *&c.* according as the Nature of the *Contuſion* and Part *contus'd* requires.

CONVENT, a Monaſtery of Religious, of the one or the other Sex. See MONASTERY.

The Word comes from the Latin *Conventus*, Meeting, of *Convenire.*

CONVENTICLE, a diminutive of *Convent*; denoting, properly, a Cabal or ſecret Aſſembly of a Part of the Monks of a *Convent*, to make a brigue in the Election of an Abbot.

From the ill Uſe of theſe Aſſemblies, the Word is come into diſrepute; and now ſtands for any ſeditious or irregular Aſſembly.

F. *Doucine* obſerves, the Occidentals always eſteem'd the Vth General Council an unlawful *Conventicle.*

The Term *Conventicle* is ſaid by ſome to have been firſt attributed, in *England*, to the Schools of *Wickliff*: Now it is apply'd to the Meetings of Nonconformiſts.

CONVENTION, a Treaty, Contract or Agreement between two or more Parties. See TREATY, *&c.*

Every *Convention* between Men, provided it be not contrary to Honeſty and good Manners, produces a natural Obligation, and makes the Performance a Point of Conſcience. See OBLIGATION.

Every *Convention* has either a Name, and a Cauſe or Conſideration, or it has none: In the firſt Caſe, it obliges civilly and naturally; in the latter only naturally. See CONTRACT.

CONVENTION is much uſed both in antient and modern Pleadings for an Agreement, or Covenant. See COVENANT.

Hence, *Conventione facienda*, a Writ that lies for breach of Covenant in writing.

In the Book of Rolls of the Manor of *Hatfield* in *Yorkſhire*, we have a Record of a pleaſant *Convention*, *Anno* 11. *Ed.* III. between *Robert de Roderham* and *John de Ithen*, the latter of whom ſold the Devil in a ſtring for three-pence halfpenny to the former, to be deliver'd on the fourth Day after the *Convention*: when, the Purchaſer making his demand, the Seller refus'd to give him livery; to the great Loſs (as the Record repreſents it) of forty Shillings to the Purchaſer, &c. But it appearing to the Court that ſuch a Plea does not lie among Chriſtians; the Parties were adjourn'd to Hell for Judgment.

CONVENTION is alſo the Name given to an extraordinary Aſſembly of Parliament, or of the States of the Realm, held without the King's Writ. See PARLIAMENT.

The *Convention* of Eſtates, in 1688, after the Retreat of K. *James* II. upon mature Deliberation, came to a Concluſion, that K. *James*, by his Practices here, and his Flight hence, had abdicated the Kingdom; and that the Throne was vacant; and therefore devolv'd upon King *William* and Queen *Mary*. See ABDICATION.

Upon this their Aſſembly expir'd, and a Parliament was ſummon'd in their ſtead.

There was a *Convention* of the like kind in *Scotland*, and with the like effect.

CONVENTIONE, in Law, is a Writ which lies for the Breach of any Covenant. See COVENANT.

Fitzherbert calls it a Writ of *Covenant*.

CONVENTUAL ſomething belonging to a Convent. See CONVENT.

CONVENTUAL, is particularly uſed for a Religious who actually reſides in a Convent; in contradiſtinction to thoſe who are only Hoſts, or are entertain'd there, or are in poſſeſſion of Benefices depending on the Houſe.

Conventual Prior differs from a *Clauſtral Prior*, in that the former has the full right and Authority of an Abbot; the only difference between 'em being in the Name: Whereas the Clauſtral Prior is a Dependant of the Abbot, and derives all his Authority from him. See PRIOR, and ABBOT.

The *Conventual* Prior is oblig'd to aſſume the Prieſthood in a Year, or at moſt in two Years, from the Day of his Admiſſion: in default whereof, the Benefice becomes vacant.

Some Priories are actually *Conventual*, *i. e.* are ſtock'd with Religious; others are only *Conventual* by habitude, *v. g.* where there have been no Religious during the ſpace of 40 Years: The Continuance of one ſingle Religious, keeps the Priory *Conventual Actu*; for in default of one the Priory becomes ſimple.

By a Declaration of the King of *France*, in 1680, 'tis decided, that a *Conventuality* never degenerates in any lapſe of time, while there are regular Places ſubſiſting in it for twelve Religious, with Revenues for their ſupport. See PRIORY.

CONVENTUAL *Church*. See PARISH.

CONVERGING, or CONVERGENT *Lines*, in Geometry, are thoſe which continually approximate, or whoſe diſtance becomes continually leſs and leſs. See LINE.

In oppoſition to *divergent Lines*, whoſe diſtance becomes continually greater. See DIVERGING.

Lines that *converge* one way, diverge the other.

CONVERGING *Rays*, in Dioptricks, are thoſe Rays which in their Paſſage out of one Medium, into another of a different Denſity, are refracted towards one another; ſo, as if far enough continu'd, they meet in a Point, or Focus. See RAY, REFRACTION, &c.

Thus, all convex Lenſes make the Rays *converge*, and concave ones to diverge, *i. e.* the one inflects 'em towards a Centre, and the other deflects 'em from it; and the more, as ſuch Lenſes are Portions of ſmaller Spheres. See CONCAVE, and CONVEX.

On which Properties, all the Effects of Lenſes, Microſcopes, Teleſcopes, &c. depend. See LENS, MICROSCOPE, &c.

Rays coming *converging* out of a denſer Medium into a rarer, become more *convergent*, and concur ſooner than if they were to continue their Motion thro' the firſt. See MEDIUM.

Rays coming *converging* out of a rarer into a denſer Medium, *converge* leſs, and concur later, than if they had continued their Motion thro' the firſt.

Parallel Rays, paſſing from a denſer into a rarer Medium, *v. g.* from Glaſs into Air, the Surface of the Glaſs being towards the Air, will become *convergent*, and concur in a *Focus*. See PARALLEL.

Diverging Rays, or Rays coming from a Point, under the ſame Circumſtances, become *converging*, and meet in a *Focus*; and as the radiant Point comes nearer, the *Focus* goes further off: If the Radiant be near, the *Focus* will be infinitely diſtant; *i. e.* the Rays will be parallel: And if the Point be brought nearer ſtill, the Rays will diverge. See DIVERGENT; ſee alſo CONVEXITY, CONCAVITY, and PARALLELISM.

CONVERGING *Series*, in Mathematicks, a Method of Approximation, or coming ſtill nearer and nearer towards the true Root of any Number, or Equation; even tho it be impoſſible to find any ſuch true Roots in Numbers. See APPROXIMATION; ſee alſo SERIES, QUADRATURE, &c.

CONVERSE, in Geometry, &c. A Propoſition is ſaid to be the *Converſe* of another, when, after drawing a Concluſion from ſomething firſt ſuppos'd, we proceed to ſuppoſe what had been before concluded, and to draw from it what had been ſuppos'd. See CONVERSION.

Thus, 'tis demonſtrated in Geometry, That if the two Sides of a Triangle be equal; the two Angles oppoſite to thoſe Sides are equal alſo: The *Converſe* of the Propoſition is, That if the two Angles of a Triangle be equal, the two Sides oppoſite to thoſe Angles are equal alſo.

In Aſtrology, *Converſe Direction* is uſed in oppoſition to *direct* Direction; *i. e.* by the latter, the Promoter is carried to the Significator, according to the Order of the Signs: by the former it is carried from Eaſt to Weſt, and contrary to the Order of the Signs.

CONVERSION, in a moral Senſe, a return from Evil to Good; reſulting from a Senſe, either of the natural Deformity of the one, and Amiableneſs of the other; or of the Advantages and Diſadvantages that await the one and the other.

Or, It is a Change of the Heart, with a regard to the Morals, Paſſions, Deſires, Purſuits; and of the Mind, with regard to the Sentiments, &c.

CONVERSION, CONVERSIO, in Logicks, a Circumſtance, or Affection of Propoſitions, wherein the Order of the Terms, or Extremes is changed; ſo that the Subject comes into the Place of the Prædicate, and the Prædicate into that of the Subject; without any Alteration in the Quality of either.

As, *No Virtue is Vice*, *No Vice is Virtue*: In which we ſee the Subject of the former, made the Prædicate of the latter, and the Prædicate the Subject; yet both true.

Converſion is uſually defined *a due Change of the Order of the Extremes*, *i. e.* under ſuch a Habitude and Coherence, with reſpect to each other, that the one is rightly infer'd from the other. Hence, in every legitimate *Converſion* two Things are requir'd; 1ſt, A Communication or Reciprocation of Terms; not in reſpect of Words but of Order. 2d, The Inference of one Propoſition out of the other.

Ariſtotle makes two Kinds of *Converſion*; the one *Simple*, by others call'd *Univerſal*; wherein nothing is chang'd beſide the Order of Extremes, *i. e.* the Terms are tranſpos'd, without altering either the Quality or Quantity thereof: As, *No Mind is Body*, *No Body is Mind*.

The 2d, *per Accidens*, called alſo *particular*; wherein, beſide changing the Places of the Terms, there is a Change of an univerſal Sign into a particular one: As, *Every good Man ſtudies the Welfare of his Country*, *Some Man that ſtudies the Welfare of his Country is good*.

To theſe, ſome of *Ariſtotle*'s Followers add a third Kind of *Converſion*, call'd *by Contrapoſition*: As, *Every Man is an Animal*, *Every no-Animal is no-Man*.

CONVERSION, in Rhetorick, &c. is underſtood of Arguments which are return'd, retorted, and ſhewn on oppoſite Sides, by changing the Subject into the Attribute, and the Attribute into the Subject.

There are *Converſions* of Arguments; from one Figure to another, and from general Propoſitions to particular ones.

Thus *Cicero* againſt *Anthony*; *Doletis tres exercitus* P. R. *interfectos*? *interfecit Anthonius*. *Deſideratis clariſſimos cives*? *eoſque vobis eripuit Anthonius*. *Auctoritas hujus ordinis afflicta eſt*? *afflixit Anthonius*.

CONVERSION, in War, is when the Soldiers are order'd to preſent their Arms to the Enemy, who attack 'em in Flank, whereas they were before ſuppos'd to be in Front: The Evolution neceſſary thereto is called *Converſion*, or *Quarter-wheeling*. See QUARTER-WHEELING.

CONVERSION *of Equations*, in Algebra, is when the Quantity ſought, or any Part thereof, being in Fractions, the Whole is reduc'd to one common Denomination; and then, omitting the Denominators, the Equation continued in the Numerators only. See EQUATION, and FRACTION.

Thus, ſuppoſe $a - b = \frac{aa+cc}{} + b + b$; multiply all by d, and it will ſtand thus, $da - db = aa + cc + db + db$.

In Arithmetick, we uſe the Term *Proportion by Converſion of Ratio*, for a Compariſon of the Antecedent, and Conſequent in two equal Ratios. See RATIO.

Thus, as there is the ſame Ratio between 2 and 3, as between 8 and 12; 'tis concluded there is the ſame Ratio between 2 and 1, as between 8 and 4.

CONVERSOS. See CONVERT.

CONVERT, a Perſon who has undergone a *Converſion*. See CONVERSION.

Convert is chiefly uſed in reſpect of Changes from one Religion or Religious Sect to another.

Converts, with relation to the Religion turn'd to; are denominated *Apoſtates*, with regard to that they have relinquiſh'd. See APOSTATE.

The *Jews* formerly *converted* to Chriſtianity in *England*, were called *Converſos*. *Henry* III. built 'em a Houſe in *London*, and allow'd 'em a competent Subſiſtence for their Lives; which Houſe was called *Domus Converſorum*. The Number afterwards increaſing, they grew a Burden to the Crown; upon which they were diſtributed among the Monaſteries: and after the Expulſion of the *Jews* under *Edward* III. the *Domus Converſorum* was given for keeping of the Rolls. See ROLLS.

CONVERTS, in a Monaſtick Senſe, are *Lay-Friers*, or *Brothers*, admitted for the Service of the Houſe; without Orders, and not allowed to ſing in the Choir. See LAY.

Till the XIth Century, the Word was us'd for Perſons who embrac'd the Monkiſh Life at the Age of Diſcretion, by which they were diſtinguiſh'd from thoſe devoted in their Childhood by their Parents, call'd *Oblati*. See OBLATI.

But in the XIth Century, when they began to receive into Monaſteries illiterate Perſons, incapable of being Clerks, and only deſtin'd for Bodily Labour; the Signification of the Word was chang'd. F. *Mabillon* obſerves, that it was *John* firſt Abbot of *Vallombroſa*, who firſt introduc'd theſe *Brothers-Converts*, diſtinguiſh'd by their State from the Monks of the Choir, who were then either Clerks, or capable of becoming ſo.

CONVEX. } See { CONVEXITY.
CONVEX *Mirror*. } See { MIRROR.
CONVEX *Lens*. } See { LENS.

CONVEXITY, the exterior Surface of a *Convex*, *i. e.* a gibbous and globular Thing; in oppoſition to *Concavity*, or the inner Surface, which is hollow or depreſs'd. See CONCAVITY.

The Word is of particular import in Catoptricks and Dioptricks; where 'tis apply'd to Mirrors and Lenſes. See MIRROR, and LENS.

A *Convex Mirror* repreſents its Images ſmaller than the Objects; as a concave one repreſents 'em larger: A *convex* Mirror reflects the Rays from it, diverging; and therefore diſperſes and weakens their Effect: as a concave one reflects them converging; ſo as they concur in a Point, and have their Effect increas'd; and by how much the Mirror is a Portion of a ſmaller Sphere, by ſo much does it diminiſh the Objects, and diſperſe the Rays the more. See MIRROR.

A *Convex Lens* is either *convex* on both ſides, called a *Convexo-Convex*; or 'tis plain on one Side and *convex* on the other, called a *Plano-Convex*: or concave on one ſide and *convex* on the other, called a *Convexo-Concave*, or *Concavo-Convex*, as the one or the other Surface prevails; *i. e.* as this or that is a Portion of a ſmaller Sphere.

All *Convex* Lenſes inflect the Rays of Light in their Paſſage, *i. e.* ſend them out from their *convex* Surface converging; ſo as that they concur in a Point, or *Focus*. See CONVERGENT.

Hence, all *Convex* Lenſes magnify, *i. e.* repreſent their Images larger than their Objects; and this the more, as they are Portions of ſmaller Spheres. See LENS, REFRACTION, *&c.*

CONVEYANCE, in Law, a Deed, or Inſtrument, by which Lands, *&c.* are *convey'd*, or made over by the Proprietor, or Owner thereof, to ſome other Perſon. See DEED.

CONVICT, in Common Law, is one that is found guilty of an Offence, by the Verdict of a Jury. See CRIMINAL, VERDICT, *&c.*

According to *Crompton*, a Perſon is alſo a *Convict*, or ſaid to be *convicted*, when, after having been outlawed, he appears and confeſſes. See OUTLAWRY.

Conviction and Attainder are frequently confounded. See ATTAINDER, and ATTAINTED.

A *Convict Recuſant*, is he who has been legally preſented, indicted, and *convict* for refuſing to come to Church to hear the Common Prayer, according to the Statutes 1 and 23 *Eliz.* and 3 *Jac.* I.

This is commonly underſtood to be a Popiſh Recuſant; tho any others that refuſe coming to Church on the ſame Account are as properly denominated Recuſants. See RECUSANT.

CONVICTION, in Theology, the firſt degree of Repentance; wherein the Sinner becomes ſenſible of his Guilt, of the evil Nature of Sin, and the danger of his own ways. See REPENTANCE.

CONVICTION, in Law. See CONVICT.

CONVIVIUM, *Banquet*, in our antient Cuſtoms and Law-Books, ſignifies the ſame Thing among the Laity, as *Procuratio* among the Clergy; *viz.* when the Tenant is oblig'd, in virtue of his Tenure, to provide Meat and Drink for his Lord once or oftner in the Year.

CONVOCATION, a *National Synod*, or general Aſſembly of the Clergy; ſummon'd by the King's Writ to conſult of the more weighty Affairs of the Church, as of as a Parliament is convok'd to conſult of thoſe of the State. See SYNOD, CLERGY, *&c.*

The King's Writ is directed to the Archbiſhop of each Province, requiring him to ſummon all Biſhops, Deans, Archdeacons, Cathedral and Collegiate Churches, *&c.*

Upon which, the Archbiſhop directs his Mandate to his Dean Provincial, firſt citing him peremptorily; then willing him, in like manner, to cite all the Biſhops, Deans, *&c.* and all the Clergy of his Province; but directing, withal, that one Proctor ſent for each Cathedral and Collegiate Church; and two for the Body of the inferior Clergy of each Dioceſs may ſuffice: Which the Dean accordingly does.

The Place where the *Convocation* of the Province of *Canterbury* has been uſually held is St. *Paul*'s Church; whence, of late, they have been prorogu'd to St. *Peter*'s in *Weſtminſter*, in the Chapel of *Henry* VII. or the *Jeruſalem-Chamber*, were there is an upper and lower Houſe.

The *higher* Houſe, in the Province of *Canterbury*, conſiſts of 22 Biſhops, whereof the Archbiſhop is Preſident; all, at the opening of a *Convocation*, in their ſcarlet Robes and Hoods.

The *lower* Houſe conſiſts of 22 Deans, 24 Prebendaries, 54 Archdeacons, and 44 Clerks, repreſenting the Dioceſan Clergy.

Things are firſt uſually propos'd in the upper Houſe; then communicated to the lower. All the Members of both Houſes have the ſame Privileges for themſelves and menial Servants as the Members of Parliament have. See PARLIAMENT.

The Archbiſhop of *York*, at the ſame Time, holds a *Convocation* of the Clergy of his Province, after the like manner, at *York*; and, by conſtant correſpondence, debates and concludes of the ſame Matters as are debated by that of *Canterbury*. Not that the Northern Province is oblig'd to follow what the Southern one does. See PROLOCUTOR.

The *Engliſh* Clergy, antiently, had their Repreſentatives in the lower Houſe of Parliament; as appears by the Record much priz'd by my Lord *Coke*.

CONVOLUTION, a winding or turning Motion, proper to the Trunks of ſome Plants; as the *Convolvulæ*, or Bindweeds, and the Claſpers of Vines, and Briony.

Dr. *Grew* thinks, that all thoſe Plants whoſe Roots are twiſted, have ſuch a *Convolution*: and he aſſigns two great efficient Cauſes of this winding Motion, the Sun and the Moon.

It is very eaſy to try whether there be any ſuch *Convolution* or not in the Trunks of Plants; which may be done, as he hints, by tying a little bit of Paper to any of the Branches which are exactly North, South, *&c.* and then ſeeing whether it will change its Poſition or not, in reſpect of the Point of the Compaſs.

CONVOY, *Eſcort*, a Sea Term, ſignifying one or more Veſſels of War, intruſted with the Conducting of a Fleet of Merchants; ſerving as a Watch, and a Shelter from the Inſults of the Enemies of the State, or of Pirates. See ESCORT, and CONSERVE.

The Word is alſo uſed in ſpeaking of Military Affairs by Land; where it ſignifies a Body of Forces ſent to guard a Supply of Proviſions, Arms, Ammunition, or the like, going to a Camp, or the like.

CONUSANCE. } See { COGNISANCE.
CONUSOR. } See { COGNISOR.

CONVULSION, *Spaſmus*, in Medicine, a continued involuntary Contraction of ſome Parts of the Body otherwiſe accuſtom'd to move according to the Direction of the Will. See SPASMUS.

It owes its Origin to a Contraction of the Muſcles of the Part, occaſion'd by a too copious and violent influx of the nervous Juice: Of theſe may be infinite Cauſes in the Blood, Arteries, Meninges, Brain, Nerves, Muſcles, Cranium, *&c.* See CONTRACTION.

If the *Convulſion* be univerſal, attended with violent Motions, foaming at the Mouth, and periodical; it is uſually called the *Epilepſy*. See EPILEPSY.

The uſual Evacuations and Medicines proper for the Cure of *Convulſions*, are *Phlebotomy*, *Emeticks*, *Catharticks*, *Epiſpaſticks*, and proper *Cephalicks*; as *Sal. Volat. Oleoſ. Spirit of Lavender*, *Spirit of Hartſhorn*, *Tincture of Caſtor*, *Cinnabar of Antimony*, *Caſſuminor Root*, *Valerian Root*, *Volatile Salt of Amber*, &c. given in different forms.

In periodical univerſal *Convulſions*, a Salivation ſometimes anſwers, after other Courſes have fail'd.

Women and Children are particularly liable to *Convulſions*: Women after Delivery; as upon a Stoppage of the *Lochia*, or a violent Extraction of the *Placenta*. See CONVULSIVE.

CONVULSIVE, in Medicine, is applied to thoſe Motions which, naturally, ſhould depend on the Will; but which, by ſome external Cauſe, become involuntary.

A *Convulsive* Motion, is a Contraction made by Fits and Intervals; wherein it differs from a *Convulsion*, which is a continued Contraction.

Convulsive Motions arise from a Disorder in the Origin of the Nerves. A *Convulsive* Tension of the Solids, is one of the principal Causes which destroy the *Æquilibrium* that should obtain between the Solids and the Fluids. *Journ. de Scav.*

Convulsive is also used for any Thing that occasions *Convulsion*, or a *Convulsive Motion*.

Thus, Wounds of Nerves are said to be *Convulsive*; white Hellebore is *Convulsive*.

Children are very liable to *Convulsive* Disorders from various Causes; as Repletion, curdling of the Blood in the Stomach or Intestines, Worms, Dentition, &c. See Children, Worms, Dentition, &c.

The Cramp is a *Convulsive* Contraction of some muscular Part of the Body. See Cramp.

COOK-ROOM, in a Ship, is where the Cook and the Mate dress and deliver out the Meat, &c.

COOLERS, in Medicine, Remedies so call'd; which may be consider'd under these two Divisions: 1st, Those which produce an immediate Sense of Cold; which are such as have their Parts in less Motion than those of the Organs of Feeling. See Cold.

2dly, Such as by a particular Viscidity, or Grossness of Parts, give a greater Consistency to the Animal Fluids than they had before; whereby they are disabled from moving so fast, and will therefore have less of that intestine Force on which their Heat depends. See Calidum.

Of the former Kind are Fruits, and acid Liquors; to the latter belong Cucumbers, and all Substances producing Viscidity.

COOM, a Term for Soot that gathers over an Oven's Mouth; and also for what works out of the Wheels of Carriages.

Soot is sometimes used in Medicine, infus'd in Wine with other Ingredients, as an Antihysterick, and against Palpitations of the Heart, &c. See Soot.

The Spirit of Soot is also used for the same Intentions, and in Cephalick Cases.

COOMB, or COMB *of Corn*, is a dry Measure, containing four Bushels, or half a Quarter. See Measure; see also Bushel, &c.

COORDINATE, something of equal Order, Rank, or Degree with another.

COORDINATION, in respect of Causes, is an Order of Causes, wherein several, of the same Kind, Order, and Tendency, concur to the Production of the same Effect. See Cause.

COPAL, a Gum, of an agreeable smell, resembling that of Incense; brought from *New Spain*, where it oozes out from Incisions made in the Bark of a large Tree; much after the manner in which the Vine yields its Water, when cut in the Spring. See Gum.

The *Indians* use it to burn on their Altars: Among the *Europeans*, it is used in Diseases of the Heart. 'Tis very rare: when good, 'tis of a fine transparent yellow; and melts easily, either in the Mouth or Fire.

In defect of this is brought another Kind from the *Antilles*, which is almost the only one known among the Druggists. Its chief Consumption is in the making of Varnish. See Varnish.

COPARCENERS, or *Parceners*, *vulgo* COPARTNERS, and *Partners*, are such as have equal Portions in the Inheritance of their Ancestor. See Parceners.

Parceners are so either by *Law* or *Custom*. *Parceners by Law*, are the Issue Female; which, in default of a Male Heir, come equally to the Lands of their Ancestor.

Parceners by Custom, are those who by some peculiar Custom of the Country, challenge equal Parts in such Lands; as in *Kent*, by the Custom of *Gavelkind*. See Gavelkind.

The Crown of *England* is not subject to *Coparceny*. See Crown.

COPARCENY, or COPARSENY, the Share or Quota of a *Coparcener*. See Coparcener.

COPE, an Ecclesiastical Ornament, usually wore by Chantors and Sub-Chantors, when they officiate in Solemnity. See Chantor.

'Tis also wore by the *Romish* Bishops and other Ordinaries: It reaches from the Shoulders to the Feet. The Antients called it *Pluvial*.

S. Martin's Cope, was a Relick, formerly in great Esteem among the *French* Kings; and carried with them to War as their Standard. See Chapel, and Chaplain.

COPERNICAN *System*, or *Hypothesis*, is the System of the World, wherein the Sun is suppos'd at rest in the Centre; and the Planets, with the Earth, to describe Ellipses round him. See System.

The Heavens and Stars are here suppos'd at rest; and that diurnal Motion which they appear to have from East to West, is imputed to the Earth's Motion from West to East. See Earth, Sun, Star, &c.

This System was asserted by many of the Antients; and particularly *Ecphantes*, *Seleucus*, *Aristarchus*, *Philolaus*, *Plato*, and *Pythagoras*; from whom it was antiently denominated the *Pythagoric System*. See Pythagorean.

It was also held by *Archimedes*, in his Book *de granorum arenæ numero*; but after him it became neglected, and even forgotten, for many Ages; till about 200 Years ago when *N. Copernicus* reviv'd it; from whom it took the Name of the *Copernican System*.

Nich. Copernicus, now a Name so popular, was born at *Thorn*, in *Polish Prussia*, in the Year 1472, according to *Junctinus*, or 1473 according to *Mæstlinus*. After the usual domestick Education, he was sent to the University of *Cracow*; where he applied himself to Philosophy and Physick, and at length commenced Doctor in Medicine. In the mean time, having a strong Propensity to Mathematicks, he diligently attended the Lectures of *Albert. Brudzevius*, and even learnt of him at home. After he had here attain'd to the Use of the Astrolabe, and was entering upon Astronomy, he took *Regiomontanus* for his Guide: Tho he run thro' all the Mathematicks of the Age, yet he seem'd most taken with Perspective; on occasion whereof he learnt Painting, in which he is said to have excell'd. When 23 Years of age, being at *Boulogn*, he became acquainted with that eminent Mathematician Dom. *Maria Ferrariensis*; and was admitted to share with him in making of Astronomical Observations. Here, in the Year 1497, *Copernicus* first observ'd an Occultation of *Palilicium* by the Moon. Going on to *Rome*, he taught publickly, and made some considerable Observations; and at his return to *Cracow*, was made Canon of the Church of *Wermelandt*, or *Ermeland*, and at length Vicar-General.

The Course he took in prosecuting Astronomy, which has render'd his Name immortal, is as follows: Observing how the Astronomers of those Times were gravell'd to make the Planets move equably in circular Orbits, *viz.* to suppose 'em to move, not about their own Centre, but that of the Equant; and that they could no way make out a tolerably regular System, out of all their Shifts and Hypotheses; He resolv'd to try what he could do. With this View he perus'd the Writings of all the Philosophers and Astronomers extant; and pick'd out of each what appear'd probable and elegant. In this Review he was chiefly taken with two almost similar Opinions; (the one attributed to *Martianus Capella*, the other to *Apollonius Pergæus*:) which give a very good Account of the Motions of *Venus* and *Mercury*; and explain the Cause of their Directions, Stations, and Retrogradations very happily: The latter, withal, performing the same in the three superior Planets. But, then, in both these Hypotheses, the Earth being suppos'd the Centre; *Copernicus* chose rather to adopt the Opinion of the *Pythagoreans*; to remove the Earth out of the Centre of the World, and to give it, not only a diurnal Motion round its own Axis; but also an annual one round the Sun.

On this Footing he began to observe, calculate, compare, &c. and at length, after a long solicitous Disquisition, found himself in a Condition to account for the Phænomena and Motions of all the Planets; and to make an orderly Arrangement, or Disposition of the whole Heavens; wherein nothing could be alter'd, or displac'd, without bringing the last Confusion into the whole.

These Things he began to write down about the Year 1507. He then proceeded to furnish himself with some new *Apparatus*; particularly a Parallactick Instrument, and some *Ptolemaic* Rulers, wherewith to observe the Altitude of the Stars, and determine the Periods of the Sun and Moon: And without other Means, compos'd his six Books *de Orbium Cælestium Revolutionibus*; containing the Whole of Astronomy, deliver'd after the Example of *Ptolemy*, in the Geometrical Method. We have already observ'd that he began it in 1507; He finish'd it in 1530. Five Years after he polish'd and improv'd it. He died of a Dysentery, and a Palsy on his right Side, in the Year 1543.

See the Order, and Disposition of the heavenly Bodies, as laid down by him, compar'd with those in the other Systems, under the Head System.

COPERNICUS, is the Name of an Astronomical Instrument, contriv'd by Mr. *Whiston*, for the Calculation and Exhibition of Eclipses, and of the Motions of the Planets, both Primary and Secondary, &c.

It was so call'd by the Inventor, as being built on the *Copernican* System; or as representing the Heavenly Bodies agreeably thereto.

It consists of several concentrical Circles of Wood; upon which are inscrib'd Numbers, transfer'd thither from the Astronomical Tables: By the various Disposition of these Circles, which are made so as to slide within each other, Questions are solv'd; and thus long Calculations are sav'd, and the Work of many Hours brought into a few Minutes.

For the Exhibition of Eclipſes, there is a peculiar *Apparatus*, conſiſting of a terreſtrial Globe, ſo diſpoſed, as that being turn'd round its Axis, the Light of the Sun, or a Candle, is projected thro' a glaſs Plane, mark'd out into concentrick Circles, expreſſing Digits of the Eclipſe; and thus is the Path of the Eclipſe, with its Degree or Quantity in every Part of its Path, agreeably and accurately repreſented.

The Inſtrument not being very common, a particular Deſcription were ſuperfluous. The Author has wrote a Volume to explain it.

COPHTI, or COPTI, a Name given to the Chriſtians of *Egypt*; who are of the Sect of *Jacobines*. See JACOBINES.

The Criticks are extremely divided about the Origin and Orthography of the Word: ſome write it *Gophti*, and others *Gophte*, *Cophtites*, *Cophtitæ*.

Scaliger derives the Name *Cophti* from *Cophtæ*, an antiently celebrated Town of *Egypt*, the Metropolis of the *Thebaide*: *Kircher* refutes this Opinion, and maintains, that the Word originally ſignifies *cut*, and *circumciſed*; and was given theſe People by the *Mahometans*, by way of Reproach, in regard of their Practice of Circumciſing: But *P. Sollier*, another Jeſuit, refutes this Opinion. *Scaliger* afterwards changed his Opinion, and deriv'd the Word from ΑΠΤΙΤΟΣ, the antient Name of *Egypt*, by retrenching the firſt Syllable: But this Opinion, too, *P. Sollier* diſputes. *John de Leo* and others ſay, that the *Egyptians* antiently called their Country *Elchibth* or *Chibth*, from *Chibth* their firſt King, whence *Cophtite*, &c. others ſay from *Cobtim* ſecond King of *Egypt*. *Vanſleb* derives the Word *Cophti* from *Copt* Son of *Miſraim*, Grandſon of *Noah*.

All theſe Etymologies *P. Sollier* rejects, on this Principle, that were they true, all the *Egyptians* ought equally to be called *Cophti*; whereas, in effect, none but the Chriſtians, and among thoſe none but the *Jacobines* bear the Name; the *Melchites* not being comprehended under it.

Hence he chuſes to derive the Word from the Name *Jacobite*, by retrenching the firſt Syllable; whence *Cobite*, *Cobta*, *Copta*, and *Cophta*.

As to the Hierarchy of the *Cophti*, they have a Patriarch, who reſides at *Cairo*, but takes his Title from *Alexandria*: He has no Archbiſhop under him, but 11 or 12 Biſhops. The reſt of the Clergy, whether Secular or Regular, is compos'd of the Orders of S. *Anthony*, S. *Paul*, and S. *Macarius*, who have each their Monaſteries.

Beſide the Order of Prieſts, Deacons, and Subdeacons, the *Cophti* have likewiſe *Igoumenes*, or *Archimandrites*, the Dignity whereof they confer with all the Prayers and Ceremonies of a ſtrict Ordination.

This makes a conſiderable Difference among the Prieſts; and beſides the Rank and Authority it gives them with regard to the Religious, comprehends the Degree and Functions of Arch-Prieſts. By a Cuſtom of 600 Years ſtanding, if a Prieſt elected Biſhop be not already *Archimandrite*, the Dignity muſt be confer'd on him before Epiſcopal Ordination.

The ſecond Perſon among the Clergy, after the Patriarch, is the Titular Patriarch of *Jeruſalem*, who alſo reſides at *Cairo*, by reaſon of the few *Cophti* at *Jeruſalem*; He is, in effect, little more than Biſhop of *Cairo*: only he goes to *Jeruſalem* every *Eaſter*, and viſits ſome other Places in *Paleſtine* near *Egypt*, which own his Juriſdiction. To him belongs the Government of the *Cophtic* Church, during the Vacancy of the Patriarchal See.

To be elected Patriarch, 'tis neceſſary the Perſon have lived all his Life in Continence; and even that he be a Virgin: 'Tis he confers the Biſhopricks. To be elected Biſhop, the Perſon muſt be in the Celibate; or, if he have been married, it muſt not be above once.

The Prieſts and inferior Miniſters are allow'd to be married before Ordination; but are not oblig'd to it, as *Ludolphus* miſtakenly obſerves. They have an Infinity of Deacons, and even confer the Dignity frequently on Children. None but the loweſt Rank among the People commence Eccleſiaſticks; whence ariſes that exceſſive Ignorance found among 'em: Yet the Reſpect of the Laity towards the Clergy is very extraordinary.

Their Office is longer than the *Roman* Office, and never changes in any thing: They have three Liturgies, which they vary occaſionally.

The Monaſtick Life is of great Eſteem among the *Cophti*: to be admitted into it, there is requir'd the Conſent of the Biſhop. The Religious *Cophti* make a Vow of perpetual Chaſtity; renounce the World, and live with great Auſterity in Deſarts: They are oblig'd to ſleep in their Cloths and their Girdle, on a Matt ſtretch'd on the Ground; and to proſtrate themſelves every Evening 150 times, with their Face and Breaſt on the Ground. They are all, both Men and Women, of the Scum of the People; and live on Alms. The Nunneries are properly Hoſpitals; and few enter but Widows reduc'd to Beggary.

F. *Roderic* reduces the Errors and Opinions of the *Cophti* to the following Heads: 1ſt, That they put away their Wives, and eſpouſe others while the firſt are living. 2d, That they have ſeven Sacraments, *viz.* Baptiſm, the Euchariſt, Confirmation, Ordination, Faith, Faſting, and Prayer. 3d, That they deny the Holy Spirit to proceed from the Son. 4th, That they only allow of three Oecumenical Councils; that of *Nice*, *Conſtantinople*, and *Epheſus*. 5th, That they only allow of one Nature, Will, and Action in Jeſus Chriſt after the Union of the Humanity with the Divinity.

For their Errors in Diſcipline, they may be reduced, firſt, To the Practice of circumciſing their Children before Baptiſm, which has obtain'd among 'em from the XIIth Century. 2d, To their ordaining Deacons at five Years of Age. 3d, To their allowing of Marriage in the ſecond Degree. 4th, To their forbearing to eat Blood: To which ſome add their Belief of a Baptiſm by Fire, which they confer by applying a hot Iron to their Forehead or Cheeks.

Others palliate theſe Errors, and ſhew that many of 'em are rather Abuſes of particular Perſons, than Doctrines of the Sect. This ſeems to be the Caſe with regard to their Polygamy, eating of Blood, marrying in the ſecond Degree, and the Baptiſm of Fire: For Circumciſion, it is not practis'd as a Ceremony of Religion; nor as of any divine Appointment, but merely as a Cuſtom which they derive from the *Iſhmaelites*; and which, perhaps, may have had its Origin from a View to Health and Decency in thoſe hot Countries. See CIRCUMCISION.

The *Cophti*, in different Times, have made ſeveral Reunions with the *Latins*; but always in Appearance only, and under ſome Neceſſity of their Affairs. In the Time of Pope *Paul* IV. a *Syrian* was diſpatch'd to *Rome* from the Patriarch of *Alexandria*, with Letters to that Pope; wherein he acknowledg'd his Authority, and promis'd Obedience; deſiring a Perſon might be diſpatch'd to *Alexandria*, to treat about a Re-union of his Church to that at *Rome*: purſuant to which, *Pius* IV. Succeſſor to *Paul*, choſe F. *Roderic*, a Jeſuit, whom he diſpatch'd in 1561, in Quality of Apoſtolical Nuntio.

But the Jeſuit, upon a Conference with two *Cophti* deputed for that Purpoſe by the Patriarch, was made to know, that the Titles of *Father of Fathers*, *Paſtor of Paſtors*, and *Maſter of all Churches*, which the Patriarch had beſtow'd on the Pope in his Letters, were mere Matters of Civility and Compliment; and that it was in this manner the Patriarch us'd to write to his Friends: They added, that ſince the Council of *Chalcedon*, and the Eſtabliſhment of different Patriarchs independent of one another; each was Chief and Maſter of his own Church. This was the Anſwer the Patriarch gave the Pope, after he had receiv'd a Sum of Money remitted to him from *Rome*, by the Hands of the *Venetian* Conſul.

COPHTIC, or COPTIC *Language*, the Language of the *Cophti*. This is the antient Language of the *Egyptians*, mix'd with a great deal of *Greek*; the Characters it is written in being all *Greek*. See COPHTI, and LANGUAGE.

F. *Kircher* is the firſt who publiſh'd a Grammar and Vocabulary thereof. There is not known any Book extant in the *Cophtic*, except Tranſlations of the Holy Scripture, or of Eccleſiaſtic Offices; or others that have relation thereto, as Dictionaries, *&c.* See BIBLE.

The antient *Cophtic* is now no longer found, but in their Books: The Language they now uſe throughout the Country is *Arabic*.

The old *Cophtic*, which *Kircher* maintains to be a Mother Tongue, and independent of all others, has been much alter'd by the *Greek*: For beſides that it retains all its Characters, with a very little Variation, a great number of the Words are pure *Greek*.

Voſſius, indeed, aſſerts that there was no *Cophtic* Language till *Egypt* became ſubject to the *Arabs*. The Language, according to him, is a Mixture of *Greek* and *Arabic*: the very Name thereof not being in the World till after the *Arabs* were Maſters of the Country. But this, M. *Simon* obſerves, proves nothing; except that what was antiently call'd *Egyptian*, has ſince by the *Arabs* been call'd *Cophtic*, by a Corruption of Speech. There are, 'tis true, *Arabic* Words in the *Cophtic*; yet this by no means proves but that there was a Language before that time, either *Cophtic* or *Egyptian*. *Pietro de la Valle* obſerves, that the *Cophti* have entirely loſt their antient Tongue; that 'tis now no longer underſtood among 'em; that they have nothing extant therein but ſome ſacred Books; and that they ſtill ſay Maſs in it, and *ſolo hanno in eſſa alcuni libri ſacri, dicendo ancora la maſſa in quella lingua.*

All their other Books have been tranſlated into the *Arabic*, which is their vulgar Tongue; which has occaſion'd the Originals to be loſt: 'Tis added, that they rehearſe the Epiſtles and Goſpels in the Maſs twice; once in *Arabic*, and once in *Cophtic*.

Indeed, if we believe F. *Vanſleb*, the *Cophti* ſay Maſs in *Arabic*, all but the Epiſtles and Goſpels, which they rehearſe both in that and *Cophtic*; *La Maſſa celebrano in lin-*

gua

gua Arabica, eccetto l'Evangelio & alcune altre coſe che ſoſgliano leggere nella lingua Copta & Araba.

COPIA *Libelli deliberanda*, a Writ which lies in Caſe where a Man cannot get the Copy of a Libel at the Hands of the Eccleſiaſtical Judge.

COPIATE, under the Weſtern Empire, a *Grave-digger*.

In the firſt Ages of the Church, there were Clerks deſtin'd for this Employment. In 357, *Conſtantine* made a Law in favour of the Prieſts *Copiates*, *i.e.* of thoſe who had the Care of Interrment; whereby he exempts 'em from the Luſtral Contribution which all other Traders paid.

It was under him that they firſt began to be called *Copiates*, *q. d.* Clerks deſtin'd for bodily labour, from κοπος, of κοπλω, *ſcindo*, *cædo*, *ferio*. Before that Time they were called *Decani* and *Lecticarii*; perhaps, becauſe they were divided by Decads or Tens, each whereof had a Bier or Littre for the Carriage of the dead Bodies. See DECANUS, and LECTICARIUS.

Their Place among the Clerks, was the next in order before the Chantors.

COPING *of a Wall*, the Top or Cover of a Wall, made ſloping to carry off the wet. See WALL.

COPING *over*, in Carpentry, a ſort of hanging over, not ſquare to its upright, but bevelling on its under Side till it end in an Edge.

COPIVI, CAPIVI, COPAYBA or CUPAYBA, a Balm or Balſam, oozing out of Inciſions made in a Tree of *Braſil*; not taken notice of but by very late Writers; at leaſt, not under this Name. See BALM.

It is of a thinner Conſiſtence than common Turpentine, but much more fragrant and deterſive. It is extremely quick in paſſing off by Urine, and mightily cleanſeth thoſe Paſſages; by which it has obtain'd very much in Gonorrhæas, Seminal Weakneſſes, the Whites, and all Obſtructions, and Ulcerations of thoſe Parts. It is likewiſe a powerful Balſamick, and good in many Diſtempers of the Breaſt, eſpecially Catarrhs, tickling Coughs, ſpitting of Blood, &c. In Dyſenteries and Diarrhæas of long continuance, where the *Mucus* that lines the Inteſtines is, by the Acrimony of the Humours abraded, it is of great ſervice in ſupplying its Place by its balſamick quality. It mixes intimately with the Yolk of an Egg.

The *Jews* uſe it to ſtop the Flux of Blood after Circumciſion.

COPPEL, COPEL, or CUPPEL, call'd alſo *Teſt*, a Veſſel uſed by Refiners and Eſſayiſts, to try and purify their Metals.

The *Coppel of Eſſay*, is a little flat Veſſel, compos'd of Vine Aſhes, and Bones of Sheeps Feet, calcin'd and lixiviated, to ſeparate the Salts, which would otherwiſe make it crackle. At the bottom of the Veſſel is a little Cavity fill'd with a kind of white Varniſh, compos'd of Hartſhorn or of Bones of Pike, calcin'd and diluted in Water: the Uſe of this Liquor is, that the Gold or Silver to be eſſay'd may be more conveniently lodg'd, and that the Button of the Eſſay may be ſeparated the more eaſily. See ESSAY.

Note, Tho Metals may be tried otherwiſe than by *Coppeling*: and tho the Touchſtone, Graver, &c. are of ſome ſervice to the Goldſmith in judging of their Purity; yet, 'tis certain, without the *Coppel* 'tis difficult, not to ſay impoſſible, to know their preciſe degree of Purity.

The Refiner's Coppel, is a large Free-ſtone Veſſel, lined withinſide with a kind of Plaſter made of Aſhes well lixiviated, cleans'd, dry'd, beaten and ſifted.

In this Kind of *Coppel* it is that the Refiners purify their Gold and Silver, by adding Lead to it, and expoſing the whole to a violent Fire. See REFINING.

COPPER, a hard, dry, heavy, ductile Metal; found in Mines, in ſeveral Parts of *Europe*, but moſt abundantly in *Sweden*. See METAL.

Copper is of all Metals the moſt ductile and malleable after Gold and Silver; and abounds much in Vitriol and Sulphur. See VITRIOL, &c.

The Chymiſts call it *Venus*; as ſuppoſing it to have ſome more immediate Relation to that Planet. See VENUS.

By an Analyſis it appears compos'd of a Sulphur ill digeſted, a yellowiſh Mercury, and a red Salt.

'Tis found both in Duſt and in Stones, each of which are firſt well waſh'd, to ſeparate 'em from the Earth wherewith they are mix'd. In this State 'tis call'd *Virgin Copper*.

After waſhing 'tis melted, and the melted Matter run into a kind of Molds, to form large Blocks, by ſome call'd *Salmons*, and by others *Pigs of Copper*. This is the ordinary *Copper*.

To render it more pure and beautiful, they melt it again once or twice; ſome of its coarſe earthy Parts being left at each Fuſion, and a Quantity of Tin and Antimony added in each. In this State 'tis call'd *Roſe Copper*, in Latin *Æs Peloſum*.

Of a Mixture of this and *Lapis Calaminaris*, is form'd Braſs, which the *French* call *yellow Copper*, in contradiſtinction to *Naturat Copper*, which they call *red Copper*. See BRASS.

Copper melted together with 22 or 23 Pounds of fine Tin *per* Quintal, makes Bell Metal. See BELL *Metal*.

Copper melted with Calamine, quantity for quantity, makes Braſs. See CALAMINE.

Copper and Braſs melted in equal Quantities, make what the *French* call *Bronze*, uſed for Figures, Statues, &c. See FOUNDERY.

Copper turns white by an Unction of Spirit of Wine and Orpiment. *Pliny* ſays there is a *Copper* naturally white, found underneath the Silver Mines.

The Uſe of Copper is very extenſive: Among other Works of *Copper* may be reckon'd thoſe of Braſs, Bell Metal, Pot Metal, &c. which are all Compoſitions where *Copper* makes the prevailing Ingredient.

The Chymiſts call *Saffron of Copper*, or *Crocus veneris*, a Preparation of *Copper* Plates ſtratify'd with decrepitated Salt, in a Crucible; after having extinguiſh'd 'em in Water, and ſcrap'd 'em with Iron Bruſhes. This Saffron is very red, and is uſed in Emplaiſters to mundify Wounds and Ulcers. See CROCUS.

Some Chymiſts have pretended that the Spirit of *Venus* was a real Alkaheſt, capable of diſſolving wholly Pearls, Corals, Crabs Eyes, &c. without any Diminution of its force; but Experience has ſhewn the contrary. See ALCAHEST.

The Calx of Braſs, called *Æs Uſtum*, and ſometimes alſo *Saffron of Venus*, is nothing but *Copper* calcin'd in a violent Fire. See Æs USTUM.

Verdigreaſe is a Ruſt of *Copper*. See VERDIGREASE.

M. *Becher* obſerves, that the drinking of acid Liquors, even out of common Silver Plate, is very unwholeſom, by reaſon of the Mixture of *Copper* therein; much more out of Veſſels of *Copper*.

The *Indian* Phyſicians are ſaid to ſet a great Value on Talc and yellow *Copper*; which, they ſay, conſumes the moſt viſcid Humours, and removes the moſt obſtinate Obſtructions.

COPPERAS, or COPERAS, a Mineral, form'd in *Copper*-Mines, and which is properly a Kind of Vitriol. See VITRIOL.

Copperas is purify'd and prepar'd in the ſame manner as Allum and Salt-petre, by paſſing thro' ſeveral Lixiviums, till it be wholly reduced to Cryſtal. See SALT.

Some make *Copperas* to be the Chalcitis of the Antients. See CHALCITIS.

But the more common Opinion is, that 'tis rather a Calcanthum, or Vitriol. See CALCANTHUM.

There is *Copperas* of *England*, of *Piſa*, *Germany*, *Cyprus*, *Hungary*, and *Italy*, which only differ from each other in Colour and Perfection; being all the ſame Mineral.

White Copperas, is the *Copperas* of *Germany*, calcin'd, laid in Water, thence filtrated, and reduced to Salt; whereof, as it coagulates, they form Cakes of 40 or 50 Pound each: ſuch are thoſe brought from *Goſlelar* in *Saxony*. This *Saxon Copperas*, ere it be whiten'd, is of a bluiſh green, clear and tranſparent.

The *Engliſh Copperas* is of a fine green; that of *Cyprus* and *Hungary* a ſky-blue, in Pieces cut like the Point of a Diamond. That of *Piſa* and *Italy* is likewiſe green; and the laſt as tranſparent as Glaſs.

Copperas is of conſiderable uſe in many Preparations; but eſpecially in Dying. The Hatters alſo uſe it in their dye; and this and Galls are the Ingredients that compoſe writing Ink. See INK, &c.

The ordinary *Engliſh Copperas* is made of a Kind of Stones found on the Sea-ſhore in *Eſſex*, *Hampſhire*, and ſo Weſtward, ordinarily called *Gold Stones*, from their Colour: they abound much with Iron.

To prepare the *Copperas* from them, they are laid in Heaps or Beds under ground. In proceſs of Time they ſwell and ferment; and, by degrees, a Humour diſtils out, which draining into a Ciſtern, and afterwards boil'd, in the boiling ſhoots into thoſe Cryſtals we ſee it in.

The Works at *Deptford* for making it, are known to moſt People.

Many Chymiſts diſſolve this, and ſhoot it again for the common Salt of Steel.

COPPICE, or COPSE, a little Wood, conſiſting of Under-woods; and may be rais'd both by ſowing and planting. See WOOD.

COPULA, in Logick, a Verb that connects any two Terms in a Propoſition, either Negative or Affirmative: As, *A Roſe is ſweet*; where *is* is the *Copula*.

COPULATION. See COITION.

COPULATIVE *Propoſitions*, are thoſe which include ſeveral Subjects, or ſeveral Attributes join'd together by an affirmative or negative Conjunction. See CONJUNCTION.

Thus, *v. g. Power and Riches don't make a Man happy.* Where *and* is the Conjunction that couples *Power* and *Riches*.

Conjunction COPULATIVE. See CONJUNCTION.

COPY, a Minute, Draught, or firſt Deſign of an Inſtrument, to be afterwards put into form.

The

The Word comes from the Latin *Copia*, which was uſed for the ſame thing.

COPY is alſo uſed for a Tranſcript of a Writing or Inſtrument, made for the Uſe and Satisfaction of ſome of the Parties concern'd; or in order to preſerve the Memory thereof.

Such a *Copy* was taken from the Original; has been collated with the Original. Antient Titles do now few of 'em ſubſiſt otherwiſe than in *Copies*.

COPY is alſo uſed for an Imitation of any original Work; particularly a Painting, Draught, Figure, &c. See ORIGINAL.

Among Printers, *Copy* is the Manuſcript, or Original of a Book given them to print from. In this Senſe, they ſay, The Preſs ſtands ſtill for want of *Copy*: Such an Author's *Copy* is good, *i. e.* fair, legible, orderly, &c. and ſuch another's, otherwiſe.—— In the Bookſellers Language, a *good Copy* is that which produces a ſaleable Book.——*To caſt off a Copy*, is to make a Computation of the Number of Sheets a Manuſcript will make in print.

COPY-HOLD, is a Tenure for which the Tenant has nothing to ſhew but the *Copy* of the Roll made by the Steward of the Lord's Court. See TENURE.

The Steward of the Court is, among other Things, to enroll and keep a Regiſter of all ſuch Tenants as are admitted to any Parcel of Land, or Tenement belonging to the Manor; and the Tranſcript is called the *Copy of the Court Roll*, which the Tenant keeps as his own Evidence. See ROLL.

This Tenure is called a *baſe Tenure*, becauſe the Tenant holds at the Will of the Lord. *Fitzherbert* ſays, it was formerly called *Tenure in Villenage*; and that *Copy-hold* is but a modern Name.

However, it is not ſimply at the Lord's Will, but according to the Cuſtom of the Manor; ſo that if the *Copy-holder* doth not break that Cuſtom, and forfeit his Tenure, he ſeems not to ſtand at the Lord's Courteſy.

Theſe Cuſtoms are infinite; varying in one Point or other almoſt in every Manor. See CUSTOM, and MANOR.

Copy-holders upon admittance pay a Fine to the Lord; which Fines are in ſome Manors certain, in others not; but yet, if the Lord exceeds two Years Value, the Court of Chancery, King's-Bench, &c. have, in their ſeveral Juriſdictions, Power to reduce the Fine. See FINE.

In many Places the *Copy-holds* are a kind of Inheritance, and term'd *Cuſtomary*, becauſe the Tenant dying, and the Hold becoming void, the next of Blood paying the cuſtomary Fine, as two Shillings an Acre, or the like, may not be denied his Admiſſion.

Some *Copy-holders* have by Cuſtom the Wood growing upon their own Land; ſome, again, hold by the Verge in antient Demeſne, ſo that tho they hold by *Copy*, they are yet accounted a kind of Free-holders: Laſtly, ſome others hold by common Tenure, called *mere Copy-hold*; whoſe Land, upon Felony committed, eſcheats to the Lord of the Manor.

This is the Land which the *Saxons* called *Folkland*, as being held *ſine ſcripto*; in contradiſtinction to *Bockland*, or Charter-Land, *Terra ex ſcripto*, and now Free-Land. See CHARTER-LAND, and FREE-HOLD.

COPY-HOLDER, is defined by *Weſt* to be a Perſon admitted Tenant of any Lands or Tenements within a Manor, which, Time out of Mind, by the Uſe and Cuſtom thereof, have been demiſable to ſuch as will take the ſame by *Copy* of Court Roll, according to the Cuſtom of the ſaid Manor.

COQ. *ad Med. Conſumpt.* an Abbreviature among Phyſicians, ſignifying that the Thing is to be boil'd till half of it be conſum'd.——*Coq. in S. Q. Aq.* implies it to be boil'd in a ſufficient Quantity of Water.

COR, in Anatomy. See HEART.

COR *Hydræ*, in Aſtronomy, a Star of the ſecond Magnitude, in the Heart of the Conſtellation *Hydra*; the 12th in Order in *Ptolemy*'s Catalogue; the 11th in *Tycho*'s; and the 25th in the *Britannic*. See STAR.

Its Longitude is 22° 57′ 59″. its Latitude 22° 24′ 32″ South. See HYDRA.

COR *Leonis*, or *Regulus*, a Fix'd Star of the firſt Magnitude, in the Conſtellation *Leo*. See LEO.

COR *Caroli*, in Aſtronomy, an extra-conſtellated Star in the Northern Hemiſphere, ſituated between the *Coma Berenices* and *Urſa Major*; ſo call'd by Dr. *Hally* in honour of King *Charles*. See STAR, and CONSTELLATION.

CORACOBRACHIALIS, a Muſcle which ariſeth from the *Proceſſus Coracoides* of the *Scapula*, by a tendinous beginning; and paſſing over the Articulation of the *Humerus*, is inſerted into the middle and internal Part of that Bone, and with the *Deltoides* and *Supra-ſpinatus*, lifts the Arm upwards; and alone, obliquely outwards.

CARACOHYOIDEUS, in Anatomy, a Muſcle which hath its Origin from the *Proceſſus Caracoides* of the *Omoplata*; or rather, according to *Keil*, from the upper Edge of the *Scapula*, near its Neck; whence aſcending obliquely under the *Maſtoidæus*, it is inſerted into the *Os Hyoides*; which it ſerves to pull obliquely downwards. See HYOIDES.

It is alſo called *Digaſtricus*, as having two Bellies at its two Extremities, and a Tendon in the middle, to give room for the Paſſage of the Carotid and inner Jugular Artery. See DIGASTRIC.

The Word is form'd from *Caracoides* and *Hyoides*, the two Parts.

CARACOIDES, in Anatomy, a Proceſs, ſo call'd from its reſembling a Crow's Bill. See PROCESS.

The *Caracoides* is plac'd in the upper Part of the Neck, and projects over the Head of the Bone of the Arm.

It ſerves to ſtrengthen the Articulation of the Shoulder; and gives Origin to one of the Muſcles of the Arm.

The Word comes from the *Greek* κόραξ, κόρακος, *corvus*, and εἶδος, *imago*.

CORAL, in Natural Hiſtory, a Production of the Sea, rank'd among the Number of Marine Plants. See PLANT.

This Opinion, which we received from the Antients, is now ſo well eſtabliſh'd, that all other Sentiments ſeem precluded. *P. Kircher*, that learned Naturaliſt, ſuppoſes entire Foreſts of it, at the bottom of the Sea; and M. *Tournefort*, that able Botaniſt, maintains that it evidently multiplies by Seed; tho neither its Flower nor Grain be known. However, the Count *de Marſigli* has diſcover'd ſome Parts therein which ſeem to ſerve the Purpoſe of Grains and Flowers. See SEED, &c.

Coral, then, being eſtabliſh'd a Plant, has, in that Quality, *Roots*, wherewith it is faſten'd to the Rock whereon it grows: theſe Roots are cover'd with a *Bark*, ſet with ſtarry Pores, which traverſe 'em from top to bottom. Above the Roots is the ligneous or *woody* Part of the Plant, if we may ſo call a Matter that rather ſeems to reſemble Stone than Wood. It is divided into Branches like other Plants; having white Streaks therein, which ſeem to repreſent a kind of Fibres. The Extremities of the Plant are ſoft, and rounded into little Bowls, ordinarily divided into ſix Cells, fill'd with a Humour ſomewhat like Milk, fatty, ſharp, and aſtringent.

Laſtly, that nothing may be wanting to conſtitute a real Tree, theſe Bowls are eſteem'd a kind of Pods, or *Capſulæ*, containing the Seed of the *Coral*. 'Tis even ſaid, that in what Place, or on what Matter ſoever this Juice be ſhed, it carries Fecundity with it, and produces a Plant of *Coral*: whence it is, that in the Cabinets of the Curious, we find ſome of it on dead Mens Skulls, Pieces of Earthen Ware, and other Kinds of ſolid Bodies, which Chance and the working of the Sea have thrown into ſome of F. *Kircher*'s Foreſts.

Coral, M. *le Comte de Marſigli* obſerves, grows chiefly in Grottos, whoſe Mouth or Aperture is towards the South, and the Vault, or concave Arch nearly parallel to the Surface of the Earth. For its Growth, 'tis neceſſary the Sea be as quiet as a Pond: It vegetates the contrary way to all other Plants; its Foot adhering to the top of the Grotto, and its Branches extending downwards. The Foot takes the exact form of the Solid it grows to, and even covers it, like a Plate, to a certain extent; which M. *de Marſigli* thinks a Proof that its Subſtance was originally fluid: And what confirms the Thought, is, that the ſame Subſtance ſhall ſometimes line the inſide of a Shell, which it could never enter but in form of a Fluid.

Upon a nice Examen of the ſeveral Parts of *Coral*, M. *de Marſigli* gathers, that all its Organiſm, with regard to Vegetation, conſiſts in its Bark, or Surface; that the Tubules of the Bark filtrate a Juice which fills the Cellules, and runs along the Canals as far as the Extremities of the Branches; and that this Juice being petrify'd, both in the Cells encompaſſing the *Coralline* Subſtance, and in thoſe of the Extremes of the Branches whoſe Subſtance is not yet form'd, makes the Plant grow both in height and bulk. See VEGETATION, &c.

The Antients believ'd that *Coral* was ſoft while it continu'd in the bottom of the Water; and that it only became hard and ſolid by the Impreſſion of the Air. But the Moderns are convinc'd of the contrary from Experience; and know that there was more of Imagination than Truth in the Name *Gorgonium*, which they gave it to ſhew that *Meduſa*'s Head did not convert Objects into Stone, more ſurely than *Coral* was converted as ſoon as it appear'd in the Air.

There are, properly, but three Kinds of *Coral*, *red*, *white*, and *black*: The white is the rareſt and moſt eſteem'd; but 'tis the red is ordinarily uſed in Medicine. It muſt be choſen thick, ſmooth, and ſhining, and of a beautiful red, not cover'd with any tartareous Matter.

There is a kind of white *Coral* pierc'd full of holes, and a black *Coral*, named *Antipathes*; appearing of a different Nature from the reſt: but theſe are of no uſe.

The Chymiſts draw a magiſterial Tincture from *Coral*, and a Salt.

It gives Title to an Officinal Compoſition, call'd *Syrup of Coral*, often preſcrib'd by Phyſicians; as is the Pouder of *Coral* finely ground, and after levigated on a Marble, and made up into a proper form. But there are few except thoſe who are fond of Medicines with Pearls in 'em that make uſe hereof. By means of its exceeding hardneſs, it is ſuſpected to take away with it a great deal of the levigating Stone.

The Virtues attributed to *Coral* and its Preparations, are that it is Cardiac, and therefore of uſe in Diarrhæas, too large Fluxes of the Menſtrua, and Floodings; of ſervice in the *Fluor Albus*, and to prevent Miſcarriages; beſide its uſe in common as a Teſtaceous Pouder in Childrens Diſeaſes, &c. See CHILDRENS *Diſeaſes*.

Some alſo attribute to *Coral* the immediate ſtopping of Blood, the ſecuring of Houſes from Thunderbolts, the keeping away of evil Spirits, and the promoting of Dentition. 'Tis added, that *Coral* appears redder wore on a Man than on a Woman; that it becomes pale and livid when wore by a ſick Perſon; and that the Changes in the Plant correſpond with thoſe in the Diſeaſe. But for theſe, and many more Fancies of the ſame kind, *Credat Judæus Apella*.—Its chief Uſe we know of, is in Chaplets, Beads, and other Toys.

CORAL *Fiſhery*. The Time for fiſhing *Coral* is from *April* to *July*: The Places are the *Perſian* Gulf, Red Sea, Coaſts of *Africa* towards the *Baſtion* of *France*, the Iſles of *Majorca* and *Corſica*, and the Coaſts of *Provence* and *Catalonia*.

The Method of fiſhing is nearly the ſame in all Places: That uſed at the *Baſtion* of *France*, where there is an eſtabliſh'd Fiſhery, under the Direction of a Company (ſee COMPANY) at *Marſeilles*, is as follows.

Seven or eight Men go in a Boat, commanded by the Patron or Proprietor; the Caſter throws his Net, if we may ſo call the Machine wherewith he uſes to tear up the *Coral* from the bottom of the Sea; and the other ſix manage the Boat. The Net is compos'd of two Beams tied acroſs, with a leaden Weight to preſs 'em down: To the Beams is faſten'd a great quantity of Hemp looſely twiſted round, among which they mix ſome ſtrong Nets.

In this Condition the Machine is let down into the Sea; and when the *Coral* is pretty ſtrongly embarraſs'd in the Hemp and the Nets, draw it out by a Rope; which they unwind according to the Depth, and which ſometimes requires half a dozen Boats to draw. If the Cord happen to break, the Fiſhermen are in great danger of drowning.

Before the Fiſhers go out, they agree on the Price of the *Coral*, which is ordinarily at the Rate of 4 *s.* 6 *d. per* Pound.

When the Fiſhery is over, which in a Seaſon uſually amounts to 25 Quintals of *Coral* each Boat; it is divided into 13 Parts; the Patron whereof, or Maſter *Coraller*, has four, the Caſter two, and each of the ſix Companions one: the 13th being reſerv'd for the Company, &c.

Artificial CORAL, is made of Cinnabar well beaten; a Lay whereof is applied on a piece of Wood well dried, and poliſh'd, firſt moiſten'd with Size: The whole is again poliſh'd; and for varniſh, rubb'd over with the White of an Egg.

CORALLINE, or *Sea Moſs*, a Plant found adhering to Rocks, Shells, and even to *Coral*.

It has no Stem, but its Branches ſhoot immediately out of the Root. Its Uſe in Medicine is not very conſiderable: yet 'tis ſuppos'd of ſome effect to deſtroy Worms in Children when taken in Pouder; and is alſo uſed as an Ornament in Rock-work. The beſt is greeniſh; the worſt aſh-colour'd; the red is not much better.

CORAM *non Judice*, in Law, is when a Cauſe is brought into a Court where the Judges have no Juriſdiction.

CORBAN, a Scripture Term, ſignifying an Oblation, or Offering to God on the Altar. See OFFERING, &c.

The Word is *Hebrew*, קרבן.

CORBAN is alſo a Ceremony in uſe among the *Mahometans*; yearly perform'd at the foot of Mount *Ararat* in *Arabia*, near *Mecca*. It conſiſts in ſlaying a great Number of Sheep, and diſtributing 'em among the Poor.

CORBEILS, in Fortification, little Baſkets, about a Foot and an half high, eight Inches broad at the bottom, and twelve at the top; which being fill'd with Earth, are frequently ſet one againſt another upon the Parapet, or elſewhere; leaving certain Port-holes, from whence to fire upon the Enemy under covert, without being ſeen by them.

CORBEL, in Architecture, the Repreſentation of a Baſket, ſometimes ſeen on the Heads of Cariatides. See CARIATIDES.

The Word is alſo uſed for the Vaſe or Tambour of the *Corinthian* Column; ſo call'd from its reſemblance of a Baſket; or becauſe it was firſt form'd on the Model of a Baſket. See CORINTHIAN *Order*.

CORBELL, CORBIL, or CORBEL, is alſo uſed in Building for a ſhort Piece of Timber placed in a Wall, with its End ſticking out ſix or eight Inches, as occaſion ſerves, in manner of a Shouldering-piece.

The under Part of the End thus ſticking out, is ſometimes cut into the form of a Boultin; ſometimes of an Ogive, and ſometimes of a Face, &c. according to the Workman's Fancy; the upper ſide being plain and flat.

Theſe *Corbels* are uſually placed for Strength immediately under the Semi-girders of a Platform, and ſometimes under the Ends of Chamber-Beams: in which latter Caſe, they are commonly placed a Foot or two below the Beam, and have a piece of Timber ſtanding upright cloſe to the Wall from the *Corbel* to the Beam.

CORBEL is alſo uſed by ſome Architects for the hollow Niches, or hollows left in Walls for Images, Figures, or Statues to ſtand in. See NICHE.

CORD, or CHORD, an Aſſemblage of ſeveral Threads of Hemp, cabled or twiſted together by means of a Wheel. See CORDAGE.

The Word comes from the *Greek* χορδὴ, which properly ſignifies an Inteſtine, or Gut, whereof *Cords* may be made. See CHORD.

CORD *of S.* Francis, a kind of Rope adorn'd with Knots, wore by the Brothers of the Fraternity inſtituted in honour of that Saint. See FRANCISCAN.

Some, as the Cordeliers, Capuchins, Minorites, and Recolets wear it white; others, as the Pique Puces, black.

Its deſign is to commemorate the Bonds wherewith Jeſus Chriſt was bound.

The Society of the CORD, includes a great Number of People beſide Religious. To obtain Indulgences, they are only oblig'd to ſay five *Paters*, five *Ave Marys* and *Gloria Patri*'s, and to wear this Rope, which muſt have been firſt bleſs'd by the Superiors of the Order.

CORD *of Wood*, a certain Quantity of Wood for burning; ſo called, becauſe formerly meaſur'd with a *Cord*. See MEASURE.

'Tis now meaſur'd between two Stakes of Wood, four Foot high, and eight Foot apart.

CORD-*Wood*, is properly new Wood; and when brought by Water comes aboard a Veſſel, in oppoſition to that which is floated. All burning Wood not exceeding 18 Inches in circumference, is deem'd *Cord-Wood*.

CORD, in Geometry, Muſick, &c. See CHORD.

CORDAGE, in the Sea Language, is uſed in general for all the Ropes and *Cords*, big and ſmall, uſed in the Rigging and fitting out of a Veſſel. See RIGGING.

The Word is alſo uſed for the Art of preparing and manufacturing the Ropes, &c.

The *Cordage* is ſaid to be *baked*, when having paſs'd a Stove or other hot Place, 'tis drain'd of all its Moiſture.

White Cordage, is that not yet pitch'd. *Cordage pitch'd in the Stove*, is that which is paſs'd thro' hot Pitch as it comes out of the Stove. Each Quintal of *Cordage* may take up about 20 Pounds of Pitch. The *Cordage* is ſometimes pitch'd in the Thread.

When a *Cordage* is ſaid to be of ſix Inches, 'tis underſtood of ſix Inches around, or in Circumference. The Commerce of *Cordage* is very conſiderable at *Amſterdam*: That made of *Coningsberg* Hemp is valued at 20 *per Cent.* more than that of *Muſcovy* Hemp. They are ſold by weight.

The Number of Ropes requir'd in fitting out of a Veſſel is almoſt inconceivable: Each has its particular Name and Uſe. See CABLE, HALSER, &c.

The *Spaniards* make a kind of Shoes of *Cordage*, which they call *Alpargates*, whereof they uſe great Quantities at home, and yet drive a very conſiderable Commerce to the *Indies*; ſo as to ſend away whole Ship-loads thereof.

The *Indians* make their *Cordage* of the Bark of *Cocao*, *Magnay*, and other Trees.

As to the Strength of Ropes or Cordage, M. *Reaumur* takes occaſion, in the Memoirs of the *French* Academy, to conſider the Queſtion, whether a Rope compos'd of ſeveral Twiſts or Strands interwoven, *v. g.* ten, have more force to ſuſtain a Weight, than the ten Twiſts would have ſeparately, placed parallel over one another: or, which is the ſame thing, whether if each Twiſt be capable of ſuſtaining the weight of a Pound, the whole *Cord* be able to ſuſtain more than ten?

There, indeed, appears no great difficulty in the Queſtion; the Evidence ſeems ſtrong on the ſide of the Affirmative: For, 1ſt, by Virtue of the Twiſting, the Diameter of the Rope is made larger than are thoſe of the ten Twiſts together; but, 'tis apparently by its thickneſs that a Rope ſuſtains a Weight or reſiſts a Fracture.

2d, Twiſted Strands have not all, as when parallel, a vertical Direction with regard to the Weight: Several of 'em, and even the greateſt Part, have oblique Directions, and of conſequence don't bear all the Share of the Burden they would otherwiſe bear. In effect, they are inclined Planes that are only preſs'd with a part of the Load.

Hence it would follow, that the Surplus of the Strength of the Twiſts, might be employ'd in raiſing a larger Weight.

On

On the other hand, 'tis true, that in twiſting the Strands, ſome are ſtretch'd, and others left more looſe; and the new Tenſion given the former, ſerves to weaken 'em, and has of it ſelf the effect of a Weight: Thus they become leſs able to ſuſtain one ſo large. Thoſe more lax, on the contrary, evade in ſome meaſure the Action of the Weight. For the Action is diſtributed equally on the ten ſuppoſedly equal Twiſts; and if ſome, by reaſon of their particular Diſpoſition, receive leſs than their Quota, the Weight will act more forcibly on the reſt, and will break them firſt, as being more tenſe; after which it will eaſily diſpatch the reſt, as not being in ſufficient Number to oppoſe it.

This is the Sum of what can be urg'd for and againſt the twiſting. To decide between 'em M. *Reaumur* had recourſe to Experiment. The Reſult was, that contrary to all Expectation, he ſtill found the twiſting diminiſh'd the Force of the Rope: whence it is eaſily infer'd, that it diminiſhes it the more, as the Rope is the thicker: For inaſmuch as the twiſting diminiſhes; the more Twiſting the more Diminution.

The Reſiſtance or Friction of the Cordage is very conſiderable; and by all means to be conſider'd in calculating the Force of Machines. M. *Amontons* obſerves, in the *French* Memoirs, that a Rope is ſo much the more difficult to bend, firſt, as it is ſtiffer, and more ſtretch'd by the Weight it draws. 2d, As it is thicker; and, 3d, as it is to be more bent; *i. e.* as it is to be roll'd, for inſtance, into a ſmaller Gyre.

The ſame Author has thought of ways to prove in what proportion theſe different Reſiſtances increaſe: That ariſing from the Stiffneſs or Rigidity occaſion'd by the Weight which draws the Rope, increaſes in proportion to the Weight; and that ariſing from its thickneſs in proportion to their Diameter. Laſtly, that ariſing from the ſmallneſs of the Gyres, or Pullies about which it is to be wound, is indeed greater for ſmaller Circumferences than great ones, but does not increaſe ſo much as in the Proportion of thoſe Circumferences.

On this footing, the Loſs a Machine ſuſtains by the *Cordage* being eſtimated in Pounds; becomes, as it were, a new Weight, added to that which the Machine is to raiſe. This Augmentation of weight will render the *Cords* ſtill the more ſtiff: which exceſs is to be computed as before.

Thus we ſhall have different Sums ſtill decreaſing; which are to be added together, as in the Article of Friction, and it will be ſurprizing to ſee what a Sum they will amount to. See FRICTION.

Where Ropes are us'd in a Machine, all the Reſiſtance reſulting from their ſtiffneſs is to be put together; and all that occaſion'd by the Friction; which will make ſo conſiderable an Augmentation to the difficulty of the Motion, that a Power which to raiſe a Weight of 3000 Pound, by means of a fix'd and a moveable Pully, needed only 1500 Pound; muſt, according to M. *Amontons* have 3942 Pounds, on account of the Frictions, and the Reſiſtance of the *Cordage*. See RESISTANCE.

CORDED, in Heraldry. *A Croſs corded*, ſome Authors take for a Croſs wound or wrench'd about with *Cords*: Tho others, with more probability, take it for a Croſs made of two Pieces of *Cord*. See CROSS.

CORDELIER, a *Franciſcan*, or Religious of the Order of S. *Francis*. See FRANCISCAN.

The *Cordeliers* are cloth'd in thick grey Cloth, with a little Cowl, a Chaperon, and Cloke of the ſame; having a Girdle of Rope or *Cord*, tied with three Knots, whence the Name. See CORD.

The *Cordeliers* are otherwiſe called *Minor Friers*, their original Name. The Name *Cordelier* is ſaid to have been firſt given 'em in the War of S. *Louis* againſt the Infidels; wherein the *Friers Minor* having repuls'd the *Barbarians*, and that King having enquir'd their Name; it was anſwer'd they were People *corde liez*, tied with Ropes.

The *Cordeliers* are, to a Man, profeſs'd *Scotiſts*. See SCOTIST.

CORDIAL, *Cardiac*, in Medicine, a comfortative or refreſhing Remedy, that gives a ſudden Strength and Chearfulneſs to the Spirits, by raiſing them when depreſs'd by too much Exerciſe, the Conſequence of ſome Diſeaſe, or the like Cauſe.

Cordials act by giving a Springineſs and Force to the Fibres, and by ſome of their fine Particles directly entering the *Tubuli*, or Pores of the Nerves and fine Veſſels, and ſo mixing directly with the Fluids.

Thus, ſome of the Particles of the Spirit of Lavender, when dropt into Sugar and taken, are ſuppos'd to enter the Nerves of the Palate directly. Spirituous Liquors, as Brandy, Cinnamon Water, *&c.* are ſuppos'd alſo to act immediately on the Palate; but eſpecially on the nervous Coat of the Stomach, and not by the common Current of the Circulation: by which means they often prove an immediate *Cordial*.

In Faintings, where the Circulation of the Blood is languid, Sal Volatile Oleoſum, or Spirit of Hartſhorn dropt in cold Water and drank immediately, occaſion a Contraction of the *Fibrillæ*, the laſt by its coldneſs, and the firſt by entering the ſmall Veſſels; and thus they inſtantly augment the Circulation, or in other Words, prove *Cordial*. In Officinal Compoſitions, the four *Cordial* Flowers are *Borrage*, *Bugloſs*, *Roſes* and *Violets*.

The four *Cordial* Waters are thoſe of *Borrage*, *Bugloſs*, *Endive*, and *Chicory*; ſome add thoſe of *Carduus Benedictus* and *Scorzonera*, *Scabioſa*, *Sorrel*, &c.

CORDON, in Fortification, a row of Stones jutting out between the Rampart and the Baſis of the Parapet.

The *Cordon* ranges round the whole Fortreſs; and ſerves to join the Rampart, which is aſlope, and the Parapet, which is perpendicular, more agreeably together.

In Fortifications rais'd of Earth, this Space is fill'd up with pointed Stakes inſtead of a *Cordon*.

CORDWAINERS, or CORDINERS, the Term whereby the Statutes denominate *Shoe-makers*; from the *French Cordonnier*, which *Menage* derives from *Cordouan*, a kind of Leather brought from *Cordoua*, whereof they formerly made the Upper-leathers of their Shoes.

Others derive it from *Corde*, Rope, becauſe antiently Shoes were made of Cords; as they ſtill are in ſome Parts of *Spain*, under the Name of *Alpargates*, vaſt Quantities whereof they export to *America*.

But the former Etymology is better warranted: for, in effect, the *French* Workmen who prepare the *Cordoua's* are ſtill call'd *Cordouanniers*.

In *Paris* they have two pious Societies, under the Titles of *Freres Cordonniers*, Brothers Shoemakers; eſtabliſh'd by Authority towards the middle of the XVIIth Century; the one under the Protection of S. *Criſpin*, the other of S. *Criſpianus*, two Saints who had formerly honour'd the Profeſſion. They live in Community, and under fix'd Statutes and Officers; by which they are directed both in their ſpiritual and ſecular Concerns.

The Produce of their Shoes goes into a common Stock, to furniſh Neceſſaries for their ſupport; the reſt to be diſtributed among the Poor.

Bennet Baudouin, a Native of *Amiens*, the Son of a *Cordwainer*, and himſelf a Workman in his Father's Shop, has among other learned Works publiſh'd a Treatiſe *de Calceo antiquo & myſtico*, to do honour, as he himſelf owns, to his antient Trade. *John Battiſta Gallo*, a Shoemaker of *Florence*, has given ſome fine Pieces in the *Italian* Language; and among others, Dialogues in Imitation of *Lucian*.

CORIANDER, the Seed of a Plant of the ſame Name. See SEED.

Both the Taſte and Smell of the Seed is very agreeable; yet both in the Plant extremely nauſeous. Beſides the Confections made of the *Coriander*-Seed, it is of uſe in Medicine as a Carminative, and a Corrective to ſome ſorts of Catharticks. It is much us'd by the Brewers both in *England* and *Holland*, to give a Flavour to their ſtrongeſt Beer. The Antients had a Notion that the Juice of *Coriander* would deprive People of their Senſes, and even of Life.

Some derive the Word from κόρις, on account of the ſtinking Quality of the Leaves; others from κόρη, *apple of the Eye*, and ἄνθρων, *hominum*, becauſe it is ſuppos'd to weaken the Sight.

CORINTHIAN *Order*, the fourth, or as *Scamozzi*, and M. *le Clerc* make it the fifth and laſt of the Orders of Architecture; being the nobleſt, richeſt, and moſt delicate of all others. See ORDER.

The Invention of this Order moſt of the Moderns, after *Vitruvius*, aſcribe to *Callimachus* a *Corinthian* Sculptor, who paſſing by the Tomb of a young Lady, over which her Nurſe had placed a Baſket with ſome of her Play-things, and cover'd it up from the Weather with a Tile; the whole having been plac'd on a Root of Acanthus; as it ſprung up, the Branches encompaſs'd the Baſket, and bending down atop under the Corners of the Tile, form'd a kind of Volutes.

Hence *Callimachus* took his hint: The Baſket he imitated in the Vaſe of his Column; the Leaves in the Volutes; and the Tile in the Abacus of his Order. See ABACUS, ACANTHUS, *&c.*

Villalpandus treats this Story of *Callimachus* as a Fable; and will have the *Corinthian* Capital to have taken its Origin from an Order in *Solomon*'s Temple, the Leaves whereof were thoſe of the Palm-Tree. See LEAVES.

The *Corinthian* Order has ſeveral Characters whereby it is diſtinguiſh'd from the reſt: Its Capital is adorn'd with two Rows of Leaves, between which riſe little Stalks, or Caulicoles, whereof the Volutes are form'd, which ſupport the Abacus, and which are in Number 16.

It has no Ovolo, nor even Abacus properly ſpeaking; for the Member which goes by that Name is quite different from the Abacus in the other Orders, being cut with a Sweep, in the middle of which is carved a Roſe, or other Ornament. See CAPITAL, VOLUTE, ABACUS, CAULICOLE, *&c.*

Vitruvius obſerves, that the *Corinthian* Order has no particular Ordonnance for its Cornice, or any of the other Ornaments of its Entablature; nor does he give it any other Proportions than thoſe of the *Ionic* Order: So that if it appears higher than the *Ionic*, 'tis purely owing to the Exceſs of the height of its Capital. See IONIC.

He alſo makes the reſt of the Entablature the ſame; and the *Attic* Baſe he uſes indifferently for the one and the other. See ATTIC.

But *Vitruvius* differs widely in this Order from all the Examples now remaining of Antiquity; the moſt beautiful whereof have a particular Baſe, and the whole Order 20 Modules high; whereas the *Ionic* has but 18. Again, its Capital is higher than that of *Vitruvius* by one third of a Module: and its Entablature, which has Modillions, and ſometimes Dentils together with Modillions, is very different from the *Ionic* Entablature.

Moſt of the modern Architects ſet aſide *Vitruvius*'s *Corinthian* Ordonnance, and follow that of the antient Buildings; ſelecting from them according to their ſeveral Taſtes: So that the modern *Corinthian* is a kind of *Compoſite*; differing from any of the antient Buildings, and much more from *Vitruvius*'s Rules.

Vignola and M. *le Clerc* make the *Corinthian* Order 20 Modules high: yet *Serlio* only makes it 18; and M. *Perrault* $18\frac{2}{3}$, retrenching ſomething from the 19 of *Vitruvius*.

The height of the Shaft M. *Perrault* makes leſs than that of the *Ionic*, by reaſon of the Exceſs of its Capital. See COLUMN; ſee alſo SHAFT, BASE, and ENTABLATURE.

CORINTHIAN *Braſs*. See BRASS.

CORK, the Bark of a Tree of the ſame Name, much reſembling the Holm-Tree. See BARK.

Its Leaves are green above, and white underneath; and its Fruit a real Acorn, which feeds much more than that of the Oak. It is found in great abundance in *Spain*, *Italy*, *France*, &c.

To take off the Bark they make an Inciſion from top to the bottom of the Tree, and at each Extremity another round the Tree, perpendicular to the firſt. When ſtripp'd from the Tree, which does not therefore die, 'tis pil'd up in a Pond or Ditch, and loaden with heavy Stones to flatten it, and reduce it into Tables: Hence it is taken, to be dry'd; and when ſufficiently dry put in Bales for Carriage.

If care ben't taken to ſtrip the Bark, it ſplits and peels off it ſelf; being puſh'd up by another Bark form'd underneath.

The Bark of *Cork*, as well as the Acorn, are of ſome uſe in Medicine; being both reputed Aſtringents, after being burnt and pouder'd, when us'd externally; but the chief employ of the former is to put under Slippers, *&c.* and to ſtop Bottles.

The *Spaniards* burn it to make that light kind of black we call *Spaniſh Black*, uſed by Painters. See BLACK.

CORN, a Plant, or Genus of Plants, that produce a Grain fit for Bread, the ordinary Food of Man. See BREAD.

Corn is alſo uſed for the Grain or Seed of that Plant, ſeparated from the *Spica*, or Ear.

In the Commerce of *Corns*, they only diſtinguiſh three Kinds, *viz. Corn*, properly ſo called, or *Wheat*; *Rye*, which is a Species very different, and of a Quality far inferior; and a third kind reſulting from a Mixture of the two, and called *Maſlin*.

The Farmers, indeed, rank among the Number of *Corns* ſeveral of the Grains ſow'd in *March*; as Barley, Oats, and even Pulſe, as Peas, Vetches, *&c.* which, however, they ſometimes diſtinguiſh by the *ſmaller Corn*. Maiſe and Sarraſin are number'd among the *Corns*; the firſt call'd *Turky* and *Indian Corn*, the ſecond *French*, or *black Corn*.

Europe, in every Part of it; *Egypt*, and ſome other Cantons of *Africa*, particularly the Coaſts of *Barbary*; and ſome Parts of *America* cultivated by the *Europeans*, particularly *New-England*, *New-France*, and *Acadia*, are the Places which produce *Corn*. Other Countries have Maiſe and Rice in lieu of it; and ſome Parts of *America*, both in the Iſlands and Continents, ſimple Roots, ſuch as Potatoes, and Manioc.

Egypt was antiently the moſt fertile of all other Countries in *Corn*; as appears both from ſacred and profane Hiſtory: It furniſh'd a good Part of the People ſubject to the *Roman* Empire, and was call'd the Dry Nurſe of *Rome* and *Italy*. *France* and *Poland* ſeem now in the place of *Egypt*, and with their Superfluities ſupport a good part of *Europe*.

For the firſt Diſcovery and Culture of Corn, Authors are much divided: The common Opinion is, that in the firſt Ages Men liv'd on the ſpontaneous Fruits of the Earth; as Acorns, and the Nut or Maſt produced by the Beech, which, they ſay, took its Name *Fagus* from the *Greek* φάγομαι, *I eat*. 'Tis added, that they had not either the Uſe of *Corn*, nor the Art of preparing or making it eatable.

Ceres has the Credit of being the firſt that ſhew'd the Uſe of *Corn*, on which account ſhe was placed among the Gods. Others give the Honour to *Triptolemus*: Others ſhare it between the two; making *Ceres* the firſt Diſcoverer, and *Triptolemus* the firſt Planter and Cultivater of *Corn*.

Diodorus Siculus aſcribes the Whole to *Iſis*; in which *Polydore Virgil* obſerves, he does not differ from the reſt; *Iſis* and *Ceres* being the ſame. The *Athenians* pretend it was among them the Art began, and the *Cretans* or *Candiots*, *Sicilians*, and *Egyptians* lay claim to the ſame. Some think the Title of the *Sicilians* beſt ſupported, that being the Country of *Ceres*: and Authors add, ſhe did not teach the Secret to the *Athenians*, till ſhe had firſt inſtructed her Country-men. Others ſay, *Ceres* paſs'd firſt into *Attica*, thence into *Crete*, and laſt of all into *Sicily*. Many of the Learned, however, maintain it was in *Egypt* the Art of cultivating *Corn* firſt began; and 'tis certain there was *Corn* in *Egypt* and the Eaſt, long before the Time of *Ceres*.

For the Preſervation of Corn: It muſt be well dried and clean'd; the Granary have its Openings to the North or Eaſt, and Vent-holes a-top. For the firſt ſix Months it muſt be well ſtirr'd every 15 Days; afterwards it will be ſufficient to ſift it once *per* Month: After two Years it heats no more; nor is there any thing to fear, but from the Air and foreign Moiſture.

A little time after the Siege of *Metz* under *Henry* II. of *France*, the Duke *d'Eſpernon* laid up vaſt Stores of *Corn* in the Citadel; which was preſerv'd in good plight to the Year 1707, when the *French* King and his Retinue paſſing that way eat Bread baked thereof.

The chief Thing that contributes to the Preſervation of *Corn*, is a Cruſt which forms on its Surface, by the Germination of the Grain underneath, to the thickneſs of an Inch and half. On that at *Metz* People walk'd, without its giving the leaſt way. At *Sedan* was a Granary cut in a Rock, wherein a heap of *Corn* was preſerv'd 110 Years: It was cover'd with a Cruſt a Foot thick.

At *Chalons* they have Granaries where they ſtill keep *Corn* 30 or 40 Years: Over the Heap they ſtrew Quick-lime, in fine Duſt, to the thickneſs of three Inches; and ſprinkle this over with Water, whence ariſes a Cruſt. The Grain near the Surface ſprouts to the height of a Foot and half: theſe the Winter kills; and the Heap is left untouch'd till Neceſſity obliges 'em to it.

CORNACHINE *Pouder*, a purging Pouder, call'd alſo *Earl of* Warwick's *Pouder*, and *Pulvis de Tribus*.

It is compos'd of equal Parts of *Antimonium Diaphoreticum*, *Diagridium*, and *Cream of Tartar*.

CORNAGE, an antient Tenure, the Service whereof was to blow a Horn, when any Invaſion of the *Scots* was perceiv'd. See SERVICE.

This Tenure was very frequent in the Northern Counties, near the *Picts* Wall. But by Stat. 12 *Car.* II. all Tenures are converted into free and common Soccage. See TENURE, and SOCCAGE.

An old Rental calls *Cornage*, *Nowtgeld*, q. d. *Neat-geld*. My Lord *Coke* ſays, in old Books it is called *Horngeld*.

CORNEA *Tunica*, in Anatomy, the third Coat of the Eye; ſo call'd from its Subſtance reſembling the Horn of a Lanthorn. See EYE.

It is ſituated in the Fore-part; and is ſurrounded by the White. It has a greater Convexity than the reſt of the Globe of the Eye, and is compoſed of ſeveral parallel *Laminæ*, which are nouriſh'd by many Blood-Veſſels, ſo fine, as not to hinder even the ſmalleſt Rays of Light from entering the Eye. It has a moſt exquiſite Senſe, to the end that upon the leaſt Pain, the Tears may be ſqueez'd out of the Lachrymal Gland, to waſh off any Filth, which, by ſticking to the *Cornea*, might render it cloudy or dim. See LACHRYMAL; ſee alſo TEAR, *&c.*

In the Memoirs of the *French* Academy, M. *Gandolphe* gives us an Inſtance of Inciſions deſignedly made in the *Cornea*, to diſcharge a quantity of Blood ſettled there by a violent Blow on the Eye, by means whereof the Sight had been almoſt entirely extinguiſh'd.

The extravaſated Blood, it ſeems, was in too great a quantity to be diſſipated by Topical Medicines; beſides that the Proceſs would have been ſo tedious, that the aqueous Humour would have been in danger of being quite ruin'd in the mean time.

The *Cornea*, therefore, was open'd by three Inciſions, all made acroſs; the Blood was diſcharg'd; the Eye bound up with Compreſſes ſteep'd in a Mixture of four Ounces of Plantain Water, and two of Vulnerary Water. In eight Days the Eye reſum'd its natural tranſparency; and there remain'd no Scar after the Inciſions.

After the Cure, the Pupil of that Eye continued dilated much beyond its natural Dimenſions.

CORNEA *Lunæ*. See LUNÆ *Cornea*.

CORNELIAN, otherwiſe called *Sardoin*, a precious Stone, ordinarily red, bordering on an Orange. See PRECIOUS *Stone*.

It is but little tranſparent, cuts eaſily; and we find moſt of the fine Gravings of Antiquity, whether in relievo or indented, on this Stone.

It

It bears the Fire admirably: The largeſt Pieces found don't exceed three Inches in height.

The fineſt *Cornelians* are thoſe brought from near *Babylon*; the next are thoſe of *Sardinia*; the laſt thoſe of the *Rhine*, *Bohemia*, and *Sileſia*.

To give theſe Stones the greater Luſtre, in ſetting them they lay a piece of Silver Leaf underneath.

The principal uſe made of *Cornelians* is in Seals; by reaſon they grave well, and take a fine poliſh. The Author of the Book uſually but falſely attributed to *Albertus Magnus*, gives the *Cornelian* Virtues which, were they real, would make it ineſtimable. See AGAT.

The *Cornelian* is otherwiſe call'd *Carneola* and *Corneola*: The *Italians* call it *Corniolos*; 'tis ſaid from *Corno*, Horn; on account of the reſemblance it bears to Horn.

CORNET, a Horn, or Muſical Inſtrument us'd by the Antients in their Wars. See MUSICK.

Vegetius informs us, that the Legions had Trumpets, *Cornets*, and Buccinæ: that when the *Cornets* ſounded, only the Enſigns regarded; none of the Soldiers: that when the Enſigns were to march alone without the Soldiers, the *Cornet* alone was ſounded: as, on the contrary, when the Soldiers were to move without the Enſigns, the Trumpets alone were ſounded: That the *Cornets* and *Buccinæ* ſounded the Charge and Retreat; and the *Cornets* and Trumpets during the Courſe of the Battle.

CORNET, in War, an Officer in the Cavalry, who bears the Enſign or Colours of the Company. See ENSIGN.

The *Cornet* is the third Officer in the Company, and commands in the Abſence of the Captain and Lieutenant. He takes his Title from his Enſign which is ſquare, and is ſuppoſed to be call'd by that Name, from *Cornu*; becauſe placed on the Wings, which form a kind of Points or Horns of the Army.

Others derive the Name from *Coronet*; it being the antient Cuſtom for theſe Officers to wear Coronets or Garlands on their Heads.

CORNICHE, or CORNICE, in Architecture, the uppermoſt Member of the Entablature of a Column; or that which crowns the Order. See ENTABLATURE, CROWNING, *&c.*

The *Cornice* is the third grand Diviſion of the Trabeation, commencing from the Frize and ending with the Cymatium. The Word is form'd from the Latin *Coronis*, a Crowning.

The *Cornice* is different in the different Orders: In the *Tuſcan* Order it is the moſt plain. *Vignola* makes it to conſiſt of an Ovum or Quarter-round, an Aſtragal or Baguette, the Reglet or Fillet, the Larmier, and the Talon. See TUSCAN.

In the *Doric*, he makes Capitals of the Triglyphs of the Frize with their Bandilettes, a Talon, Mutules or Dentils, a Larmier with its *Guttæ* underneath, a Talon, Fillet, Cavetto, and Reglet. See DORIC.

In the *Ionic*, the Members are in moſt reſpects the ſame as in the *Doric*; except that they are frequently enrich'd with carving, and there are always Dentils. See IONIC.

In the *Compoſite* there are Dentils; its Mouldings are carv'd, and there are Channels under the Soffit. See COMPOSITE.

The *Corinthian Cornice* is the richeſt; and is diſtinguiſh'd by having both Modillions and Dentils: contrary to the Opinion of *Vitruvius*, who looks on thoſe two Ornaments as incompatible; and of M. *le Clerc*, who regards the Dentils as peculiar to the *Ionic*. See MODILLION, DENTIL, *&c.* ſee alſo ORDER.

For the Heights and Projectures of the Cornices in the ſeveral Orders; *Goldman* makes the Height of the *Tuſcan* $1\frac{1}{3}$, and its Projecture $2\frac{2}{3}$ Modules: The Height of the *Doric* $1\frac{1}{3}$, its Projecture $2\frac{2}{5}$; Height of the *Ionic* $1\frac{1}{5}$, its Projecture $2\frac{2}{5}$; Height of the *Compoſite* $1\frac{3}{5}$, Projecture $2\frac{13}{30}$; Height of the *Corinthian* $1\frac{2}{5}$, Projecture $2\frac{13}{30}$.

CORNICE is uſed in the general for all little Projectures of Maſonry or Joinery; even where there are no Columns.

Thus, we ſay, the *Cornice* of a Chimney, a Buffet, *&c.*

Architrave CORNICE, is that immediately contiguous to the Architrave; the Frize being retrench'd.

Mutilated CORNICE, is that whoſe Projecture is cut or interrupted, to the right of the Larmier, or reduced into a Platband with a Cimaiſe.

Cantaliver CORNICE, a Term uſed by the Workmen for a *Cornice* that has Cantalivers underneath it. See CANTALIVER.

Modillion CORNICE, a *Cornice* with Modillions under it. See MODILLION.

Coving CORNICE, a *Cornice* which has a great Caſement or hollow in it; ordinarily lathed and plaiſter'd upon Compaſs, Sprockets, or Brackets.

CORNICE is alſo uſed for the Crownings of Pedeſtals. See PEDESTAL.

This *Cornice*, too, is different in the different Orders: In the *Tuſcan*, according to M. *Perrault*, it has a Platband which ſerves as a *Corona*, and a Cavetto with its Fillet: In the *Doric*, it has a Cavetto with a Fillet, which bears a Drip crown'd with a Square: In the *Ionic*, a Cavetto with its Fillet above, and a Drip or hanging Square crown'd with an Ogee and its Fillet: In the *Corinthian*, an Ogee with its Fillet, a Cymatium under the *Corona*, which it hollows to make a Drip, a *Corona*, and an Ogee with its Fillet: Laſtly, in the *Compoſite*, a Fillet with a Sweep over the Die, an Aſtragal, Cyma with its Fillet, *Corona*, and Ogee with its Fillet: *See each in its Place.*

CORNICE *Ring* of a Piece of Ordnance, is that which lies next the Trunnion Ring; or next from the Muzzle Ring backwarks. See ORDNANCE.

CORNICULARIS *Proceſſus*, the Proceſs or Knob of the Shoulder Bone; thus call'd, as reſembling the Figure of a Crow's Beak.

CORNICULARIUS, in Antiquity, an Officer in the *Roman* Army.

His Buſineſs was to aid and aſſiſt the Military Tribune in the exerciſe of his Poſt, in quality of Lieutenant.

The *Cornicularii* went the Rounds in lieu of the Tribune, viſited the Watch, and were nearly what the *Aids Major* are in the *French* Army.

The Name *Cornicularius* was given 'em from a little Horn, called *Corniculum*, which they uſed in giving Orders to the Soldiers: Tho *Salmaſius* derives it from *Corniculum*, the Creſt of an Headpiece; it being an Obſervation of *Pliny*, that they wore Iron or Braſs Horns on their Helmets; and that theſe were call'd *Cornicula*.

In the *Notitia Imperii*, we find a kind of Secretary or Regiſter of the ſame Name; his Buſineſs was to attend the Judge, and to enter down his Sentences and Deciſions.

The Criticks derive the Word, in this Senſe, from *Corniculum*, a little Horn to put Ink in.

CORNICULATE *Plants*, are ſuch as after they have blown into Flower, produce many diſtinct and horned Pods, or Seed-Veſſels, called *Siliquæ*; For which Reaſon, the Plants are alſo denominated *ſiliquous Plants*. See SILIQUOUS.

Such are the *Sedum* or *Sempervivum*, *Telephium*, *Juncus Floridus*, *Helleborus niger*, *Pæonia*, *Caltha Paluſtris*, *Althæa Lutea*, &c. See PLANT.

CORNU *Ammonis*, in Natural Hiſtory, an extraordinary kind of Stone, which in Vinegar, Juice of Lemons, *&c.* has a Motion like that of an Animal. See STONE.

'Tis rough, knotty, of an Aſh-colour, and crooked in manner of a Ram's-horn ſuch as thoſe wherewith the Antients repreſented *Jupiter Ammon*: whence its Name.

'Tis diſputed among Naturaliſts, whether it be a Foſſil, or a *Nautilus*, or a Rock-Plant. *Camerarius* maintains the firſt, urging that 'tis frequently dug out of the Tops of Mountains; and that 'tis ſeldom found near the Sea-ſhore.

Dr. *Woodward* aſſerts it a Shell, and of the Number of the Nautili, form'd in the Sea, and carried thence by the Waters of the Deluge into the Countries whence 'tis dug. He argues, that if it be rarely found on the Sea-Coaſts, 'tis becauſe Shells and other Bodies faſten'd to the bottom of the Sea, as moſt Kinds of the *Cornua Ammonis* muſt be, are only to be tore thence and driven aſhore by Tempeſts: but the moſt violent Tempeſts never move the Bottom of the Sea, as the Divers have put paſt doubt; ſo that 'tis no wonder if none of the *Cornua* be thrown up: But in the overturning of the Earth by the Deluge, theſe, with a thouſand more Productions of the Sea, might be thrown from the bottom of the Waters to the Places where they are now found. See SHELL.

The *Cornua Ammonis* are of different thickneſſes and lengths; ſome of 'em weigh about three Pounds. It is found in ſeveral Places in *Germany*. From ſome Experiments that have been made therewith, it's found to contain a little quantity of Gold; which ſinks to the bottom upon pounding it ſmall, and ſtirring it in a running Water, till all the earthy Parts were carried off.

'The Stone call'd *Cornu Ammonis* is frequent in the Clay 'wherein the Trochites and Entrochi are found: The lar'geſt I have is ſeven Inches in length, and four in circum'ference at the big End, and two and a half at the ſmaller; 'the Tip being broke off. Tracing its Origin, I find ſome 'of the firſt Buddings out of it about the bigneſs of a young 'Cock's Spur, and very much like it: I have ſome in raw 'Clay; and one growing of a white cawky Stone. They 'generally become at laſt a whitiſh Spar, and ſome milk'white, as ſome of the Trochites are.' See TROCHITÆ.

'There are of all intermediate Proportions between theſe 'two; tho very few of any bigneſs are to be found entire, 'but all broken and imperfect Pieces. The Texture of the 'Stone is thus: Some have a moſſy Spar in their inſides, 'which takes up three Parts of the Stone; then from the 'ſharp top there grows thin flat Cells, or ſmall Pipes of Spar 'ſet edgewiſe one cloſe to the other, which ſhoot towards 'the broad End, and appear outwardly like ſmall Ridges or 'Seams. There are likewiſe Rings running round it, tend'ing in their growth towards the broad End, as in a Ram's 'Horn. Moſt of the leſſer Stones have very little moſſy

'Spar within 'em, and ſome none, with Cells coming down 'inwardly from the top of the Stone, reſembling thoſe in 'the Flowers of Coral, that terminate its Branches. And 'doubtleſs, if taken from their Beds in a ſeaſonable time, 'would yield the like milky Juice.' *Mr.* Beaumont, *ap.* '*Philoſoph. Tranſact.* N° 129. See ROCK-*Plant.*

CORNU *Cervi*, *Hartſhorn*, in Medicine, one of the Teſtaceous Pouders. See TESTACEOUS.

Among Chymiſts, the ſame Name is uſed for the Mouth of an Alembic.

CORNUA *Uteri*. See UTERUS.

CORNUCOPIA, among the Poets, a Horn out of which proceeded all things in abundance, by a particular Privilege which *Jupiter* granted his Nurſe, ſuppoſed to be the Goat *Amalthea*.

The real Senſe of the Fable is this; that in *Lybia* there is a little Territory ſhaped not unlike a Bullock's Horn, exceedingly fertile, given by King *Ammon* to his Daughter *Amalthea*, whom the Poets feign to have been *Jupiter*'s Nurſe.

In Architecture and Sculpture, the *Cornucopia*, or Horn of Plenty, is repreſented under the Figure of a large Horn, out of which iſſue Fruits, Flowers, &c.

On Medals, F. *Jobert* obſerves, the *Cornucopia* is given to all Deities, Genii, and Heroes.

CORNUTUM *Argumentum*. See DILEMMA.

CORONA, *Crown*, or *Crowning*, in Architecture, a large flat ſtrong Member of the Cornice; ſo called, becauſe it crowns not only the Cornice, but the Entablature, and the whole Order. See ENTABLATURE.

The *French* call it the *Larmier*, our Workmen the *Drip*, as ſerving, by its great Projecture, to ſkreen the reſt of the Building from the Rain. See LARMIER.

Some *Latin* Authors call it *Supercilium*; but, as it ſhou'd ſeem, by miſtake for *Stillicidium*. Some *French* Authors call it *Mouchette*; ſome *Latin* ones *Mentum*, Chin; from its keeping off the Weather from the Parts underneath, as the Chin does the Sweat, &c. out of the Neck.

Some call it abſolutely the *Cornice*, as being the principal Member thereof. *Vitruvius* frequently uſes the Word *Corona* for the whole Corniche. See CORNICHE.

The *Corona* is it ſelf *crown'd* or finiſh'd with a Reglet, or Fillet.

There are ſometimes two *Corona's* in a Cornice; as in the *Corinthian* of the *Rotunda*.

CORONA *Borealis*, *Northern Crown*, in Aſtronomy, a Conſtellation of the Northern Hemiſphere. See CONSTELLATION.

The Stars in the Conſtellation of the *Northern Crown*, in *Ptolemy*'s Catalogue are 8; in *Tycho*'s as many; in the *Britannic Catalogue* 21. The Order, Names, Longitudes, Latitudes, Magnitudes, &c. are as follow.

Stars in the Conſtellation CORONA BOREALIS.

Names and Situations of the Stars.	Signs.	Longitude. °	′	″	Latitude. °	′	″	Magn.
	♏	2	5	16	45	57	52	6 7
That preced. the *Corona*, without ſide		2	44	45	46	49	30	5
That next the *Lucida*, towards the N.		4	45	53	46	0	40	4
Anoth. following this, and more Nor.		5	5	20	48	34	50	4 5
Lucida of the *Corona*		7	55	56	44	21	17	2 3
5								
1ſt of the *Informes* over the Crown		0	58	43	55	48	50	5
Second		3	58	22	53	59	32	4
That following the *Lucida* to the So.		10	31	50	44	32	18	4
Nor. in the Circumference of the *Coro.*		7	50	41	50	30	3	5
Sou. in the Circumference of the *Coro.*		12	40	33	44	48	22	4
10								
3d of the *Informes* over the Crown		8	17	34	53	59	43	5
4th of the *Informes*		3	49	7	60	15	50	6
5th over the *Corona*		8	18	21	56	25	32	5
3d of thoſe following the *Lucida* Sout.		14	46	15	46	6	27	4 5
Laſt of all in the *Corona*		14	39	38	49	11	21	5 6
15								
6th over the *Corona*		12	48	24	52	30	42	6
North. of thoſe following the *Corona*		13	42	50	55	57	53	6
Preced. of the middle		17	4	43	53	52	41	6
South. of thoſe following the *Corona*		19	51	15	49	28	4	6
Poſterior of the middle ones		20	54	10	51	27	0	5
20								
Another following 'em all	♏	19	40	31	54	16	36	5

CORONA *Clericalis*. See CROWN; ſee alſo COIF.

CORONALE *Os*, in Anatomy, the Bone of the Forehead; called alſo *Os Frontis*, *Os Puppis*, and *Verecundum*. See *Os* FRONTIS.

CORONALIS, the firſt Suture of the *Cranium*, or Skull. See SUTURE.

The *Coronal* Suture reaches tranſverſly from one Temple to the other; and joins the *Os Frontis* with the *Oſſa Parietaria*.

It is open, the breadth of a Finger or two in the middle, in young Children, but grows cloſer with Age: tho ſometimes, by Convulſion-Fits, or a bad Conformation, it not only cloſes in Children, but the Edges ſhoot over one another; which is what the Women call *Head-mould-ſhot*; after which they ſeldom live long.

CORONARIA *Vaſa*, CORONARY *Veſſels*, the Arteries and Veins which ſurround the Heart, to nouriſh and ſupply it with Blood, &c. See CORONARY *Arteries*.

CORONARY *Arteries*, are two Arteries ſpringing out of the *Aorta*, ere it leaves the *Pericardium*; and ſerving to carry the Blood into the Subſtance of the Heart. See HEART.

At their riſe out of the *Aorta*, there is a Valve to hinder the Reflux of the Blood; firſt diſcover'd by *B. Euſtachio* a Native of *San Severino*. See VALVE.

They are call'd *Coronary*, becauſe of their ſpreading into Branches, and encompaſſing the Baſis of the Heart, in manner of a *Crown*, or Garland. In their progreſs, they ſend out ſeveral Branches lengthwiſe of the Heart; and, as *Ruyſch* obſerves, to the Auricles, and into the very Subſtance of the Heart: After incompaſſing the Baſis, and meeting again, they inoſculate with each other.

CORONARY *Vein*, is a Vein diffus'd over the exterior Surface of the Heart: It is form'd from ſeveral Branches ariſing from all Parts of the *Viſcus*, and terminates in the *Vena Cava*, whither it conveys the Remains of the Blood brought by the *Coronary* Arteries.

Stomachic CORONARY, is a Vein inſerted into the Trunk of the Splenic Vein; which by uniting with the *Meſenteric*, forms the *Vena Porta*.

CORONE, in Anatomy, a ſharp pointed Eminence, or Proceſs of a Bone. See BONE.

Of theſe there are ſeveral in the Body, diſtinguiſh'd, according to their Figures, by different Names; *e.g.* one of the *Os Petroſum*, called *Styloides*; as being ſlop'd like a Bodkin: Another call'd *Maſtoides*, from its reſembling a Nipple; another of the *Omoplata*, call'd *Coracoides*; as being in the Figure of a Crow's Bill: laſtly, another of the *Os Sphenoides*, called *Pterigoides*, from its ſhape, which reſembles the Wings of a Bat. See STYLOIDES, CORACOIDES, &c.

CORONER, an Officer, whereof there are two in every County, whoſe Buſineſs is to inquire, by a Jury of twelve Neighbours, how, and by whom any Perſon came by a violent Death; and to enter the ſame upon record. This, being Matter Criminal, and a Plea of the Crown, 'tis hence they are called *Crowners*, or *Coroners*.

They are choſen by the Freeholders of the County, by Virtue of a Writ out of Chancery.

This Officer, by the Statute of *Weſtminſter*, ought to be a Knight; and there is a Writ in the Regiſter *Niſi ſit Miles*, whereby it appears to be a ſufficient Cauſe for removal of a *Coroner* choſen, if he were not a Knight, and had not 100 Shillings *per Ann.* Freehold. Mention is made of this Officer as early as the Time of King *Athelſtan*, *Anno* 925.

The Lord Chief Juſtice of the King's-Bench is the Sovereign *Coroner* of the whole Realm, or whereſoever he abides.

There are alſo certain *Special Coroners* within divers Liberties, as well as the ordinary Officers in every County; and ſome Colleges and Corporations are impower'd by their Charters, to appoint their *Coroner* within their own Precincts.

CORPORA *Cavernoſa*, in Anatomy, two ſpongious Bodies, called alſo *Corpora Nervoſa*, and *Corpora Spongioſa*. See CAVERNOSA *Corpora*, &c.

CORPORA *Olivaria*. See OLIVARIA *Corpora*.

CORPORA *Pyramidalia*, are two Protuberances of the Under-part of the *Cerebellum*, about an Inch long; ſo called from their Reſemblance to a Pyramid. See PYRAMIDALIA.

CORPORA *Striata*, two Protuberances of the *Crura* of the *Medulla Oblongata*. See MEDULLA *Oblongata*.

CORPORAL, an inferior Officer in a Company of Foot, who hath charge over one of the Diviſions; places and relieves Centinels, and keeps good Order in the *Corps de Garde*; receiving, withal, the Word, of the inferior Rounds that paſs by his *Corps de Garde*.

There are uſually three *Corporals* in each Company. See COMPANY.

The Word comes from the Italian *Corporale*, which ſignifies the ſame thing; and that from *Caput*, Head, Chief; the *Corporal* being the firſt of the Company.

CORPORAL *of a Ship*, is an Officer who hath the Charge of ſetting the Watch and Centries, and relieving them; and who ſees that all the Soldiers and Sailors keep their Arms neat and clean: He alſo teaches them how to uſe their Arms, and hath a Mate under him.

CORPORAL *Oath*. See OATH.

CORPORAL, CORPORALE, is alſo an antient Church Term, ſignifying the Sacred Linen, ſpread under the Chalice in the Euchariſt and Maſs, to receive the Fragments of the Bread, if any chanced to fall.

Some ſay, it was Pope *Euſebius* who firſt enjoin'd the Uſe of the *Corporal*; others ſay S. *Silveſter*. It was the Cuſtom to carry *Corporals*, with ſome Solemnity, to Fires, and to raiſe 'em againſt the Flames, in order to extinguiſh 'em.

Philip de Comines ſays, the Pope made *Louis* XI. a Preſent of the *Corporale* wherein my Lord S. *Peter* ſung Maſs.

CORPORATION, a Body Politick, or *Incorporate*; ſo call'd, becauſe the ſeveral Members thereof are form'd into one Body; and are qualify'd to take, purchaſe, grant, have a common Seal, ſue and be ſued, *&c.* in their joint Capacity.

A *Corporation* may be eſtabliſh'd three ways, *viz.* by Preſcription, by Letters Patent, and by Act of Parliament.

Corporations are either *Eccleſiaſtical*, or *Lay*.

Eccleſiaſtical are either *Regular*, as Abbies, Priories, Chapters, *&c.* or *Secular*, as Biſhopricks, Deanaries, Archdeaconries, Parſonages, *&c.* Univerſities, Colleges, Hoſpitals. See ABBEY, PRIORY, CHAPTER, *&c.* ſee alſo HOSPITAL, *&c.*

Lay, as thoſe of Cities, Towns, Mayoralties, Bailliwicks, Companies or Communities of Commerce, *&c.* See COMPANY, *&c.*

Again, a *Corporation* is either *ſole*, or an aggregate of *many*; which laſt is what the Civilians call a *College*. See COLLEGE; ſee alſo COMMUNITY.

CORPOREITY, a School Term. Subſtance is uſually divided into *Corporeal* and *Spiritual*: Now *Corporeity* is the Quality of that which is *Corporeal*, or has Body; or that which conſtitutes or denominates it ſuch. See SUBSTANCE, and BODY.

The *Corporeity* of God was the capital Error of the *Anthropomorphites*. Some Authors reproach *Tertullian* with admitting a *Corporeity* in the Deity; but 'tis manifeſt, by *Body* he means no more than *Subſtance*.

The *Mahometans* reproach the *Samaritans* at this Day, with a Belief of the *Corporeity* of God. Many of the Antients believ'd the *Corporeity* of Angels.

CORPORIFICATION, or *Corporation*, in Chymiſtry, the Operation of recovering Spirits into the ſame Body, or at leaſt into a Body nearly the ſame, with that which they had before their Spiritualization. See SPIRIT.

CORPS *de Garde*, a Poſt in an Army, ſometimes under Covert, ſometimes in the open Air, to receive a Body of Soldiery, who are reliev'd from time to time, and who are to watch in their Turns, for the Security of a Quarter, a Camp, Station, *&c.*

The Word is alſo uſed for the Men who watch therein.

'Tis uſual to have, beſide the *great*, a *little Corps de Garde*, at a good diſtance before the Lines; to be the more readily advertis'd of the Approach of the Enemy.

CORPS, in Architecture, is a Term borrow'd from the *French*, ſignifying any Part that projects or advances beyond the Naked of a Wall; and which ſerves as a Ground for ſome Decoration. See PROJECTURE.

CORPS *de Bataille*, is the main Body of an Army, drawn up for Battle.

CORPULENCY. See OBESITY, and FATNESS.

CORPUS, and CORPORA, *Body*, *Bodies*, in Anatomy, Terms apply'd to ſeveral Parts in the Animal Structure; as the *Corpus Calloſum*, *Corpora Striata*, and *Olivaria* of the Brain; the *Corpora Cavernoſa* and *Nervoſa* of the Penis; *Corpus Glanduloſum*, *Corpus Reticulare*, &c. See CALLOSUM *Corpus*, OLIVARIA *Corpora*, &c.

CORPUS is alſo uſed in Matters of Learning, for ſeveral Works of the ſame Nature, collected, join'd, and bound together. Thus, *Gratian* made a Collection of the Canons of the Church, called *Corpus Canonum*. See CANON.

The *Corpus* of the Civil Law is compos'd of the Digeſt, Code, and Inſtitutes. See CIVIL *Law*; ſee alſo CODE, and DIGEST.

We have alſo a *Corpus* of the *Greek* Poets; and another of the *Latin* Poets. See BODY.

CORPUS *Calloſum*, is the Upper-part, or covering of the two lateral Ventricles of the Brain, appearing immediately under the Proceſs of the *Dura Mater*, below the Depth of all the Circumvolutions; being form'd by the Union of the Medullary Fibres of each ſide. See BRAIN.

CORPUS *Glanduloſum*. See PROSTRATÆ.

CORPUS *Reticulare*. See RETICULARE *Corpus*.

CORPUS *cum Cauſa*, in Law, a Writ iſſuing out of Chancery, to remove both the Body and Record touching the Cauſe of any Man lying in Execution upon a Judgment for Debt, into the King's-Bench, *&c.* there to lie till he has ſatisfy'd the Judgment.

CORPUSCLE, in Phyſicks, a Diminutive of *Corpus*, us'd to expreſs the minute Parts, or Particles that conſtitute Natural Bodies. See PARTICLE, and BODY.

Corpuſcles are the ſame with what the Antients call'd *Atoms*; and differ both from the Elementary and Hypoſtatical Parts of the Chymiſts, and the *Materia Subtilis* of the *Carteſians*. See ATOM, PRINCIPLE, SUBTLE, MATTER, *&c.*

Sir *Iſaac Newton* ſhews a Method of determining the Sizes of the *Corpuſcles* whereof the Particles that compoſe Natural Bodies conſiſt, from their Colours. See COLOUR.

CORPUSCULAR or *Atomical Philoſophy*, the Scheme or Syſtem of Phyſicks, wherein the Phænomena are accounted for, from the Motion, Reſt, Poſition, Arrangment, *&c.* of the minute *Corpuſcles*, or Atoms, whereof Bodies are compos'd.

The *Corpuſcular Philoſophy*, which now flouriſhes under the Title of the *Mechanical Philoſophy*, is exceedingly antient. *Leucippus* and *Democritus* were the firſt who taught it in *Greece*; from them *Epicurus* receiv'd it and improv'd it, inſomuch that it came at length to be denominated from him, and was call'd the *Epicurean Philoſophy*. See EPICUREAN.

Leucippus, again, is ſaid to have receiv'd it from *Mochus* a *Phenician* Phyſiologiſt and Phyſician, before the Time of the *Trojan* War, and the firſt who philoſophiz'd about Atoms: Tho *Gale*, who borrows all Profane Philoſophy from the Sacred Philoſophy in the Books of *Moſes*, is of Opinion he might take the Hint from the *Moſaic* Hiſtory of the Formation of Man out of the Duſt of the Earth.

Indeed, *Caſaubon* takes Μῶκον, or Μῶχον, to be the Name of a *Tyrian*, who among his own Countrymen was called משה *Moſche*, or according to the Method of writing which then obtain'd, *Moſes*: whence 'tis conjectur'd that the *Moſche*, or *Moſchus* of the *Tyrians*, was, in effect, the *Moſes* of the *Hebrews*.

This appears to be the Sentiment of *Selden*, *Arcerius*, &c. But the Opinion of *Bochart* is the more probable, who from *Poſidonius* and others, takes *Mochus* for an Inhabitant of *Sidon*, and his Philoſophy to be nothing elſe but a Phyſiological or Natural Hiſtory of the Creation.

After *Epicurus*, the *Corpuſcular Philoſophy* gave way to the *Peripatetic*, which became the popular Syſtem. See PERIPATETIC.

Thus, in lieu of Atoms, were introduc'd Specific and Subſtantial Forms, Qualities, Sympathies, *&c.* which amus'd the World till *Gaſſendus*, *Charleton*, *des Cartes*, *Boyle*, *Newton*, and others, retriev'd the old *Corpuſcularian* Hypotheſis; which is now become the Baſis of the Mechanical, and Experimental Philoſophy. See MECHANICAL, EXPERIMENTAL, and NEWTONIAN.

Mr. *Boyle* reduces the Principles of the *Corpuſcular* Philoſophy to the four following Heads:

1ſt, That there is but one Catholick, or Univerſal Matter, which is an extended, impenetrable, and diviſible Subſtance, common to all Bodies, and capable of all Forms. See MATTER.

This Sir *I. Newton* finely improves on: 'All Things conſider'd, *ſays that great Author*, it appears probable to me, 'that God, in the Beginning, created Matter in ſolid, hard, 'impenetrable, moveable Particles; of ſuch Sizes and Figures, and with ſuch other Properties, as moſt conduced to 'the End for which he form'd 'em: And that theſe primitive Particles, being Solids, are incomparably harder 'than any of the ſenſible porous Bodies compounded of 'em; even ſo hard as never to wear or break in pieces: 'no other Power being able to divide what God made one 'in the firſt Creation. While theſe *Corpuſcles* remain entire, they may compoſe Bodies of one and the ſame Nature and Texture in all Ages: but ſhould they wear away, 'or break in pieces, the Nature of things depending on 'em 'wou'd be chang'd: Water and Earth, compos'd of old 'worn Particles, and Fragments of Particles, wou'd not be 'of the ſame Nature and Texture now, with Water and 'Earth compos'd of entire Particles at the Beginning. And 'therefore, that Nature may be laſting, the Changes of *Corporeal* Things are to be plac'd only in the various Separations and new Aſſociations of theſe permanent *Corpuſcles*.' *Opticks*.

2d, That this Matter, in order to form the vaſt Variety of Natural Bodies, muſt have Motion, in ſome or all its aſſignable Parts; and that this Motion was given to Matter by God the Creator of all Things: and has all manner of Directions and Tendencies.

'Theſe *Corpuſcles*, *ſays Sir* I. Newton, have not only a '*Vis Inertiæ*, accompanied with ſuch paſſive Laws of Motion as naturally reſult from that Force; but alſo are 'moved by certain active Principles; ſuch as that of Gravity, and that which cauſes Fermentation, and the Coheſion 'of Bodies.' See GRAVITY, FERMENTATION, *&c.*

3d, That Matter muſt alſo be actually divided into Parts, and each of theſe primitive Particles, Fragments, or Atoms of Matter, muſt have its proper Magnitude, Figure, and Shape.

4th, That theſe differently fiz'd and ſhap'd Particles, have different Orders, Poſitions, Situations, and Poſtures; from whence all the Variety of Compound Bodies ariſes.

CORRECTION, in Printing, the Retrenching of the Faults in a Work; or the Reading which the Maſter, or in his Place the Corrector, give the firſt Proofs, to point out and correct the Faults, to be adjuſted, in the Forms, by the Compoſitor. See PRINTING.

The

The *Corrections* are plac'd on the Margin of each Page, right againſt the Line where the Faults are found. There are different Characters us'd to expreſs different *Corrections*, *v. g.* *D* or *ꝺ dele*, for any thing to be effaced, or left out. When any thing is to be inſerted, the Place is mark'd in the Line with a Caret ∧ and the Inſertion added in the Margin. When a Word, Syllable, *&c.* is to be alter'd, 'tis eras'd out of the Proof, and that to come in its room written in the Margin; always obſerving, if there be ſeveral in the ſame Line, that they be ſeparated by little Bars or Strokes, |. If a Space be omitted, its Place is mark'd with a Caret, and the Thing expreſs'd on the Margin with ⁂. If a Letter be inverted, 'tis expreſs'd on the Margin with ℈. If any thing be tranſpos'd, 'tis mark'd thus; *The ſhorteſt are the Follies beſt*; for, *The ſhorteſt Follies are the beſt*: and in the Margin is added *tr* in a Circle. If *Roman* Characters are to be chang'd for *Italic*, or *vice verſa*, a Line is drawn under them thus, and *Rom.* or *Ital.* added in the Margin. See COMPOSITION.

CORRECTION, in Rhetorick, a Figure, whereby a Perſon in a Paſſion fearing he has not expreſs'd a thing fully, or ſtrongly enough, calls it back again, as it were, by a ſtronger Phraſe, and *corrects* the Error. See FIGURE.

Thus *Cicero pro Cælio*; *O ſtultitia! ſtultitiam ne dicam an impudentiam ſingularem. O Folly! Folly do I call it, or rather Impudence.* And in the firſt *Catilinarian*; *Quanquam, quid loquor: te, ut ulla res frangat; tu, ut unquam te corrigas; tu, ut ullam fugam mediteris.* Thus *Terence*, in the *Heautontimorumenos*: *Filium unicum adoleſcentulum habeo: Ah! quid dixi, habere me; imo, habui Chreme; nunc habeam necne incertum eſt.*

CORRECTION, in Pharmacy, the Preparation of a Medicine, in order to moderate and qualify the too great Violence of its Action; as when Glaſs of Antimony is calcin'd with a little Salt-petre; or, to prevent its giving the Gripes, when Salt of Tartar is diſſolv'd in an Infuſion of Senna. Hence,

CORRECTORS, in Medicine, ſuch Ingredients in a Compoſition as guard againſt, or abate the Force of others.

Thus, the Lixivious Salts prevent the grievous Vellications of Reſinous Purges, by dividing their Particles, and preventing their Adheſions to the inteſtinal Membranes, whereby they ſometimes occaſion intolerable Gripings: And thus Spices, and carminative Seeds alſo, aſſiſt in the eaſier Operation of ſome Cathartics, by diſſipating Collections of Wind.

In the making a Medicine, likewiſe, ſuch Things are called *Correctors*, as deſtroy or diminiſh a Quality in it that could not otherwiſe diſpens'd with: Thus, Turpentine may be called the *Corrector* of Quickſilver, by deſtroying its Fluxility, and making it thereby capable of Mixture: and thus rectified Spirit of Wine breaks off the Points of ſome Acids, ſo as to make them become ſafe and good Remedies, which before were deſtructive.

CORRELATIVE, ſomething oppos'd to another in any certain Relation. See RELATIVE.

Thus, the Father and the Son are two *Correlatives*; *Pater & Filius ſibi mutuo reſpondent.* Light and Darkneſs, Motion and Reſt, are *correlative*, and oppoſite Terms.

CORRIDOR, in Fortification, a Road or Way along the Edge of the Ditch, withoutſide; incompaſſing the whole Fortification. See DITCH.

It is alſo called the *Covert way*; becauſe cover'd with a Glacis, or Eſplanade, ſerving it as a Parapet. See COVERT *Way*.

The *Corridor* is ordinarily about 20 Yards broad.

The Word comes from the Italian *Coridore*, or the Spaniſh *Coridor*.

CORRIDOR is alſo uſed in Architecture for a Gallery, or long Iſle, around a Building, leading to ſeveral Chambers at a diſtance from each other.

CORRIVAL, a Relative Term, ſignifying, originally, a Perſon who drew Water from the ſame Source or Spring with another; by means of ſome common Canal, which carried it to both their Lands; and which prov'd the Occaſion of frequent Diſputes.

Hence the Word came to be uſed for thoſe who have the ſame Pretenſions; whether to Glory, to Love, or the like: but uſe has abridg'd the Word; and we now both write and pronounce *Rival*.

CORROBORATIVE, in Medicine, any thing that increaſes the Strength, or gives a new Force. See STRENGTHNER.

The Word is likewiſe frequently apply'd to ſuch Medicines as are of uſe in particular Weakneſſes; as the *Fluor Albus*, Gonorrhæas, *&c.* Such are Terebinths, *&c.*

All Cardiacs are *Corroborative*. See CARDIAC.

CORROSION, the Action of *corroding*, or gnawing away, by little and little, the Continuity of the Parts of Bodies.

Thus, Acids *corrode* moſt Natural Bodies; and Arſenic only kills, becauſe it *corrodes* the Bowels with its ſharp, pointed Particles. See ARSENIC, POISON, *&c.*

Corroſion is uſed both in Chymiſtry, Medicine, and Natural Philoſophy; where it ſtands for a particular Species of Diſſolution, either by an Acid, or a ſaline Menſtruum. See DISSOLUTION.

What *Corroſion* has peculiar to it, is, that 'tis moſtly deſign'd for the Reſolution of Bodies the moſt ſtrongly compacted, as Bones and Metals; ſo that the Menſtruums imploy'd require an uncommon Moment, or Force.

Now the *Corroſive* Liquors, whether acid or urinous, are nothing but Salts diſſolv'd in a little Phlegm: Therefore, theſe being ſolid, and conſequently containing a conſiderable quantity of Matter, do both attract one another the more, and are alſo more attracted by the Particles of the Body, which is to be diſſolv'd. And as their Attractions at equal Diſtances are proportional to their Bulks, *cæteris paribus*; ſo when the more ſolid Bodies are put into ſaline Menſtruums, the Attraction is ſtronger than other Solutions; and the Motion, which is always proportional to the Attraction, more violent. See ATTRACTION.

Hence we eaſily conceive how they ſhould drive thoſe Salts, like ſo many Darts, into the Pores of the Bodies, and open and looſen the Coheſion of them, tho ever ſo firm. See ACID.

Again, we know, the more minute the Particles of the Menſtruum are, the ſooner they penetrate, and with the greater Force: The Motion produc'd by Attraction, being always greateſt in the leaſt Corpuſcles, next to nothing in the large ones.

Add to this another advantage gain'd by this minuteneſs of the Particles, *viz.* that they approach nearer the Body to be diſſolv'd; without which, the attractive Force wou'd be inſenſible. Hence, thoſe very Salts, which diſſolv'd in Water will hardly touch Metals, if once turn'd into acid Spirits, eaſily penetrate: For in Diſtillation, not only a greater Quantity of Water remains, but the ſaline Bodies are ſo minutely broken, and divided by the Fire, as to make them more readily capable of being mov'd by an attractive Force; and therefore ſuch a diſtill'd Menſtruum is much more efficacious than any Solution of Salt made with Water. See MENSTRUUM.

CORRUGATOR *Supercilii*, or CORRUGENT *Muſcle*, a Muſcle ariſing from the great Canthus of the Orbit of the Eye, and terminating in the Skin about the middle of the Eyebrows. See EYEBROWS.

Some reckon this Muſcle only a Prolongation of the *Frontales*. Its Name declares its Uſe; being form'd of *Con* and *Rugo*, to wrinkle up, and knit the Brows.

CORRUGENT *Muſcle*, the ſame as *Corrugator Supercilii*. See CORRUGATOR.

CORRUPTICOLÆ, a Sect of antient Hereticks, who aroſe out of the *Eutycheans* in *Egypt*, about the Year 531, under their Chief, *Severus*, the pretended Patriarch of *Alexandria*.

Their diſtinguiſhing Doctrine, whence they deriv'd their Name, was, that the Body of Jeſus Chriſt was *corruptible*; that the Father had own'd it; and that to deny it was to deny the Truth of our Saviour's Paſſion.

On the other hand, *Julian* of *Halicarnaſſeus*, another *Eutychean*, a Refugee as well as *Severus*, in *Alexandria*, maintain'd that the Body of Jeſus Chriſt had been always Incorruptible; that to ſay it was Corruptible, was to make a Diſtinction between Jeſus Chriſt and the Word, and by conſequence to make two Natures in Jeſus Chriſt.

The People of *Alexandria* were divided between the two Opinions; and the Partiſans of *Severus* were called *Corrupticolæ*, q. d. Worſhipers of ſomething *Corruptible*: Sometimes they were denominated *Corruptibiles*; and the Adherents of *Julian Incorruptibiles*, or *Phantaſiaſtes*.

The Clergy and Secular Powers favour'd the firſt; the Monks and the People the latter.

CORRUPTION, the Extinction of any thing; or the Action whereby it ceaſes to be what it was.

Thus, Wood is ſaid to be *corrupted*, when we don't ſee it remain Wood any longer, but find Fire in its ſtead. And thus the Egg is *corrupted*, when it ceaſes to be an Egg, and we find a Chicken in its room.

Hence that Axiom in Philoſophy, *The Corruption of one thing is the Generation of another.*

Corruption, in effect, differs from Generation, as two Contraries differ from each other. See GENERATION.

It differs from *Alteration* as the Leſs from a Greater, or a Part from the Whole; a Thing being ſaid to be *alter'd*, when it is not ſo far chang'd but it may be known, and ſtill keeps its old Name; both which it loſes by *Corruption*. See ALTERATION.

But, as in Generation, nothing of Matter is produced that did not before exiſt; ſo in *Corruption*, nothing more is loſt, than that particular Modification which was its Form, and made it to be of ſuch a Species. See FORM.

Dr. *Drake* accounts for *Corruption* in Animal and Vegetable Bodies, thus; 'The Principle of *Corruption* is, perhaps, the ſame which in a State of Circulation is the Principle of Life; *viz.* the Air, which is found mix'd in conſiderable Quantities with all ſorts of Fluids; as neceſſary to Vegetable, as to Animal Life. Now this Air has two Motions, *viz.* an expanſive one, from its natural Elaſticity, by means whereof it communicates that inteſtine Motion which all Juices have, and by which the containing Parts are gradually extended and grow; and a circulatory or progreſſive Motion, which is not eſſential to it, but is occaſion'd by that Reſiſtence of the ſolid Parts of thoſe Bodies, which obliges it to take that Courſe which is moſt free and open, which is thro' the Veſſels of Animals and Plants.

'Now, this Courſe being ſtop'd, the expanſive Motion ſtill remains, and continues to act, till by degrees it has ſo far overcome the including Bodies, as to bring it ſelf to an equal degree of Expanſion with the external Air; which it cannot do without deſtroying the Texture and Continuity, or ſpecifick degree of Coheſion of thoſe Solids; which is what we call a *State of Corruption*.

'This expanſive or deſtructive Quality of the Air in Bodies, may be promoted two ways; and therefore *Corruption* accelerated in as many, *viz.* either by weakning the Tone or Coheſion of the including Parts, and ſo facilitating the Work of the Air; as is the Caſe when Fruit is bruis'd, which is found to *corrupt* much ſooner there than in any other Part: or by intending the expanſive Force of the Air it ſelf, by Heat, or ſome other co-operating Circumſtance; and ſo helping it to overcome the Reſiſtance the ſooner.' See AIR.

CORRUPTION *of Blood*, in Law, an Infection accruing to a Man's State, attainted of Felony or Treaſon, and to his Iſſue. See TREASON, ATTAINTED, *&c.*

For, as he loſes all to the Prince, or other Lord of the Fee, ſo his Iſſue cannot be Heirs to him, or to any other Anceſtor by him: and if he were Noble, or a Gentleman, he and his Heirs are thereby ignobled and ungenteel'd.

The King's Pardon cleanſes the *Corruption of Blood* in thoſe Children born after the Pardon, not of thoſe born before it; theſe latter continuing ſtill incapable of inheriting the Land of their Father, purchas'd before the Time of the Pardon.

But note, there are ſeveral Offences now made Treaſon by Act of Parliament which don't *corrupt* the Blood, nor ſhall the Criminal forfeit any thing thereby beſide what he has for Life.

CORSAIR, a Pirate, or Perſon who ſcours the Seas, eſpecially the *Mediterranean*, with a Veſſel arm'd for War, without Commiſſion from any Prince or Power; to plunder Merchant Veſſels. See PIRATE.

The *Corſair* is diſtinguiſh'd from a Privateer in this, that the latter does it under a Commiſſion, and only attacks the Veſſels of thoſe at War with the State whence his Commiſſion is deriv'd. See PRIVATEER.

The Puniſhment of a *Corſair* is to be hang'd, without Remiſſion; whereas Privateers are to be treated as Priſoners of War. All *Corſair* Veſſels are good Prizes. See PRIZE.

The Word comes from the Italian *Corſaro*, of *Corſis*, or *à Curſibus*, or *à Caurſinis*, or *à Coryceelis*. *Menage*, &c.

CORSELET, a little *Cuiraſſe*, according to ſome, and according to others, a Coat, or Cover for the whole Trunk, antiently wore by the Pikemen, commonly plac'd in the Front and Flanks of the Battle, for the better Reſiſtance of the Enemy's Aſſaults, and the ſurer Guard of the Gunners plac'd behind or within them. See CUIRASSE.

Vaugelas obſerves, that the Seamen were antiently arm'd with *Corſelets*.

CORSEPRESENT, in our antient Authors, denotes a *Mortuary*. See MORTUARY.

The Word is form'd of the *French*, *Corps preſente*; and the Reaſon of the Denomination is probably this: that where a Mortuary after any Man's Death became due, the beſt or ſecond beſt Beaſt was offer'd or *preſented* to the Prieſt, and carried along with the *Corpſe*.

CORSNED *Bread*, a ſuperſtitious manner of Trial, uſed among our *Saxon* Anceſtors, by a piece of Barley-Bread, firſt execrated by the Prieſt, then offer'd the ſuſpected Criminal to be ſwallow'd, by way of Purgation; from an Opinion that a guilty Perſon could not ſwallow a piece of Bread ſo accurs'd, or if he did, it would choke him.

The Ceremony was accompanied with a Prayer, beſeeching God, 'That the Criminal's Jaws might be ſhut, his Throat ſo narrow that he might not ſwallow, and that he might caſt it out of his Mouth.'

CORTES, a Term purely *Spaniſh*, properly ſignifying the *Court*, *i.e.* the States, or Aſſembly of the States in *Madrid*. The Word is uſed in ſpeaking of the Affairs of *Spain*.

CORTEX, a *Latin* Name, denoting the Bark, or outer Cover of a Plant, or the like. See BARK.

CORTEX *Peruvianus*, call'd alſo *Quinquina*, *Kinkinna*, *Quinaquina*, *Pulvis Patrum*, and popularly the *Jeſuit's Bark*; is the Bark of a Tree growing in the *Weſt-Indies*, called by the *Spaniards Palo de Caſſenturas*, q. d. *Fever-Wood*; by reaſon of its extraordinary Virtue in removing all Kinds of intermitting Fevers and Agues. See FEVER.

The *Indians* commonly call it the *Fuddling Tree*, from the Property it has of intoxicating Fiſhes, when either its Wood or Bark is beaten, and ſteep'd in the Water where they are.

The Tree that yields this noble Specific, is only found in *Peru*; in the Province of *San Franceſco de Quitto*, or *Quinto*, near the City of *Loxe*: tho ſome ſay 'tis alſo found in that of *Potoſi*; and F. *Labat*, in the Iſland of *Guadeloupa*.

The Bark, while on the Tree, is ſtreak'd, of a whitiſh yellow withoutſide, and a pale tan-colour within.

'Tis about 70 Years ſince this noble Febrifuge was firſt known in *England*. It was firſt introduc'd into uſe by the Cardinal *de Lugo*; whence, in *France*, it was firſt called from the Name of that Cardinal. Afterwards it became known by the Name of the *Jeſuit's Pouder*, and the *Jeſuit's Bark*; becauſe ſold by the Jeſuits, to whom that Cardinal, who had been of their Society, left great Quantities of it.

When firſt introduc'd, it is ſaid to have been ſold for about eight Shillings Sterl. the Doſe; which great Price, with the little Effects found from it, by reaſon of their Ignorance of the manner of preparing and preſcribing it, occaſion'd its being diſus'd, till about the Year 1706, that Dr. *Talbot*, an *Engliſh* Phyſician, brought it into vogue again, by the great Number of Cures wrought about the Court and City of *Paris*, with this Pouder, prepar'd after his manner; the Secret whereof was ſoon after made publick by the Munificence of *Louis* XIV. who rewarded *Talbot* for the Communication.

The *Quinquina* is ſold either in Bark or in Pouder: thoſe who buy it in the Bark muſt chuſe it very dry and compact; ſuch as has never been moiſten'd, and which is not too eaſily reduc'd into Pouder by breaking. The ſmall, fine, blackiſh Barks, chagrin'd without and reddiſh within, of a bitter diſagreeable Taſte, are the moſt eſteem'd. For the Pouder, it muſt be well ſifted, and care be taken it be bought of Perſons that may be truſted; it being very eaſy to ſophiſticate it, and difficult to find it out.

The *Cortex* is a Bitter, Abſorbent, and Aſtringent or Styptic: From its bitterneſs, M. *Reneaume* obſerves, it becomes fit to ſoften ſour acrimonious Juices; for a ſour and a bitter make a ſweet. Again, as an Abſorbent it blunts the Points of Acids, and prevents their Action; and of conſequence keeps up the Fluidity of the Juices, which Acids would coagulate. As a Styptic, it muſt have earthy Parts to abſorb Seroſities, by which the Parts before moiſten'd and relax'd, will contract themſelves: and by this means, the *Cortex* augments the Spring and Tenſion of the Fibres. As a Bitter it heats; and it facilitates Perſpiration, by heating and augmenting the Fluidity of the Juices. On theſe Properties it is that its Medicinal Uſes are aſcertain'd.

But its chief uſe is in curing of Agues, and intermitting Fevers; it being us'd for theſe Purpoſes in all Ages, and moſt Conſtitutions. Dr. *Cockburn* ſays, it produces this Effect better than any other Medicine of the ſame Intention, in the Ratio of 365 to 1. It is uſual to give a gentle Emetic of *Ipecacuanha* before the Exhibition of the *Cortex*: by thus preparing the Paſſages, the *Cortex* has not only more Succeſs, but alſo is not ſubject to cauſe theſe Indiſpoſitions, *viz.* ſwelling in the Belly, Nauſea's, *&c.* which often ariſe when neglected.

The *Cortex* muſt never be exhibited in the Paroxyſm of an Ague, or intermitting Fever; but given in ſuch a Quantity at times between the Paroxyſms, as to prevent a Return of the Fit.

The *Cortex* exhibited in continual Fevers is dangerous; and care muſt be taken, that the Remiſſion of a continual Fever be not miſtaken for its Intermiſſion: When there is a Remiſſion, it uſually happens indifferently at any time; whereas an Intermiſſion happens at particular times.

The *Cortex* is given ſeveral ways, *viz.* in Pouder, in forms of Electuary, Bolus's, Infuſions, Tinctures, *&c.* The *Arcana Taboriana* is about two Ounces of the *Cortex* in Pouder, digeſted in Sand-heat, with about a Quart of red Wine: After Digeſtion, the Wine muſt be pour'd off, and two or three Ounces given every three or four Hours between the Paroxyſms, till the Intention is anſwer'd. If the Bark take downward, Venice Treacle, Diaſcordium, Conſerve of Roſes, Terra Japonica, Doſes of Laudanum, *&c.* muſt be added to its Preparations. When there happens to be an Obſtruction of the Menſes from the Exhibition of the *Cortex*, or to prevent it, it is adviſable to add to its Preparations the Black Hellebore, Æthiops Mineral, Cinnabar, *&c.* The *Cortex* is often us'd for young Children in Agues, by way of Clyſter; and alſo applied to the Wriſts, and Soles of

the Feet, wrought up into a ſtiff Maſs, with Turpentine, Venice Treacle, &c. which uſually anſwers the Purpoſe.

Dr. *Helvetius*, Phyſician to the King of *France* about 20 Years ago, wrote a Book entirely upon the Subject of curing Agues by giving the *Cortex* clyſterwiſe: In which he pretends, that this is more ſafe, and no leſs certain than the *Cortex* given internally. Dr. *Cockburn*, in his Treatiſe of *Sea Diſeaſes*, aſſerts the contrary; and proves that the *Cortex* given inwardly is as ſafe, and by much more certain and expeditious; and ſhews that we know how to remedy all the Inconveniencies the *Cortex* may occaſion.

Dr. *Sydenham*, and after him M. *Reneaume*, and others, have preſcrib'd it with Succeſs in Melancholic and Hyſteric Affections, commonly call'd *Vapours*.

CORTEX *Winteranus*, or *Winteri*, the Bark of a Tree brought from the Streights of *Magellan*, by Captain *Winter*, in his Voyage with Sir *Francis Drake*: *Cluſius* calls the Tree, *Magellanica Aromatica Arbor*.

The Bark is Aromatic, and found of good uſe at Sea againſt the Scurvy: Half a Dram of it, boil'd with other carminative Seeds, ſweats, and relieves ſcorbutic Patients. It has alſo prov'd an Antidote againſt a poiſonous ſort of Seal, call'd a *Sea Lion*, frequent in thoſe Parts.

The Bark ſold in the Shops under the Name of *Cortex Winteranus*, or Wild Cinnamon, Dr. *Sloane* obſerves, is not the true *Cortex Winteranus*; they grow on different Trees, and in different Countries, and their Appearance is very different; yet are they ſo like in Taſte, that he thinks they may be uſed as Succedaneums to each other. See COSTUS *Indicus*.

CORTEX *Caparis*. See CAPER.

CORTEX *Cerebri*, the *cortical* or cineritious Subſtance of the Brain. See CORTICAL, and BRAIN.

CORTICAL *Subſtance of the Brain*, in Anatomy, the exterior Part of the Brain and *Cerebellum*, or that Part immediately under the *Pia Mater*; ſo called, becauſe of its inveſting the inner or medullary Part, as a Bark does a Tree. See BRAIN.

The ſame is alſo call'd the *Cineritious Subſtance*, from its greyiſh or aſh-colour. See CINERITIOUS.

Archangelo Piccholomini, a *Ferrareſe*, firſt introduc'd this Diviſion of the Brain into *Cortical* or Cineritious, and Medullary or Fibrous Subſtance. See MEDULLA.

The *Cortical Subſtance* is more ſoft and moiſt than the Medullary; and follows or attends it thro' all its Prominences and Sinus's. It is form'd, from the minute Branches of the Carotid Arteries, interwove in the Meninges, and thence continued hither in infinitely fine Ramifications. See MENINX.

Moſt Anatomiſts, after *Malpighi*, agree in its being glandulous, and that the medullary Parts are only a Continuation thereof; *Ruyſch* alone excepted: who, from his admirable Skill in Injections, and the Diſcoveries he has made thereby, maintains that it has nothing glandular in it. See BRAIN, CEREBELLUM, and MEDULLA *Oblongata*; ſee alſo GLAND, CAROTID, &c.

CORTIN, in Fortification, ſignifies the Wall, or Diſtance, between the Flanks of two Baſtions.

CORVET, or CURVET, in the Manage, an Air, in which the Horſe's Legs are rais'd higher than in the Demivolt; being a kind of Leap up, and a little forwards, wherein the Horſe raiſeth both his fore-Legs at once, equally advanced, (when he is going ſtrait forward, and not in a Circle;) and as his fore-Legs are falling, he immediately raiſes his hind-Legs, equally advanc'd, and not one before the other; ſo that all his four Legs are in the Air at once; and as he ſets them down, he marks but twice with them. See AIR.

Horſes that are very dull, or very fiery, are improper for *Curvets*; this being the moſt difficult Air they can make, and requiring a great deal of Judgment in the Rider, as well as Patience in the Horſe, to perform it.

CORUSCATION, *Glittering*, a Gleam of Light emitted from any thing.

The Term is chiefly uſed for a flaſh of Lightning nimbly darting down from the Clouds, in time of Thunder. See THUNDER, and LIGHTNING.

CORVUS, *Crow*, in Aſtronomy, a Conſtellation of the Southern Hemiſphere. See CONSTELLATION.

The Stars in the Conſtellation *Corvus*, in *Ptolemy*'s Catalogue are 7; in *Tycho*'s as many; in the *Britannic Catalogue* 10. The Order, Names, Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow.

Stars in the Conſtellation CORVUS.

Names and Situations of the Stars.	Signs.	Longitude. ° ′ ″	Latitude. South. ° ′ ″	Magnit.
That in the Beak	♍	7 55 35	21 44 26	4
In the Neck nigh the Head		7 21 58	19 39 41	4
Small one following theſe		8 0 16	20 27 40	
In the preceding Wing		6 25 58	14 29 0	3
In the Breaſt		9 29 58	10 16 48	5
Informis over the Wings		5 54 35	10 21 48	6
		11 16 15	20 23 42	6
Preced. of two in the hind Wing		9 9 13	12 9 47	3
Subſeq.		9 32 0	11 39 31	5
In the Foot, common with *Hydra*	♎	13 3 25	18 1 40	3

CORYBANTES, in Antiquity, Prieſts of *Cybele*, who danced and caper'd to the Sound of Flutes, and Drums.

Catullus, in his Poem call'd *Atys*, gives a beautiful Deſcription of 'em; repreſenting them as Madmen. Accordingly, *Maximus Tyrius* ſays, that thoſe poſſeſs'd with the Spirit of *Corybantes*, as ſoon as they heard the Sound of a Flute, were ſeiz'd with an Enthuſiaſm, and loſt the uſe of their Reaſon.

Hence, the *Greeks* uſe the Word κορυβαντιᾶν, *Corybantiſing*, to ſignify a Perſon's being tranſported, or poſſeſs'd with a Devil.

Some ſay, the *Corybantes* were all Eunuchs; and that 'tis on this account that *Catullus*, in his *Atys*, always uſes feminine Epithets and Relatives.

Diodorus Siculus remarks, that *Corybas* Son of *Jaſon* and *Cybele*, paſſing into *Phrygia* with his Uncle *Dardanus*, there inſtituted the Worſhip of the Mother of the Gods, and gave his own Name to the Prieſts. *Strabo* relates it as the Opinion of ſome, that the *Corybantes* are Children of *Jupiter* and *Calliope*, and the ſame with the *Cabires*. Others ſay, the Word had its Origin from this, that the *Corybantes* always walk'd dancing, (if the Expreſſion may be allow'd) *quod* κορύπτοντες βαίνειν. *Voſſius*.

CORYMBIFEROUS *Plants*, are diſtinguiſh'd into ſuch as have a *radiate* Flower, as the *Flos Solis*, *Calendula*, &c. and ſuch as have a *naked* Flower, as the *Abrotanum Feminina*, *Eupatorium*, *Artemiſia*; to which are added the *Corymbiferous Affines*, or thoſe a-kin hereunto; ſuch as *Scabious*, *Dipſacus*, *Carduus*, and the like. See PLANT, and CORYMBUS.

CORYMBUS, in the general, ſignifies the Top, or Summet of any thing; but among the antient Botaniſts was particularly uſed to expreſs the Bunches or Cluſters of Ivy, Berries, &c.

Some alſo call the Top of the Stalk of a Plant, when ſo ſubdivided and adorn'd with Flowers or Fruits, as to make a round ſpherical Figure, by this Name; as the Tops of Leeks, Onions, and the like: and others confound the Word with *Umbella*, which expreſſeth the flowry Tops of ſuch Plants as have their Branches and Flowers ſpread round, into the Form of what the Women now call an *Umberella*.

But among the modern Botaniſts, *Corymbus* is chiefly uſed for a compound diſcous Flower, whoſe Seeds are not Pappous, or do not fly away in Down: Such are the Flowers of Daiſies, common Marigold, &c. See SEED.

Mr. *Ray*, therefore, makes one Genus of Plants to be ſuch as have a compound diſcous Flower, but without any downy Wings to carry off their Seeds; as the *Corymbiferous*. See CORYMBIFEROUS.

CORYPHÆUS, in the antient Tragedy, was the Chief or Leader of the Company that compos'd the Chorus. See CHORUS.

The *Coryphæus* ſpoke for all the reſt, whenever the Chorus took part in the Action, in quality of a Perſon of the Drama, during the Courſe of the Acts.

Hence, the Term has paſs'd into a general Name for the Chief or Principal of any Company, Corporation, Sect, Opinion, &c.

Thus, *Euſtachius* of *Antioch* is call'd the *Coryphæus* of the Council of *Nice*; and *Cicero* calls *Zeno* the *Coryphæus* of the *Stoicks*.

The Word in the original *Greek* ſignifies *Tip of the Head*.

CORYZA, in Medicine, a *running at the Noſe*; or a Defluxion of ſharp ſerous Humours from the Glands of the Head, ariſing upon a diminution of Perſpiration, or catching of Cold. See COLD.

Proper Evacuations, as Bleeding, Epiſpaſticks, Sternutatories, &c. are uſual in this Caſe.

COSCINOMANCY, or COSKINOMANCY, the Art of Divination by means of a Sieve or Riddle. See DIVINATION.

The Sieve or Riddle being ſuſpended; after rehearſing a *Formula* of Words, 'tis taken between two Fingers only; and the Names of the Parties ſuſpected, repeated: He at whoſe Name the Riddle turns, trembles, or ſhakes, is reputed guilty of the Evil in queſtion.

This muſt be a very antient Practice: *Theocritus*, in his third *Idyllion*, mentions a Woman very ſkilful in it. It was ſometimes alſo practis'd by ſuſpending the Riddle by a Thread, or fixing it to the Points of a Pair of Shears, giving it room to turn, and naming, as before, the Parties ſuſpected: In which laſt manner, *Coſcinomancy* is ſtill practis'd in ſome Parts of *England*.

It appears from *Theocritus*, that it was not only uſed to find out Perſons unknown; but alſo to diſcover the Secrets of thoſe that were known.

The Word comes from the *Greek* κόσκινον, *Riddle*, and μαντεία, *Divination*.

CO-SECANT, in Geometry, the Secant of an Arch, which Arch is the Complement of another Arch to 90 Degrees. See SECANT, and COMPLEMENT.

CO-SINE, is the right Sine of an Arch, which is the Complement of another to 90 Degrees. See SINE, and COMPLEMENT.

COSMETIC, a Term in Phyſick, uſed for any Medicine, Preparation, or Means uſed to beautify and embelliſh the Face, and preſerve or improve the Complexion; as Ceruſs, and the whole Tribe of Fucus's, Waſhes, Cold Creams, Lip-Salves, &c.

The *Indians* uſe the Water of green Cacao-Nuts as a grand *Coſmetic*, which wonderfully improves the Complexion.

COSMICAL, a *Greek* Term, κοσμικὸς, of κόσμος, *World*; denoting ſomething that refers, or has a relation to the World.

Thus, among Aſtrologers, *Coſmical Aſpect*, is the Aſpect of a Planet with reſpect to our Earth.

Coſmical Qualities are uſed by Mr. *Boyle* in the ſame Senſe with *Syſtematical* ones. Tho, in conſidering the Qualities of Natural Bodies, we uſually only take in the Powers any particular one has of acting on, or its Capacity of ſuffering from the Action of, another, wherewith it is obſerv'd to have ſome manifeſt Commerce, by a Communication of Impreſſions: yet there may be ſome Attributes belonging to a particular Body, and ſeveral Alterations to which it may be liable, not barely on account of thoſe Qualities preſum'd to be evidently inherent in it, nor of the Reſpects it bears to thoſe other particular Bodies whereto it ſeems manifeſtly related; but on account of a Syſtem conſtituted as our World is, of ſuch a Fabrick, that there may be many unheeded Agents, which by unperceiv'd means have great Operations on the Body we conſider, and work ſuch Changes in it, and enable it to work ſuch Changes on other Bodies, as are rather to be aſcrib'd to ſome unheeded Agents, than to thoſe other Bodies with which the Body propos'd is obſerv'd to be concern'd. So that if many Bodies that might be nam'd, were plac'd together in ſome imaginary Space, beyond the Bounds of our Syſtem; tho they would retain many of the Qualities they are now endow'd with, yet they could not poſſeſs 'em all: but by being reſtor'd to their former Places in this World, they wou'd regain a Set of Faculties and Diſpoſitions, depending on ſome unheeded Relations, and Impreſſions from the determinate Fabrick of the grand Syſtem, or World, whereof they are Parts. And theſe are what Mr. *Boyle* calls *Coſmical* or *Syſtematical Qualities*.

To account for theſe *Coſmical Qualities*, the ſame Author propoſes ſome *Coſmical Suſpicions*, as to ſome unobſerv'd Laws and Orders of Nature; and refers 'em principally to the Action of certain Effluvia hitherto unobſerv'd. See EFFLUVIA.

COSMICAL is alſo uſed in Aſtronomy, to expreſs one of the Poetical Riſings of a Star.

Thus, a Star is ſaid to riſe *Coſmically*, when it riſes together with the Sun; or with that degree of the Ecliptic wherein the Sun then abides. See RISING.

So, the *Coſmical Setting* is, when a Star ſets and goes down in the Weſt, at the ſame time the Sun riſes in the Eaſt. See SETTING.

But, according to *Kepler*, to *riſe* or *ſet Coſmically*, is only to aſcend above, or deſcend below the Horizon.

COSMOGRAPHY, the Deſcription of the World; or, the Art which teaches the Conſtruction, Figure, and the Diſpoſition and Relation of all its Parts; with the Manner of repreſenting them on a Plane.

Coſmography conſiſts of two Parts; Aſtronomy, which ſhews the Structure of the Heavens and the Diſpoſition of the Stars. See ASTRONOMY.

And Geography, which ſhews thoſe of the Earth. See GEOGRAPHY.

The Word comes from the *Greek* κόσμος, *Mundus*, World, and γράφω, *ſcribo*, I deſcribe.

COSMOLABE, an antient Mathematical Inſtrument, ſerving to meaſure Diſtances, both in the Heavens and on the Earth. See DISTANCE.

The *Coſmolabe* is in great meaſure the ſame with the *Aſtrolabe*. See ASTROLABE.

It is alſo called *Pantocoſm*, or *Univerſal Inſtrument*, by *L. Morgard*, in a Treatiſe expreſly thereon, printed in 1612.

COSMOPOLITAN, or COSMOPOLITE, a Term ſometimes uſed to ſignify a Perſon who has no fix'd living, or Place of abode; or a Man who is a Stranger no-where.

The Word comes from the *Greek* κόσμος, *Mundus*, and πόλις, *City*.

One of the antient Philoſophers being interrogated what Countryman he was; anſwer'd he was a *Coſmopolitan*, i. e. an Inhabitant or Citizen of the World.

COSTAL, in Anatomy. There are eight *Vertebræ* diſtinguiſh'd by the Name of *Coſtales*, or *Pleurites*; becauſe ſerving to articulate the Ribs, which are lin'd with the *Pleura*. See VERTEBRA.

Theſe *Vertebræ* are the eight which follow the ſecond, call'd the *Axillary*; and are therefore the third, fourth, fifth, and to the tenth incluſive.

COSTÆ, in Anatomy. See RIBS.

COSTIVENESS, in Medicine, a preternatural Detention of the Excrements, with an unuſual Hardneſs or Dryneſs thereof; and, thence, a difficulty of diſcharging 'em. See EXCREMENT.

This is the oppoſite to a Diarrhæa, or Looſeneſs. See DIARRHÆA.

In the *Philoſophical Tranſactions*, we have an uncommon Inſtance of *Coſtiveneſs* by Mr. *Sherman*: the Patient, one *Thomas Philips*, for ſeveral Years, never went to Stool in leſs than 19 or 20 Weeks: He generally eat and drank as well as his Neighbours; and did all the while the Office of a labouring Man: yet was not any of the other Evacuations ſenſibly greater than in other People. He died of it at 23 Years old.

In *Coſtiveneſs* the uſual Remedies are gentle Preparations of Senna, lenitive Electuaries, Cream of Tartar, laxative Clyſters, &c.

COSTUS *Arabicus*, the Root of a Tree reſembling Eldar, brought from *Arabia*; whence its Name.

Its chief uſe in Medicine, is to enter the Compoſition of Venice Treacle.

The beſt is heavy, of a cineritious Colour without-ſide, a reddiſh within, difficult to break, of a ſtrong Smell, and an aromatic Taſte.

This Root was formerly call'd *Coſtus Verus*, and was divided into two Kinds, the *ſweet* and the *bitter Coſtus*; both of which are now uncommon. M. *Charas*, and others, are of Opinion there is but one kind of *Coſtus*, which proves more or leſs ſweet or bitter, according to the Soil where it is fed.

COSTUS *Indicus*, an *American* Root, called alſo *Coſtus Blavo*, *Coſtus Corticoſus*, *Coſtus Corticus*, *White Cinnamon*, and *Winter's Bark*. The Iſlands of *Madagaſcar* in *Africa*, of *Domingo* and *Guadaloupa* in *America*, are the Places where the moſt and beſt is found. See CORTEX *Winteranus*.

COTAGE, or COTTAGE, a Houſe without Land belonging to it, Stat. 4 *Edw.* I. By a later Statute, 31 *Eliz.* no Man may build a Houſe without laying four Acres of Land to it: So that, properly, a *Cotage* now is a Houſe without four Acres of Land to it.

CO-TANGENT, is the Tangent of an Arch, which is the Complement of another Arch to 90 Degrees. See TANGENT.

COTHURNUS, *Buskin*, a very high Shoe, or a kind of Patten, rais'd on Soals of Cork; wore by the antient Actors in Tragedy, to make 'em appear the taller, and the more like the Heroes they repreſented; moſt of whom were ſuppos'd to be Giants. See TRAGEDY.

It cover'd the greateſt part of the Leg, and was tied beneath the Knee. *Sophocles* is ſaid to have invented the *Cothurnus*. See BUSKIN.

COTICE, or COTISE, in Heraldry, is the fourth Part of the Bend, which, with us, is ſeldom if ever born but in Couples, with a Bend between them; and whence, probably, the Name: from the French *Coté*, Side; they being born, as it were on the Sides of the Bend.

COTTON, or COTON, a ſort of Wool, or rather Flax, encompaſſing the Seed of a Tree of the ſame Name.

The Tree which produces this uſeful Merchandiſe, grows common in ſeveral Places of the *Levant*, and of the *Eaſt* and *Weſt-Indies*, eſpecially in the *Antilles*. Its Fruit is of an oval form, about the ſize of a Nut: As it ripens, it grows black without-ſide; and by the heat of the Sun opens in ſeveral Places, diſcovering the *Cotton* thro' the Clefts, which is of an admirable Whiteneſs. In each Fruit are found ſeveral little Beans, which are the Seed of the Tree.

There is another kind of *Cotton* Tree, which creeps along the Ground, as the Vine wou'd do if unſupported; the *Cotton* whereof is the moſt eſteem'd. And the late Relations from the South mention two other Kinds, the one in the *Terra firma* of *Braſil*, the other in the Iſle of *S. Catherine*.

The Seed of the *Cotton* being mix'd, in the Fruit, together with the *Cotton* it ſelf, they have invented little Machines, which being play'd by the Motion of a Wheel, the *Cotton* falls on one ſide, and the Seed on the other; and thus they are ſeparated.

Cotton makes a very conſiderable Article of Commerce: it is diſtinguiſh'd into *Cotton in the Wool*, and *Spun-Cotton*. The firſt us'd for various Purpoſes, as to put between two Stuffs, in Quilts, Night-Gowns, &c. but 'tis the latter is more general; furniſhing various Cloths, Muſlins, Callicoes, Dimitties, and Hangings; beſides that 'tis frequently join'd with Silk and Flax, in the Compoſition of other Stuffs.

The firſt kind is ordinarily brought from *Cyprus* and *Smyrna*: Near *Smyrna* its Produce is greater than any where elſe: they ſow the Seed in *June*, and gather it in *October*; and the

the Soil is ſo favourable that they can have three Crops in a Year. There are ordinarily brought from *Smyrna* 10000 Bales of *Cotton per Annum*; and yet there is, at leaſt, as much more ſpent in the Manufactures of the Country.

For the *Spun Cottons*, they are diſtinguiſh'd by various Names, the beſt are thoſe from *Jeruſalem*, call'd *Bazacs*; and thoſe of *Damaſcus*, call'd *Cottons of the Ounce*: others are *Demi-Bazacs*, *Baladins*, *Payas*, *Cottons Joſeph*, *Geneguinſo*, &c.

Cotton antiently only grew in *Egypt*, and was us'd by the Prieſts and Sacrificers for a very ſingular kind of Gowns, wore by them alone.

Cotton, applied to Wounds in lieu of Linen, produces an Inflammation: *Leewenhoeck*, examining into the Reaſon of this with a Microſcope, found its Fibres to have each two flat Sides; whence he concludes, that each of its minute Parts muſt have two acute Angles, or Edges; which acute Edges being not only thinner and more ſubtile than the Globules whereof the fleſhy Filaments conſiſt, but alſo more firm and ſtiff than any of the globulous Fleſh; it follows, that upon the Application of *Cotton* to a Wound, its Edges muſt not only hurt and wound the Globules of the Fleſh, but alſo cut inceſſantly the new Matter brought to 'em to produce new Fleſh; and that with the more eaſe, as this Matter, not having attain'd the Firmneſs and Conſiſtence of Fleſh, is the leſs able to reſiſt its Attacks: Whereas the Linen ordinarily uſed in Wounds, being compos'd of little round Parts, very cloſe to each other, form larger Maſſes, and are thus incapable of hurting the globous Parts of the Fleſh.

Menage derives the Word from the Latin *Cotonea*, the fine Moſs growing on Quinces, which reſembles *Cotton*: But *Nicod* ſays, the *Arabs* call it *Cotum* and *Bombaſum*; whence our *Cotton*, and *Bombazon*.

COTYLA, a liquid Meaſure, in uſe among the Antients. See MEASURE.

Some have computed the *Cotyla* to be equal to a *Roman* Semi-ſeptary. *Savot* adds, that the Roman *Cotyla* contain'd twelve Ounces of any Liquor. Upon which Principle, there muſt have been as many *Cotylæ* as there were Liquors ordinarily ſold; which is nothing ſtrange, ſince, in ſeveral Countries, we ſtill find Meaſures of different Capacity, call'd by the ſame Name, when they contain the ſame Weights, tho under different Bulks.

Fannius ſays, the *Cotyla* was the ſame thing with the *Hemina*, which was half a Sextary. See HEMINA.

At Cotylas, *quas*, *ſi placeat*, *dixiſſe licebit*
Heminas, *recipit Geminas ſextarius unus.*

Chorier obſerves, that the *Cotyla* was us'd as a dry Meaſure as well as a liquid one; from the Authority of *Thucydides*, who in one place mentions two *Cotylæ* of Wine, and in another two *Cotylæ* of Bread. The Word comes from the *Greek* κοτυλη.

COTYLA, or COTYLE, or COTYLOIDES, in Anatomy, a Name given the Cavities at the Extremities of large Bones, encompaſs'd with thick ſtrong Edges, which receive the Heads, or Apophyſes of other Bones articulated with them.

Such is the Cavity in the *Iſchion*, or Hip-Bone, which receives the Head of the Bone of the Thigh.

It is alſo called *Acetabulum*, *i. e.* Cup. See ACETABULUM.

COTYLEDONES, in Anatomy, little Glands diſpers'd throughout the outermoſt Membrane of the *Fœtus*, call'd *Chorion*, (ſee CHORION;) and ſuppos'd to ſeparate a nutritious Juice for the Subſiſtence of the *Fœtus*. But *Cotyledones*, in this Senſe of the Word, are only found in Sheep, Goats, and ſome other Animals; the *Placenta* in the Womb, ſupplying the Place thereof in Women. See PLACENTA.

Other Authors uſe *Cotyledones* for the Apertures of the Veins in the inner Surface of the Womb. See MATRIX.

In *Latin* they are call'd *Acetabula*, from their reſemblance of a Cup.

COWARD, in Heraldry. When a Lion is born in any Eſcutcheon, with his Tail doubled or turn'd in between his Legs, they call it a *Lion Coward*.

COUCH, in Painting, is uſed for each Lay or Impreſſion of Colour, whether in Oil or Water, wherewith the Painter covers his Canvas, Wall, Wainſcot, or other Matter to be painted. See PAINTING.

Thus, we ſay, A Painting has had its laſt *Couch*, or Lay; a Ceiling has had two *Couches*. There is a great deal of Art in *couching* the Colours well, one after another.

The Word is alſo us'd for a Lay or Impreſſion on any thing, to make it more firm and conſiſtent, or to ſkreen it from the Weather.

Thus, Paintings are cover'd with a *Couch* of Varniſh: A Canvas to be painted, muſt firſt have two *Couches* of Size ere the Colours be laid. Two or three *Couches* of white Lead, are laid on Wood ere the *Couch* of Gold be applied: The Leather-gilders lay a *Couch* of Water and Whites of Eggs on the Leather, ere they apply the Gold or Silver Leaf.

The Gold Wire-drawers uſe the Word *Couch* for the Gold or Silver Leaf wherewith they cover the Maſs to be gilded or ſilver'd, before they draw it thro' the Iron that is to give it its proper thickneſs. See WIRE-DRAWING.

The Gilders uſe *Couch* for the Quantity of Gold or Silver Leaves applied on the Metals in gilding or ſilvering. Each *Couch* of Gold is but one Leaf, or two at moſt, and each of Silver three; to gild: If the Gilding be hach'd, there are requir'd from eight to twelve *Couches*, and only three or four if it be without haching. To Silver there are requir'd from four to ten *Couches*, according to the Beauty of the Work. See GILDING.

COUCHANT, in Heraldry, is underſtood of a Lyon or other Beaſt, when lying down; but with his Head lifted up: which diſtinguiſhes the Poſture of *Couchant* from *Dormant*, when he is ſuppos'd quite ſtretch'd out and aſleep.

COUCHE', in Heraldry, denotes any thing laid all along: Thus, *Chevron Couchee*, is a Chevron lying ſidewiſe with the two Ends on one ſide of the Shield, which ſhould properly reſt on the Baſe.

COUCHING *of Cataracts*. See CATARACT.

COVENANT, the Conſent or Agreement of two or more Parties, to do or perform the ſame thing. See CONVENTION, and CONTRACT.

A *Covenant* ſeems to be much the ſame with a *Pactum*, or *Conventum* among the Civilians. See PACT.

Covenant is either *in Law*, or *in Fact*.

Covenant in Law, is that which the Law intends to be made, tho it be not expreſs'd in Terms: As, if the Leſſor demiſe, and grant a Tenement to the Leſſee for a certain Term; the Law intends a *Covenant* on the Leſſor's Part, that the Leſſee ſhall, during the Term, quietly enjoy the Leaſe againſt all lawful Incumbrances.

Covenant in Fact, is that which is expreſly agreed between the Parties.

There is alſo a *Covenant merely Perſonal*, and a *Covenant Real*. *Fitzherbert* defines a *Covenant Real* to be that whereby a Man ties himſelf to paſs a thing real, as Lands or Tenements, or to levy a Fine on Lands, &c.

Covenant merely Perſonal, is where a Man *covenants* with another by Deed to build him a Houſe, or to ſerve him, &c.

COVERING, in Architecture, one of the principal Parts of a Building. See ROOFING.

CO-VERSED *Sine*, a Term ſome People uſe for the remaining Part of the Diameter of a Circle, after the verſed Sine is taken from it. See SINE.

COVERT, in Law. *Feme Covert* denotes a Woman to be married, and ſo *cover'd* by, or under the Protection of, her Husband. See COVERTURE.

COVERT *Way*, in Fortification, a ſpace of Ground level with the Field, on the Edge of the Ditch, ranging quite round the Half-Moons, and other Works on the ſide of the Country.

It is otherwiſe call'd *Corridor*, and hath a Parapet rais'd on a Level, together with its *Banquets* and *Glacis*, which form the Height of the Parapet, and ought to follow the Parapet of the Place, till it is inſenſibly loſt in the Field. See PARAPET.

One of the greateſt Difficulties in a Siege, is to make a Lodgment on the *Covert-Way*; becauſe, uſually, the Beſieged palliſade it along the Middle, and undermine it on all Sides. This is ſometimes alſo called the *Counterſcarp*, becauſe it is on the Edge of the Scarp. See COUNTERSCARP.

COVERTURE, in Law, is particularly applied to the State and Condition of a married Woman; who, by the Laws of our Realm, is under *Covert-Baron*, or *ſub poteſtate viri*; and therefore diſabled to make Bargains with any, to the Prejudice of her ſelf or her Husband, without his Conſent and Privity; or at leaſt without his Allowance and Confirmation: And if the Husband alien the Wife's Lands, during the Marriage, ſhe cannot gainſay it during his Life. See FEME.

COUGH, in Medicine, &c. See TUSSIS.

COVINE, a deceitful Compact, or Agreement between two or more, to deceive or prejudice a third Perſon.

As, if a Tenant for Life conſpire with another, that this other ſhall recover the Land which the Tenant holds in prejudice of him in Reverſion.

Dr. *Skinner* takes the Word to be a Corruption of the Latin *Conventum*, and therefore writes it *Coven*. See CONSPIRACY.

COVING, in Building. When Houſes are built projecting over the Ground-plot, and the turn'd Projecture arch'd with Timber, lath'd and plaſter'd; the Work is call'd *Coving*. See ALCOVE.

COVING *Corniche*, is a Corniche with a great Caſement, or Hollow therein. See CORNICH.

COUL, or COWL, a Habit wore by the *Bernardins*, and *Benedictins*.

There are two Kinds of *Couls*; the one white, very large, wore in Ceremony, and when they assist at the Office: The other black, wore on ordinary Occasions, in the Streets, &c.

F. *Mabillon* maintains the *Coul* to be the same thing with the *Scapulary*. The Author of the Apology of the Emperor *Henry* IV. distinguishes two Forms of *Couls*; the one a Gown reaching to the Feet, having Sleeves and a Capuchin, used in Ceremonies; the other a kind of Hood to work in, called also *Scapulary*; because it only covers the Head and Shoulders. See SCAPULARY.

The Word is form'd from the Latin *Cuculla*, by confounding the two first Syllables into one, as being the same twice repeated. See COWL.

COUNCIL, or COUNSEL, an Assembly, or Meeting of divers considerable Persons, or Officers, to consider and concert Measures touching the Administration of publick Affairs, or for the rendring of Justice.

The *King's Privy-Council*, is the *Primum Mobile* of the Civil Government of *England*; and that from which all the inferior Orbs derive their Motion. See PRIVY-*Council*.

In the *French* Polity *Councils* are very numerous: They have their *Council of State*, *Council of the Finances*, *Council of Dispatches*, *Council of Directions*, *Grand Council*, *Council of the Regency*, *Council of Conscience*, &c.

COUNCIL, in Church-History and Policy, is a *Synod*, or Assembly of Prelates, and Doctors, met for the regulating of Matters relating to the Doctrine or Discipline of the Church. See SYNOD.

A *Provincial Council*, is an Assembly of the Prelates of a Province, under the Metropolitan. See PROVINCE.

A *National Council*, is an Assembly of the Prelates of a Nation, under their Primate or Patriarch. See PRIMATE.

An *Oecumenical or General Council*, is an Assembly of all the Prelates of *Christendom*. See OECUMENICAL.

Indeed, to constitute a *General Council*, 'tis not requir'd that all the Prelates should be actually present; 'tis sufficient that the *Council* be regularly appointed, and that they may be there, or are call'd thereto.

General Councils are frequently call'd by Ecclesiastical Authors *Plenary Councils*.

The *Romanists* reckon 18 *General Councils*; whereof only the four first are admitted by the Reformed. The Number is made out thus: two of *Nice*, four of *Constantinople*, one of *Ephesus*, one of *Chalcedon*, five of the *Lateran*, two of *Lyons*, one of *Vienna*, one of *Florence*, and the last of *Trent*, which held from 1545 to 1563.

The *Council* of *Trent* ordains *Provincial Councils* to be held every three Years; yet the last held in *France* is that of *Bourdeaux*, 100 Years ago.

The Word comes from the Latin *Concilium*, which signifies no more than an Assembly; for we say, *Concilium Deorum*, *Concilium Patrum*, *Concilium Martyrum*, &c.

There have been various Collections of *Councils*, as that of Dr. *Merlin* at *Paris* in 1524; one of F. *Crabe*, a *Franciscan*, in 1536; another of *Surius* in 1567; another at *Venice*, in 1585; another at *Rome* in 1608; one of *Binius* Canon of *Cologne*, in 1606, in 10 Volumes: Another of the *Louvre* in 1644, in 37 Volumes: Another of F. *l'Abbe* and F. *Cossart*, Jesuits, in 1672, in 17 Volumes, more ample than the rest. Lastly, another is shortly expected from F. *Hardouin*, another Jesuit.

COUNCIL *of War*, is an Assembly of the principal Officers of an Army, or Fleet, occasionally call'd by the General or Admiral, to consider of the present State of Things, and concert Measures for their Conduct, with regard to Sieges, Retreats, Engagements, &c.

The same Term is sometimes also used for an Assembly of the Officers of a Regiment, or Ship; met to try Soldiers or Sailors accused of any Crime.

Common COUNCIL, is a Court or Assembly, wherein are made all By-Laws which bind the Citizens of *London*: It consists, like the Parliament, of two Houses; an *upper*, consisting of the Lord Mayor and Aldermen; and a *lower*, of a Number of *Common-Council*-Men, chose by the several Wards, as Representatives of the Body of the Citizens.

COUNT, *Comes*, a Nobleman who possesses a Domain erected into a *County*. See COUNTY.

English Counts we distinguish by the Title of *Earls*, (see EARL;) foreign ones still retain their proper Name.

The Dignity of a *Count*, is a Medium between that of a Duke and a Baron. See NOBILITY.

According to the modern use, most Plenipotentiaries and Embassadors assume the Title of *Counts*; tho they have no County; as the *Count d'Avaux*, &c.

Antiently, all Generals, Councellors, Judges, and Secretaries of the Cities under *Charlemaign* were call'd *Counts*; the distinguishing Character of a Duke and a *Count* being this, that the latter had but one Town under him, but the former several. See DUKE.

A *Count* has a Right to bear on his Arms a Coronet, adorn'd with three precious Stones, and surmounted with three large Pearls, or a row of Pearls, whereof those in the Middle and Extremities of the *Coronet*, advance above the rest. See CORONET.

Counts were originally Lords of the Court, or of the Emperor's Retinue, and had their Name *Comites*, *à Comitando*, or *à Commeando*: Hence, those who were always in the Palace, or at the Emperor's Side, were called *Counts Palatine*, or *Comites à latere*. See PALATINE.

In the Times of the Commonwealth, *Comites*, among the *Romans*, was a general Name for all those who accompany'd the Proconsuls and Proprætors into the Provinces, there to serve the Commonwealth; as the Tribunes, Præfecti, Scribes, &c.

Under the Emperors, *Comites* were the Officers of the Palace. The Origin of what we now call *Counts*, seems owing to *Augustus*, who took several Senators to be his *Comites*, as *Dion* observes, *i. e.* to accompany him in his Voyages and Travels, and to assist him in hearing of Causes; which were here judg'd with the same Authority as in full Senate. *Gallian* seems to have abolish'd this Council, by forbidding the Senators being found in the Armies; and none of his Successors re-establish'd it.

These Counsellors of the Emperor, were really *Counts*, *Comites*, *i. e.* Companions of the Prince; and they sometimes took the Title thereof, but always with the Addition of the Emperor's Name whom they accompany'd: So that it was rather a Mark of their Office, than a Title of Dignity.

Constantius was the first who converted it into a Dignity; and under him it was, that the Name was first given absolutely.

The Name once establish'd, was in a little time indifferently confer'd, not only on those who follow'd the Court, and accompany'd the Emperor, but also to most Kinds of Officers; a long List whereof is given us by *Du Cange*.

Eusebius tells us, that *Constantine* divided the *Counts* into three Classes; the first bore the Title of *Illustres*, the second that of *Clarissimi*, and afterwards *Spectabiles*; the third were called *Perfectissimi*. See PERFECTISSIMATE, &c.

Of the two first Classes was the Senate composed; those of the third had no Place in the Senate, but enjoy'd several other of the Privileges of Senators. See SENATOR.

There were *Counts* who serv'd on Land, others at Sea; some in a Civil, some a Religious, and some in a Legal Capacity; as, *Comes Ærarii*, *Comes Sacrarum Largitionum*, *Comes Sacri Consistorii*, *Comes Curiæ*, *Comes Capellæ*, *Comes Archiatrorum*, *Comes Commerciorum*, *Comes Vestiarius*, *Comes Horreorum*, *Comes Opsoniorum aut Annonæ*, *Comes Domesticorum*, *Comes Equorum regiorum*, *aut Comes Stabuli*; *Comes Domorum*, *Comes Excubitorum*, *Comes Notariorum*, *Comes Legum*, *seu Professor in Jure*, *Comes Limitum*, *aut Marcarum*; *Comes Maritimæ*; *Comes Portus Romæ*; *Comes Patrimonii*.

The *Francs*, *Germans*, &c. passing into *Gaul* and *Germany*, did not abolish the Form of the *Roman* Government; and as the Governours of Cities and Provinces were called *Counts*, *Comites*, and *Dukes*, *Duces*, they continued to be call'd so. See DUKE.

These Governours commanded in time of War; and in time of Peace administer'd Justice. Thus, in the Time of *Chalemaign*, *Counts* were the ordinary Judges and Governours of the Cities, all under one.

These *Counts* of Cities were beneath the Dukes, and *Counts* who presided over Provinces; the first being constituted in the particular Cities under the Jurisdiction of the latter. The *Counts* of Provinces were in nothing inferior to Dukes, who themselves were only Governours of Provinces.

Under the last of the second Race of Kings, they got their Dignity render'd Hereditary; and even usurp'd the Sovereignty when *Hugh Capet* came to the Crown: His Authority was not sufficient to oppose their Encroachments; and hence it is they date the Privilege of wearing Coronets in their Arms: they assum'd it then, as enjoying the Rights of Sovereigns in their particular Districts, or *Counties*. But, by degrees, the *Counties* became reunited to the Crown.

The Quality of *Count* is now become very different from what it was antiently; being now no more than a Title, which a King grants upon erecting a Territory into a County, with the Reserve of Jurisdiction and Sovereignty to himself.

At first there was no Clause in the Patent of Erection, intimating the Reversion of the County to the Crown in default of Heirs Male; but *Charles* IX. to prevent their being too numerous, ordain'd that Duchies and Counties, in default of Heirs Male, should return to the Crown.

The Point of Precedence between *Counts* and Marquisses, has been formerly much controverted; the Reason was, that there are *Counts* who are Peers of *France*, but no Marquisses: But the Point is now given up, and Marquisses take place; tho antiently, when *Counts* were Governours of Provinces, they were on a Level even with Dukes. See PEER, and MARQUISS.

William the Conqueror, as is observ'd by *Camden*, gave the Dignity of *Counts* in Fee to his Nobles; annexing it to

this or that County, or Province, and allotting for their Maintenance a certain Proportion of Money, arising from the Prince's Profits in the Pleadings and Forfeitures of the Provinces. To this Purpose he quotes an antient Record; thus, *Hen.* II. *Rex Angliæ his verbis* Comitem *creavit*; *sciatis nos feciſſe Hugonem Bigot* Comitem *de Norf. &c. de tertio Denario de Norwich & Northfolk ſicut aliquis* Comes Angliæ, *&c.* See EARL.

The *Germans* call a *Count*, *Graff*; which, according to a Modern Critick, properly ſignifies *Judge*; and is deriv'd from *Gravio*, or *Graffio*, of γεφω. They have ſeveral Kinds of theſe *Counts*, or *Graffs*; as *Landgraves*, *Marchgraves*, *Burgraves*, and *Palſgraves*, or *Counts Palatine*.

Theſe laſt are of two Kinds; the one are of the Number of Princes, and have the Inveſtiture of a Palatine; the others have only the Title of *Count Palatine*, without the Inveſtiture of any Palatinate. See PALATINATE.

Some aſſert, that by publickly profeſſing the Imperial Laws for 20 Years, the Perſon acquires the Dignity of a *Count Palatine*; and there are Inſtances of Profeſſors of Law, who have aſſum'd the Title accordingly; but there there are others who call the Right in doubt.

COUNT, in Law, the original Declaration in a Real Action; as the Declaration is in a Perſonal one: The *Libellus* of the Civilians comprehends both.

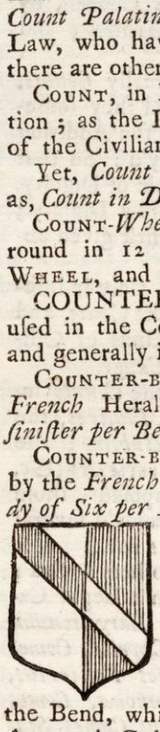
Yet, *Count* and Declaration are ſometimes confounded; as, *Count in Debt*, *Count in Appeal*, &c. See DECLARATION.

COUNT-*Wheel*, in Clock-work, a Wheel which moves round in 12 Hours; call'd alſo the *Locking-Wheel*. See WHEEL, and CLOCK.

COUNTER, of the *Latin* Prepoſition *contra*, againſt, is uſed in the Compoſition of divers Words in our Language; and generally implies the Relation of Oppoſition.

COUNTER-BARRY, or CONTRE-BARRE, is uſed by the *French* Heralds, for what we more ordinarily call *Bendy ſiniſter per Bend counterchang'd*. See BARRY.

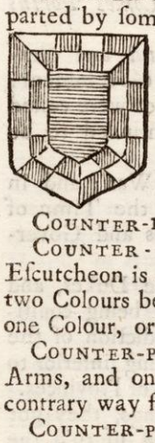
COUNTER-BENDY, or CONTRE-BEND, in Heraldry, is uſed by the *French* to expreſs what we more ordinarily call *Bendy of Six per Bend ſiniſter counterchang'd*. See BENDY.



COUNTER-CHANG'D, in Heraldry, is when there is a mutual Changing of the Colours of the Field and Charge in an Eſcutcheon, by means of one or more Lines of Partition.

Thus, in the Coat of the famous *Chaucer*: He beareth, Party per Pale Argent and Gules, a bend *counterchang'd*; that is, that Part of the Bend, which is in that Side of the Eſcutcheon which is Argent, is Gules; and that Part of it which is on the other, is Argent.

COUNTER-CHEVRON'D, denotes a Shield *Chevronny*, or parted by ſome Line of Partition. See CHEVRON.



COUNTER-COMPONED, or CONTRE-COMPONE, or COUNTER-COMPONY, in Heraldry, is when a Bordure is compounded of two Ranks of Panes; as in the adjoining Figure. When it conſiſts but of one Rank, it is call'd *Componed*; and when of more than two, *Checky*. See CHECKY, *&c.*

COUNTER-ERMINE. See ERMINE.

COUNTER-PALED, or CONTRE-PALLE, is when the Eſcutcheon is divided into twelve Pales parted per Feſſe, the two Colours being *counter-chang'd*: ſo that the upper are of one Colour, or Metal, and the lower of another.

COUNTER-PASSANT, is when two Lions are in a Coat of Arms, and one appears to be paſſing or walking quite the contrary way from the other. See PASSANT.

COUNTER-POINTED, by the *French* call'd *Contre-pointe*, is when two Chevrons in one Eſcutcheon meet in the Points; the one riſing, as uſual, from the Baſe; and the other inverted, falling from the Chief: So that they are *counter*, or oppoſite to one another in the Points.

They may alſo be *counter-pointed* the other way; that is, when they are founded on the Sides of the Shield, and the Points meet that way; call'd *Counter-pointed in Feſſe*.

COUNTER-POTENT, or *Potent Counter-potent*, by the *French* Heralds call'd *Contre-potence*, is reckon'd a Fur, as well as Vair and Ermine; but compos'd of ſuch Pieces as repreſent the Tops of Crutches, call'd in French *Potences*, and in old *Engliſh*, *Potents*. See FUR.

COUNTER-QUARTER'D, by the *French* call'd *Contre-eſcartele*, denotes the Eſcutcheon, after being quarter'd, to have each quarter divided again into two: So that there are eight Quarters, or Diviſions. See QUARTER.

COUNTER-SALIENT, is when two Beaſts are borne in a Coat of Arms in a Poſture of leaping from each other, directly the contrary way. See SALIANT.

COUNTER-TRIPPING, is when two Beaſts are borne in a Coat of Arms tripping, *i.e.* in a walking Poſture, and the Head of the one to the Tail of the other. See TRIPPING.

COUNTER-CHANGE, a mutual Exchange between two Parties. See EXCHANGE.

COUNTER-BREAST-WORK, in Fortification, a *Falſe-Braye*. See FALSE BRAYE.

COUNTER-BOND, is a Bond given to ſave a Perſon harmleſs, who has given his Bond for another. See BOND.

This is alſo call'd *Counter-ſecurity*.

COUNTER-CHARGE, is a reciprocal Recrimination, or Charge, brought againſt an Accuſer. See CHARGE.

COUNTER-DEED, a ſecret Writing, or a private Act, either before a Notary, or under a private Seal; which deſtroys, changes, annuls or alters ſome more ſolemn and publick Act.

Counter-Deeds, are rather tolerated than permitted: in many Caſes they are actually prohibited; as being uſually no better than Frauds.

The Cuſtom of *Paris* annuls all *Counter-Deeds*, contrary to the Tenour of a Marriage.

COUNTER-PLEA, in Law, a Replication to a Prayer.

Thus, when a Tenant by Courteſy, in Dower, or other Real Action, prays the View or Aid of the King, or him in the Reverſion, for his better defence; or if a Stranger to the Action begun, deſire to be admitted, to ſay what he can for the Safeguard of his Eſtate: That which the Demandant alledges againſt this Requeſt, why it ſhould not be admitted, is call'd a *Counter-Plea*.

COUNTER-SIGNING, the Signing an Order, or Patent of a Superior, in quality of Secretary; to render the Thing more authentick.

Charters, *&c.* are ſign'd by the King, and *counter-ſign'd* by a Secretary of State or Ld.Chancellor. See SIGNATURE.

COUNTER-CHARM, a Charm or Spell, contrived to hinder the Effect of another. See CHARM, SPELL, LIGATURE, *&c.*

COUNTER-FOIL, or COUNTER-STOCK, is that Part of a Tally ſtruck in the Exchequer, which is kept by an Officer of the Court. See TALLY, and EXCHEQUER.

COUNTER-FUGUE, in Muſick, is when the Fugues proceed contrary to one another. See FUGUE.

COUNTER-PART, a Part of ſomething oppoſite to another Part. See PART.

Thus, in Muſick, the Baſs and Treble are two *Counterparts*, or oppoſite Parts.

COUNTER-POINT, in Muſick, the Art of compoſing Harmony; or of diſpoſing and concerting ſeveral Parts ſo together, as that they make an agreeable Whole. See COMPOSITION, and HARMONY.

Counter-point is divided into *ſimple*, and *figurative*; agreeably to the Diviſion of Harmony, into the Harmony of Concords, and that of Diſcords. See CONCORD.

Counter-point took its Name hence, when Muſick in Parts was firſt introduc'd, their Harmony being ſo ſimple they us'd no Notes of different Time, and mark'd their Conſonances by *Points* ſet *againſt* each other. Hence, in regard of the Equality of the Notes of Time, the Parts were made Concord in every Note.

This afterwards became denominated *ſimple* and *plain Counter-point*; to diſtinguiſh it from another Kind, wherein Notes of different Value were us'd, and Diſcords brought in betwixt the Parts, which they call *figurative Counter-point*.

Simple Counter-point, or the Harmony of Concords, conſiſts of the imperfect, as well as the perfect Concords; and may therefore be denominated *perfect*, or *imperfect*, according as the Concords are, whereof it is compos'd: Thus, the Harmony ariſing from a Conjunction of any Note with its Fifth and Octave, is perfect; but with its Third and Sixth imperfect.

Now, to diſpoſe the Concords or the Natural Notes and their Octaves in any Key in a ſimple *Counterpoint*, obſerve, with regard to the Diſtinction into perfect and imperfect Harmony, this general Rule, *viz.* to the Key *f*, to the 4th *f*, and to the 5th *f*, a perfect Harmony muſt be join'd; to the 2d *f*, the 3d *f*, and 7th, an imperfect Harmony is indiſpenſible; to the 6th *f*, either an imperfect or perfect Harmony.

In the Compoſition of two Parts, obſerve, that tho a third appears only in the Treble on the Key *f*, the 4th *f*, and the 5th *f*; yet the perfect Harmony of the Fifth, is always ſuppos'd, and muſt be ſupplied in the Accompanyments of the thorow Baſs to thoſe fundamental Notes.

More particularly, in the Compoſition of two Parts, the Rules are, That the Key *f* may either have its Octave, its Third, or its Fifth; the fourth *f* and fifth *f* may have either their reſpective Thirds or Fifths, and the firſt may have its Sixth; as, to favour a contrary Motion, the laſt may have its Octave.

The ſixth *f* may have either its 3d, its 5th, or its 6th.

The ſecond *f*, third *f*, and ſeventh *f*, may have either their reſpective 3ds or 6ths; and the laſt, on many occaſions, its falſe 5th. Which Rules hold the ſame both in flat and ſharp Keys.

For the Rules of *Counter-point*, with regard to the Succeſſion of Concords; it muſt be obſerv'd, That as much as can be in Parts, may proceed by a contrary Motion, *i. e.* the Baſs may aſcend when the Treble deſcends, and *vice verſa*. The Parts moving either upwards or downwards the ſame way; two Octaves or two Fifths never to follow one another immediately. Two Sixths never to ſucceed each other

other immediately. Whenever the Octave or Fifth is to be made uſe of, the Parts muſt proceed by a contrary Motion, except the Treble move into ſuch Octave or Fifth gradually. If in a Sharp Key, the Baſs deſcend gradually from the 5th *f* to the 4th *f*, the laſt, in that Caſe, muſt never have its proper Harmony applied to it; but the Notes that were Harmony in the preceding 5th *f*, muſt be continu'd on the 4th *f*. Thirds and Fifths may follow one another as often as one has a mind.

Figurative Counter-point is of two Kinds: In the one, Diſcords are introduc'd occaſionally; ſerving only as Tranſitions from Concord to Concord: In the other, the Diſcord bears a chief part in the Harmony. See DISCORD.

For the *firſt*; nothing but Concords are ever to be us'd on the accented Parts of the Meaſure: In the unaccented Parts, Diſcords may paſs tranſiently, without any Offence to the Ear. This the *French* call *Suppoſition*; becauſe the tranſient Diſcord always ſuppoſes a Concord immediately following it: Which is of infinite Service in Muſick. See SUPPOSITION.

For the *ſecond*, wherein the Diſcords are uſed as a ſolid and ſubſtantial Part of the Harmony; the Diſcords that have Place are the Fifth when join'd with the Sixth, to which it ſtands in the Relation of a Diſcord: the Fourth when join'd with the Fifth; the Ninth, which is in effect the Second; the Seventh, and the Second and Fourth.

Theſe Diſcords are introduc'd into the Harmony with due Preparation; and are to be ſucceeded by Concords: which is commonly call'd the *Reſolution of Diſcord*.

The Diſcord is prepar'd by firſt ſubſiſting in the Harmony in quality of a Concord; *i.e.* the ſame Note which becomes the Diſcord is firſt a Concord to the Baſs Note immediately preceding that to which it is a Diſcord. The Diſcord is reſolv'd by being immediately ſucceeded by a Concord deſcending from it by the Diſtance only of Second *g*, or Second *l*.

As the Diſcord makes a ſubſtantial Part of the Harmony, ſo it muſt always poſſeſs an accented Part of the Meaſure. Now to introduce the Diſcords into Harmony; it muſt be conſider'd what Concords may ſerve for their Preparation and Reſolution: The Fifth, then, may be prepar'd, either by being an Octave, Sixth, or Third. It may be reſolv'd either into the Sixth, or Third. The Fourth may be prepar'd in all the Concords, and may be reſolv'd into the Sixth, Third, or Octave. The Ninth may be prepar'd in all the Concords except the Octave; and may be reſolv'd into the Sixth, Third, or Octave. The Seventh may be prepar'd in all the Concords; and reſolv'd into the Third, Sixth, and Fifth. The Second and Fourth are uſed very differently from the reſt; being prepar'd and reſolv'd into the Baſs. See HARMONY, CONCORD, DISCORD, KEY, CLEF, MODULATION, *&c.*

COUNTER-PART, in Muſick, denotes a Part to be oppoſite to ſome other; as the Baſs is the *Counter-part* of the Treble. See PART.

COUNTER-TENOR, is one of the mean or middle Parts of Muſick; ſo call'd, as if it were oppoſite to the Tenor. See TENOR.

COUNTER-PART, in Law, is the Duplicate, or Copy of any Indenture, or Deed. See DUPLICATE.

COUNTER-PLOT, a Plot, or Intrigue contrived to thwart and overthrow another. See PLOT.

COUNTER-ROLL, a *Counterpart*, or Copy of the Rolls relating to Appeals, Inqueſts, *&c.* See ROLL.

COUNTER-ROUND, a Body of Officers going to viſit, and inſpect the Rounds, or the Sentinels. See ROUND.

COUNTER-SWALLOW-TAIL, an Outwork, in form of a ſingle Tenaille, wider at the Gorge than at the Head. See SWALLOW-TAIL.

COUNTER-TALLY, one of the two Tallies whereon any thing is ſcored. See TALLY.

COUNTER-LIGHT, or *Counter-jour*, a Window or Light oppoſite to any thing, which makes it appear to a diſadvantage. A ſingle *Counter-light* is ſufficient to take away all the Beauty of a fine Painting.

COUNTER-DRAWING, in Painting, *&c.* the copying a Deſign or Painting, by means of a fine linen Cloth, an oil'd Paper, or other tranſparent Matter; whereon the Strokes appearing thro', are follow'd and traced with a Pencil, with or without Colour. See DRAWING.

Sometimes they *counterdraw* on Glaſs, and with Frames or Nets divided into Squares, with Silk or with Thread; and alſo by means of Inſtruments invented for the Purpoſe; as the Parallelogram. See PARALLELOGRAM.

COUNTER-PROOF, in Rolling-Preſs Printing, a Print taken off from another freſh printed; which, by being paſs'd thro' the Preſs, gives the Figure of the former, but inverted. See PRINTING.

To *Counter-prove*, is alſo to paſs a Deſign in black Lead, or red Chalk thro' the Preſs, after having moiſten'd with a Sponge, both that, and the Paper on which the *Counter-Proof* is to be taken.

COUNTER-*Approaches*, in Fortification, Lines or Works made by the Beſieg'd, when their Trenches meet the Lines of Attack of the Beſiegers. See APPROACHES.

COUNTER-*Battery*, a Battery on the Side oppoſite to that of the Enemy; eſpecially that which aims to diſmount the Enemy's Cannon. See BATTERY.

COUNTER-GUARD, in Fortification, a triangular Work, in form of a large Parapet, placed beyond the Ditch, before the Point and Faces of the Baſtion.

It differs from the Demi-lune, in that it covers the whole Baſtion. The Engineers ordinarily call it the *Enveloppe*. See ENVELOPPE.

'Tis chiefly us'd when the Baſtion is on an Eminence; and 'tis by means hereof that Baſtions may be doubled and tripled. *Counter-guards* are very fit for covering the weak Parts of a Place.

COUNTER-MARCH, in War, a Change of the Face, or Wings of a Battalion; whereby the Men who were in the Front, come to be in the Rear.

This is an Expedient they have recourſe to when the Enemy attacks their Rear; or when they change their March for a Direction oppoſite to that wherein they had begun.

The *Counter-March* is either made by Files, or Ranks; by Files, when the Men in the Front of the Battalion go into the Rear: by Ranks, when the Wings or Flanks of the Battalion change Ground with one another.

The Term is alſo uſed at Sea, for the like Change of a Squadron.

COUNTER-MINE, in War, a ſubterraneous Vault, running the whole length of a Wall, three Foot broad, and ſix deep, with ſeveral Holes and Apertures therein; contriv'd to prevent the Effects of Mines, in caſe the Enemy ſhould make any to blow up the Wall. See MINE.

This Kind of *Counter-mine* is now little in uſe. The modern *Counter-mine* is a Well and a Gallery, ſunk on purpoſe till it meet the Enemy's Mine, and prevent its Effect: it being firſt pretty well known whereabouts it is.

COUNTER-MURE, or COUNTER-*Wall*, a little Wall built cloſe to another, to fortify and ſecure it, that it may not receive any Damages from Buildings made contiguous to it.

By the Cuſtom of *Paris*, If a Stable be erected againſt a Partition-Wall, there muſt be a *Counter-Wall* added, eight Inches thick. M. *Bullet* obſerves, that the *Counter-Wall* ought never to be bound, or connected with the proper Wall.

COUNTER-SCARP, in Fortification, the Slope, or Acclivity of the Ditch, looking towards the Campagne. See SCARP.

The Term ſometimes alſo takes in the Covert-way, and the Glacis.

Counterſcarps are ſometimes made of Stone, and without any Slope.

To be lodg'd on the Counterſcarp, is to be lodg'd on the Covert-way, or the Glacis. See COVERT-*Way*.

COUNTER-TRENCH, in Fortification, a Trench made againſt the Beſiegers, and which, of conſequence, has its Parapet turn'd towards 'em. See TRENCH.

There are uſually a great many Communications between this and the Place, to prevent the Enemy from making any uſe of it, in caſe they render themſelves Maſters thereof.

COUNTER-VALLATION, a *Counter*-Line, or Ditch, made around a Place beſieg'd; to prevent the Sallies and Excurſions of the Garriſon, when it is ſtrong.

Along its Edge, on the Side of the Place, runs a Parapet; and it is flank'd from Space to Space.

COUNTER-WORKING, in the Military Art, the raiſing of Works, in order to oppoſe thoſe of the Enemy. See WORK.

COUNTER-GAGE, in Carpentry, a Method uſed to meaſure the Joints, by transferring, *v. g.* the breadth of a Mortoiſe to the Place in the Timber where the Tenon is to be, in order to make 'em fit each other.

COUNTER-MARK, a ſecond or third Mark, put on any thing mark'd before.

The Word is us'd in Commerce, for the ſeveral Marks put on a Bale of Goods belonging to ſeveral Merchants; that it mayn't be open'd but in the Preſence of 'em all, or their Agents.

In Goldſmiths Works, *&c.* the *Counter-Mark* is the Mark or Punchion of the Hall, or Company, to ſhew the Metal is Standard, added to that of the Artificer that made it.

Counter-Mark of a Horſe, an Artificial Cavity, which the Jockeys make in the Teeth of Horſes that have out-grown the Natural Mark; to diſguiſe their Age, and make 'em appear as if they were not above ſix Years old. See MARK.

Counter-Mark of a Medal, is a Mark added to a Medal, a long time after its being ſtruck. See MEDAL.

The *Counter-Marks* appear to be Faults or Flaws in Medals, diſfiguring the Ground, ſometimes on the Side of the Head, and ſometimes on the Reverſe; particularly in the large and middle-ſiz'd Braſs: yet are they eſteem'd as Beauties among the Curious, who ſet a particular Value on ſuch Medals,

Medals, in regard they know the ſeveral Changes in Value they have undergone; which are expreſs'd by thoſe *Counter-Marks*.

Antiquaries, however, are not well agreed about the Signification of the Characters they find on 'em. On ſome, N.PROB. on others, N.CAPR. on others CAIR, RM, MT, AUG. SC. Some have for their *Counter-Mark* an Emperor's Head; ſome ſeveral; ſome a Cornucopia.

Care muſt be taken not to confound the Monograms with the *Countermarks*: The Method of diſtinguiſhing them is eaſy. The *Counter-Marks* being ſtruck after the Medal, are dented or ſunk in; whereas the Monograms being ſtruck at the ſame time with the Medals, have rather a little Relievo. See MONOGRAM.

COUNTER-POISON, an Antidote, or Remedy, which prevents the Effect of Poiſon. See ANTIDOTE, and POISON.

Of this Kind are Treacle, Mithridate, and Orvietan. See MITHRIDATE, &c.

Counter-poiſons are either *general*, or *ſpecific*: General *Counter-poiſons* are Angelica, Rice, Carduus Benedictus, the Vincetoxicum, Dittany, Scorzonera, Citrons, Bezoar, Hartſhorn, &c.

The Specificks are thoſe that follow; Citron-Bark, *v. g.* is a *Counter-poiſon* to Nux Vomica; Venice-Treacle to the Bite of a Viper; Oil of Scorpion, to the Bite of Scorpions; Oil of Pine-Apples, to Orpiment; Gentian, to the Cicuta, &c.

Vander Linden, in his Treatiſe *de Venenis*, ſays, that in every putrid Indiſpoſition, whether ariſing from the Bite of venomous Beaſts, or from an Alcali form'd by Putrefaction, Vinegar drank is ſovereign, either ſimple or diſtill'd; either with Honey in form of Oximel, or with Sea-Onion.

COUNTER-POISE, any thing ſerving to weigh againſt another; particularly a piece of Metal, ordinarily Braſs or Iron, making a Part of the *Statera Romana*, or Stilyard. See STATERA.

It is made to ſlide along the Beam; and from the Diviſion in which it keeps the Balance in Equilibrio, the Weight of the Body is determin'd. See BALANCE.

It is alſo call'd the *Pear*, on account of its Figure; and *Maſs*, by reaſon of its Weight.

Rope-Dancers uſe a Pole by way of *Counter-poiſe*, to keep their Bodies in Equilibrio.

COUNTERFORTS, *Buttreſſes*, *Spurs*, are Pillars of Maſonry, ſerving to prop or ſuſtain Walls or Terraſſes, ſubject to buldge, or be thrown down. See BUTTRESS.

Theſe Works are uſually bent into Arches, and placed at a diſtance from each other.

When any thing is built on the Deſcent of a Mountain, it muſt be ſtrengthen'd with *Counterforts* well bound to the Wall, and at the Diſtance of about twelve Yards from each other.

COUNTERMAND, a Revocation of an Order; or an Excuſe for ſetting aſide, or deferring a Conſignment.

A *Countermand* differs from an Eſſoign, firſt, in that in the *Countermand*, the Conſignment is propos'd to be defer'd to a Day certain, which is not in the Eſſoign. 2d, In the Eſſoign, the Cauſe of deferring the Conſignment is expreſs'd and affirm'd to be true, but in a *Countermand* that Affirmation is not requir'd. See ESSOIGN.

COUNTERMAND, is alſo where a thing formerly executed is afterward, by ſome Act or Ceremony, made void by the Party that firſt did it. As, if a Man make his Laſt Will, and deviſe his Land to *T. S.* and afterwards enfeoffs another of the ſame Land; this Feoffment is a *Countermand* of the Will, and the Will void as to the Diſpoſition of the Land.

COUNTING, or COMPTING-HOUSE, in the King's Houſhold, an Office wherein account is daily taken of the Expences, &c. of the Houſhold; Proviſions made for the ſame; as alſo Payments, and Orders for the well-governing of the Servants. See HOUSHOLD.

The principal Officer hereof, is the Lord Steward; under whom are the Treaſurer, Comptroller, Cofferer, Maſter of the Houſhold, Clerks of the Green-Cloth, and Clerks Controllers. See STEWARD, &c.

In the *Compting-Houſe*, is the Board of Green-Cloth, which is a Court of Juſtice. See GREEN-CLOTH.

COUNTY, originally ſignifies the Territory of a *Count*, or Earl. See COUNT.

But now it is uſed in the ſame Senſe with *Shire*; the one Word coming from the *French*, the other from the *Saxon*. See SHIRE.

In this View, a *County* is a Circuit, or Portion of the Realm, into 52 of which, the whole Land, *England* and *Wales*, is divided, for the better Government thereof, and more eaſy Adminiſtration of Juſtice therein.

Theſe *Counties* are ſubdivided into *Rapes*, *Lathes*, *Wapentakes*, *Hundreds*; and theſe again into *Tythings*. See RAPE, WAPENTAKE, HUNDRED, &c.

For the Execution of the Laws in the ſeveral Counties excepting *Cumberland*, *Weſtmorland*, and *Durham*, every *Michaelmas* Term, Officers are appointed, under the Denomination of *Sheriffs*. See SHERIFF.

This Officer has a double Function; firſt, *Miniſterial*, to execute all Proceſſes and Precepts of the Courts of Law directed to him: and ſecondly, *Judicial*; whereby he has Authority to hold two Courts, the one call'd the *Sheriff's-Turn*, the other the *County-Court*. See TURN, and COUNTY-*Court*.

Other Officers of the ſeveral *Counties*, are, *Lord Lieutenant*, who has the Command of the Militia of the *County*; *Cuſtodes Rotulorum*, *Juſtices of Peace*, *Bailiffs*, *High Conſtable*, and *Coroner*. See *Lord* LIEUTENANT, MILITIA, CUSTOS *Rotulorum*, JUSTICE *of the Peace*, *High* CONSTABLE, BAILIFF, CORONER, &c.

Of the 52 *Counties*, there are four of ſpecial Note, which are therefore term'd *Counties Palatine*; as, *Lancaſter*, *Cheſter*, *Durham*, and *Ely*: *Pembroke* alſo, and *Hexam* were antiently *Counties Palatine*; which laſt belong'd to the Archbiſhop of *York*, and was ſtripp'd of its Privilege in the Reign of Queen *Elizabeth*, and reduc'd to be a Part of the *County* of *Northumberland*. See PALATINE.

The Chief Governours of theſe *Counties Palatine*, heretofore, by a ſpecial Charter from the King, ſent out all Writs in their own Names; and, touching Juſtice, did all Things as abſolutely as the King himſelf in other *Counties*; only acknowledging him their Superior and Governour. But in *Henry* VIII's Time, the ſaid Power was much abridg'd.

COUNTY-*Corporate*, is a Title given to ſeveral Cities, or antient Boroughs, on which the *Engliſh* Monarchs have thought fit to beſtow extraordinary Privileges; annexing to them a particular Territory, Land, or Juriſdiction.

The Chief of theſe is the famous City of *London*; with *York*, *Canterbury*, *Briſtol*, *Cheſter*, *Norwich*; the Town of *Kingſton upon Hull*, *Newcaſtle upon Tine*, *Haverford-Weſt* in *Wales*, &c.

COUNTY-*Court*, is a Court of Juſtice held in each *County* by the Sheriff thereof, every Month. See SHERIFF.

This *County Court* had antiently the Cognizance of Matters of great Moment; but was much abridg'd by *Magna Charta*, and more 1 *Edw.* IV. but has ſtill the Determination of Debts and Treſpaſſes under forty Shillings.

In effect, till the Courts at *Weſtminſter* were erected, the *County-Courts* were the chief Courts of the Kingdom. See COURT.

Among the Laws of K. *Edgar* is this, *viz.* Let there be two *County-Courts* in a Year, and let there be preſent a Biſhop, and an Alderman or Earl; one whereof ſhall judge according to the Common Law, the other according to the Eccleſiaſtical Law. The Conjunction of theſe two Powers to aſſiſt each other, is as antient as the *Engliſh* Government it ſelf.

They were firſt ſeparated by *William* the Conqueror, who brought all the Eccleſiaſtical Buſineſs into a Conſiſtory, erected for that Purpoſe; (ſee CONSISTORY:) and the Law-Buſineſs into the King's-Bench. See KING'S-BENCH.

COUPED, *Coupe*, in Heraldry, expreſſes a Head, Limb, or other Thing in an Eſcutcheon which is borne as if cut, clear and even off, from the Trunk; in oppoſition to its being forcibly torn off, which they call *Eraſed*. See ERASED.

Thus, the Arms of *Ulſter*, which all Baronets carry, is a Dexter-Hand *couped*, or cut off at the Wriſt.

Couped is alſo uſed to denote ſuch Croſſes, Bars, Bends, Chevrons, &c. as do not touch the Sides of the Eſcutcheon, but are as it were cut off from 'em.

COUPEE, a Motion in Dancing, wherein one Leg is a little bent, and ſuſpended from the Ground; and with the other a Motion is made forwards.

The Word, in the original *French*, ſignifies a *Cut*.

COUPLE *Cloſe*, in Heraldry, the fourth Part of a Chevron. Theſe are never born but in Pairs, except a Chevron be between them, ſaith *Guillim*; tho *Bloom* gives an Inſtance to the contrary. See CHEVRON.

COUPLET, a Diviſion of an Hymn, an Ode, Song, &c. wherein, an equal Number, or an equal Meaſure of Verſes are found in each Part.

In Odes, theſe Diviſions are more ordinarily call'd *Strophes*. See STROPHE.

The Word is form'd from the Latin *Copula*.

By an Abuſe, *Couplet* is ſometimes uſed to ſignify a *Couple* of Verſes.

COURANT, a Term uſed to expreſs the preſent Time: Thus, the Year 1726 is the *Courant* Year; the 15th *Courant*, the 15th Day of the Month now running.

With regard to Commerce, the *Price Courant* of any Merchandize, is the known and ordinary Price accuſtom'd to be given for it.

The Word is alſo uſed for any thing that has Courſe, or is receiv'd in Commerce: In which Senſe, we ſay, *Courant* or *Current* Coin, &c. See CURRENT.

COURANT is alſo a Term in Muſick and Dancing; being uſed to expreſs both the Time or Air, and the Dance.

With regard to the firſt, *Courant* or *Currant* is a Piece of Muſick in triple Time: The Air of the *Courant* is ordinarily noted in Triples of Minims; the Parts to be repeated twice.

It

It begins and ends, when he who beats the Measure falls his Hand; in contradistinction from the Saraband, which ordinarily ends when the Hand is rais'd.

With regard to Dancing, the *Courant* is the most common of all the Dances practis'd in *England:* It consists, essentially, of a Time, a Step, a Balance, and a Coupee; tho it also admits of other Motions.

Formerly they leap'd their Steps; in which Point, the *Courant* differ'd from the low Dances and Pavades. There are *simple Courants*, and *figur'd Courants*, all danc'd by two Persons.

The Term is *French*, and properly signifies *running*. See CURRENT.

COURIER, or CURRIER, a Messenger sent Post, or Express, to carry Dispatches. See POST.

Antiquity, too, had its *Couriers*; we meet with three Kinds, *viz.* those who ran on foot, call'd by the *Greeks Hemerodromi*, q. d. *Couriers of a Day*. *Pliny*, *Corn. Nepos*, and *Cæsar*, mention some of these, who would run 20, 30, 36, and, in the Circus, even 40 Leagues *per* Day. And *Riding Couriers*, who chang'd Horses, as the modern *Couriers* do.

Xenophon attributes the first *Couriers* to *Cyrus*. *Herodotus* says, they were very ordinary among the *Persians*, and that there was nothing in the World more swift than these kind of Messengers. 'That Prince, *says* Xenophon, exa-'min'd how far a Horse would go in a Day; built Equeries, 'or Stables, at such Distances from each other, where he 'lodg'd Horses, and Persons to take care of 'em; and at 'each Place kept a Person always ready to take the Packet, 'mount a fresh Horse, and forward it to the next Stage: 'and this quite thro' his Empire.

But it does not appear, that either the *Greeks* or *Romans* had any regular fix'd *Couriers*, till the Time of *Augustus:* Under that Prince they travell'd in Cars; tho it appears from *Socrates*, they afterwards went on Horseback.

Under the Western Empire, they were call'd *Viatores*; and under that of *Constantinople*, *Cursores:* whence the modern Name.

COURSE, in Navigation, the Point of the Compass, or Coast of the Horizon, on which a Ship steers. See POINT, and COMPASS.

When a Vessel begins its *Course*, the Wind wherewith it is given makes a certain Angle with the Meridian of the Place; and, as 'tis here supposed, the Vessel follows exactly the Direction of the Wind, it makes the same Angle with the Meridian which the Wind makes. See WIND.

The Wind is further supposed always the same; and because each Point or Instant of a *Course* may be regarded as the first; every Moment of the *Course* it makes the same Angle with the Wind.

Now a Wind that is North-East, *v. g.* here, (and by consequence makes an Angle of 45 Degrees with our Meridian) is North-East wherever it blows, and makes the same Angle of 45 Degrees with all the Meridians it meets.

The *Course* of a Vessel therefore, driven by the same Wind, makes the same Angle with all the Meridians on the Surface of the Globe.

If the Vessel run North and South, it makes an Angle infinitely small with the Meridian, *i. e.* is parallel to it, or never goes from it: If it run East and West, it cuts all the Meridians at right Angles. In the first Case it describes a great Circle; in the second, either a great Circle, which is the Equator, or a Parallel. But if the Course be between the two, it does not then describe a Circle; because a Circle drawn in such a manner, would cut all the Meridians at unequal Angles. It describes, therefore, a Spiral or Curve, the essential Condition whereof, is to cut all the Meridians under the same Angle; call'd the *Loxodromic Curve*, or *Loxodromy*, popularly Rhumb. See RHUMB.

The Ship's *Course*, therefore, except in the two first Cases, is always a Loxodromic Curve; and the Hypothenuse of a Rectangle-Triangle; the two other Sides whereof, are the Ship's Way in Latitude and Longitude.

The Latitude is usually had by Observation. See LATITUDE.

The Rhumb, or Angle of the *Course*, is had by the Compass, together with the one or other of the two Sides; and what remains to be calculated in Sailing, is the Quantity of the Longitude, and of the Rhumb, or *Course*. See SAILING; see also CHART.

COURSE *of a River*. See RIVER.

COURSE, in Architecture, a continued Range of Stones, level, or of the same height, throughout the whole length of the Building; without being interrupted by any Aperture. See BUILDING, WALL, MASONRY, &c.

A *Course of Plinths*, is the Continuity of a Plinth of Stone, or Plaister, in the Face of a Building; to mark the Separation of the Stones. See PLINTH.

COURSE, is also us'd for a Collection, or Body of Laws, Canons, or the like. The *Civil Course*, is the Collection of the *Roman* Laws, compiled by Order of *Justinian*. See CIVIL *Law*.

The *Canonical Course*, is the Collection of the Canon Law, made by *Gratian*. See CANON.

COURSE, again, is used for the Time ordinarily spent in learning the Principles of a Science, or the usual Points and Questions therein.

Thus, a Student is said to have *finish'd his Course* in the Humanities, in Philosophy, &c.

Hence, *Course* is also us'd for the Elements of an Art exhibited and explain'd, either in Writing, or by actual Experiment: Hence our *Courses* of Philosophy, Anatomy, Chymistry, Mathematicks, &c. probably so call'd, as going throughout, or running the whole Length or *Course* of the Art, &c.

COURT, an Appendage to a House, or Habitation; consisting of a piece of Ground inclos'd with Walls, but open upwards. See HOUSE.

That before the House is properly call'd the *Avant-Court*; that behind, the *Arriere-Court:* That where Country-Affairs, &c. are manag'd, *i. e.* where Cattel, &c. come, the *Basse-Court*.

Nicod derives the Word from the Latin *Cohors*; *Menage* from *Cortis*. See COHORT.

COURT is also used for the *Palace*, or the Place where a King or Sovereign Prince resides; in which Sense, the Jesuit *Gratian* derives the Word from *Cortis*, or *Curtis*, of κόρτη, *Tent*; whence *Courtesy*, in the Sense of Civility. See PALACE.

In the Laws of the *Germans*, there is one Article, *de eo qui in* curte *Regis furtum commiserit*; and another, *de eo qui in* curte *ducis hominem occiderit*. Others derive it from the *Gallish Cors*, form'd of *Cohors*, and *Cohors* from χορὸς.

COURT, *Curia*, in a Law Sense, is the Place where the Judges distribute Justice, or exercise their Jurisdiction; as also, the Assembly of Judges, Jury, &c. in that Place.

In this Sense, *Courts* are divided into *Sovereign*, or *Superior*, and *Subaltern*, or *Inferior:* And, again, into *Courts of Record*, and *Base Courts*.

Crompton describes 32 *Courts* in *England*, most of 'em *Courts of Record*. See RECORD.

Again, *Courts* are either such as are held in the *King's Name*; as all the ordinary *Courts:* or those held by his Authority, where the Precepts are issu'd in the *Judge's Name*, *Virtute Magistratus sui*; as the Admiral's *Court*.

In *England* we have four principal *Courts* subsisting; all establish'd by antient Custom of the Realm, rather than by any Statute; tho their Establishments have been from time to time since confirm'd by Acts of Parliament. These are, the *Courts of King's-Bench*, the *Common-Bench* or *Pleas*, the *Exchequer*, and the *Court of Chancery*. See each in its Place, *King's*-BENCH, COMMON-*Pleas*, EXCHEQUER, and CHANCERY.

COURT *of Admiralty*, is a Court for the Decision of Maritime Controversies. See ADMIRALTY *Court*.

COURT *of Arches*. See ARCHES *Court*.

COURTS-*Baron*, are *Courts* that all Lords of Manors, who were antiently call'd *Barons*, have within their respective Precincts. See BARON.

This *Court* is twofold; as, if a Man having a Manor in a Town, grants the Inheritance of the Copyholds thereto belonging to another; this Grantee may keep a *Court* for the Customary Tenants, and accept Surrenders to the Use of others, and make both Admittances and Grants.

The other *Court* is of Freeholders, which is properly call'd a *Court-Baron*, wherein the Free-holders are Judges: whereas of the other, the Lord or his Steward is Judge. See PEER, FREEHOLDER, STEWARD, &c.

COURT *of Chivalry*, or the *Marshal's Court*; a *Court* whereof the Judges are the Lord High Constable, and the Earl Marshal of *England*. See CONSTABLE, and MARSHAL.

This *Court* is the Fountain of Martial Law; and the Earl Marshal is not only one of the Judges, but also to see Execution done. See CHIVALRY, MARTIAL, &c.

COURT *of Delegates*, is a *Court* where Delegates or Commissioners are appointed by the King's Commission, upon an Appeal to him, to sit in the *Court* of Chancery, or elsewhere. It is granted in three Cases; first, when a Sentence is given in an Ecclesiastical Cause, by the Archbishop, or his Official: Secondly, when a Sentence is given in an Ecclesiastical Cause, in Places exempt: Thirdly, when Sentence is given in the Admiralty Court, in Suits Civil or Marine, by Order of the Civil Law. See DELEGATES.

COURT *of Peculiars*, is a Spiritual *Court*, held in such Parishes as are exempt from the Jurisdiction of the Bishops, and are peculiarly belonging to the Archbishop of *Canterbury*. See PECULIARS.

COURT *of Pye-pouders*. See PYE-POUDERS.

COURT *of Prerogatives*. See PREROGATIVE *Court*.

COURT *of Requests*, was a Court of Equity, of the same Nature with the *Court* of Chancery, but inferior to it; being principally instituted for the Help of such Petitioners, as in conscionable Cases, deal by Supplication to his Majesty.

Of this *Court* the Lord Privy-Seal was chief Judge; assisted by the Masters of Requests. It had its Beginning about

9 *Hen.* VII. according to Sir *Julius Cæsar*'s Tract on this Subject. *Mich.* 40 and 41 *Eliz.* in a *Court* of Common Pleas, it was adjudg'd, upon ſolemn Argument, that this *Court of Requeſts*, or the *White-Hall*, was no *Court* that had the Power of Judicature, &c. *Coke Inſt.* fol. 97.

It had aſſum'd ſo great Power to it ſelf, that it grew burdenſome and grievous, and was therefore taken away, with ſome others, by a Statute made 16 and 17 *Car.* I. cap. 10.

COURT *of the Legate*, was a *Court* obtain'd by Cardinal *Wolſey* of Pope *Leo* X. in the ninth Year of *Henry* VIII. wherein he, as Legate of the Pope, had power to prove Wills, and diſpence with Offences againſt the Spiritual Laws, &c. It was but of ſhort continuance. See LEGATE.

COURT-*Leet*, a *Court* belonging to a Lord of a Manor, in which all Offences under High Treaſon are inquir'd into. See LEET.

COURT-*Days*, are Days when the *Courts* of Judicature are open, and Pleas held. See DAY, FASTUS, NEFASTUS, &c.

COURT-*Lands*, ſuch as the Lord of the Manor keeps in his own Hands, for the Uſe of his Family, and for Hoſpitality. See MANOR.

COURT-*Roll*, a Roll which contains an account of the Number, &c. of Lands, depending on the Lord of the Manor; with the Names of the Tenants, &c. See ROLL.

Tenants holding by Copy of this Roll, are denominated Copy-holders. See COPY-HOLDER.

COURTESY, or CURTESY *of England*, a Tenure, whereby a Man marrying an Inheritrix, a Woman ſeiz'd of Lands of Fee-ſimple, or Fee-tail general; or ſeized as Heir of the Tail-ſpecial, and getteth a Child by her, who cometh alive into the World, tho both Wife and Child die forthwith; yet, if ſhe were in Poſſeſſion, he ſhall keep the Land during his Life, and be called Tenant, by the *Courteſy* of *England*; this Privilege being not allow'd in any other Country, except *Scotland*, where it is call'd *Curialitas Scotiæ*.

This Tenure was introduc'd by the Conqueror, and borrow'd by him from his own Country, *Normandy*, where it obtain'd before, under the Name of *Veuveté*.

COURTIN, or COURTAIN, in Fortification, the Front of the Wall, or Rampart, lying between two Baſtions. See CURTIN.

COURTISAN, a Term of Infamy, given to Women who ſell their Perſons, and make a Trade of Proſtitution. See STEWS.

Lais, the famous *Theban Courtiſan*, ſtands on record for requiring no leſs than ten thouſand Crowns for a ſingle Night. Of all Places in the World, *Venice* is that where *Courtiſans* abound the moſt: 'Tis now 250 Years ſince the Senate, which had expell'd 'em, was oblig'd to recall 'em; to provide for the Security of Women of Honour, and to keep the Nobles employ'd, leſt they ſhould turn their Heads to make Innovations in the State.

COUSIN, a Term of Relation and Kinſhip, applied to thoſe who are iſſu'd from two Brothers, or two Siſters.

In the firſt Generation they are call'd *Couſin Germans*, *i. e.* next *Couſins*. See GERMAN.

In the ſecond, Iſſues of Germans, or ſecond *Couſins*; in the third and fourth, *Couſins* in the third and fourth Degrees.

In the Primitive Times, it was allow'd *Couſin*-Germans to marry, to prevent their making Alliances in Heathen Families; but *Theodoſius* the Great prohibited it under Pain of Death; on pretence that they were, in ſome ſort, Brothers and Siſters, with regard to each other.

The Word is ordinarily derived from *Conſanguineus*; tho *Menage* brings it from *Congenius*, or *Congeneus*, q. d. *ex eodem genere*.

Paternal Couſins, are thoſe iſſu'd from Relations on the Father's ſide; *Maternal*, thoſe on the Mother's.

COUSIN is alſo a Title of Honour, which Kings beſtow on Peers or Nobles, foreign Princes of the Blood, Cardinals, and the principal Perſons of their State; particularly Dukes.

COUSSINET, *Cuſhion*, in Architecture, the Stone that crowns a Piedroit, or Peer; or that lies immediately over the Capital of the Impoſt, and under the Sweep. See IMPOST, PIEDROIT, &c.

Its Bed, below, is level, and above, curved; receiving the firſt Riſe or Spring of the Arch, or Vault. See ARCH, &c.

COUSSINET is alſo uſed for the Ornament in the *Ionic* Capital between the Abacus, and Echinus, or Quarter-Round; and which ſerves to form the Volutes. See CAPITAL.

It is thus denominated from its repreſenting a Pillow or Cuſhion, preſs'd by the Weight over it, and bound with the Strap or Girdle, call'd by *Vitruvius*, *Baltheus*.

COUSU, in Heraldry, is uſed in the ſame Senſe as *Remply*, *viz.* for a Piece of another Colour or Metal, placed on the Ordinary, as if it were ſew'd on; which the Word in the *French* Language naturally implies.

This is generally of Colour on Colour, or Metal on Metal, contrary to the general Rule of Heraldry: Whence the Word denotes, that the Piece is not properly on the Field, but in the Nature of a thing ſew'd on.

COUTHUTLAUGH, from the Saxon *Couth*, *Sciens*, Knowing; and *Utlaugh*, *exlex*, Outlaw; is he that wittingly receives a Man outlaw'd, and cheriſhes or conceals him. See OUTLAW.

In which Caſe he was, in antient Time, ſubject to the ſame Puniſhment with the Outlaw himſelf. *Bracton*, l. 3.

COUVERT, in Heraldry, denotes ſomething like a Piece of Hanging, or a Pavilion falling over the Top of a Chief, or other Ordinary; ſo as not to hide, but only be a Covering thereto.

COWARD, in Heraldry, a Lion borne in an Eſcutcheon, with his Tail doubled or turn'd in between his Legs, is called a *Lion Coward*.

COWL, or COUL, *Cuculla*, a ſort of Hood, wore by certain Monks. See COUL.

COWRING, in Falconry, the quivering of young Hawks, which ſhake their Wings, in Sign of Obedience to the old ones.

COXÆ, or COCCIGIS *Os*, in Anatomy, a Bone join'd to the lower Bone of the *Os Sacrum*; conſiſting of three or four little Bones and two Cartilages. See SACRUM.

In form it reſembles a little Tail, the loweſt Bone growing gradually leſs and leſs than the upper, till it end in a cartilaginous Point, which is turn'd upwards for the Convenience of ſitting.

Theſe two Bones are but looſly fix'd; eſpecially in Women; in whom, at the Time of Parturition, they eaſily give way.

The Uſe of this Bone is to ſuſtain the *Inteſtinum Rectum*: It has Muſcles in common with the *Anus*, to draw it upwards, or inwards. See COCCIGIS *Muſculi*.

COXÆ, or COXENDICIS *Oſſa*, call'd alſo *Oſſa Innominata*, and in *Engliſh* the *Hip-Bones*, are two large Bones, ſituate on either ſide the *Os Sacrum*.

In Infants, each of theſe conſiſts of three diſtinct Bones, ſeparated by Cartilages; which, in Adults, grow up, and conſtitute one firm, ſolid Bone; whoſe Parts, however, retain three diſtinct Names, according to their former Diviſion, *viz.* the *Os Ilium*, *Os Iſchium*, by ſome peculiarly call'd *Os Coxendicis*, and *Os Pubis*; which ſee in their proper Places ILIUM, ISCHIUM, and PUBIS.

COXÆ *Muſculus*, according to Dr. *Drake*, a Pair of Muſcles ariſing fleſhy from the *Os Iſchium*, between the *Muſculi Marſupialis*, and *Pyriformis*, and deſcending obliquely, terminate on each ſide the *Os Coccygis*, and adjoining Part of the *Os Sacrum*, ſerving to draw the *Os Coccygis* upwards and inwards; as Antagoniſts to two Ligaments, ſpringing from the back Part of the *Os Sacrum*, and terminating in the external Surface of the *Os Coccygis*.

CRABS-EYES, *Oculi Cancrorum*, or *Lapides Cancrorum*, in Natural Hiſtory and Medicine, are little, white, round Stones, ordinarily flat; ſo call'd, becauſe taken out of the Craw-fiſh, or River Lobſter: and tho bearing no great reſemblance to Eyes, yet reſembling them more than any other Part. They are much uſed in Medicine, as a powerful Alcali, or Abſorbent. See ABSORBENT, ALCALI, &c.

The moſt able Naturaliſts imagine 'em form'd in the Brain of the Animal. *Vanhelmont* firſt found 'em in the Region of the Stomach: M. *Geoffroy* the younger has obſerv'd the manner of their Formation much more accurately.

According to him, we may lay down one Claſs of Animals, which have their Bones withoutſide; whereas the reſt have 'em withinſide: Of the firſt Kind are the Fiſhes we are ſpeaking of. See SHELL.

Thoſe of the Rivers diveſt themſelves every Year in *June* of the Bones wherewith they are cover'd and arm'd; a Membrane wherewith the Inſide of thoſe Scales is lin'd, takes their Place, and hardens, by degrees, into a new Scale.

Indeed, 'tis much leſs wonder an Animal ſhould caſt its Skin, or Covering; than that it ſhould diſcharge it ſelf of its Stomach, as the Craw-fiſh does; and even, as M. *Geoffroy* thinks, of its Inteſtines too: The exterior Membranes of thoſe *Viſcera* taking their place.

There is room to believe, that as they putrify and diſſolve, they ſerve for Food to the Animal; during the Time of the Reformation, the old Stomach is the firſt Food the new one digeſts.

'Tis only in this time that the Stones are found, called *Crabs-Eyes*: They begin to be form'd when the antient Stomach is deſtroy'd; and are afterwards wrap'd up in the new one, where they decreaſe by degrees till they diſappear entirely. See TESTACEOUS *Powder*.

CRAFT, a Sea Term, ſignifying all manner of Lines, Nets, Hooks, which ſerve for fiſhing.

Hence, as thoſe that uſe the Fiſhing Trade, uſe ſmall Veſſels, ſuch as Ketches, Hoys, Smacks, &c. they call ſuch little Veſſels *ſmall Craft*.

CRAMP, a kind of Numbneſs, or Convulſion, occaſion'd by a thick viſcid Vapour, entering the Membranes of the Muſcles which contracts or extends the Neck, Arms, Legs, &c. with a violent, but tranſitory Pain; being uſually driven off with Friction alone. See CONVULSION.

The

The Word comes from the German *Krampff*.

CRAMP-IRON, a Piece of Iron, bent at each Extreme, ſerving to bind together Pieces of Wood, Stones, or other Things.

Thus, we ſay, Theſe Stones are bound together by *Cramp-Irons* faſten'd in Lead, *&c.* Some derive the Word, by Corruption, from *Agrapon*, or the Italian *Rampone*, which ſignifies the ſame thing.



CRAMPONNEE, in Heraldry. A *Croſs Cramponee*, is that which at each End has a *Cramp*, or ſquare Piece coming from it; as in the Figure adjoining. See CROSS.

CRAMPOONS, CRAMPONS, pieces of Iron, hooked at the Ends; for the drawing or pulling up of Timber, Stones, *&c.*

CRANAGE, a Liberty to uſe a *Crane*, for drawing up Wares out of a Ship, or Hoy, *&c.* at a Wharf; and to make Profit thereof.

The Word alſo ſignifies the Money taken, or paid for that Grant.

CRANE, a Machine uſed in Building, for the raiſing large Stones and other Weights.

M. *Perrault*, in his *Notes on* Vitruvius, makes the *Crane* the ſame with the *Corvus*, *Crow* of the Antients. See CORVUS.

The modern *Crane* conſiſts of ſeveral Members, or Pieces, the principal whereof is a ſtrong perpendicular Beam, or Arbor, firmly fix'd in the Ground, and ſuſtain'd by eight Arms, coming from the Extremities of four Pieces of Wood laid acroſs, thro' the Middle whereof the Foot of the Beam paſſes. About the middle of the Arbor the Arms meet, and are mortais'd into it: its Top ends in an Iron Pivot, whereon is bore a tranſverſe Piece, advancing out to a good diſtance in manner of a *Crane*'s Neck; whence the Name.

The Middle and Extremity of this is again ſuſtain'd by Arms from the middle of the Arbor; and over it comes a Rope, or Cable, to one end whereof the Weight is fix'd; the other is wound round the Spindle of a Wheel, which turn'd, draws the Rope, and that heaves up the Weight; to be afterwards applied to any Side or Quarter, by the mobility of the tranſverſe Piece on the Pivot.

CRANE is alſo a popular Name for a Syphon. See SYPHON.

CRANE-*Lines*, in a Ship, are Lines going from the upper End of the Sprit-ſail-top-maſt, to the Middle of the Foreſtays.

CRANIUM, in Anatomy, an Aſſemblage of ſeveral Bones, which cover and encloſe the Brain and *Cerebellum*; popularly call'd the *Skull*. See BRAIN, *&c.*

It is divided into two Tables, or *Laminæ*, laid or applied over each other; between which is a thin ſpongious Subſtance, made of bony Fibres detach'd from each *Lamina*, and full of little Cells of different Bigneſſes, call'd *Diploe*, or *Meditullium*. See DIPLOE.

The Tables are hard and ſolid, the Fibres being cloſe to one another; the *Diploe* is ſoft, in regard of the bony Fibres being at a greater Diſtance: A Contrivance whereby the Skull is not only made lighter, but leſs liable to Fractures.

The external *Lamina* is ſmooth, and cover'd with the *Pericranium*; the internal is likewiſe ſmooth, abating the Furrows made by the Pulſation of the Arteries of the *Dura Mater*, ere the *Cranium* be arriv'd at its Conſiſtence.

It has ſeveral Holes, thro' which it gives paſſage to the Spinal Marrow, Nerves, Arteries, and Veins, for the Conveyance and Re-conveyance of the Blood, *&c.* between the Heart and the Brain.

Its Figure is round, which is an advantage to its Capacity; but a little depreſs'd, and longiſh; advancing out behind, and flatted on the two Sides, which form the Temples; which contribute to the Enlargement of the Sight and Hearing.

It is compoſed of eight Bones, ſix whereof are *proper*, and two *common*: The *proper* are, the Bone of the Forehead, *Os Frontis*, that of the back of the Head, *Os Occipitis*, the two *Oſſa Parietalia*, and the two of the Temples, *Oſſa Temporum*. See each in its Place, FRONTIS, OCCIPITIS, TEMPORIS, *&c.*

In the Eminences of the Bones of the Temples, is contain'd the Organ of Hearing, with the four little Bones belonging thereto, *viz.* the *Malleolus*, *Incus*, *Stapes*, and *Os Orbiculare*. See HEARING.

The *common* Bones are the *Os Sphenoides*, and *Ethmoides*. See SPHENOIDES, *&c.*

The *Cranium* has three *common* Sutures, which divide it from the Jaw: It has others *proper*, whereof there are three genuine, the *Coronalis*, *Sagittalis*, and *Lambdoides*; the reſt ſpurious, call'd *Squammoſæ*, or *Temporales*. See SUTURE, *&c.*

This Diviſion of the *Cranium* into Pieces by Sutures, is of good uſe, as it makes it leſs liable to break, gives paſſage to the Membranes which ſuſtain the *Pericranium*, and affords Vent to the Matter of inſenſible Perſpiration. See FRACTURE, *&c.*

The Word comes from the *Greek* κρανος, *Galea*, Helmet; in regard it ſerves to defend the Brain, like a Head-piece. *Pezron*, again, derives κρανιον from the Celtic *Cren*, from its roundneſs.

CRANK, a Contrivance in Machines, in manner of an Elbow, only of a ſquare form; projecting out from an Axis, or Spindle; and ſerving by its Rotation, to raiſe and fall the Piſtons of Engines for raiſing Water, *&c.*

CRANK, in the Sea Language. A Ship is ſaid to be *Crank*, when ſhe cannot bear her Sail, or can bear but a ſmall Part, for fear of overſetting. She is alſo ſaid to be *Crank by the Ground*, when her Floor is ſo narrow, that ſhe cannot be brought on ground without danger.

CRAPE, a light tranſparent Stuff, in manner of Gauze; made of raw Silk, gumm'd and twiſted on the Mill; wove without croſſing, and much uſed in Mourning.

Crapes are either *crap'd*, i. e. *criſp'd*, or *ſmooth*: the firſt *double*, expreſſing a cloſer Mourning; the latter *ſingle*, uſed for that more remote. Note, white is reſerv'd for young People, or thoſe devoted to Virginity.

The Silk deſtin'd for the firſt is more twiſted than that for the ſecond; it being the greater or leſs degree of twiſting, eſpecially of the Warp, which produces the Criſpage, given it when taken out of the Loom, ſteep'd in clear Water, and rubb'd with a piece of Wax for the Purpoſe.

They are all died raw. The Invention of *Crapes* comes from *Boulogne*: But the chief Manufacture hereof is at *Lyons*.

Hiſtory tells us, that S. *Bathilda*, Queen of *France*, made a fine *Crape*, *Crepam*, of Gold and Silver, to lay over the Body of S. *Eloy*. The *Bollandiſts* own they can't find what this *Crepa* was. *Binet* ſays it was a Frame to cover the Body of the Saint withal: But others, with reaſon, take it to be a tranſparent Stuff, thro' which the Body might be ſeen; and that this was the *Crepa* whence our *Crape* is form'd.

CRAPULA, a Surfeit by over-eating and drinking. See SURFEIT, and PLENITUDE.

CRASIS, in the Animal Oeconomy, a due Temperament or Conſtitution of the Blood; wherein the ſeveral Principles, *viz.* Salt and Oil, whereof it is compoſed, are found in their juſt Proportion and Purity: in contradiſtinction to a *Diſcraſy*, which conſiſts in an improper Union of the Principles, or in an unnatural State of ſome thereof. The chief Diſcraſies the Blood is ſuſceptible of, whence flow moſt of the Diſeaſes of the Body, are *Coagulation*, *Diſſolution*, an Exceſs of Oil, or of Salt. See BLOOD; ſee alſo COAGULATION, *&c.*

The Word is *Greek*, κρασις, ſignifying *Mixture*, *Temperament*.

CRASIS, in Grammar, a Figure, whereby we join two Syllables into one; call'd alſo *Syneræſis*. See SYNERÆSIS.

Thus, in *Virgil*'s fourth *Eclogue*,

Orphei Calliopea lino formoſus Apollo.

there is a *Craſis* in the Word *Orphei*, which here only conſiſts of two Syllables.

CRASSAMENTUM, a Term uſed by ſome Anatomiſts, for the Cruor of the Blood; or that Part which, upon ſtanding to cool and ſeparate, forms the *Coagulum*: In oppoſition to the Serum, or Whey, wherein it ſwims. See CRUOR.

Some Authors have ſuppoſed the *Craſſamentum* to be ſpecifically lighter than the Serum; but Dr. *Jurin* ſhews the contrary from repeated Experiments. See BLOOD.

CRATER, *Cup*, in Aſtronomy, a Conſtellation of the Southern Hemiſphere. See CONSTELLATION.

The Stars in the Conſtellation *Crater*, in *Ptolemy*'s Catalogue are 7; in *Tycho*'s 8; in the *Britannic Catalogue* 11. The Order, Names, Longitudes, Latitudes, *&c.* whereof, are as follow.

Stars in the Conſtellation CRATER.

Names and Situations of the Stars.	Signs.	Longitude. ° ′ ″	Latitude. ° ′ ″	Magnit.
That in the Baſis	♍	19 26 3	22 42 47	4 3
Preced. of 3 in the Middle of the Cup		22 23 50	17 35 20	4
South. in the Middle of the Cup		25 5 50	20 47 43	4
Preced. in the North Part of the Circumference of the Mouth		21 55 59	13 28 28	4
Middle of 3 in the Middle of the Cup 5		24 56 16	19 39 22	4
Subſ. in North Circumf. of the Mouth		23 9 20	14 35 16	6
In the North Handle		24 16 26	11 18 33	4
In the Middle of the Mouth		26 8 52	14 13 32	5
In the South Circumf. of the Mouth		29 45 50	18 17 29	4
In the South Handle 10	♎	1 47 42	16 4 46	4
	♎	3 58 41	17 52 59	5 6

CRATER, in Falconry, any Line on which Hawks are faſten'd when reclaimed. See RECLAIM.

CRAVEN, or CRAVENT, in our antient Cuſtoms, a Trial by Battle, upon a Writ of Right. See COMBAT.

The

The Law was, that the Victory ſhould be proclaim'd, and the Vanquiſh'd acknowledge his Fault in the Audience of the People; or pronounce the Word *Cravent* in the Name of *Recreantice*, or Cowardice, &c. and, preſently, Judgment to be given; and the Recreant, *amittere Legem terræ*, *i. e.* become infamous.

Coke obſerves, that if the Appellant join Battle, and cry *Craven*, he is to loſe, *liberam Legem*. If the Appellee cry *Craven*, he is to be hang'd.

CRAYON, a general Name for all colour'd Stones, Earths, or other Minerals; uſed in Deſigning, or Painting in Paſtel; whether they have been beaten and reduced to a Paſte, or are us'd in their Conſiſtence of a Stone, after ſawing or cutting them into long narrow Slips.

In this laſt manner are red *Crayons* made, of Blood-ſtone, or red Chalk; black ones, of Charcoal and black Lead. *Crayons* of all other Colours are Compoſitions of Earths reduc'd into Paſte.

CREAM, the thickeſt and fatteſt Part of Milk; being that whereof Butter is made. See MILK.

The Word is deriv'd from the Latin *Cremor*, which ſignifies the ſame thing; tho in the lower *Latin* we find *Crema lactis*.

CREAM *of Tartar*, in Pharmacy, a Preparation of Tartar, otherwiſe called *Cryſtal of Tartar*.

It is made by boiling Tartar in Water till it be diſſolved, and paſſing the Diſſolution thro' a Straining-Bag: Half the Liquor being evaporated, the Remainder is ſet in a cool Place; where it ſhoots into Cryſtals, Part of it ſwimming a-top, in form of *Cream*.

This latter is properly the *Cream of Tartar*, the reſt *Cryſtal of Tartar*, both of the ſame Nature and Uſe.

It is reputed a great Sweetner of the Blood; for which ſome take it in Whey or Water gruel in the Spring-time, to the Quantity of Half an Ounce every Morning, for three or four Weeks.

Its Operation is by Stool; and, by its ſaline Particles, pretty much alſo by Urine. It's generally mix'd with lenitive Electuaries, and other gentle Catharticks, in Nephritic and Antivenereal Caſes, where it often proves ſerviceable.

CREDENTIALS, Letters of Credit and Recommendation; eſpecially ſuch as are given to Embaſſadors, Plenipotentiaries, &c. ſent to foreign Courts. See EMBASSADOR, &c.

CREDIBILITY. See PROBABILITY, VERISIMILITUDE, EVIDENCE, OPINION, &c.

In the *Philoſophical Tranſactions*, we have a Mathematical Computation of the *Credibility* of Human Teſtimony. See TESTIMONY.

CREDIT, in Commerce, a mutual Loan, of Merchandizes or Silver, on the Reputation of the Probity and Solvability of a Negotiant. See LOAN.

Letters of CREDIT, are thoſe given to Perſons in whom a Merchant, &c. can truſt, to take Money of his Correſpondent abroad, in caſe he happens to need it. See LETTER.

Credit is alſo uſed for the Courſe which Papers, or Bills, &c. of Commerce, have in the Publick, and among Dealers.

In this Senſe, *Credit* is ſaid to *riſe*, when in negotiating the Actions of a Company, they are receiv'd and ſold at Prices above *Par*, or the Standard of their firſt Creation.

Diſcredit is oppos'd to *Credit*, and is uſed where Money, Bills, &c. fall below *Par*. See PAR.

CREDIT was alſo antiently a Right which Lords had over their Vaſſals; conſiſting in this, that during a certain time they might oblige 'em to lend them Money.

In this Senſe, the Duke of *Brittany* had *Credit* during fifteen Days on his own Subjects, and thoſe of the Biſhop of *Nants*; and the Biſhop had the ſame *Credit* or Right among his Subjects, and thoſe of that Prince.

CREDITOR, a Perſon to whom any Sum of Money is due, either by Obligation, Promiſe, or otherwiſe. See DEBT, and DEBTOR.

The Laws of the Twelve Tables, which were the Foundation of the *Roman* Juriſprudence, allow'd the *Creditor* to tear or cut his Debtor to pieces, in caſe he prov'd inſolvable.

CREDITOR, in Book-keeping. See BOOK-KEEPING.

CREED, CREDO, *Symbol*, a ſhort, or ſummary Account of the chief Articles of the Chriſtian Faith; thus called from the firſt Word thereof in Latin, *Credo*, I believe. See SYMBOL.

CREEK, Part of a Haven, where any thing is landed from the Sea. See HARBOUR.

So many Landing-Places as there are in a Harbour or Port, ſo many *Creeks* there are. *Crompt.*

CREMASTERS, in Anatomy, an Epithet given two Muſcles, otherwiſe called *Suſpenſores*; ſerving to keep the Teſticles ſuſpended. See SUSPENSORES.

The Word comes from the *Greek* κρεμαιν, *ſuſpendere*, to ſuſpend, hang.

CRENATED *Leaves*, a Term uſed by Botaniſts, for ſuch Leaves of Plants as are jagg'd, or notch'd. See LEAVES.

CRENELLE, or *Imbattled*, in Heraldry, is when any honourable Ordinary is dented, in reſemblance of the Battlements of a Wall. See BATTLEMENT.

The Uſe hereof is, doubtleſs, taken from the Figures of ſuch Walls being given, either for having been the firſt at mounting, or the chief in defending them.

The *French* Word comes from *Cren*, a Notch or Interval; the *Engliſh*, from its being a Place of Fighting, or Battle.

Upton in *Latin* calls this *Imbatallatum*, a Word forg'd from the *Engliſh*; but moſt others term it *Pinnatum*, from *Pinna*, a Battlement.

CREPITATION, that Noiſe which ſome Salts make over the Fire in Calcination; call'd alſo *Detonation*. See DETONATION.

CREPITUS *Lupi*, in Natural Hiſtory, a kind of *Fungus*, popularly call'd *Puff-ball*.

Mr. *Derham* obſerves, that upon examining the Pouder thereof with a Microſcope, he found the Seeds to be ſo many exceeding ſmall Puff-balls, with round Heads, and long, ſharp-pointed Stalks; as if made on purpoſe to prick into the Ground.

The Seeds are intermix'd with much duſty Matter, and become hurtful to the Eyes; probably by their ſharp Stalks pricking and wounding it.

CREPUSCULUM, in Aſtronomy, *Twilight*; or the Time from the firſt Dawn or Appearance of the Morning, to the riſing of the Sun; and, again, between the ſetting of the Sun, and the laſt Remains of Day. See DAY, RISING, SETTING, &c.

The *Crepuſculum* is uſually computed to begin and end when the Sun is about 18 Degrees below the Horizon.

The *Crepuſcula* are longer in the Solſtices than in the Equinoxes, longer in an oblique, than in a right Sphere.

Papias derives the Word from *Creperus*; which, he ſays antiently ſignify'd *uncertain*, *doubtful*, q. d. a *dubious Light*.

The *Crepuſcula* are occaſion'd by the Suns Rays refracted in our Atmoſphere, and reflected from the Particles thereof, to the Eye.

Demonſt. For ſuppoſe an Obſerver in O, (Tab. *Aſtronomy*, Fig. 41.) the ſenſible Horizon A B, and the Sun under the Horizon in H K; and let the Ray S E fall in the Atmoſphere below the Horizon. Since it paſſes out of a rarer into a thicker Medium, it will be refracted, (ſee REFRACTION;) and that towards the Perpendicular, *i. e.* towards the Semidiameter C E. It will not, therefore, proceed in T, but touching the Earth in D, will fall upon A, the Eaſtern Part of the ſenſible Horizon: Nor can any other Ray beſides A D, of all thoſe reflected from E, arrive at A. But now, ſince the Particles of the Atmoſphere reflect the Sun's Rays, (ſee REFLECTION;) and ſince the Angle DAC is equal to C A O; the Rays reflected in A will be carried to O, the Place of the Spectator; who will therefore ſee the Particle A ſhining in the ſenſible Horizon, and conſequently the beginning of the Morning *Crepuſculum*.

And in the ſame manner might be ſhewn the Refraction and Reflection of the Sun's Rays in the Atmoſphere, in the Evening *Crepuſculum*.

Kepler, indeed, aſſigns another Cauſe of the *Crepuſculum*, *viz.* the luminous Matter around the Sun; which ariſing near the Horizon, in a circular Figure, exhibits the *Crepuſculum*; in no wiſe, as he would ſhew, owing to the Refraction of the Atmoſphere.

The Depth of the Sun below the Horizon, at the Beginning of the Morning Crepuſculum, *or End of the Evening one*, is determin'd in the ſame manner as the Arch of Viſion; *viz.* by obſerving the Moment wherein the Air firſt begins to ſhine in the Morning *Crepuſculum*, and that wherein it ceaſes in the Evening; and finding the Sun's Place for that Moment.

Alhazan found it 19 Degrees; *Tycho* 17°; *Rothmannus* 24°; *Stevinus* 18°; *Caſſini* 15°; *Ricciolus*, in the Equinoxes in the Morning, 16°, in the Evening 20° 30′; in the Summer Solſtice in the Morning, 21° 25′; in the Winter Solſtice in the Morning 17° 25′.

Nor need we wonder at this Difference among Aſtronomers; the Cauſe of the *Crepuſculum* being inconſtant: For, if the Exhalations in the Atmoſphere be either more copious, or higher than ordinary; the Morning *Crepuſculum* will begin ſooner, and the Evening hold longer than ordinary: For the more copious the Exhalations are, the more Rays will they reflect, conſequently the more will they ſhine; and the higher they are, the ſooner they will be illumin'd by the Sun. To this it may be added, that in a denſer Air, the Refraction is greater; and that not only the Brightneſs of the Atmoſphere is variable, but alſo its Height from the Earth.

Hence, when the Difference between the Sun's Declination and the Depth of the Equator is leſs than 18°, and does not, in effect, exceed 15°; the *Crepuſculum* will continue the whole Night.

The Elevation of the Pole P R, (Fig. 42.) *and the Sum of Declination being given, to find the Beginning of the Morning*

ing Crepuſculum, *or End of the Evening.* Since in the Triangle PSZ the ſeveral Sides are given, *viz.* PZ the Elevation of the Pole, PR and PS the Complement of the Declination, OS and SZ the Aggregate; from the Quadrant ZD, and the Sun's Depth DS, find the Angle ZPS, whoſe Meaſure is the Arch AO. See TRIANGLE.

Convert AO into Solar Time: thus have you the Time elaps'd from the Beginning of the Morning *Crepuſculum*, to the Period of the Evening one. See TIME.

To find the Crepuſculum *by the Artificial Globe.* See GLOBE.

CRESCENT, the *New-Moon*, which, as it begins to recede from the Sun, ſhews a little Rim of Light, terminating in Points, or Horns, which are ſtill increaſing, till it become full, and round in the Oppoſition. See MOON.

The Term is alſo uſed for the ſame Figure of the Moon in its Wane, or Decreaſe; but improperly: in regard the Points or Horns are then turn'd towards the Weſt, whereas they look to the Eaſt in the juſt *Creſcent*.

The *Creſcent* is the *Turkiſh* Symbol; or rather, 'tis that of the City of *Byzantium*, which bore this Device from all Antiquity; as appears from Medals, ſtruck in honour of *Auguſtus*, *Trajan*, &c.

The Word comes from the Latin *Creſcere*, to increaſe.

CRESCENT is alſo a Military Order, inſtituted by *Renatus* of *Anjou*, King of *Sicily*, &c. in 1448; ſo call'd from the Badge, or Symbol thereof, a *Creſcent* of Gold enamell'd.

What gave occaſion to this Eſtabliſhment, was, that *Renatus* took for his Device a *Creſcent*, with the Word *Loz*, *Praiſe*; which, in the Stile of *Rebus*, makes *Loz in Creſcent*, q. d. *by advancing in Virtue, one merits Praiſe.*

CRESCENT, in Heraldry, is a Bearing in form of a Half-Moon.

The *Creſcent* is ſometimes *Montant*, *i. e.* its Points look towards the Top of the Chief, which is its moſt ordinary Repreſentation: whence ſome contend, that the *Creſcent*, abſolutely ſo call'd, implies that Situation; tho, ſome Authors blazon it *Montant*, when the Horns are towards the Dexter-ſide of the Eſcutcheon, when others call it *Increiſſant*.

The *Ottomans* bear Sinople, a *Creſcent Montant*, Argent.

Creſcents are ſaid to be *adoſs'd*, when their Backs or thickeſt Parts, are turn'd towards each other; their Points looking to the Side of the Shield.

The Inverted Creſcent, is that whoſe Points look towards the bottom: *Turn'd Creſcents* are plac'd like thoſe *adoſs'd*; the difference is, that all their Points look to the Dexter-ſide of the Shield: The *Conturn'd*, on the contrary, look to the Siniſter-ſide. The *affronted or appointed Creſcents*, are contrary to the *adoſs'd*, the Points looking towards each other.

The *Creſcent* is frequently us'd as a Difference in a Coat-Armour, to diſtinguiſh it for that of a ſecond Brother, or ſecond Family. See DIFFERENCE.

CREST, in Armoury, the uppermoſt Part of the defenſive Armour of the Head; riſing over the reſt, in manner of the Comb or Tuft of a Cock; to ſuſtain the Effort of very keen Scimitars, &c.

It has its Name from *Criſta*, Cock's Comb. Hence,

CREST, in Heraldry, the uppermoſt Part of an Armoury; or that Part over the Caſk, or Helmet. See CASK.

Next to the Mantle, ſays *Guillim*, the *Creſt* or *Cognizance* claims the higheſt Place, being ſeated on the moſt eminent Part of the Helmet; yet ſo, as to admit an Interpoſition of ſome Eſcrol, Wreath, Chapeau, Crown, &c. See COGNIZANCE.

The *Creſt* of the Arms of *England*, is a Lion Paſſant Gardant, crown'd with the like; that of *France*, a Flower-de-Lys ſquared.

In the antient Tournaments, the Cavaliers had Plumes of Feathers, eſpecially thoſe of Oſtriches and Herons, for their *Creſts*; theſe Tufts of Feathers they called *Plumarts*; and were placed in Tubes, on the Tops of high Caps, or Bonnets. Some had their *Creſts* of Leather; others of Parchment, Paſtboard, &c. painted or varniſh'd, to keep out the Weather; others of Steel, Wood, &c. on which were ſometimes repreſented a Member or Ordinary of the Coat; as, an Eagle, Flower-de-Lys, &c. but never any of thoſe called Honourable Ordinaries, as Pale, Feſſe, &c.

The *Creſts* were changeable at pleaſure; being reputed no other than as an arbitrary Device, or Ornament. See DEVICE.

Herodotus attributes the Riſe of *Creſts* to the *Carians*, who firſt bore Feathers on their Caſks, and painted Figures on their Bucklers; whence the *Perſians* call'd 'em *Cocks*.

The antienteſt of the Heathen Gods wore *Creſts*, even before Arms were made of Iron and Steel: *Jupiter Ammon* bore a Ram's Head for his *Creſt*; *Mars* that of a Lion, or a Tyger, caſting out Fire at his Mouth and Noſtrils. *Alexander* the Great wore for his *Creſt* a Ram's Head, to inculcate that he was the Son of *Jupiter Ammon*; *Julius Cæſar* ſometimes bore a Star, to denote that he was deſcended from *Venus*; and ſometimes the Head of a Bull, or an Elephant with his Trunk; and ſometimes the Wolf that ſuckled *Romulus* and *Remus*. The Chriſtians, in their firſt Religious Wars, were wont to wear a Croſs darting forth Rays, for their *Creſts*, as well as on their Shields and Banners, as *Prudentius* informs us;

Clypeorum inſignia Chriſtus
Scripſerat, ardebat ſummis crux addita Criſtis.

The antient Warriors bore *Creſts* to ſtrike Terror in their Enemies, at the Sight of the Spoils of Animals they had kill'd; or to give 'em the more formidable Mien, by making them appear taller, &c.

Plutarch obſerves, that the *Creſt* of *Pyrrhus* was a Bunch of Feathers, with a Stag's Horns; and *Diodorus Siculus*, that of the Kings of *Egypt*, Lion's Heads, Bulls, or Dragons.

The *Creſts* have given riſe to ſeveral Fables: The Antients, *v. g.* give *Serapis* the Head of a Sparrow Hawk; this being the *Creſt* of that Cavalier. *Geryon* they made a Monſter with three Heads, becauſe he bore a triple *Creſt*; and feign'd, that *Proteus* chang'd his form every Moment, becauſe, being King of *Egypt*, he frequently chang'd his *Creſt*; ſometimes bearing that of a Lion, ſometimes of a Dragon, &c.

The *Creſt* is eſteem'd a greater Mark of Nobility, than the Armoury, as being bore at Tournaments; to which none were admitted, till they had given Proof of their Nobility. Sometimes it ſerves to diſtinguiſh the ſeveral Branches of a Family. It has ſerv'd, on occaſion, as the diſtinguiſhing Badge of Factions.

Sometimes the *Creſt* is taken from the Device; but more uſually is form'd of ſome Piece of the Arms: Thus, the Emperor's *Creſt* is an Eagle; that of *Caſtile* a Caſtle, &c.

Families that exchange Arms, as have done the Houſes of *Brunſwic* and *Cologne*, do not change their *Creſts*; the firſt ſtill retain the Horſe, and the latter the Mermaid.

CREST, among Carvers, an Imagery, or carved Work, to adorn the Head, or Top of any thing; like our modern Corniſh. See CORNICHE.

CREST-FALLEN, of a Horſe, is when the upper Part of the Neck, on which the Mane grows, does not ſtand upright, but hangs either to one Side, or the other.

CREUX, a Term in Sculpture, much us'd by the *French*; tho not yet, that we know of, naturaliz'd among us: But the want of a Word of equal import in *Engliſh*, as it has frequently put us under a neceſſity of uſing this in the Courſe of the preſent Work; ſo it pleads ſtrongly for its Admiſſion into our Language.

The Word originally ſignifies a *Hollow*, *Cavity*, or *Pit*, out of which ſomething has been ſcoop'd, or dug: The Term is uſed particularly for that kind of Sculpture and Graving, where the Lines and Figures are cut, and form'd within the Face, or Plan of the Plate or Matter engraven: In which Senſe, it ſtands in oppoſition to *Relievo*; where the Lines and Figures are imboſs'd, and riſe prominent above the Face of the Matter. See ENGRAVING, and SCULPTURE.

CRIBRATION, in Pharmacy, a Separation of the finer Parts of a Medicine, whether dry, or humid, from the groſſer; the latter by means of a Pulping Sieve, the former by a fine Searce.

CRIBROSUM *Os*, or *Os* CRIBRIFORME, in Anatomy, a little Bone at the Top of the Noſe, pierced like a Sieve, to let paſs ſeveral little Fibres, ariſing from the Mamillary Productions, and terminating in the Membrane that lines the Cavity of the Noſtrils; call'd alſo *Os Ethmoides*. See ETHMOIDES.

CRICOARYTÆNOIDES, in Anatomy, a Name given two Pair of Muſcles, ſerving to open the Larynx. See LARYNX.

The *Cricoarytænoides* are either *Poſterior*, or *Lateral*: The firſt are the firſt Pair of Openers of the Larynx; the latter, the ſecond Pair.

The *Lateral* have their Origin in the Edge of the Lateral, and Superior of the Cartilage *Cricoides*, and are inſerted into the Lateral and Superior Part of the *Arytænoides*.

The *Poſterior* have their Origin in the poſterior and lower Part of the *Cricoides*: and hence the Reaſon and Etymology of the Name is evident.

CRICOIDES, in Anatomy, a Cartilage of the Larynx; ſo called, *q. d.* annular, as being round, like a Ring, and incompaſſing the whole Larynx. See LARYNX.

The *Cricoides* is the ſecond Cartilage of the Larynx: 'tis narrow before, thick behind; and ſerves as a Baſe to all the other Cartilages; and is, as it were, let into the *Tircides*.

'Tis by means of this that the other Cartilages are join'd to the *Trachea*; on which account it is immoveable.

The Word is form'd from κρίκος, uſed by Tranſpoſition for κιρκος, *Circle*, and εἶδος, *Form*.

CRICOTHYROIDÆUS, in Anatomy, a Name given to the firſt Pair of Muſcles proper to the Larynx. See LARYNX.

Their Name is derived hence, that they have their Origin in the lateral and anterior Part of the *Cricodes*; and are inſerted into the inferior Part of the *Ala Thyroides*.

Their Uſe is to dilate the Scutiform Cartilage. See Scutiform.

CRIME, a *Breach*, or *Tranſgreſſion* of a Law; or, an Action contrary to the Tenor of a Law, either Natural or Divine, Civil, or Eccleſiaſtick; to which a Penalty is annex'd. See Law.

The *Romans* diſtinguiſh'd two Kinds of *Crimes*, *viz. Private Crimes*, which only affected particular Perſons; the Proſecution whereof was not allowed by the Laws to any but thoſe intereſted therein; as *Adultery*, &c. And *Publick Crimes*; the Purſuit whereof was permitted to all Perſons, tho in no wiſe immediately intereſted.

With us, *Crimes* are diſtinguiſh'd into *Capital*, as *Treaſons*, *Murders*, *Robberies*, &c. and *Common*, as *Perjuries*, &c.

They are again divided into *Crimes* cognizable by the King's Judges; as thoſe abovemention'd; and ſuch as are only cognizable in the Spiritual Courts, as Simple *Fornication*, &c.

The Term *Crime* includes in it the Idea of a Determination, and a Deſign form'd to do an Injury. It is deriv'd from the Latin *Crimen*, of the *Greek* κρινω, *judico*.

CRIMSON, one of the ſeven red Colours of the Dyers. See Red.

The Stuffs to be dy'd in *Crimſon*, after they have been clear'd of their Soap, and ſtrongly allum'd, are put in a Bath of Cochineal, each according to its Colour. See Purple.

The Word comes from the *Arabic Kermiſi*, of *Kermes*, or *Hermes*, red. The *Bollandiſts* inſinuate, that *Crimſon* comes from *Cremona*, and is uſed for *Cremonois*. See Kermes, Cochineal, &c.

CRINONES, in Medicine, a ſort of Worms, ſometimes found under the Skin, in Children; reſembling ſhort thick Hairs, or Briſtles. See Worms, and Vermes.

They are alſo called *Comedones*, from the Latin *Comedere*, to eat; by reaſon they prey on the Subſtance of the Child, or conſume its Nouriſhment.

CRISIS, in Medicine, a Change, or Turn in acute Diſeaſes; wherein the Morbifick Matter is ſo alter'd, as determines the Patient either for Recovery or Death. See Critical.

The Cauſe of ſuch Change is owing to the remaining vital Force's being irritated by the Matter of the Diſeaſe ſo or ſo condition'd; *i. e.* fit either to be evacuated, or tranſlated, or to kill. See Disease.

If the Matter be diſpos'd for Evacuation or Tranſlation, but is not Salubrious, it produces a Change call'd a *Critical Perturbation*, or *Imperfect Criſis*.

If the Change become ſenſible, they are call'd *Critical Symptoms*, or *Signs of a Criſis*, either future or preſent.

The Symptoms of the *Criſis* are frequently confounded with thoſe ariſing from the Cauſes of the Diſeaſe, the Diſeaſe it ſelf, or the Matter of the Diſeaſe; whence the moſt unhappy Conſequences. See Symptom.

The Differences between theſe critical Symptoms and morbifick ones, are, that the firſt proceed from the vital Powers prevailing over the Force of the Diſeaſe; but the latter from the Diſeaſe's prevailing over the vital Faculty: that the firſt are preceded by a manifeſt Concoction, but the latter are form'd even in Crudities: that the former happen about the *critical Times*, but the latter at all Times of the Diſeaſe, chiefly during its Increaſe.

The principal Symptoms of an approaching Criſis, are, after Digeſtion, and about the critical Time, a ſudden Stupor, Drouſineſs, Waking, Delirium, Anxiety, Dyſpnœa, Grief, Redneſs, Titillation, Pricking, Heavineſs, Darkneſs, Light, ſpontaneous Tears, Nauſea, Heat, Thirſt, trembling of the lower Lip, &c.

The Symptoms and Effects of a preſent Criſis, are, after the preceding ones, a Vomiting, Salivation, Looſeneſs, thick Sediment in the Urine, bleeding at the Noſe, Hemorrhoids, Sweat, Abſceſſes, Puſtules, Tumors, Bubos, Parulis, Aphthæ, &c.

CRISTA *Galli*, in Anatomy, an Eminence in the middle of the *Os Ethmoides*, advancing within the Cavity of the *Cranium*; and to which is faſten'd that Part of the *Dura Mater* which divides the Brain, called *Falx*. See Brain.

It has its Name from its Figure, which reſembles that of a Cock's Comb.

In Adults, this Proceſs appears of a piece with the *Septum Narium*. See Nose, and Nostrils.

Cristæ is alſo a Term uſed by Anatomiſts for certain Excreſcences ariſing about the Fundament, reſembling Cocks Combs.

Theſe, M. *Dionis* ſays, are taken off either by Ligature, by Cauteriſation, or Amputation. When theſe Excreſcences have other Figures, they have other Names.

Crista is alſo uſed for a crook'd, twiſted, ſpiral Eminence, in the middle of the Spine of the *Omoplate*. See Omoplate.

CRITERIUM, or CRITERION, a Judgment made of the Truth, or Falſhood of a Propoſition, or the Nature and Qualities of any Effect. See Truth.

The Doctrine of *Criteria*, and the Characters and Rules thereof, make the firſt Part of the *Epicurean* Philoſophy. See Epicurean.

CRITHOMANCY, a kind of Divination, perform'd by conſidering the Dough, or Matter of the Cakes offer'd in Sacrifice; and the Meal ſtrew'd over the Victims to be kill'd.

Hence, in regard they ordinarily us'd Barley-Meal in theſe Ceremonies, this Kind of Divination was call'd *Crithomancy*; from κριθη, *Barley*, and μαντεια, *Divination*.

CRITICAL *Days*, *Symptoms*, &c. are certain Days, and Symptoms, uſually ariſing in the Courſe of acute Diſeaſes, as Fevers, Small Pox, &c. which indicate the Patient's State, and determine him either to recover or grow worſe. See Crisis.

The Criſes have been frequently obſerv'd to happen on the 7th, 14th, or 20th Day; whence thoſe have been denominated *Critical Days*.

The Word comes from the *Greek* κρινω, *judico*, I judge.

For the Theory of Criſes, it may be obſerv'd, that the Concoction of any morbifick Matter, and the Humour to be ſecern'd, is nothing elſe but a Change thereof into ſuch a due Magnitude, or Smallneſs, as it may be carried by the circulating Blood along the Canals, and excern'd by Veſſels deſtin'd for that Purpoſe. But if the morbifick Matter cannot be reduc'd to ſuch a Magnitude or Smallneſs as may correſpond to the Orifices of the Secretory Veſſels; then either an Abſceſs or a Hemorrhage will follow, if a Criſis be begun; for which Reaſon, Abſceſſes, &c. are accounted leſs perfect Criſes. But, that the morbifick Matter may be reduc'd to a due Magnitude, or Smallneſs, and its wiſh'd-for Diſcharge, there is requir'd a conſiderable Time, if the Quantity of Matter is large; that is, if the Diſtemper be great and ſevere: And ſince there are a great many Cauſes, and thoſe very conſtant, which may occaſion the Blood, and offending Humours therein, to be of a different Fluidity in the Inhabitants of different Climates; it is impoſſible but that different Spaces of Time ſhould be requir'd for the finiſhing Concoction: which makes it impoſſible to determine the *critical* Days in one Climate, from what they are found to be in another.

The Cauſes of real *Critical* Days, that is, ſuch on which happens the laſt Concoction of the morbifick Matter, which is always attended with its Expulſion, are all thoſe Things which occaſion the Humours to become of ſuch a certain Magnitude or Minuteneſs, and of a greater or leſſer Coheſion; but with any given Power, Bodies unequally large, or unequally cohering, cannot be concocted in an equal Time: Wherefore, it is to be found by the Obſervations made by all Nations among themſelves, which are the uſual Cauſes and Conditions of thoſe Diſeaſes, which require a certain Number of Days to finiſh ſuch a Concoction in.

CRITICISM, the Art of Judging. See Crisis, and Criterion.

Some define the Term more at large, thus; *Criticiſm* is the Art of judging of the Facts of a Hiſtory, or of a Work of Genius, with the various Incidents there met with, their Stile and their Authors: So that M. *le Clerc* may ſeem to have given a defective Idea of *Criticiſm*, when he defines it ſimply the Art of entering into the Meaning of antient Authors, and of making a juſt Diſcernment of their genuine Works.

We may diſtinguiſh divers Sorts, or Branches of this Art: As, *Philoſophical Criticiſm*, or the Art of judging of Opinions and Hypotheſes in Philoſophy: *Theological Criticiſm*, the Art of judging of the Explication of *Dogmata*, or Doctrines of Faith, &c. *Political Criticiſm*, the Art of judging of the Means of governing, acquiring, and preſerving States.

But the ordinary uſe of the Word is reſtrain'd to *Literary Criticiſm*; which, however, is of great extent, as it takes in the Art of judging of Facts: a Branch of *Criticiſm*, which regards not only Hiſtory, but alſo the Diſcernment of the real Works of an Author, the real Author of a Work, the genuine Reading of a Text; and the Art of diſcovering Suppoſititious Monuments, Charters, interpolated Paſſages, &c.

The other Parts of *Literary Criticiſm*, are, the Art of judging of Works of Genius, their Excellencies and Defects.

We have alſo *Grammatical Criticiſm*, or the Art of interpreting and diſcovering the Words and Meanings of an Author; *Criticiſm of Antiquities*, which conſiſts in diſtinguiſhing genuine Medals, and the different Taſte and Spirit found among 'em, according to the different People, the different Country, and the different Times wherein they were ſtruck; the diſtinguiſhing between what is caſt and what ſtruck; what has been retouch'd, and repair'd or added, from what is really antique; the genuine from the ſpurious, &c. and to decypher and explain 'em, &c.

Sacred Criticiſm, in general, is that employ'd in Eccleſiaſtick Matters, the Hiſtory of the Church, the Works of the Fathers, Councils, Lives of the Saints, &c. but more particularly

particularly what concerns the Books of the Holy Scriptures, and the Canon thereof.

Ariſtotle, if we believe *Halicarnaſſæus*, is the firſt Inventor of the Art of *Criticiſm*. *Ariſtarchus*, *Halicarnaſſæus* himſelf, *Varro* and *Longinus*, diſtinguiſh'd themſelves therein in their Days. Among the Chriſtians, *Dionyſius Alexandrinus*, *Heſychius*, *Euſebius*, *Tichonius*, S. *Jerom*, and *Theodoret*, were the greateſt Maſters in this Art. The Decree of Pope *Gelaſus* about the Apocryphal Books, requir'd a good ſhare of *Criticiſm*.

But the Art fell with the other Arts; and lay unknown till the Time of *Charlemaign*, when it was re-eſtabliſh'd under him and his Sons.

The Care which the Religious *Ciſtercians* took to correct the Manuſcripts of the Bible, ſhew that the Rules of *Criticiſm* were not entirely unknown in the XIth Century. The Works of *Johannes Sarisburienſis*, *Euſtathius*, and *Tzetzes*, make it evident, it was cultivated in the XIIth. The Manuſcripts of the Bible corrected by the *Dominicans* of *Paris*, and the Doctors of the *Sorbonne* in the XIIIth, ſhew it was ſubſiſting then. In the following Ages it was ſtill cultivated with more Earneſtneſs; eſpecially in the XVIth and XVIIth Centuries, when all the World made it their Study.

From the Whole, it follows, that *Criticiſm*, does, indeed, ſuppoſe an uncommon Stock of Knowledge of the Subject whereon it is employ'd: but *Criticiſm*, it ſelf, is nothing elſe but good Senſe perfected by Logick.

CROCHES, among Hunters, the little Buds about the Top of a Deer's Horns.

CROCI, among Botaniſts, the Apices, or ſmall Knobs on the Tops of Flowers. See APICES.

CROCIA, a Biſhop's or Abbot's *Croſier*, or Paſtoral Staff. See CROSIER.

CROCODILE, in Rhetorick, a captious and ſophiſtical Kind of Argumentation; diſpos'd to ſeduce the Unwary, and draw 'em ſpeciouſly into a Snare. See SOPHISM.

It has its Name, *Crocodile*, from the following Occaſion, invented by the Poets.

A poor Woman begging a *Crocodile* that had caught her Son walking by the River-ſide, to ſpare and reſtore him; was anſwer'd, that he wou'd reſtore, provided ſhe'd give a true Anſwer to a Queſtion he ſhou'd propoſe: The Queſtion was, *Will I reſtore thy Son or not?* To this the poor Woman, ſuſpecting a Deceit, ſorrowfully anſwer'd, *Thou wilt not*: and demanded to have him reſtor'd, becauſe ſhe had anſwer'd truly. Thou lieſt, ſays the *Crocodile*, for if I reſtore him thou haſt not anſwer'd truly: I can't therefore reſtore him, without making thy Anſwer falſe. See DILEMMA.

Under this Head may be reduc'd the Propoſitions call'd *Mentientes*, or *Inſolubiles*; which deſtroy themſelves. Such is that of the *Cretan* Poet; *Omnes ad unum Cretenſes ſemper mentiuntur*: All the *Cretans*, to a Man, always lie. Either, then, the Poet lies, when he aſſerts that the *Cretans* all lie; or the *Cretans* don't all lie.

CROCOMAGMA, in Pharmacy, Troches compos'd of Saffron, Myrrh, red Roſes, Starch, and Gum-Arabic: Thus call'd from the *Greek* κρόκος, *Saffron*, and μάγμα, a *Mark* impreſs'd on any thing.

CROCUS, a Term us'd for Saffron. See SAFFRON.

CROCUS, in Chymiſtry, is a Name given to ſeveral different Preparations; from their red, or ſaffron Colour.

Crocus Martis, is a Preparation of Iron; and is of two Kinds, *viz. Crocus Martis aperiens*, and *Crocus Martis aſtringens*. See SAFFRON *of Mars*.

Crocus Martis aperiens, *opening Saffron of Mars*, is a Preparation of Iron Plates, made by firſt waſhing them, then expoſing 'em to the Dew, till they have contracted a Ruſt; which Ruſt is ſcrap'd off, and the Plates expos'd for more. See MARS.

Others prepare it by calcining Iron Filings, with an equal Weight of Sulphur. Others by clapping a Bar of Iron, red, or rather white hot, between two Rolls of Brimſtone; in which Caſe, the Iron melts, and runs down into a Veſſel of Water below: which ſome call *Mars cum Sulphure præparatus*. Others have other Preparations.

M. *Lemery* endeavours to ſhew, that Iron taken in Subſtance, is much more ſalutary and efficacious than when thus prepar'd; the Proceſs tending to ſtrip it of its oily Part, wherein its chief Virtue reſides; leaving nothing behind but the more ferruginous Part. See CHALYBEAT.

Crocus Martis aſtringens, *binding Saffron of Iron*, is a Preparation of Iron Filings; wherein they are depriv'd of their more ſaline Parts, by waſhing them five or ſix times in ſtrong Vinegar, and calcining them five or ſix Hours.

Crocus Metallorum, a Kind of impure, opake, Glaſs of Antimony, of a liver Colour; hence frequently call'd *Liver of Antimony*; made by firing equal Parts of Pouder of Antimony and Salt-petre, well mix'd in an Iron Mortar, cover'd with a Tile. See ANTIMONY.

This is kindled by dropping in a Coal of Fire, upon which a great Detonation enſues; and the Mortar is ſtruck, to make the Matter fall to the bottom. The ſhining Part is the *Crocus*, or Liver, which is to be ſeparated from the Droſs, and reſerv'd for uſe.

Its chief uſe is in making the *Vinum Emeticum*, or *Benedictum*, by infuſing an Ounce or two of the *Crocus* pouder'd, in a Quart of Wine for 24 Hours.

CROFT, *Croſta*, a little Cloſe, or Pittle encloſed, near a Dwelling-houſe, either for Paſture or Tillage.—*Poſſunt etiam dicti Monachi de eiſdem mariſcis verſus occidentem jacentibus pro ſe & hominibus ſuis, includere* Croftos, *ſive pratum juxta pontem ſpecialiter quantum illis placuerit.* Ingulf.

In ſome antient Deeds, *Cruſta* occurs as the *Latin* Word for a *Croft*; but *cum Toftis & Croftis* is moſt frequent.

Croft is tranſlated by *Abba Floriacenſis*, *in prædium*, a *Farm*.

CROISADE, or CRUZADE, or CRUZADO, a *Holy War*, or an Expedition againſt Infidels and Hereticks; particularly againſt the *Turks*, for the Recovery of *Paleſtine*.

People antiently flock'd on theſe *Cruſades* out of Devotion; the Pope's Bulls, and the Preaching of the Prieſts of thoſe Days, making it appear a Point of Conſcience. Hence ſeveral Orders of Knighthood took their riſe. See TEMPLARS, *&c.*

Thoſe who meant to go on this Errand, diſtinguiſh'd themſelves by Croſſes of different Colours, wore on their Clothes; and were thence call'd *Croiſes*: The *Engliſh* wore 'em white; the *French*, red; the *Flemmiſh*, green; the *Germans*, black; and the *Italians* yellow. See CROISE.

They reckon eight *Croiſades* for the Conqueſt of the Holy Land: The firſt undertook in 1095, at the Council of *Clermont*; the ſecond in 1144, under *Louis* VII. the third in 1188, by *Henry* II. of *England*, and *Philip Auguſtus* of *France*; the fourth in 1195, by Pope *Celeſtin* III. and the Emperor *Henry* VI. the fifth publiſh'd in 1198, by Order of *Innocent* III. wherein the *French*, *Germans*, and *Venetians* engag'd; the ſixth under the ſame Pope, began tumultuarily, in 1213, and ended in the Rout of the Chriſtians; the ſeventh reſolv'd at the Council of *Lyons* in 1245, undertaken by S. *Louis*; the eighth, which was the ſecond of S. *Louis*, and the laſt of all, in 1268.

'Tis ſaid, it was the *Ciſtercian* Monks who firſt projected the *Croiſades*; *Philip Auguſtus* ſollicited the Execution thereof with the Holy See; and *Innocent* III. rais'd the firſt Standard of the Croſs.

It was the Council of *Clermont* who order'd that they ſhould bear the Croſs in their Banner; and that thoſe who enter'd themſelves into the Service, ſhould alſo wear it on their Clothes.

The Abbot *Juſtiniani* makes an Order of Knighthood of the *Croizes*, who ſerv'd in the *Croizades*.

Towards the middle of the XIIth Century, there was alſo a *Croizade* of the *Saxons* againſt the Pagans of the North; wherein the Archbiſhop of *Magdeburg*, the Biſhops of *Halberſtadt*, *Munſter*, *Mersburgh*, *Brandenburgh*, &c. with ſeveral Lay-Lords embark'd. And towards the Beginning of the ſame Century, under the Pontificate of *Innocent*, there was alſo a *Croiſade* undertaken againſt the *Albigenſes*; who were become powerful in *Languedoc*, &c. See ALBIGENSES.

CROISES, in our antient Cuſtoms, Pilgrims bound for the Holy Land, or who had already been there; ſo called from a Badge which they wore on their Garments, repreſenting a Croſs.

The Word *Croiſes* is alſo extended to the Knights of S. *John of Jeruſalem*; created for the Defence and Protection of Pilgrims; and all thoſe of the Nobility, Gentry, *&c.* who in the Reigns of King *Henry* II. *Richard* I. *Henry* III. and *Edward* I. were *Cruce Signati*, *i. e.* dedicated themſelves to the Wars, for the Recovery of the Holy Land. See CROISADE.

CROISIERS, *Corte-croix*, or *Crucigeri*, were a Religious Order, or a Congregation of Regular Canons, ſo call'd.

There are three Orders which have, or do ſtill bear this Name: one of *Italy*; another in the *Low Countries*; and a third in *Bohemia*.

The firſt pretend to be deriv'd from S. *Clot*; and add, that S. *Quiriacus* the *Jew*, who ſhew'd S. *Helena* the Place of the true Croſs, and was afterwards converted, reform'd them. All we know for certain, is, that they ſubſiſted in *Italy* before *Alexander* III. mounted the Chair; for that Pontiff, flying from *Frederick Barberoſſa*, found an Aſylum in the Monaſteries of the *Croiſiers*, which he afterwards, in 1169, took under his Protection, giving 'em the Rule of S. *Auguſtin*, &c.

They were confirm'd by *Pius* V. but the Diſcipline being much relax'd, they were ſuppreſs'd in 1656, by *Alexander* VII.

Matt. Paris ſays, that the *Croiſiers*, bearing Staffs with Croſſes at the End, came into *England* in 1244, and preſented themſelves to a Synod held by the Biſhop of *Rocheſter* to be admitted.

Dodſworth

Dodſworth and *Dugdale* mention two Monaſteries of this Order in *England*, the one at *London*, the other at *Rygate*; the firſt founded in 1245, the latter in 1298: ſome add a third at *Oxford*, where they were receiv'd in 1349. M. *Allemand* ſays, there were fourteen Monaſteries of *Croiſiers* in *England*; adding, that they came from *Italy*; thoſe of the *Low Countries* diſowning 'em.

The *Croiſiers* of the *Low-Countries* and *France*, were founded in 1211, by *Theodore de Celles* Son of *Boſon*, who having ſerv'd in a *Croiſade* in *Paleſtine*, in 1188, and there found ſome of the *Croiſiers* inſtituted by S. *Clot*, conceiv'd a Deſign of inſtituting another Congregation in his own Country. This is certain, that *Theodore*, in his return from *Paleſtine*, engag'd himſelf in the Eccleſiaſtick State; and went in quality of Miſſionary to the *Croiſade* againſt the *Albigenſes*: and that at his return in 1211, the Biſhop of *Liege* gave him the Church of S. *Thebault* near *Huy*; where, with four Companions, he laid the Foundation of his Order; which was confirm'd by *Innocent* III. and *Honorius* III. *Theodore* ſent his Religious to *Tholouſe*, to join thoſe of S. *Dominic*, and combat the *Albigenſes*; and the Congregation multiply'd in *France*. The Popes have endeavour'd to bring the *Croiſiers* of *Italy* under thoſe of *Flanders*.

The *Croiſiers*, or *Port-croix with a Star*, in *Bohemia*, derive their Origin from S. *Quiriacus*, and ſay they came from *Paleſtine* into *Europe*, where they embrac'd the Rule of S. *Auguſtine*, and built Monaſteries. They add, that S. *Agnes* of *Bohemia*, to diſtinguiſh 'em from other *Croiſiers*, obtain'd of *Innocent* IV. to add a Star to their Habit. But the Story of S. *Quiriacus* has no Foundation; and it was *Agnes* herſelf, Daughter of *Primiſlas* King of *Bohemia*, who inſtituted the Order at *Prague*, in 1234. They are very numerous; and have, now, two Generals.

CROISSANTEE, in Heraldry, *la Croix Croiſſante* is a Croſs creſcented; that is, having a Creſcent, or Half-Moon, fix'd on each end thereof. See CROSS.

CROSETTE, in Architecture, the Returns in the Corners of Chambranles, or Door-Caſes, or Window-Frames; call'd alſo *Ears*, *Elbows*, *Ancones*, *Prothyrides*.

Croſette of a Luthern, the Plaiſter or covering near a Luthern.

CROSIER, or CROZIER, a *Shepherd's Crook*; a Symbol of Paſtoral Authority, conſiſting of a Gold or Silver Staff, crook'd a-top, carried occaſionally before Biſhops and Abbots, and held in the Hand when they give ſolemn Benedictions. See BISHOP, and ABBOT.

At one End 'tis crook'd, at the other pointed; expreſs'd in the Verſe;

Curva trahit mites, pars pungit acuta Rebelles.

The Cuſtom of bearing a Paſtoral Staff before Biſhops is very antient, as appears from the Life of S. *Cæſarea* of *Arles*, who lived about the Year 500. Among the *Greeks*, none but the Patriarchs had a Right to the *Croſier*. See PATRIARCH.

The *Croſiers* were at firſt no more than ſimple wooden Staves, in form of a T, uſed to reſt and bear upon; by degrees they were made longer; and at length arrived at the form we now ſee them.

Regular Abbots are allow'd to officiate with a Mitre and a *Croſier*. See ABBOT, and MITRE.

Du Cange obſerves, that it was antiently call'd *Cambuca*, and *Cambuta*; and the Perſon who bore it, *Cambucarius*. *Papias* derives the Word *à ſimilitudine Crucis*. Others fetch it from the old Saxon *Camoc*, Crook.

CROSIER, in Aſtronomy, four Stars, in form of a Croſs; by help whereof, thoſe who ſail in the Southern Hemiſphere find the Antartick Pole. See STAR, and CONSTELLATION.

CROSS, *Crux*, a piece of Carpentry, compos'd of two Pieces of Wood, traverſing and cutting each other, ordinarily at right Angles.

It was uſed among the Antients, as a Puniſhment for Malefactors and Slaves; and was planted at ſeveral Places, *in terrorem*, as our Gallows, &c.

Sozomen obſerves, that it was *Conſtantine* who by Law firſt aboliſh'd the Puniſhment of the *Croſs*; which had obtain'd among the *Romans* till his Time.

Pezron derives the Word *Crux*, from the Celtic *Croug*, and *Croas*; tho, perhaps, *Croug* and *Croas* might with as much Juſtice be deriv'd from *Crux*.

As to Crucifixion, or the manner wherein the Puniſhment of the *Croſs* was effected, the Criticks, both antient and modern, are exceedingly divided: The Points in diſpute, are, Whether the Criminal was faſten'd with three Nails, or with four; whether the Feet were immediately faſten'd to the *Croſs*, or whether they reſted on a little piece of Wood, in manner of a Step or Reſt, *πηγμα*; whether the *Croſs* was planted in the Earth before the Patient was nail'd on, faſtening him afterwards by means of a Scaffold rais'd the height of the Place where the Feet were to be nail'd; or whether he was nail'd ere the *Croſs* was rais'd or planted, as the Painters repreſent it: or laſtly, whether the Patient was faſten'd quite naked, or cover'd: Queſtions that have all been occaſion'd by the *Crucifixion* of Jeſus Chriſt.

Invention of the CROSS, *Inventio Crucis*, is an antient Feaſt, ſolemniz'd on the third of *May*, in Memory of S. *Helena*'s (the Mother of *Conſtantine*) finding the true *Croſs* of Jeſus Chriſt deep in the Ground, on Mount *Calvary*; where ſhe erected a Church for the Preſervation of part of it: the reſt being brought to *Rome*, and repoſited in the Church of the *Holy Croſs* of *Jeruſalem*. See FEAST.

Theodoret mentions the finding of three *Croſſes*, that of Jeſus Chriſt, and thoſe of the two Thieves; and that they diſtinguiſh'd between 'em by means of a ſick Woman, who was immediately heal'd by touching the true *Croſs*.

The Place is ſaid to have been indicated to her by S. *Quiriacus*, then a *Jew*, afterwards converted and canoniz'd. See on the *Invention of the Croſs*, *Theodoret*, *Ruffin*. *Socrates*, *Sozom*. S. *Ambroſe*, S. *Cyril*, &c.

Exaltation of the CROSS, an antient Feaſt, held on the 14th of *September*, in Memory of this, that *Heraclius* reſtor'd to Mount *Calvary* the true *Croſs*, which had been carried off 14 Years before, by *Coſroes* King of *Perſia*; upon his taking *Jeruſalem* from the Emperor *Phocas*.

CROSS-*Bearer*, *Porte-croix*, *Cruciger*, in the *Romiſh* Church, the Almoner of an Archbiſhop, or a Primate; who bears a *Croſs* before him on ſolemn Occaſions.

The Pope has the *Croſs* bore before him every where; a Patriarch any where out of *Rome*; Primates, Metropolitans, and thoſe who have a Right to the *Pallium*, throughout their reſpective Juriſdictions.

Gregory XI. forbad all Patriarchs and Prelates to have it bore in Preſence of Cardinals. A Prelate bears a *ſingle Croſs*, a Patriarch a *double Croſs*, and the Pope a *triple* one on their Arms.

Order of the CROSS, or CROISADE, an Order of Ladies, inſtituted in 1668, by the Empreſs *Eleonora de Gonzagua*, Wife of the Emperor *Leopold*; on occaſion of the miraculous Recovery of a little golden *Croſs*, wherein were inclos'd two Pieces of the *true Croſs*; out of the Aſhes of part of the Palace.

It ſeems, the Fire had burnt the Caſe wherein it was inclos'd, and melted the Cryſtal; yet the Wood remain'd untouch'd.

CROSS, in Botany, is uſed to expreſs the Arrangment of the *Petala* of certain Flowers; call'd *Plantæ flore Cruciformi*. See PLANT, and FLOWER.

The Flowers are not to have either more or leſs than four *Petala*; and their Calix only to conſiſt of four Pieces. The Piſtil generally becomes a Fruit, call'd *Siliqua*. See SILIQUA.



CROSS, in Heraldry, is defin'd by *Guillim*, an Ordinary compos'd of four-fold Lines; whereof two are perpendicular, and the other two tranſverſe; for ſo we muſt conceive of them, tho they be not drawn throughout, but meet by Couples, in four right Angles, near the Feſs-Point of the Eſcutcheon. See ORDINARY.

The Content of a *Croſs* is not the ſame always: For when it is not Charg'd, Canton'd, nor Accompany'd, it has only the fifth Part of the Field; but if it be charg'd, it muſt contain the third Part thereof.

This Bearing was firſt beſtow'd on ſuch as had perform'd, or at leaſt undertaken, ſome Service for Chriſt, and the Chriſtian Profeſſion; and is held, by ſome, the moſt honourable Charge in all Heraldry. What brought it into ſuch frequent uſe, was the antient Expeditions into the Holy Land; and the Holy War Pilgrims, after their Pilgrimage, taking the *Croſs* for their Cognizance; and the Enſign of that War being the *Croſs*. See CROISADE.

In thoſe Wars, ſays *Mackenzy*, the *Scots* carry'd St. *Andrew*'s *Croſs*; the *French* a *Croſs* Argent; the *Engliſh* a *Croſs* Or; the *Germans* Sable, the *Italians* Azure, the *Spaniards* Gules.

St. *George*'s *Croſs*, or *the Red Croſs*, in a Field Argent, is now the Standard in *England*; that Saint being the reputed Patron of this Nation.

Guillim enumerates 39 different ſorts of *Croſſes* us'd in Heraldry, the ſeveral Names whereof here follow; the Deſcriptions are to be look'd for under proper Articles.

A *Croſs voided*, a *Croſs wavy-voided*, a *Croſs patee fimbriated*, a *Croſs patee fitched on the Foot*, a *Croſs patee on three Parts and fitched on the fourth*, a *Croſs engrailed*, a *Croſs patonee*, a *Croſs flory*, a *Croſs patonee voided*, a *Croſs avelane*, a *Croſs patee lambeaux*, a *Croſs furchee*, a *Croſs croſlet*, a *Croſs croſlet fitchee at the Point*, a *Croſs bottone*, a *Croſs pomel*, a *Croſs urdee*, a *Croſs degraded fitchee*, a *Croſs potent*, a *Croſs potent fitched*, a *Croſs calvary*, a *Croſs croſlet ſet in Degrees*, a *Croſs patriarchal*, a *Croſs anchor'd*, a *Croſs moline*, a *Croſs clechee*, a *Croſs flury*, or *fleury deliſee*, a *Croſs double fitchee*, a *Croſs a ſeize Points*, a *Croſs milrine*, a *Croſs raguled*, a *Croſs pointed voided*, a *Croſs pall*, a *Tau*, or S. Anthony's *Croſs*, a *Croſs voided* and

and couped, a *Croſs couped pierced*, a *Croſs moline pierced Lozenge-ways*, a *Croſs moline quarter-pierced*, a *Saltire, or S.* Andrew's *Croſs*, which muſt be diſtinctly ſpoken of under that Denomination; and ſo all the others may be found more particularly deſcrib'd under the Names of their ſeveral Difference.

Colombiere makes 72 diſtinct ſorts of *Croſſes*, of which we ſhall only mention thoſe that differ from ſuch as have been mention'd above; as, *La Croix remply*, which is only one *Croſs* charged with another: A *Croſs party*, that is, one half of one Colour, and the other of another: A *Croſs quarter'd*, that is, the oppoſite Quarters of ſeveral Colours: A *Croſs of five Pieces*, that is, of ſo many Colours; a *Croſs mouſſue*, and *abaiſee*; a *Croſs barbee*; a *Croſs croiſſantee*, or *creſcented*, that is, having a Creſcent at each End: A *Croſs forked of three Points*; a *Croſs pommetee of three Pieces*; a *Croſs reſſercelee*; a *Croſs pointed*; a *Croſs anker'd, and ſuranker'd*; a *Croſs anker'd with Snakes Heads*; a *Croſs orled*; a *high Croſs*; a *Croſs rayonnant*, or *caſting out Rays of Glory*; a *Croſs of* Malta; a *Croſs of the Holy Ghoſt*; a *Croſs forked*, like the antient Reſts for Muſkets; a *Croſs with eight Points*; a *Croſs bourdonnee*; a *Croſs cramponnee and tournee*; a *Croſs cablee*; a *Croſs inclining*; a *Croſs pater noſtree*, that is, made of Beads; a *Croſs fleuronnee*; a *Croſs vuidee, clechee, and pommetee*; a *Croſs crenellee and baſtilee*; a *Croſs with four Steps to every Arm*; a *Croſs rounded*; a *Croſs and an half*; a *Croſs eſtoilee*, or *ſtarways*; a *Croſs corded*; a *Croſs doubled*, of ſix Pieces ſet together; a *double Croſs ſplit in Pale*; a *long Croſs cut in pieces and diſmember'd*; a *Croſs couped*, or cut thro' in Feſſe of the two contrary Colours to the Field; a *Chevron ſurmounted by an half Croſs*: Four Tails of Ermin in a *Croſs*, the Tops of the Ermins oppoſite to each other in the middle: Four Pieces of Vair plac'd *croſs-ways*, and counterpointing in the Centre: The *Croſs* or Sword of S. *James*: *Potence cramponnee* on the dexter upper Arm, and a *Potence* about the middle of the Shaft.

Theſe are the various *Croſſes* we find in the aforeſaid Authors; which ſome may think too many, as not being all uſed in *England*: but Heraldry extends to all Countries; and all Terms us'd deſerve to be explain'd, that they may be underſtood. Nor is it only in *Croſſes* that the Variety is ſo great, it will appear in many other Bearings, and particularly in Lions, and the Parts of them; whereof the ſame *Colombiere* gives us no leſs than 96 diſtinct Varieties. *Leigh* mentions but 46 ſeveral *Croſſes*; *Sylvanus Morgan*, 26; *Upton*, 30; *Johannes de Bado Aureo*, 12; and ſo others, whom it is needleſs to mention. The aforeſaid *Upton* owns he dares not preſume to aſcertain all the various *Croſſes* uſed in Arms, for that they are at preſent almoſt innumerable: and therefore he only takes notice of ſuch as he had ſeen uſed in his own time.

Cross, in Surveying; or, the *Surveying-Croſs*, is an Inſtrument us'd in Surveying; conſiſting of a braſs Circle, divided into four equal Parts, by two Lines cutting each other in the Centre: At each Extremity of either Line is fix'd a Sight, perpendicularly over the Lines; with Holes below each Slit, for the better Diſcovery of diſtant Objects.

The *Croſs* is mounted on a Staff, or Stand, for uſe. Sometimes, inſtead of four Sights there are eight.

The *Surveying Croſs* is but little known or us'd among us; abroad it is of more account: The manner of applying it is as follows.

Suppoſe the Field A B C D E, (Tab. *Surveying*, Fig. 24.) to be ſurvey'd: Plant Poles at all the Angles; meaſure the Line A C, and the Perpendiculars let fall from the Angles to the Line: Take down the Dimenſions of each. Now, to find the Point F, plant Poles at pleaſure in the Line A C, and the Foot of the Inſtrument in the ſame Line, in ſuch manner, as that thro' two of the oppoſite Sights you may obſerve two of the Staffs; and thro' the other two, the Staff E. If in this Station E ben't thus viſible, remove the Inſtrument backwards or forwards, till the Lines A F, E F make a right Angle in F; by which means, the Plot of the Triangle A F E will be had. After the ſame manner is the Point H found, where the Perpendicular D H falls; whoſe length, together with that of G F, is meaſur'd, to have the Plot of the Trapezium E F H D.

Again, meaſure H C, making a right Angle with H D, and the Plot of the Triangle D H C will be had. All that now remains, is to find the Point G, where the perpendicular B G falls: Which being found after the ſame manner as the reſt, we have the Plot of the whole Field A,B,C,D,E. The Area whereof, is had by adding the Triangles and Trapeziums together. See Area; ſee alſo Surveying, Chain, Plain-*Table*, &c.

Cross *Multiplication*, the Method of multiplying Feet and Inches, by Feet and Inches, or the like; ſo call'd, becauſe the Numbers are multiply'd *croſs-wiſe*. *See the Method under* Multiplication.

Cross, in Dialling. See Dial.

Cross-staff, a Mathematical Inſtrument, otherwiſe call'd the *Foreſtaff*. *See its Deſcription and Uſe under* Forestaff.



Crosselet, *little Croſs*, a Diminutive of *Croſs*, uſed in Heraldry, where we frequently ſee the Shield cover'd with *Croſſelets*; Feſſes, or other honourable Pieces, charg'd or accompany'd with *Croſſelets*. Croſſes themſelves frequently terminate in *Croſſelets*, as in the Figure adjoining. See Cross.

Cross-grain'd *Stuff*, in Joinery. Wood is ſaid to be *croſs-grain'd*, when a Bough or Branch has ſhot out of it: for, the Grain of the Branch ſhooting forward, runs athwart that of the Trunk. In Wood well grown this Defect is ſcarce perceivable, except in working; but in Deal-Boards theſe Boughs make Knots. If the Bough grew up with the young Trunk, inſtead of a Knot is found a *curling in the Stuff*; very ſenſible under the Plane.

Crotalum, a kind of *Caſtagnetta*, or Muſical Inſtrument found on Medals, in the Hands of the Prieſts of *Cybele*. See Corybantes.

The *Crotalum* differ'd from the *Siſtrum*; tho Authors frequently confound the two. It conſiſted of two little braſs Plates, or Rods, which were ſhook in the Hand, and in ſtriking againſt each other made a Noiſe.

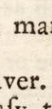
It was ſometimes alſo made of a Reed ſplit lengthwiſe; one Part whereof they ſtruck againſt the other: and as this made a Noiſe ſomewhat like that of a Crane's Bill, they call'd that Bird *Crotaliſtria*, *Player on Crotala*.

An Antient, in *Pauſanias*, ſays, that *Hercules* did not kill the Birds of the Lake *Stymphala*, but that he drove them away by playing on *Crotala*. On this footing, the *Crotala* muſt be exceedingly antient.

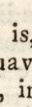
Clemens Alexandrinus attributes the Invention to the *Sicilians*; and forbids the Uſe thereof to the Chriſtians, becauſe of the indecent Motions and Geſtures that accompany it.

Crotaphytes, a Muſcle of the lower Jaw.

Its Fibres ſpring ſeverally from the Bones of the Forehead, the *Sinciput*, *Sphenoides*, and *Temporale*; which meeting, and as it were centering under the *Os Jugale*, whence alſo this Muſcle receives ſome Fibres, they proceed to the *Proceſſus Corone*, into which they are inſerted, and draw the lower Jaw upwards. See Maxilla.

Crotchet, in Muſick, one of the Notes, or Characters of Time, mark'd thus  equal to half a Minim, and double a Quaver. See Note, and Character.

'Tis not eaſy to conceive how this Character comes by the Name *Crotchet*: The Word is apparently borrow'd from the French *Crotchet*, of *Croc*, a Crook or Hook, uſed by them for what we call the *Quaver*, or *half Crotchet*; by reaſon of the additional Stroke at bottom, which gives it an Appearance of a Crook. See Quaver.

A Dot added to the *Crotchet*, thus  increaſes its Time by half; that is, makes it equal to a *Crotchet* and an half, or to three Quavers. See Time.

Crotchet, in Printing, a Term uſed for certain Strokes or Lines, ſometimes ſtrait, ſometimes waved, but always turn'd up at each Extreme; ſerving to bind or link together ſeveral Articles, that are to be read together, ere you proceed to the Subdiviſions, placed aſide of 'em with ſimilar or ſmaller *Crotchets*; much us'd in Genealogies, Analytical Tables, *&c.* for facilitating the Diviſion and Subdiviſion of any thing.

Crotchet is alſo uſed for two oppoſite Characters, ſerving to incloſe what we call a *Parentheſis*, or any other Part of a Diſcourſe, to be diſtinguiſh'd from the reſt of the Work; ſometimes in this form [ ] and ſometimes in this ( ). See Character.

Crow, in the Sea Language, a Machine with an Iron Hook, for the faſtning hold, and grappling with the Enemies Veſſel, in an Engagement.

The Name *Crow*, *Corvus*, was antiently given to ſeveral Machines of War, uſed in the Defence of Places: one invented by *Diades*; another by the *Tyrians*, mention'd by *Q. Curtius*; another by *Cn. Ovellius*.

Vitruvius calls the firſt the *Demoliſhing Crow*, *Corvus demolitor*, and alſo *deprædator*: others call it the Crane.

Polybius deſcribes another invented by *C. Duillius* uſed againſt the *Carthaginian* Fleet.

They were all a kind of Grappling-Hooks; ſerving to drag Things towards the Ingineer. That deſcrib'd by *Qu. Curtius* was thrown out of a Baliſta.

Crows-*Bill*, an Inſtrument us'd by Chirurgeons, in their Operations; eſpecially for the drawing Bullets and other foreign Bodies out of Wounds.

It has its Name from its Figure.

CROWS-FEET, in the Military Art, are Irons with four Points, of three or four Inches long; ſo that which way ſoever they fall, one Point will be uppermoſt.

CROWS-FEET, in a Ship, are ſmall Ropes, divided by the Hole of a little Block or Pully, called *the dead Man's Eye*, into ſix, ten, or more Parts.

CROWN, *Corona*, a Mark of Regal Dignity; or an Ornament wore on the Head by Kings and Sovereigns, as a Symbol of their Authority. See KING, *&c.*

In the remoteſt Antiquity, the *Crown* was only given to Gods: *Pliny* ſays, that *Bacchus* was the firſt who us'd it: *Pherycides*, cited by *Tertullian de Corona*, ſays *Saturn*: *Diodorus* aſcribes it to *Jupiter*, after his Victory over the *Titans*: *Q. Fabius Pictor.* aſcribes the Invention to *Janus*; adding, that it was an Ornament he us'd in Sacrificing: *Leo* the *Egyptian* ſays, it was *Iſis* who firſt wore a *Crown*; and that it conſiſted of Ears of Corn, the Uſe whereof ſhe firſt taught Men.

In this, moſt Authors agree, that the *Crown*, originally, was rather a Religious than a Civil Ornament; rather one of the *Pontificalia*, than the *Regalia*: that it only became common to Kings, as the antient Kings were Prieſts as well as Princes; and that the modern Princes are entitled to it, in their Eccleſiaſtical Capacity rather than their Temporal.

The firſt *Crowns* were no more than a *Bandelette*, or Headband, drawn round the Head, and tied behind; as we ſtill ſee it in *Jupiter*'s Heads on Medals, as alſo in the *Ptolemies*, and the Kings of *Syria*.

Afterwards they conſiſted of two *Bandelette's*; by degrees they took Branches of different Trees; at length they added Flowers; inſomuch that *Tertullian de Corona*, aſſures us, (from *Claudius Saturninus*, who had wrote expreſly on the Subject) there was not any Plant whereof *Crowns* had not been made.

The Woods and Groves were ſearch'd, to find ſeveral *Crowns* for the ſeveral Deities: Thus, on Medals, we find *Jupiter*'s *Crown* of Flowers, more frequently of Laurel; *Juno*'s of the Vine; that of *Bacchus*, Vine with Grapes, Vine-Leaves, and Branches of Ivy, with Flowers and Berries: Thoſe of *Caſtor*, *Pollux*, and the River-Gods, of Bulruſhes: That of *Apollo*, ſometimes of Laurel, ſometimes of Ruſhes; that of *Saturn*, new Figs; that of *Hercules*, Poplar; that of *Pan*, Pine or Aldar; that of *Lucina*, Dictamnus; that of *the Horæ*, the Fruits proper to each Seaſon; that of *the Graces*, Olive-Branches, as well as that of *Minerva*: That of *Venus*, Roſes: of *Ceres*, Ears of Corn, as well as that of *Iſis*: That of *the Lares*, Myrtle or Roſemary, *&c.*

Crowns were not only us'd for the Statues and Images of the Gods, for the Prieſts in Sacrificing, and for Kings and Emperors; but alſo for Altars, Temples, Doors of Houſes, ſacred Veſſels, Victims, Ships, *&c.*

The Poets *crown'd* thoſe who were Victors in the Solemn Games, Warriors, *&c.* See OLYMPIC, *&c.*

From ſome Paſſages in *Euſebius Cæſarienſis*, ſome Authors conclude, that Biſhops had antiently their *Crowns*.

The *Roman* Emperors had four Kinds of *Crowns*, ſtill ſeen on Medals; *viz.* a *Crown* of Laurel, a Radiating *Crown*, a *Crown* adorn'd with Pearls and Precious Stones; the fourth a kind of Bonnet, or Cap, ſomething like the Mortier.

The firſt was that ordinarily uſed from the Time of *Julius Cæſar*: The Right of bearing it was granted him by the Senate; ſome ſay, on account of his Baldneſs; and afterwards continued to his Succeſſors. *Juſtinian* was the firſt who took that of the Bonnet-kind.

The *Papal Crown*, is compos'd of a Tiara, and a triple *Crown* incompaſſing the Tiara; having two Pendants, like the Biſhops Mitres: Theſe three *Crowns* repreſent the pretended triple Capacity of the Pope, *viz.* as High Prieſt, Supreme Judge, and ſole Legiſlator of the Chriſtians. See POPE.

The *Imperial Crown* is a Bonnet, or Tiara, with a Semicircle of Gold, ſupporting a Globe with a Croſs a-top.

The *Engliſh Crown* is adorn'd with four Croſſes, in the manner of thoſe of *Malta*; between which are Flower-de-Lys's. It is cover'd with four Diadems, which meet at a little Globe ſupporting a Croſs.

The *French Crown* is a Circle of eight Flower-de-Lys's, incompaſs'd with ſix Diadems; bearing a-top a double Flower-de-Lys, which is the Creſt of *France*.

The *Spaniſh Crown* is adorn'd with large indented Leaves, cover'd with Diadems, bordering on a Globe, ſurmounted with a Croſs. See CORONET.

Among the *Romans*, there were various Kinds of *Crowns*, diſtributed as Rewards of Military Atchievements: The *Oval Crown* was the firſt, made of Myrtle; and was beſtow'd on Generals who had been victorious over Slaves, unworthy of the *Roman* Valour, and who were entitled to the Honours of the leſſer Triumph, call'd *Ovation*. See OVATION.

The ſecond was the *Naval* or *Roſtral Crown*, conſiſting of a Circle of Gold, rais'd with Prows and Poops of Ships; given to the Captain who firſt grappled, or the Soldier who firſt jump'd aboard, an Enemy's Ship. See ROSTRAL.

The third call'd *Vallaris*, or *Caſtrenſis*, was alſo a Circle of Gold, rais'd with Piles or Palliſades; given him who firſt leap'd into the Enemies Camp, or forced the Palliſades. See CASTRENSIS.

The fourth, call'd *Mural Crown*, was a Circle of Gold, indented or embattel'd; given him who firſt mounted the Wall of a Place beſieg'd, and there lodg'd a Standard: This *Crown* we alſo find given, on Medals, to the particular *Genii* and Guardians of Provinces and Places. See MURAL.

The fifth the *Civic Crown*; made of a Branch of green Oak: given a Citizen who had ſav'd the Life of another Citizen in a Battel or Aſſault. See CIVIC.

The ſixth was the *Triumphal Crown*, made of Branches of Laurel, given a General who had gain'd a Battle, or conquer'd a Province. This was afterwards given of Gold. See TRIUMPH.

The ſeventh the *Corona Obſidionalis*, or *Graminea*, made of Graſs or Herbs, found on the Ground; given to Generals who had deliver'd a *Roman* Army beſieg'd by the Enemy, and oblig'd him to decamp. See OBSIDIONAL.

The eighth was alſo a *Crown* of Laurel, given by the *Greeks* to their *Athletæ*; and by the *Romans*, to thoſe who had negotiated, or confirm'd a Peace with an Enemy: This was the leaſt eſteem'd.

Beſides theſe, in Antiquity, we meet with *Radial Crowns*, given to Princes at their Tranſlation among the Gods; whether before or after their Death.

Caſaubon ſays, this *Crown* was peculiar to Deities; yet, 'tis certain *Nero* took it in his Life-time.

Athletic Crowns, were deſtin'd to crown Victors at the Publick Games.

There are alſo *Sacerdotal Crowns* for the Prieſts.

In an Eccleſiaſtical Senſe, *Crown* is alſo uſed for the Clerical Tonſure; which is the Mark, or Character of the *Romiſh* Eccleſiaſticks. See TONSURE.

This is a little Circle of Hair, ſhav'd off from the *Crown* of the Head; more or leſs broad, according to the Quality of the Orders receiv'd. See ORDER.

That of a mere Clerk is the ſmalleſt; that of Prieſts and Monks the largeſt.

The *Clerical Crown*, was antiently a round Liſt of Hair, ſhav'd off around the Head, repreſenting a real *Crown*: This is eaſily obſerv'd in ſeveral antient Statues, *&c.* The Religious of S. *Dominic* and S. *Francis* ſtill uſe it.

Father *Daniel* ſays, that S. *Louis* ranſom'd the *Crown of Thorns* of our Saviour, which had been pawn'd by *Baldwin* Emperor of *Conſtantinople*, for an immenſe Sum of Money; and tranſported it, with great Ceremony, to *France*: where 'tis ſtill kept in the Holy Chapel. The Author of the Hiſtory of S. *Louis*, adds, that the Thorns were ſtill green in his Days. Some Writers, from *Clemens Alexandrinus*, hold that it was made of Bramble, *ex Rubo*; others of Black-Thorn, *ex Rhamno*; others of White-Thorn. Thoſe who ſee it in the Chapel, take it to be the *Juncus Marinus*.

Galiot derives the Word *Corona*, whence *Crown*, from the Latin *Cornu*, Horn; becauſe the antient *Crowns* were pointed in manner of Horns; which were antiently, both by *Jews* and *Gentiles*, eſteem'd as Marks of Power, Strength, Authority, and Empire.

Hence, in the Holy Scripture, Horns are us'd for the Regal Dignity: and accordingly, *Horn* and *Crown*, in the *Hebrew*, are expreſs'd by the ſame Word.

Ch. Paſchal has wrote expreſly *de Coronis*: *Baudelot* has made a good Number of curious Obſervations on the ſame Subject, that had eſcap'd *Paſchal*. *Du Cange* gives us a curious Diſſertation of *Crowns*; and *Schmeizell*, a *German*, a Treatiſe of *Royal Crowns*, both antient and modern.

CROWN, in Commerce, is a general Name for Coins, both Foreign or Domeſtick, of, or near, the Value of five Shillings Sterling. See MONEY, and COIN.

In its limited Senſe, *Crown* is only applicable to that popular *Engliſh* Coin which bears that Name, and which is equivalent to 60 *Engliſh* Pence, or five Shillings; or to 13 Livres 15 Sols *French* Money: But, in its extenſive Senſe, it takes in ſeveral others; as the *French Ecu*, which we call the *French Crown*, ſtruck in 1641 for 60 Sols, but now riſen to 5 Livres; the Patagon, Dollar, Ducatoon, Rixdollar, and Piaſtre or Piece of Eight. See ECU, DOLLAR, DUCATOON, RIXDOLLAR, PIASTRE, *&c.*

CROWN, in Architecture, the uppermoſt Member of the Cornice; call'd alſo *Corona* and *Larmier*. See CORONA, and LARMIER.

CROWN, in Aſtronomy, one of the Northern Conſtellations. See CORONA.

CROWN, or CORONET, in Heraldry, is us'd for the Repreſentation of that Ornament, in the Mantling of an Armoury; to expreſs the Dignity of the Perſon who bears it.

The *Crown* here is of more Antiquity even than the Helmet; and was us'd as a Symbol of Victory and Triumph.

Radiated, or *Pointed Crowns*, are thoſe of the antient Emperors, which had 12 Points; repreſenting, as ſome will have it, the twelve Months of the Year.

Pearl'd,

Pearl'd, or *Flower'd Crowns*, thoſe with Pearls, or Leaves of Smallage, Parſley, &c. ſuch as were antiently almoſt all *Crowns*, even thoſe of Sovereign Princes: Tho they were not us'd in their Armouries, till about 200 Years ago.

CROWN, in Geometry, a Plane included between two parallel or concentric Perimeters, of unequal Circles; generated by the Motion of ſome Part of a Right Line round a Centre, the moving Part not being contiguous to the Centre.

The Area of this is had, by multiplying its Breadth by the middle Perimeter; for a Series of Terms in Arithmetick Progreſſion being $n \times \frac{a+\omega}{2}$; that is, the Sum of the firſt and laſt multiply'd by half the Number of Terms, the middle Element muſt be $\frac{a+\omega}{2}$; wherefore, that multiply'd by the Breadth or Sum of all, the two Terms will give the *Crown*.

CROWN-*Office*, a Court or Office ſo called, becauſe the *Crown* is more immediately concern'd in what is therein tranſacted. See CROWN.

Tho none of the Officers under the Lord Chief Juſtice are employ'd in ſummoning a Parliament; yet, many of them have Buſineſs in other Matters, during the ſitting of the Parliament: As, in Caſes of Error, &c. but more eſpecially on Trials of Peers; wherein the Clerk of the *Crown* is chief Manager.

He hath likewiſe, out of Parliament, all Indictments in the *Crown*, Informations, Recognizances; and a multitude of other Buſineſs runs thro' his Hands, as the writing of all Pleadings, Declarations, and other Proceedings upon Records: but the executive Part is left to his Secondary or Deputy.

CROWN-GLASS, the fineſt ſort of Window-Glaſs. See GLASS.

CROWN-POST, in Architecture, a Poſt which in ſome Buildings ſtands upright in the middle, between two principal Rafters. See POST.

CROWN-WHEEL *of a Watch*, is the upper Part next the Balance, that drives it by its Motion. See WATCH.

CROWN-WORK, or CROWNING, in Fortification, Outworks running in the *Campagne*, to keep off the Enemy, to gain ſome Hill, or advantageous Poſt, and to cover the other Works of the Place. See OUTWORK.

It conſiſts of two Demi-Baſtions at the Extremes, and an entire Baſtion in the middle, with Courtines.

CROWNED *Horn-work*, is a Horn-work with a *Crown*-work before it. See HORN-WORK.

CROWNING, is underſtood, in the general, of any thing that terminates, or finiſhes a Decoration of Architecture: Thus, a Cornice, a Pediment, Acroteria, &c. are call'd *Crownings*. See ACROTER, &c.

Thus, alſo, the Abacus is ſaid to *crown* the Capital; and thus any Member or Moulding is ſaid to be *crown'd*, when it has a Fillet over; and a Niche is *crown'd*, when it is cover'd with a Capital. See MOULDING, NICHE, &c.

CROUPADE, or *Groupade*, in the Manage, a Leap, higher than the Corvet, wherein the fore and hind Part of a Horſe keep an equal height; his Legs being truſs'd under his Belly, without ſtretching 'em out, or ſhewing his Shoes.

CROUPER, or CRUPPER, the hind Part of a Horſe; comprehended between the Place of the Saddle, and the Tail.

The Word is form'd from the German *Grub*, thick, fat: *Du Cange* derives it from the Italian *Groppa*, Buttock.

CRUCIAL *Inciſion*, in Chirurgery, an Inciſion, or Cut into ſome fleſhy Parts, in form of a Croſs.

CRUCIBLE, a little Veſſel, ordinarily of Earth, ſometimes Iron, without any Handle; us'd by Chymiſts, Coiners, Goldſmiths, Glaſiers, and other Artificers; to melt and calcine Gold, Silver, or other Metals whereon they work. See FUSION, CALCINATION, &c.

Earthen *Crucibles* are made of glaz'd Earth, with Stone Potſherds pounded and ſifted: They are of various Sizes, but generally of the ſame Form, which reſembles that of an inverted Cone, or Pyramid.

'Tis theſe are chiefly us'd in Coinage, as being the only ones in which Gold will melt without irritating. Iron *Crucibles* are in form of little Pails without Handles, made of Iron well forg'd and beaten: In theſe they melt Silver, Copper, &c.

There are Earthen *Crucibles* that hold from 100 to 3 or 400 Marks; but thoſe ordinarily us'd are but of 100. The Iron ones are larger; ſome holding 12 or 1500 Marks: Theſe are not taken off the Furnaces when the Plates are to be run, but the Metal is laden out with an Iron Ladle. 'Tis a Rule never to put as much Metal in the *Crucible* as it will hold. See COINAGE.

The *Crucibles* uſed by Goldſmiths and Founders are like thoſe uſed in the Coinage: Thoſe of Chymiſts, &c. are of all Sizes, according to the Quantity and Quality of the Metal to be put in 'em.

The Word comes from the Hebrew *Keres*, *teſta*, *fictile*. *Du Cange* derives it from *Cruſelinum*; which, in the lower *Latin* ſignifies a little drinking Veſſel.

CRUCIFIX, a Croſs, whereon the Body of Jeſus Chriſt is faſten'd in Effigy; much us'd by the *Romaniſts* in their Churches, and other Places, to recognize the Paſſion of Jeſus Chriſt, and to ſerve them to direct their Prayers to. See CROSS.

There are ſome Chapters wherein Jeſus Chriſt is the firſt Canon, and the Fruits of the Prebend go to the Subſiſtence of the *Crucifix*.

CRUCIFIXION, an antient Form of Execution; by faſtening the Criminal to an erected Croſs. See CROSS.

CRUDE, ſomething that has not paſs'd the Fire, or has not had the degree of *Coction*, *i. e.* of Heat, requiſite to prepare it for eating, or ſome other Purpoſe. See COCTION.

Crude or Raw Silk, is that which has not been put in boiling Water, to unwind it from off the Cod; nor boil'd in Water and Soap, to fit it for dying. See SILK.

In Chymiſtry, they call *Crude Antimony* that which comes immediately from the Mines, without any Preparation. See ANTIMONY.

In Medicine, *Crude Humours* are thoſe which want of that Preparation and Elaboration which they ordinarily receive from Digeſtion. See CRUDITY.

The Retainers to the Doctrine of Trituration, hold that the *Crudity* of the Humours only conſiſts in this; that they are not broke and comminuted ſo much as they ſhould be by the ordinary Action of the Stomach. See TRITURATION.

CRUDITY, in Medicine, the State of a Diſeaſe, wherein the morbifick Matter is of ſuch Bulk, Figure, Coheſion, Mobility, or Inactivity, as denominates it *crude*, *i. e.* as creates or increaſes the Diſeaſe. See DISEASE.

A *Crudity* is diſcover'd, 1ſt, from the Diſeaſe's continuing its degree of Strength, or increaſing. 2d, From a continual Increaſe of Symptoms. 3d, From a diſorderly Exerciſe of the Functions. 4th, But chiefly from a Fault in the Quantity or Quality of the Humours; both thoſe ſtill circulating, and thoſe ſecreted, and evacuated: as of Sweat, Tears, Mucus of the Noſe, Saliva, Sputum, the Bile, Urine, Ichor, Pus, Blood, Menſes, Loches, Milk, Aphthæ, &c.

That State of the Diſeaſe, wherein the *crude* Matter is changed, and render'd leſs peccant, and laudable, is call'd Digeſtion, Concoction, or Maturation. See DIGESTION, CONCOCTION, &c.

CRUISE, from the German *Kruis*, a-croſs, ſignified to croſs to and fro, to ſail up an down for guard of the Seas, &c.

CRUOR, a Term uſed by Anatomiſts for the red Globules of the Blood; in contradiſtinction to the limpid or ſerous Part. See BLOOD.

Some Authors, Dr. *Keill* and Dr. *Woodward* for inſtance, ſuppoſe theſe Globules replete with an elaſtick Aura, or Air; and on this Principle account for ſome of the Phænomena of the Animal Oeconomy; particularly Muſcular Motion, &c. But Dr. *Jurin* has overturn'd that Suppoſition. See MUSCULAR *Motion*.

Vanhelmont uſes the Word *Cruor* for the Blood in the Veins; in contradiſtinction to the Blood in the Arteries, which he calls *ſanguis*. See VEIN, and ARTERY.

CRURA *Clitoridis*, in Anatomy. Between the *Corpora Nervoſa* of the *Clitoris*, runs a *Septum*, or membranous Partition, from the Glans to its Divarication at the *Os Pubis*; dividing the *Clitoris* into two Parts, call'd the *Crura of the Clitoris*.

Theſe are three times as long as the ordinary Trunk of the *Clitoris* it ſelf. See CLITORIS.

CRURA *of the Medulla Oblongata*, are two of the four Roots whence the *Medulla Oblongata* ſprings, in the Brain.

The *Crura* are the larger Roots; the two ſmaller are call'd *Pedunculi*. See MEDULLA *Oblongata*.

CRURAL, in Anatomy, an Epithet given to the large Artery and Vein of the Thigh. See THIGH.

The *Crural Artery* ariſes from the Iliac Artery; or rather, 'tis the Iliac it ſelf, under another Name; being call'd *Crural*, from the Place of its Entrance into the Thigh. See ILIAC.

It conveys Blood thro' all the Part, by means of a great Number of Branches diſſeminated thro' its Subſtance.

The *Crural Vein* is form'd of ſix other Veins, *viz.* the *great* and *little Sciatica*, the *Muſcula*, the *Poplitea*, the *Sural*, and the *Saphena*. See SCIATICA, &c.

CRURÆUS, in Anatomy, a Muſcle ariſing from the fore Part of the Thigh-Bone, between the leſſer and greater Trochanter, and lying cloſe upon the Bone, joins its Tendon with three others, which altogether make one broad Tendon, that paſſes over the *Patella*, and is inſerted into the little Tuberoſity on the upper and fore Part of the *Tibia*.

'Tis call'd *Cruræus*, as being faſten'd in the Thigh-Bone in the ſame manner as the *Brachiæus* to the Arm. Its uſe is to extend the Leg.

CRUS, among Anatomiſts, is all that Part of the Body which reacheth from the Buttocks to the Toes; and is divided into *Thigh*, *Leg*, and *Foot*. See each in its Place, THIGH, &c.

CRUSCA, an *Italian* Term, ſignifying *Bran*, or what remains of Meal after the Flower has been ſifted out.

It is only in uſe among us for that celebrated Academy call'd *Della Cruſca*, eſtabliſh'd at *Florence*, for the Purity and Perfection of the *Tuſcan* Language. See ACADEMY.

The Academy took its Name from its Office, and the End propos'd by it; which is, to purify the Language, and as it were to ſeparate it from the Bran. Accordingly, its Device is a Sieve, and its Motto, *Il piu bel fior ne coglie*; that is, *It gathers the fineſt Flower thereof.*

In the Hall or Apartment where the Academy meets, M. *Monconis* informs us, every thing bears an Alluſion to the Name and Device: the Seats are in form of a Baker's Baſket; their Backs like a Shovel for moving of Corn: The Cuſhions of gray Sattin in form of Sacks, or Wallets; and the Branches where the Lights are diſpos'd, likewiſe reſemble Sacks.

The Dictionary *Della Cruſca* is an excellent *Italian* Dictionary, compos'd by this Academy.

CRUSTA *Villoſa*, in Anatomy, the fourth Tunic, or Coat, of the Stomach. See STOMACH.

On the inner Surface of this Coat, are ſeen innumerable *Villi* or *Fibrillæ*, riſing every where perpendicularly from it; which ſome will have to ſerve for nothing but a Defenſative to the Stomach, to preſerve it from acrimonious Humours: but Dr. *Drake* rather takes 'em to be excretory Ducts to the ſubjacent Glands; which ſome Authors would have to be that now exploded thing a *Parenchyma*; but which are, indeed, the Organs by which moſt of that Humour which is diſcharg'd upon the Stomach, is ſeparated; and theſe *Villi* the immediate Channels thro' which it is convey'd. See STOMACH.

CRUSTACEOUS *Fiſhes*, in Natural Hiſtory, are thoſe cover'd with Shells, conſiſting of ſeveral Pieces, or Scales; as thoſe of Crabs, Lobſters, &c. See FISHES.

Theſe are uſually ſofter than thoſe of the Teſtaceous kind, which conſiſt of a ſingle piece, uſually much thicker and ſtronger than the former; ſuch as thoſe of the Oyſter, Scallop, Cockle, &c. See SHELL.

Dr. *Woodward* obſerves, in his Natural Hiſtory, that of all the Shells and Nautili found in Beds of all the different Matters dug out of the Earth, there are ſcarce any of the *Cruſtaceous* Kind: The Reaſon he gives for it is, that theſe being much lighter than the reſt, muſt have floated on the Surface at the time of the Deluge, when all the Strata were form'd; and there have corrupted and periſh'd. See DELUGE.

CRUZADO, in Commerce, is a *Portugueze* Coin, ſtruck under *Alphonſus* V. about the Year 1457, at the Time when Pope *Calixtus* ſent thither the Bull of a *Croiſade*, againſt the Infidels. See COIN.

It had its Name from a Croſs, which it bears on one ſide; the Arms of *Portugal* being on the other. A *Cruzade* is of the Value of 40 Sols. See SOL.

CRUZADO, or CROISADE, an Expedition to the Holy Land. See CROISADE.

CRYPTA, a ſubterraneous Place, or a Vault; eſpecially under a Church, for the Interment of particular Families, or Perſons. See TOMB.

S. *Ciampini*, deſcribing the Outſide of the *Vatican*, ſpeaks of the *Cryptæ* of St. *Andrew*, St. *Paul*, &c. See CATACOMB.

Vitruvius uſes the Word for a Part of a Building, anſwering nearly to our Cellar; *Juvenal*, for a *Cloaca*.

Hence, *Crypto-Portico*, a ſubterraneous Place, arch'd, or vaulted; us'd as an Underwork, or Paſſage in old Walls. The ſame is alſo us'd for the Decoration at the Entry of a Grotto. See GROTTO.

CRYPTA, is alſo uſed by ſome of our antient Writers, for a Chapel, or Oratory under ground: *Egreſſo toto conventu, accepta abſconſa ſi nox eſt vadit per* cryptam. *Du Cange.*

The Word is form'd of the *Greek* κρύπτω, *abſcondo*, I hide; whence κρυπτη, *Crypte*.

CRYPTOGRAPHY, the Art of *Secret Writing*, or writing in *Cipher*. See CIPHER, and DECIPHERING.

The Word is compounded of κρυπτω, *I hide*, and γραφω, *I deſcribe*.

CRYSTAL, in Natural Hiſtory, a Kind of Mineral; or rather, a tranſparent Stone, white, like a Diamond, but much inferior thereto in Luſtre and Hardneſs; uſed for Vaſes, Urns, Mirrors, &c.

The Antients were but little acquainted with the Nature of *Cryſtal*: *Pliny* ſpeaks of it as harden'd, petrified Water, which was the popular Opinion of thoſe Days; but Experience has ſhewn us the contrary: for by a Chymical Analyſis, inſtead of reſolving into Water, it yields nothing but a Calx, Earth, and Salts.

For the Places where 'tis found, *Pliny* adds, that he has ſeen it dug from off the higheſt and roughеſt Rocks of the *Alps*; whence, doubtleſs, its Name of *Rock-Cryſtal*. 'Tis ſometimes alſo found in Brooks and Rivers, but not form'd there; only waſh'd down thither from off the Mountains by the violent Rains.

Several Mountains of *Europe*, and ſome of *Aſia*, produce *Rock-Cryſtal*: If we may believe the *French* Relation of *Madagaſcar*, that Iſland yields more than all the World beſides.

Its Perfection conſiſts in its Luſtre and Tranſparency; that with Straws, Duſt, Clouds, &c. is little valued. It is frequently found Hexagonal; the Edges inimitably fine and accurate.

'Tis cut or engrav'd in the ſame manner, with the ſame Inſtruments, and by the ſame Workmen as Diamonds. See DIAMOND, and ENGRAVING.

Cryſtal is of ſome uſe in Medicine, being an Aſtringent; and as ſuch uſed in Diarrhæas and Dyſenteries: 'Tis alſo uſed to increaſe the Milk of Nurſes; and, further, is eſteem'd a good Antidote againſt Arſenic.

The Word comes from the *Greek* κρύσταλλος, *Glacies*; form'd of κρυος, *frigus*, and στέλλομαι, *concreſco*, becauſe of its reſembling Ice.

The Formation of CRYSTAL, is deliver'd by F. *Franciſco Lana* in the *Philoſophical Tranſactions*, to this Effect: 'In the *Val Sabbia* I obſerv'd a ſpacious round of a Meadow, ſome Parts whereof were bare of all Herbs; wherein, and no where elſe thereabout, *Cryſtals* are generated: all Sexangular; both Points terminating in a pyramidal Figure, likewiſe Sexangular. The Country-People told me, They were produc'd from the Dews; becauſe, forſooth, being gather'd over night, there would others ariſe, only in a ſerene and dewy Sky. But having obſerv'd that there was no mark of any Mine thereabout, I concluded it might be a plenty of Nitrous Steams; which at the ſame time might hinder the Vegetation on thoſe Places, and coagulate the Dew falling thereon: For Nitre is not only the natural Coagulum of Water, as is manifeſt in artificial Glaciations, but ever retains the aboveſaid Sexangular Figure; which, by the way, may be the Cauſe of the Sexangular Figure of Snow.

——'Since *Cryſtals* are only found in thoſe narrow Places, 'tis probable, thence are rais'd the Exhalations that concrete the Dew; after the ſame manner as the Vapour or Exhalation of Lead coagulates Quickſilver.'

Rohault ſhews, that *Cryſtal*, Diamond, &c. muſt have been originally liquid, from their Figure, which is ſuch as Drops of Water of the ſame Size muſt neceſſarily have; and ſuch as Globules of Meal or Flower, heap'd up and compreſs'd by their own weight, might have: For as each *Cryſtal* is encompaſs'd and cloſed round with ſix others; ſo it becomes modell'd into a hexangular Body, conſiſting of equal and ſquare Sides.

Boerhaave takes *Cryſtal* to be the proper Matter, or Baſis of all Gems or Precious Stones, which aſſume this or that Colour, &c. from the different Admixture of Mineral and Metalline Fumes, with the primitive *Cryſtalline* Matter. See STONE, GEM, &c.

CRYSTAL is alſo uſed for a factitious Body, caſt in the Glaſs-Houſes; called alſo *Cryſtal-Glaſs*. See GLASS.

It is, in effect, a Glaſs; but carried, in the Melting, and in the Matter whereof it is compos'd, to a degree of Perfection far beyond the common Glaſs; tho it comes far ſhort of the Whiteneſs and Vivacity of the Natural *Cryſtal*.

The beſt Artificial *Cryſtals* are thoſe made at *Mouran* near *Venice*; call'd *Venice Cryſtals*.

CRYSTALS, in Chymiſtry, expreſs Salts, or other Matters, ſhot, or congeal'd in manner of *Cryſtal*. See CRYSTALLIZATION. Thus,

CRYSTAL *of Allum*, is Allum purified, and reduced into *Cryſtals*, in the ſame manner as Tartar. In like manner are Vitriol, Nitre, and other Salts *cryſtalliz'd*.

Cryſtals of Allum are quadrangular, and brilliant like Diamonds; thoſe of Nitre, white, and oblong; thoſe of Vitriol, green, quadrangular, and ſhining. See SALT.

CRYSTAL, or *Cream of Tartar*, is that Drug purify'd and diſſolv'd, and again coagulated in form of *Cryſtals*. See TARTAR.

To prepare it, they boil Tartar in Water, ſkim it, and ſtrain it; when cool, there are form'd little white, ſhining *Cryſtals* at the Edges, as alſo a Pellicle, or Cream ſwimming a-top.

The Cream and *Cryſtals* were antiently ſuppos'd to be different; but are now found the ſame Thing. See CREAM.

Cryſtal of Tartar is eſteem'd Purgative, and Aperitive; proper in Hydropical and Aſthmatical Caſes, and Intermitting Fevers.

CRYSTAL *of Tartar chalybeated*, is when 'tis impregnated with the moſt diſſoluble Parts of Iron. See CHALYBEAT.

CRYSTAL *of Tartar emetic*, is when 'tis charg'd with the ſulphureous Parts of Antimony, to render it vomitive. See EMETIC.

CRYSTAL *Mineral*, call'd alſo *Mineral Anodyne*, and *Sal Prunella*, is Salt-petre prepar'd with Sulphur; thus: Put half a Pound of Salt-petre in a Crucible, and ſet that in a Furnace; and when the Salt-petre is in Fuſion, add, at ſeveral times, two Drachms of Flower of Sulphur. After the Flame is over, invert the Crucible in a flat Pewter Baſon, that the Salt may ſhoot.

This is eſteem'd good againſt the Squinancy, whence its Name of *Sal Prunella*; *Pruna*, or *Prunella*, expreſſing that Diſeaſe. See PRUNELLA.

CRYSTALS *of Silver*, or *of Luna*, is Silver, penetrated and reduced into the form of Salts, by the pointed Acids of Spirit of Nitre. See SILVER.

'Tis uſed for making Eſchars, by applying it to any Part: 'tis alſo of uſe internally, in Dropſies, and Diſeaſes of the Brain.

CRYSTALS *of Mars*, call'd alſo *Salt*, or *Vitriol of Mars*; is Iron reduced into Salts by an acid Liquor; uſed in Diſeaſes ariſing from Obſtructions. See MARS.

CRYSTALS *of Venus*, call'd alſo *Vitriol of Venus*; is Copper reduced into the form of Vitriol by the Spirit of Nitre; very cauſtick, and uſed to cut off proud Fleſh. See VITRIOL.

Iſland CRYSTAL, is a tranſparent fiſſile Stone, brought from *Iſland*; ſoft, as Talc; clear, as Rock-*Cryſtal*, and without Colour; famous among optic Writers for its unuſual Refractions. See REFRACTION.

It bears a red heat without loſing its Tranſparency; and, in a very intenſe heat, calcines without Fuſion: Steep'd a day or two in Water, it loſes its natural poliſh; rubb'd on Cloth it attracts Straws, *&c.* like Amber. In effect, it appears a kind of Talc; and is found in form of oblique Parallelopipeds with ſix parallelogram Sides, and eight ſolid Angles. See TALC.

The Phænomena of this Stone are very remarkable, and have been examin'd with great accuracy by M. *Huygens* and Sir *I. Newton*: For, firſt, whereas in other pellucid Bodies there is only one Refraction, in this there are two; ſo that Objects view'd thro' it appear double.

2dly, Whereas in other tranſparent Bodies, a Ray falling perpendicularly on the Surface, paſſes ſtrait thro', without ſuffering any Refraction; and an oblique Ray is always divided: In *Iſland Cryſtal*, every Ray, whether perpendicular or oblique, becomes divided into two, by means of the double Refraction. One of theſe Refractions is, according to the ordinary Rule, the Sine of Incidence out of Air into *Cryſtal*, being to the Sine of Refraction as five to three; but the other is perfectly new. The like double Refraction is alſo obſerv'd in *Cryſtal of the Rock*, tho much leſs ſenſibly.

When an incident Ray is thus divided, and each Moiety arrives at the further Surface; that, refracted in the firſt Surface after the uſual manner, is refracted entirely after the uſual manner at the ſecond; and that refracted in the unuſual manner in the firſt, is entirely refracted after the like manner in the ſecond: So that each emerges out of the ſecond Surface, parallel to the firſt incident Ray.

Again, if two pieces of this *Cryſtal* be plac'd over each other, ſo as the Surfaces of the one be parallel to the correſponding ones of the other; the Rays refracted in the uſual manner in the firſt Surface of the firſt, are refracted after the uſual manner in all the other Surfaces: And the ſame Uniformity appears in the Rays refracted after the unuſual manner; and this in any Inclination of the Surfaces; provided their Planes of perpendicular Refraction be parallel.

From theſe Phænomena, Sir *I. Newton* gathers, That there is an original Difference in the Rays of Light; by means whereof ſome are, here, conſtantly refracted after the uſual manner; and others in the unuſual manner. See RAY, and LIGHT.

Were not the difference original, and did it ariſe from any new Modifications impreſs'd on the Rays at their firſt Refraction, it would be alter'd by new Modifications in the three following ones; whereas, in fact, it ſuffers no Alteration at all.

Again, he hence takes occaſion to ſuſpect, that the Rays of Light have ſeveral Sides, endu'd with ſeveral original Properties: For, it appears from the Circumſtances, that there are not two ſorts of Rays differing in their Nature from each other, one conſtantly, and in all Poſitions, refracted in the uſual, and the other in the unuſual manner; the difference in the Experiment mention'd, being only in the Poſitions of the Sides of the Rays, to the Planes of perpendicular Refraction. For one and the ſame Ray is refracted ſometimes after the uſual, and ſometimes after the unuſual manner, according to the Poſition of its Sides to the *Cryſtal*: the Refraction being alike in both, when the Sides of the Rays are poſited the ſame way to both, but different when different.

Every Ray, therefore, may be conſider'd as having four Sides, or Quarters; two of which, oppoſite to each other, diſpoſe the Ray to be refracted after the unuſual manner; and the other two in the uſual. Theſe Diſpoſitions, being in the Rays before their Incidence on the ſecond, third, and fourth Surfaces; and ſuffering no Alterations, for what appears, in their paſſage thro' 'em; muſt be original and connate. See RAY, and LIGHT; ſee alſo REFRACTION.

CRYSTALLI, among Phyſicians, are Puſtules diſpers'd all over the Body; white, and of the bigneſs of a Lupine.

CRYSTALLINE *Humour*, is a thick, compact Humour of the Eye, in manner of a flattiſh convex Lens, ſituate in the middle of the Eye; ſerving to make that Refraction of the Rays of Light, neceſſary to have 'em meet in the *Retina*, and form an Image thereon, whereby Viſion may be perform'd. See EYE, HUMOUR, REFRACTION, VISION, RETINA, *&c.*

'Tis the Configuration of the *Cryſtalline* that occaſions Perſons to be either *Myopes*, or *Presbytæ*, *i. e.* to be either long or ſhort-ſighted. See MYOPES, and PRESBYTÆ.

The *Cryſtalline* being of two Conſiſtences; outwardly, like a Gelly; but toward the Centre as hard as Salt: Hence, ſome Authors think that its Figure may be varied; which Variation they ſuppoſe to be effected by the *Ligamentum Ciliare*. Hence Dr. *Grew*, and others, aſcribe to the Ciliary Ligament a Power of making the *Cryſtalline* more convex, as well as of moving it to or from the *Retina*: Accordingly, by the Laws of Opticks, ſomething of this Kind is abſolutely neceſſary to diſtinct Viſion: For, as the Rays from diſtant Objects diverge leſs than thoſe from nigh ones; either the *Cryſtalline Humour* muſt be capable of being made more convex, or more flat; or elſe there muſt be an Elongation of the Eye, or of the Diſtance between that and the *Retina*. See *Ligamentum* CILIARE, and SIGHT.

The *Cryſtalline Humour*, when dried, appears to conſiſt of a vaſt Number of thin, ſpherical *Laminæ*, or Scales, lying over one another: *Leewenhoeck* reckons there may be 2000 of 'em in one *Cryſtalline*; each of theſe, he ſays, he has diſcover'd to conſiſt of a ſingle Fibre, or fine Thread wound up in a ſtupendous manner, this way and that; ſo as to run ſeveral Courſes, and meet in as many Centres: and yet not interfere nor croſs in any Place. *Philoſ. Tranſact.* N° 165, and 293.

CRYSTALLINE *Heavens*, in the old Aſtronomy, two Orbs imagined between the *Primum Mobile* and the Firmament, in the *Ptolemaic* Syſtem, where the Heavens were ſuppos'd ſolid, and only ſuſceptible of a ſingle Motion. See HEAVEN.

King *Alphonſus* of *Arragon* is ſaid to have introduc'd the *Cryſtallines*, to explain what they call'd the *Motion of Trepidation*, or *Titubation*. See *Ptolemaic* SYSTEM.

The firſt *Cryſtalline*, according to *Regiomontanus*, &c. ſerves to account for the ſlow Motion of the fix'd Stars; which makes 'em advance a Degree in 70 Years, according to the Order of the Signs, *viz.* to the Eaſt; which occaſions the Preceſſion of the Equinox. See PRECESSION.

The ſecond ſerves to account for the Motion of Libration, or Trepidation; whereby the Celeſtial Sphere is carried from one Pole towards another, occaſioning a difference in the Sun's greateſt Declination. See TREPIDATION.

But the Moderns account for theſe Motions, in a much more natural and eaſy manner. See LIBRATION, *&c.*

CRYSTALLIZATION, in Chymiſtry, a Kind of Congelation, befalling Salts, both *eſſential*, *fix'd*, and *volatile*; when, being ſet free from the greateſt Part of their Humidity, they are left to harden, dry, and ſhoot into *Cryſtals*. See SALT.

The ordinary Method of *Cryſtallization*, is perform'd by diſſolving the ſaline Body in Water, filtering it, and letting it evaporate, till a Film appears at the top; and laſtly, letting it ſtand to ſhoot. See DISSOLUTION, and EVAPORATION.

This Shooting is accounted for, on Sir *I. Newton*'s Principles, from that attractive Force which is in all Bodies, and particularly in Salt, by reaſon of its Solidity; whereby, when the Menſtruum or Fluid in which ſuch Particles float, is ſated enough, or evaporated, (which brings it to the ſame) ſo that the ſaline Particles are within each other's attractive Powers, and can draw one another more than they are drawn by the Fluid, they will run into *Cryſtals*. See ATTRACTION.

This is peculiar to Salts, that let them be ever ſo much divided, and reduc'd into minute Particles; yet, when they are form'd into *Cryſtals*, they each of them reaſſume their proper Shapes: ſo that one might as eaſily diveſt and deprive 'em of their Saltneſs, as their Figure.

This being an immutable and perpetual Law, by knowing the Figure of the *Cryſtals*, we may underſtand what the Texture of the Particles ought to be, which can form thoſe *Cryſtals*: and, on the other hand, by knowing the Texture of the Particles, may be determin'd the Figures of the *Cryſtals*.

For, ſince the Figures of the moſt ſimple Parts remain always the ſame, it is evident that the Figures they run into, when compounded and united, muſt be uniform, and conſtant: and ſince the Force of Attraction may be ſtronger on one ſide of a Particle than on another; there will conſtantly be a greater Accretion of Salts upon thoſe Sides which attract more ſtrongly: From which it may eaſily be

demonſtrated, that the Figure of the leaſt Particles, is entirely different from that which appears in the *Cryſtal*. See PARTICLE.

CRYSTALOIDES, the *Cryſtalline* Coat of the Eye; a Coat, or Tunic, immediately encompaſſing, and containing the *Cryſtalline* Humour; and ſuppoſed to ſerve, by conſtringing or dilating that Humour, to vary the Place of its Focus. See CRYSTALLINE.

Anatomiſts are divided about the Reality of ſuch Tunic, which is alſo, from its fine Texture, called *Aranea Tunica*, or *Arachnoides*. See ARACHNOIDES.

CRYSTALOMANCY, the Art of divining, or foretelling future Events, by means of a Mirror; wherein the Things requir'd are repreſented. See MIRROR.

It is alſo call'd *Catoptromancy*: The firſt from χρύσαλλος, *congeal'd Water*, or *Cryſtal*; and the ſecond from κατόπτρον, *Mirror*, and μαντεία, *Divination*.

CUBATURE, or CUBATION, the *Cubing* of a Solid; or the meaſuring of the Space comprehended in a Solid; as in a *Cone*, *Pyramid*, *Cylinder*, &c. See CONE, PYRAMID, CYLINDER, &c.

The *Cubature* regards the Content of a Solid, as the Quadrature does the Superficies of a Figure; ſo that the *Cubature* of the Sphere turns on the ſame thing as the Quadrature of the Circle. See SOLIDITY, and QUADRATURE.

CUBE, in Geometry, a regular or ſolid Body, conſiſting of ſix ſquare and equal Faces, or Sides; and its Angles all right, and therefore equal. See SOLID, and REGULAR *Body*.

The *Cube* is alſo call'd *Hexaedron*, becauſe of its ſix Sides. The Word comes from the *Greek* κυβος, *Teſſara*, Die.

The *Cube* is ſuppos'd to be generated by the Motion of a ſquare Plane, along a Line equal to one of its Sides, and at right Angles thereto: whence it follows, that the Planes of all Sections parallel to the Baſe, are Squares equal thereto, and conſequently to one another.

To deſcribe a Rete, or Net, whence any given Cube *may be conſtructed, or wherewith it may be cover'd.* On the right Line AB, (Tab. *Geometry*, Fig. 49.) ſet off the Side of the *Cube*, four times; on A erect a Perpendicular, AC, equal to the Side of the *Cube* AI, and compleat the Parallelogram ACBD. With the Interval of the Side of the *Cube*, in the Line CD; determine the Points K, M and O: Laſtly, draw the right Lines IK, LM, NO, and BD; produce IK and LM, each way to E and F, and to G and H; till EL=IK=KF, and GL=LM=MH, and draw the right Lines EG, FH.

To determine the Surface and Solidity of a Cube: As the Surface of a *Cube* conſiſts of ſix equal Squares, a Side multiply'd by it ſelf, and the Product by ſix, will give the Superficies; and the ſame Product, again, multiply'd by the Side, the Solidity. See SURFACE, and SOLIDITY.

Coroll. Hence, If the Side of a *Cube* be 10, the Solidity will be 1000; if that be 12, this will be 1728: Wherefore, the Geometrical Perch being 10 Foot, and the Geometrical Foot 10 Digits, &c. the *Cubic* Perch is 1000 *Cubic* Feet, and a *Cubic* Foot 1000 *Cubic* Digits, &c.

Hence, alſo, *Cubes* are in a triplicate Ratio of their Sides; and are equal, if their Sides be ſo.

CUBE, or CUBIC *Number*, in Arithmetick, is a Number ariſing from the Multiplication of a ſquare Number by its Root. See NUMBER.

Thus, if the ſquare Number 4, be multiplied by its Root, 2, the *Factum* 8 is a *Cube* or *Cubic Number*; and the Number 2, with reſpect thereto, a *Cube*-Root. See ROOT.

Hence, ſince, as Unity is to the Root, ſo is the Root to the Square; and as Unity is to the Root, ſo is the Square to the *Cube*; the Root will, alſo, be to the Square as the Square to the *Cube*: that is, Unity, the Root, the Square, and the *Cube*, are in continual Proportion; and the *Cube*-Root is the firſt of two Numbers that are Mean Proportionals between Unity and the *Cube*. See POWER.

For the Compoſition of CUBIC *Numbers.* Every *Cubic* Number of a Binominal Root, is compos'd of the *Cubic* Numbers of the two Parts, of the *Factum* of thrice the Square of the firſt Part into the ſecond, and of the *Factum* of thrice the Square of the ſecond Part into the firſt.

Demonſt. For a *Cubic* Number is produced by multiplying the Square by the Root: But the Square of a Binomial Root, is compos'd of the Squares of the Parts, and the double *Factum* of one Part into the other. See SQUARE.

Wherefore, the *Cube* is compos'd of the *Cube* of the firſt Part, of the triple *Factum* of the Square of the firſt Part into the ſecond, and of the triple *Factum* of the Square of the ſecond Part into the firſt, and of the *Cube* of the ſecond Part. See ROOT.

An ocular Demonſtration of this we have in the following Example, where Multiplication alone is uſed. Suppoſe, *v. g.* the Root 24, or 20+4. Here,

$$24^2 = 20^2 + 2.4.20 + 4^2$$
$$\underline{\qquad\qquad 20 + 4^2}$$
$$+4.20^2 + 2.4^2.20 + 4^3$$
$$20^3 + 2.4.20^2 + 4^2.20$$
$$\underline{\qquad\qquad\qquad\qquad}$$
$$24^3 = 20^3 + 3.20^2.4 + 3.4^2.20 + 4^3$$
$$20^3 = 8000$$
$$3.20^2.4 = 4800$$
$$3.4^2.20 = 960$$
$$4^3 = 64$$
$$\underline{\qquad\qquad}$$
$$24^3 = 13824$$

Coroll. Hence, as the Part on the right Hand is placed among Units, and that on the left among Tens; the *Cubic* Number of the right hand Part muſt be put in the right Place; the *Factum* of its triple Square into the left, in the ſecond Place; and the *Factum* of the triple Square of the left into the right, in the third: laſtly, the *Cube* of the left-hand Part falls in the fourth Place.

If the Root be a Multinomial, two or more Characters on the right muſt be eſteem'd as one; that it may have the form of a Binomial.

'Tis obvious, that any *Cube* is compos'd of the *Cubes* of the ſeveral Parts of the Root, and of the *Factums* of the triple Square of any of the left-hand Characters into the next on the right; and alſo of the *Factums* of the triple Square of the right-hand Characters into all the left. Suppoſe, *v. g.* the Root 243: Take 240 for one Part of the Root, 3 will be the other Part; Conſequently,

$$240^3 = 13824000$$
$$3.240^2.3 = 518400$$
$$3.240.3^2 = 6480$$
$$3^3 = 27.$$
$$\underline{\qquad\qquad\qquad}$$
$$243^3 = 14348907$$

The Places of the ſeveral *Factums*, are determin'd from what was obſerv'd above: for regard muſt here, too, be had to the Ciphers to be added to the Numbers multiplied by each other, if they be placed alone.

This Compoſition of *Cubic Numbers* once well conceiv'd, the Extraction of *Cubic* Roots will be eaſy. See EXTRACTION.

CUBE *Root*, or CUBIC *Root*, the Origin of a *Cube* Number; or a Number by whoſe Multiplication into it ſelf, and again into the Product, any given Number is form'd. See CUBE *Number*.

The *Extraction of the Cube Root*, is the ſame thing as the finding any Number, *v. g.* 2; by whoſe Multiplication into it ſelf three times, a given Number, *v. g.* 8, is produced: The Proceſs whereof, ſee under the Article EXTRACTION.

CUBEBS, in Pharmacy, a Fruit brought from the Iſland of *Java*, in Grains reſembling Pepper, both in form and ſize; whence ſome call it *Wild Pepper*.

'Tis ſaid, the Natives of the Place boil it ere they allow it to be exported, to prevent its being ſown in other Countries.

Cubebs fortify the Stomach, Brain, and other *Viſcera*; and enter as an Ingredient in ſeveral Officinal Compoſitions.

CUBIC *Equation*, is an Equation wherein the unknown Quantity is of three Dimenſions, as $x^3 = a^3 - b^3$, &c. See EQUATION.

For the Conſtruction of Cubic Equations, ſee CONSTRUCTION. *For their Reſolution*, ſee RESOLUTION. *For its Root*, ſee ROOT.

CUBICAL *Parabolois*, a Term us'd by ſome Writers for a Parabola of the higher Kind, *v. g.* where $a^2 x = y^3$, &c. See CURVE; ſee alſo PARABOLA.

CUBIT, a long Meaſure, us'd by the Antients, eſpecially the *Hebrews*; taken from the ordinary length of a Man's Arm, from the Elbow to the Tip of the Hand. See MEASURE, ARM, and HAND.

In the Scripture, we find *Cubits* of two lengths, the one equal, according to Dr. *Arbuthnot*, to 1 Foot, 9 Inches, $\frac{888}{1000}$ of an Inch, our Meaſure; being the fourth Part of a Fathom, double the Span, and triple the Palm: The other equal to $1.\frac{824}{1000}$ Foot, or the four hundredth Part of a Stadium.

The *Romans*, too, had a *Cubit*, equal to 1 Foot, 5 Inches, $\frac{406}{1000}$ of an Inch.

F. *Merſenne* makes the *Hebrew Cubit* 1 Foot, 4 Digits, and 5 Lines, with regard to the Foot of the Capitol. According to *Hero*, the Geometrical *Cubit* is 24 Digits; and according to *Vitruvius*, the Foot is $\frac{3}{4}$ of the *Roman Cubit*, *i. e.* 16 Digits. See FOOT, DIGIT, &c.

CUBITÆUS *Externus*, or *Ulnaris*, in Anatomy, the firſt of the Extenſor Muſcles of the Fingers.

It has its Name, as being placed along the *Cubitus*, externally. It riſes from the external Extuberance of the *Humerus*, and paſſing its Tendon under the *Ligamentum Annulare*, is inſerted into the fourth Bone of the *Metacarpus*, that ſuſtains the little Finger.

CUBITÆUS *Internus*, the firſt of the *Flexores*, placed along the *Cubitus*, withinſide the Arm. It riſes from the internal Extuberance of the *Humerus*, and part of the *Ulna*; upon which it runs all along till paſſes under the *Ligamentum Annulare*, and is inſerted by a ſtrong and ſhort Tendon into the fourth of the firſt Order of the *Carpus*.

CUBITUS, in Anatomy, a Bone of the Arm, reaching from the Elbow to the Wriſt; otherwiſe called *Ulna*, or the *greater Focile*. See ULNA.

Some uſe the Word for all that Part of the Arm between the Elbow and the Wriſt; including the *Ulna*, or *Cubitus*, properly ſo call'd, and the *Radius*. See ARM, and RADIUS; ſee alſo FOCIL.

CUBO-CUBO-CUBUS. See CUBUS-CUBI.

CUBO-CUBUS, the Term whereby *Diophantus*, *Vieta*, &c. diſtinguiſh the ſixth Power; which the *Arabs* call *Quadratum-cubi*. See POWER.

CUBOIDES, or *Os* CUBIFORME, in Anatomy, the ſeventh Bone of the Foot; ſo called, from its being in form of a *Cube*, or Die. See FOOT.

Some alſo call it *Multiforme*: It is ſituate in the fore-Part of the *Calcaneum*, in the ſame Rank with the *Oſſa Cuneiformia*.

Behind, it is articulated to the *Os Calcis*; before, to the two outer Bones of the *Metatarſus*; and within, it is join'd to the third *Os Cuneiforme*. See BONE.

CUBUS-CUBI, a Name whereby the *Arab* Writers, and thoſe who follow 'em, denominate the ninth Power, or a Number multiplied eight times by it ſelf; which *Diophantes*, and after him *Vieta*, *Oughtred*, &c. call *Cubo-cubo-cubus*. See POWER.

CUCKING-STOOL, or COKESTOOL, antiently call'd *Tumbrel*, and *Trebuchet*; an Engine for the Puniſhment of Scolds and unquiet Women, by ducking them in the Water.

Kitchen ſays, 'Every one having View of Frank-Pledge, 'ought to have a Pillory and a Tumbrel.' This Machine was much in uſe, even among our *Saxon* Anceſtors, who call'd it *Scealding-ſtole*.

This Puniſhment was antiently inflicted on Brewers and Bakers, tranſgreſſing the Law; who were thereupon, in ſuch a Stool or Chair, to be ducked *in Stercore*, ſome muddy or ſtinking Pond. This was antiently written *Gagingſtole*: In *Domeſday* it is called *Cathedra Stercoris*.

CUCULLARIS, in Anatomy, a Muſcle, ſo called from the reſemblance it is ſuppos'd to bear to a Monk's Cowl; and *Trapezius*, from its reſemblance to a geometrical Figure, call'd a *Trapezium*. See TRAPEZIUS.

The Fibres of this Muſcle have various Originations and Actions: whence Dr. *Drake* thinks it may be more properly call'd three, than one Muſcle.

The upper Order of Fibres or Muſcles, ſprings from the *Os Occipitis*; the ſecond from the Spine of the *Vertebræ* of the Neck; and the third from the Spines of the eight upper *Vertebræ* of the Thorax, or Back: and are inſerted into the Spine, *Acromium*, and Baſis of the *Scapula*, and part of the *Claviculæ*.

From the different Diſpoſitions of theſe Fibres, the *Scapula* is drawn different ways; the firſt pulling obliquely upwards, the laſt obliquely downwards, and the middle backwards: When they act all three together, they are ſaid to draw backwards only; *i. e.* the two Extremes antagonizing, the middle one alone is at liberty to act.

CUCULLATE *Flowers*, among Botaniſts, are ſuch as reſemble a *Cucullus*, or Monk's Hood, or Helmet. See FLOWER.

CUCULLUS, was antiently a kind of Traveller's Cap; call'd alſo *Cowl*, *Goul*, or *Gula*: whence the Name paſs'd to the Monks, among whom it ſignify'd their Frock, and Cap. See COWL.

The Word aroſe hence, that antiently they wore their Clothes turn'd up at the Neck and Sleeves, with a kind of Skin call'd *Gulæ*, or *Gules*, *Caules*, and *Cuſcules*; from *Cuſculium*, Grain of Scarlet.

CUCUPHA, an antient Form of Medicine; being a Cap, or Cover for the Head, with Cephalic Spices quilted therein; wore in many nervous Diſtempers, and particularly ſuch as more immediately affect the Head: as againſt Catarrhs, Defluxions, &c. It is now almoſt out of uſe.

CUCURBITACEOUS *Plants*, a Kind of Plants, ſo called from their reſemblance to the Gourd, call'd by the Latins *Cucurbita*, which is the Head of this Family. See PLANT.

Plants of the *Cucurbitaceous* Kind, ſend out their Branches every way; which are ſoft, and generally ſet with *Urillæ*, by means whereof they cling to the Bodies that are near 'em.

Their Flowers are either Sterile, or Fertile: The laſt knit, and yield fleſhy Fruits of various Figures; containing within 'em ſeveral flat Seed placed in three or four Lodges, or even a greater Number.

Theſe Seeds have uſually a white ſweetiſh Kernel; the greateſt part of 'em being of thoſe call'd *Frigidæ Majores*, or greater Cold Seeds.

The Pumpion, Muſhroom, Melon, &c. are of the *Cucurbitaceous* Kind.

CUCURBIT, in Chymiſtry, an Earthen, or Glaſs Veſſel, call'd alſo *Body*; wherein are put the Matters to be diſtill'd. See DISTILLATION.

It is ſometimes alſo made of Tin, and ſometimes of Braſs, tinn'd. When a Diſtillation is to be made, they fit on to it a glaſs Head, with an Aperture, and a Neck proportional. See RETORT.

CUCURBITULA, in Chirurgery, a Cupping-Glaſs, or Inſtrument uſed in the Operation of Cupping. See CUPPING-*Glaſs*.

CUDDY, in a Firſt Rate Man of War, is a Place lying between the Captain's and the Lieutenant's Cabins, and the Poop; and divided into Partitions, for the Maſter and Secretary's Officers.

CUE, an Item, or Innuendo, given to the Actors on the Stage, what, or when to ſpeak.

CUERPO. *To walk in Cuerpo*, is a *Spaniſh* Phraſe, for going without a Cloke; or without all the Formalities of a full Dreſs.

CUI *ante Divortium*, a Writ, which a Woman divorc'd from her Husband, hath, to recover Lands or Tenements from him to whom her Husband did alienate them during Marriage; becauſe, during the Marriage, ſhe could not gainſay it.

CUI *in Vita*, is a Writ of Entry, which a Widow hath againſt him to whom her Husband alienated her Lands or Tenements in his Life-time; ſpecifying, that, during his Life, ſhe could not withſtand it.

CUIRASSE, a piece of defenſive Armour, made of an Iron Plate well hammer'd; ſerving to cover the Body, from the Neck to the Girdle, both before and behind.

Hence, *Cuiraſſiers*, the Cavaliers arm'd with *Cuiraſſes*.

The *Cuiraſſe* was not brought into uſe till about the Year 1300. The *French* have ſtill a Regiment of *Cuiraſſiers*; and a good Part of the *German* Cavalry, are *cuiraſs'd*.

In the *Roman* Calendar, we find the Name of S. *Dominic the cuiraſs'd*; a Title given a Saint of the XIth Century, from his conſtant wearing of an Iron *Cuiraſſe*, by way of Penance.

Some derive the Word, by Corruption, from *Cucuraſſe*; becauſe it covers the Body: Others from the French *Cuir*, or the Latin *Corium*, Leather; whence *Coriaceus*: by reaſon defenſive Arms were originally made of Leather.

CULINARY, an Epithet frequently added to Fire; determining it to be a common Fire, excited in Wood, Coals, or other ordinary Fuel: In contradiſtinction to Solar Fire, or that rais'd by the Action of a Burning-Glaſs; to Central Fire; to Animal Fire, &c. See FIRE.

Culinary Fire, according to *Boerhaave*, conſiſts of a Portion of pure Elementary, or Solar Fire, attracted by the oily, or ſulphureous Parts of the Fuel, with ſuch Velocity, as that it moves the ſame, agitates and whirls 'em violently about, and by degrees breaks and attenuates them; renders 'em volatile, and diſperſes 'em in Air. See FUEL.

The Effect of Air upon this Fire, is to make, as it were, a Vault around it, and by that means, reſtrain and keep it in, determine it upon the Sulphur, and thus prevent its too haſty Diſſipation. See AIR.

The Word is form'd from the Latin *Culina*, Kitchen; this being the chief place of ſuch Fires.

CUL *de Lamp*, a *French* Term, properly ſignifying the bottom of a Lamp; uſed in Architecture for ſeveral Decorations, both of Maſonry and Joinery, found in Vaults and Ceilings, to finiſh the bottom of Works, and wreath'd ſomewhat in manner of a *Teſtudo*; particularly a kind of Pendentive in *Gothic* Vaults.

CUL *de Four*, a ſort of low, ſpherical Vault, Oven-like. See VAULT.

Cul de Four of a Niche, the arch'd Roof of a Niche, on a circular Plan. See NICHE.

CULLIAGE, or CULLAGE, a Right uſurp'd by the antient Lords, and eſtabliſh'd by a fooliſh Cuſtom, which gave 'em the firſt Night with their Vaſſals Brides.

'Tis ſaid this Right was eſtabliſh'd by *Ewen* King of *Scotland*; and finally aboliſh'd by *Malcolm* III. a Compenſation being ſettled in its ſtead; as occaſioning frequent Revolts of the Vaſſals againſt their Lords.

The Word is form'd from the French *Cul*, Breech.

CULMIFEROUS, in Botany, a Term applied to ſuch Plants as have a ſmooth-jointed Stalk, uſually hollow; the Stalk wrap'd about, at each Joint, with ſingle, narrow, ſharp-pointed Leaves; and the Seeds contain'd in chaffy Huſks. See CULMUS, and PLANT.

Culmiferous Plants are divided into two Kinds; thoſe with a *greater*, and thoſe with a *ſmaller* Seed.

Thoſe with a larger Seed are called *Frumentaceous*, or *Cereales*; and are again divided into *Spicatæ*, as Wheat, Rye, Spelt, Barley, Rice, Peaſe, &c. and *Paniculatæ* or *Jubatæ*, as Oats, Scordium, Milium, and Maiſe. See FRUMENTACEOUS, &c.

CULMINATION, in Aſtronomy, the Tranſit of a Star or Planet over the Meridian; or that Point of its Orbit wherein it is at its greateſt Altitude. See STAR, ALTITUDE, ORBIT, &c.

Hence, a Star is ſaid to *culminate*, when it paſſes the Meridian. See MERIDIAN, and MID-HAVEN.

To find the Culmination *of a Star, or the Time wherein it paſſes the Meridian.* On a Meridian-Line AB, (Tab. *Aſtronomy*, Fig.48) ſtretch a Thread, DC, perpendicularly; and from D to E another, DE, cutting the Meridian obliquely, at any Angle: The triangular Thread, therefore, DCE, will cut the Plane of the Horizon in the Meridian-Line, at right Angles; and conſequently will be in the Plane of the Meridian.

The Eye, therefore, being ſo placed as that the Thread DE may cover the Thread DC; wait till the Star be biſſected by the Triangle DCE; for then the Eye and the Star will, together with the Triangle DCE, be in the ſame Plane: Conſequently the Star is in the Meridian. See MERIDIAN.

To find the Culmination *of a Star by the Globe.* See GLOBE.

To find the Time when a Star culminates, *from a given right Aſcenſion of the Meridian, the Sun, and the Star.* Subtract the right Aſcenſion of the Sun from that of the Star; if that of the latter be the leſs, add 360° to it, and ſubtract the former from the Sum; convert the Remainder into Solar Time: (ſee TIME.) Thus will you have the Time paſs'd ſince the Star's *Culmination*.

Hence, alſo, we have the Hour of the Night. See HOUR.

CULMUS, is properly the Stem or Stalk of Corn, or Graſs; which in other Plants is call'd *Caulis*. See STEM, and STALK.

Hence, *Culmiferous Plants*, are ſuch as have a ſmooth-jointed Stalk, and uſually hollow; and at each Joint the Stalk is wrap'd about with ſingle, narrow, long, ſharp-pointed Leaves, and their Seeds are contain'd in chaffy Huſks. See CULMIFEROUS.

CUL-PRIT, a Term us'd by the Clerk of the Arraignments, when a Perſon is indicted for a criminal Matter. See INDICTMENT.

After the Indictment is read in Court (which is the Crown's Charge) againſt the Priſoner at the Bar; he is aſk'd if Guilty, or Not Guilty?

If he anſwers *Not Guilty*, there is next a Replication from the Crown, by continuing the Charge of Guilt upon him; which is expreſs'd by pronouncing the Word *Cul-prit*; *Cul* being an Abbreviation of the *Latin* Word *Culpabilis*, Guilty, and *prit* (now *pret*) the old *French* Word for *ready*.

From theſe two Aſſertions, therefore, of the Clerk of the Arraignments, the Priſoner is deem'd guilty of the Crime charg'd on him; and that the Crown is ready to prove it upon him.

That this is the true Explanation of the Term, is evident from the Form of the Entry of the Record of the Trial, when drawn at large.

CULTELLATION, a Term ſome Authors uſe for the meaſuring of Heights, and Diſtances, by Piecemeal; that is, by Inſtruments which give us ſuch Heights and Diſtances by Parts, and not all at one Operation. See MEASURING, ALTIMETRY, DISTANCE, &c.

CULVERIN, a Piece of Ordnance or Artillery, ſerving to carry a great diſtance. See ORDNANCE.

Of theſe there are three Kinds, *viz.* the *Culverin extraordinary*, the *ordinary*, and the *leaſt ſiz'd*.

The *Culverin extraordinary* has $5\frac{1}{2}$ Inches bore; its length 32 Calibers, or 13 Foot; weighs 4800 Pound; its Load above 12 Pound; carries a Shot 5 Inches $\frac{1}{4}$ Diameter, weighing 20 Pound weight.

The *Ordinary Culverin* is 12 Foot long; carries a Ball of 17 Pound 5 Ounces; Caliber $5\frac{1}{2}$ Inches; its weight 4500 Pound.

The *Culverin* of the *leaſt ſize*, has its Diameter 5 Inches; is 12 Foot long; weighing about 4000 Pounds; carries a Shot 3 Inches $\frac{3}{4}$ Diameter, weighing 14 Pounds 9 Ounces. See DEMI-*Culverin*.

Menage derives the Word from the Latin *Colubrina*; others from *Coluber*, Snake; either from the Length of the Piece, or the Ravages it makes.

CUMMIN, the Grain of a Plant of the ſame Name, much like that of Fennel; growing abundantly in the Iſle of *Malta*, where 'tis ſown and cultivated after the manner of Corn.

The *French* frequently call it *Anis aigre*, ſharp or ſour Anis.

'Tis us'd with Succeſs in the Vertigo, Wind-Colics, Tympanies, &c. 'Tis eſteem'd excellent to retrieve the Natural Heat in Horſes, Bulls, &c. The Pidgeons are exceedingly fond of it; whence ſome make uſe of it to people their Dove-houſes, incorporating it with an Earth naturally ſaline, or ſome other Earth that has imbib'd Urine.

This Seed, as well as the common Anis, yields, by Expreſſion, a kind of Oil, eſteem'd ſovereign in Rheumatiſms; provided it be us'd with Precaution, and in ſmall Quantities.

CUNETTE, in Fortification, a deep Trench, about three or four Fathom wide, ſunk along the middle of a dry Moat, to lade out the Water; or to make the Paſſage more difficult to the Enemy. See TRENCH.

CUNEUS, one of the Mechanical Powers; more uſually, by *Engliſh* Writers, call'd the *Wedge*. See WEDGE.

CUNEIFORME *Os*, in Anatomy. See SPHÆNOIDES.

CUNEIFORMIA *Oſſa*, the fourth, fifth, and ſixth Bones of the Foot; thus called from their wedge-like Shape, being large above, and narrow below.

They lie all three a-ſide of one another, and are of different Sizes; their upper Side convex, and their under hollow: by which means, the Muſcles and Tendons in the bottom of the Foot are not hurt in walking.

At one End they have each a *Sinus*, which receives the *Os Naviculare*; and at the other End are join'd each to one of the three inner Bones of the *Metatarſus*.

CUP, *Calyx*, a Veſſel ſo call'd, of various Forms and Uſes. See CHALICE.

In the *Ephem. German.* we have a Deſcription of a *Cup* made of a common Pepper-Corn, by *Oſwald Nerlinger*; which holds 1200 other Ivory *Cups*, each having its ſeveral Handle; all gilt on the Edges, with room for 400 more.

CUPS, among Herbaliſts, are thoſe ſhort Huſks in which Flowers grow; ſome being pointed into two, three, four, five, or ſix Leaves. See CALYX.

CUPOLA, in Architecture, a ſpherical Vault; or the round Top of the Dome of a Church, in form of a *Cup* inverted. See DOME.

Some call it a *Lanthorn*. See LANTHORN.

The Word is *Italian*, form'd of the barbarous Latin *Cuppala*; otherwiſe call'd *Thola*, and *Fornix*.

CUPPEL, CUPEL, or COUPEL, among Chymiſts, a Veſſel or Utenſil, uſed in the trying and purifying of Gold and Silver; call'd alſo *Teſt*. See COUPEL, TEST, PURIFYING, and REFINING; ſee alſo ESSAY.

CUPPING, an Operation in Chirurgery, for the Diſcharge of Blood and other Humours by the Skin.

It is perform'd by collecting the Humours into a Tumor under the Cutis; and letting 'em out thence, by Scarification; *i. e.* by ſeveral Inciſions made with a Scarificator. See SCARIFICATION.

The Inſtruments uſed herein, are the *Cucurbitulæ*, or *Cupping-Glaſſes*, and *Scarificator*: The Deſcription of each whereof ſee under their proper Head.

Cupping is perform'd either *with* or *without* Fire.

Cupping with Fire, is the more uſual Proceſs; and is commonly, among us, thus effected: The Air in the Cavity of the *Cucurbitula* is heated, and ſo rarefy'd, by the Application of the Flame of a Lamp, or the like; and the Veſſel immediately apply'd to the Part to be *cupp'd*.

Others, eſpecially the *French*, proceed thus: A piece of Card is cut round, and a Lamp, or four little Wax Candles affix'd to it: This is placed after the manner of a Candleſtick to the Part whereon the Operation is to be perform'd, and cover'd with a *Cucurbitula*, or Cupping-Glaſs.

After the included Air has been well heated and rarefy'd with the Flames of the Candles, it is clap'd cloſe to the Skin; which it has no ſooner touch'd but the Candles are extinguiſh'd, and the Tumor rais'd.

In *Cupping without Fire*, inſtead of rarefying the Air included in the *Cupping*-Glaſs by heat; 'tis done by a Syringe applied to the Neck of the *Cupping*-Glaſs, fitted with a braſs Collar, Cap, and Valve: The *Cupping*-Glaſs being applied to the Skin, and the Syringe wrought, part of the Air is pump'd out of the *Cucurbitula*; and thus the Tumor riſes, as in the former Caſe. See SYRINGE.

The Reaſon of the Phænomenon is this: The Air included in the *Cupping*-Glaſs being rarefied, a great Part of the Load which before preſs'd it and kept it down, and which ſtill continues to preſs the reſt of the Body, is taken off; upon which the Air, known to be contain'd in the Veſſels of the Body, and mix'd with the Blood and Juices, expands it ſelf; and raiſes a Tumor, carrying with it the Fluids wherewith it is mingled.

The Operation is perform'd on the Breaſts and Thighs, to ſtop or promote the Menſes; on the Navel for the Cholick.

Cupping is alſo us'd for Defluxions on the Eyes, for venomous Wounds, and Buboes; on the Head, for Apoplexies, &c.

CUPPING-GLASS, *Cucurbitula*, in Chirurgery, a Glaſs Veſſel, applied to certain Parts of the Body, to draw the Blood and other Humours from within outwards; to be afterwards diſcharg'd, thro' ſeveral Inciſions made with a Scarificator. See CUPPING.

The Veſſel is of various Dimenſions: Sometimes, inſtead of Glaſs, 'tis made of Wood, Horn, Braſs, Silver, &c.

When the *Cupping* is to be perform'd with Fire; the Veſſel is heated with Candles, Tow, a Torch, Lamp, or the like; and in this State applied cloſe to the Part: The Air

in its Cavity being by this means rarefy'd, and brought near to the Condition of a Vacuum; that Part of the Body cover'd by it being leſs preſs'd by the Air than the reſt, its Juices are forc'd up with the Cutis, and raiſe a Bunch in the Cavity of the Veſſel: to which the Scarificator being apply'd, and ten or twelve Inciſions made at the ſame time, a plentiful Evacuation is effected.

To Cup without Fire, the Veſſel is fitted with a braſs Neck; to which a Syringe being apply'd, a Rarefaction is produc'd, by working it to and fro: (ſee SYRINGE.) The reſt as in the former Caſe.

CURATE, is properly a Parſon, or Vicar of a Pariſh, who hath the Charge or *Cure* of the Pariſhioners Souls. See CURE, PARSON, &c.

Curate is now more generally uſed for a Deputy or Subſtitute; or one who officiates in the Place of the Incumbent, or Beneficiary.

CURATIVE *Indication*, among Phyſicians, a Sign which has relation to the Diſeaſe to be cured. See SYMPTOM, and INDICATION.

CURATOR, in the Civil Law, a *Truſtee*, or Perſon elected or nominated to take care of the Affairs and Intereſts of a Perſon emancipated, or interdicted. See EMANCIPATION.

In Countries where the *Roman* Law prevails, between the Age of 14 and 24 Years, Minors have *Curators* aſſign'd 'em: Till 14, they have Tutors. See MINOR, and TUTOR.

CURATOR *of an Academy*, in the United Provinces, is an elective Office, to which belongs the Direction of the Affairs of the Academy; as, the Adminiſtration of the Revenues, the Inſpection of the Profeſſors, &c. The *Curators* are choſe by the States of each Province: The Academy of *Leyden* has three; the Bourgemaiſters of the City have a fourth.

CURDLING, the *coagulating*, or fixing of any fluid Body; particularly Milk. See COAGULATION.

Pauſanias ſays, *Ariſtæus* Son of *Apollo*, and *Cyrene* Daughter of the River *Peneus*, were the firſt who found the Secret of *curdling* Milk. See MILK.

At *Florence*, they *curdle* their Milk for the making of Cheeſe with Artichoke Flowers; in lieu of the Rennet us'd for the ſame Purpoſe among us. See CHEESE.

The *Biſaltes*, a People of *Macedonia*, *Rochfort* obſerves, live wholly of *curdled* Milk, *i. e.* of Curds. He adds, that Curds is the whole Food of the People of the upper *Auvergne* in *France*, and Whey their only drink.

Women newly deliver'd are ſubject to have their Milk *curdled*, or converted into little *Grumæ* in their Breaſts, which occaſions violent Pains, with a ſhivering in the back.

'Tis occaſion'd by the want of being ſuck'd, whence the Method of remedying and preventing it is apparent.

CURE *of Souls*, a Benefice, the Incumbent whereof has the Charge and Guidance of the Souls of the People within a certain extent of Ground, call'd a *Pariſh*. See BENEFICE, PARISH, &c.

Such is a Vicar, a Rector, &c. in contradiſtinction to a Prebend, a Dean, a Chantor, &c. See VICARAGE, &c.

CURE, in Falconry, a Remedy which the Falconers give their Birds, in form of little Balls or Pellets, of Hemp, Cotton, or Feathers, to imbibe and dry up their Phlegm.

The beſt *Cure* is that made of Feathers, or of little Bones of Birds, bruis'd; or of Hares, or Rabbets Feet. That of Cotton burns and conſumes the Lungs; eſpecially when given without waſhing.

From the Condition of the *Cure*, when evacuated, they Judge of the State of the Bird. See CASTING.

CURETES, in Antiquity, a ſort of People of the Iſle of *Crete*; call'd alſo *Corybantes*. See CORYBANTES.

The *Curetes* are ſaid to have been originally of Mount *Ida*, in *Phrygia*; for which reaſon they were alſo call'd *Idæi Dactyli*. See DACTYLI.

The Name *Curetes*, according to *Strabo*, was given 'em by reaſon of their cutting off the Hair before, to prevent the Enemy's taking hold thereof: the Word being *Greek*, κουρῆτες, of κουρά, the Act of cutting off the Hair; of κείρω, *tondo*. Others derive it from κουροτροφία, the feeding or educating of a Child; by reaſon they are ſaid to have educated *Jupiter*.

Ovid ſays, they aroſe from a huge Shower of Rain: *Lucian* and *Diodorus Siculus* repreſent them as very expert in caſting of Darts; tho other Authors give 'em no Weapons but Bucklers and Pikes: But all agree in furniſhing 'em with Tabours, and Caſtanetta's; and relate that they uſed to dance much to the Noiſe and claſhing thereof.

Some Authors, however, give a different Account of the *Curetes*: According to *Pezron*, and others, the *Curetes* were, in the Times of *Saturn*, &c. and in the Countries of *Crete* and *Phrygia*, what the Druids and Bards were afterwards among the *Gauls*, &c. *i. e.* they were Prieſts, and Sacrificers, who took care of what related to Religion, and the Worſhip of the Gods. See DRUIDS.

Hence, as in thoſe Days it was ſuppos'd there was no Communication with the Gods but by Divinations and Auguries, and the Operations of Magick; the *Curetes* paſs'd for Magicians and Enchanters: To theſe they added the Study of the Stars, of Nature, and Poeſy; and ſo were Philoſophers, Aſtronomers, &c.

Such were the *Curetes*, and after them the Druids; with this difference, that the *Curetes*, in the Time of the Flamens, went to the Wars; for which reaſon they were arm'd, and were wonderfully dextrous in dancing, Cap-a-pe, ſhaking their Bucklers and Javelins: From which Action, *Pezron* conjectures, they took their Name, *Curetes*; *Curo*, in the *Celtic*, being the ſame with the κείρω, of the *Greek*.

According to *Kircher*, the *Curetes* were what the *Spirits* are among the *Caballiſts*, the *Powers* in *Dionyſius*, the *Demons* among the *Platoniſts*, and the *Genii* among the *Egyptians*. See DÆMON, &c.

Voſſius diſtinguiſhes three Kinds of *Curetes*, thoſe of *Etolia*, thoſe of *Phrygia*, and thoſe of *Crete*, which were originally derived from the *Phrygians*.

The firſt, he ſays, took their Name from κουρά, *tonſure*; in regard, from the Time of a Combat wherein the Enemy ſeiz'd their long Hair, they always kept it cut: Thoſe of *Phrygia* and *Crete*, he ſuppoſes were ſo call'd from κοῦρος, *young Man*; in regard they were young; or becauſe they nurs'd *Jupiter* when he was young. *De Idololat.*

CURFEW, or COURFEU, q. d. *Couvre-feu*, a Signal of Retreat, given in Cities taken in War, &c. to advertiſe the Inhabitants to go to bed, and not to ſtir out any more.

The *Curfeu-Bell*, wherewith the Signal was given, was ſometimes hung up as a Puniſhment of Sedition. *Paſquier* ſays, it was call'd *Carfeu*, and *Garefeu*; as being intended to advertiſe the People to ſecure themſelves from the Robbers and Debauchees of the Night.

The moſt antient *Curfeu*, was that eſtabliſh'd in *England*, by *William* the Conqueror; who appointed, under ſevere Penalties, that at the ringing of a Bell, at eight a Clock in the Evening, every one ſhould put out their Lights, *cover*, or rake up their Fires, and go to bed.

Whence, to this Day, where a Bell is accuſtom'd to be rung about Bed-time, 'tis call'd *Curfeu-Bell*.

CURIA, in our antient Cuſtoms. It was uſual for the Kings of *England* to aſſemble the Biſhops, Peers, and great Men of the Kingdom, to ſome particular Place, at the chief Feſtivals in the Year; and this Aſſembly is call'd, by our Hiſtorians, *Curia*; becauſe there they conſulted about the weighty Affairs of the Nation: whence it was ſometimes alſo call'd, *Solennis Curia*, *Generalis Curia*, *Auguſtalis Curia*, and *Curia Publica*, &c. See COURT.

CURIA *adviſare vult*, in Law, is a Deliberation, which the Court ſometimes takes, before they give Judgment in a Cauſe wherein there ſeems to be any Point of difficulty.

CURIA *Baronum*. See COURT-*Baron*.

CURIA *Claudenda*, is a Writ that lies againſt him who ſhould fence and encloſe Ground, but refuſes or defers to do it.

CURIALITAS *Angliæ*. See COURTESY *of England*.

CURIA *Militum*, a Court ſo called; antiently held at *Carisbrook* Caſtle, in the Iſle of *Wight*. *Et idem Dominus Willielmus de inſula facere debet ſectam ad Curiam Domini caſtri de Crasbroc, de tribus ſeptimanis in tres ſeptimanas, in Curia quæ vocatur* Curia Militum.

CURIA, among the *Romans*, a Portion or Diviſion of a Tribe. See TRIBE.

In the Time of *Romulus*, a Tribe conſiſted of ten *Curiæ*, or a thouſand Men; each *Curia* being one hundred: That Legiſlator made the firſt Diviſion of his People into thirty *Curiæ*.

Afterwards, the Word *Curia*, *Curies*, or *Domus Curialis*, became uſed for the Place where each *Curia* held its Aſſemblies: Hence, *Curia* paſs'd to the Senate-houſe; and 'tis hence the Moderns come to uſe the Word *Curia*, Court, for a Place of Juſtice, and for the Judges, &c. there aſſembled. See COURT.

Some derive the Word *Curia* from *Cruor*; for what Reaſon we ſee not. *Varro* brings it from *Cura*, Care, *q. d.* an Aſſembly of People, charg'd with the Care of Publick Affairs. Others will have the Word come from the *Greeks*; maintaining, that at *Athens* they call'd κυρία the Place where the Magiſtrate held his Aſſizes, and the People uſed to aſſemble: κυρία, again, may come from κῦρος, *Authority*, *Power*; in regard, it was here the Laws were made. Hence alſo,

CURIO, the Chief, and Prieſt of a *Curia*.

Romulus, upon dividing the People into *Curiæ*, gave each Diviſion a Chief, who was to be Prieſt of that *Curia*, under the Title of *Curio*, *Curion*, and *Flamen Curialis*.

His Buſineſs was to provide and officiate at the Sacrifices of the *Curia*, which were call'd *Curionia*; the *Curia* furniſhing him with a Sum of Money on that Conſideration: which Penſion or Appointment was call'd *Curionium*.

Each Diviſion had the Election of its *Curio* ; but all theſe particular *Curio's*, were under the Direction of a Superior, or General, call'd *Curio Maximus* ; who was the Head of the Body ; and elected by all the *Curio's*, aſſembled in the *Comitia Curiata*.

All theſe Inſtitutions were ſet a-foot by *Romulus*, and confirm'd by *Numa*, as *Halicarnaſſæus* relates it. *Goodwin* will have two *Curio's* in each *Curia*.

CURIOSUS, *Curious*, an Officer of the *Roman* Empire, during the Emperors of the middle Age.

The *Curioſi* were Perſons appointed to have an Eye that there were no Frauds, and Malverſations committed ; particularly no Abuſes in what related to the Poſts, the Roads, *&c.* and to give Intelligence to the Court of what paſs'd in the Provinces.

This made them People of Importance ; and put 'em in a Condition of doing more harm than they prevented : on which account, *Honorius* caſhier'd 'em, at leaſt in ſome Parts of the Empire, *Anno* 415.

The *Curioſi* came pretty near to what we call Controllers : They had their Name from *Cura*, Care ; *Quod Curis agendis & erectionibus curſus publici inſpiciendis operam darent.*

CURLING *Stuff*, in Joinery. See CROSS-GRAIN'D *Stuff*.

CURNOCK, a Meaſure of Corn, containing four Buſhels. See MEASURE, and BUSHEL.

CURRANTS, a Kind of little Raiſins, or dried Grapes, of different Colours ; black, white, or red ; of the ſize of ordinary Gooſeberries, brought from ſeveral Places of the *Archipelago*, and among others, from the Iſthmus of *Corinth* ; whence their Name.

They muſt be choſen new, ſmall, and in large Maſſes ; and care be taken that the little *Spaniſh Currants* ben't foiſted in their room. When made up in Bales, they may keep two or three Years, without ſtirring, or giving 'em Air.

Their uſe is in ſeaſoning ſeveral Viands, and in ſome medicinal Compoſitions ; where they ſerve in lieu of Raiſins.

Sir *George Wheeler's* account of theſe Fruit, and the manner of preparing 'em is very curious.

The Iſland of *Zant*, he obſerves, is the chief Place whence the *Currants* are brought : the *Morea*, or the *Iſthmus* of *Corinth*, which was antiently the principal Plantation, and whence the *Latins* denominate 'em *Uvæ Corinthiacæ*, now, produces no more ; as having been much neglected : the Jealouſy of the *Turks* not allowing large Veſſels to enter the Gulf, to take 'em off their Hands.

They don't grow on Buſhes, like our Gooſeberries, tho that be the common Opinion ; but on Vines, like other Grapes ; except that the Leaves are ſomewhat thicker, and the Grapes ſomewhat ſmaller : They have no Stone ; and, in this Country, are all red, or rather black.

They gather 'em in *Auguſt*, diſpoſe 'em in Beds on the Ground till they be dry, clean 'em, and lay 'em up in Magazines, which the Natives call *Seraglio's* ; pouring them in at a Hole, till the Magazine be full. They cling ſo faſt together by their own weight, that they are forc'd to be dug out with Iron Inſtruments.

To barrel 'em for ſending abroad, they have People who greaſe their Feet and Legs, and tread 'em cloſe, that they may keep the better. They are ſold for about 12 Crowns the thouſand Weight ; and pay as much Cuſtom to the State of *Venice*.

Zant produces enough yearly to load five or ſix Veſſels ; *Cephalonia* three or four ; and the other Iſlands one. The *Engliſh* have a Factory at *Zant* ; the *Dutch* two or three Merchants, and the *French* one : the *Engliſh* conſuming more than ſix times the Quantity that both *France* and *Holland* do together.

Thoſe of *Zant* know but little of the uſe we make of 'em ; being perſuaded they only ſerve in dying of Cloth ; and being entirely ignorant of the Luxury of Chriſtmas Pyes, Puddings, *&c.*

CURRANT, or COURANT *Money*, good Money, or that which paſſes in Commerce from one to another. See COURANT.

CURRANT, *Curranto*, a ſort of running *French* Dance : Alſo a Muſical Air in triple Time. See COURANT.

CURRENT, in Hydrography, a Stream, or Flux of Water in any certain Direction. See RIVER, and WAVE.

Currents, in the Sea, are either *Natural* and *General*, as ariſing from the diurnal Rotation of the Earth on its Axis ; or *Accidental*, and *Particular*, caus'd by the Waters being driven againſt Promontories, or into Gulphs and Straights ; where, wanting room to ſpread, they are driven back, and thus diſturb the ordinary Flux of the Sea. See SEA, FLUX, *&c.*

The *Currents* are ſo violent under the Equator, where the Motion of the Earth is the greateſt, that they carry Veſſels very ſpeedily from *Africa* to *America* ; but abſolutely prevent their return the ſame way : ſo that Ships are forc'd to run as far as the 40th Degree of Latitude, to find a Paſſage into *Europe*.

In the Straights of *Gibraltar*, the *Currents* almoſt conſtantly drive to the Eaſtward, and carry Ships into the *Mediterranean* : They are uſually, too, found to drive the ſame way in St. *George's Channel*. The great Violence and dangerouſneſs of the Sea in the Straights of *Magellan*, is attributed to two contrary *Currents* ſetting in, one from the South, and the other from the North Sea.

CURRENTS, with reſpect to Navigation, may be defin'd, certain progreſſive Motions of the Water of the Sea, in ſeveral Places, either quite down to the Bottom, or to a certain determinate depth ; by which a Ship may happen to be carry'd forward more ſwiftly, or retarded in her Courſe, according to the Direction or Setting of the *Current*, in, with, or againſt the Courſe or Way of the Ship. See NAVIGATION.

The Buſineſs of *Currents* making a conſiderable Article in Navigation ; the way they ſet, together with their Strength, is to be carefully obſerv'd : this ſome do by the Ripplings of the Water, and by the driving of the Froth along the Shore, when in ſight of it : But the more uſual, as well as more accurate way, is thus :

They firſt fix their Boat, by throwing out a triangular piece of Wood, with a piece of Lead faſten'd to it and to the Stem of the Boat with a Cord ; and letting it ſink 60 Fathom, or more ; or, ſometimes, by a Kettle ty'd by the Bowl, and ſunk, as the other.

By either of theſe means, the Boat is brought to ride as at Anchor ; which done, the Log is caſt over, the Glaſs turn'd, and as the Log-line veers out, the Drift of the Log is ſet with the Compaſs. See LOG-LINE.

This ſhews whether there be any *Current*, or none ; and if any, which way it ſets, and at what rate it drives : obſerving, however, to add ſomething to the Drift, for the Boat's Drift ; for tho ſhe appear to ſtand ſtill, yet, in reality, ſhe is found to move. This Addition Experience has thus determin'd ; if the Line ſhe ride by be 60 Fathom, a third Part of the Drift to be added ; if 80 Fathom, a fourth ; if 100, a fifth.

If a Ship ſail along the Direction of a *Current*, 'tis evident the Velocity of the *Current* muſt be added to that of the Veſſel : If her Courſe be directly againſt the *Current*, it muſt be ſubtracted ; if ſhe ſail athwart the *Current*, her Motion will be compounded with that of the *Current* ; and her Velocity augmented or retarded, according to the Angle of her Direction, with that of the Direction of the *Current* ; *i. e.* ſhe will proceed in the Diagonal of the two Lines of Direction, and will deſcribe or paſs thro' that Diagonal in the ſame Time wherein ſhe would have deſcrib'd either of the Sides, by the ſeparate Forces. See COMPOSITION of *Motion*.

To determine a Ship's Courſe and Diſtance, ſailing obliquely with, or againſt a Current. Suppoſe, *v. g.* ſhe ſails N.E. 110 Miles, in a *Current* which ſets S.W. 30 Miles in the ſame Time : To ſolve the Problem geometrically ; ſet off 4 Points from N towards E, (Tab. *Navigation*, Fig. 15.) and draw A C equal to 110 Miles ; from C draw C B, parallel to the Line N N E, and equal to 30 Miles : Laſtly, draw A B, which will be the Ship's true Courſe and Diſtance.

To find which Trigonometrically. In the Triangle A B C, there are given A C 110, B C 30, and the Angle C, 22° 30′ ; then, $AC+:AC-BC::t,\frac{1}{2}A+B:t,\frac{1}{2}B-A$. That is, as the Sum of A C and B C, *viz.* 140, is to their Difference 80 : : ſo is the Tangent of 78° 45′ to the Tangent of 70° 49′. Hence her true Courſe appears to be N.E. 7°, 56′ Eaſterly. For her Diſtance ; as the Sine of the Angle A, 7° 56′, is to the Drift of the *Current* B C, 30, ſo is the Sine of the Angle at C 22° 30′, to the Diſtance run, 83, two Miles. See COURSE.

Under-CURRENTS. Dr. *Halley* makes it highly probable, that in the *Downs*, in the Straights of *Gibraltar*, &c. there is an *Under-Current*, whereby as much Water is carried out, as is brought in by the *upper Current*.

This he argues from the Offing between the North and South Foreland, where it runs Tide and Half-Tide, *i. e.* it is either Ebb or Flood in that Part of the *Downs*, three Hours ere it is ſo off at Sea : A certain Sign, that tho the Tide of Flood runs aloft, yet the Tide of Ebb runs under-foot, *i. e.* cloſe by the Ground ; and ſo at the Tide of Ebb it will flow under-foot.

This he confirms by an Experiment in the *Baltic* Sound, which he receiv'd from an able Seaman preſent at the making it : Being there, then, with one of the King's Frigates, they went with their Pinnace into the Mid-Stream, and were carried violently by the *Current*. Soon after that they ſunk a Baſket with a large Cannon-Bullet, to a certain depth of Water, which gave check to the Boat's Motion ; and ſinking it ſtill lower and lower, the Boat was driven a-head to the Windward, againſt the *upper Current* : the *Current* aloft, not being above four or five Fathom deep. He added, that the lower the Baſket was let down, the ſtronger the *Under-Current* was found.

From this Principle, 'tis eaſy to account for that vaſt Draught of Water continually pouring in with the *Current* out of the *Atlantic* into the *Mediterranean*, thro' the Straights of *Gibraltar* ; a Paſſage about 20 Miles broad : yet,

yet without any ſenſible riſing of the Water along the Coaſts of *Barbary*, &c. or any overflowing of the Lands, which there lie very low.

CURRICULUS, in our antient Writers, the *Year*, or Courſe of a Year. See YEAR.

Actum eſt hoc annorum Dominicæ incarnationis quatuor quinquagenis & quinquies, quinis luſtris & tribus curriculis, *i. e.* In the Year 1028; for four times fifty makes two hundred, and five times two hundred makes one thouſand; five *Luſtra* are twenty five Years, and three *Curriculi* are three Years.

CURRYING, or COURRYING, a Method of preparing Leather, with Oil or Tallow; which raiſes on the Hair, or Wool-ſide, a kind of Grain, not unlike that of *Morocco*, or *Maroquin*. Tho there is alſo a Kind of *curried* Leather without Grain. See LEATHER.

Currying is the laſt Preparation, and puts the Leather in a Condition to be us'd for Shoes, Saddles, Harneſs, &c. It is equally practis'd on Sheep, Calf, and Cows-Skins.

The Colours given in *Currying*, are, black, white, red, yellow, and green: The other Colours are given by the Skinners; who differ from the *Curriers* in this, That they apply their Colours on the Fleſh-ſide; the *Curriers* on the Hair-ſide.

Manner of currying *in black, with the Grain.*

Of Blacks there are four Caſes: Either the Skins are put in Tallow on both Sides; or Oil is us'd, in lieu of Tallow, and nothing on the other; or Tallow is us'd on both Sides, but no Grain rais'd.

The two firſt are us'd for Cows and Calves Leather; the ſecond is the only way uſed for Sheep; and the two laſt are uſed occaſionally for Cow and Bullock: For Calf and Sheep, they uſe Sumac on the Fleſh-ſide, which gives an Orange-caſt.

For *Neats-Skin* in black; The Skin, coming from the Tanner, is wet ſeveral times with a Broom, roll'd and trod under-foot to make it tractable, drain'd, and as much of the remaining Fleſh as poſſible taken off with the Knife; hung in the Air till half dry, then wet and trampled again, and again.

This done, 'tis rub'd over with a Pummel, or Call, having Niches in manner of Teeth, to render it ſtill more pliant; and ſing'd with Straw, to prepare it to receive the Tallow; which is applied, boiling hot, on both Sides.

The Skin is then ſing'd a ſecond time, laid four Hours in a Veſſel of freſh Water, trampled, and work'd a ſecond time with the Pummel on each ſide, and ſtoutly drain'd; ſmeer'd over with its firſt black, made of Galls and Ferailles, boil'd in Beer-agre, or ſour Beer; half dry'd, ſtretch'd on a Table, and the Grain beat down with a flat Iron Inſtrument, drawn over it from place to place.

It now receives its ſecond black, made of Galls, Copperas, and Gum Arabic; when dry, and ſtretch'd on a Table, 'tis ſmeer'd over with Beer-agre; then folded from Corner to Corner, and the Pummel drawn over it to cut the Grain, firſt on the Hair-ſide, then on the Fleſh-ſide; the laſt with a Pummel of Cork: The Beer hanging in it is taken out with a Hair Torch, boil'd in Hatter's Lie; and the Skin faſten'd to the Table, and clean'd with the Iron Inſtrument abovemention'd, and again wip'd with a piece of worſted Stocking. The Skin is now brighten'd, on the Hair-ſide, by a Luſtre of Barberries, to prepare it to receive its laſt Grain.

The Grain, we already obſerv'd, is begun, by folding the Skin, the Hair-ſide inwards, ſeveral ways: to finiſh it, 'tis again folded, after its firſt Luſtre, two ways; firſt from Corner to Corner, a little ſlanting; then a-croſs, *i. e.* firſt directly, or from Eye to Eye, then from Head to Tail.

The Grain thus effected, the laſt Luſtre, which makes its laſt Preparation, is given; compos'd of Gum Arabic, Garlick, Beer Vinegar, and *Flanders* Size, boil'd together, and applied cold. See LUSTRE.

Calf-Skin, in black, is prepared much after the ſame manner; tho begun differently. After wetting, taking off as much of the Fleſh remaining as poſſible, and drying; they pounce the Fleſh-ſide with a hard rough Pounce-Stone, which makes it more ſmooth and gentle; then give the Grain with the Pummel, put in the Tallow: the reſt as before.

Sheep-Skins, in black. What theſe have peculiar in their Preparation, is, that they are firſt ſtretch'd on a Table to get off the Bourre, or Tan wherewith they are loaden; then wet, trod under-foot, and Tallow added on the Hair-ſide: they are again wet, again trod, ſtretch'd on the Table, and the Water ſqueez'd out with the Pummel; then black'd, repaſs'd under the Pummel on each ſide, dried, and all the Roughneſs and Inequality par'd off with a flat, round, cutting Inſtrument: the reſt as before.

Sleek Leather, or that without any Grain, made of Cows or Bullocks Leather, differs a little in its Preparation from the former. The Skins being wet, trod, and paſs'd under the Pummel, the Fleſh is taken off; the reſt as in the firſt Article: Obſerving, that the Tallow be applied on both Sides as thick as poſſible: being now ſteep'd in Water, trod, friz'd, and black'd the firſt time; the ſecond black is laid on, till the Hair-ſide be quite ſmooth. After receiving their two Luſtres, they are preſs'd between two Tables; without having plaited or folded 'em in any manner during the whole Preparation.

CURSITOR, an Officer or Clerk belonging to the Court of Chancery, who maketh out original Writs. See CHANCERY, and WRIT.

Theſe are alſo called *Clerks of the Courſe*; and are 24 in Number: making a Corporation of themſelves. To each of 'em are allotted ſeveral Shires; in which Shires they make out ſuch original Writs as are by the Subject requir'd.

CURSOR, a Piece, little Ruler, or Label of Braſs, divided like a Line of Sines, and ſliding in a Groove, or Notch, along the middle of another Label, or Ruler, repreſenting the Horizon, and always at right Angles to it.

It is uſed in the *Analemma*. See ANALEMMA.

CURSOR is alſo uſed for a Point ſcrew'd on the Beam-Compaſs; and which may be moved, or ſlidden along the Beam thereof, for the ſtriking of greater or leſs Circles. See *Beam*-COMPASS.

CURTAILING, in the Manage, the *Docking*, or cutting off a Horſe's Tail. See DOCKING.

The Practice of *Curtailing* is no where in vogue ſo much as in *England*; it being a popular Opinion, that the cutting off the Tail renders the Horſe's Chine or Back the ſtronger, and more able to bear Burdens: which ſeems warranted by Experience.

The Amputation is uſually made between the fourth and fifth Joints of the Tail; a Ligature being firſt ty'd tight about the Place, to prevent the Flux of Blood; and the raw Stump afterwards ſear'd up with a hot Iron, till the Extremities of the Veſſels be all ſtop'd.

CURTAIN, or COURTINE, in Fortification, that Part of a Wall, or Rampart, which is between two Baſtions; or which joins the Flanks thereof. See RAMPART, and BASTION.

It is uſually border'd with a Parapet five Foot high; behind which the Soldiers ſtand to fire upon the Covert Way, and into the Moat.

Beſiegers ſeldom carry on their Attacks againſt the *Curtain*; becauſe it is the beſt flanked of any Part. See FLANK.

Du Cange derives the Word *Curtain* from the Latin *Cortina*, *quaſi minor Cortis*, a little Country Court, inclos'd with Walls: He ſays, it was in Imitation hereof, that they gave this Name to the Walls and Parapets of Cities, which incloſe 'em like *Courts*: He adds, that the *Curtains* of Beds take their Name from the ſame Origin; that *Cortis* was the Name of the General's, or Prince's Tent; and that thoſe who guarded it were call'd *Cortinarii* and *Curtiſani*.

CURTATE *Diſtance*, in Aſtronomy, the Diſtance of a Planet's Place from the Sun, reduced to the Ecliptick; or, the Interval between the Sun, and that Point where a Perpendicular let fall from the Planet, meets with the Ecliptic. See PLACE, and DISTANCE.

CURTATION, the Interval between a Planet's Diſtance from the Sun, and the *Curtate* Diſtance. See PLANET.

From the preceding Article, 'tis eaſy to find the *Curtate Diſtance*; whence the manner of conſtructing Tables of *Curtations* is obvious.

The Quantity of Inclination, Reduction, and *Curtation* of a Planet, depending on the Argument of the Latitude; *Kepler*, in his *Rhudolphin Tables*, reduces the Tables of 'em all into one, under the Title of *Tabulæ Latitudinariæ*.

CURTESY. See COURTESY.

CURTICONE, in Geometry, a Cone whoſe top is cut off by a Plane parallel to its Baſis; call'd alſo *Truncated Cone*. See TRUNCATED.

CURVATURE *of a Line*, is its Bending, or Flexure; whereby it becomes a Curve, of ſuch peculiar Properties. See LINE, and CURVE.

Thus, the *Curvature* of the Circle is ſuch, as that all Points of the Periphery are equally diſtant from one Point within, called the Centre.

The *Curvatures* of different Circles, are to one another reciprocally as their Radii. See CIRCLE.

CURVE, in Geometry, a Line, wherein the ſeveral Points it conſiſts of tend ſeveral ways, or are poſited towards different Quarters. See LINE.

In this Senſe, the Word is uſed in oppoſition to a *ſtrait* Line; whoſe ſeveral Points are poſited towards the ſame Quarter.

Hence, Figures terminated with Lines of the firſt Property, are called *Curvilinear* Figures; in oppoſition to thoſe terminated with the latter, call'd *Rectilinear* Figure. See RECTILINEAR, and FIGURE.

The Doctrine of *Curves*, and of the Figures and Solids generated from them, conſtitute what we call the *Higher Geometry*. See GEOMETRY.

In a *Curve*, the Line AD, (Tab. *Geometry*, Fig. 51.) biſſecting the parallel Lines MM, is call'd the *Diameter*:

If the Lines be equidiſtant, and it cut 'em at right Angles, it is call'd the *Axis*; and the Point A, whence the Diameter is drawn, is call'd the *Vertex*. See DIAMETER, AXIS, and VERTEX.

The equidiſtant Lines M M are call'd *Ordinates*, or *Applicates*; and their Halves, P M, *Semiordinates*. See ORDINATE, and SEMIORDINATE.

The Portion of the Diameter A P, between the Vertex, or other fix'd Point, and an Ordinate, is call'd the *Abſciſſe*. See ABSCISSE.

And the Concourſe of all the Diameters, the *Centre*. See CENTRE.

Curves are diſtinguiſh'd into *Algebraic*, frequently with *Des Cartes* call'd *Geometrical*; and *Tranſcendental*, called by the ſame *Cartes*, &c. *Mechanical Curves*.

Algebraical CURVES, are thoſe wherein the Relation of the Abſciſſes A P, A P, AP, to the Semiordinates M P, M P, M P, may be expreſs'd by an Algebraical Equation. See EQUATION.

Suppoſe, *v. g.* in a Circle, (Fig. 52.) $AB=a$, $AP=x$, $PM=y$; then will $PB=a-x$; conſequently, as $PM^2=AP$, $PB\,y^2=ax-x^2$. Or, ſuppoſe $PC=x$, $AC=a$, $PM=y$; then will $MC^2=PC^2=PM^2$; that is, $a^2-x^2=y^2$.

Note, Thoſe are alſo call'd *Algebraic Curves*, which are of a determinate Order; ſo, as that the Equation always continues the ſame in the ſeveral Points of the *Curve*.

Moſt Authors, after *Des Cartes*, call Algebraic *Curves*, *Geometrical* ones; as admitting none elſe into the Conſtruction of Problems; nor, conſequently, into Geometry. But *Wolfius*, from Sir *I. Newton*, and M. *Leibnitz*, is of another Opinion; and thinks, that in the Conſtruction of a Problem, one *Curve* is not to be preferr'd to another, for its being defin'd by a more ſimple Equation, but for its being more eaſily deſcrib'd. See PROBLEM.

A Tranſcendental CURVE, is that which can't be defin'd by an Algebraic Equation.

Theſe *Curves*, *Des Cartes*, &c. call *Mechanical* ones; and under that Notion exclude 'em out of Geometry: But *Newton* and *Leibnitz*, for the Reaſon abovemention'd, are of another Opinion. Indeed, *Leibnitz* has found a new Kind of Equations, which he calls *Tranſcendental Equations*; whereby even *Tranſcendental Curves*, and thoſe which are not of any determinate Order, *i. e.* which don't continue the ſame in all the Points of the *Curve*, may be defin'd. *Act. Erudit. Leip.* A. 1684. p. 234.

Algebraic CURVES *of the ſame Kind or Order*, are thoſe whoſe Equations riſe to the ſame Dimenſion. See ORDER.

Geometrical Lines being defined by the Relation between the Ordinates and Abſciſſes, or (which is the ſame, by the Number of Points wherein they may be cut by a right Line) are well diſtinguiſh'd into *two Kinds* or *Orders*: In which view, Lines of the firſt Order will be right Lines; and thoſe of the ſecond or quadratic Order will be *Curves*, viz. *Conic Sections*.

Now, a *Curve* of the firſt Kind is the ſame with a Line of the ſecond, (a right Line not being number'd among *Curves*) and a *Curve* of the ſecond Kind, the ſame with a Line of the third. Thus, *Curves* of the firſt Kind, are thoſe whoſe Equation riſe to two Dimenſions; if they riſe to three, *the Curves are of the ſecond Kind*; if to four, of the third, &c.

Thus, *e. g.* the Equation for a Circle is, $y^2=ax-x^2$, or $a^2-x^2=y^2$. A Circle, therefore, is a *Curve* of the firſt Kind.

Again, *a Curve of the firſt Kind*, is that defined by the Equation $ax=y^2$; and a *Curve of the ſecond Kind*, that defined by the Equation $a^2x=y^3$. See CIRCLE.

For the various Curves *of the firſt Kind, and their Properties*, ſee CONIC *Sections*.

For Curves of the ſecond Kind, Sir *I. Newton* has a diſtinct Treatiſe, under the Title of *Enumeratio linearum tertii ordinis*.

Curves of the ſecond and other higher Kinds, he obſerves, have Parts, and Properties ſimilar to thoſe of the firſt: Thus, as the *Conic* Sections have Diameters and Axes; the Lines cut or biſſected by theſe, are call'd *Ordinates*; and the Interſection of the *Curve* and Diameter, the *Vertex*: So, in *Curves of the ſecond Kind*, any two parallel right Lines being drawn ſo as to meet the *Curve* in three Points; a right Line cutting theſe Parallels, ſo, as that the Sum of the two Parts between the Secant and the *Curve* on one ſide, is equal to the third Part terminated by the *Curve* on the other ſide, will cut, in the ſame manner, all other right Lines parallel to theſe, and that meet the *Curve* in three Points, *i. e.* ſo, as that the Sum of the two Parts on one ſide, will be ſtill equal to the third Part on the other ſide.

Theſe three Parts, therefore, thus equal, may be call'd *Ordinates*, or *Applicates*; the Secant the *Diameter*; and where it cuts the Ordinates at right Angles, the *Axis*: The Interſection of the Diameter and the *Curve*, the *Vertex*; and the Concourſe of the two Diameters, the *Centre*; and the Concourſe of all the Diameters, the *General Centre*.

Again, as a Hyperbola of the firſt Kind has two Aſymptotes; that of the ſecond has three, that of the third four, &c. and as the Parts of any right Line between the Conic Hyperbola and its two Aſymptotes are equal on either ſide; ſo, in Hyperbolas of the ſecond Kind, any right Line cutting the *Curve* and its three Aſymptotes in three Points; the Sum of the two Parts of that right Line, extended from any two Aſymptotes the ſame way to two Points of the *Curve*, is equal to the third Part, extended from the third Aſymptote, the contrary way to the third Point of the *Curve*. See ASYMPTOTE, HYBERBOLA, &c.

Again, as in other Conic Sections, not parabolical, the Square of the Ordinate, *i. e.* the Rectangle of the Ordinates, drawn to contrary Parts of the Diameter, is to the Rectangle of the Parts of the Diameter terminated at the Vertices of an Ellipſis or Hyperbola, as a given Line, call'd the *Latus Rectum*, is to that Part of the Diameter which lies between the Vertices, and is call'd the *Latus Tranſverſum*: So, in *Curves of the ſecond Kind*, not parabolical, the Parallelopiped under the three Ordinates, is to the Parallelopiped under the Parts of the Diameter cut off at the Ordinates and the three Vertices of the Figure, in a given Ratio: wherein, if there be taken three right Lines at the three Parts of the Diameter plac'd between the Vertices of the Figure, each to each; then thoſe three right Lines may be call'd the *Latera Recta* of the Figure, and the Parts of the Diameter between the Vertices, the *Latera Tranſverſa*.

And, as in a Conic Parabola, which has only one Vertex to one and the ſame Diameter, the Rectangle under the Ordinates, is equal to the Rectangle under the Part of the Diameter cut off at the Ordinates and Vertex, and a given right Line call'd the *Latus Rectum*: So, in *Curves of the ſecond Kind*, which have only two Vertices to the ſame Diameter; the Parallelopiped under three Ordinates, is equal to the Parallelopiped under two Parts of the Diameter cut off at the Ordinates and the two Vertices, and a given right Line, which may therefore be call'd the *Latus Tranſverſum*. See LATUS; ſee alſo PARABOLA.

Further, as in the Conic Sections, where two Parallels terminated on each ſide by a *Curve*, are cut by two Parallels, terminated on each ſide by a *Curve*; the firſt by the third, and the ſecond by the fourth: the Rectangle of the Parts of the firſt, is to the Rectangle of the Parts of the ſecond, as that of the ſecond is to that of the fourth: So, when four ſuch right Lines occur in a *Curve* of the ſecond Kind, each in three Points; the Parallelopiped of the Parts of the firſt, will be to that of the Parts of the ſecond, as that of the ſecond to the Parts of the fourth. See SECTION.

Laſtly, the Legs of *Curves*, both of the *firſt*, *ſecond*, and *higher Kinds*, are either of the Parabolic or Hyperbolic Kind: an Hyperbolic Leg, being that which approaches infinitely towards ſome Aſymptote; a Parabolic, that which has no Aſymptote. See ASYMPTOTE.

Theſe Legs are beſt diſtinguiſh'd by their Tangents; for, if the Point of Contact go off to an infinite Diſtance, the Tangent of the Hyperbolic Leg, will coincide with the Aſymptote; and that of the Parabolic Leg, recede infinitely, and vaniſh. The Aſymptote, therefore, of any Leg, is found by ſeeking the Tangent of that Leg to a Point infinitely diſtant; and the Bearing of an infinite Leg, is found by ſeeking the Poſition of a right Line parallel to the Tangent, when the Point of Contact is infinitely remote: for this Line tends the ſame way towards which the infinite Leg is directed.

Reduction of CURVES *of the ſecond Kind.*

Sir *I. Newton* reduces all *Curves* of the *ſecond Kind* to four Caſes of Equation: In the firſt, the Relation between the Ordinate and Abſciſſe, making the Abſciſſe x, and the Ordinate y, aſſumes this form $xyy+ey=ax^3+bxx+cx+d$. In the ſecond Caſe, the Equation aſſumes this form $xy=ax^3+bx^2+cx+d$. In the third Caſe, the Equation is $yy=ax^3+bx^2+cx+d$. In the fourth, the Equation is of this form, $y=ax^3+bx^2+cx+d$.

Enumeration of the CURVES *of the ſecond Kind.*

Under theſe four Caſes, the ſame Author brings a vaſt Number of different Forms of *Curves*, to which he gives different Names.

A Hyperbola lying wholly in the Angle of the Aſymptotes, like a Conic Hyperbola, he calls an *Inſcribed Hyperbola*; that which cuts the Aſymptotes, and contains the Parts cut off within its own Periphery, a *Circumſcrib'd Hyperbola*; that, one of whoſe infinite Legs is inſcrib'd, the other circumſcrib'd, he calls *Ambiginal*; that whoſe Legs look towards each other, and are directed the ſame way, *Converging*; that where they look contrary ways, *Diverging*; that where they are convex different ways, *Croſs-leg'd*; that applied to its Aſymptote, with a concave Vertex, and diverging Legs, *Conchoidal*; that which cuts its Aſymptote with contrary Flexures, and is produced each way into contrary Legs, *Anguineous*, or *Snake-like*; that which cuts its

Conjugate

Conjugate a-croſs, *Cruciform*; that which returning around cuts it ſelf, *Nodated*; that whoſe two Parts concur in the Angle of Contact, and there terminate, *Cuſpidated*; that whoſe Conjugate is oval, and infinitely ſmall, *i. e.* a Point, *Pointed*; and that which from the Impoſſibility of its two Roots, is without either Oval, Node, Cuſp, or Point *pure*: And in the ſame manner he denominates a Parabola, to be *converging*, *diverging*, *cruciform*, &c. Where the Number of Hyperbolic Legs, exceeds that of the Conic Hyperbola; he denominates the *Hyperbola redundant*.

Now, the various *Curves* which he enumerates under theſe four Caſes, are in Number 72; whereof nine are *redundant* Hyperbolas, without Diameters, having three Aſymptotes including a Triangle.

The firſt conſiſting of three Hyperbolas, one *inſcribed*, another *circumſcribed*, another *ambigonal*, with an *Oval*; the ſecond *Nodated*; the third *Cuſpidated*; the fourth *Pointed*; the fifth and ſixth *Pure*; the ſeventh and eighth *Cruciform*; the laſt *Anguineal*.

There are 12 *redundant* Hyperbolas, having only one Diameter: The firſt *Oval*, the ſecond *Nodated*, the third *Cuſpidated*, the fourth *Pointed*, the fifth, ſixth, ſeventh, and eighth, *Pure*; the ninth and tenth *Cruciform*; the eleventh and twelfth *Conchoidal*.

Two are *redundant* Hyperbolas with three Diameters.

Nine are *redundant* Hyperbolas, with three Aſymptotes converging to a common Point; the firſt form'd of the fifth and ſixth redundant Parabolas, whoſe Aſymptotes include a Triangle; the ſecond, of the ſeventh and eighth; the third and fourth, of the ninth; the fifth is form'd of the fifth and ſeventh of the redundant Hyperbolas, with one Diameter; the ſixth, of the ſixth and ſeventh; the ſeventh, of the eighth and ninth; the eighth, of the tenth and eleventh; the ninth, of the twelfth and thirteenth: All which Converſions are effected, by diſtinguiſhing the Triangle comprehended between the Aſymptotes, till it vaniſh into a Point.

Six are defective Parabolas, having no Diameters: The firſt *Oval*, the ſecond *Nodated*, the third *Cuſpidated*, the fourth *Pointed*, the fifth *Pure*.

Seven are defective Hyperbolas, having Diameters: The firſt and ſecond *Conchoidal*, with an *Oval*; the third *Nodated*, the fourth *Cuſpidated*, which is the Ciſſoid of the Antients; the fifth and ſixth, *Pointed*; the ſeventh *Pure*.

Seven are Parabolic Hyperbolas, having Diameters: The firſt *Oval*, the ſecond *Nodated*, the third *Cuſpidated*, the fourth *Pointed*, the fifth *Pure*, the ſixth *Cruciform*, the ſeventh *Anguineous*.

Four are Parabolic Hyperbolas. Four are Hyperboliſms of the Hyperbola. Three Hyperbolas of the Ellipſis. Two Hyperboliſms of the Parabola.

Five are diverging Parabolas: one, a *Trident*; the ſecond *Oval*, the third *Nodated*, the fourth *Pointed*, the fifth *Cuſpidated*; (this is *Neal*'s *Parabola*, uſually called the *Semicubic Parabola*:) the ſixth, *Pure*.

Laſtly, one commonly call'd the *Cubic Parabola*.

Organical Deſcription of theſe Curves.

1ſt, If two Angles given in Magnitude, PAD, PBD, (Tab. *Analyſis*, Fig. 53.) revolve round Poles given in poſition, A and B; and their Legs, AP, BP, with their Point of Concourſe, P, paſs over another right Line: The other two Legs AD, BD, with their Point of Concourſe D, will deſcribe a Conic Section paſſing thro' the Poles AB: Unleſs that Line happen to paſs thro' either of the Poles A or B; or unleſs the Angles BAD and ABD vaniſh together: in which Caſes, the Point will deſcribe a right Line.

2dly, Now, if the Legs, AP, BP, by their Point of Concourſe, P, thus deſcribe a Conic Section paſſing thro' one of the Poles, A; the other two, AD, BD, with their Point of Concourſe D, will deſcribe a *Curve of the ſecond Kind*, paſſing thro' the other Pole B, and having a double Point in the firſt Pole A: Unleſs the Angle BAD, ABD, vaniſh together; in which Caſe, the Point D will deſcribe another Conic Section, paſſing thro' the Pole A.

3dly, If the Conic Section deſcrib'd by the Point P, paſs thro' neither of the Poles AB; the Point D will deſcribe a *Curve of the ſecond or third Kind*, having a double Point: which double Point will be found in the Concourſe of the deſcribing Legs AD, BD: When the two Angles BAP, ABP, vaniſh together, the *Curve* deſcribed will be of the *ſecond Kind*, when the Angles BAD, ABD, vaniſh together; otherwiſe of the *third Kind*, having two other double Points in the Poles A and B.

With regard to *double Points of Curves*: We have obſerv'd that *Curves* of the ſecond Kind may be cut by a right Line in thoſe Points: Now two of theſe ſometimes coincide, *v. g.* when the right Line paſſes thro' an infinitely ſmall Oval; or thro' the Concourſe of two Parts of a *Curve*, mutually cutting each other, and uniting in a Cuſp. Sometimes the right Line, even, only cuts the *Curve* in one Point; as in Ordinates of the *Carteſian* and *Cubic Parabola*, &c. In which Caſe, we muſt conceive the right Lines paſſing thro' two other Points of a *Curve*, placed, as it were, at an infinite diſtance: Now theſe coincident Interſections, whether at a finite or infinite Diſtance, make what we call *double* Point.

Geneſis of Curves *of the* ſecond Order *by Shadows*.

If the Shadows of Figures be projected on an infinite Plane, illumin'd by a lucid Point; the Shadows of Conic Sections will ſtill be Conic Sections; thoſe of *Curves* of the ſecond Kind, will be *Curves* of the ſecond Kind; thoſe of the third Kind, *Curves* of the third Kind, *&c.*

And as a *Curve*, in projecting a Shadow, generates all the Conic Sections; ſo, the five diverging Parabolas, with their Shadows, generate and exhibit all other *Curves* of the ſecond Kind.

And in this manner may a Train of the *ſimple Curves* of other Kinds be found, which ſhall form all the other *Curves* of the ſame Kind, by their Shadows projected from a lucid Point, upon a Plane.

Deſcription of Curves *of the* ſecond Order, *having double Points*.

Theſe are all deſcrib'd from ſeven given Points, whereof one is the double Point it ſelf: Thus, let there be given any ſeven Points of the *Curve* to be deſcribed; as, *v. g.* A, B, C, D, E, F, G, (Tab. *Analyſis*, Fig. 54.) whereof A is the double Point: join the Point A, and any other two Points, *v. g.* B and C; and let the Angle CAB of the Triangle ABC, revolve about its Vertex A; and another of the Angles ABC, about its Vertex B. And when the Point of Concourſe C, of the Legs AC, BC, is ſucceſſively applied to the four other Points D, E, F, G, let the Concourſe of the remaining Legs AB and BA, fall on the four Points P, Q, R, S.

Thro' thoſe four Points, and the fifth A, deſcribe a Conic Section; and let the foremention'd Angles CAB, CBA, ſo revolve, as that the Point of Concourſe of the Legs AB, BA, may paſs over that Conic Section; and the Concourſe of the other Legs AC, BC, will deſcribe the propoſed *Curve*.

Uſe of theſe Curves *in the Conſtruction of Equations*.

The uſe of *Curves* in Geometry, is by means of the Interſections thereof, to ſolve Problems. See Construction.

Suppoſe, *v. g.* an Equation to be conſtructed of nine Dimenſions, as $x^9 + bx^7 + cx^6 + dx^5 + ex^4 + fx^3 + gx^2 + hx + r = o$; where *b*, *c*, *d*, &c. ſignify any given Quantities affected with the Signs + and −: aſſume an Equation to a Cubic Parabola $x^3 = y$; and the firſt Equation, writing *y* for x^3 will come out $y^3 + bxy^2 + cy^2 + dx^2y + exy + my + fx^3 + gx^2 + hx + k = o$; an Equation to another *Curve* of the ſecond Kind, where *m* or *f* may be aſſum'd or annulled. And by the Deſcriptions and Interſections of theſe *Curves* will be given the Roots of the Equation to be conſtructed. 'Tis ſufficient to deſcribe the Cubical Parabola once.

If the Equation to be conſtructed, by omitting the two laſt Terms *hx* and *k*, be reduced to ſeven Dimenſions; the other *Curve*, by expunging *m*, will have the double Point in the beginning of the Abſciſſe, and may be eaſily deſcrib'd as above: If it be reduced to ſix Dimenſions, by omitting the three laſt, taking $gx^2 + hx + k$; the other *Curve*, by expunging *f*, will become a Conic Section: and if, by omitting the three laſt Terms, the Equation be reduced to three Dimenſions, we ſhall fall on Dr. *Wallis*'s Conſtruction by the Cubic Parabola and right Line.

Rectification of a Curve, is the finding of a right Line equal to a *Curve*. *For the Praxis hereof*, ſee Rectification *of Curves*.

Quadrature of a Curve, the finding of the Area, or Space included by a *Curve*; or the aſſigning of a Square equal to a *Curvilinear Space*. See Quadrature.

Family of Curves, is an Aſſemblage of ſeveral *Curves* of different Kinds, all defined by the ſame Equation of an indeterminate Degree; but differently, according to the Diverſity of Kind.

E. g. Suppoſe an Equation of an indeterminate Degree, $a^{m-1}x = y^m$. If $m = 2$, then will $ax = y^2$; if $m = 3$, then will $a^2x = y^3$; if $m = 4$, then $a^3x = y^4$, *&c.* All which *Curves* are ſaid to be of the ſame *Family*, or *Tribe*.

The Equations whereby the Families of Curves are defined, are not to be confounded with the Tranſcendental ones: For tho, with regard to the whole Family, they be of an indeterminate degree, yet, with reſpect to each ſeveral *Curve* out of the Family, they are determinate; whereas tranſcendent Equations are of an indefinite Degree, with reſpect to the ſame *Curve*.

All Algebraic *Curves*, therefore, compoſe a certain Family, conſiſting of innumerable others; each whereof comprehends infinite Kinds. For ſince the Equations whereby the *Curves* are defined enter the *Facta*, either of the Powers

of the Abſciſſes and Semiordinates into the given Coefficients, or of the Powers of the Abſciſſes into the Powers of the Semiordinates, or of the mere given Quantities; and all Equations may be equal to nothing, (*v.g.* if $ax = y^2$, then $ax - y^2 = 0$); the Equation for all Algebraical *Curves* will be $a\,y^m + b\,x^n + c\,y^r x^s + d\,f = 0$.

Exponential CURVE, is that defined by an Exponential Equation; that is, by an Equation wherein is an Exponential Quantity, *v. g.* x^x, a^x. See EXPONENTIAL.

The Symptoms, Properties, Geneſes, &c. of particular Curves, v. g. *Cycloid, Logarithmic Curves, Conchoid, &c. ſee under their proper Heads,* CYCLOID, LOGARITHMIC, CONCHOID, *&c.*

CURVET, in the Manage. See COURVET.

CURVILINEAL *Figures*, in Geometry, are Spaces bounded by crooked Lines; as the Circle, Ellipſis, Spherical Triangle, *&c.* See CURVE, and FIGURE.

CURULE *Chair*, *Sella Curulis*, in Antiquity, an Ivory Seat, whereon certain of the *Roman* Magiſtrates had a Right to ſit.

The *Curule* Magiſtrates were the Ediles, Prætors, Cenſors, and Conſuls. See EDILE, *&c.*

The Senators who had bore theſe Charges, were carried to the Senate on *Curule Chairs*; as alſo thoſe who triumph'd: the Chair being fitted into a kind of Chariot, *Currus*; whence *Curules*. See TRIUMPH.

The *Curule Chair* is uſed on Medals, to expreſs a *Curule* Magiſtracy: When travers'd by a Haſta, 'tis the Symbol of *Juno*, and ſerves to expreſs the Conſervation of Princeſſes.

CUSP, *Cuſpis*, properly denotes the Point of a Spear.

It is particularly us'd in Aſtronomy, to expreſs the Points or Horns of the Moon, or other Luminary. See MOON, CRESCENT, ECLIPSE, *&c.*

In Aſtrology, *Cuſp* is uſed for the firſt Point of the twelve Houſes, in a Figure or Scheme of the Heavens.

CUSPIDATED, in Botany, is when the Leaves of a Flower end in a *Cuſp*, or Point, reſembling that of a Spear.

CUSPIDATED *Hyperbola*, &c. See HYPERBOLA.

CUSTODE *Admittendo*, and CUSTODE *Amovendo*, are Writs for the admitting, or removing of Guardians. See GUARDIAN.

CUSTODES *Libertatis Angliæ, authoritate Parliamenti*, was the Style or Title in which Writs, and other Judicial Proceedings, did run in the Rump Time; that is, from the Death of King *Charles* I. till *Oliver* was declared Protector, *&c.*

CUSTOM, the Manners, Ceremonies, or Ways of living of a People, which in time have turn'd into Habitude, and by Uſage, obtain'd the Force of Laws. See LAW.

In this Senſe, *Cuſtom* implies Things that were at firſt voluntary, but are become neceſſary by uſe: Thus, the Preſents made by Officers at their admiſſion into Poſts, are only due becauſe they have paſs'd into *Cuſtom*. See FEE.

The Word further ſignifies the doing or not doing certain Things, introduc'd by the greateſt Part of the People of a Country, or Province: If there be nothing evil in ſuch *Cuſtom*, it obliges, till it be either abrogated by a contrary *Cuſtom*, or a Law.

For a *Cuſtom* thus eſtabliſh'd to have the Force of a Law, 'tis neceſſary, ordinarily, that it be founded on ſome natural Equity, or ſome conſiderable Good; and that it have ſubſiſted *ultra tritavum*: but, as this is hard to prove, 'tis ſufficient if two or more Witneſſes depoſe they heard their Fathers ſay the ſame of their Time.

If it be Matter of Record, the Continuance of 100 Years is ſufficient. See RECORD.

The Effect of a *Cuſtom* thus circumſtantiated, is, that it has the ſame Force and Authority as a Law; making what we call *Lex non ſcripta*; and that in popular States and limited Monarchies, it ſerves to interpret the written Laws: for in abſolute Monarchies, 'tis the King alone has the Power of interpreting Laws.

Hence, the Word *Cuſtom* is ſtill retain'd, and ſerves to expreſs the particular Rights and Municipal Laws eſtabliſh'd by Uſage in particular Provinces, *&c.* after they are reduced into written Laws.

In this Senſe, moſt of the Common Law of *England* is *Lex non ſcripta*; being originally no more than the *Cuſtoms* of our Forefathers. See COMMON *Law*.

Lex non ſcripta, in this Senſe, is uſed in oppoſition to *Statutes* or *Acts of Parliament*; which commence Laws at once. See STATUTE.

Cowel diſtinguiſhes *Cuſtom* from Preſcription, in that the former is more general, and relates to ſeveral Perſons; whereas the latter is uſually confin'd to this or that Man. Five Years time, too, are ſufficient for Preſcription; whereas for *Cuſtom* there are requir'd 100. See PRESCRIPTION.

Cuſtoms are real Things, and are included within their Limits or Territories: They are either *Local*, *i. e.* reſtrain'd to this or that Place, or *General*.

The *Cuſtom of Paris*, ſerves as a Rule for all the other Places of *France*; where they have no Proviſions contrary thereto.

The *Romans* were govern'd by *Cuſtoms*, or unwritten Laws, after the Expulſion of their Kings. See CIVIL *Law*.

Cæſar obſerves, that the *Gauls* had their *Cuſtoms*, which they conſtantly retain'd; and that it was impoſſible for the *Romans* to govern 'em by any other Laws: So that it was only the Provinces bordering on *Italy* that receiv'd the *Roman* Laws.

CUSTOMS, in Commerce, the Dues, Duties, or Tolls, paid by Merchants to the King, for carrying out, and bringing in of Merchandizes. See EXPORTATION, and IMPORTATION.

The *Cuſtoms* of Goods exported and imported, throughout *England*, amount yearly to 1300000 Pounds; whereof thoſe of the Port of *London* make a third part. See COMMERCE.

The *Cuſtoms* in *England* are very numerous, and very high; beyond what any other trading Nation knows: The principal are Duties of *Tunnage* and *Poundage*, which are very antient, being the only ones in uſe before the Time of King *Charles* II. But that Prince, and his Succeſſors, have introduc'd divers others: At preſent, the *Cuſtoms* on Liquors are, *Tunnage*, the *Additional* Duty, the Duty of *Exciſe*, *Coinage*, Duty of the *old Impoſition*, Duty of the *additional Impoſition*, Duty of *Orphans Money*, Duty on *French Wines*, *New Subſidy*, $\frac{1}{3}$ and $\frac{2}{3}$ of *Subſidies*.

For other Merchandizes, the Duties are, *Poundage*, the *additional* Duty on Silks and Linens, *Exciſe* of the ſame Year, on *foreign* Species, *new Impoſition* of Poundage, another of $\frac{4}{5}$; a Duty of 25 *per Cent.* on *French* Commodities; the *new Subſidy* of Poundage, in 1697; an *additional Subſidy* of $\frac{2}{3}$ of Poundage, in 1703; a third in 1704; a Duty on *Fiſh Oils*, another on *Leather*, another on *Paper*, *Soap*, &c. *See theſe deſcrib'd more at large under the Article* DUTY.

CUSTOM-*Houſe*, an Office eſtabliſh'd on the Frontiers of a State, or in ſome chief City, for the Receit of the *Cuſtoms* and Duties of Importation and Exportation; impoſed on Merchandizes, by the Authority of the Prince, and regulated by Tariffs, or Books of Rates. See CUSTOMS, and DUTIES.

There are ſeveral *Cuſtom-houſes* in the ſeveral Ports of *England*: The moſt conſiderable is that of *London*.

It is under the Direction of ſeven Commiſſioners appointed by Patent; who have the Charge and Management of all the *Cuſtoms* (the Petty-Farms alone excepted) in all the Ports of *England*. See COMMISSIONER.

Other Officers are, a *Secretary*, *Sollicitor*, *Receiver-General*, *Comptroller* of the Iſſues and Payments of the Receiver-General; *Comptroller-General*; *Inſpector* of the Out-Port Collectors Accompts; *Inſpector-General* of the Exports and Imports; *Regiſter-General* of all Ships of *Great-Britain*; *Surveyor-General*; *Surveyor* of the Out-Ports, and *Regiſter* of the Seizures; all holding their Places by Patents: with other inferior Officers, appointed by Warrant from the Lord High Treaſurer.

CUSTOMARY *Tenants*, *Cuſtumarii*, *vel Tenentes per conſuetudinem*; are ſuch Tenants as hold by the *Cuſtom* of the Manor as their ſpecial Evidence. See MANOR.

Theſe were antiently Bondmen, or thoſe that held *Tenura Bondagii.—Et omnes illi qui tenuerint in Bondagii tenura, ſolebant vocari* Cuſtumarii. *MS. de Conſuetud. Man. de* Sutton Colfield, *de anno* 3 Edw. II.

CUSTOS *Brevium*, a Clerk, belonging to the Court of Common Pleas; whoſe Office is to receive, and keep all the Writs, and put 'em upon Files; every Return by it ſelf; and at the End of every Term to receive of the Prothonotaries all the Records of the *Niſi prius*, call'd the *Poſtea*. See WRIT, and POSTEA.

The Writs are firſt brought in by the *Clerks of Aſſize* of every County to the Prothonotary who enter'd the Iſſue in that Matter, to enter Judgment. Four Days after the Return, the Prothonotary enters the Verdict, and Judgment thereupon, into the Rolls of the Court; and then delivers them over to the *Cuſtos Brevium*.

He alſo makes Entry of the Writs of Covenant, and the Concord upon every Fine; and makes Copies and Exemplifications of all Writs and Records in his Office, and of all Fines levied: The Fines, when engroſſed, are divided between the *Cuſtos Brevium* and *Chirographer*; the former keeping the Writ of Covenant and the Note, the latter the Concord, and Foot of the Fine. See CHIROGRAPHER.

In the Court of the King's-Bench, there is likewiſe a *Cuſtos Brevium & Rotulorum*, who fileth ſuch Writs as are there uſed to be filed, and all Warrants of Attorney; and tranſcribes or makes out Records of *Niſi prius*, &c.

CUSTOS *Placitorum Coronæ*, in *Bracton*, ſeems to be the ſame with him now call'd *Cuſtos Rotulorum*. See CUSTOS *Rotulorum*.

CUSTOS *Rotulorum*, is he that hath the Cuſtody of the Rolls, or Records of the Seſſions of Peace; and ſome ſay, of the Commiſſions of Peace it ſelf. See PEACE.

He

He is always a Juſtice of Peace, and *Quorum*, in the County where he hath his Office; and by his Office is rather a Miniſter than a Judge. Becauſe the Commiſſion of the Peace, by expreſs Words, lays this ſpecial Charge upon him, *Quod ad dies & loca prædicta, brevia, præcepta, proceſſus, & judicamenta prædicta coram te & dictis ſociis tuis venire facias.*

Custos *Spiritualium*, is he who exerciſeth Spiritual or Eccleſiaſtical Juriſdiction in any Dioceſe, during the Vacancy of the See. See Diocese.

This, by the Canon Law, belongs to the Dean and Chapter; but in *England*, to the Archbiſhop of the Province, by Preſcription: Tho, divers Deans and Chapters do challenge it by antient Charters, from Kings of this Land.

Custos *Temporalium*, is the Perſon to whoſe Cuſtody a vacant See was committed by the King, as ſupreme Lord; who, as a Steward of the Goods and Profits, was to give an account to the Eſcheator, and he into the Exchequer.

His Truſt continued till the Vacancy was ſupply'd by a Succeſſor, who obtained the King's Writ *de Reſtitutione Temporalium*; which was commonly after *Conſecration*, but ſometimes before.

In the Canon Law, we meet with a *Cuſtodi nos*, *i. e.* a Confidentiary, or Incumbent of a Benefice, who borrows his Name of ſome other, to collect the Fruits thereof, and is to make a Reſignation whenever demanded.

CUT *a Feather*, in the Sea Language, is when a well-bow'd Ship ſo ſwiftly preſſes the Water, that it ſeems before her.——To *Cut the Sail*, is to unfurl it, and let it fall down.

Cut-*Water*, the Sharpneſs of a Ship, which is under the Beak-head.

CUTANEOUS, ſomething that concerns the Skin; whether in the way of Diſtemper, or Remedy. See Cutis.

Thus, we ſay, *Cutaneous* Eruptions; the Itch is a *Cutaneous* Diſeaſe.

The Word is form'd of the Latin *Cutis*, Skin.

CUTICULA, *Cuticle*, in Anatomy, a thin pellucid Membrane, void of Senſe; ſerving as a Cover to the *Cutis* or Skin. See Cutis.

The *Cuticula* is that firſt and outermoſt Covering of the Body, call'd alſo *Epidermis*, but more commonly the *Scarf-Skin*; or that ſoft Tegument which riſes in a Bliſter upon a Burn, or the Application of a Cautery.

It ſticks cloſe to the Surface of the Cutis, or true Skin, to which it is alſo tied by the Veſſels that nouriſh it; tho theſe are ſo ſmall as not to be ſeen.

When examin'd by a Microſcope, it appears to conſiſt of ſeveral Lays of exceeding ſmall Scales, which cover one another, more or leſs, according to its different thickneſs, in the ſeveral Parts of the Body; and in the Lips, where the Scales appear plaineſt becauſe the Skin is thinneſt, they do little more than barely touch.

Theſe Scales are either the excretory Ducts of the Glands of the Cutis; as is the Caſe apparently in Fiſhes: or elſe the Glands have their Tubes, opening between the Scales. See Milliary *Gland*.

Leewenhoeck reckons, that in one *cuticular* Scale there may be 500 excretory Ducts; and that a Grain of Sand will cover 250 Scales: ſo that one Grain of Sand will cover 102500 Pores or Orifices, thro' which we daily perſpire. See Perspiration, and Pore.

Yet, notwithſtanding the exceeding Porofity of the *Cuticula*, it obſtructs a great Part of the ſerous Humours which would otherwiſe be evacuated by the Glands of the *Cutis*; as is evident from that plentiful Diſcharge conſequent on the Application of a Bliſter, or other Accident, whereby the *Cuticula* is remov'd, and the Cutis bared. See Vesicatory.

The Scales are often glu'd together by the groſſer Parts of our inſenſible Tranſpiration hardening upon 'em by the heat of the Body, which carries off the more volatile Particles; and in this conſiſts that Indiſpoſition we popularly call a *Cold*.

The Humour which is thenceforward ſeparated by the Glands of the Skin, being pent in between the Scales, cauſeth frequent itching; and where the Matter has been long pent up, ſmall Pimples, and other Foulneſſes: for removing of which, Nature directs to thoſe wholeſom Remedies of frequent rubbing, waſhing, or bathing. See Leprosy.

Some imagine the *Cuticle* form'd from the groſſer Parts of the excrementitious ſerous Humour, eliminated thro' the Pores of the Cutis, and condens'd on the Surface; like the Pellicle which appears upon Evaporation on the Surface of the Serum of the Blood: But *Leewenhoeck*, with more probability, takes it to be from an Expanſion of the Excretory Ducts of the Glands of the Skin.

Its uſe is to defend the Nerves of the *Cutis*, which are the Origin of the Senſe of Feeling, from the Injuries of rough and hard Bodies, as well as the Air: for either of thoſe would make too exquiſite and painful an Impreſſion on the naked Nerves; or the Air would dry them, ſo as that they would be leſs ſuſceptible of the nicer Touches of Pleaſure. See Feeling.

Riolanus, and ſeveral others, maintain that the *Cuticula* of Women has no Pores: *Molinette* argues the contrary from their Sweating; but maintains, withal, that this is true of Dogs and Cats, which never ſweat, how much ſoever fatigued. See Sweat.

CUTIS, in Anatomy, *the Skin*; a Reticular Plexus, or Body of Veſſels, immediately under the *Cuticle*, or Scarf-Skin. See Skin, and Cuticula.

The Veſicles of the *Cutis* contain a mucous Liquor; from the Tincture of which, *Malpighi*, and others, take the Colour of the Skin to be derived; founded on this, that the *Cutis*, as well as *Cuticle* of Blacks is white, and the Blood red, *&c.* and that the only thing they have peculiar in this Part, is the Colour of this Liquor. See Negro.

The *Cutis* conſiſts of Fibres of its own; or, according to *Steno*, is form'd out of the Productions of the Tendons of the ſubjacent Parts: which terminate in an infinite Number of pyramidal *Papillæ*, interwoven with innumerable nervous Fibres, and other Veſicles, forming what we call a *Parenchyma*. See Parenchyma.

'Tis by means hereof that the *Cutis* becomes the Organ of Feeling. See Pyramidales *Papillæ*.

The *Cutis* is generally connected to the ſubjacent Parts by the *Membrana Adipoſa*, and its proper Veſſels, the Veins, Arteries, Nerves, *&c.* Its Uſe, is to wrap up and cover the whole Body; to be a general Emunctory for the Matter of Perſpiration; and to be the Organ of Feeling. See Perspiration, Feeling, *&c.*

The Diſeaſes of the *Cuticula* and *Cutis*, are the *Itch*, *Leproſy*, *Small-Pox*, *Meaſles*, *Scarlet Fever*, and *Eryſipelatous Inflammations*. See Itch, Pox, Leprosy, *&c.*

CUTTER *of the Tallies*, an Officer of the Exchequer, who provides Wood for the Tallies, and cuts the Sum paid upon them. See Tally.

CUTTING, a Term us'd in various Senſes, and various Arts; in the general, it implies a Diviſion or Separation.

Cutting is us'd in Heraldry, where the Shield is divided into two equal Parts, from right to left, parallel to the Horizon, or in the Feſſe-way. See Coupee.

The Word is alſo applied to the Honourable Ordinaries, and even to Animals, and Moveables, when they are divided equally the ſame way; ſo, however, as that one Moiety is Colour, the other Metal. The Ordinaries are alſo ſaid to be *cut*, *couped*, when they come full to the Extremities of the Shield.

Cutting, *Lithotomy*, in Chirurgery, the Operation of extracting the Stone out of the Bladder. See Stone.

It appears, that *Cutting* was in uſe for the Stone, even in the Time of *Hippocrates*; tho we are perfectly in the dark as to the manner in which they perform'd it: It was, however, wholly diſus'd in the after-Ages; inſomuch, that in the beginning of the XVIth Century, there was no body durſt practiſe it. The Faculty of Medicine at *Paris* were oblig'd to addreſs themſelves to the Parliament, to obtain Leave to make a Trial on a Criminal condemn'd to Death, who had the Stone in the Bladder: the Operation ſucceeding, the Practice became popular.

There are three principal Ways of performing the Operation; the *Apparatus minor*, *Apparatus major*, and *Apparatus altus*; or the *low*, *lateral*, and *high Operations*. *The Method of performing each, ſee under the Article* Lithotomy.

Cutting-*Glaſs*, in Chirurgery. See Cupping-*Glaſs*.

Cutting, in Coinage. When the *Laminæ*, or Plates of the Metal, be it Gold, Silver, or Copper, are brought to the thickneſs of the Species to be coin'd, pieces are *cut* out, of the Thickneſs, and nearly of the Weight of the intended Coin; which are now call'd *Planchets*, till the King's Image have been ſtamp'd on 'em. See Coining.

The Inſtrument wherewith they *cut*, conſiſts of two pieces of Steel, very ſharp, and placed over one another; the lower a little hollow, repreſenting a Mortar; the other a Peſtel.

The Metal being put between the two, is *cut* out in the manner deſcrib'd.

Note, Medallions, where the Relievo is to be great, are not *cut*, but caſt, or moulded. See Medal.

Cutting, in the Manage, is when the Horſe's Feet *interfere*; or when with the Shoe of one Foot he beats off the Skin from the paſtern Joint of another Foot. See Interfering.

This is more frequent in the hind Feet than the fore: The Cauſes are either Wearineſs, Weakneſs in the Reins, not knowing how to go, or ill ſhoeing.

Cutting, in Painting, the laying one ſtrong lively Colour over another, without any Shade or Softening. See Colouring.

The *Cutting* of Colours has always a diſagreeable Effect.

Cutting *in Wood*, a particular Kind of Sculpture, or Engraving; denominated from the Matter wherein it is employ'd. See Engraving.

It is us'd for various Purpoſes; as for initial or figured Letters, Head and Tail-pieces of Books; and even for

Schemes and other Figures; to ſave the Expences of engraving on Copper: and for Prints, and Stamps, for Paper, Callicoes, Linens, &c. See PRINTING.

The Invention of *Cutting in Wood*, as well as that in Copper, is aſcribed to a Goldſmith of *Florence*; but 'tis to *Albert Durer*, and *Lucas*, they are both owing for their Perfection.

One *Hugo de Carpi* invented a manner of *Cutting* in Wood, by means whereof, the Prints appear'd as if painted in Clair-Obſcure: In order to this, he made three Kinds of Stamps for the ſame Deſign; which were drawn, after one another, thro' the Preſs for the ſame Print: They were ſo conducted, as that one ſerv'd for the grand Lights, a ſecond for the Demi-Teints, and a third for the Outlines, and the deep Shadows.

The Art of *Cutting in Wood*, was certainly carried to a very great Pitch about 150 Years ago; and might even vie, for Beauty and Juſtneſs, with that of engraving in Copper: At preſent 'tis in a low Condition, as having been long neglected, and the Application of Artiſts wholly employ'd on Copper, as the more eaſy and promiſing Province: Not but that wooden *Cuts* have the Advantage of thoſe in Copper on many Accounts; chiefly for Figures and Devices in Books; as being printed at the ſame Time, and in the ſame Preſs as the Letters; whereas, for the other, there is requir'd a particular Impreſſion.

The *Cutters in Wood* begin with preparing a Plank or Block, of the ſize and thickneſs requir'd, and ever even and ſmooth on the Side to be *cut*: for this, they uſually take Pear-Tree, or Box; tho the latter is the beſt, as being the cloſeſt, and leaſt liable to be worm-eaten.

On this Block they make their Deſign with a Pen, or Pencil, juſt as they would have it printed. Thoſe who can't make their own Deſign, as many there are cannot, make uſe of a Deſign furniſh'd 'em by another; faſtening it upon the Block with Paſte of Flower and Water, with a little Vinegar; the Strokes or Lines turn'd towards the Wood.

When the Paper is dry, they waſh it gently over with a Sponge dip'd in Water; which done, they take off the Paper by little and little, ſtill rubbing it a little firſt, with the Tip of the Finger; till at length there be nothing left on the Block, but the Strokes of Ink that form the Deſign, which mark out ſo much of the Block as is to be ſpared, or left ſtanding.

The reſt they *cut* off, and take away very curiouſly with the Points of fine ſharp Knives, or little Chiſſels, or Gravers, according to the Bigneſs or Delicacy of the Work; for they need no other Inſtruments.

CUTTINGS, or *Slips*, in Gardening, the Branches or Sprigs of Trees, or Plants, *cut* or ſlipp'd off to ſet again; which is done in any moiſt, fine Earth. See PLANTING.

The beſt Seaſon is from *Auguſt* to *April*; but Care is to be taken, when 'tis done, the Sap be not too much in the Top, leſt it die ere that Part in the Earth have Root enough to ſupport it: nor yet muſt it be too dry, or ſcanty; the Sap in the Branches aſſiſting it to take Root.

In providing the *Cuttings*, ſuch Branches as have Joints, Knots, or Burrs, are to be *cut* off two or three Branches beneath them, and the Leaves to be ſtrip'd off ſo far as they are ſet in the Earth. Small Top-Branches, of two or three Years growth, are fitteſt for the Operation. See MANURING, GARDENING.

CYCLE, in Chronology, *Circle*; a certain Period, or Series of Numbers, proceeding orderly from firſt to laſt, and recurring again from laſt to firſt; ſucceſſively, and without interruption. See PERIOD.

The Origin of *Cycles* was thus: The apparent Revolution of the Sun round the Earth, has been divided, arbitrarily, into 24 Hours; the Baſis or Foundation of all our Menſuration of Time. Civil Uſe knows none but Hours; or rather, Multiples of Hours, as Days, and Years. But neither the annual Motion of the Sun, nor that of the other Heavenly Bodies, can be meaſur'd exactly, and without any Remainder, by Hours, or their multiples. That of the Sun, *v. g.* is 365 Days, 5 Hours, 49 Minutes, nearly; that of the Moon 29 Days, 12 Hours, 44 Minutes.

Hence, to ſwallow up theſe Fractions in whole Numbers, and yet in Numbers which only expreſs Days, and Years; *Cycles* have been invented: which comprehending ſeveral Revolutions of the ſame Body, replace it, after a certain Number of Years, in the ſame Points of the Heaven, whence it firſt departed; or, which is the ſame thing, in the ſame Place of the Civil Calendar. See CALENDAR.

Such is the famous *Cycle of 19 Years*, call'd alſo the

CYCLE *of the Moon*, or *Lunar* CYCLE, a Period of 19 Lunar Years, and ſeven Intercalary Months; equivalent to 19 Solar Years: in which Time, the New and Full Moons are ſuppoſed to return to the ſame Day of the *Julian* Year. See MOON.

This is alſo called the *Metonic Period*, from its Inventor *Meton*, the *Athenian*; and the *Golden Number*: tho, properly, the Golden Number is the particular Number which ſhews the Year of the Lunar *Cycle*, any given Year is in.

This *Cycle* of the Moon only holds true for 312 Years: For, tho the New Moons do return to the ſame Day after 19 Years; yet not to the ſame time of the Day, but near an Hour and a half ſooner: which Error, in 312 Years, amounts to an entire Day.

Yet, thoſe employ'd in reforming the Calendar, went on a Suppoſition of the Lunations returning preciſely from 19 Years to 19 Years, for ever. See GREGORIAN.

The Uſe of this *Cycle* in the antient Calendar, is to ſhew the New Moon of each Year, and the Time of Eaſter. See EASTER.

In the new one, it only ſerves to find the Epacts; which ſhew, in either Calendar, that the New Moons fall 11 Days too late. See EPACT.

As the Orientals began the Uſe of this *Cycle* at the Time of the Council of *Nice*; they aſſumed, for the firſt Year of the *Cycle*, the Paſchal New Moon to fall on the 13th of *March*: On which foot, the Lunar *Cycle* 3, fell on the 1ſt of *January*, in the third Year.

The Occidentals, on the contrary, put the Number 1 to the 1ſt of *January*, which occaſion'd a conſiderable Difference in the Time of *Eaſter*: Hence, *Dionyſius Exiguus*, upon framing a new Calendar, perſuaded the Chriſtians of the *Weſt* to ſalve the Difference, and come into the Practice of the Church of *Alexandria*.

To find the Year of the Lunar CYCLE, is to find the *Golden Number*. See GOLDEN *Number*.

CYCLE *of Indictions*, is a Series of 15 Years, returning conſtantly around, like the other *Cycles*; and commencing from the third Year before Chriſt. See INDICTION.

When this *Cycle* of Indictions was firſt ſet on foot among the *Romans*, and for what End; is much controverted among Chronologers. *Petavius* leaves it as a thing not to be aſcertain'd. The moſt probable Opinion is, that it was receiv'd about the Year 312, after the Time of *Conſtantine*.

To find the Cycle *of Indiction for any given Year*; add 3 to the given Year, and divide the Sum by 15, the Remainder is the *Cycle of Indiction*.

If there be no Remainder the *Cycle* is 15.

CYCLE *of the Sun*, or *Solar* CYCLE, a Revolution of 28 Years; beginning with 1, and ending with 28; which elapſed, the Dominical or Sunday-Letters, and thoſe that expreſs the other Feaſts, &c. return into their former Place, and proceed in the ſame Order as before. See DOMINICAL, &c.

'Tis called *Solar Cycle*, not with regard to the Sun's Courſe, which has nothing to do herein; but from Sunday, antiently call'd *Dies Solis*, *the Day of the Sun*: in regard, 'tis the Dominical Letter is principally ſought for from this Revolution; the Dominical Letters, which are the firſt in the Alphabet, having been ſubſtituted in lieu of the Nundinal Letters of the *Romans*.

The Reformation of the Calendar under Pope *Gregory*, occaſion'd a conſiderable Alteration of the *Cycle*: In the *Gregorian* Calendar, the *Solar Cycle* is not conſtant and perpetual; in regard, every fourth Secular Year is Common; whereas, in the *Julian* 'tis Biſſextile. The Epocha, or Beginning of the *Solar Cycle*, both *Julian* and *Gregorian*, is the 9th Year before Chriſt.

To find the Cycle *of the Sun for any given Year*; add 9 to the Number given, and divide the Sum by 28; the Number remaining will be the Number of the *Cycle*, and the Quotient the Number of Revolutions ſince Chriſt.

If there be no Remainder, it will be the 28th, or laſt Year of the *Cycle*.

CYCLE *of the Sun in the* Julian *Year.*

1	G	F	5	B	A	9	D	C	13	F	E	17	A	G	21	C	B	25	E	D
2		E	6		G	10		B	14		D	18		F	22		A	26		C
3		D	7		F	11		A	15		C	19		E	23		G	27		B
4		C	8		E	12		G	16		B	20		D	24		F	28		A

CYCLE *of the Sun from the* Gregorian *Year* 1700, *to the Year* 1800.

1	D	C	5	F	E	9	A	G	12	C	B	17	E	D	21	G	F	25	B	A
2		B	6		D	10		F	14		A	18		C	22		E	26		G
3		A	7		C	11		E	15		G	19		B	23		D	27		F
4		G	8		B	12		D	16		F	20		A	24		C	28		E

CYCLE, it may be obſerv'd, is not only us'd in the general, for all the Numbers that compoſe the Series; but for each Number in particular: Thus, we compute, that the ordinary Epocha from the Birth of Jeſus Chriſt, had the *Solar Cycle* 10; the *Lunar Cycle*, or the Golden Number 2; the Dominical Letter B, and the *Cycle of Indiction* 4.

CYCLISCUS, from κύκλος, *Circulus*; an Inſtrument in form of an Half-Moon; uſed by the Surgeons to ſcrape away Rottenneſs.

CYCLOID,

CYCLOID, in Geometry, one of the Mechanical, or, as others term 'em, the Tranſcendental Curves; called alſo the *Trochoid*. See CURVE, and TROCHOID.

It is deſcrib'd by the Motion of a Point A, (Tab. *Analyſis*, Fig. 55.) in the Periphery of a Circle; while the Circle makes a Revolution along the right Line A P.

Hence, *the Properties of this Curve, viz.* that the right Line A E is equal to the Periphery of the Circle A B C D; and A C to the Semi-periphery; and in any Situation of the generating Circle, the right Line A *d* is equal to the Arch D *d*.——Again, *a d* being parallel to A *c*; A *d* is equal to the Arch of the generating Circle *d* F.——Further, the whole length of the *Cycloid* is four times that of the Diameter of the generating Circle; and the *Cycloidal* Space comprehended between the Curve and the Subtenſe A E, triple the Area of the generating Circle.——Laſtly, any Part eſtimated from the Vertex, as F I, is every where double the Chord of the Circle F *b*; and the Tangent thereof G I, perpetually parallel to the ſame Chord F *b*.

The Geneſis of the CYCLOID, may be conceiv'd by imagining a Nail in the Circumference of a Wheel; the Line which the Nail deſcribes in the Area, while the Wheel revolves in a right Line, is the *Cycloid*.

The *Cycloid* is reputed a modern Curve, and its Invention aſcrib'd by ſome to *Merſenne*; by others to *Galileo*: but Dr. *Wallis* ſhews it of an older ſtanding, and to have been known to *Bovillus*, about the Year 1500; and even conſider'd by Cardinal *Cuſanus* much earlier, *viz.* before the Year 1451.

M. *Huygens* has demonſtrated, that from whatever Point, or Height, a heavy Body, oſcillating on a fix'd Centre, (*v.g.* a Pendulum) begins to deſcend; while it continues to move in a *Cycloid*, the Times of its Falls, or Oſcillations, will be equal to each other.

This Property M. *Fontenelle* ſtates thus: The Nature of the *Cycloid* is ſuch, that, if a Body which deſcribes it, fall from a greater height, and by that means acquire a certain Augmentation of Velocity, as in *Galileo*'s Theory; the greater *Cycloidal* Arch which it deſcribes, takes up preciſely that Exceſs of Velocity. So that the Body does not deſcribe it, either ſooner for its being accelerated, or later for having a greater Space to move: And hence ariſes an Equality in Time, notwithſtanding the Inequality of Arches.

On this Foundation it is, that the Pendulum-Clock is built: on the Subject whereof, the ſame M. *Huygens* has wrote a large Volume, under the Title of *Horologium Oſcillatorium*. See PENDULUM; ſee alſo OSCILLATION.

CYCLOIDAL *Space*, the Space contained between the *Cycloid*, and the Subtenſe thereof. See CYCLOID.

CYCLOMETRY, the Art of meaſuring Cycles, or Circles. See CYCLE, and CIRCLE.

CYCLOPÆDIA, the Circle, or Compaſs of Arts and Sciences; more ordinarily call'd *Encyclopædia*. See ENCYCLOPÆDIA.

CYGNUS, *the Swan*, in Aſtronomy, a Conſtellation of the Northern Hemiſphere. See CONSTELLATION.

Stars in the Conſtellation *Cygnus*, in *Ptolemy*'s Catalogue are 17; in *Tycho*'s 19; in the *Britannic Catalogue* 107. The Order, Names, Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow.

Stars in the Conſtellation CYGNUS.

Names and Situations of the Stars.	Signs.	Longitude. °	′	″	Latitude. °	′	″	Magn.
Preced. of two towards the Harp	♍	20	54	46	66	13	6	5
Subſeq. and more North.		25	41	28	68	49	57	6
In the Extremity of the North Wing	♒	10	38	18	73	50	11	4
That preced. the Bill towards the So.	♍	23	47	46	47	44	20	5
Preced. the Bill towards the South		25	18	47	50	57	30	5
5								
		24	16	45	46	25	40	6
		28	51	20	57	20	44	6
That below the Bill		25	12	34	45	54	20	4
In the Bill		25	16	24	45	59	22	6
10		26	55	37	49	0	31	3 4
	♒	13	40	9	72	10	51	6
	♒	29	55	52	55	14	20	6
Middle of 3 in the North Wing	♍	13	42	43	71	28	38	4
In the Head.		2	38	16	57	23	36	6
15		0	36	19	50	39	38	5
South of 3 in the North Wing		14	22	42	69	37	56	4
		7	54	44	62	42	5	6
		0	18	38	46	10	32	6
		5	50	43	57	15	9	6
Preced. in the Inſide of the No. Wing		17	1	8	69	30	50	6
20								
Preced. in the Neck	♒	4	36	37	53	42	33	5
In the Angle of the North Wing		11	57	17	64	27	14	3 4
		1	28	49	42	41	50	4 5
		8	53	22	58	7	12	6
25		2	43	29	43	58	26	4 5
Names and Situations of the Stars.	Signs.	Longitude. °	′	″	Latitude. °	′	″	Magn.
North of the middle Stars in the Wing		24	13	58	70	53	46	5 6
In the middle of the Neck		8	37	28	54	18	48	4
		10	31	20	57	31	43	6
		4	7	19	42	40	56	5
		25	11	36	74	10	15	6 7
30								
South of the middle Stars in the Wing		25	9	41	69	59	55	5
		6	31	37	47	1	43	4 5
		10	58	10	55	54	29	6
Laſt of thoſe in the North Wing		5	39	1	44	15	50	5
35		23	44	12	67	33	40	6
Preced. in the Riſe of the Neck		6	36	40	42	41	12	4 5
		12	30	29	54	28	16	5
Middle of 3 in the Riſe of the Neck		9	3	51	45	34	54	6 5
		13	57	43	55	1	40	5
40		9	24	14	45	24	28	6
		9	19	24	45	4	48	5 6
		10	59	28	47	2	8	5 6
Subſeq. in the Riſe of the Neck		9	7	46	42	0	27	5
		15	34	43	54	36	33	6
45		11	3	12	46	5	20	4 5
Preced. in the Foot, which is double		9	58	47	43	1	53	5
		23	46	19	63	43	29	5
Subſeq. in the ſame Foot		23	47	55	63	38	3	4
A new one of the Breaſt, *Anno* 1600		25	31	58	64	18	53	5 6
50		17	29	12	55	29	20	6
South of two under the new one		15	44	13	52	36	15	6
North of the ſame		17	2	13	54	33	16	6
In the Breaſt (of the N. Wing		11	26	23	42	26	36	6
Middle of 3 *Informes* preced. the Angle		20	32	51	57	9	20	3
55		15	42	22	49	36	33	4
South of the ſame		20	51	58	55	4	46	6
		16	24	20	47	28	53	4
		20	0	57	53	7	6	4
	♓	1	22	17	64	41	46	5 6
60	♒	20	57	9	53	23	53	6
Middle and brighter agſt. the No. Knee	♓	1	46	7	64	3	51	5
Subſeq. at the Knee		2	31	4	64	10	7	5 6
North of thoſe preced. the Angle	♒	20	37	18	51	38	16	5
(gle near the Tropic		16	10	4	42	45	11	6
Preced. of the *Informes* in the Trian-		16	42	41	43	13	32	5 6
65								
South. in that Triangle		19	28	14	47	57	16	6
		16	2	55	40	54	36	5 6
		14	56	59	38	7	7	5
Bright Star in the Tail		20	54	55	48	21	13	6
70	♓	1	1	32	59	56	37	2
Subſeq. of the ſaid Triangle	♒	18	22	34	41	30	54	6
Inform. under the Angle of the S. Wing	♓	7	17	32	64	4	18	6 7
In the Angle or Elbow of the So. Wing	♒	21	21	29	46	30	26	5
In the middle of the ſame Wing		23	22	52	49	26	21	3
75		25	26	47	51	38	37	4
South of thoſe preced. the Extreme	♓	4	8	54	49	57	10	5
of the 2 *Informes* of the S. Wing	♒	21	18	12	42	37	9	6
(Wing	♓	2	22	56	58	5	31	6 5
North of thoſe prec. the Extrem. of the	♓	3	39	19	58	5	13	6
80	♒	22	45	37	43	13	58	5
In the South Foot (Tail	♒	20	45	4	37	39	42	6
Foremoſt of 3 in the North Part of the	♓	1	51	21	54	56	25	4
South of the ſame		8	49	9	60	6	19	5 6
		7	42	10	58	50	19	6 7
85		1	57	3	51	50	35	5
Againſt the South Knee		6	32	3	56	36	5	4
Subſeq. in the North Part of the Knee		10	50	42	59	33	35	6 5
In the Extrem. of the South Wing	♒	24	51	36	37	59	50	6
Middle of thoſe in the South Wing		28	44	36	43	43	13	3
90	♓	4	16	38	50	32	40	4
South of 3 in the Wing		2	57	29	47	29	10	5
North of the ſame		6	3	49	51	30	45	4
A ſmall one following the South Knee		10	14	21	55	20	9	6
		6	1	38	48	25	8	6
That under the Extrem. of the S. Wing		1	14	9	40	0	20	6 5
95								
North of 2 in the Extrem. of the Tail		7	1	15	48	34	55	6
		15	39	47	56	25	37	6
South in the Extremity of the Tail		9	59	28	49	7	0	6
		15	53	18	55	12	21	4 5
100		12	1	23	50	32	2	6
		15	15	52	52	39	30	6
		13	31	55	50	25	21	6
		13	56	49	50	34	26	6
Under the South Wing, towards		6	8	0	39	32	16	3 4
the Foot of *Pegaſus*		12	3	43	48	3	34	6
105								
N. of the *Informes* following the Tail		24	1	45	58	52	37	4 5
South of thoſe following the Tail	♓	23	17	18	57	12	6	5

CYLINDER, in Geometry, (from the *Greek* κύλινδρος, a *round long Stone*;) a ſolid Body, contain'd under three Surfaces; ſuppos'd to be generated by the Rotation of a Parallelogram, as C B E F, (Tab. *Geometry*, Fig. 56.) about one of its Sides, C F. See SOLID.

If the generating Parallelogram be Rectangular, as C B E F, the *Cylinder* it produces will be a *right Cylinder*, *i. e.* a *Cylinder* whoſe Axis is perpendicular to its Baſe.

If the Parallelogram be a *Rhombus*, or *Rhomboides*, the *Cylinder* will be *oblique*, or *ſcalenous*.

The Surface of a *right Cylinder*, excluſive of its Baſes, is demonſtrated to be equal to a Rectangle contain'd under the Periphery, and the Altitude of the *Cylinder*.

The Periphery, therefore, of the Baſe, and thence the Baſe it ſelf, being found, and multiply'd by two, and the Product added to the Rectangle of the Height, and Periphery of the *Cylinder*; the Sum will be the Area or Superficies of the *Cylinder*: multiply this by the Area of the Baſe; and the Product will be the Solidity of the *Cylinder*.

For it is demonſtrated, that a Circle is equal to a Triangle, whoſe Baſe is equal to the Periphery, and Height, to the Radius; and alſo, that a *Cylinder* is equal to a Triangular Priſm, having the ſame Baſe and Altitude with it ſelf: Its Solidity, therefore, muſt be had by multiplying the Superficies into the Baſe. See PRISM.

Again, ſince a Cone may be eſteem'd an infinite-angular Pyramid; and a *Cylinder* an infinite-angular Priſm: a Cone is one third Part of a *Cylinder*, upon an equal Baſe, and of the ſame height. See CONE.

Further, a *Cylinder* is to a Sphere of the ſame Baſe and Altitude as 3 to 2. See SPHERE.

Laſtly, It being demonſtrated in Mechanicks, that every Figure, whether Superficial or Solid, generated, either by the Motion of a Line, or of a Figure; is equal to the *Factum* of the generative Magnitude into the Way of its Centre of Gravity, or the Line its Centre of Gravity deſcribes: Hence, if the Rectangle A B C D, (Tab. *Mechanicks*, Fig. 43.) revolve about its Axis A D, it will deſcribe a *Cylinder*, and its Side B C the Surface of the *Cylinder*. But the Centre of Gravity of the right Line B C, is in the Middle F; and the Centre of Gravity of the generating Plane in the Middle G, of the right Line E F. The Way of this, therefore, is the Periphery of a Circle deſcrib'd by the Radius E G; and of that, the Periphery of a Circle deſcrib'd by E F. The Superficies, therefore, of the *Cylinder*, is the *Factum* of the Altitude B C, into the Periphery of the Circle deſcrib'd by the Radius E F, *i. e.* into the Baſe: But the Solidity of the *Cylinder*, is the *Factum* of the generating Rectangle A B C D, into the Periphery of the Circle deſcrib'd by the Radius E G; which is Subduple of E F, or the Semidiameter of the *Cylinder*.

Suppoſe, *v. g.* the Altitude of the deſcribing Plane, and therefore of the *Cylinder*, B C $= a$, the Semidiameter of the Baſe D C $= r$; then will E G $= \frac{1}{2}r$; and ſuppoſing the Ratio of the Semidiameter to the Periphery, $= 1 : m$; the Periphery deſcrib'd by the Radius, $\frac{1}{2}r$ will be equal to mr. Therefore, multiplying $\frac{1}{2}mr$ into the Area of the Rectangle A C $= ar$; the Solidity of the *Cylinder* $= \frac{1}{2}mar^2$: But $\frac{1}{2}mar^2 = \frac{1}{2}r.mr.a$, and $\frac{1}{2}r.mr$, the Area of the Circle deſcrib'd by the Radius D G. The Solidity of the *Cylinder*, therefore, is equal to the *Factum* of the Baſe, and the Altitude.

For the Ratio of CYLINDERS; as the *Radii* of all *Cylinders*, Cones, &c. are in a Ratio compos'd of their Baſes, and Altitudes: Hence, if their Baſes be equal, they will be in the Ratio of their Heights; if their Altitudes be equal, in the Ratio of their Baſes.

Hence, alſo, the Baſes of *Cylinders* and Cones being Circles; and Circles being in a duplicate Ratio of their Diameters; all *Cylinders* and Cones are in a Ratio compounded of the direct Ratio of the Altitudes, and the duplicate one of their Diameters: and, if they be equally high, as the Squares of the Diameters.

Hence, again, if in *Cylinders* the Altitude be equal to the Diameter of the Baſes, they will be in a triplicate Ratio of the Diameters of the Baſe. All *Cylinders*, Cones, &c. are in a triplicate Ratio of their homologous Sides; as alſo of their Altitudes.

Again, equal *Cylinders*, Cones, &c. reciprocate their Baſes and Altitudes.

Laſtly, a *Cylinder* whoſe Altitude is equal to the Diameter of the Baſe, is to the Cube of its Diameter, as 785 to 1000.

To find a Circle equal to the Surface of a given CYLINDER, we have this Theorem: The Surface of a *Cylinder* is equal to a Circle, whoſe Radius is a Mean Proportional between the Diameter and Height of the *Cylinder*. See SUPERFICIES.

The Diameter of a Sphere, and Altitude of a CYLINDER *equal thereto, being given; to find the Diameter of the* Cylinder: The Theorem is; The Square of the Diameter of the Sphere, is to the Square of the Diameter of the *Cylinder*, equal to it, nearly, as triple the Altitude of the *Cylinder*, to duple the Diameter of the Sphere. See SPHERE.

To find a Rete, *or Net, whence a* Cylinder *may be form'd, or wherewith any* Cylinder *may be cover'd.* With the Diameter of the Baſe, deſcribe two Circles; find their Peripheries: and upon a Line equal to the Altitude of the *Cylinder*, form a Rectangle, whoſe other Dimenſion is equal to the found Periphery. Thus may the *Cylinder* requir'd be form'd, or cover'd.

CYLINDER *charged*, in Gunnery, is the Chamber of a great Gun. See ORDNANCE.

CYLINDER *concave*, in Gunnery, is all the *Chace*, or hollow length of a Piece of Ordnance. See ORDNANCE.

CYLINDER *vacant*, in Gunnery, is that Part of the Hollow that remains empty, after the Gun is charg'd. See CANON.

CYLINDROID, in Geometry, a ſolid Body, approaching the Figure of a *Cylinder*; having, *v. g.* its Baſes elliptical, parallel, and equal.

The Word comes from the *Greek* κύλινδρος, *Cylinder*, and εἶδος, *Form*.

CYMA, in Botany, a Term ſignifying the Top of any Plant, or Herb.

CYMA, in Architecture. See CIMA, SIMA, and CYMATIUM.

CYMATIUM, CIMATIUM, or CIMA, in Architecture, (from the *Greek* κυμάτιον, *undula*;) a Member, or Moulding of the Cornice, whoſe Profile is waved, *i. e.* concave a-top, and convex at bottom; frequently alſo call'd *Doucine*, *Gorge*, or *Gula Recta*; eſpecially by the *French*: by the Italians *Goletta*, i. e. *parva Gula*; but more uſually, *Cymatium*, among us; as being the laſt, or uppermoſt Member, *q. d.* the *Cyma*, or Summet of the Corniche. See CORNICHE.

Some write it *Simaiſe*, from *Simus*, *Camus*, flat-nos'd; but this Etymology is unlucky: the Beauty of the Moulding conſiſting in its having its Projecture equal to its Height.

M. *Felibien*, indeed, will not allow this Etymology; contending, that the Moulding is not ſo denominated from its being the uppermoſt Member of the Corniche; but, according to the Sentiment of *Vitruvius*, from its being waved.

This is certain, that *Vitruvius* ſometimes uſes the Word *Unda* for *Cymatium*, and ſometimes *Lyſis*, i. e. *Solution*, *Separation*; in regard, Corniches, where the *Cymaiſes* are found, ſeparate one piece of Architecture from another; as the Pedeſtal from the Column, and the Frieze from the Corniche.

But, withal, it muſt be obſerved, that he does not confine *Cymatium* to the Corniche; but uſes it indifferently for any ſimilar Moulding, wheree'r he meets with it: in which he differs from the moſt accurate among the Moderns.

Felibien makes two Kinds of *Cymatiums*; the one *right*, the other *inverted*: In the firſt, that Part which projects the furtheſt is concave, and is otherwiſe call'd alſo *Gula Recta*, and *Doucine*. See DOUCINE.

In the other, the Part that projects furtheſt is convex, called *Gula Inverſa*, or *Talon*. See TALON.

Our Architects don't uſe to give the Name *Cymatium* to theſe Mouldings, except when found on the Tops of Cornices; but the Workmen apply the Name indifferently, wherever they find 'em.

Palladio diſtinguiſhes the *Cymatium* of the Corniche by the Name *Intavolatum*.

Tuſcan CYMATIUM, conſiſts of an Ovolo, or Quarter-Round. *Philander* makes two *Doric Cymatiums*, whereof this is one: *Baldus* calls this the *Lesbian Aſtragal*.

Doric CYMATIUM, is a Cavetto, or a Cavity leſs than a Semicircle, having its Projecture ſubduple its Height.

Lesbian CYMATIUM, according to *Vitruvius*, is what we otherwiſe call *Talon*, *viz.* a concavo-convex Member, having its Projecture ſubduple its Height. See TALON.

CYMBAL, a Muſical Inſtrument, uſed among the Antients; call'd by the *Greeks* κύμβαλον, and by the Latins *Cymbalum*.

It was of Braſs, like our Kettle-Drums; and ſome think in their Form, but ſmaller, and its Uſe different.

Caſſiodorus, and *Iſidore*, call it *Acetabulum*, the Name of a Cup or Cavity of a Bone wherein another is articulated; and *Xenophon* compares it to a Horſe's Hoof: whence it muſt have been hollow; which appears, too, from the Figure of ſeveral other Things, denominated from it, as a Baſon, Caldron, Goblet, Caſque; and even a Shoe, ſuch as thoſe of *Empedocles*, which were of Braſs.

In effect, the antient *Cymbals* appear to have been very different from our Kettle-Drums, and their Uſe of another Kind: To their exterior Cavity was faſten'd a Handle; whence *Pliny* takes occaſion to compare 'em to the upper Part of the Thigh, *Coxendicibus*; and *Rabban* to Phiols.

They were ſtruck againſt one another, in Cadence, and made a very acute Sound. Their Invention was attributed to *Cybele*; whence their uſe in Feaſts and Sacrifices: Setting

ting aſide this Occaſion, they were ſeldom uſed but by diſſolute and effeminate People.

Mr. *Lampe*, who has wrote expreſly on the Subject, attributes the Invention to the *Curetes*, or Inhabitants of Mount *Ida* in *Crete*: 'Tis certain, theſe, as well as the *Corybantes*, or Guards of the Kings of *Crete*; and thoſe of *Rhodes*, and *Samothracia*, were reputed to excel in the Muſick of the *Cymbal*. See CORYBANTES.

Sylburgius derives the Word κύμβαλον from three ſeveral *Greek* Roots, *viz.* from κυφος, *crooked*; from κυπελον, *Cup*; and from φωνη, *Voice*. *Iſidore* derives it from *cum*, and *ballematica*, an immodeſt Dance, uſed to accompany this Inſtrument. The real Etymology appears to be from κύμβος, *Cavity*.

The *Jews*, too, had their *Cymbals*, which they called צלצלים, or מצלתים; or at leaſt, Inſtruments that the *Greek*, *Latin*, and *Engliſh* Tranſlators render *Cymbals*; for as to their Matter, Form, &c. the Criticks are wholly in the dark.

The Modern *Cymbal* is a paltry Inſtrument, chiefly in uſe among Vagrants, Gypſies, &c. It conſiſts of ſteel Wire, in a triangular Form, whereon are paſs'd five Rings, which are touch'd and ſhifted along the Triangle with an Iron Rod held in the left Hand, while 'tis ſupported in the right by a Ring, to give it the freer Motion.

Durandus ſays, that the Monks us'd the Word *Cymbal* for the Bell hung in the Cloiſter, uſed to call 'em to the Refectory.

CYMBIFORME *Os*, in Anatomy. See NAVICULARE *Os*.

CYNEGETICS, *Cygnetica*, Books treating of the Art of Hunting. *Gratius Faliſcus* has wrote *Cynegetica* with Applauſe.

CYNICS, a Sect of antient Philoſophers, who valu'd themſelves on their Contempt of every thing, eſpecially Riches and State, Arts and Sciences; all excepting Morality.

The Founder of this Sect is ſaid to have been *Antiſthenes*, a Diſciple of *Socrates*; who, after his Maſter's Death, quitting the *Pyreum*, retir'd to *Cynoſarges*, a kind of Academy not far from the Gates of *Athens*.

Hence, ſome will have it, came the Name κυνικὸς, *Cynicus*, *viz.* from *Cynoſarge*. But others, with more probability, derive it from κύων, *Canis*, becauſe of their Severity and Importunity in reprehending Vice.

Thus, *Ariſtotle* obſerves, οι δ κυνικοὶ ὅπως ἐκλήθησαν διὰ τὸ παῤῥησιας πολὺν, &c. Cynicks *were ſo called, from their free way of rebuking*, &c.

Hence, *Diogenes* the *Cynic* ſaid of himſelf, πονηρὸς δάκνων, *I bite the Evil*; and *Antiſthenes* himſelf was called ἁπλωκύων, *an ingenious and ſincere Dog*: It being the diſtinguiſhing Character of the *Cynics*, to attack and bark at the Ill, and to defend and fawn on the Good.

Arrian praiſes the *cynical* Genius to the Skies: 'A *Cynic*, *ſays he*, is a Meſſenger ſent from *Jupiter*, to over-'look human Affairs;——a publick Doctor, and Tutor of 'Mankind; inſtructs, and chaſtiſes at the ſame time:—— 'An *Æſculapius*; a Lord and King, adorn'd with a Scep-'ter and Diadem,——who governs the People; and this 'voluntarily, without trembling, without Guards, &c. but 'by a good Conſcience.

The Ground of this Encomium, may be owing, in ſome meaſure, to that affinity between the *Stoicks* and *Cynicks*: the chief difference between 'em was, that the former were more modeſt and reſerv'd than the latter; who were ſaid to have baniſh'd all Shame, and were able to practiſe any Obſcenity without bluſhing.

Hence, *Laertius* obſerves of *Diogenes*, that he did every thing openly, whether it belong'd to *Ceres* or to *Venus*: Tho, the ſame *Laertius* adds, that he did it in imitation of the *Chorididaſcali*, *i. e.* he only ran to an Exceſs of Impudence, to put others out of conceit with it.

Spaſmus CYNICUS, a ſort of Spaſm, or Convulſion; whereby the Patient is brought to imitate the Geſtures, Snarlings, Howlings, &c. of a Dog. See SPASMUS.

Dr. *Freind*, in the *Philoſophical Tranſactions*, gives us an Account of a very extraordinary *Spaſmus* of this Kind, wherewith two Families, at *Blackthorn* in *Oxfordſhire*, were ſeiz'd.

The Novelty of the Thing drew abundance of Viſitors to the Village, and among the reſt Dr. *Willis*; who, a good while ere he reach'd the Place, heard a terrible Noiſe of barking and howling: upon his entering the Houſe, he was ſtrait ſaluted with five Girls, bawling, and anſwering each other by turns, with violent Motions of the Head. In their Face there was no Convulſion ſeen, beſide *Cynic* Diſtortions, and Oſcillations of the Mouth: Their Pulſe was pretty regular; their Noiſe was rather like that of the howling, than of the barking of Dogs; only that its Returns were more frequent, with deep Sighings between.

The *Spaſmus* had ſeiz'd 'em all equally; whereof the youngeſt was but ſix, and the eldeſt fifteen Years of Age: At Intervals they had their Reaſon and Senſes entire; but not long, ere one of 'em returning to her yelling, ſet on the reſt: till at length, all fainting, they fell like Epilepticks on a Bed laid in the middle of the Room to receive 'em.

A little while they would lie quietly and decently together; but upon a new Orgaſm of the Spirits, they began to beat and bruiſe each other. Two of the youngeſt awak'd while the Doctor ſtaid, and left their Siſters on the Bed: but the *Spaſmus* ſoon had hold on 'em again.

In *July*, 1700, Dr. *Freind* himſelf viſited another Family, in the ſame Village; where one Boy and three Girls had been ſeiz'd ten Weeks, without any apparent preceding Cauſe. A Girl had it firſt; and the reſt, as the Mother inform'd him, were ſo ſtruck with their Siſter's Diſorder, that they too were ſeiz'd.

At his Arrival, they were all at play, very briſkly and unconcernedly, before the Doors; at length the eldeſt Girl, about fourteen Years of Age, was ſeiz'd as uſual.

The only Symptom of its approach, was a Swelling of the Stomach; which riſing gradually up the Throat, ſet the Muſcles of the Larynx and the Head upon their uſual Convulſions: This Riſing was a certain Symptom of an approaching Paroxyſm in 'em all; and if they endeavour'd to ſtop it, it burſt out with the greater Violence, and held the longer.

The Noiſe they made was inceſſant, and diſagreeable; yet not ſo much like the barking or howling of Dogs, as had been given out, as a quaint kind of a Song, conſiſting of three Notes, or Tones, repeated twice over; and cloſed by deep Sighs, &c. accompany'd with extraordinary Geſtures and Nutations of the Head.

This Diſeaſe the Doctor takes to be natural; and to ariſe from the common Cauſe of all Convulſions, *viz.* from the Animal Spirits growing unruly in the Nerves, and driving the Muſcles into various Contractions, according to the Circumſtances of the Indiſpoſition. See CONVULSION.

CYNODESMUS, among Anatomiſts, the Band, or Ligament, which ties the Prepuce of the Yard to the Nut, or Glans. See PREPUCE, and GLANS.

CYNOREXY, an immoderate Appetite; to the Degree of a Diſeaſe; called alſo *Fames Canina*, and *Bulimy*. See BULIMY.

CYNOSURA, in Aſtronomy, a Name the *Greeks* have given to *Urſa Minor*, or the little Bear. See URSA.

This is the Conſtellation next our Pole, conſiſting of ſeven Stars; four whereof are diſpos'd like the four Wheels of a Chariot; and three lengthwiſe, repreſenting the Beam: whence ſome give it the Name of the *Chariot*, or *Charles's Wain*.

From theſe ſeven Stars it is the Pole takes its Name, *Septentrionalis*; and the reſt of the Hemiſphere, as far as the Line, *Septem Triones*. See POLE, NORTH, &c.

The Word *Cynoſura* is form'd of κυνοσουρα, q. d. *the Dog's-Tail*.

CYON, or CION, a Graft, Sprig, or Sucker. See CION, GRAFT, &c.

CYPHER. See CIPHER.

CYPHI, a Term in the *Arabian* Pharmacy, ſignifying a kind of ſtrengthning Perfume. See PERFUME.

Mithridates gives the Appellation *Cyphi* to the Troches wherewith the *Egyptian* Prieſts us'd to ſweeten their Gods, to make 'em grant what they requeſted. He uſed the ſame in the Compoſition of Mithridate, on account of their efficacy againſt Poiſons, Defluxions, &c. See MITHRIDATE.

The *Cyphi* are compos'd of Raiſins, or dry'd Grapes, Turpentine, Myrrh, Bdellium, Spica Nardi, Caſſia Lignea, Aſpalathum, Saffron, &c. temper'd into a Maſs with Honey and a little Wine.

CYPHONISM, CYPHONISMUS, a Kind of Torture, or Puniſhment, in uſe among the Antients.

The Learned are at a loſs to determine what it was: Some will have it to be that mention'd by S. *Jerom*, in his Life of *Paul the Hermit*, Ch. II. which conſiſted in ſmearing the Body over with Honey, and thus expoſing the Party, with his Hands ty'd, to the warm Sun, to invite the Flies and other Vermin to perſecute him.

CYPRESS, *Cupreſſus*, in Natural Hiſtory, a precious ſort of Wood, the Produce of a Tree of the ſame Name; frequent in the Iſland of *Cyprus*.

It is very compact, and heavy; and its Smell as agreeable as that of Santal. It ſcarce ever rots, decays, or is worm-eaten, no more than Cedar, or Ebony: For which Reaſon, the Antients uſed it to make the Statues of their Gods.

In *Candia*, and particularly about Mount *Ida*, the Plant is ſaid to riſe ſpontaneouſly, wherever the Earth is a little dug; but is exceeding difficult to raiſe by Art.

The Fruit of this Tree, call'd *Cones*, is us'd in aſtringent Decoctions, for Hernia's, Hemorrhages, &c.

CYPRUS, an Order of Knights, call'd alſo Knights of *Silence*, and Knights of *the Sword*; inſtituted by *Guy de Luſignan*, King of *Cyprus*, in 1192.

The

The Deſign of the Inſtitution was, to oppoſe the Deſcents and Irruptions of the Infidels in this Iſland: Accordingly, their Motto was *Securitas Regni*. See SWORD.

CYRENAICI, a Sect of antient Philoſophers; ſo called from their Chief, *Ariſtippus* of *Cyrene*, a Diſciple of *Socrates*.

Their leading Tenet was, that Man was born for Pleaſure; and that Vertue is only ſo far laudable, as it conduces thereto.

By Pleaſure, they meant, not only a Privation from Pain, and a Tranquillity of Mind like what *Epicurus* preach'd up; but an Aſſemblage of all the poſitive Pleaſures both of the Mind and the Senſes; eſpecially the laſt.

Cicero makes frequent mention of *Ariſtippus*'s School; and ſpeaks of it as if it yielded Debauchees.

Three Diſciples of *Ariſtippus*, after his Death, divided the Sect into three Branches; under which Diviſion it languiſh'd and ſunk: the firſt call'd the *Hegeſiac* School; the ſecond the *Annicerian*, and the third the *Theodorian*; from the Names of their Authors.

CYRTOMA, a Tumor in any Part of the Body. See TUMOR.

CYST-HEPATIC *Duct*, a Canal, by which the *Porus Bilarius* diſcharges part of its Bile into the Gall-Bladder. It was firſt deſcrib'd by Dr. *Gliſſon*, and long afterwards pretended to be diſcover'd by M. *Perrault*.

Verhayen, from the Courſe of the Bile, inverts the Name, and more properly calls it *Hepaticyſticus*. See HEPATICYSTICUS.

CYSTIC, an Epithet given to two Arteries and two Veins in the Gall-Bladder. See GALL-*Bladder*.

The *Cyſtic* Arteries, or *Cyſticæ Gemellæ*, are two Branches from the *Cæliac*, beſtow'd on the Gall-Bladder, and bringing Blood into the ſame: The *Cyſtic Veins* return the Remains of this Blood into the *Vena Porta*. See PORTA.

CYSTICS, are Medicines againſt Diſtempers in the Bladder. See LITHONTRIPTICS.

CYSTICUS *Meatus*, a Bilary Duct, about the bigneſs of a Gooſe's Quill; join'd to the *Meatus Hepaticus*, at about two Inches diſtance from the Gall-Bladder; the two together forming the *Ductus Communis*. See DUCTUS *Communis*.

CYSTIS, the ſame with *Veſica*, or *Bladder*. See VESICA, and BLADDER.

The Word is *Greek*, κύστις.

CYSTIS *Choledocha*, the ſame with *Folliculus Fellis*. See FOLLICULUS.

CYTHARA, an antient Muſical Inſtrument, by ſome ſuppoſed the ſame with the *Lyra*; at leaſt, a particular Species of the *Lyra*; by others different: Tho its preciſe Structure does not appear. See LYRE.

The Antients deſcribe it as triangular, in form of a *Greek Delta*, Δ: The Poets aſcribe the Invention to *Apollo*.

CYZICENES, *Cyzicena*, among the antient *Greeks*, were a ſort of magnificent Banquetting-Houſes, always expos'd to the North, and uſually opening upon Gardens.

They had their Name from *Cyzicus*, a City very conſiderable for the Grandeur of its Buildings; ſituate in an Iſland of the *Propontis* of the ſame Name.

Theſe *Cyzicenes* were among the *Greeks*, what the *Triclinia* and *Cœnacula* were among the *Romans*.

CZAR, a Title of Honour, aſſum'd by the Grand-Dukes, or, as they are now ſtyl'd, Emperors, of *Ruſſia*.

The Natives pronounce it *Tzar*, or *Zaar*; and this, by Corruption, from *Ceſar*, Emperor: they pretending to be deſcended from *Auguſtus*; and accordingly bearing the Eagle as a Symbol of their Empire. See CESAR.

The firſt who bore the Title of *Czar*, was *Baſil*, Son of *Baſilides*, who freed his Country from its Subjection to the *Tartars*, and firſt ſet it on its preſent Footing, about the Year 1470.

M. *Sperlingius*, in his Diſſertation on the Majeſty of the Name *Konning*, obſerves, that the *Ruſſian* Princes never bore the Name of *Czar*, till their People had embrac'd the *Greek* Faith: before that Time, he ſays, they were called *Konger*, King.

D, The 4th Letter of the Alphabet, and the 3d Conſonant. Grammarians generally rank it among the Lingual Letters, as ſuppoſing the Tongue to have the principal Share in the Pronunciation thereof: Tho' the Abbot *de Dangeau* ſeems to have Reaſon in making it a palatal Letter.

The Letter D is the 4th in the *Hebrew*, *Chaldee*, *Samaritan*, *Syriac*, *Greek* and *Latin* Alphabets; in the five firſt of which Languages it has the ſame Name, tho' ſomewhat differently ſpoke, *e. gr.* in *Hebrew* and Chaldee *Daleth*, in Syriac *Dolath*, and in Greek *Delta*. The *Arabians* have three D's in their Language, the 1ſt call'd *Dal*, which is the 8th of their 28 Letters; the 2d, call'd *Dhſal*, is only diſtinguiſh'd from the former by having a Point added over it; tho' its Sound is confounded with that of the Z: The 3d, which is their 17th Letter, is call'd *Da*, and pronounced like our D, tho' in Form it reſembles the Arabic *Ta*, all it differs in, being a Point added a-top.

The Form of our D, is the ſame with that of the *Latins*; as appears from all the ancient Medals and Inſcriptions. And the *Latin* D, is no other than the *Greek* Δ, rounded a little, by making it quicker, and at two Stroaks. The Δ of the *Greeks*, again, is borrow'd from the ancient Character of the Hebrew *Daleth*; which Form it ſtill retains on the *Samaritan* Medals, as is ſhewn by the Jeſuite *Souciet* in his Diſſertation on the *Samaritan* Medals. All the Alteration the *Greeks* have made in it, is the making it ſtoop a little, and taking away a little Line. Nor wou'd it be difficult to ſhew, that the Syriac *Dolath*, and the Arabic *Dal*, are both borrow'd from the ancient *Hebrew*, as well as the ד *Daleth* of the Modern or *Chaldee Hebrew*.

Some indeed will have it, that the *Greek* Δ *Delta* is borrow'd from the *Egyptians*, who made their D of three Stars diſpos'd in a Triangle; which was a Hieroglyphic that among them denoted God, the ſoveraign Being, as if they had had ſome Notion of a Trinity: But this is but poorly ſupported.

D is alſo a Numeral Letter, ſignifying *Five Hundred*; which ariſes hence, that in the *Gothic* Characters the D is half the M, which ſignifies a thouſand — Hence the Verſe

Littera D velut A Quingentos ſignificabit.

A *Daſh* added a-top, $\overline{D}$, denotes it to ſtand for *Five Thouſand*.

DABITIS, in Logic, one of the Modes of Syllogiſm. See Mode and Syllogism.

DACROIDES, in Medicine, a Term applied to Ulcers, which are continually yielding any putrid Matter. The Word is form'd from δάκρυον, Tear, and εἶδος, Form; denoting the Ulcers to weep or ſhed ſomewhat like Tears.

DACTYLI, in Antiquity, a Name attributed to the firſt Prieſts of the Goddeſs *Cybele*; who were particularly call'd *Dactyli Idæi*, on Account of the Goddeſs herſelf, who was call'd *Cybele Idæa*, becauſe principally honour'd on Mount *Ida* in *Phrygia*. The Name *Dactyli* is ſuppos'd to have been given them on this Occaſion; That to prevent *Saturn* from hearing the Cries of *Jupiter*, whom *Cybele* had committed to their Cuſtody, they uſed to ſing I know not what Verſes of their own Invention, which by their unequal Meaſures ſeem'd to reſemble the Foot call'd *Dactylos*. This is the Account of the Grammarian *Diomedes*. One *Sophocles*, quoted by *Strabo*, Lib. X. ſpeaks differently. They were call'd *Dactyli*, ſays he, from the *Greek* Word δάκτυλος, Finger, by Reaſon their Number was at firſt equal to that of the Fingers of the Hand, *viz.* Ten; five of them Boys, and as many Girls.— He adds, that 'tis to them we owe the Invention of Iron, and the Manner of Working it, with divers other uſeful Things. Others make their Number more, and others leſs than Ten. Some, again, make them Natives of *Phrygia* near the Foot of Mount *Ida*; and others bring them from elſewhere.

However, all the Authors *Strabo* had ſeen, agreed, That they were the firſt who wrought in Iron near Mount *Ida*; that they were Impoſtors; that they had been Miniſters of the Mother of the Gods, or *Cybele*; that they dwelt at the Foot of Mount *Ida*. 'Tis a Conjecture among them too, not that the *Curetes* and *Corybantes* were the ſame with the *Dactyli Idæi*, but that the *Curetes* and *Corybantes* were their Poſterity; That a hundred Men, born in *Creta*, were firſt call'd *Dactyli*; that each of theſe had nine Children, who were the *Curetes*; and that each of the *Curetes* had Ten Children, who were alſo call'd *Dactyli Idæi*. *Strabo* only gives us the Names of four of them, which are *Salaminus*, *Damnanæus*, *Hercules*, and *Acmon*. See Corybantes.

DACTYL, *Dactylus*, a Foot in the Latin Verſe, conſiſting of a long Syllable, follow'd by two ſhort ones, as *Carmine* &c. Hexameter Verſes uſually end with a *Dactyl* and Spondee. The *Dactyl* is ſaid to have been the Invention of *Dionyſius* or *Bacchus*, who deliver'd Oracles in this Meaſure at *Delphos*, before *Apollo*. The *Dactyl* and Spondee are the moſt conſiderable of the Poetical Feet; as being the Meaſures us'd in Heroic Verſe, by *Homer*, *Virgil*, &c. Theſe two are of equal Time, but not equal Motion. The Spondee has an even ſtrong and ſteady Pace like a Trot: But the *Dactyl* reſembles the nimbler Strokes of a Gallop. See Quantity, Measure, &c.

Dactyl was alſo a Sort of Dance among the ancient *Greeks*, chiefly perform'd, as *Heſychius* obſerves, by the *Athletæ*.

Dactyls are alſo the Fruits of the Tree, more uſually call'd *Dates*. See Date.

DACTYLIC, Something belonging, or that has a Relation to *Dactyls*: Anciently there were *Dactylic*, as well as Spondaic Flutes, *Tibiæ Dactylicæ*. The *Dactylic* Flutes conſiſted of unequal Intervals, as the *Dactylic* Foot does of unequal Meaſures.—*Dactylic Verſes* are Hexameter Verſes, ending in a *Dactyl*, inſtead of a Spondee; As Spondaic Verſes are thoſe, which have a Spondee in the 5th Foot inſtead of a *Dactyl*. An Inſtance of a *Dactyl* Verſe we have in *Virgil*, *Eneid* l. VII. 33.

Bis Patriæ cecidere Manus: Quin Protinus omnia
Perlegerent Oculis. —

DACTYLIOMANCY, *Dactyliomantia*, a Sort of Divination perform'd by means of a Ring. *Dactyliomancy* conſiſted principally in holding a Ring, ſuſpended by a fine Thread, over a round Table, on the Edge whereof were made divers Marks with the 24 Letters of the Alphabet. The Ring in ſhaking, or vibrating over the Table, ſtop'd over certain of the Letters, which being joyn'd together, compos'd the Anſwer required. But the Operation was preceded and accompanied by ſeveral Superſtitious Ceremonies: For firſt the Ring was to be conſecrated with a World of Myſtery; the Perſon who held it was to be clad in linnen Garments, to the very Shoes; his Head was to be ſhaved all around; and in his Hand he was to hold Vervain. Ere he proceeded on any Thing, the Gods were firſt to be appeas'd by a Formulary of Prayers, &c. compiled for the Purpoſe. *Ammianus Marcellinus* gives the Proceſs at large in his XXIXth Book. The Word is compos'd of the *Greek* δακτύλιος, Ring; of δάκτυλος, Finger, and μαντεία, Divination.

DACTYLOMANCY. See Dactyliomancy.

DACTYLONOMY, The Art of Accounting, or Numbering by the Fingers. The Rule is this: The left Thumb is reckond 1, the Index 2, and ſo on to the right Thumb, which is the tenth, and of Conſequence denoted by the Cypher o.

DADO, in Architecture, is by ſome Writers uſed for the *Dye*; which is the Part in the Middle of the Pedeſtal of a Column, between its Baſe and Cornice: It is of a Cubick Form, whence the Name of Dye. See Dye.

DADUCHI, in Antiquity, Prieſts of *Ceres*. That Goddeſs having loſt her Daughter *Proſerpine*, ſay the Fables, began to make Search for her at the Beginning of the Night. In Order to do this in the Dark, ſhe lighted a Torch, and thus ſet forth on her Travels throughout the World: For which Reaſon it is, that ſhe is always ſeen repreſented with a lighted Torch in her Hand. On this Account, and in Commemoration of this pretended Exploit, it became a Cuſtom for the Prieſts, at the Feaſts and Sacrifices of this Goddeſs, to run about, in the Temple, with Torches after this Manner: One of them took a lighted Torch from off the Altar, and holding it in his Hand, run with it to a certain Part of the Temple; where he gave it to another, ſaying to him, *Tibi trado*: This ſecond run after the like Manner to another Place of the Temple, and gave it to the third; and ſo of the reſt.

From this Ceremony, the Prieſts became denominated *Daduchi*, q. d. Torch-bearers; from δᾶς, an unctuous, and reſinous Wood, as Pine, fir, &c. whereof the Ancients made Torches; and ἔχω, I have, I hold.

DAILY, in Aſtronomy, &c. See Diurnal.

DAMAGE is generally taken to ſignify any Hurt or Hindrance, that a Man takes in his Eſtate; but particularly a Part of what the Jurors are to inquire of, in paſſing Verdict for the Plaintiff, or Defendant in a Civil Action, be it Perſonal or Real: for after Verdict given of the principal Cauſe, they are ask'd their Conſciences touching Coſts (which are the Charges of Suit, call'd by the Civilians *Expenſæ Litis*) and *Damages*, which contain the Hindrances that the Plaintiff or Demandant hath ſuffered by means of the wrong done him by the Defendant or Tenant. But the Word has two ſeveral Significations; the one properly and generally, the other ſtrictly and relatively: Properly, as it is in Caſes, where Damages are founded on the Statute of 2. *H.* 4. Cap. 1. and 8. *H.* 6. Cap. 9. where

Coſts are included within this Word *Damages*; for Damage, in its proper Signification, is ſaid a *Demendo*, when, by Diminution, a Thing becomes worſe; and in this Senſe Coſts of Suits are *Damages*, to the Plaintiff, for by it, his Subſtance is diminiſhed: But when the Plaintiff declares the Wrong done him to the *Damage* of ſuch a Sum, this is to be taken relatively, for the Wrong which paſſed, before the Writ brought, and is aſſeſs'd by Reaſon of the Treſpaſs aforeſaid; and cannot extend to the Coſts of Suit, which are future, and of another Nature.

DAMAGE *Feaſant*, or *Faiſant*, i. e. doing hurt, or *Damage*: As when a Stranger's Beaſts are doing hurt or ſpoiling the Graſs, Corn, Woods, &c. of another Man, without his Leave or Licenſe. In which Caſe, the Party whom they *damage* may diſtrain, and impound them, both by Night and by Day; tho' in other Caſes, as for Rent, Services, &c. none may diſtrain in the Night.

DAMASK, a Sort of Silk Stuff, having ſome Parts rais'd above the Ground, repreſenting Flowers, or other Figures. *Damask* is properly a Sort of Mohair and Satin intermix'd; in ſuch Manner as that what is not Satin on one Side, is on the other. The Elevation which the Satin makes on one Side, is the Ground on the other. The Flowers have a Satin Grain; and the Ground, a Grain of Taffetas. It has its Name from its being originally brought from *Damaſcus* in *Syria*.

DAMASKEENING, or *Damask-Work*, a kind of Moſaic Work; and accordingly, by the *Italians*, call'd by the ſame Name, *Tauſia*, as Moſaic.

DAMASKEENING, is properly the Art, or Act of adorning Iron, Steel, &c. by making Inciſions therein, and filling them up with Gold or Silver Wiar. It is chiefly us'd in Enriching Sword-blades, Guards and Gripes, Locks of Piſtols, &c. Its Name ſhews the Place of its Origin; or, at leaſt, the Place where it has been practiſed in the greateſt Perfection, *viz.* the City of *Damaſcus* in *Syria*. Tho' Monſr. *Felibien* attributes the Perfection of the Art to his Countryman *Curſinet*, who wrought under the Reign of King *Henry* IV.

DAMASKEENING, is partly Moſaic Work, partly Engraving, and partly Carving: As Moſaic Work, it conſiſts of Pieces *de Rapport*; as Engraving, the Metal is indented, or cut in *creux*; and as Carving, Gold and Silver are wrought therein, in *Relievo*.

There are two Manners of *Damaskeening*: In the firſt, which is the moſt beautiful, the Artiſt cuts into the Metal with a Graver, and other Tools proper for Engraving on Steel; and afterwards fills up the Inciſions, or Notches with a pretty thick Silver, or Gold Wiar. In the other, which is only ſuperficial, they content themſelves to make Hatches, or Strokes a-croſs the Iron, &c. with a cutting Knife, ſuch as is uſed in making of ſmall Files.

For the firſt, 'tis neceſſary the Gravings, or Inciſions be made in the dovetail Form; that the Gold or Silver Wiar, which is thruſt forcibly into them, may adhere the more ſtrongly.

For the ſecond, which is the more uſual, the Method is thus: Having heated the Steel till it changes to a Violet, or blue Colour; they hatch it over, and a-croſs with the Knife; then draw the Deſign, or Ornament intended, on this hatching, with a fine Braſs Point, or Bodkin. This done, they take fine Gold Wiar, and conducting or chaſing it according to the Figures already deſign'd, they ſink it carefully into the Hatches of the Metal with a Copper Tool.

DAMASCUS-*Steel*, a very fine kind of Steel, made in ſome Parts of the *Levant*, and particularly at *Damaſcus*, remarkable for its excellent Temper; and uſed chiefly in the making of Sword-Blades. See STEEL.

Some Authors aſſure us it comes from the Kingdom of *Golconda*, in the *Eaſt-Indies*; Where the Method of tempering with Alum, which the *Europeans* have never been able to imitate, was firſt invented.

DAMIANISTS, a Branch of the Ancients *Acephali Severitæ*. They agreed with the Catholics in admitting the IVth Council; but diſown'd any Diſtinction of Perſons in the Godhead, and profeſs'd one ſingle Nature incapable of any Difference. And yet they call'd God, the Father, Son, and Ghoſt. On which Account the *Severitæ Petritæ*, another Branch of *Acephali*, uſed to call them *Sabellianiſts*, and ſometimes *Tetraditæ*. Thus much we learn from *Nicephorus Calliſtes*, L. XVIII. C. 49. They took their Name from *Damianus* a Biſhop, who was their Leader.

DAMNATA *Terra*, in Chymiſtry, is the ſame with *Caput Mortuum*, that is, all the Earthy Part, or Maſs, remaining at the Bottom of the Retort, &c. after all the other Principles have been drawn out of the Body by Fire.

DAMPS, in Natural Hiſtory, are noxious Steams, or Exhalations, frequently found in cloſe, ſubterraneous Places, particularly Mines, Pitts, Cellars, &c. For the Rationale of the Effects of *Damps*, See POISONS and MEPHITES.

The *Damps* in Mines are of 4 Kinds: The firſt, which withal is the moſt ordinary, the Workmen apprehend in its Approach, by the Flame of the Candle's becoming orbicular, and leſſening by degrees, till it goes quiet out; as alſo by their Shortneſs or Difficulty of breathing: Thoſe who eſcape ſwooning, ſeldom ſuffer any great harm by it; but ſuch as ſwoon away, tho' they are not downright ſuffocated, yet on their firſt Recovery are tormented with very violent Convulſions: Their way of Cure is to lay the Perſon down on the Earth in a prone Poſture, with a Hole dug in the Ground under his Mouth; if this fail, they fill him full of good Ale; and if that will not do, they conclude him deſperate. The ſecond is the *Peaſe-Bloom-Damp*, which is called ſo from its Smell. This *Damp* always comes in the Summer-time, and hath not been known to be mortal: The Miners in the Peak of *Derby* fancy it ariſes there from the Multitude of red Treſoil-Flowers, called by them Honey-Suckles, with which the Lime-Stone Meadows of the Peake much abound; perhaps the Smell of this gives timely Notice to get out of the Way: The third is the moſt peſtilential, and moſt ſtrange of all, if what is ſaid of it be true: They, who pretend to have ſeen it, (for they ſay it is viſible) do thus deſcribe it: In the higheſt Part of the Roof of thoſe Paſſages in a Mine, which branch out from the main Grove, they ſee a round Thing hanging, about as big as a Foot-Ball, covered with a Skin of the Thickneſs and Colour of a Cob-web: If this Bag, by a Splinter, or any other Accident, become broken, the *Damp* immediately flies out, and ſuffocates all the Company: The Workmen, by Help of a Stick, and long Rope, have a way of breaking this at a Diſtance; and when they have done it, they purify the Place well with Fire: And they will have it, that it gathers from the Steam of their Bodies, and Candles, aſcends up into the higheſt Part of the Vault, and there condenſeth, and in Time has a Film grown over it, and then corrupts, and becomes Peſtilential. The fourth, is the Fulminating, or *Fire-Damp*, whoſe Vapour being touch'd by the Flame of the Candles, preſently takes Fire, and has all the Effects of Lightning, or fired Gun-powder. Theſe are found frequently in the Coal-Mines, and ſometimes, tho' rarely, in the Lead ones. How Mineral Steams may prove poiſonous, may be underſtood from Doctor *Mead's* Eſſay on Poiſons.

Naturaliſts furniſh us with very ſurprizing Inſtances of the Effects of *Damps*. In the *Hiſt. de l'Academie des Sciences An.* 1701; We read of a Well in the City of *Rennes*, into which a Maſon, at Work near its Brink, letting fall his Hammer, a Labourer, who was ſent down to recover it, e're he reach'd the Water, was ſtrangled. A ſecond ſent to fetch up the Corps, met with with the ſame Fate, and ſo a third: At laſt a fourth, half drunk, was let down, with Charge to call out aſſoon as he felt any Thing incommode him. He call'd accordingly, as ſoon as he came near the Water; and was inſtantly drawn out: yet he died 3 Days afterwards. The Information he brought them was, that he felt a Heat, which ſcorch'd up his Entrails. A Dog being let down, cried about the ſame Place; and died aſſoon as he came to Air; But throwing Water on him, he recover'd; as happens to thoſe thrown into the *Grotto del Cani* near *Naples*. See GROTTO. The three Carcaſſes being drawn up with Hooks, and open'd; there appear'd not any Cauſe of their Death. Now, what renders the Relation the more conſiderable, is, that the Water of this Well had been drawn and drunk ſeveral Years, without the leaſt ill Conſequence.

In the ſame Hiſtory, *An.* 1710. a Baker of *Chartres*, having carried 7 or 8 Buſhels of Brands out of his Oven into a Cellar 36 Stairs deep; his Son, a robuſt young Fellow, going with more, his Candle went out on the Middle of the Stairs. Having lighted it a-freſh, he was no ſooner got into the Cellar, than he cried out for Help; and they heard no more of him: His Brother, an able Youth, run immediately after him; cried out, he was dead; and was heard no more. He was follow'd by his Wife; and ſhe by a Maid, and ſtill 'twas the ſame. Such an Accident ſtruck the whole Nighbourhood with a Panic; and no body was forward to venture any further: till a Fellow more hardy and zealous than the reſt, perſwaded the four People were not dead, would go down to give them Help: He cried too, and was ſeen no more. Upon this, a 6th Man requiring a Hook to draw ſome of them forth without going to the Bottom; drew up the Maid: who, having taken the Air, fetch'd a Sigh and dyed. Next Day, the Baker's Friend, undertaking to get up all the Carcaſſes with a Hook, was let down with Ropes on a wooden Horſe, to be drawn up whenever he ſhould call. He ſoon call'd, but the Rope breaking, he fell back again; And tho' the Rope was ſoon piec'd again, he was drawn forth dead. Upon opening him, his Meninges were found extravagantly ſtretched; his Lungs ſpotted with black, his Inteſtines

ſwell'd

ſwell'd as big as one's Arm, inflamed and red as Blood; and what was moſt extraordinary, all the Muſcles of his Arms, Thighs and Legs, torn and ſeparated from their Parts. The Magiſtrate, at length, taking Cognizance of the Caſe, and the Phyſicians, being conſulted; they gave their Opinion, that the Brands had been but ill extinguiſh'd: the Conſequence of which muſt be, that as all the Cellars in *Chartres* abound with Saltpetre, the unuſual Heat in this, had rais'd a malignant Vapour, which had done the Miſchief: and that a good Quantity of Water muſt be thrown in to put out the Fire, and lay the Vapour. This perform'd, a Dog, and a lighted Candle were let down without Injury to either: An infallible Sign the Danger was over.

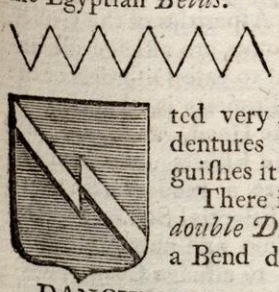
A third Hiſtory we ſhall add from Doctor *Connor*, in his *Diſſert. Med. Phyſ.* Some People digging in a Cellar at *Paris*, for ſuppoſed hidden Treaſure; after a few Hours working, the Maid going down to call her Maſter, found them all in their digging Poſtures: but ſtark dead. The Perſon who managed the Spade, and his Attendant who ſhovel'd off the Earth, were both on Foot, and ſeemingly intent on their ſeveral Offices: The Wife of one of them, as if a-weary, was ſat down on the Side of a Hopper, very thoughtful, and leaning her Head on her Arm: And a Boy, with his Breeches down, was evacuating on the Edge of the Pit; his Eyes fix'd on the Ground: All of them, in fine, in their natural Poſtures and Actions, with open Eyes, and Mouths that ſeem'd yet to breath; but ſtiff as Statues, and cold as Clay.

DAMSEL, from the French *Damoiſel*, or *Damoiſeau*, an Apellation anciently given to all young People of Genteel, or Noble Extraction of either Sex; As to the Sons and Daughters of Knights, Barons, and even Kings. Thus, in Hiſtory, we read of *Damſel Pepin*, *Damſel Louis le Gros*, *Damſel Richard*, Prince of *Wales*. *Paſquier* will have the the Word a Diminutive of *Dam*, an ancient Word for Lord; as in ſome Authors we read *Dam Dieu* for Lord God; *Dam* Chevalier, &c. Tho' in its feminine Senſe he takes it to come from *Dame*. Others derive the Word from *Domicellus*, or *Domnicellus*, a Diminutive of *Domnus*, *quaſi parvus Dominus*. Accordingly, *du Cange* obſerves, that it has been ſometimes wrote *Domenger*. — They who hold the Signory of *Commercy*, M. *de la Roque* tells us, anciently held it under the Title of *Damoiſeau*: And M. *de Marca* aſſures us, that the Nobleſſe of *Bearn* is ſtill divided into three Bodies or Claſſes; The Barons, the Cavers, and the *Damſels*, Domicellos, call'd in that Country *Domengers*. The Kings of *Denmark* and *Sweden* have here the ſame Title, as appears from *Pontanus*'s *Hiſt. of Denmark*, L. VII. and VIII. and *Henry of Upſals Hiſt. of Sweden*, L. III. From the Sons of Kings, the Apellation paſs'd to thoſe of Great Lords and Barons; and at length, to thoſe of Gentlemen who were not yet Knights.

At preſent *Damſel* is applied to all Maids, or Girls not yet married; provided they be not of the loweſt Claſs of People.

DAMSEL is ſometimes alſo applied to a kind of Utenſil put in Beds, to warm old Mens Feet withal. It conſiſts of a hot Iron incloſed in a hollow Cylinder, which is wrap'd round with linnen Cloth, and keeps its Warmth a long Time. Some call it a *Nun*.

DANAIDES, in the Ancient *Mythology*, the Daughters of *Danais*, or *Danaus*, IXth King of *Argos*, and Brother of *Egyptus*. They were 50 in Number, and were eſpous'd to the 50 Sons of their Uncle *Egyptus*. *Danaus* fearing the Accompliſhment of an Oracle, which had foretold that he ſhould be expell'd his Kingdom by a Son in Law, perſwaded his Daughters to murther, each of them, her Husband, the firſt Night; which they perform'd, all but *Hypermneſtre*, who ſpared her Husband *Lynceus*. In Vengeance for this Crime of the 49 *Danaides*, the Poets have condemn'd them to Hell, to be continually employ'd in filling a Cask perforated at Bottom. The *Danaides* are ſometimes alſo call'd *Belides*, from their Father, who was the Son of the Egyptian *Belus*.



DANCETTE, in Heraldry, is when the Out-line of any Bordure, or ordinary, is indented very largely; the Largeneſs of the Indentures being the only Thing that diſtinguiſhes it from *Indented*. See INDENTED.

There is alſo a bearing of a Bend, called *double Dancette*; thus, He beareth Azure, a Bend double *Dancette* Argent.

DANCHE', in Heraldry, the ſame with *Indented*; or, as others will have it, with *Dancette*. See INDENTED and DANCETTE.

DANCE, an agreeable Motion of the Body, adjuſted by Art to the Meaſures or Tune of a Violin, or Voice. Some diſtinguiſh the *high Dance*, conſiſting of Capers, Gambades, &c. from the *low Dance*, which is *Terra a Terra*, or cloſe to the Ground. In the *Carrouſel* of King *Louis* XIII. there were *Dances* of Horſes. The Invention of ſuch *Dances* is attributed to the *Sybarites*. The Word is French, *Dance*, form'd of the German *Dantz*, which ſignifies the ſame Thing. *Bochart* derives it from the Arabic *Tanza*, and *Guichart* from the *Hebrew* רוץ *doubts*, which have all the ſame Signification. *Menage*, after *Salmaſius*, derives the French *Danſer* to *dance*, from the Latin *denſare* to *condenſe* and *full*; as holding it a Practice among the ancient Fullers, to leap and *dance* as they full'd their Clothes.

Dancing has always been in Uſe among all Nations, both civilized and barbarous: Tho' held in Eſteem among ſome; and in Contempt among others. *Dancing*, of it ſelf, no doubt, is harmleſs. There is a Time, ſays the Preacher, to *dance*: And ſometimes it is even made an Act of Religion. Thus David *danced* before the Ark, to honour God, and expreſs his Exceſs of Joy for its Return into the City of *Sion*. *Socrates* learnt to *dance* of *Aſpaſia*. And the People of *Crete* and *Sparta* went to the Attack, *dancing*. On the other hand, *Cicero* reproaches *Gabinius*, a Conſular Man, with having *danced*. *Tiberius* expelled the *Dancers* out of *Rome*. And *Domitian* excluded ſeveral Members from the Senate, for having *danced*. *Caſtor* and *Pollux* are ſaid to be the firſt who taught the Art of *Dancing*; and that to the *Carcians*: Tho' others attribute the Invention to *Minerva*; who *danced* for Joy after the Defeat of the Giants.

The Ancients had three kinds of *Dances*: The firſt Grave, call'd *Emmelia*, anſwering to our *low Dances* and *Pavanes*. The ſecond Gay, call'd *Cordax*; anſwering to our *Courants*, *Galliards*, *Gavots* and *Vaults*. The third, call'd *Siccinnis*, was a Mixture of Gravity and Gayety. *Neoptolemus*, Son of *Achilles*, taught the *Cretans* a new Sort of *Dance*, call'd *Pyrrichia*, or the *Armed Dance*, to be uſed in going to War. But according to the Fable, the *Curetes* firſt invented this *Dance*, to amuſe and divert the little *Jupiter* with the Noiſe, and Claſh of their Swords, beating againſt their Bucklers. *Diodorus Siculus* in the IVth of his *Bibliotheca* aſſures us, that *Cybele*, Daughter of *Menon*, King of *Phrygia*, and *Dindymena* his Wife, invented divers Things, and among others the Flageolot of ſeveral Pipes, *Dancing*, the Tabour and the Cymbal. *Numa*, 'tis certain, inſtituted a Sort of *Dance* for the *Salii*, Prieſts of *Mars*, who made Uſe of Weapons therein. From theſe *Dances* was compoſed another, call'd *Saltatio Mimicorum*, or the *Buffoons Dance*; Wherein the *Dancers* were dreſs'd in little Corſlets, with Gilt Morions, Bells on their Legs, and Swords and Bucklers in their Hands. *Lucian* has an expreſs Treatiſe, and *Julius Pollux*, a Chapter on this Head; *Athenæus*, *Cælius Rhodiginus*, and *Scaliger*, alſo make mention of this *Dance*.

'Tis not many Years ago, ſince *Thoinot Arbeau*, a *Dancing*-Maſter of *Paris*, gave an *Orcheſography*, wherein all the Steps and Motions of a *Dance* are writ, or noted down; as the Sounds of a Song are ſcored in Muſic. Tho' the famous *Beauchamp* has ſome Pretenſions to be the Inventor of this Secret, and accordingly procured an *Arret* in his Favour.

Dancing is uſually an Effect, and Indication of Joy among moſt Nations: Tho' Mr. *Palleprat* aſſures us, that there are People in *South-America*, who *dance* to ſhow their Sorrow.

Rope-DANCER, *Schoenobates*. A Profeſſor of Philoſophy at *Dantzic*, publiſh'd a Diſſertation on *Rope-dancers*, de Funambulis; full of Learning, and an uncommon Knowledge of Antiquity. He defines a *Rope-dancer*, a Perſon who walks on a thick Rope faſten'd to two oppoſite Poſts; which is preciſely, what is expreſs'd by the *Latin* Word *Funambulus*, being a Compound of *Funis*, Rope, and *Ambulo*, I walk. But our *Rope-dancers* do more, for they not only walk, but *dance* and leap upon the Rope. The Ancients, 'tis certain, had their *Rope-dancers* as well as we. Witneſs the *Greek* Words *Neurobates*, *Schoenobates*, and the Latin *Funambulus*, which every where occur. They had likewiſe their *Cremnobates* and *Oribates*, that is, People who walk'd on the Brinks of Precipices. Nay more, *Suetonius in Galba* C. 6. *Seneca* in his 85th Epiſtle, and *Pliny* Lib. VIII. Cap. 2. make mention of Elephants that were taught to walk on the Rope. *Acron*, an ancient Grammarian and Commentator on *Horace*, takes Occaſion to obſerve on the Xth Satire of the firſt Book, that *Meſſala Corvinus* was the firſt, who uſed the Word *Funambulus*; and that *Terence* had it from him. But Mr. *Groddeck*, the learned Profeſſor above mentioned, ſhews that he is miſtaken, and that *Meſſala* liv'd after *Terence*. The Buſineſs is, *Acron* confounds *Valerius Meſſala*, who got the Sir-name *Corvinus* in the War againſt the Gauls about 200 Years before *Terence*, with one of his Deſcendants, who was a famous Orator in the Time of *Horace*.

Mr.

Mr. *Groddeck* coming from the Hiſtorical to the Moral Conſideration, maintains that the Profeſſion of a *Rope-dancer* is not allowable; that the Profeſſors are infamous, and their Art of no Uſe to Society; that they expoſe their Bodies to very great Dangers; and that they ought not to be tolerated in a well regulated State. But coming afterwards to temper the Severity of his Morals, he allows that there are ſometimes Reaſons for admitting them. That the People muſt have Shews; that one of the Secrets of Government is to furniſh them therewith, &c.

The ancient *Rope-dancers* had four ſeveral Ways of Exerciſing their Art; The firſt vaulted or turn'd round the Rope, like a Wheel round its Axis, and there hung by the Heels, or the Neck. The ſecond flew or ſlid from above, downwards, reſting on their Stomachs with the Arms and Legs extended. The third run along a Rope ſtretch'd in a right Line, or up and down. Laſtly, the fourth not only walk'd on a Rope, but made ſurprizing Leaps and Turns thereon. See SCHOENOBATES.

DANEGELT, or DANEGELD (*Gelt* in *Dutch* ſignifying Money) was an ancient Tribute or Contribution, which the *Danes* impoſed on the *Engliſh*, as the Arbitrary Terms of Peace and Departure. It was firſt impoſed as a ſtanding yearly Tax on the whole Nation under King *Ethelred*, *A. D.* 991. That Prince, ſays *Cambden*, *Britan.* 142. much diſtreſs'd by the continual Invaſion of the *Danes*; to procure his Peace, was compell'd to charge his People with heavy Payments, call'd *Danegelt*. At firſt he pay'd 10000 *lib.* then 16000 *l.* then 24000 *l.* after that 36000 *lib.* and laſtly 48000 *lib.* St. *Eduard* the Confeſſor releaſed the Nation from the *Danegelt*. *William* the I. and II. reaſſumed it. *Henry* the I. and after him King *Stephen*, releaſed them finally.

DANEGELT was alſo an annual Tax laid on our Anceſtors, firſt of 1 Sh. afterwards 2 Sh. for every Hide of Land through the Realm, for clearing the Seas of *Daniſh* Pyrates, which heretofore greatly annoy'd our Coaſts. *Eduard* the Confeſſor remitted this Tax. *William* I. and II. reaſſum'd it occaſionally. In the Reign of *Henry* I. it was accounted among the King's ſtanding Revenues; But King *Stephen*, on his Coronation Day, abrogated it for ever.

DANTELLE' in Heraldry, the ſame with *Danché*, or rather with *Dancette*, viz. a large, open Indenture. See DANCETTE.

DAPIFER, the Dignity, or Office of the Grand Maſter of the Emperor's and other Prince's Houſhold. The Word is pure *Latin*, compounded of *daps*, *dapis*, a Diſh of Meat ſerv'd on the Table, and *Fero*, I bear: So that *Dapifer* literally ſignifies a Diſh-carrier, or an Officer who ſerves the Meats upon the Table. The Title of *Dapifer* was given by the Emperor of *Conſtantinople* to the Czar of *Ruſſia*, as a Teſtimony of Favour. In *France*, the like Office was inſtituted by *Charlemain*, under the Title of *Dapiferat*, and *Senechauſſeé*; to which was affix'd the Superintendance over all the Officers of the Houſhold. In *England*, the Office of *Dapifer*, was leſs Eminent; being found in ſeveral of our ancient Charters named one of the Laſt of the Officers of the Houſhold. The Dignity of *Dapifer*, is ſtill ſubſiſting in *Germany*. Till the Year 1623. the Elector Palatin was *Dapifer* of the *Empire*: Since that Time the Elector of *Bavaria* has aſſumed the Title of Arch-*Dapifer* of the Empire. His Office is, at the Coronation of an Emperor, to carry the firſt Diſh of Meat to Table on Horſe-back. The ſeveral Functions of a *Dapifer* occaſion'd the Ancients to give him divers Names. Ἐιλεάτρος, and *Eleator*, *Dipnocletor*, *Convocator*, *Trapezopæus*, *Architritinus*, *Progeuſtla*, *Præguſtator*, *Domeſticus*, *Megadomeſticus*, *Oeconomus*, *Majordomus*, *Seneſchallus*, *Schalcus*, *Gaſtaldus*, *Aſſeſſor*, *Præfectus*, or *Præpoſitus Menſæ*, *Princeps Coquorum & Magyrus*.

DARAPTI, in Logic, one of the Modes of Syllogiſms. See MODE and SYLLOGISM.

DARDANARIUS, Uſurer, Monopoliſt, a Name anciently attributed to ſuch as caus'd a Scarcity and Dearneſs of Proviſions, particularly Corns, by buying and hoarding them up, to raiſe their Value, and ſell them again at an extravagant Rate. The Name *Dardanarius* was given them from one *Dardanus*, who made a Practice of ſpoiling and deſtroying the Fruits of the Earth by a Sort of Sorcery. The ſame People are alſo call'd *Æruſcatores*, *Directarii*, *Sitocapeli*, *Annonæ Flagellatores*, and *Seplaſiarii*.

DARII, in Logic, one of the Modes of Syllogiſms. See MODE and SYLLOGISM.

DARK-*Chamber*, See CAMERA OBSCURA.

DARK-*Tent*, a portable *Camera obſcura*, made not unlike a Desk, and fitted with Optic Glaſſes; to take Proſpects of Landſhips, Buildings, Fortifications, &c. See CAMERA OBSCURA.

DARREIN, in Law, a Corruption of the French *dernier* laſt, and uſed in the like Senſe, as — *Darrein Continuance*. See CONTINUANCE. — *Darrein* preſentment. See ASSIZE of *Darrein preſentment*.

DART, in Geometry, Aſtronomy, &c. See SAGITTA.

DARTOS, or DARTUS, in Anatomy, the inner Coat of the *Scrotum*, compoſed of a great Number of Muſcular, or Fleſhy Fibres; whence ſome call it a Cutaneous Muſcle. 'Tis by means hereof that the *Scrotum* is contracted; which is eſteem'd a Sign of Health. The *Dartos* was anciently taken to be a Continuation of the *Panniculus Carnoſus*; but miſtakenly. It has ſeveral Veins and Arteries. It inveſts the Teſticles, and ſhooting it ſelf between them, ſeparates them from each other. The Word is pure *Greek*, Δαρτὸς, *Excoriatus pelle*, *Nudatus*, of Δέρω, *excorio*, probably by Reaſon this Muſcle is cloſe under the Skin. See SCROTUM.

DATA, *Things given*, a Term uſed in Mathematicks, Philoſophy, &c. implying certain Things, or Quantities ſuppoſed to be given, or known, in Order, from them, to find out other Things or Quantities, which are unknown, or ſought for. A Problem or Queſtion generally conſiſts of two Parts; *Data* and *Quæſita*. See PROBLEM, &c.

Euclid has an expreſs Treatiſe of *Data*; Wherein he uſes the Word for ſuch Spaces, Lines and Angles as are given in Magnitude; or to which we can aſſign others equal. See GIVEN.

From the primary Uſe of the Word *Data* in Mathematicks, it has been tranſplanted into other Arts; as Philoſophy, Medicine, &c. where it expreſſes any Quantity, which, for the Sake of a preſent Calculation, is taken for granted to be ſuch, without requiring an immediate Proof for its Certainty; called alſo the *given* Quantity, Number, or Power: and ſuch Things as are known; from whence either in Natural Philoſophy, the animal Mechaniſm, or the Operation of Medicines, we come to the Knowledge of Things before unknown, are now frequently in Phyſical Writers call'd *Data*.

DATE, an Addition, or Appendage in Writings, Acts, Inſtruments, Letters, &c. expreſſing the Day and Month of the Year when the Act, or Letter, was paſs'd or ſign'd; together with the Place where the ſame was done. In Writings of Importance the *Date* ſhould be wrote in Words at length, *Dated* or given *at London* this twenty ſixth Day of *March* in the Year of our Lord one thouſand ſeven hundred twenty and five. In Letters, the *Date* is uſually in Figures. *London*, March the 26th 1725.— The Word is form'd from the Latin *Datum*, given, the Participle of *do*, I give. The *Latins* uſually ſay *dabam*, I gave.

An *Antidate* is a falſe *Date*, prior to the real Time when the Inſtrument was paſs'd or ſign'd: A *Poſt-date* is the poſterior to the real Time, &c.

Our ancient Deeds had no *Dates*, but only the Month and Year; to ſignify that they were not made in Haſt, or in the Space of a Day, but upon longer and more mature Deliberation. The Kings Grants began with the Words, *Præſentibus & futuris*, &c. but the Grants of private Perſons with, *Omnibus præſentes Literas inſpecturis*.—

DATE, *Dactyl*, the Fruit of the Palm-Tree. This Fruit is gather'd in Autumn, ere ripe; and bears a near reſemblance to our Bullace; being of a green Colour, very ſharp and aſtringent. When ripe, it becomes ruddy, having a hard, longiſh Stone, cloven at Bottom, encompaſs'd with a thin white Pellicle or Skin. The Bark or Covering of the *Date*, call'd by the Ancients *Elate* or *Spata*, when the Fruit is in its Flower, is various; having as many Changes of Colour as the Fig has: Some black, ſome white, ſome brown, ſome again are round like Apples, and very big. Ordinarily they are oblong, fleſhy, yellow, ſomewhat bigger than the Thumbs End, and very agreeable to the Taſte. Some are no bigger than a Chich-Pea, and others as big as a Pomegranate. The beſt are thoſe, call'd *Royal-Dates*. There is alſo another Sort, call'd *Carjotes*, which are very good. Some of them have Stones, and others none. *Dates* are principally uſed in Medicine: Their Qualities are, to ſoften the Aſperities of the Gullet, to ſtrengthen the Child in the Womb, to aſſuage all immoderate Fluxes of the Belly, and to eaſe Diſorders of the Reins and Bladder. Their bad Property is, that they digeſt difficultly, cauſe Pains in the Head, and produce a thick melancholic Blood.— Theſe Effects ariſe from the Principles they contain, which are a moderate Share of Oil, and a deal of Phlegm, and Eſſential Salt. The Oil and Phlegm render them moiſtening and nutritious, good againſt Acrimonies of the Breaſt, to aſſuage Coughs, &c. And the Phlegm and Salt render them deterſive and aſtringent, and good againſt Diſeaſes of the Throat. For the reſt; they are an heavy Food, full of an Earthy Juice, and occaſion Obſtructions in the *Viſcera*; for which Reaſon, People who live of *Dates* become Scorbutic, and loſe their Teeth betimes.

Our

Our *Dates* are brought us from *Egypt*, *Syria*, *Africa*, and the *Indies*. They never come to full Maturity in *Italy*, or the moſt Southern Parts of *Spain*. And yet there are tolerable *Dates* in *Provence*; only they don't keep, but breed Worms. Thoſe from *Perſia* exceed all others in Largeneſs, Colour, and Taſte. The Word is form'd of *Dacte*, and that of *Dactylus*, Finger; as being round and oblong, reſembling a Finger's End.

DATISI, in Logic, one of the Modes of Syllogiſms. See MODE and SYLLOGISM.

DATIVE, in Grammar, the third Caſe in the Declenſion of Nouns; expreſſing the State, or Relation of a Thing, to whoſe Profit or Loſs ſome other Thing is referr'd. See CASE.

'Tis call'd *Dative*, becauſe uſually govern'd by a Verb, implying ſomething to be *given* to ſome Perſon. As, *Commodare* Socrati, To lend to *Socrates*; *Utilis Republicæ*, Uſeful to the Common-wealth; *Perniciosus Eccleſiæ*, Pernicious to the Church; *Promittere Amico*, To promiſe a Friend; *Viſum eſt* Platoni, It ſeem'd good to *Plato*, &c.

In *Engliſh*, where we have properly no Caſes, this Relation is expreſs'd by the Sign *to*, or *for*; which are uſually either expreſs'd, or underſtood.

DAVIDISTS, or *Davidici*, a Sect of Hereticks, the Adherents of *David George* a Glazier, or, as others ſay, a Painter of *Ghant*; who in 1525. began to preach a new Doctrine. He publiſh'd himſelf to be the true *Meſſiah*, and that he was ſent hither to fill Heaven, which was quite empty for Want of People to deſerve it. He rejected Marriage, with the *Adamites*; denied the Reſurrection, with the *Sadducees*; held with *Manes*, that the Soul was not defiled by Sin; and laugh'd at the Self-Denial ſo much recommended by Jeſus Chriſt. Such were his principal Errors. He made his Eſcape from *Ghant*, and retired firſt into *Friſeland*, and then to *Baſil*, where he changed his Name, aſſuming that of *John Bruck*, and died in 1556. He left ſome Diſciples behind him, to whom he promis'd that he would riſe again at the End of three Years. Nor was he altogether a falſe Prophet herein, for the Magiſtrates of that City, being inform'd at the three Years End of what he had taught, had him dug up, and burnt, together with his Writings, by the common Hangman. There are ſtill ſome Remains of this ridiculous Sect in *Holſtein*, particularly about *Friderickſtadt*, where they are intermix'd with the *Armenians*.

DAVIS'S-*Quadrant*. See BACK-STAFF.

DAUGHTER. See FEMALE. The Sons and Daughters of the King of *England* are call'd the *Sons* and *Daughters* of *England*; becauſe all the Subjects of *England* have a ſpecial Intereſt in them. See PRINCES *of the Blood*.

DAUPHIN, *Dolphin*, in Aſtronomy. See DELPHIN.

DAUPHIN, a Title given the eldeſt Son of *France*, and preſumptive Heir of the Crown; On Account of the Province of *Dauphine*, which in 1343. was given to *Philip de Valois* on this Condition, by *Humbert*, *Dauphin* of the *Viennois*. *M.* the *Dauphin*, in his Letters Patents ſtyles himſelf, "By the Grace of God, "Eldeſt Son of *France*, and *Dauphin* of *Viennois*.

DAUPHIN was anciently the Title of the Prince of *Viennois* in *France*. Moſt Authors, who have ſought the Origin of the Name *Dauphin*, and *Dauphine*, ſeem to have given too much looſe to their Imagination. Some will have it deriv'd from the *Auffinates*, an ancient People mentioned by *Ptolomy* and *Pliny*; But thoſe Authors place the *Auffinates* on t'other Side of the *Alpes* in the *Gallia Ciſalpina*. Others wirte that the *Allobroges* brought the Name from *Delphos*; Others, that King *Boſon*'s Shield was diſtinguiſh'd by the Figure of a *Dolphin*, which he bore thereon. Others, that the Princes who reign'd in the *Viennois* after *Boſon*, pitch'd on theſe Arms as a Symbol of their Mildneſs and Humanity. Others, that it was given by an Emperor, who made War in *Italy*, but whom they do not name, to a Governour of this Province, who ſent him a powerful Supply with ſuch Expedition, that it deſerv'd to be compar'd with the Swiftneſs of a *Dolphin*. *Thabot* fancies the Word to be *Gothic*; as well as the Names, *Breſs*, *Savoy*, *Beaujeu*, &c. *Claud de Grange* believes the Word to be form'd of *Viennois*, the ancient Name of this Province. A Perſon of this Province, ſays he, being aſk'd what Countryman he was, anſwer'd, *do Viene*, and the Prince of the Province call'd himſelf the Prince *do Viene*, and afterwards, changing the *V*, after the common Cuſtom, into *F*, *do Fiene*; and at Length retrenching the two *e*'s, *Dofin*: The common Opinion that the Word was form'd from *Delphinus*, occaſion'd them to write *Dauphin*. But this appears to *Chorier* no better than an ingenious Anagram, or ridiculous Subtilty. Others will have it that *Guy* the *Fat*, having a Daughter that he was very fond of, he uſed to call her *Dauphine*; and to immortalize her when dead, gave her Name to his Country. Others are of Opinion, that the laſt Count *d'Albon*, whoſe Eſtate became incorporated with that of the Counts *de Greſivaudan*, by the Marriage of his only Daughter with the firſt *Guy*, was really named *Dauphin*; and that his eldeſt Grandſon, being oblig'd to take his Name, was call'd *Dauphin*, and bore the Figure of a *Dolphin* for his Arms. *Du Cheſne* is likewiſe of Opinion, that it was the Grandſon of *Guy* the *Fat*, who firſt bore the Name of *Dauphin*; tho' not for the Reaſon juſt alledg'd, but that it was given him at his Baptiſm; and added to that of *Guy*.

Chorier wont allow any Thing probable in any of theſe Opinions. He obſerves then, that *William*, Canon of *Notre Dame* at *Grenoble*, who has wrote the Life of *Margaret*, Daughter of *Stephen*, Earl of *Burgundy*, married with *Guy*, Son of *Guy* the *Fat*, calls the latter ſimply *Guy* the *Old*, and the former always Count *Dauphin*. And adds, that no Title, no Monument, ever attributes the Title of *Dauphin* to *Guy* the *Fat*, or any of his Predeceſſors; So that it muſt neceſſarily have taken its Riſe in his Son, all whoſe Succeſſors have ſo conſtantly aſſum'd it, that it is become the proper Name of the Family. He died in 1142. in the Flower of his Youth; So that it muſt be about the Year 1120, that that Title commenced; and without doubt, he adds, on ſome illuſtrious Occaſion. He obſerves further, that this Prince was of a military Diſpoſition, and delighted in nothing but War; And again, that it was the Cuſtom of the Cavaliers to charge their Caſks, Coats of Arms, and the Houſing of their Horſes, with ſome Figure or Device peculiar to themſelves, whereby they were diſtinguiſh'd from all others engag'd in the ſame Combat or Tournament. From all theſe Circumſtances he conjectures that this *Guy* choſe the *Dolphin* for his Signature; that this was the Creſt of his Helmet; and that he bore it on his Coat in ſome notable Tournament or Battel wherein he diſtinguiſh'd himſelf. And this, *Chorier* makes no doubt, is the real Origin of the Appellation.

Monſr. *le Preſident de Valbonnet* ſpeaks more juſtly on the Subject. *Guigues*, or *Guy* the *Fat*, Son of *Guy* the *Old*, married *Mathilda*, who has been ſuppoſed to be of the ſame Royal Family, as being call'd *Regina* in ſeveral ancient Charters. This Couple had a Son, who, in an Act paſs'd between him and *Hugh*, Biſhop of *Grenoble*, in 1140, is call'd *Delphinus*; *Guigo Comes*, *qui vocatur Delphinus*. This has occaſion'd ſome Hiſtorians to think to diſcover the Origin of the Name *Dauphin*. There was no Neceſſity for having Recourſe to Voyages beyond the Sea, where the Counts *de Greſivaudan* might take the *Dolphin* for their Arms, or Badge of Diſtinction. In Effect, that Conjecture does not ſtand on any Proof; Nor is it true, that the firſt and ſecond Race of thoſe Princes bore the *Dolphin* for their Arms; There being ſcarce any Signs thereof before *Humbert* I. who firſt bore it on his Shield. 'Tis more probable, that the Sirname *Dauphin*, which *Guy* firſt aſſumed, pleas'd his Succeſſors ſo much, that they added it to their own Name, and erected it into a Title, which has been retained ever ſince. Nothing is more common in thoſe Times, than to find proper Names become the Names of Families, or Dignities. Witneſs the *Ademars*, *Arthauds*, *Aynards*, *Atlemans*, *Berengers*, and infinite others, who all owe their Names to ſome one of their Anceſtors, from whom it has been tranſmitted throughout the Family.

The Seigneurs or Lords of *Auvergne* have likewiſe bore the Appellation of *Dauphin*; But the *Dauphins* of *Auvergne* had it not till a good while after thoſe of the *Viennois*, and even receiv'd it from them. The Manner was this: *Guy* the VIIIth *Dauphin* of the *Viennois*, had by his Wife *Margaret*, Daughter of *Stephen*, Earl of *Burgundy*, a Son and two Daughters. The Son was *Guy* the IXth, his Succeſſor. *Beatrix*, one of the Daughters, was married to the Count *d'Auvergne*, who, according to *Blondel*, was *William* the Vth, or rather, as *Chorier* and others hold, *Robert* the VIth, Father of *William* the Vth. This Prince

loſt the greateſt Part of the County *d'Auvergne*, which was taken from him by his Uncle *William*, aſſiſted by *Louis* the *Young*; and was only left Maſter of the little Canton whereof *Vodable* is the Capital. He had a Son whom he call'd *Dauphin*, on Account of *Guy*, or *Guigues*, his Uncle by the Mother's Side. From his Time his Succeſſors holding the ſame petty Canton of *Auvergne*, qualified themſelves *Dauphins* of *Auvergne*, and bore a *Dolphin* for their Arms.

DAY, a Diviſion of Time, drawn from the Appearance, and Diſappearance of the Sun. See SUN.

The *Day* is of two Kinds, *Artificial*; and *Natural*, or *Civil*.

Artificial DAY, which ſeems to be that primarily meant by the Word *Day*, is the Time of Light; determin'd by the Sun's Riſing and Setting. This is properly defined the Stay of the Sun above the Horizon: In Oppoſition to which, the Time of Darkneſs, or, the Sun's Stay below the Horizon from Setting to Riſing again, is call'd *Night*. See NIGHT.

Natural DAY, call'd alſo *Civil Day*, is the Space of Time wherein the Sun performs one Revolution round the Earth: Or, more juſtly, the Time wherein the Earth makes a Rotation on its Axis. Which the *Greeks* more properly expreſs by νυχθήμερον, *Nychthymeron*, q. d. Night-Day.

The *Epocha*, or *Beginning of the Civil Day*, is the Term from which one *Day* begins, and in which the preceeding *Day* concludes. The Fixing of this Term is of ſome Importance. 'Tis certain that for the more commodious diſtinguiſhing of *Days*, it ought to be fix'd in ſome Moment of Time wherein the Sun is in ſome diſcernible Part of the Heavens. The moſt eligible therefore ſhou'd be the Moments wherein the Sun paſſes either the Horizon or the Meridian. In Effect, as there is no Moment can be more accurately determined by Obſervation than that when the Sun paſſes through the upper Meridian: if Regard be had to the Exactneſs of the Meaſure, the Noon Tyde, has the beſt Pretenſions; the Riſing and Setting of the Sun being diſturb'd by the Refraction; beſide that, the Horizon is ſeldom clear of Clouds. But yet, as the *Artificial Day* does begin with the Sun's Riſe, and ends with the Setting; and beſides, the Sun's Paſſing the Horizon is a Thing eaſily obſerved, the Riſing or Setting of the Sun ſhou'd appear the moſt commodious *Epoch* or Beginning of the *Civil-Day*.

As then there are not wanting Reaſons for Beginning the *Natural Day*, both from the Sun's Paſſing the Meridian, and the Eaſtern, and Weſtern Side of the Horizon; 'tis no Wonder that different Nations ſhou'd begin their *Day* differently.

Accordingly, Firſt, The ancient *Babylonians*, *Perſians*, *Syrians*, and moſt other Eaſtern Nations, with the preſent Inhabitants of the *Balearick* Iſlands, the *Greeks*, &c. begin their *Day* with the Sun's Riſing. Secondly, The ancient *Athenians* and *Jews*, with the *Auſtrians*, *Bohemians*, *Marcomanni*, *Sileſians*, with the modern *Italians* and *Chineſes*, reckon it from the Sun's Setting. Thirdly, The ancient *Umbri* and *Arabians*, with the modern Aſtronomers, at Noon. And fourthly, The *Egyptians* and *Romans*, with the modern *Engliſh*, *French*, *Dutch*, *Germans*, *Spaniards*, and *Portugueſes*, at Midnight.

The *Day* is divided into *Hours*; and the Week, Month, &c. into *Days*. See HOUR, MONTH, WEEK.

For the different Lengths of the *Day* in different Climates. See CLIMATE, and GLOBE.

It has been a Matter of ſome Controverſy among Aſtronomers, whether or no the *Natural Days* are all equally long throughout the Year; and if not, what is their Difference. *M*.... Profeſſor of Mathematicks at *Sevil*, in *a Memoir in the Philoſophical Tranſact.* aſſerts, from a continued Series of Obſervations for three Years, that they are all equal. Mr. *Flamſteed*, in the ſame *Tranſactions*, refutes the Opinion; and ſhews, that one Day, when the Sun is in the Equinoctial, is ſhorter than when he is in the Tropicks, by 40 Seconds; and that 14 Tropical *Days* longer than ſo many Equinoctial ones, by $\frac{1}{6}$ of an Hour, or 10 Minutes. The Inequality of the Days flows from two ſeveral Principles: The one, the Excentricity of the Earth's Orbit; the other, the Obliquity of the Ecliptic with Regard to the Equator, which is the Meaſure of Time. As theſe two Cauſes happen to be combin'd, the Length of the *Day* is varied. See EXCENTRICITY and OBLIQUITY.

DAY, in Law, is frequently uſed for the *Day* of Appearance in Court, either originally, or upon Aſſignation; as, *He had a* Day *by the Rolls*, i. e. *He had a* Day *of Appearance aſſign'd him.* Sometimes, for the Returns of Writs; e. g. *Days in Bank* are *Days* ſet down by State or Order of the Court when Writs ſhall be returned, or when the Party ſhall appear on the Writ ſerved. To be diſmiſs'd *without* Day, *ſine Die*, is to be finally diſcharged the Court. *Days of Prefixion* in the Exchequer. See REMEMBRANCER.

DAYS *of Grace*, in Commerce, are a Number of *Days* allow'd by Cuſtom for the Payment of a Bill of Exchange, after the ſame becomes due, *i. e.* after the Time it was accepted for is expired. In *England*, 3 *Days of Grace* are allowed; So that a Bill accepted in Order to be pay'd, *e. gr.* 10 *Days* after Sight, is not to be pay'd till 13 *Days*. Throughout *France*, they allow 10 *Days of Grace*; as many at *Dantzic*; 8 at *Naples*; 6 at *Venice*, *Rotterdam*, and *Antwerp*; 4 at *Francfort*, and 3 at *Leipſic*.

Dog-DAYS, or *Dies Caniculares*. See DOG-*Days*.

Critical DAYS, *Dies Critici*. See CRITICAL *Days*.

Intercalary, or *Additional* DAYS. See INTERCALARY *Days*.

DEACON, *Diaconus*, a Perſon in the loweſt Degree of holy Orders, whoſe Buſineſs is to baptize, read in the Church, and aſſiſt at the Celebration of the Euchariſt. The Word is form'd from the Latin *Diaconus*, of the *Greek* διακόνος, Miniſter. See ORDERS and ORDINATION.

DEACONS were inſtituted ſeven in Number by the Apoſtles, *Acts* C. VI. which Number was retain'd a long Time in ſeveral Churches. Their Office was to ſerve in the *Agapæa*, and to diſtribute the Bread and Wine to the Communicants, and to diſpenſe the Alms. By the ancient Canons, Marriage was not incompatible with the State and Miniſtry of a *Deacon*. But 'tis now a long Time that the Romiſh Church has prohibited their Marrying; and the Pope only grants them Diſpenſations for very important Cauſes; and after Diſpenſation, they loſe the Rank and Functions of their Order, and return to a Lay State. The *Deacons* were formerly prohibited ſitting with the Prieſts. The Canons of Councils forbid *Deacons* to conſecrate; that being a ſacerdotal Office. They alſo prohibit a *Deacon* being ordain'd, unleſs he have a Title, or Call, and be at leaſt 25 Years of Age. The Emperor *Juſtinian*, in *Novel* 123. aſſigns the ſame Age of 25 Years for a *Deacon*. But this was the Cuſtom when Prieſts were not ordained at leſs than 30 Years of Age. At preſent 23 Years of Age ſufficies for a *Deacon*.

At *Rome*, under Pope *Sylveſter*, they had only one *Deacon*; then ſeven were appointed; then 14, and at laſt eighteen, who were call'd *Cardinal Deacons*, to diſtinguiſh them from thoſe of other Churches. See CARDINAL.

Their Office was to take Care of the Temporalities of the Church, look to the Rents and Charities, to provide for the Neceſſities of the Eccleſiaſticks, and even of the Pope. The Collecting of the Rents, Alms, &c. belong'd to the *Sub-Deacons*; the *Deacons* were the Depoſitaries and Diſtributers. Having thus the Management of the Revenues of the Church in their Hands; their Authority grew a-pace, as the Riches of the Church increaſed. Thoſe of *Rome*, as being Miniſters of the firſt Church, preceeded all others, and even at length took Place of the Prieſts themſelves. Doubtleſs, it was the Avarice of the Prieſts that made them give Place to the *Deacons*, who had the Diſpoſal of the Money. St. *Jerom* exclaims againſt this Attempt, and proves that a *Deacon* is inferior to a Prieſt.

The Council in *Trullo*, which is the IIId of *Conſtantinople*, *Ariſtinus* in his *Synopſis* of the Canons of that Council, *Zonaras* on the ſame Council, *Simeon Logothetes*, and *Oecumenius*, diſtinguiſh *Deacons* deſtin'd for Service at the Altar, from thoſe who had the Care of the Diſtribution of the Alms of the Faithful. Thus, the Cuſtom of conſtituting *Deacons*, without any other Office but to attend the Prieſt at the Altar, being once introduced, thoſe ſimple *Deacons* durſt no longer pretend to a Superiority over the Prieſts. As to the other *Deacons*, who had got the Adminiſtration of the Revenues, they would ſtill retain the Superiority; and for Diſtinction ſake, where there were ſeveral, the firſt took the Appellation of *Arch-Deacon*. See ARCH-*Deacon*.

The *Deacons* rehearſed certain Prayers at the holy Office, which were thence denominated *Diaconics*. See DIACONIC.

They took Care that the People at Church behaved themſelves with due Modeſty and Reſpect. They were not allowed to teach publickly; at leaſt

not

not in the Preſence of a Biſhop or Prieſt. They only inſtructed the *Catecumens*, and prepared them for Baptiſm. The Doors of the Church were likewiſe in their Cuſtody: Tho', in after Times, that Charge was commitred to the *Sub-Deacons*.

Among the *Maronites* of Mount *Libanon*, are two *Deacons*, who are mere Adminiſtrators of the Temporalities. *Fa. Dandini*, who calls them *li Signori Diaconi*, aſſures us, they are Secular Lords, who govern the People, ſit in Judgment on all their Differences, and treat with the *Turks* as to what concerns the Taxes and other Affairs. In this, the Patriarch of the *Maronites* ſeems to have aim'd to imitate the Apoſtles, who diſcharged all the temporal Concerns of the Church on the *Deacons*; *'Tis not well done*, ſay they, *to leave the Word of God, and ſerve at Tables*. And, in Effect, 'twas this gave Occaſion to their firſt Eſtabliſhment.

DEACONESS, an Office in Uſe in the Primitive Church, tho' now laid aſide. St. *Paul* makes mention thereof in his Epiſtle to the *Romans*: And the younger *Pliny*, in a Letter to *Trajan*, tells that Prince, he had order'd two *Deaconeſſes*, whom he calls *Miniſtræ*, to be tortured. The Name *Deaconeſs* was affected to certain devout Women, who conſecrated themſelves to the Service of the Church, and rendred thoſe Offices to the Women, which Men could not decently do; as, in Baptiſm, for Inſtance, which was conferr'd by Immerſion, on Women as well as Men. They were likewiſe to look to the Doors on the Side the Women were on, who were ſeparated from the Men, according to the Cuſtom of thoſe Times. They had the Care and Inſpection of the Poor, Sick, *&c.* And in Times of Perſecution, when a *Deacon* could not be ſent to the Women, to exhort and fortify them, a *Deaconeſs* was ſent. See *Balſamon on the* 11*th Canon of the Council of Laodicæa*; And the *Apoſtolical Conſtitutions*, L. II. C. 57. To ſay nothing of the Epiſtle of *Ignatius* to the People of *Antioch*; where, what is ſaid of *Deaconeſſes*, is ſaid to have been interpolated.

In the Commentaries on the Councils of *Chriſt. Lupus*, it is ſaid that they were ordain'd by the Impoſition of Hands: And the Council in *Trullo* uſes the Term χειροτονεῖν, *to impoſe Hands*, to expreſs the Conſecration of *Deaconeſſes*. *Baronius*, however, denies that Hands were laid on the *Deaconeſſes*; or that there was any Ceremony of Conſecration. Founding his Opinion on the 19th Canon of the Council of *Nice*, which places them in the Rank of Layety, and ſays expreſsly, they have had no Impoſition of Hands. And yet the Council of *Chalcedon* decrees they ſhould not be ordain'd till 40 Years of Age; whereas till then they had not been ordained before 60; as is preſcribed in the firſt Epiſtle to *Timothy*, C. V. v. 9. And as is ſeen in the *Nomocanon* of *John* of *Antioch*, in *Balſamon*, the *Nomocanon* of *Photius*, the *Theodoſian Code*, *Tertullian de Veland. Virgin.* &c. The ſame Author, *ad Uxorem*, L. I. C. 7. ſpeaks of Women who had receiv'd Ordination in the Church, and who, on that Account, were deprived of the Liberty of Marrying. For the *Deaconeſſes* were Widows, and might not remarry. Nor were they capable of being admitted to that Order, if they had been marry'd more than once. Tho' in After-times Virgins were alſo made *Deaconeſſes*, at leaſt if we may credit St. *Epiphanius*, *Zonaras*, *Balſamon* and *Ignatius*. The Council of *Nice* ranks *Deaconeſſes* among the Clergy. Tho' ſome hold that their Ordination was not Sacramental, but a mere Eccleſiaſtical Ceremony. However, it gave them a Preeminence above their Sex; for which Reaſon the Council of *Laodicæa* forbad the Ordaining of any more for the future. The firſt Council of *Orange*, held in 441, likewiſe forbids the Ordaining of *Deaconeſſes*, and enjoyns ſuch as had been ordained to receive the Benediction with the mere Layety.

'Tis hard to ſay when the Order of *Deaconeſſes* expired; by Reaſon they did not all ceaſe together. The 11th Canon of the Council of *Laodicæa*, 'tis true, ſeems to abrogate them; but 'tis certain they ſubſiſted in divers Places long afterwards. For the 26th Canon of the firſt Council of *Orange*, and the 21ſt of that of *Epauna*, held in 515, forbid the Ordination of *Deaconeſſes*; yet there were ſome at the Time of the Council in *Trullo*. *Atton* of *Verceil* in his VIIIth Letter gives the Reaſon of their being aboliſh'd. He obſerves that in the firſt Ages the Miniſtry of Women was neceſſary, in Order to the more eaſy Inſtructing of other Women, and Recovering them from Paganiſm; and that they likewiſe ſerved for the more decent Adminiſtration of Baptiſm to the ſame: But that it was not then neceſſary, by Reaſon none but Children were baptized; And it might now be added, by Reaſon Baptiſm is only conferr'd by Sprinkling. The Number of *Deaconeſſes* does not ſeem to have been fixed. The Emperor *Heraclius*, in his Letter to *Sergius*, Patriarch of *Conſtantinople*, orders that in the great Church of *Conſtantinople* there be forty *Deaconeſſes*, whereas there were only ſix in that of the Mother of God, in the Quarter of the *Blachernes*.

DEACONRY, *Diaconate*, the Order or Miniſtry of a Deacon, or Deaconeſs. See DEACON and DEACONESS.

DEACONRY, *Diaconia*, is alſo a Name ſtill reſerved to the Chappels, and Oratories in *Rome*, under the Direction of the ſeveral Deacons, in their reſpective Regions or Quarters. See REGION.

To the *Deaconries* were annex'd a Sort of Hoſpitals, or Boards, for the Diſtribution of Alms, govern'd by the Regionary Deacons, call'd Cardinal Deacons, of whom there were ſeven, anſwering to the ſeven Regions, their Chief being call'd the Arch-Deacon. See CARDINAL. The Hoſpital adjoyning to the Church of the *Deaconry*, had an Adminiſtrator for the temporal Concerns, call'd the Father of the *Deaconry*, who was ſometimes a Prieſt, and ſometimes a Lay-man. At preſent there are 14 of theſe *Deaconries* or Hoſpitals at *Rome*, which are affected to the Cardinals. *Du Cange* gives us their Names: As, the *Deaconry* of St. *Maria* in the broad Way; The *Deaconry* of St. *Euſtachio* near the *Pantheon*, &c.

DEADLY *Feud*, in our Law-Books, a Profeſſion of irreconcilable Enmity till we are revenged by the Death of our Enemy. The Word *Feud*, is derived from the German *Feed*, which, as *Hottoman* obſerves, ſignifies, *Modo bellum, modo capitales inimicitias*. Such Enmity and Revenge was allowed by our ancient Laws in the Time of the *Saxons*. viz. If any Man was kill'd, and a pecuniary Satisfaction were not made to the Kindred, it was lawful for them to take up Arms, and revenge themſelves on the Murtherer: which was call'd *Deadly Feud*. And this, probably, was the Original of an Appeal. See APPEAL.

DEAD-*Pledge*. See MORTGAGE.

DEAD-*Reckoning*, at Sea, is that Eſtimation, Judgment or Conjecture, which the Sea-men make of the Place where a Ship is, by keeping an Account of her Way by the Log, by knowing the Courſe they have ſteer'd by the Compaſs, and by Rectifying all, with Allowance, for Drift, Lee Way, *&c.* according to the Ship's Trim; ſo that this *Reckoning* is without any Obſervation of the Sun, Moon and Stars, and is to be rectified as often as any good Obſervation can be had. See LOG, and LOG-*Line*.

DEAD-*Water*, is the Eddy-Water juſt behind the Stern of a Ship; and if a Ship hath a great Eddy follows her Stern, they ſay, ſhe makes much *Dead-Water*: This is ſo call'd, becauſe it doth not paſs away ſo ſwiftly, as the Water running by her Sides doth.

DEAFFORESTED, in our Law-Books, the being diſcharged from being Foreſt; or freed and exempted from Foreſt-Laws. See FOREST.

Johannes Dei Gratia, &c. Archiepiſcopis, Epiſcopis, &c. ſciatis nos omnino Deafforeſtaſſe *Foreſtam de Brewood de omnibus quæ ad Foreſtam & Foreſtarios pertinent. Quare volumus & firmiter præcipimus, quod prædicta Foreſta & homines in illa manentes, & hæredes eorum, ſint* Deafforeſtati *in perpetuum*.

DEAFNESS, the State of a Perſon who wants the Senſe of Hearing: Or a Diſeaſe of the Ear, which prevents its due Reception of Sounds. See HEARING and EAR.

DEAFNESS generally ariſes either from an Obſtruction, or a Compreſſion of the auditory Nerve; or from ſome Collection of Matter in the Cavities of the inner Ear; or from the auditory Paſſage being ſtopp'd up by ſome harden'd Excrement; or, laſtly, from ſome Excreſcence; a ſwelling of the Glands, or ſome foreign Body introduced within it. Thoſe born *Deaf* are alſo dumb, as not being able to learn any Language; at leaſt in the common Way. However, as the Eyes, in ſome Meaſure, ſerve them for Ears, they may underſtand what is ſaid by obſerving the Motion of the Lips, Tongue, *&c.* of the Speaker; and even accuſtom themſelves to move their own, as they ſee other People do; and by this means learn to ſpeak. Thus it was that Dr. *Wallis* taught two young Gentlemen, born *deaf*, to hear what was ſaid to them, and to return pertinent Anſwers. *Digby* gives us another Inſtance of the ſame, within his own Knowledge. And there was a *Swiſs* Phyſician lately living at *Amſterdam*, one *Joh. Conrad Amman*, who effected the ſame in ſeveral Children born *deaf*, with

fur-

ſurprizing Succeſs. He has reduced the Thing to a fix'd Art or Method, which he has publiſh'd in his *Surdus Loquens*, Amſtellod. 1692. and *de Loquela*, ibid. 1700.

In the *Phil. Tranſact.* N. 312. we have an Account by Mr. *Waller*, R. S. Secr. of a Man and his Siſter, each about 50 Years old, born in the ſame Town with Mr. *Waller*, who had neither of them the leaſt Senſe of Hearing; yet both of them knew, by the Motion of the Lips only, whatever was ſaid to them, and would anſwer pertinently to the Queſtion propoſed. It ſeems they could both hear and ſpeak when Children; but loſt their Senſe afterwards; whence they retain'd their Speech, which, tho' uncouth, was yet intelligible.

Such another Inſtance is that of Mr. *Goddy*'s Daughter, Miniſter of St. *Gervais* in *Geneva*, related by Biſhop *Burnet*. At two Years old they perceiv'd ſhe had loſt her Hearing; and ever ſince, tho' ſhe hears great Noiſes, yet hears nothing of what is ſaid to her. But by obſerving the Motions of the Mouth and Lips of others, ſhe has acquired ſo many Words, that out of theſe ſhe has form'd a Sort of Jargon, in which ſhe can hold Converſation whole Days with thoſe that can ſpeak her Language. She knows nothing that is ſaid to her, unleſs ſhe ſee the Motion of their Mouths that ſpeak to her; So that in the Night, they are oblig'd to light Candles to ſpeak to her. One Thing will appear the ſtrangeſt Part of the whole Narration: She has a Siſter, with whom ſhe has practiſed her Language more than with any body elſe; and in the Night, by laying her Hand on her Siſter's Mouth, ſhe can perceive by that what ſhe ſaith, and ſo can diſcourſe with her in the Dark. *Burnet*'s *Let.* 4. p. 248.

'Tis obſerv'd by ſeveral Authors, that *deaf* Perſons, and thoſe thick of Hearing, hear better and more eaſily if a loud Noiſe be raiſed at the Time when you ſpeak to them. Which is owing, no doubt, to the greater Tenſion of the Ear-Drum, on that Occaſion. Dr. *Willis* mentions a *deaf* Woman, who, if a Drum were beat in the Room, could hear any Thing very clearly; ſo that her Husband hired a Drummer for a Servant, that by his Means he might hold Converſation with his Wife. The ſame Author mentions another, who, living near a Steeple, could always hear very well, if there was a Ringing of 3 or 4 Bells: But never elſe. See DRUM.

DEAN, a prime Dignitary in moſt Cathedral, and Collegiate Churches; being uſually the Preſident of the Chapter. See CHAPTER.

He is call'd DEAN, *Decanus*, of the *Greek* Δεκα, Ten, as being ſuppoſed to preſide over *ten* Canons or Prebendaries, at leaſt. See PREBENDARY, &c.

We diſtinguiſh between *Deans* of *Cathedral*, and thoſe of *Collegiate Churches*. The firſt, with their Chapter, are regularly ſubject to the Juriſdiction of the Biſhop. As to *Deans* of Collegiate Churches, they have uſually the contentious Juriſdiction in themſelves, that is, they exerciſe Juriſdiction over their Canons in all Civil or Criminal Matters; tho' ſometimes this belongs to them in common with the Chapter. See COLLEGIATE and CATHEDRAL.

The Word is form'd from the Latin *Decanus*, which was applied among the *Romans* to a Perſon who had the Command over ten Soldiers; and to a petty Judge of a Decury. In Imitation whereof, the Prelates eſtabliſh'd Judges to inſpect certain Parts of their Dioceſes, under the Denomination of *Archipresbyteri*, &c. who were ſucceeded by *Decani*, or *Deans*. See *Rural* DEAN.

In *England*, as there are two Foundations of Cathedral and Collegiate Churches, the *Old* and the *New*, (the latter being thoſe founded by *Henry* the VIIIth, on the Suppreſſion of the Abbots and Priors, when their Convents were turned into *Dean* and Chapter;) ſo there are two Ways of Creating the *Deans*; Thoſe of the old Foundation, are brought to their Dignity much like a Biſhop. The Prince firſt ſending out his *Conge d'Eſtire* to the Chapter; the Chapter there chuſing, the King yielding his Royal Aſſent, and the Biſhop confirming him, and giving his Mandate to inſtal him. Thoſe of the new Foundation are inſtall'd by a ſhorter Courſe; only by the King's Letters Patents, without either Election or Confirmation.

Conſtantine, we are told, erected an Office of 950 Perſons at *Conſtantinople*, taken out of divers Trades and Profeſſions, whom he exempted from all Impoſitions, and beſtowed them on the Cathedral Church, to render the Offices of Burial *gratis* to the Defunct, particularly to the Poor. Theſe he call'd *Decani* and *Lecticarii*, probably by Reaſon they were divided by Tens; Each whereof had a Bier or Litter to carry the Bodies in: 'Tis ſuppoſed to be theſe, who under *Conſtans* began to be call'd *Copiates*, i. e. Clerks deſtined for Labour. For they are uſually rank'd among the Clerks, and even before the Chantors. By a Law of the Year 357, it appears that there were of theſe *Copiates* at *Rome*. See LECTICARII.

The Word *Dean* is alſo applied among us to divers that are the Chief of ſome peculiar Churches, or Chappels; as, the *Dean* of the King's Chappel, of *Paul*'s, of the *Arches*, of *Battel*, of *Boking*, &c.

Rural DEAN, or *Urban* DEAN, was formerly an Eccleſiaſtical Perſon, who had a Diſtrict of ten Churches or Pariſhes, either in the Country or City, within which he exerciſed Juriſdiction. Theſe *Rural* DEANS were ſometimes call'd *Archipresbyteri*, and at firſt were both in Order, and Authority, above the Arch-Deacons. They were elected by the Clergy, and by their Votes depoſed; but afterwards they were appointed, and removed, at the Diſcretion of the Biſhop: And hence they were call'd *Decani Temporarii*, to diſtinguiſh them from the Cathedral *Deans*, who were call'd *Decani Perpetui*. See *Rural Dean*.

We meet with *Rural* DEANS as early as the IXth Century. *Hincmar*, in his Capitular to his Arch-Deacons, reſerves the Right of Electing them to himſelf; and only allows it to the Arch-Deacons, in Caſe he be abſent, and by Proviſion only. Some take the *Rural Deans* to hold the Rank and Place of the *Chorepiſcopi*. Be this as it will; 'tis certain they are very ancient in *France*, *Germany*, and *England*; tho' till the End of the XVIth Century they were unknown in *Italy*, in Regard the Biſhopricks being there exceeding ſmall, they were not needed. S. *Charles Borromeo* firſt introduced them there. See CHOREPISCOPUS.

DEAN, in the ancient Monaſteries, was a Superior eſtabliſh'd under the Abbot, to eaſe him in taking Care of *ten* Monks; whence he was call'd *Decanus*, in Imitation of thoſe Officers among the *Romans*, who had ten Soldiers under them. Till the Time of St. *Benedict*, there were uſually in each Monaſtery a Provoſt, *Præpoſitus*, and ſeveral *Deans*, *Decani*, under the Abbot. In ſome Abbies, there was but one *Dean*, and he, bleſs'd by the Biſhop, as well as the Abbot himſelf. This Privilege gave him Occaſion to think himſelf in ſome Meaſure the Abbot's equal; and to ſcruple Obedience to him. St. *Benedict* was ſenſible of this Inconvenience, and to prevent it in his Order, appointed that the Monaſteries ſhould be govern'd under the Abbot by ſeveral *Deans*, whoſe Authority being thus ſhared, they would be the leſs dangerous.

The Office of the *Deans*, we have obſerved, was to have the Inſpection of ten Monks, to look to their Working, and all their Exerciſes. They were not choſe by Seniority, but Merit; and might be depoſed after three Admonitions. The Monaſteries being now leſs numerous than they were in ancient Times, the Abbot, or Prior, don't ſtand in ſo much need of being eas'd; So that *Deans* are ſet a-ſide.

DEAN *and Chapter*; Anciently, Biſhops did not ordinarily tranſact Matters of Moment *ſine Concilio Presbyterorum principalium*, who were then call'd *Senatores Eccleſiæ*, and Collegues of the Biſhops; repreſented in ſome Meaſure by our Cathedrals, whereof the *Dean* and ſome of the Prebends are, upon the Biſhop's Summons, to aſſiſt him in Ordinations, Deprivations, Condemnations, Excommunications, and other weighty Concerns of the Church. See CHAPTER.

DEARTICULATION, in Anatomy. See DIARTHROSIS.

DEATH, *Mors*, is generally conſider'd as the Separation of the Soul from the Body; in which Senſe it ſtands oppoſed to *Life*, which conſiſts in the Union thereof. See LIFE.

The Phyſicians generally define *Death* by a total Stoppage of the Circulation of the Blood; and a Ceſſation of the animal, vital, &c. Functions conſequent thereon; As, Reſpiration, Senſation, &c.

An animal Body, by the Actions inſeparable from Life, undergoes a continual Change. Its ſmalleſt Fibres become rigid, its Minute Veſſels grow into ſolid Fibres no longer pervious to the Fluids, its greater Veſſels grow hard and narrow, and every Thing becomes contracted, cloſed and bound up; whence the Dryneſs, Immobility, and Extenuation obſerved in old Age. By ſuch Means the Offices of the minuter Veſ-

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ſels are deſtroy'd, the Humors ſtagnate, harden, and at length coaleſce with the Solids. Thus are the ſubtileſt Fluids in the Body intercepted and loſt, the Concoction weaken'd, and the Reparation prevented; only the coarſer Juices continue to run ſlowly thro' the greater Veſſels, to the Preſervation of Life, after the animal Functions are deſtroy'd. At length, in the Proceſs of theſe Changes, *Death* it ſelf becomes inevitable, as the neceſſary Conſequence of Life.

But 'tis rare, that Life is thus long protracted, or that *Death* ſucceeds merely from the Decays and Impairments of old Age. Diſeaſes, a long and horrid Train, cut the Work ſhort. See DISEASE.

DEATH-*Watch*, in Natural Hiſtory, a little Inſect famous for a ticking Noiſe, like the Beat of a Watch, which the Populace have long took for a Preſage of Death, in the Family where 'tis heard; Whence it is alſo call'd *Pediculus Fatidicus*, *Mortiſaga*, *Pulſatorius*, &c.

There are two Kinds of *Death-Watches*: Of the firſt we have a good Account in the *Philoſoph. Tranſact.* by Mr. *Allen*. It is a ſmall Beetle $\frac{5}{16}$ of an Inch long, of a dark brown Colour, ſpotted; pelluced Wings under the *Vaginæ*, a large Cap or Helmet on the Head, and two *Antennæ* proceeding from beneath the Eyes, and doing the Office of Proboſcides. The Part it beats withal, he obſerved, was the extream Edge of the Face, which he chuſes to call the upper Lip, the Mouth being protracted by this bony Part, and lying underneath, out of View. Its Figure, as it appears in a Microſcope, ſee repreſented in *Tab. Natural Hiſtory Fig.* 1.

This Account is confirm'd by Mr. *Derham*, with this Difference, that inſtead of ticking with the upper Lip, he obſerv'd the Inſect to draw back its Mouth, and beat with its Fore-head. He had two, a Male and a Female, which he kept alive in a Box, ſeveral Months, and could bring one of them to beat whenever he pleas'd, by Imitating its Beating. By his ticking Noiſe he could frequently invite the Male to get up upon the other in the Way of Coition. When the Male found he got up in vain, he would get off again, beat very eagerly, and then up again: Whence the ingenious Author concludes, thoſe Pulſations to be the Way whereby theſe Inſects woo one another, and find out, and invite each other to Copulation.

The ſecond Kind of *Death-Watch* is an Inſect in Appearance quite different from the firſt. The former only beats 7 or 8 Strokes at a Time, and quicker; The latter will beat ſome Hours together, without Intermiſſion, and his Strokes are more leiſurely, and like the Beat of a Watch. This latter is a ſmall greyiſh Inſect, much like a Louſe when viewed with the naked Eye. Its Figure, as magnified, is ſeen in *Tab. Natur. Hiſt. Fig.* 2. It is very common in all Parts of the Houſe in the Summer-Months: Is very nimble in running to Shelter; and ſlie of Beating when diſturb'd. But will beat very freely before you, and alſo anſwer the Beating, if you can view it without giving it Diſturbance, or ſhaking the Place where it lies, *&c.* He cannot ſay, whether they beat in any other Thing, but never heard their Noiſe except in or near Paper. As to their Noiſe, the ſame Author is in doubt whether it be made by their Heads, or rather Snouts againſt the Paper; Or, whether it be not made after ſome ſuch Manner, as Graſhoppers and Crickets make their Noiſe. He inclines to the former Opinion: The Reaſon of his Doubt is, that he obſerved the Animal's Body to ſhake and give a Jirk at every Beat, but could ſcarce perceive any Part of its Body to touch the Paper. But its Body is ſo ſmall, and near the Paper, and its Motion in Ticking ſo quick, that he thinks it might be, yet he not perceive it.

The Ticking, as in the other, he judges to be a Wooing-Act; as having obſerved another, after much Beating, come and make Offers to the beating Inſect, who, after ſome Offers, left off Beating, and got upon the Back of the other. When they were joyn'd, he got off again, and they continued ſome Hours joyn'd Tail to Tail, like Dog and Bitch in Coition.

Whether this Inſect change its Shape, and become another Animal, or not, he cannot ſay; tho' he has ſome Cauſe to ſuſpect that it becomes a Sort of Fly. 'Tis at firſt a minute white Egg, much ſmaller than the Nits of Lice; tho' the Inſect is near as big as a Louſe. In *March* it is hatch'd, and creeps about with its Shell on. When it firſt leaves its Shell, 'tis even ſmaller than its Egg; tho' that be ſcarce diſcernible without a Microſcope. In this State 'tis perfectly like the Mites in Cheeſe: From the Mite State they grow gradually to their mature or perfect State. When they become like the old Ones, they are at firſt very ſmall; but run about much more ſwiftly than before.

DEBENTURE, a Kind of Writing, in the Nature of a Bond, firſt given in 1649, to charge the Common-wealth to ſecure the Soldier-Creditor, or his Aſſigns, the Sum due, upon Auditing the Accounts of his Arrears.

The Word is alſo uſed in the Exchequer, and in the King's Houſe, were *Debentures* are uſually given to the Servants for the Payment of their Wages, Board-Wages, and the like.

The Word is mention'd in the Act of Oblivion, 12. *Car.* II. *Cap.* II. and ſince the late Revolution, has been uſed in many Acts of Parliament, eſpecially in that which relates to the forfeited Eſtates in *Ireland*, out of which the Soldiers *Debentures* are appointed to be ſatisfied, 11. *W.* III.

DE *benè eſſe*, a *Latin* Phraſe uſed in our Law-Books: Doing, or to do a Thing, *De bene eſſe*, is to accept or allow it as well done for the preſent; But when it comes to be more fully examin'd, or tried, to ſtand or fall, to be allowed or diſallowed, according to the Merit, or Well-being of the Thing in its own Nature; or, as we ſay, *Valeat quantum valere poteſt.*

Thus, in Chancery, upon Motion to have one of the leſs principal Defendants in a Cauſe examin'd as a Witneſs, the Court (not then thoroughly examining the Juſtice of it, or not hearing what may be objected on the other Side) often orders ſuch a Defendant to be examin'd *De bene eſſe*, i. e. that his Depoſition ſhall be allowed or ſuppreſſed at the Hearing of the Cauſe upon a full Debate of the Matter, as the Court ſhall think fit; But for the preſent they have a Well-being or conditional Allowance.

DEBILITY, in a Medicinal Senſe, is a Relaxation of the Solids, which induces Weakneſs and Fainting.

DEBRUIZED, or DEBRUS'D, in Heraldry, is when we would imitate the grievous Reſtraint of any Animal, which is debarr'd its natural Freedom by any of the Ordinaries being laid over it.

Thus when a Pale, *&c.* is born upon a Beaſt in an Eſcutcheon, the Beaſt is ſaid to be *debruiſed* of the Pale.

DEBT, a Thing due, whether it conſiſt of Money, or Goods, or other Præſtations.

By our Law, *Debts* due to the King are to be ſatisfied in the firſt Place in all Caſes of Executorſhip, and Adminiſtratorſhip; and till the King's *Debt* be ſatisfied, he may protect the Debtor from the Arreſt of any other Creditor.

There are divers Kinds of *Debts*: *Active Debts*, are thoſe whereof a Perſon is Creditor: *Paſſive Debts*, thoſe whereof he is Debtor. There are alſo *Real Debts*, *Perſonal*, or *Mobiliary Debts*, and *Mixed Debts*.

Chorographary Debt, is that due by Virtue of Note, or Writing under one's Hand, and not proved in Judicature. *Hypothecary Debt*, is that due in Virtue of ſome Contract, or Condemnation. *Predicatory Debt*, is that ariſing from an Alienation of Lands, *&c.* the whole Purchaſe whereof has not been paid. *Privileged Debt*, is that which muſt be ſatisfied before all others; As, the King's Tax, *&c.*

DEBTOR, a Perſon who owes ſomething to another: In Oppoſition to Creditor, which is he to whom it is own. See CREDITOR.

DECAGON is a plain Figure in Geometry, having ten Sides and Angles.

If they be all equal to one another, it is then call'd a Regular *Decagon*, and may be inſcrib'd in a Circle.

Concerning this Figure, the chief Property is, that the Sides of a Regular *Decagon* are, in Power and Length, equal to the greateſt Segment of an Hexagon, inſcribed in the ſame Circle, and cut according to extream and mean Proportion. A Fortification alſo conſiſting of ten Baſtions, is ſometimes call'd a *Decagon*.

DECALOGUE, the ten Commandments of God, engraven on two Tables of Stone, and given to *Moſes*.

The Word is *Greek*, compos'd of δέκα, Ten, and λόγος, Word, *q. d.* Ten Words. Accordingly, the *Jews* call them עשרת הדברים *the Ten Words*, which Appellation is very ancient. Tho' the *Samaritans*, both in their *Hebrew* Text, and their Verſion, add after the 17th Verſe of the XXth Chapter of *Exodus*; and after the 21ſt Verſe of the Vth Chapter of *Deuteronomy*,

nomy, an eleventh Commandment, to build an Altar on Mount *Gerizim*, &c. But 'tis apparently an Interpolation, to authorize their having a Temple and an Altar on that Mountain, and to diſcredit, if poſſible, the Temple at *Jeruſalem*, and the Worſhip there perform'd. It muſt be added, however, that, tho' all, both Jews and Chriſtians, agree in the Number of ten Commandments; there is ſome Difference as to the Manner of dividing them.

The *Thalmudiſts*, and *Poſtellus* after them, in his Treatiſe, *de Phœnicum Literis*, ſay, that the *Decalogue*, or Ten Commandments, were engraven quite through the Tables which God gave to *Moſes*; and that notwithſtanding the Middle of the ם *Mem* final, and of the ס *Samech*, remain'd miraculouſly ſuſpended without adhering to any Thing. See the *Diſſertation on the Samaritan Medals*, printed at *Paris* in 1715. They add, that the *Decalogue* was wrote in Letters of Light, *i. e.* in Luminous, Shining Letters.

DECAMERIS, a Term ſignifying a tenth Part; us'd by Mr. *Sauveur*, and ſome other Authors, to mark and meaſure the Intervals of Sounds. The Word is form'd of δέκα, Ten, and μερὶς, Part.

DECAMERON, a Work containing the Actions, or Converſations of ten Days. *Boccaces Decameron* conſiſts of one hundred Novels related in ten Days.

DECAMP; when an Army raiſes its Camp, and departs from the Place where it lay before, they ſay, it is *decamped*.

DECANUS, among the *Romans*, an Officer who had ten other Officers, or Perſons, under his Charge; Whence our *Engliſh* Dean. See DEAN.

DECANTATION, in Chymiſtry, *&c.* the Act of pouring out a Liquor from off the *Fæces*, &c. by gently inclining the Lip or *Canthus* of the Veſſel; whence the Word is derived. See CANTHUS.

DECAPITE', in Heraldry. See DEFFAIT.

DECAPROTI, among the Ancients, were Officers who gather'd the Tributes or Taxes. The *Decaproti* were oblig'd to pay for the Dead; or, to anſwer to the Emperor for the *Quota* Parts of ſuch as died, out of their own Eſtates. *Cicero* in his Oration for *Roſcius*, calls them *Decemprimi*.

The Word comes from δέκα, Ten, and πρῶτος, firſt; probably by Reaſon the ten firſt, or principal Perſons of each Community, were choſe to make the Levies.

DECASTYLE, in the ancient Architecture, a Building with an Ordonnance of ten Columns in Front. The Temple of *Jupiter Olympius* was *Decaſtyle*. The Word is form'd of δέκα, Ten, and στύλος, Column.

DECEMBER, the laſt Month of the Year, wherein the Sun enters the Tropic of Capricorn, and makes the Winter-Solſtice. See MONTH.

In *Romulus*'s Year *December* was the 10th Month, whence the Name, *viz.* from *Decem*, Ten: For the *Romans* began their Year in *March*. The Month of *December* was under the Protection of *Veſta*. *Romulus* aſſign'd it 30 Days; *Numa* reduced it to 29, and *Julius Cæſar* to 31.

Under the Reign of *Commodus*, this Month was call'd out of Flattery *Amazonius*, in Honour of a Courtezan, whom that Prince paſſionately loved, and had got painted like an *Amazon*; but it kept that Name but during that Emperor's Life. At the latter End of the Month, they had the *Juveniles ludi*, and the Country-People kept the Feaſt of the Goddeſs *Vacuna* in the Field, having then gotten in their Fruits, and ſown their Corn; whence ſeems to be derived the Feſtival we make after Harveſt is in.

DECEMPEDA, an Inſtrument uſed by the Ancients in Meaſuring. The *Decempeda* was a Rule, or Rod divided into ten Feet; whence its Name from *Decem*, Ten, and *Pes pedis*, Foot. The Foot was ſubdivided into 12 Inches; and each Inch into 10 Digits. See FOOT. The *Greeks* call'd it δέκαπους.

It was greatly uſed both in Meaſuring of Land, like the Chain among us; and by Architects, to give the proper Dimenſions and Proportions to the Parts of their Building, which Uſe it ſtill retains. *Horace*, Lib. II. *Od.* 15. lamenting the Magnificence and Delicacy of the Buildings of his Time, obſerves, that it was otherwiſe in the Times of *Romulus* and *Cato*, that in the Houſes of private Perſons there were not then known any Portico's meaſur'd out with the *Decempeda*, nor turn'd to the *North*, to take the cool Air.

DECEMVIRI, Magiſtrates among the *Romans*, created with a ſoveraign Power, to draw up and make Laws for the People; Thus call'd by Reaſon the Power was committed to ten Perſons together.

To the *Decemviri* was given all the Legiſlative Authority ever held by the Kings, and after them by the Conſuls. One among them had all the Enſigns and Honours of the Function; and the reſt had the like in their Turn, during the Year of the *Decemvirat*. 'Twas the *Decemvirs* drew up the Law of the Twelve Tables, call'd thence the *Leges Decemvirales*, which for a conſiderable Time were the whole of the *Roman* Law. In the Year 302, the Conſuls *Appius Claudius Craſſinius*, and *T. Genucius Augurinus*, were oblig'd to abdicate; upon which the firſt *Decemviri* were created. The Year following ten new ones were appointed to ſucceed them, and in the Year 304 another Set were to have been choſen; but that the People roſe, made them lay down, and reſumed the Conſuls. The exceſſive Debauchery of *Appius Claudius Craſſinius*, one of the Conſuls, who was firſt oblig'd to abdicate, and who had been choſen firſt *Decemvir* three times, was the principal Cauſe. *Cicero de Finib.* Lib. I. *Livy*, Lib. III. *Halicarnaſſæus*, Lib. X. and *Florus*, Lib. C. 24. give the Hiſtory.

The *Decemviral* Adminiſtration, however, it is to be obſerved, had not its firſt Riſe at the Time when the Authority of the Conſuls was devolved into the Hands of the *Decemvirs*: For, during the *Interregnum* that enſued after the Death of *Romulus*, the Management of Affairs, which the Senate then took upon them, is call'd by *Halicarnaſſæus*, Lib. II. *Decemviral*, by Reaſon the Senators, divided into Tens, commanded each in their Turn: That is, one of each Ten, for 5 Days ſucceſſively, having the *Faſces*, *Lictors*, &c. like the Kings.

There were alſo military *Decemvirs*; and on divers Emergencies *Decemvirs* were created to manage and regulate certain Affairs, after the ſame Manner as Boards of Commiſſioners are now appointed. Thus, there were *Decemvirs* for Conducting Colonies; *Decemvirs* to prepare and preſide at Feaſts, in Honour of the Gods; *Decemvirs* to take Care of the Sacrifices; *Decemvirs* to keep the *Sybils* Books. Sometimes, in lieu of *Decemvirs*, they only created *Septemvirs*, or *Triumvirs*, or *Duumvirs*, &c. See QUINDECEMVIR, *&c.*

DECENNALIA, in Antiquity, Feaſts which the *Roman* Emperors held every tenth Year of their Reign, with Sacrifices, Games, Largeſſes to the People, *&c.* *Auguſtus* was the Author of this Cuſtom, which was afterwards imitated by his Succeſſors. At the ſame Time they likewiſe offer'd Vows for the Emperor, and the Perpetuity of his Empire, call'd *Vota Decennalia*. From the Time of *Anthoninus Pius*, we find theſe Ceremonies mark'd on Medals. PRIMI DECENNALES. SECVNDI DECENNALES. VOTA SOL. DECEN. II. VOTA SVSCEP. DECEN. III. Theſe Vows muſt have been made at the Beginning of every 10th Year; for on the Medal of *Pertinax*, who ſcarce reign'd 4 Months, we find VOTA DECENN. & VOTIS DECENNALIBVS.

Struvius in his *Antiq. Roman. Syntagma*, Cap. IV. is of Opinion, that theſe Vows took Place of thoſe which the Cenſor uſed to make in the Times of the Republic for the Proſperity and Preſervation thereof. In Effect, they were not only made for the Prince, but alſo for the State, as may be obſerv'd from *Dion.* Lib. VIII. and *Pliny* the Younger, *Lib.* X. *Ep.* 101.

Auguſtus's Aim in Eſtabliſhing this Feaſt, was to preſerve the Empire, and the ſoveraign Power without Offence, or Reſtraint to the People. For during the Celebration of this Feaſt, that Prince uſed to ſurrender up all his Authority into the Hands of the People, who, fill'd with Joy, and charm'd with the Goodneſs of *Auguſtus*, immediately deliver'd it him back again.

DECIDUOUS, in the general, expreſſes ſomething apt and ready to *fall*: Thus Bothaniſts ſay, in ſome Plants the *Perianthium* or *Calyx* is *deciduous* with the Flower, that is, falls off from the Plant with it; in others not. See CALIX.

DECIES *Tantum*, a Writ that lies againſt a Juror, who hath taken Money for giving his Verdict; ſo call'd from its Effect, which is to recover ten times as much as he took. It lies alſo againſt Embracers that procure ſuch an Enqueſt.

DECIL, in Aſtronomy, an Aſpect or Poſition of two Planets, when they are diſtant from each other a tenth Part of the *Zodiac*. See ASPECT.

DECIMAL *Arithmetic*, the Art of Computing by *Decimal Fractions*, firſt invented by *Joh. Regiomontanus*, and uſed by him in the Conſtruction of his *Tables of Sines*, &c. See ARITHMETIC, and DECIMAL FRACTION.

DECIMAL *Fractions* are thoſe whoſe Denominator is one, with one or more Cyphers; as, 10, 100, 1000, 10000, *&c.* Thus $\frac{5}{10}$ $\frac{6}{100}$ $\frac{7}{1000}$ *&c.* are *Decimal Fractions*. See FRACTION.

In

In the Writing of *Decimal Fractions* we uſually omit the Denominator, as only conſiſting of Unity with Cyphers annex'd: And in lieu thereof, a Point, or Comma, is prefix'd to the Numerator. Thus, $\frac{5}{10}$ is wrote .5; $\frac{46}{100}$,46; and .125 expreſſes an Hundred Twenty-Five Parts of any Thing, ſuppoſed to be divided into 1000 Parts.

In *Decimals* it is chiefly to be noted, that as Cyphers on the right Hand of Integers, do increaſe their Value *decimally*; as, 2, 20, 200, *&c.* ſo when ſet on the left Hand of Fractions, they decreaſe the Value *decimally*; as, 5., 05., 005., *&c.* but ſet on the left Hand of Integers, or on the right Hand of Fractions, they ſignify nothing; but only to fill up Places; thus, ,5000, or 0005. is but five Units.

To *reduce any Vulgar Fraction*, of ſuppoſe $\frac{5}{8}$ to a *Decimal Fraction* of the ſame Value, whoſe Denominator ſhall be 1000; ſay by the Rule of three, as 8 the Denominator of the Vulgar Fraction, is to 5 its Numerator: So will 1000, the Denominator aſſign'd, be to a 4th Term, which by Working will be found to be ,625. and therefore, $\frac{625}{1000}$, or, 625. is a *Decimal* of the ſame Value with the former Fraction $\frac{5}{8}$.

The common Operations in *Decimals* are perform'd as in the Vulgar Rules, regard being had only to the particular Notation, to diſtinguiſh the Integral from the Fractional Part of a Sum.

In *Addition, and Subſtraction of Decimals*; The Points being all plac'd under each other, the Figures are to be added, and ſubſtracted as in common Arithmetic: And when the Operation is done, ſo many Figures of the Sum, or the Remainder, are to be noted for *Decimals*, as there are the moſt Places of *Decimals* in any of the given Numbers. An Example will make this clear.

Addition of *Decimals*.		Subſtraction.
543791	59 ,271	From 67 ,9
792	15 ,040	Take 29 ,8754
6124	3 ,791	Rem. 38 ,0246
053	12 ,009	
10	7 ,5	From 25 ,1462
2	97 ,692	Take 13 ,07
2;19531		Rem. 12 ,0762

For *Multiplication of Decimals*, obſerve to cut off juſt ſo many *Decimal* Parts from the Product as there are *Decimals* in both Factors. The Work is the ſame as in Integers. Thus,

Multiplication of *Decimals*.

,1472	,365	3, 650	*Note*, In the ſecond Example, the Product only amounts to five Places; for which Reaſon a Cypher is prefix'd, to make up 6 *Decimal* Places; there being ſo many in the two Factors.
,175	,122	6,21	
7360	730	3,650	
10304	730	7300	
1472	,365	21900	
,257560	,044530	2293,650	

In *Diviſion of Decimals*, proceed in all Reſpects as in Dividing of Integers; and when the Operation is done, mark as many Places in the Quotient for *Decimals*, as, with the Number of *Decimals* in the Diviſor are equal to the *Decimal* Places of the Dividend:

,22) ,8030 (3,65
66
143
132
.110
110
..0

22) 8,030 (,365
66
143
132
110
110
..0

22) ,8030 (,365
66
143
132
110
110
...

73,2) 8321,9 (1,13
732
1002
732
2729
2196
233

But there are certain Caſes in Diviſion of *Decimals*, which require ſome further Management: As, firſt, where the Diviſor is a *Decimal Fraction*, and the Dividend an Integer; add, or annex at leaſt as many Cyphers to the Dividend, as there are Places in the Diviſor: Thus ,365) 22,0000 (60,2. For there being three Places of *Decimals* in the Diviſor, and four in the Dividend, there will be but one in the Quotient: Secondly, Where the Diviſor is a mixt Number, and the Dividend a whole Number, add as many Cyphers to the Dividend, as there are Places in the Diviſor. Thus, 3,65) 22,0000 (6,02. Thirdly, Wherever the Diviſor is bigger than the Dividend, annex Cyphers to the latter. Thus, ,365) 22,0000 (,602.

DECIMAL *Scales*, in the general, are any Scales divided *decimally*; But, particularly, certain Scales of Money, Weights, and Meaſures, made from Tables, ſo call'd, to expedite *Decimal* Arithmetic, by Shewing by Inſpection the *Decimal Fraction* of any Part of Money, Weight, or Meaſure.

DECIMATION, a Puniſhment which the *Romans* us'd to inflict on the Soldiers who had quitted their Poſt, or raiſed a Mutiny in the Camp, or behaved themſelves cowardly in the Fight; which was practiſed thus: The General aſſembled the whole Camp, then the Tribune brought to him thoſe that were guilty, and impeach'd, and reproach'd them, with their cowardly Actions and Baſeneſs in the Preſence of the whole Army: Then, putting their Names into an Urn, or Head-Piece, he drew five, ten, or twenty of them, according to their Number; and the Fifth, the Tenth, or the Twentieth, were put to the Sword, and the others ſaved. This was call'd *Decimare*, a Word of the ancient *Roman* Militia, who, to puniſh whole Legions, when they had failed in their Duty, made every tenth Soldier draw Lots, and put him to Death for an Example to the others.

DECINERS, or DECENNIERS, or DOZINERS, in the ancient Monuments of our Law, are ſuch as were wont to have the Overſight, and Check of the Friburghs, for Maintenance of the King's Peace; The Limits of whoſe Juriſdiction was call'd *Decenna*, and *Dozein*.

They ſeem to have had very large Authority in the *Saxon* Times; taking Cognizance of Cauſes within their Circuit, and redreſſing Wrongs by Way of Judgment. Thus *Briton*, "We will that all thoſe "who are fourteen Years old, ſhall make Oath, that "they will be ſufficient and Loyal to us; and neither "be Felons, nor aſſenting to Felons; and we will, that "all profeſs themſelves of this or that *Dozein*, and "make or offer Surety of their Behaviour by thoſe or "thoſe *Doziners*, except Religious Perſons, Clerks, "Knights eldeſt Sons, and Women."

A *Dozein* now ſeems only to extend ſo far as a Leet: For in Leets only this Oath is adminiſtred by the Steward, and taken by ſuch as are twelve Years old and upwards. See LEET.

DECK *of a Ship*, a Kind of planked Floor, whereon the Guns are laid, and the Men walk to and fro, ſerving as a Ceiling to ſeparate the Stories of the Ship, or other Veſſel.

Hence, a Ship is ſaid to have two or three *Decks*, when it contains 2 or 3 Stories in its Cavity. The Middling Sort of Veſſels have two *Decks*; the biggeſt three, diſtant from each other about 5 Feet. The Bottom-*Deck* is call'd the *firſt Deck*: The ſecond *Deck*, anſwering to the ſecond Story from the Ground in Houſes, to the Place of the ſecond Battery, contains an equal Number of Guns with the firſt, abating that there is none over the Stern, which is the Captain's Apartment. Before this *Deck* are the Kitchin-Offices, *&c.* In large Veſſels there is a third *Deck*, and a third Battery. Some Veſſels have likewiſe a *Half-Deck*, which reaches from the Main-Maſt to the Stern of the Ship. As alſo a *Quarter-Deck*, which is from the Steerage a-loft to the Maſter's Round-Houſe. Sometimes there is a *Spare-Deck*, which is the uppermoſt of all, being between the Main-Maſt and the Miſſen, call'd alſo the *Orlope*. A *Rope-Deck* is that made of Cordages interwove, and ſtretch'd over a Veſſel that has no *Deck*, through which 'tis eaſy to annoy the Enemy who comes to board her, and has leap'd thereon. Theſe are little uſed but in Merchant-Veſſels, to defend them from the Corſairs. See SHIP, and NAVY.

DECLAMATION, a feign'd Diſcourſe, or Speech made in public, and in the Tone and Manner of an Oration.

Among the Greeks, *Declamation* was become the Art of Speaking indifferently on all Subjects and all Sides of a Queſtion; of making a Thing appear juſt that was unjuſt, and triumphing over the beſt and ſoundeſt Reaſons. Such Sort of *Declamations* M. *de St. Evremond* obſerves, were very fit to corrupt the Mind by Accuſtoming it, to cultivate the Imagination rather than to form the Judgment, and to ſeek for Veriſimilitudes to impoſe upon, rather than ſolid Reaſons to convince.

Among us, *Declamation* is reſtrain'd to certain Exerciſes, which Scholars perform, to teach them to ſpeak in public. A *Declamation* againſt *Hannibal*, againſt *Pyrrhus*, the *Declamations* of *Quintilian*, &c. In the Colleges of the Jeſuites *Declamations* are little Theatrical or Dramatic

tic Performances, conſiſting of a few Scenes not divided into Acts, rehears'd by the Students by Way of Exerciſe, and to form them for Speaking in public. Such *Declamations* are the moſt uſeful Exerciſes perform'd in the Colleges.

DECLARATION, in Law, a Shewing in Writing the Grief and Complaint of the Demandant, or Plaintiff, againſt the Defendant, or Tenant, wherein he is ſuppoſed to have receiv'd ſome wrong. This ought to be plain and certain, both becauſe it impeacheth the Defendant, and alſo compels him to anſwer thereto.

DECLARATION is alſo us'd for a Confeſſion which the Quakers, who ſcruple taking the Oaths of Supremacy, *&c.* are oblig'd to make and ſubſcribe in lieu thereof. Its Tenor is a ſolemn Promiſe before God and the World, to be true to King *George*, with a Deteſtation and Horror of that damnable Poſition, that Princes, excommunicated by the Pope, or any other Power, may be depoſed or murther'd; and a Declaration, that no foreign Prince, or Power, has any Right, Juriſdiction, or Authority in this Kingdom.

DECLENSION, in Grammar, an Inflexion of Nouns, according to their divers Caſes; as *Nominative*, *Genitive*, &c. See CASE, NOMINATIVE, *&c.*

The *Declenſion* of Nouns is a different Thing in the modern Languages, which have not properly any Caſes; from what it is in the ancient *Greek* and *Latin*, which have.

Declenſion, with Reſpect to Languages, wherein the Nouns admit of Changes, whether in the Beginning, the Middle, or the Ending, is properly the Expreſſion of all thoſe Changes in a certain Order, and by certain Degrees, call'd *Caſes*: With Regard to Languages, wherein the Nouns do not admit of Changes in the ſame Number, *Declenſion* is the Expreſſion of the different States, or Habitudes a Noun is in, and the different Relations it has; which Difference of Relations is mark'd by Particles, call'd Articles; as, *a*, *the*, *of*, *to*, *from*, &c.

DECLENSION of a Diſeaſe, is when it is paſt its Height, and the Symptoms abate. See ACME.

DECLINATION, in Aſtronomy, the Diſtance of the Sun, a Star, Planet, or other Point of the Sphere of the World, from the Equator, either Northward, or Southward. See EQUATOR.

Declination is either *real* or *apparent*, according as the real or apparent Place of the Point is conſider'd. See PLACE.

Hence the *Declination* is an Arch of a great Circle, as GS, (*Tab. Aſtronomy Fig.* 4.) intercepted between a given Point, as S, and the Equator AQ, and perpendicular to the ſame. Conſequently, the Circle, by whoſe Arch the *Declination* GS is meaſured, paſſes through the Poles of the World. See CIRCLE of *Declination*.

The *Declination* of a Star, *&c.* is found by firſt obſerving the Altitude of the Pole as PR, (*Tab. Aſtronomy Fig.* 5.) This ſubſtracted from 90°. gives the Height of the Equator AH. Then, the Meridian Altitude of the Star, HD, being obſerved, if it be greater than the Altitude of the Equator, AH, the latter ſubſtracted from the former leaves the *Declination* Northward AD: Or, if the Altitude of the Star HT be leſs than that of the Equator HA, the former ſubſtracted from the latter leaves the *Declination* Southward TA. e. g. *Tycho* at *Vranisbourg* obſerv'd the Meridian Altitude of the *Cauda Leonis*

	HD	50°	59′	0″
Altitude of Equat.	HA	34	5	20
Declinat. therefore,	AD	16	53	40

If the Star be in the Quadrant ZR, then the leaſt Altitude MR ſubſtracted from the Altitude of the Pole PR, leaves the Diſtance from the Pole PM; which ſubſtracted again from the Quadrant PQ, leave the *Declination* MQ. e. g. *M. Couplet* obſerved PM 2° 18′ 50″ which ſubſtracted from 90° leaves MQ 87° 41′ 10″. And by this Method are conſtructed the Tables of *Declinations* of the fix'd Stars given us by *Ricciolus* and *Dechales*.

By comparing the ancient Obſervations with the modern, it appears, that the *Declination* of the fix'd Stars is variable; and that, differently, in different Stars. For in ſome it increaſes, and in others decreaſes, and that in different Quantities. The greateſt Increaſe or Decreaſe doth not exceed three Minutes and a half in 10 Years Time.

It has been greatly diſputed among the latter Mathematicians, whether or no the *Declination* and Obliquity of the Ecliptic be variable; but the Point ſeems now decided in Favour of the Immutability. See OBLIQUITY, and ECLIPTICK.

Circle of DECLINATION is a great Circle of the Sphere, paſſing through the Poles of the World: Such is PGDK, paſſing through the Poles T and K.

Parallax of the DECLINATION is an Arch of the Circle of *Declination*, whereby the Parallax of the Altitude increaſes or diminiſhes the *Declination* of the Star. See PARALLAX.

Refraction of the DECLINATION, an Arch of the Circle of the *Declination*, whereby the *Declination* of a Star is increaſed, or diminiſhed, by means of the Refraction. See REFRACTION.

DECLINATION *of the Needle*, or Compaſs, is the Variation from the true Meridian. See VARIATION *of the Needle*.

DECLINATION *of a Plane*, or Wall, in Dialling, is an Arch of the Horizon, comprehended either between the Plane, and the Prime Vertical Circle, if you account it from Eaſt to Weſt; or between the Meridian, and the Plane, if you account it from the North, or South. See DECLINER.

There are many Ways given by Authors for finding the *Declination* of Planes: The moſt handy and practical Way is by a *Declinator*. See DECLINATOR.

DECLINATOR, an Inſtrument in Dialling, whereby the Declination, Inclination, and Reclination of Planes is determined. Its Structure is as follows: On a ſquare wooden Board ABCD, (*Tab. Dialling Fig.* 1.) deſcribe a Semi-Circle AED, and divide the two Quadrants thereof AE and ED into 90 Degrees, each beginning from E, as in the Figure. Then, having fix'd a Pin in the Center F, fit a wooden Ruler HI upon the ſame, moveable thereon, with a Box and Needle K, as ſhewn under COMPASS.

Now, to apply this, in taking the Declination of a Plane, applying the Side AD of the Inſtrument to the Plane purpoſed, as MN *Fig.* 2. and move the Ruler FG, with the Compaſs G this Way and that, and about the Center F, till the Needle reſt upon the Line of the Magnetical Meridian of the Place. Now if the Ruler in this Situation cut the Quadrant in E, the Plane is either Northern or Southern: But if it cut between D and E, the Plane declines to the Weſt; or, if between AE, to the Eaſt by the Quantity of the Angle GFE.

The ſame Inſtrument will ſerve to take the Inclinations and Reclinations of Planes. To this End, inſtead of the Ruler and Needle, a Thread with a Plummet is fitted on a Pin in the Center E: Then the Side BC of the Declinator ABCD, being applied to the propoſed Plane, as IL *Fig.* 3. If the Plumb-Line FG cut the Semi-Circle AED in the Point E, the Plane is Horizontal; Or if it cut the Quadrant EL in any Point as G, then will EFG be the Angle of Inclination: Laſtly, if applying the Side AB to the Plane, the Plummet cut E, the Plane is Vertical.

Hence, if the Quantity of the Angle of Inclination be compared with the Elevation of the Pole, and Equator; it is eaſily known, whether the Plane be inclined, or reclined. See INCLINATION, and RECLINATION.

DECLINERS, or *Declining Dials*, are thoſe which cut either the Plane of the prime Vertical Circle, or the Plane of the Horizon obliquely. See DIAL.

If we conceive the Plane of the prime Vertical Circle to revolve a little upon a right Line drawn from *Zenith* to *Nadir*; The Plane will become *declining*; nor will it be any longer cut at right Angles by the Meridian, but by ſome Vertical Circle paſſing through the intermediate Points. After the like Manner a Horizontal Plane will be brought to *decline*, if revolving on the Meridian Line, one Part of it be raiſed a little towards the *Zenith*, and the other depreſs'd towards the *Nadir*.

The Uſe of *Declining* Vertical Dials is very frequent, in Regard the Walls of Houſes, whereon Dials are commonly drawn, do generally decline from the Cardinal Points. Incliners and Recliners, and eſpecially Deincliners, are very rare. See DIAL.

DECLINING, { Erect, Inclining, Reclining } *Dials*. See DIAL.

DECLIVIS, in Anatomy, a Muſcle of the Abdomen, call'd alſo *Obliquus Deſcendens*. See OBLIQUUS *Deſcendens*.

DECLIVITY. See ACLIVITY.

DECOCTION, the Act of Boiling one, or more Plants, or other Drugs, to extract the Juice out of the ſame for ſome medicinal Purpoſe.

Decoctions of Guaiac, and Sarſaparilla, are the common Drink in certain Diſeaſes. See APOZEM, and INFUSION.

Monſr.

Monſr. *Boulduc* aſſures us from his own Experience, that the Infuſions of Vegetable Purgatives act better, and produce better Effects, than their *Decoctions*; which he attributes to this, that the pureſt and moſt active Principles of thoſe Bodies are diſſipated and evaporated by Heat. *Memoires de l'Academie Royale des Sciences*, An. 1710.

DECOLLATION, *Beheading*, a Term ſeldom uſed, but in the Phraſe, *the* Decollation *of St.* John *Baptiſt*, ſignifying a Painting, wherein is repreſented the Baptiſt's Head, ſtruck off from his Trunk; Or, the Feaſt held in Honour of that Martyr.

A *French* Embaſſador at *Conſtantinople*, ſhewing the Grand Seignior a *Decollation* of St. *John*, admirably repreſented, except that the Painter had not obſerved, that when a Man is beheaded, the Skin ſhrinks back a little; The Emperor immediately ſpied the Fault in that exquiſite Performance; and to convince the Embaſſador thereof, ſent Orders for a Man to be immediately beheaded, and his Head to be brought for a Proof. *Catherinot Traite de la Peinture.*

DECOMPOSITION, in Chymiſtry and Pharmacy, the ſame Thing with *Analyſis*, or Reſolution, *viz.* the Reduction of a Body into the Principles, or component Parts it conſiſts of. See ANALYSIS, and RESOLUTION.

Decompoſition, is ſometimes taken for any Sort of Reſolution, or Separation of Parts: In Propriety, however, *Decompoſition* is a Proceſs of an Artiſt, in order to a Separation of the Heterogeneities, or Impurities from any Matter.

Tradition, founded on repeated Experiments, is a much ſurer Way of arriving at the Knowledge of the Properties of a Plant, than any chymical *Analyſis*, or *Decompoſition* of its Principles. See MEDICINE.

DECORATION, in Architecture, an Ornament in a Church, or other public Place: Or, what adorns, and enriches a Building, Triumphal Arch, *&c.* either without Side, or within. See ORNAMENT.

The Orders of Architecture contribute a great deal to the *Decoration*; but then the ſeveral Parts of thoſe Orders muſt have their juſt Proportions, Characters, and Ornaments; Otherwiſe the fineſt Order will bring Confuſion, rather than Richneſs. See ORDER.

Decorations in Churches, are Paintings, Vaſes, Feſtoons, *&c.* occaſionally applied to the Walls; and with ſo much Conduct and Diſcretion, as not to take off any Thing from the Form of the Architecture: As is much practiſed in *Italy*, at the ſolemn Feaſts.

DECORATION is particularly applied to the *Scenes* of Theatres. See SCENE.

In Opera's, and other Theatrical Performances, the *Decorations* muſt be frequently changed, in Conformity to the Subject. The Ancients had two Kinds of *Decorations* for their Theatres: The firſt, call'd *Verſatilis*, having three Sides, or Faces which were turned ſucceſſively to the Spectators: The other, call'd *Ductilis*, ſhewing a new *Decoration* by drawing, or ſliding another before it. This latter Sort of *Decoration* is ſtill uſed, and apparently with much greater Succeſs than among the Ancients, who were oblig'd to draw a Curtain whenever they made a Change in the *Decoration*; whereas on our Stage the Change is made in a Moment, and almoſt without being perceiv'd. See THEATRE.

DECORTICATION, the Peeling, or Unhuſking of Roots, Seeds, Fruits, Branches, *&c.* or the Freeing, of them from their Barks, Rinds, Huſks, or Shells. See BARK.

DECORUM, DECOR, *Decency*, is particularly uſed in Architecture, for the Suitableneſs of a Building, and the ſeveral Parts, and Ornaments thereof, to the Station, and Occaſion. *Vitruvius* is very ſevere in this Point; and gives expreſs Rules for the Appropriating, or Suiting the ſeveral Orders to their natural Characters. So, *e.g.* as a *Corinthian* Column ſhould not be ſet at the Entrance of a Priſon, or Gate-Houſe; Nor a *Tuſcan*, in the Portico of a Church; As ſome have done among us, in breach of *Decorum*. Even in the Diſpoſition of the Offices of our ordinary Houſes, we find grievous Offences againſt *Decorum*: The Kitchin being often where the Parlour ſhould be; and that in the firſt and beſt Story, which ſhould have been damned to the loweſt and worſt.

DECOUPLE, in Heraldry, the ſame as *Uncoupled*, i. e. parted, or ſever'd; Thus, a Chevron *Decouple*, is a Chevron wanting ſo much towards the Point, that the two Ends ſtand at a Diſtance from each other, or are parted, or uncoupled.

DECOURS, DECRESSANT, } in Heraldry. See DECREMENT.

DECOY, a Place made fit for Catching of wild Fowl: Hence, a *Decoy*-Duck is one that flies abroad, and lights into Company of wild ones, and being become acquainted with them, by her Allurement draws them into the *Decoy*-Place, where they become a Prey.

DECREE, a Reſolve made by a Superior Power, for the Regulating of an Inferior.

The Commerce between Soul and Body, *Fa. Mallebranch* obſerves, has no other *Vinculum*, or Connexion, but the Efficacy of the divine *Decrees*. Second Cauſes only execute the *Decrees* of Providence. The Doctrine of the *Calviniſts* infers, that God enters into Sin by a poſitive *Decree*; in that if Crimes were not ordain'd by an antecedent *Decree*, God could not foreſee the Events.

The *Decrees* of Councils, are the Laws made by them, to regulate the Doctrine and Policy of the Church. See CANON.

Decree was originally uſed by the Lawyers for any Thing ordain'd by the Prince, upon Cognizance of the Cauſe: But the Canoniſts now reſtrain the Word *Decree* to the Ordinances of Popes; as the Name *Canon* is to what is ordain'd by Councils.

The *Decrees* in Chancery, are the Determinations, or Sentences of the Lord Chancellor, upon full Hearing, and Weighing the Merits of the Cauſe. See CHANCERY.

DECREMENT, or DECRESSANT, in Heraldry, by the *French* Heralds uſually call'd *Decours*, or, *en Decours*, is the Wane, or Decreaſe of the Moon, when ſhe is receding from the Full towards the New.

In this State ſhe is call'd in Blazon, a *Moon-Decreſſant*, or, *en Decours*; Since to call it a *Creſcent*, would be improper, as that Term denotes an Increaſe. The Moon looking to the left Side of the Eſcutcheon, is always ſuppoſed to be *decreſſant*: When ſhe faces the right, ſhe is *Creſcent*, or in the *Increment*.

DECREPITATION, in Chymiſtry, a Drying, and Calcining of Salt over the Fire, continued till ſuch Time as it ceaſes to crackle. See SALT.

The Term is alſo applied to the Noiſe, or Crackling of the Salt during the Operation. The Deſign of this Operation is to free the Salt of its ſuperfluous Moiſture. But the Salt is hereby rendred ſoporous, and apt to imbate Moiſture, that unleſs it be kept very cloſe, it ſoon moiſtens again.

DECRETAL, a Reſcript, or Letter of a Pope, whereby ſome Point, or Queſtion in the Eccleſiaſtical Law is ſolved, or determined.

The *Decretals*, *Litteræ Decretales*, compoſe the ſecond Part of the Canon-Law. See CANON *Law*.

Decretals, are *Inſtituta proprie Papæ*, *Præcepta vero Regum*. They were firſt compiled into a Body by *Regino*, *Burchard*, *Anſelm*, and *Ivo*: Afterwards by *Gratian*, who lived in the Pontificate of *Eugenius* III; which latter, as being generally approv'd, is call'd, *The firſt Collection of the* Decretals. Twelve Years after, a ſecond Collection was made by *Gilbertus*, and *Alanus*, under the Name of *Volateranus*; which, beſide the *Decretals* of the former, contain'd thoſe of *Celeſtine* the IIId. The third Collection was begun by *James Major*, Arch-Deacon of *Compoſtella*, and collected out of the Regiſters of *Innocent* the IIId. It was call'd, *Romana Compilatio*; But, containing many Things not generally receiv'd, that Pope was perſuaded to employ ſome Perſon, to make a Collection by his Authority. Accordingly, *Petrus Beneventanus*, a Notary, or, as others ſay, *F. Raimond*, a Dominican, was appointed for that Work; Which is the only Collection authorized by the holy See to be read in the Schools. *Boniface* the VIIIth, in 1297, made a new Collection, under the Name of *Sextus*, containing 5 Books. *Clement* the IIId made a third, under the Title of *Clementines*; And *John* the XXIIth, under that of *Extravagantes*. See CLEMENTINES, and EXTRAVAGANTES.

All the *Decretals* attributed to the Popes before *Siricius*, in 318, are evidently ſuppoſititious. All the World allow them an Impoſture; and even ſuch as are moſt favourable to the Court of *Rome*, are oblig'd to abandon them: Tho' they have been one great means of Eſtabliſhing the Grandeur of *Rome*, and ruining the ancient Diſcipline, particularly as to Eccleſiaſtical Judgments, and the Rights of Biſhops. They are ſuppoſed by ſome, the ſpurious Off-ſpring of *Iſidore*, Arch-Biſhop of *Seville*, by Reaſon the Collection thereof bears the Name of *Iſidore Peccator*, or *Mercator*. They were firſt publiſh'd by *Riculph* Biſhop of *Mentz*, in the IXth Century.

DECUPLE, in Arithmetic, a Term of Relation, or Proportion, implying a Thing to be *ten* times as much as another. See RATIO.

DECURIO, the Chief, or Commander of a *Decury*, both in the *Roman* Army, and in the College, or Aſſembly of the People. See DECURY.

DECURIO *Municipalis*, was a Name given to the Senators of the *Roman* Colonies. See MUNICIPAL.

They were call'd *Decuriones*, by Reaſon their Court, or Company, conſiſted of *ten* Perſons. By means hereof the Cities of *Italy*, at leaſt ſuch as had Colonies, had a Share, under *Auguſtus*, in the Election of the *Roman* Magiſtrates; The *Decuriones*, or Senators of thoſe Cities, having Suffrages therein, which they ſent, ſeal'd up to *Rome*, a little before the Election.

DECURIO was alſo a Name given to certain Prieſts intended, as it ſhould ſeem, for ſome particular Sacrifices, or other religious Ceremonies; or for the Sacrifices of private Families and Houſes, as *Struvius* conjectures, who thence derives their Name. But be the Origin of the Name what it will, we have an Inſcription in *Gruter*, which confirms what we have ſaid of their Function. ANCHIALVS. CVB. AED. Q. TER. IN. AEDE. DECVRIO. ADLECTVS. EX. CONSENSV. DECVRIONVM. FAMILIAE. VOLVNTATE. Where we have a *Decurio* in the Houſe of a private Perſon, *Q. Terentius*.

DECURY, ten Perſons rang'd under one Chief, or Commander, call'd *Decurio*. See DECURIO.

The *Roman* Cavalry was divided into *Decuries*.

Romulus divided the whole *Roman* People into three *Tribes*; over each of which he appointed a Tribune: Each Tribe he ſubdivided into ten *Centuries*, with Centurions at their Heads: And each *Century* he ſubdivided further into ten *Decuries*, over each of which a Decurio commanded.

DECUSSATION, in Geometry, Opticks, Anatomy, *&c.* The Point wherein two Lines, Rays, or Nerves, *&c.* croſs, or interſect each other: Or the Action it ſelf, of Croſſing.

The Optic Nerves of both Eyes are commonly ſuppoſed to *decuſſate* e're they reach the Brain; to which *Decuſſation*, many Authors attribute it, that we ſee ſingle with two Eyes: Others deny any *Decuſſation*. See OPTIC *Nerve*, VISION, *&c.*

The Rays of Light *decuſſate* in the *Cryſtalline*, e're they reach the *Retina*. See CRYSTALLINE.

There are divers Muſcles, Membranes, *&c.* that *decuſſate*; their Fibres running over each other under greater or leſs Angles; and by that means giving both Strength and Conveniency of Motion different Ways.

DECUSSORIUM, is a Surgeon's Inſtrument, wherewith the *dura Mater* is preſſed down in the Operation of Trepanning, to ſave it from Damage.

DECYPHERING, the Art, or Act of finding the Alphabet of a Cypher, or of Explaining a Letter wrote in Cypher. See CYPHER.

Every Language has peculiar Rules of *Decyphering*. *Jaques Geſvry* has publiſhed the Principles of *Decyphering* the *French*; wherein the Rules proper to that Language are laid down. The principal, we ſhall here add as a Specimen in this Kind. As, firſt, that when a Character is found alone, it muſt either be an *A*, *Y*, or an *O*, theſe being the only Letters in the Alphabet that make Words ſingly. Secondly, the Character that occurs the oftenеſt in a Writing to be *decypher'd* is ordinarily an *E*; this being the moſt common Letter in that Language. Thirdly, To know the *U*, you muſt take the Character that is always preceeded by one certain other, which will be the *Q*. Fourthly, The *I* is alſo known by means of the *Q*, for ſince *QUE*, and *QUI*, are the only Syllables in the *French* Tongue that begin with *Q*; whenever you find a Word of three Characters, whereof the firſt is a *Q*, and the laſt is not an *E*, it muſt be an *I*. Fifthly, In all Words of two Letters, one of them is a Vowel. Sixthly, Of the three firſt Characters of a Word, one of them is a Vowel. Seventhly, The Vowels being once *decypher'd*; the Conſonants are readily found by the Connexion certain Conſonants uſually have with certain Vowels.

DEDI, in Law, a Warranty given to the Feoffee and his Heirs. See WARRANTY.

DEDICATION, the Act of Conſecrating a Temple, Altar, Statue, Place, *&c.* to the Honour of ſome Deity. See TEMPLE, ALTAR, CHURCH, *&c.*

The Uſe of *Dedications* is very ancient both among the Worſhippers of the true God, and among the Heathens. The *Hebrews* call it חנכה *hhanucha*, Initiation, which the *Greek* Tranſlators render Ἐγκαίνια, and Ἐγκαινισμὸς, *Renewing*. In the Scripture we meet with *Dedications* of the Tabernacle, of Altars, of the firſt and ſecond Temple, and even of the Houſes of private Perſons. *Numb.* VIII. 10, 11, 84, 88. *Deut.* XX. 5, 80, 88. 2d of *Kings* V. 63. 2d *Chronic.* VII. 5, 9. 1ſt *Eſdr.* VI. 16, 17. 2d *Eſdr.* XII. 27. *Pſalm.* XXIX. 1. *Hebr.* IX. 18. There are alſo *Dedications* of Veſſels and Garments of the Prieſts, and Levites, and even of the Men themſelves.

Under the Chriſtian Diſpenſation, we call thoſe Ceremonies *Conſecrations*, *Benedictions*, *Ordinations*, &c. and not *Dedications*, which is only applied to Places. See therefore, CONSECRATION, BENEDICTION, and ORDINATION.

The *Feaſt of the* DEDICATION, or rather the Feaſt-Day of the Saint, and Patron of a Church, call'd in our Law-Books, &c. *Dedicare*, was celebrated not only by the Inhabitants of the Place, but by thoſe of all the neighbouring Villages, who uſually reſorted thither. And ſuch Aſſemblies were authorized by the King. *Ad* Dedicationes, *ad Synodos*, *&c. venientes ſit ſumma Pax.*

The Cuſtom is ſtill retain'd in divers Places, under the Name of *Wakes*, or *Vigils*. See WAKE.

The Heathens had alſo *Dedications* of Temples, Altars, and Statues of their Gods, *&c.* *Nebuchodonoſar* had a *Dedication* of his Statue, *Daniel* III. 2. *Pilate dedicated* gilt Bucklers at *Jeruſalem* to *Tiberius*, *Philo de Legat.* *Petronius* would have *dedicated* a Statue to the Emperor in the ſame City. *ibid.* p. 791. *Lycophron* ſpeaks of the *Dedication* of the Temple of *Parthenope*. *Tacitus Hiſt.* Lib. IV. C. 53. mentions the *Dedication* of the Capitol, upon Rebuilding it by *Veſpaſian*, &c. Theſe *Dedications* were perform'd with Sacrifices proper to the Deity they were offer'd to; but were never practiſed without Permiſſion. Among the *Greeks*, it does not appear who gave the Permiſſion: But among the *Romans*, it was the Magiſtrate.

The Jews celebrated the *Dedication* of their Temple every Year for eight Days. This was firſt enjoyn'd by *Judas Maccabeus*, and the whole Synagogue, in the Year of the *Syromacedonian Æra* 148. *i.e.* 164. Years before Chriſt.

The Heathens had the like Anniverſaries, as that of the *Dedication* of the Temple of *Parthenope*, mention'd by *Lycophron*.

Under Chriſtianity, *Dedication* is only applied to a Church; and is properly the Conſecration thereof, perform'd by a Biſhop, with a Number of Ceremonies preſcrib'd by the Church. The Chriſtians finding themſelves at Liberty under *Conſtantine*, in lieu of their ruinous Churches, built new Ones in every Place; and *dedicated* them with a deal of Solemnity. The *Dedication* was uſually perform'd in a Synod; at leaſt they aſſembled a Number of Biſhops, to aſſiſt at the Service. We have the Deſcription of thoſe of the Churches at *Jeruſalem*, and *Tyre*, in *Euſebius*, and many others in later Writers. In the Sacramentany of *Gelaſus*, the *Dedication* of the Baptiſtery, is deliver'd ſeparately from that of the Church, which was perform'd with leſs Ceremony than at preſent.

DEDIMUS *Poteſtatem*, in Law, a Writ whereby Commiſſion is given to one, or more private Perſons for the Expedition of ſome Act belonging to a Judge. The Civilians call it *Delegatio*. It is granted moſt commonly upon Suggeſtion, that the Party, who is to do ſomething before a Judge, or in a Court, is ſo weak he cannot travel. Its Uſe is various; as, to take a perſonal Anſwer to a Bill in Chancery; to examine Witneſſes, levy a-fine, *&c.*

DEDUCTION, in Commerce, a ſubſtracting, or retrenching a little Sum payd from a greater remaining to pay. See SUBSTRACTION.

When you have made a Deduction of 300 l. which I ſent you, from the 500, which you lent me, there will only remain 200 due.

DEED, *Factum*, in Law, an Inſtrument written on Paper, or Parchment, conſiſting of three Things: *viz.* *Writing*, *Sealing*, and *Delivery*; and comprehending a Contract, or Bargain between Party and Party.

Of theſe there are two Sorts: *Deeds indented*, and *Deeds poll*; which Denominations ariſe from the Form and Faſhion thereof; the one being cut in, and out in the Top, or Side, call'd *Indented*; and the other *plain*.

A *Deed Indented*, or *Indenture*, conſiſts of two Parts, or more, (for there are *tripartite*, *quadripartite*, *ſeptempartite*, &c. *Deeds*) wherein it is expreſs'd, that the Parties thereto have to every Part thereof interchangeably ſet their ſeveral Seals. The Cauſe of their Indenting is, that, whereas the ſeveral Parties have each of them one, the *Indenture* may make it appear, that they belong to one and the ſame Contract, by their tallying. See INDENTURE.

A *Deed poll, or polled*, antiently call'd *Charta decima Parte*, or *Charta ſimplex*, is a plain *Deed*, without Indenting uſed, when the Vendor, for Example, only ſeals, and there is no need for the Vendee's Sealing a Conter-Part, by Reaſon the Nature of the Contract is ſuch, that it requires no Covenant from the Vendee. See POLL.

DEEMSTERS, or DEMSTERS. All Controverſies in the Iſle of *Man* are decided, without Proceſs-Writings, or any Charges, by certain Judges choſe from among themſelves, call'd *Deemſters*. *Cambd. Britan.* The Word is form'd from the Saxon *Dema*, Judge, or Umpire.

DEEP-*Sea Line*, in the Sea-Language, a ſmall Sea-Line to ſound withal when a Ship is in very *deep* Water at Sea.

At the End of this Line is a Piece of Lead, call'd the *deep Sea Lead*, at the Bottom of which is a Coat of white Tallow, to bring up Stones, Gravel, Shells, or the like, from the Bottom, in order to learn the Differences of the Ground; which being enter'd from Time to Time in their Books, by comparing of Obſervations, they gueſs by their Soundings, *&c.* what Coaſts they are on, tho' they cannot ſee Land. See SOUNDING.

DE *Expenſis Militum*, a Writ commanding the Sheriff to levy 4 Shillings *per* Day, to defray the Expences of a Knight of the Shire attending in Parliament. And there is a like Writ *de Expenſis Civium, & Burgenſium*, to levy 2 Shill. *per* Day for every Burgeſs in Parliament. See REPRESENTATIVE.

DE *facto*, ſomething actually done, or done indeed: In Contradiſtinction to *de Jure*, where a Thing is only ſo in Juſtice, or Equity, but not in Fact.

After the Revolution, the Retainers to the abdicated King talk'd much of the Difference between a King *de Jure*, and *de Facto*, a Prince in actual, but not legal Poſſeſſion of the Crown; and another who had the Right, but not the Poſſeſſion. The Non-Jurors ſtill hold the Chevalier for King *de Jure*; and only allow King *George* for King *de Facto*.

DEFAULT, in Law, an Offence, in omitting what a Perſon ought to do, particularly before a Court of Juſtice, at a Day aſſign'd, for which Judgment may be given againſt the *Defaulter*.

DEFECATE, a Term applied to ſome body that is purged, and clear'd of Feces, or Impurities. See FÆCES.

Diſtillations, and other Chymical Operations, are intended to ſeparate the moſt pure, and ſubtile Parts from the Feces, or Lees. See DISTILLATION.

Spirit of Wine well *defecate*, eaſily evaporates. See SPIRIT.

DEFECTION, the Act of Abandoning, or relinquiſhing of a Party, or Intereſt a Perſon had been engag'd in. The Word is form'd of the Latin *deficio*, to fail of.

DEFECTIVE, or DEFICIENT *Nouns*, in Grammar, are ſuch as want either a Number, a particular Caſe, or are indeclinable. See NOUN.

The Term *defective* is alſo applied to a Verb that has not all its Moods and Tenſes. See VERB, MOOD, *&c.*

DEFEISANCE, or DEFEIZANCE, in Law, a Condition relating to a Deed, as to an Obligation, Recognizance, or Statute, which being perform'd by the Obligor, or Recognizor, the Act is diſabled, or annulled, as if it had never been done.

The Difference between a *Proviſo*, or Condition in Deed, and a *Defeiſance*, is this, that a *Proviſo*, or Condition is annexed, or inſerted in the Deed of Grant, whereas a *Defeiſance* is uſually a Deed by it ſelf.

DEFENCE, in War, is uſed for any Thing that ſerves to preſerve, or ſcreen the Soldiers, or the Place.

The Parapets, Flanks, Caſemates, Ravelins, and Out-Works that cover the Place, are call'd the *Defences*, or Covers of the Place. See PARAPET, *&c.*

And when the Canon has beat down, or ruin'd theſe Works, ſo that the Men cannot fight under Covert, the *Defences* of the City are ſaid to be demoliſh'd.

Line of DEFENCE, is that which flanks a Baſtion, being drawn from the Flank oppoſite thereto. The *Line of Defence* ſhould not exceed a Muſket Shot, *i. e.* 120 Fathoms, or 720 Foot, or 60 *Rhinland* Perches. Indeed *Melder* allows 65; *Scheiter* 70; the Counts *de Pagan* and *Vauban* 75. There are greater *Lines of Defence*, and leſſer; call'd alſo *Raſant*, and *Fichant*.

Line of DEFENCE *greater*, or *fichant*, is a right Line, as EC, (*Tab. Fortification Fig.*3.) drawn from the Point, or Vertex of the Baſtion C to the Concourſe E of the oppoſite Flank LE, with the Courtine EA.

Line of DEFENCE *leſſer*, call'd alſo *Raſant*, and *Flanquant*, is the Face of the Baſtion continued to the Courtine, as CI.

DEFENDING is ordinarily ſynonimous with *Flanking*. Thus, we ſay, the Flank *defends* the Courtine, and the oppoſite Face of the Baſtion. This Demi-Lune Flank, or *defends* the Horn- or Crown-Work. The antient Fortifications are eaſily taken, there being nothing to *defend*, to flank them. When we ſay, Flank *defends* the Courtine, we mean, not only that it is a-ſide of the Courtine, but alſo, that it prevents the Approaches; that is, ſuch as are poſted on the Flank of a Baſtion, can ſee any that come to attack the Courtine, and can ſhoot them, or prevent their approaching it.

Inner DEFENDING-*Angle*, is the Angle CIE, made by the leſſer Line of Defence with the Courtine.

Outer DEFENDING-*Angle*, is the Angle COF, form'd by the two leſſer Lines of Defence CO, and FO.

The Lines, or Sides of the Rampart, or Wall, are *defended* by Muſkets, or Carbines, as more eaſy, cheap, and commodious than Canons.

To eſtimate how far the Fire-Arms plac'd in any Poſt will *defend*; From the Extremes of a Line, as AB (*Fig.*4.) draw Lines AC, and BD along, which the Fire-Arms are to be directed; then the Quantity of *Defence* is meaſur'd by a Perpendicular AE, intercepted between the Parallels: As is demonſtrated by Mathematicians.

Hence, firſt, If from the given Angle ABE, and right Line AB, you ſeek AE, by Trigonometry, and by Experience determine the Number of Feet anſwering to one Fire-Lock, or Soldier; the Quantity of *Defence* will be had. Secondly, The Quantities of the Lines of *Defence* are as their Lengths; provided the Lines of Direction be perpendicular thereto.

DEFENCE, in our Law-Books, is us'd for a *Prohibition*: as, in *Rot. Parl.* 21. *Edu.* III. *Cries and Defence was made throughout* England. i. e. Proclamation and Prohibition. *Salmones ponantur in* Defenſo. *Stat. Weſt.* 2. c. 47. Salmons are by that Act prohibited to be taken at certain Times. *Uſurarios* defendit *Rex* Eduardus *ne remanerent in Regno IL.* Edu. *Confeſſ.* In the Statutes of *Eduard* I. we have one, entitled, *Statutum de* Defenſione *portandi Arma*, &c. And 'tis *defended* by Law, to diſtrain on the High-Way.

The DEFENCE-*Month* is more uſually call'd *Fence-Month*. See FENCE-*Month*.

DEFENCES, in Heraldry, are the Weapons of any Beaſt; as, the Horns of a Stag, the Tuſks of a wild Boar, *&c.*

DEFENDANT, is a Term in Law, ſignifying him, who is ſued in an Action Perſonal; as Tenant is he, who is ſued in an Action Real. See PLAINTIFF.

DEFENDEMUS, in Law, a Term us'd in Feoffments, and Donations, having this Force, that it binds the Donor, and his Heirs, to *defend* the Donee, if any Man go about to lay any Servitude on the Thing given, other than is contained in the Donation. See WARRANTY.

DEFENDERS, were anciently notable Dignitaries both in the Church and State; whoſe Buſineſs was to look to the Preſervation of the public Weal, and to protect the Poor and Helpleſs, and maintain the Intereſts, and Cauſes of Churches.

About the Year 420 each Patriarchal Church began to have its *Defender*; which Cuſtom was afterwards introduced into other Churches, and continued to later Days under other Names, as thoſe of *Advocate*, and *Advouee*. See ADVOCATE, *&c.*

In the Year 407, we find the Council of *Carthage* aſking the Emperor for *Defenders* of the Number of *Scholaſtici*, i. e. Advocates who were in Office; and that it might be allowed them to enter, and ſearch the Cabinets and Papers of the Judges, and other Civil Magiſtrates, whenever it ſhould be found neceſſary for the Intereſt of the Church.

The Emperor ſtill retains the Quality of *Advocate of the Church*: And the Kings of *Great Britain* preſerve the Title of *Defender of the Faith*, granted to King *Henry* VIII. by Pope *Leo* X. on Occaſion of that Prince's Writing againſt *Luther*, and afterwards confirmed by *Clement* VII.

The Council of *Chalcedon*, *Can.* 2. calls the *Defender* of a Church Ἔκδικος. *Codin de Officiis Aulæ Conſt.* makes mention of *Defenders of the Palace*. So does *Bollandus*, *Act. S. Janu.* T. 1. p. 501. There was alſo a *Defender of the Kingdom*; Defenſor Regni; *Defenders of Cities*, Defenſores Civitatis; *Defenders of the People*; Defenſores Plebis; *Of the Poor*, *Fatherleſs*, *Widows*, &c.

DEFENDER *of the Faith*, a Title, or Quality attributed to the Kings of *England*, as that of *Catholicus* to the Kings of *Spain*, *Chriſtianiſſimus* to the Kings of *France*, and *Advocatus Eccleſiæ*, to the Emperor. See TITLE, QUALITY, KING, *&c.*

It was firſt granted by Pope *Leo* X. to King *Henry* VIII. on Account of his Writing againſt *Martin Luther*, in Defence of the Church of *Rome*: And the Bull for the ſame bears Date *quinto Idus Octobris* 1521. See TITLE.

DEFENSITIVE, in Medicine, and Chirurgery, a Bandage, Plaſter, or the like, uſed in the Cure of a Wound,

Wound, to moderate the Violence of the Pain, the Flux of Blood, and the Acceſs, and Impreſſion of the external Air.

The Cauterization perform'd, the Wound is cover'd with Lint ..... and the Eye with a *Defenſitive*, and a Triangular Compreſs. *Dionis*.

For the firſt dreſſing of the Entorſe, Mr. *Dionis* uſed a little *Defenſitive* made of the White of an Egg, *Oleum Roſatum*, and Alumn-Powder.

DEFERENS, *Deferentia*, in Anatomy, is applied to certain Veſſels of the Body, appointed for the Conveyance of Humours from one Place to another.

The *Vaſa* DEFERENTIA, are the Veſſels that convey the Seed as faſt as it is ſecreted, and prepar'd in the Teſticles, *&c.* into the *Veſiculæ ſeminales*, there to be depoſited, till an Emiſſion is requir'd. See SEED.

Some call them the *Ejaculatory Veſſels*. They are white, nervous, and round, ſituate partly in the *Scrotum*, and partly in the Abdomen. See GENERATION.

DEFERENT, or *Deferens*, in the ancient Aſtronomy, a Circle invented to account for the Excentricity, Perigee, and Apogee of the Planets.

As the Planets are found differently diſtant from the Earth at different Times, it was ſuppoſed, that their proper Motion was perform'd in a Circle, or Ellipſis, which is not concentric with the Earth; And this excentric Circle, or Ellipſis, they call'd the *Deferens*, becauſe paſſing through the Center of the Planet, it ſeem'd to ſupport, or ſuſtain it in its Orbit.

The *Deferens* is ſuppoſed differently inclin'd to the Ecliptic, but in none more than 8 Degrees, excepting that of the Sun, which is in the Plane of the Equator it ſelf, and is cut differently by the *Deferents* of the other Planets in two Places, call'd *Nodes*.

In the *Ptolomaic* Syſtem, the ſame *Deferent* is alſo call'd the *Deferent of the Epicycle*, becauſe it traverſes the Centre of the Epicycle, and ſeems to ſuſtain it. See EPICYCLE, PTOLEMAIC, &c.

DEFICIENT *Numbers*, are ſuch whoſe Parts added together make leſs than the Integer, whoſe Parts they are. *E. gr.* 8, whoſe Quota-Parts are 1, 2, and 4, which together only make 7. See ABUNDANT *Number*.

DEFICIENT *Hyperbola*, is a Curve of that Denomination, having only one Aſymptote, and two Hyperbolic Legs, running out infinitely towards the Side of the Aſſymptote, but contrary Ways. See CURVE.

DEFFAIT, or *Decapité*, a Term uſed by the *French* Heralds, to denote a Beaſt, whoſe Head is cut off ſmooth; in which it differs from *Eraſed*, where it is, as it were, torn off, and the Neck left ragged. See ERASED.

DEFILE, in Fortification, is a ſtreight narrow Lane, or Paſſage, through which a Company of Horſe, or Foot, can paſs only in File, by making a ſmall Front, ſo that the Enemy may take an Opportunity to ſtop their March, and to charge them with ſo much the more Advantage, in Regard that the Front and Rear cannot reciprocally come to the Relief of one another.

Hence, to go off File by File, is call'd *Defiling*. The Army began to *defile* on the left, and was forc'd to *defile* at each End of the Field, by Reaſon of the Moraſſes, and the Woods. The Word is form'd from the French *deffiler*, to unthread, or unſtring.

DEFINITE, in Grammar, is applied to an Article, or a Tenſe of a Verb, that has a preciſe, determinate Signification. See ARTICLE, TENSE, *&c.*

Such are, the Article *the* in Engliſh, *le* and *la* in French, *&c.* which fix, and aſcertain the Noun they belong to, to ſome particular; as, *the* King, *le* Roy; whereas in the Quality, *of* King, *de* Roy, the Articles *of*, *de*, mark nothing preciſe, and are therefore call'd *Indefinite*. *I have loved*, is a *Preter-Perfect Definite*. See VERB.

DEFINITION, in Philoſophy, Logic, *&c.* an Enumeration of the chief ſimple Idea's, whereof a compound Idea conſiſts; in order to aſcertain, or explain its Nature, and Character. See IDEA.

The Schoolmen give very imperfect Notions of *Definition*. Some define it the firſt Notion, or Conception, that ariſes of a Thing, whereby it is diſtinguiſh'd from every other, and from which, all the other Things that we conceive of it, are deduced. But the uſual Doctrine is, *Oratio explicans quod res eſt*, A Diſcourſe explaining what a Thing is: That is, as they further explain it, A Diſcourſe conveying thoſe Attributes which circumſcribe, and determine the Nature of a Thing. For to explain, is only to propoſe the Parts ſeparately, and expreſsly, which were before propos'd conjunctly, and implicitly; ſo that every Explication has regard to ſome Whole.

Hence, according to the divers Kinds of Parts in any Thing, *viz.* Phyſical Parts, Metaphyſical Parts, *&c.* ariſe ſo many divers Kinds of *Definitions* of the ſame Thing; Thus, *Man* is either *defined* an *Animal, conſiſting of Soul and Body*; Or, *a reaſonable Animal*, &c.

Definitions are of two Kinds; The one *Nominal*, or, *of the Name*: The other *Real*, or, *of the Thing*.

DEFINITION *of the Name*, or *Nominal Definition*, is that which explains the Senſe, or Signification affected to a Word: Or, as *Wolfius* more accurately conſiders it, an Enumeration of certain Marks, or Characters, ſufficient to diſtinguiſh the Thing *defined* from any other Thing; ſo to leave it out of doubt, what the Subject is intended, or denoted by the Name. Such is the *Definition* of a Square, when it is ſaid to be a quadrilateral, equilateral, rectangular Figure.

By *Definition of the Name*, is either meant a Declaration of the Idea's, and Characters affected to the Word in the common Uſage of the Language; or the peculiar Idea's, *&c.* which the Speaker thinks fit to denote by that Word; *i. e.* the ſpecial Senſe wherein he propoſes to uſe it, in his future Diſcourſe. For it may be obſerved, that the Significancy of any Word depends intirely on our Will; and we may affix what Idea we pleaſe to a Sound, which it ſelf ſignifies nothing at all. The *Definition* of the Name therefore, in the ſecond Senſe, is merely arbitrary; and ought never to be call'd in Queſtion; Only 'tis to be minded, that we keep inviolably to the ſame Signification. Hence, a *Definition* comes to ſtand, or to be made Uſe of, as an undoubted, or ſelf-evident Maxim, as it frequently does, and particularly among Geometricians, who, above all other People, make Uſe of ſuch *Definitions*.

Not that we mean, that after having *defined* a Thing ſo and ſo, there is nothing in our Idea affix'd to the *defined* Term, but muſt be granted to the Thing it ſelf: Thus, If any one ſhould define *Heat* to be a Quality in certain Bodies, like that which we feel upon the Application of Fire, or hot Bodies; no Man could find Fault with the *Definition*, as far as it expreſſes what he means by the Word *Heat*; but this does not hinder us from denying, that there is any Thing in the Body that warm us, like what we feel in our ſelves.

DEFINITION *of a Thing*, or *Real Definition*, is properly an Enumeration of the principal Attributes of a Thing, in order to convey, or explain its Nature. Thus a *Circle* is *defined* a *Figure, whoſe Circumference is every where equidiſtant from its Centre.*

A good Author, *Wolfius*, defines a *Real Definition* to be a diſtinct Notion explaining the *Geneſis* of a Thing, that is, the Manner wherein the Thing is made, or done: Such is that of a Circle, whereby 'tis ſaid *to be form'd by the Motion of a right Line round a fix'd Point*. On which footing, what was before inſtanc'd as a *Real Definition* of a Circle, amounts to no more than a nominal one.

This Notion of a *Real Definition* is very ſtrict and juſt; and affords a ſufficient Diſtinction between a *real*, and a *nominal* one. But, tho' it has the Advantages of Analogy, Diſtinctneſs, and Conveniency on its Side; yet, being only it ſelf a *Nominal Definition*, i. e. a *Definition* of the Term *Real Definition*, we muſt conſider it in that Light, that is, as an Idea affix'd arbitrarily to that Word, and which the Author always denotes by that Word in the Courſe of his Book. But, in Effect, 'tis not the uſual Senſe, or Acceptation of the Term; which is much leſs convenient and diſtinct. And 'tis to that uſual Acceptation we are here chiefly to have regard.

A *Definition* is uſually divided into *accurate*, and *inaccurate*; The firſt is what we ſtrictly call a *Definition*; The ſecond, we diſtinguiſh under the Name of *Deſcription*. See DESCRIPTION.

Of the Parts enumerated in a *Definition*, ſome are common to other Things beſide the Thing *defined*; Others peculiar thereto: The firſt are call'd the *Genus*, or *Kind*; and the ſecond, the *Difference*. Thus, in the former *Definition* of a Circle, by a Figure whoſe Circumference is every where equidiſtant from its Centre: The Word *Figure* is the *Kind*, as being a Name common to all other Figures, as well as the Circle: The reſt are the *Difference*, which ſpecify, or diſtinguiſh the Circle from every other Figure.

And hence ariſes that Recipe of *Fa. de Colonia*, for the making of a *Definition*. Take, ſays he, ſomething that is common to the Thing *defined* with other Things, and add to it ſomething that is proper, or peculiar to the Thing; and you will have a *Definition*. Thus, *e. gr.* Rhetoric is defin'd *the Art of Speaking well*; For that it is an *Art*, is common to it with ſeveral other Things; but that it is the Art of *Speaking well*, is peculiar to it alone.

There are three common Rules of a good *Definition*. Firſt, That it be *clear*, and more eaſy and obvious than the Thing *defined*. Secondly, That it be *univerſal*, or adequate to the Thing *defined*; That is, that it agree

to all the Things contain'd in the Species *defined*. And Thirdly, That it be proper to the Thing *defined*. The two ordinary Defects of *Definitions*, are, not to agree either to the *whole Thing*, or the *ſole Thing* defined: *Neque omni, neque ſoli*; than which nothing is more common, even among the beſt and juſteſt Authors.

My Lord *Bacon* obſerves of *Ariſtotle*'s *Definitions* in the general, that they are very much like that, whereby Man ſhould be *defined* an *Animal that tills the Ground*. Nor was his Maſter *Plato* leſs acceptionable. The Joke put upon him on that Account is famous: *Plato*, it ſeems, had *defined* Man, *Animal Bipes, & Implume*, A two-footed Animal without Feathers. Upon which, *Diogenes* the *Cynic*, a great Derider of the Academicks, threw a Cock ſtrip'd of his Feathers, and quite naked, into the Middle of *Plato*'s School; crying, *Here is* Plato's *Man*.

Definition, it muſt be obſerved, has not place every where: It has only to do with compound Ideas; as being no more than an Enumeration of the chief ſimple Ideas they are compounded of. Simple Ideas cannot be *defined*, as not allowing of an Enumeration. He who knows not what it is one calls *Heat*, will only learn it by Experience, or ſome ſynonymous Word, or ſome Word of an other Language, or by Circumlocution, whereby a Thing is ſhewn, not *defined*; As if we ſhould ſay, it was a *Senſation which we find when we ſit by the Fire, or in the Sun*, which ſhews nothing of the Nature of the Thing; nor would a Perſon that had never felt the Senſation, underſtand any more what is meant thereby, than a Man born blind would know what a green Colour was, by telling him it was the Senſation we have when we behold the Graſs in the Field.

Our *Definitions* of Subſtances, it muſt be added, are very defective. And as for Individuals, we have no *Definitions* at all. The Ideas of Subſtances are compounded of the various ſimple Ideas joyntly impreſs'd when they preſented themſelves; And all we can do to *define* them, is only to enumerate thoſe ſeveral ſenſible Ideas, as Colour, Denſity, Malleability, Weight, *&c.* Thus, Gold is *defined* by ſuch a peculiar Colour, Gravity, *&c.* Yet ſuch *Definitions* may raiſe an Idea clear enough of that Subſtance in the Mind of one who has ſeparately receiv'd, by his Senſes, all the ſimple Ideas that are in the Compoſition of the Complexion *defined*; Tho' the intimate Nature and Eſſence of Subſtance is unknown, and conſequently cannot be *defined*. Thus, 'tis only the Modes, or Attributes that can be explain'd by what we properly call a *Definition*. See SUBSTANCE, MODE, *&c.*

DEFINITION, in Rhetoric, is defined by *Tully*, a ſhort, comprehenſive Explanation of a Thing.

The *Definitions* of the Orator, it muſt be obſerv'd, differ much from thoſe of the Logician, and Philoſopher: Theſe latter *define* a Thing cloſely and driely by *Genus*, and Difference, e. gr. *Man is a reaſonable Animal*, &c. The Orators take a larger Compaſs, and *define* Things more ornamentally from the Places of Rhetoric; Thus: *Man is a curious Work of an Almighty Creator, fram'd after his own Image, endued with Reaſon, and born to Immortality*. But this Rhetorical *Definition*, in Strictneſs, comes nearer to the Nature of a Deſcription, than an accurate *Definition*.

There are divers Kinds thereof; As, firſt, That drawn from the Parts whereof a Thing conſiſts: Thus, *Oratory is an Art conſiſting of Invention, Diſpoſition, Elocution, and Pronunciation*. Secondly, From the Effects; As, *Sin is the Plague of the Soul, the Sting of Conſcience, the Scandal of Nature, the Ruin of the World, the Hatred of God*, &c. Thirdly, From Affirmation, and Negation, as when we firſt ſay what a Thing is not, that it may be the better conceiv'd what it is. Thus *Cicero*, by *Defining* the Conſulate, and ſhewing, that it does not conſiſt in Enſigns, Lictors, *&c.* but in Virtue, proves that *Piſo* was not Conſul. Fourthly, From the Adjuncts, as when Chymiſtry is *defined*, An *Art without Senſe, whoſe Beginning is Deceit; its Middle, Labour; and its End, Beggary*. And laſtly, From Similies, and Metaphors; as when Death is *defined*, A *Leap in the Dark*, &c.

To this laſt Claſs of Metaphorical *Definitions*, are reducible thoſe five not unelegant *Definitions of a Man* which we ſhall here ſubjoyn. The Poets feign, that the Sciences were once called together by *Minerva*'s Command, to form a *Definition* of Man. The firſt, *viz.* Logic, *defined* him, A *ſhort Enthymeme*; his Birth the Antecedent, and his Death the Conſequent. Aſtronomy *defined* him, A *changeable Moon*; which never continues in the ſame State. Geometry *defined* him, A *Spherical Figure*; which ends in the ſame Point where it begun. Laſtly, Rhetoric *defined* Man, An *Oration*; whoſe Exordium was to be born; Narration, *Trouble*; and Peroration, *Death*; the Figures of the Oration being Sighs, Tears, or Joy, worſe than Tears.

DEFINITOR, a Term uſed in ſeveral Religious Orders, for an Aſſeſſor, or Counſellor of a General, or Superior. See GENERAL.

In moſt Orders of Religious, the *Definitor* takes Place after the Superior of the Convent he lives in, when in the Convent itſelf; but out of the Convent, the *Definitor's* Place is before his own Superior.

Definitors are alſo ſubject, in the Convent they reſide in, to the immediate Superior of the Convent, as to Things relating to the Monaſtic Diſcipline; but in nothing elſe.

DEFINITIVE, is applied to ſomewhat that terminates or decides a Queſtion, or Proceſs.

The Houſe of Lords have paſs'd a Definitive *Sentence on ſuch a Cauſe. The Church has given a* Definitive *Judgment on ſuch an Article of Faith*. The Word is uſed in Oppoſition to *Proviſional*, and *Interlocutory*. See PROVISIONAL, *&c.*

DEFLAGRATION, in Chymiſtry, the Inkindling, or ſetting Fire to a Salt, a Mineral, or other Matter, mix'd for that Purpoſe with a ſulphureous one, in order to purify it; As is done in the Preparing of *Æthiops* Mineral, *Sal Prunellæ*, &c.

The Word is form'd of the Latin *de*, and *flagrare*, to burn.

DEFLECTION, is the turning any Thing a-ſide from its former Courſe, by ſome adventitious Cauſe; and is often apply'd to the Tendency of a Ship from her true Courſe, by the Reaſon of Currents, *&c.* which divert her, and turn her out of her right Way.

DEFLECTION *of the Rays* of Light, is a Property which Dr. *Hook* obſerved 167$\frac{4}{5}$, and read an Account of before the Royal Society, *March* 18. the ſame Year. He ſays, he found it different both from Reflection, and Refraction; and that it was made towards the Surface of the opacous Body perpendicularly.

This is the ſame Property which Sir *Iſaac Newton* calls *Inflection*. See INFLECTION.

DEFLORATION, or *Deflowering*, the Act of taking away a Woman's Virginity. Death, or Marriage, are decreed by the Civil Law in Caſe of *Defloration*. Many Anatomiſts make the *Hymen* a real Proof of Virginity, perſuaded that where it is not found, the Girl muſt have been *deflowered*. See HYMEN, and VIRGINITY.

The Ancients had ſo much Reſpect for Virgins, that they would not put them to Death, till they had firſt procured them to be *deflower'd*. The Natives of the Coaſt of *Malabar* pay Strangers to come and *deflower* their Brides.

Among the *Scots*, and the Northern Parts of *England*, it was a Privilege of the Lords of the Manour, granted them by King *Evenus*, that they ſhould have the firſt Nights Lodging with their Tenants Wives. King *Malcolm* allowed the Tenants to redeem this Service at a certain Rate, call'd *Marchetta*, conſiſting of a certain Number of Cows. *Buchanan* ſays, it was redeem'd with half a Mark of Silver. The ſame Cuſtom had Place in *Flanders, Friſeland*, and ſome Parts of *Germany*.

By the Cuſtom of *Anjou*, and *Maine*, a Maid after 25 Years of Age, may ſuffer herſelf to be *deflowered* without being diſinherited for it by her Father. *Du Cange* quotes an Arret of the 19th of *March* 1409, obtain'd by the Inhabitants of *Abbeville* againſt the Biſhop of *Amiens*, for taking Money to diſpenſe with an Injunction he had made, not to ſuffer them to get their Wives Maiden-Heads the three firſt Nights; The Injunction being founded on a Canon of the IVth Council of *Carthage*, which decrees the ſame, out of Reverence to the Matrimonial Benediction.

DEFLUXION, a Falling, or Flowing of a Humour on any Part of the Body; as of Rheum on the Trachea, and Oeſophagus in a Catarrh. See FLUXION, HUMOUR, *&c.*

DEFLUXIONS *on the Lungs* are very dangerous. See PHTHISIS.

DEFLUXIONS *on the Eyes* produce a Weakneſs of Sight, and frequently Blindneſs. See EYE.

The Word is form'd from the Latin *Defluo*, I flow down, the Humors falling upon ſome Part, where they are gather'd together.

DEFORCEMENT, in Law, a Withholding Lands, or Tenements, by Force, from the right Owner. See DEFORCEOR.

DEFORCEOR, or DEFORCIANT, one that overcomes, and caſts out another from his Lands, *&c.* by mere *Force*.

A *Deforceor* differs from *Diſſeiſor*, firſt, in this, that a Man may diſſeiſe without Force. Secondly, in that a Man may *deforce* another that never was in Poſſeſſion,

as where ſeveral Perſons have a Right to Lands, as common Heirs, and one entring firſt, keeps out the reſt. See DISSEISOR.

Again, a *Deforceor* differs from *Intruder*, in that a Man becomes *Intruder* by a wrongful Entry only into Lands void of a Poſſeſſor; whereas a *Deforceor* holds out the rightful Heir. See INTRUSION.

DEFORMITY, a diſpleaſing, or painful Idea excited in the Mind on Occaſion of ſome Object, which wants of that Uniformity, that conſtitutes *Beauty*. See BEAUTY.

'Tis an Inquiry of ſome Delicacy, and Importance, whether there be any ſuch Thing as *abſolute Deformity*. Our Perception of the Idea's of *Beauty*, and Harmony is juſtly reckon'd a *Senſe*; From its Affinity to the other Senſes, in this, that the Pleaſure does not ariſe from any Knowledge of Principles, Proportions, Cauſes, Uſes, &c. but ſtrikes at firſt View; as alſo in this, that the Ideas of Beauty, like other ſenſible Ideas, are neceſſarily pleaſant to us, as well as immediately. See SENSE.

But, as the other Senſes, which give us Pleaſure, do alſo give us Pain; does this Senſe of Beauty make any Objects diſagreeable to us, and the Occaſion of Pain?

That many Objects give no Pleaſure to our Senſe, is obvious; many are certainly void of Beauty: But then, ſays a late excellent Author, there is no Form which ſeems neceſſarily diſagreeable of it ſelf, when we dread no other Evil from it, and compare it with nothing better of the Kind. Many Objects are naturally diſpleaſing, and diſtaſteful to our external Senſes, as well as others pleaſing, and agreeable; as Smells, Taſtes, and ſome ſeparate Sounds: But for our Senſe of Beauty, no Compoſition of Objects, which give not unpleaſant ſimple Ideas, ſeems poſitively unpleaſant, or painful of it ſelf, had we never obſerv'd any Thing better of the Kind.

Deformity, then, is only the Abſence of Beauty, or a Deficiency in the Beauty expected in any Species: Thus bad Muſic pleaſes Ruſticks, who never heard any better; and the fineſt Ear is not offended with tuning of Inſtruments, if it be not too tedious, where no Harmony is expected: And yet much ſmaller Diſſonancy ſhall offend amidſt the Performance, where Harmony is expected. A rude Heap of Stones is no way offenſive to one who ſhall be diſpleaſed with Irregularity in Architecture, where Beauty was expected. And had there been a Species of the Form, which we now denominate *ugly*, or *deformed*, and had we never ſeen, or expected greater Beauty, we ſhould have receiv'd no Diſguſt from it. Tho' the Pleaſure would not have been ſo great in this Form as in thoſe we now admire. Our Senſe of Beauty ſeems deſign'd to give us poſitive Pleaſure; but not poſitive Pain, or Diſguſt, any further than what ariſes from Diſappointment.

There are indeed many Faces which at firſt View are apt to raiſe Diſlike. But this is generally not from any poſitive *Deformity*, which of it ſelf is poſitively diſpleaſing, but either from Want of expected Beauty, or from the carrying ſome natural Indications of morally bad Diſpoſitions, which we all acquire a Faculty of diſcerning in Countenances, Airs, and Geſtures. That this is not occaſion'd by any Form poſitively diſguſting, appears hence, that if upon long Acquaintance we are ſure of finding Sweetneſs of Temper, Humanity, and Cheerfulneſs, tho' the bodily Form continues, it ſhall give us no Diſguſt. There are Horrors rais'd by ſome Objects, which are only the Effect of Fear for our ſelves, or Compaſſion towards others, when either Reaſon, or ſome fooliſh Aſſociation of Ideas makes us apprehend Danger, and not the Effect of any Thing in the Form it ſelf. For we find, that moſt of thoſe Objects, which excite Horror at firſt, when Experience, or Reaſon has removed the Fear, may become the Occaſion of Pleaſure; as in ravenous Beaſts, a tempeſtuous Sea, a craggy Precipice, a dark ſhady Valley, &c.

This Aſſociation of Ideas makes many Objects beautiful and pleaſant. The Beauty of Trees, their cool Shades, and their Aptneſs to conceal from Obſervation, have made Groves, and Woods, the uſual Retreat of thoſe who love Solitude, eſpecially the Religious, the Penſive, the Melancholy, and the Amorous: And do not we find, that we have ſo joyn'd the Ideas of thoſe Diſpoſitions of Mind, with thoſe external Objects, that they always occur to us along with them? And according as the Habits, or Paſſions contracted, or gratified therein give us Pleaſure, or Pain, Remembrance is pleaſurable, or painful. The Dim Light in *Gothic* Buildings has had an Aſſociation of a very foreign Idea, which *Milton* expreſſes in his Epithet, *A dim religious Light*. After the like Manner, the caſual Conjunction of Ideas give us Diſguſts where there is nothing diſagreeable in the Form it ſelf. And this, in Effect, is the Cauſe of moſt of our fantaſtic Averſions to the Figures of divers Animals, &c. Thus Serpents of all Kinds, and many Inſects, really beautiful enough, are beheld with Averſion by many People, who have got ſome accidental Ideas aſſociated to them. See ASSOCIATION *of Ideas*.

DEFTARDAR, or DEFTERDER, the Treaſurer of the Revenues of the *Turkiſh*, and *Perſian* Empire. See TREASURER.

Meninski calls him *Supremus Theſaurarius*, High Treaſurer; and *Præſes Cameræ*, Preſident of the Exchequer; And *Caſtellus* makes him the Keeper, and Comptroller of the Books of Receipt, and Payment.

The *Deftardar*, or as *Vigenere* calls him, the *Dephterder*, has in his Charge the Rolls, and Accounts of the Militia, and the Treaſury; He receives all the Grand Seignior's Revenues, pays his Forces, and furniſhes the Expences of all public Affairs: In which, his Office differs from that of the *Chaznadar*, who is Treaſurer of the *Seraglio*, or Court, as the *Deftardar* is of the State.

Ricaut makes a *Deftardar* in each *Beglierbic*, or Government. *Vigenere* aſſures us, there are but two, the one for *Europe*, and the other for *Aſia*; The firſt reſides at *Conſtantinople*, and has under him two General Commiſſioners, or Deputies, one for *Hungary*, *Tranſylvania*, *Walachia*, *Croatia*, *Servia*, *Bulgaria*, *Boſnia*, &c. The other for *Greece*, and the *Morea*, with the Iſlands of the *Archipelago*.

Each of theſe has under him as many Sub-Commiſſioners, or Agents, as there are Saniaquats in his Province; which Sub-Commiſſioners have as many Clerks as there are Sabaſſi's in their Saniaquat, to keep the Account of the Timariots in their Diſtricts. The *Dephterder* of *Aſia* has two General Commiſſioners, the one for *Anotolia*, the other for *Syria*, *Arabia*, and *Egypt*; who have likewiſe their Sub-Commiſſioners, Clerks, &c. as thoſe of *Europe*.

The Word is compounded, firſt, of דפתר *defter*, a *Turkiſh* Name for a Book, Regiſter, Memoir, &c. which *Meninski* derives from the *Greek* διφθέρα, Skin, Parchment: The ſecond Word, whereof *Deftardar* is compounded, is דאר *dar*, a *Turkiſh*, and *Perſian* Word, ſignifying keeping, or holding, *q. d.* Book-keeper of the Monies receiv'd, and expended.

DEGENERATION, the Act of failing, or declining from a more perfect, or valuable Kind, or Condition, to a leſs.

'Tis a great Diſpute among Naturaliſts, whether or no Animals, Plants, &c. be capable of *degenerating* into other Species. The Affirmative being urged by many as a ſtrong Objection againſt the Plant, &c. being contain'd in the Seed; and the Doctrine of Generation, wherein that is ſuppoſed.

Fortun. Licetus, Lib. IV. *de Spont. vivent. ort.* expreſsly contends, that the Forms of Animals *degenerate* into other more imperfect ones: Thus, ſays he, the Soul of a Calf, after its Death, *degenerates* into the Souls of the Worms, Bees, &c. ariſing out of his Carcaſs; But the other School-Men laugh at the Notion.

Others hold, that in the ſame Matter there are divers Forms; and that *Degeneration* is only the putting off one Form, and calling forth another latent one: But it is impoſſible, the Form of a Worm, and that of a Calf, ſhould be actually exiſting together in the ſame Piece of Matter. See FORM.

Others hold, that the *Degeneration* only obtains in Vegetables, and define it the Change of a Plant of one Kind into that of another viler Kind. Thus, ſay they, Wheat *degenerates* into Tares; Oats into *Avena*, or wild Oats; *Ocymum* into *Serpyllus*; *Siſymbrium* into Mint; *Caulis* into *Rapa*, &c.

The Plantule, or *Stamen* of the future Vegetable, they hold to exiſt in the Seed; ſo as that to produce ſuch a *Plexus*, or Organiſm, a Matter ſo and ſo prepar'd is requir'd: And add, that the Matter in the Soil where the Seed is lodged being ſuch as is incapable of producing the ſaid *Plexus*, it muſt neceſſarily change into another of a different Nature from that of the Seed requir'd, tho' in ſome Reſpects alike, and approaching thereto: Thus, Tares and Wheat, in many Reſpects agree; ſo alſo *Serpyllus* and *Ocymum*, &c. They allow, however, that there is no *Degeneration* in the Root, but only in the Seed: In as much as the Root already ſuppoſes a perfect Organization.

But our lateſt and beſt Naturaliſts maintain ſuch a *Degeneration*, or Tranſmutation, to be a *Chimera*: Not but they allow, that a Plant, by being tranſplanted to an improper Soil, or Sun, may be depraved; ſo as a Florid *Caulis*, e. g. may produce only a *Braſſica Capitata*; and a *Dutch Roſe* of an hundred Leaves, another Roſe far ſhort thereof in Number of Leaves, Colour, Smell, &c. ſuch a Depravation is poſſible, and frequently happens, but

but a ſpecific Transformation ſeems out of the Power of Nature; a new Form ever ſuppoſing a new Generation, which again ſuppoſes a Corruption of the former Kind. See TRANSFORMATION, and SEED.

DEGLUTITION, in Medicine, the Act of ſwallowing the Food. See FOOD.

Deglutition is perform'd, in the firſt place, by means of the Tongue, driving the Aliment into the *Oeſophagus*, or Gullet; and then, by the Contraction of the Sphincter, and the fleſhy Fibres of the ſame *Oeſophagus*, which leſſening the Bore, or Aperture thereof, protrude the Contents downwards into the Stomach. See OESOPHAGUS, PHARYNX, DIGESTION, *&c.*

Deglutition ſucceeds *Maſtication*, and is followed by Concoction. See MASTICATION, and CONCOCTION.

DEGRADATION, in our Law-Books call'd DISGRADATION, and DEPOSITION, the Act of depriving, or ſtripping a Perſon for ever of a Dignity, or Degree of Honour, and taking away the Title, Badge, and Rights thereof. See DEPOSITION.

The *Degradation* of a Peer, a Prieſt, a Knight, a Gentleman, an Officer, *&c.* is perform'd with divers Ceremonies. That anciently obſerv'd in *degrading* a Perſon from his Nobility, is very curious, and deſerves to be rehearſed here, after *Geliot*, and *la Colombiere*. It was practis'd in the Time of *Francis* I. upon Captain *Fangel*, who had cowardly given up *Fontarabia*, whereof he was Governor.

On this Occaſion, twenty or thirty Cavaliers, without Imputation, or Reproach, were aſſembled, before whom the Gentleman was accuſed of Treaſon, and Breach of Faith, by a King at Arms. Two Scaffolds were erected, the one for the Judges, Heralds, and Purſuevants, and the other for the condemn'd Cavalier, who was arm'd at all Points, and his Shield placed on a Stake before him, reverſed with the Point upwards. On one Side aſſiſted twelve Prieſts, in Surplices, who ſung the Vigils of the Dead. At the Cloſe of each Pſalm they made a Pauſe, during which the Officers of Arms ſtripp'd the Condemn'd of ſome Piece of his Armour, beginning with the Helm, and proceeding thus, till he was quite diſarm'd: Which done, they broke his Shield in three Pieces with a Hammer. Then the King at Arms turn'd a Baſon of hot Water on the Criminal's Head; and the Judges, putting on Mourning Habits, went to the Church. This done, the *Degraded* was drawn from off the Scaffold, with a Rope tied under his Arm-Pits, laid on a Biere, and cover'd with Mortuary-Cloaths, the Prieſt ſinging ſome of the Prayers for the Dead; And then he was deliver'd to the Civil-Judge, and the Executioner of Juſtice.

Take a more Domeſtic Inſtance: Sir *Andrew Harcla*, Earl of *Carliſle*, being convicted, *degraded*, and attainted of Treaſon, 18°. *Edu.* IId. *coram Rege*; after Judgment was pronounc'd on him, his Sword was broke over his Head, and his Spurs hewn off his Heels; Sir *Anthony Lucy*, the Judge, ſaying to him, *Andrew, now art thou no Knight, but a Knave.* And by *Stat.* 13. *Caroli* II. *William*, Lord *Manſon*, Sir *Henry Mildmay*, and others, were *degraded* from all Titles of Honour, Dignities, and Preeminences, and none of them to bear, or uſe the Title of Lord, Knight, Eſquier, or Gentleman, or any Coat of Arms, for ever afterwards.

As to Eccleſiaſticks, we have an Inſtance of *Degradation* before Condemnation to Death, in the VIIIth Century, at *Conſtantinople*. It is in the Perſon of the Patriarch *Conſtantin*, whom *Conſtantin Copronymus* cauſed to be executed. He was made to aſcend the *Ambo*; the Patriarch *Nicetas* ſent ſome of his Biſhops to ſtrip him of the *Pallium*, and anathematized him. Then they made him go out of the Church backwards. But we have a much later Inſtance in our own Hiſtory. When *Cranmer*, Arch-Biſhop of *Canterbury*, was *degraded* by Order of Queen *Mary*; They dreſs'd him in Epiſcopal Robes, made only of Canvas, put the Mitre on his Head, and the Paſtoral Staff in his Hand: And in this Attire ſhew'd him to the People. Which done, they ſtripp'd him Piece by Piece.

At preſent, they don't ſtand ſo much on the Ceremony of *Degradation*, in order to the putting a Prieſt to Death; by Reaſon of the Delays, and Difficulties that it would occaſion. Pope *Boniface* pronounced, that ſix Biſhops were requir'd to *degrade* a Prieſt: But the Difficulty of aſſembling ſo many Biſhops, rendred the Puniſhment frequently impracticable. With us, a Prieſt, after having been deliver'd to his Ordinary, if he cannot purge himſelf of the Crime laid at his Door; his Gown, and other Robes are ſtripp'd over his Ears by the common Hangman, by which he is declar'd diveſted of his Orders. It is decided, however, that *Degradation* does not efface the Prieſtly Character.

Degradation only ſeems to differ from *Depoſition* in a few ignominious Ceremonies, which Cuſtom has added thereto. Accordingly, in the Buſineſs of *Arnoul*, Arch-Biſhop of *Rheims*, ſentenced in the Council of *Orleans*, in 991, it was deliberated, what Form they ſhould follow in the Depoſition, whether that of the Canons, that is, ſimple Depoſition; or that of Cuſtom, viz. *Degradation.* And it was declared, that he ſhould ſurrender the Ring, Paſtoral Staff, and Pallium; but that his Robes ſhould not be tore off him. In Effect, the Canons preſcribe no more than a mere reading of the Sentence. 'Tis the reſt, therefore, added hereto by Cuſtom, *viz.* the Stripping off the Ornaments, and the tearing the Pontifical Veſtments, that properly conſtitutes *Degradation.*

DEGRADATION, in Painting, expreſſes the leſſening, and rendring dim and confuſed, the Appearance of diſtant Objects in a Landſkip; ſo as they ſhall appear there, as they would do to an Eye placed at that Diſtance from them.

DEGRADED, in Heraldry. A *Croſs degraded*, is a Croſs mark'd, or divided into Steps at each End; diminiſhing as they aſcend towards the Middle, or Centre: by the *French* call'd *Perronnée*. See CROSS.

DEJECTION, in Medicine, properly ſignifies the Act of *Ejecting*, or Evacuating the Excrements, by means of the Periſtaltic Motion of the Guts; In which Senſe it comes nearly to the Signification of *Excretion*. See EXCRETION.

But the Term is alſo, and that more ordinarily, applied to the Excrements themſelves, thus evacuated; in which Senſe it is of the ſame import with *Stool*. See STOOL, and EXCREMENT.

Viſcid, glutinous, or, as they call them, *unguinous Dejections*, frequent in Scorbutic Diſeaſes, indicate a Colliquation of the Solids of the Body. See UNGUINOUS.

DEJECTION, *Fall*, in Aſtrology, is applied to the Planets, when in their Detriment, *i. e.* when they have loſt of their Force, or Influence, by reaſon of their being in Oppoſition to ſome others, which check, and counteract them. Or it is uſed when a Planet is in a Sign oppoſite to that wherein it has its greateſt Effect, or Influence, which is call'd its *Exaltation*. Thus, the Sign *Aries* being the Exaltation of the Sun, the Sign *Libra* is its *Dejection*. See EXALTATION.

DEICIDE, *Deicida*, a Term only us'd in ſpeaking of the Condemnation, and Execution of the Saviour of the World, by *Pontius Pilate*, and the Jews; which was an horrible *Deicide*.

The Jews, an ingenious Author obſerves, were never more remote from Idolatry than at preſent; Never more inviolably attach'd to the Law of *Moſes*, than at preſent: Whence then that Load of Evils and Misfortunes they have ſo many Ages groan'd under, Evils imcomparably greater and more laſting than all the Chaſtiſements wherewith God anciently avenged their moſt heinous Idolatries? Whence do they ariſe, but from the *Deicide* they committed in the Perſon of Jeſus Chriſt.

DEIFICATION, in the *Pagan* Theology, the Act, or Ceremony of *deifying* their Emperors, *i. e.* of placing them among the Gods, and decreeing divine Honours to be rendred them. See GOD.

The *Deification* is the ſame with *Apotheoſis*. See APOTHEOSIS.

DEINCLINERS, or DEINCLINING *Dials*, are ſuch as both decline; and incline, or recline at the ſame Time. See DIAL.

Suppoſe, for Inſtance, a Plane to cut the prime Vertical Circle at an Angle of 30 Degrees; and the Horizontal Plane under an Angle of 24 Degrees; the Elevation of the Pole being 52 Degrees; a Dial drawn on this Plane, is call'd a *Deincliner*. See DECLINER.

DEISM, the Doctrine, or Belief of ſuch as hold the Exiſtence of a God, as the whole of their Religion. The Word is form'd from *Deus*, God. See DEISTS.

DEISTS, a Claſs of People, known alſo under the Denomination of *Free-thinkers*, whoſe Character is, not to profeſs any particular Form, or Syſtem of Religion; but only to acknowledge the Exiſtence of a God, without rendring him any external Worſhip, or Service.

The *Deiſts* hold, that, conſidering the Multiplicity of Religions, the numerous Pretences to Revelation, and the obſcure, precarious Arguments advanced in Proof thereof; the beſt and ſureſt Way is, to return to the Simplicity of Nature, and the Belief of one God, which is the only Truth agreed to by all Nations.

They complain, that the Liberty of thinking, and reaſoning, is oppreſs'd under the Yoke of Religion, and that the Minds of Men are ridden, and tyranniz'd over by the Neceſſity impos'd on them of believing inconceivable Myſteries; And contend, that nothing ſhould be requir'd to be aſſented to, or believed, but what their Reaſon clearly conceive.

The Appellation *Deiſt* is more particularly given to ſuch as are not altogether without Religion, but reject all Revelation as an Impoſition, and believe no more than what natural Light diſcovers to them; as that there is a God, a Providence, a future State, with Rewards and Puniſh-

ments

ments for the Good and the Bad; That God must be honour'd; and his Will, so far as we can learn it, perform'd; but that each Person is to do this after his own Manner, and as his own Conscience suggests.

The Number of *Deists* is daily increasing. In *England*, a great Part of the Men of Speculation, and Letters, are pretended to incline that Way. And the like is observ'd in some of our Neighbour Nations, where Freedom of Speaking, Writing, and Thinking are indulged. See REVELATION.

DEITY, a common Appellation given by the Poets to the Heathen Gods, and Goddesses. See GOD.

DEIVIRILE, a Term in the School-Theology, signifying something divine and human at the same Time.

The *Eutychians* held, that the same Jesus Christ, and the same Son, produces both divine and human Operations at once, by one single Theandric, or *Deivirile* Operation: So that all the Distinction depends on our manner of Understanding. See THEANDRIC, *&c.*

The Word is a Compound of *Deus*, God, and *Virilis*, of *Vir*, Man. It was first invented by the *Monophysites*, to express their Error by: For as they taught, that there were not two distinct Natures in Jesus Christ, but that the human and the divine Nature were, by the Hypostatical Union, confounded together, and render'd one Nature, which was neither the one nor the other, but a Compound of both; It follow'd, that the Operations of this third Nature, *i. e.* of Jesus Christ, were neither purely divine, nor purely human; and that there were not two Sorts, the one divine, and the other human, but that they were all of one Sort, *viz.* Theandric, or *Deivirile*.

DELEGATES, a Number of Commissioners, *delegated*, or appointed by the King's Commission, under the great Seal, to sit upon an Appeal to the King, in the Court of Chancery, in three Cases: First, Upon a Sentence given in any Ecclesiastical Cause, by the Arch-Bishop, or his Official. Secondly, Upon a Sentence given in an Ecclesiastical Cause in Places exempt. Thirdly, Upon a Sentence given in the Admiral Court in Suits Civil and Marine, by Order of the Civil Law.

Court of DELEGATES: This is the highest Court for Civil Affairs, concerning the Church; For the Jurisdiction whereof it was provided 25 *H.* 8. That it shall be lawful for the Subject, in Case of Defect of Justice in the Ecclesiastical Courts, to appeal to the Sovereign in his Courts of Chancery, whence a Commission is directed under the great Seal to particular Persons therein mentioned, for Redress of Judgment; so that from the highest Ecclesiastical Court there lies no Appeal, but to the Court of *Delegates*, and beyond this to no other, except to the House of Lords. But the King, of his Free-will, may grant a Commission of Review under the great Seal. The Citations run all under the King's Name.

DELEGATION, a Commission extraordinary, given a Judge to take Cognizance of, and determine some Cause which ordinarily did not come before him. See DELEGATES.

Sovereign Courts have frequently Inferior Judges to sit in Judgment on certain Affairs.

In the Civil Law, *Delegation* is also a Sort of Surrender, whereby a Person substitutes another Debtor in his Place. See *Ulpian.* l. 11. ff. *de Novationibus*, & *Delegationibus*.

Delegation differs from Transferring, or *Translation*, in that three Persons intervene in a *Delegation*; viz. the Creditor, the Debtor, and a third, who himself is indebted to the Debtor, and on whom the Debtor transfers the Obligation he was under to pay the Creditor, *delegating* him, as it were, for that Purpose. But in a simple Transfer, 'tis enough the Transferrer and the Transferree be present.

DELETERIOUS, probably from Δηλέω, *noceo*, to hurt, a Term sometimes us'd among Naturalists for such Things as are of a pernicious, and poisonous Nature. See POISON.

DELF, is a Quarry, or Mine, where Stone, or Coal is digged: from the *Saxon* Word *Delivan*, to *delf*, or dig; *Delf of Coal*, is Coal lying in Veins under-ground, before it is dug up; and a *Delve of Coals* is a certain Quantity dug out of the Mine, or Pit. See COAL.

DELF, is also us'd in Heraldry for one of the Abatements of Honour; being a Square in the Middle of the Escutcheon. See ABATEMENT.

A *Delf* Tenne is due to him that revokes from his own Challenge, or any way recedes from his Parole, or Word. If there be two, or more *Delfs* in an Escutcheon, it is then no longer an Abatement: So also, if it be of Metal, or charged upon it, then becomes it a Charge of perfect bearing.

DELIA, in Antiquity, Feasts celebrated by the *Athenians*, in Honour of *Apollo*, whom they surnamed *Delius*.

The principal Ceremony in this Feast, was an Embassy, or rather a Pilgrimage to *Apollo* of *Delos*, perform'd every five Year, by a certain Number of Citizens deputed for that Purpose, and call'd *Deliastæ*, Δηλιάδαι, or *Theoræ*, Θεωραὶ, *q. d.* the Seers; and the first Person of the Embassy, or Deputation, *Architheorus*, Ἀρχιθέωρος. To him were added four more of the Family of the *Ceryci* Priests, descended from *Mercury*, who resided all the Year at *Delos*, to assist in the Temple. The whole Deputation set out on five Vessels, carrying with them every Thing necessary for the Feast, and the Sacrifices.

The Vessel that carried the *Deliasts*, or *Theores*, was call'd Δηλὰς, *Delias*; the four others were the *Parale*, *Antigonid*, *Ptolomaid*, and *Ammonid*. Tho' this is a Circumstance there is some Dispute about.

The *Deliasts*, who went a-board, were crown'd with Laurel. At their Arrival, they immediately offer'd a Sacrifice to *Apollo*: And after the Sacrifice, a Number of young Maids danced round the Altar, a Dance call'd in *Greek* Γέρανον; wherein, by their various Motions, and Directions, they represented the Turnings and Windings of a Labyrinth. When the *Deliasts* returned to *Athens*, the People went out to meet them, and received them with all the Joy and Acclamation imaginable. They never laid a-side their Crown till their Commission was fully completed; and then they consecrated it to some God in his Temple.

The whole Time of their going and returning, with all the Ceremonies thereof, was call'd the *Delia*; during which Time no Criminal might be executed; which was a peculiar Privilege of this Feast, not allowed to any other, not even those of *Jupiter*. Thus, *Plutarch* observes, it was a Day consecrated to *Jupiter* when *Phocian* was made to take the Poison he was condemn'd to; whereas they waited thirty Days to give it to *Socrates*, by Reason of the *Delia*.

According to *Thucidides*, the *Delia* were first instituted in the 6th Year of the *Peloponesian* War, after the *Athenians* had expiated the Isle of *Delos*, removed all the Tombs out of it, and ordain'd, that no body should either be born, or die in it; but that all their sick People should be removed into a little Island, call'd *Rhenia*. Tho' the *Ionians*, and the neighbouring Islanders of *Ionia*, had long before that Time held a Sort of *Delia*, that is, Feasts, and Games, like those the *Athenians* celebrated afterwards.

DELIAC, or *Deliacus*, among the Ancients, was a Poulterer, or a Merchant who sold Fowls, fatted Capons, *&c.*

The Traders in this Way were call'd *Deliaci*, by reason it was the People of the Isle of *Delos* who first bethought themselves thereof. They also sold Eggs; as appears from *Cicero* in his Academic Questions, Lib. IV. *Pliny* Lib. X. C. 30. and *Columella*, Lib. VIII. C. 8. likewise mention the *Deliaci*.

DELIACAL *Problem*, *Problema Deliacum*, a famous Problem among the Ancients, about the Duplication of the Cube. See DUPLICATION.

DELIBERATIVE, is applied to that Kind of Rhetoric employ'd in proving a Thing; or convincing an Assembly thereof; in order to oblige them to put it in Execution. See RHETORIC.

The *Deliverative* Kind was much in Vogue among the *Greeks* and *Romans*, when the Orators harangued the People. To have *deliberative Voice* in an Assembly, is when a Person has a Right to give his Advice, and his Vote therein. In Councils, the Bishops have *deliberative Voices*; Those beneath them have only consultative Voices.

DELINEATING. See DESIGNING.

DELINQUENT, a Person who has committed some Fault. It is the Business of a Magistrate to be severe in punishing *Delinquents*.

DELIQUIUM, in Medicine, or *Deliquium Animi*, a swooning, or fainting away; call'd also SYNCOPE, LIPOTHYMIA, LIPOPSYCHIA, ECTHLIPSIS, and ASPHYXEA, which see.

DELIQUIUM, in Chymistry, is a Dissolution, or melting of a Salt, or *Calx*, by suspending it in a moist Cellar. Thus Salt of *Tartar*, or any fix'd *Alcali*, in a Cellar, or other cool moist Place, and an open Vessel, resolves, or runs into a Kind of Water, call'd by the Chymists, Oil of Tartar *per Deliquium*.

DELIQUIUM, is also used in some Authors for a Distillation by Force of Fire. See DISTILLATION.

DELIRIUM, *Doating*, in Medicine, a Symptom, frequently befalling in Fevers, caused by internal Inflammations, Wounds, *&c.* whereby the Mind is disorder'd to a Degree of Folly, or Phrenzy.

Deliriums also frequently arise from immoderate Losses of Blood, whereby the Brain is too much weaken'd; from

from the Stings of venomous Beasts; from the Seed, or Menses retain'd in the Womb; from the Rotting of a gangreen'd Member, &c.

A Disorder in the Diaphragm commonly produces a *Delirium*.

Some derive the Word from *De* and *Lira*, which among the Ancients signified, Furrows drawn in right Lines; Whence, *delirare*, *a recto aberrare*.

There are various Species and Degrees of *Deliriums*. In some, the Patient is fierce, and outrageous; In others, more mild, and easy, offering no Violence to any body, but only indulging idle, ridiculous Discourse; Some laugh and sing; others cry, and are sullen, &c. See MELANCHOLY, and MANIA.

DELIVERY, *Parturition*, or Birth, in Medicine, the bringing forth of a perfect *Fœtus*, or Child out of its Mother's Womb, whether it be living, or dead. See FŒTUS, BIRTH, &c.

To a *Natural Delivery*, according to the Physicians, are required three Conditions: First, That both the Mother and the Child strive alike, the one to *deliver*, and the other to be *deliver'd*: The second, That it come into the World head-fore-most, which is its natural Posture: And the third, That it be quick, and easy, without Accidents.

When the Child presents its Feet foremost, or comes a-cross, or double, 'tis no natural *Delivery*; And the *Latins* call such Children *Agrippæ*, q.d. *Ægre Parti*.

A *Legitimate Delivery*, is that which happens at the just Term, *i. e.* in the 10th Lunar Month. And an *Illegitimate*, that which comes either sooner, or later, as in the 8th Month.

Women are *deliver'd* at 7, 8, 9, 10, and 11 Months, and not later. Tho' there are some Physicians, who hold, that a *Delivery* may be *legitimate* in the 14th Month.

It has been observ'd, that *Deliveries* are more happy in the 7th Month, than in the 8th, *i.e.* that the Child is easier saved, and more frequently lives, when it comes in the 7th, than when in the 8th Month.

Monsr. *Peyssonel*, a Physician of *Lyons*, has a *Latin* Treatise expressly on the Term of *Delivery*; wherein he undertakes to reconcile all the apparent Contradictions of *Hippocrates*, with Respect thereto. He holds, that the shortest Term of a *legitimate* Birth, according to *Hippocrates*, is 182 Days, or six compleat Months, and the longest 280 Days, or nine Months and 10 Days. And that Children, who come earlier, or later, than those Terms, do not live, or are not *legitimate*.

Bartholine has composed a Book, *de insolitis partus Viis*, on the extraordinary Passages of the *Fœtus*; where he gives divers Instances of very extraordinary *Deliveries*. There have some come out by the Mouth; and others by the *Anus*. See *Salmuth. Obs.* 94. *Cent.* 3. In the Year 1686, at *Leckerkerck*, 8 or 10 Leagues from the *Hague*, the Wife of one *Christian Claes*, was deliver'd of 5 Children. The first was a Boy, who liv'd 2 Months; 17 Hours afterwards, came a second Son, which was dead; 24 Hours after a third Son was born, who liv'd about two Hours. In 24 Hours more she had a 4th, dead. Lastly, she died in bringing forth the 5th; which died in the Birth.

DELIVERY, in Law. See REPLEGIARE.

DELPHINUS, the *Dolphin*, in Astronomy, a Constellation of the Northern Hemisphere. See CONSTELLATION.

The Number of Stars in this Constellation, according to *Ptolomy*, are 10; according to *Tycho* 10; and according to Mr. *Flamsteed* 18.

The Longitudes, Latitudes, Magnitudes, &c. whereof are as follows.

Stars in the Constellation DELPHINUS.

Names and Situations of the Stars.	Sign.	Longit. ° ′ ″	Latitude. North. ° ′ ″	Magnit.
	♒	8 49 50	28 54 38	6
First of three in the Tail.		9 44 27	29 06 21	3
Betw. the Tail & the prec. Rho.		10 30 06	30 42 06	6
That immediat. preced. the Tail.		11 27 04	32 10 27	5
North of the follow. in the Tail.		11 00 18	28 51 03	3
5				
Preced. South. in the Rhombus.		12 01 14	31 56 52	3
South. of the follow. in the Tail.		10 54 06	27 31 40	6
Betw. the Tail and the hind Rho.		11 54 05	30 38 14	6
North. of preced. in the Rhomb.		13 03 24	33 02 58	3
		13 02 25	31 39 48	7
10				
South. in the hind Rhombus.		13 48 07	31 58 12	3 4
North. of the following.		15 03 41	33 44 32	3
		11 54 12	23 00 05	5
Informes following the *Dolphin*		13 00 33	24 37 30	6
(towards *Equuleus*.		14 28 25	29 07 05	6
15				
		16 07 40	28 40 19	6
		16 31 05	29 46 35	6
	♒	16 15 57	26 48 35	6

DELTOIDES, in Anatomy, a triangular Muscle, thus call'd from the Greek *Delta* Δ, and εἶδος, *Forma*. See MUSCLE.

It arises exactly opposite to the *Trapezius*, from one third Part of the *Clavicula*, from the *Acromium*, and Spine of the *Scapula*, and is inserted tendinous into the Middle of the *Os Humeri*, which Bone it lifts up directly; and it assists with the *supra Spinatus*, and *Coracobrachialis*, in all the Actions of the *Humerus*, except the Depression; it being convenient, that the Arm should be raised, and sustained, in order to its moving on any Side.

DELUGE, *Cataclysmus*, *Diluvium*, in Natural History, a Flood, or Inundation of Water, covering the Earth either in whole, or in Part. See INUNDATION.

We meet with divers of these *Deluges* in ancient History, both sacred and profane. That which happen'd in *Greece*, in the Time of *Deucalion*, call'd the *Diluvium Deucalidoneum*, is famous. This *Deluge* only overflowed *Thessaly*; Its Date is fix'd to the Year before Christ 1529; being the third Year before the *Israelites* coming out of *Egypt*, according to the Computation of *Petavius*, *Rat. Temp.* P. I. L. I. C. 7. P. II. C. 9.

The *Deluge* of *Ogyges* happen'd near 300 Years before that of *Deucalion*, 1020 Years before the first *Olympiad*, and 1796 before Jesus Christ, according to the same Author, *Rat. Temp.* P. I. L. I. C. 4. P. II. L. II. C. 5. This only ravaged *Attica*. These two are frequently mention'd in ancient *Greek* Authors, under the Denomination of *Cataclysmus prior*, and *posterior*.

Of the like Kind were those Inundations in the *Netherlands*, which in 1277 overwhelmed, and cover'd with Sea all that Part, now call'd the *Gulph Dollart* in the united *Netherlands*; and in 1421, all that Part between *Brabant* and *Holland*.

But the most memorable *Deluge* is that which we particularly, and by way of Eminence, call the *Deluge*, or the *Universal Deluge*, or *Noah*'s *Flood*; being a general Inundation sent by God, to punish the Corruption of the then World, by destroying every living Thing, (*Noah*, and his Family, and what was shut up with him in the Ark, only excepted) from off the Face of the Earth.

This *Flood* makes one of the most considerable Events in all History; and one of the greatest Epocha's in Chronology. Its History is given us by *Moses*, *Gen.* C. VI. and VII. Its Time is fix'd by the best Chronologers to the Year from the Creation 1656, answering to the Year before Christ 2293. From this *Flood*, the State of the World is divided into *Diluvian*, and *Antediluvian*.

The *Deluge* has been, and remains a mighty Subject of Inquiry, and Dispute among the Naturalists, Criticks, &c. The Points chiefly controverted, may be reduced to three: First, Its Extent, *viz.* whether *General*, or *Partial*. Secondly, Its *natural Cause*. And thirdly, Its *Effects*.

I. The immense Quantity of Water requisite to furnish an *Universal Deluge*, has occasion'd several Authors to suspect it only *Partial*. An *Universal Deluge*, they think, had been unnecessary, considering the End for which it was brought, *viz.* to extirpate the wicked Inhabitants. The World was then but new, and the People not very many; the Holy Scriptures only making 8 Generations from *Adam* to *Noah*. 'Twas but a small Part of the Earth that could be yet inhabited: The Country about the *Euphrates*, which is supposed to have been the Scene of the first Antediluvian Inhabitants, was sufficient to bear them all. Now, Providence, say they, which ever acts wisely, and frugally, would never have disproportion'd the Means to the End so far as to overflow the whole Globe, only to drown a little Corner of it. They add, that, in the Scripture Language, the *whole Earth*, expresses no more than *all the Inhabitants*. And on this Principle advance, that an Overflowing of the *Euphrates*, and *Tigris*, with a vehement Rain, &c. might answer the *Phænomena* of the *Deluge*.

But the *Deluge* was *universal*. God declared to *Noah*, *Gen.* VI. 17. that he was resolved to destroy every Thing that had Breath under Heaven, or had Life on the Earth, by a Flood of Waters. Such was the Menace: See the Execution. The Waters, *Moses* assures us, cover'd the whole Earth, buried all the Mountains, and were no less than 15 Cubits above the highest of them: Every Thing perish'd therein, Birds, Beasts, Men, and all that had Life, excepting *Noah*, and those with him in the Ark, *Gen.* VII. 19. Can an *Universal Deluge* be more clearly express'd? If the *Deluge* had only been *Partial*, there had been no Necessity to spend 100 Years in the Building of an Ark, and shutting up all the Sorts of Animals therein, in order to re-stock the World; they had been easily, and readily brought from those Parts of the World not overflown, into those that had been. At

leaſt, all the Birds would never have been deſtroy'd; as *Moſes* ſays they were; ſo long as they had Wings to bear them to thoſe Parts where the *Flood* did not reach. If the Waters had only overflowed the Neighbourhood of the *Euphrates* and *Tigris*, they could not be fifteen Cubits above the higheſt Mountains; There was no Riſing to that Height, but they muſt ſpread themſelves, by the Laws of Gravity, over the reſt of the Earth: Unleſs, perhaps, they had been retain'd there by a Miracle; And in that Caſe, *Moſes*, no doubt, would have related the Miracle, as he did that of the Waters of the *Red-Sea*, and the River *Jordan*, which were ſuſtain'd in a Heap, to give Paſſage to the *Iſraelites*. *Exod.* XIV. 22. and *Joſ.* III. 16. Add, that in Regions far remote from the *Euphrates*, and *Tigris*, viz. in *Italy*, *France*, *Switzerland*, *Germany*, *England*, &c. there are frequently found in Places, many ſcores of Leagues from any Sea, and even in the Tops of high Mountains, whole Trees ſunk deep under Ground, as alſo Teeth, and Bones of Animals, Fiſhes entire, Sea-Shells, Ears of Corn, &c. petrified; Which, the beſt Naturaliſts are agreed, could never have come there but by the *Deluge*.

II. The *Deluge* allowed *Univerſal*, the Philoſophers are ſollicitous to find Water to effect it.

Moſes brings it from two Funds: *The Fountains of the great Deep were broken up; and the Windows of Heaven were open'd.*

Dr. *Burnet*, in his *Telluris Theoria Sacra*, ſhews, that all the Waters in the Ocean were not near enough to cover the Earth 15 Cubits above the Tops of the higheſt Mountains. According to his Computation, no leſs than 8 Oceans were required. Now, ſuppoſing the Sea, therefore, drain'd quite dry, and all the Clouds of the Atmoſphere diſſolv'd into Rain, we ſhould ſtill want much the greateſt Part of the Water of a *Deluge*.

To get clear of this Embarraſs, many of our beſt Naturaliſts, as *Steno*, *Burnet*, *Woodward*, *Scheuchzer*, &c. adopt *des Cartes*'s Syſtem of the Formation of the Earth. That Philoſopher will have the primitive World to have been perfectly round and equal, without Mountains, or Vales; And accounts for its Formation on Mechanical Principles, by ſuppoſing it at firſt in the Condition of a thick turbid Fluid, replete with divers Heterogeneous Matters, which ſubſiding by ſlow Degrees, form'd themſelves into different concentric *Strata*, or Beds, by the Laws of Gravity: And thus, at length, left a dry, ſolid Earth.

Dr. *Burnet* improves on this Theory: He ſuppoſes the primitive Earth to have been no more than an Orbicular Cruſt, inveſting the Face of the Abyſs, or Deep, which grew chinky, clave, burſt, and fell down into the Water, and ſo drown'd its Inhabitants.

The ſame Theoriſt adds, That by this Cataſtrophe, the Globe of the Earth was not only ſhook, and broke in a thouſand Places, but that the Violence of the Shock it then underwent ſhifted its Situation, ſo that the Earth, which before was placed directly under the Zodiac, became thenceforth oblique to the ſame. Whence aroſe the Difference of Seaſons, which the Antediluvian Earth was not expoſed to.

But how all this conſiſts with the ſacred Text above cited, which expreſsly mentions Mountains as the Standard of the Height of the Water; Or, with that other Paſſage, *Gen.* VIII. 22. where God, promiſing not to bring any more *Deluges*, but that every Thing ſhould be reſtor'd on its ancient footing, ſays, that *Seed-Time and Harveſt, and Cold and Heat, and Summer and Winter, and Day and Night ſhall ceaſe no more*; we do not ſee.

Other Authors, ſuppoſing a ſufficient Fund of Water in the Abyſs, or Sea, are only concern'd for an Expedient to bring it forth; Accordingly, ſome have Recourſe to a Shifting of the Earth's Centre, which, drawing after it the Water out of its Channel, overwhelm'd the ſeveral Parts of the Earth ſucceſſively.

The very learned Mr. *Whiſton*, in his *New Theory of the Earth*, has a very ingenious *Hypotheſis*, perfectly new. He ſhews from ſeveral remarkable Co-incidences, that a Comet deſcending in the Plane of the Ecliptic towards its *Perihelion*, paſs'd juſt before the Earth on the firſt Day of the *Deluge*; The Conſequences whereof would be, Firſt, That this Comet, when it came below the Moon, would raiſe a prodigious, vaſt, and ſtrong Tide, both in the ſmall Seas, which, according to his *Hypotheſis*, were in the Antidiluvian Earth, for he allows no great Ocean there, as in ours; and alſo in the Abyſs, which was under the upper Cruſt of the Earth. And this Tide would riſe, and increaſe all the Time of the Approach of the Comet towards the Earth; and would be at its greateſt Height when the Comet was at its leaſt Diſtance from it. By the Force of which Tide, as alſo by the Attraction of the Comet, he judges, that the Abyſs muſt put on an Eliptic Figure, whoſe Surface being conſiderably larger than the former Spherical one; the outward Cruſt of the Earth, incumbent on the Abyſs, muſt accommodate it ſelf to the Figure, which it could not do while it held ſolid, and conjoyned together. He concludes, therefore, that it muſt of Neceſſity be extended, and at laſt broke by the Violence of the ſaid Tides, and Attraction; out of which, the included Water iſſuing, was a great Means of the *Deluge*: This anſwering to what *Moſes* ſpeaks of the *Fountains of the great Deep being broke up.*

Again, the ſame Comet, he ſhews, in its Deſcent towards the Sun, paſſed ſo cloſe by the Body of the Earth, as to involve it in its Atmoſphere, and Tail, for a conſiderable Time; and of Conſequence, left a vaſt Quantity of its Vapours, both expanded and condenſed on its Surface; a great Part of which being afterwards rarified by the ſolar Heat, would be drawn up again into the Atmoſphere, and afterwards return again in violent Rains; And this he takes to be what *Moſes* intimates *by the Windows of Heaven being open'd*; and particularly by the *fourty Days Rain.* For as to the following Rain, which with this made the whole Time of Raining 150 Days; Mr. *Whiſton* attributes it to the Earth coming a ſecond Time within the Atmoſphere of the Comet, as the Comet was on its Return from the Sun. Laſtly, to remove this vaſt Orb of Waters again, he ſuppoſes a mighty Wind to have aroſe, which dried up ſome, and forced the reſt into the Abyſs again through the Clefts by which it came up: Only a good Quantity remain'd in the *Alveus* of the great Ocean, now firſt made, and in leſſer Seas, Lakes, &c.

To the Credit of this Theory, it muſt be obſerved, that it was at firſt only propoſed Hypothetically: That is, the Author only ſuppoſed ſuch a Comet, merely, as it would account well, and Philoſophically for the *Phænomena* of the *Deluge*: without any Aſſurance, that there really was any Comet ſo near the Earth at that Time: And the *Hypotheſis* pleas'd even under ſuch Circumſtances: But, upon further Conſideration, he has ſince proved, that there actually was a Comet near the Earth at that Time; *viz.* the ſame great Comet, which appear'd again in 1688. The Author no longer, therefore, looks upon it as an *Hypotheſis*, but has republiſh'd it in a particular Tract, entituled, *The Cauſe of the Deluge demonſtrated.*

III. But the great Difficulty is yet behind. The orderly *Strata*, or Layers of the Earth, with the *Exuviæ*, or Remains of Fiſhes, as their Teeth, Bones, Shells, &c. both Marine, and Fluviatile, found in the Bodies, even of the moſt ſolid *Strata*, as thoſe of Flints, Marbles, &c. are not yet diſpatch'd. Thoſe who adhere to *Des Cartes*'s Syſtem, as *Steno*, &c. take the finding of the Parts of Terreſtrial, and Aquatic Animals, Branches of Trees, Leaves, &c. in the Beds, or *Strata* of Stone, to be a direct Proof of the primitive Fluidity of the Earth. But then they are oblig'd to have Recourſe to a ſecond Formation of *Strata*, much later than the firſt; by Reaſon at the Time of the firſt there was neither Plant nor Animal. *Steno*, therefore, holds for ſecond Formations, occaſion'd at different Times by extraordinary Inundations, Earth-quakes, Volcano's, &c. But *Burnet*, *Woodward*, *Scheuchzer*, &c. chuſe rather to attribute a ſecond general Formation to the *Deluge*; without Excluding, however, the particular ones of *Steno*. But the great Objection againſt this Syſtem of Fluidity, is Mountains; For the whole Globe being liquid, whence ſhould ſuch Inequalities ariſe? Mr. *Scheuchzer*, rather than part with a Syſtem, which looks ſo promiſing, gives into the Opinion of thoſe, who hold, that, after the *Deluge*, God, to remit the Waters into their ſubterranean Reſervoirs, broke, and diſplaced, with his own Almighty Hand, a great Number of *Strata*, that were before horizontal, and raiſed them above the Surface of the Earth; whence it is, that the *Strata* in Mountains, tho' concentrical, are never horizontal. See MOUNTAIN, &c.

Dr. *Woodward*, taking the ſeveral *Strata* for the Sediments of a *Deluge*; and conſidering the Circumſtances of thoſe Fiſhes, Shells, and other *Exuviæ*, draws ſeveral Inferences, which very much illuſtrate the Effects of the *Deluge*. As firſt, That theſe Marine Bodies, and other Spoils of freſh Water Fiſhes, were born forth of the Sea, by the *univerſal Deluge*; and on Return of the Water back again, were left behind at Land. Secondly, That while the Flood cover'd the Globe, all the ſolid Matters, as Stones, Metals, Minerals, and Foſſils, were totally diſſolved, and the Coheſion of their Corpuſcles deſtroyed; and that theſe Corpuſcles, with thoſe of the leſs ſolid Bodies, as Earth, Fleſh of Animals, and Vegetables, were ſuſtain'd promiſcuouſly in the Water, and made one common Maſs. Thirdly, That all the Maſs thus ſuſtain'd, was at length precipitated to the Bottom; and that, according to the Laws of Gravity, the heavieſt Settling firſt,

firſt, and the reſt in order. And that the Matters thus ſubſiding, conſtituted the ſeveral *Strata* of Stone, Earth, Coal, *&c.* Fourthly, That theſe *Strata* were originally all parallel, even, and regular; and rendred the Surface of the Earth perfectly Spherical; and that the whole Maſs of Water lay upon them, and conſtituted a fluid Sphere encompaſſing the Globe. Fifthly, That after ſome Time, by the Force of an Agent ſeated within the Earth, theſe *Strata* were broken on all Sides the Globe, and their Situation varied; being elevated in ſome Places, and repreſs'd in others; whence Mountains, Valleys, Grotto's, *&c.* with the Channel of the Sea-Iſlands, *&c.* In one Word, the whole Terraqueous Globe was put, by this Diſruption, and Diſlocation of the *Strata*, into the Condition we now behold it in. Sixthly, That upon the Diſruption of the *Strata*, and the Depreſſion of ſome, and Elevation of other Parts, which happen'd towards the End of the *Deluge*; the Maſs of Water fell back again into the depreſs'd, and loweſt Parts of the Earth, into Lakes, and other Cavities, and the Channel of the Ocean; and through the Fiſſures, whereby this communicates with the Abyſs, which it fill'd till it came to an *Equilibrium* with the Ocean. *Nat. Hiſt. of Earth*, P. I. and II. See FOSSILE.

But of all the Syſtems yet advanced, there ſeems none better calculated to ſolve the *Phænomena* of thoſe petrified *Exuviæ*, than that of Mr. *de la Pryme*. The Antediluvian World, according to this ingenious Author, had an external Sea, as well as Land, with Mountains, Rivers, *&c.* and the *Deluge* was effected by breaking the ſubterraneous Caverns, and Pillars thereof, with dreadful Earthquakes, and cauſing the ſame to be for the moſt Part, if not wholly, abſorbed and ſwallowed up, and cover'd by the Seas that we now have. Laſtly, this Earth of ours aroſe out of the Bottom of the Antediluvian Sea, and in its Room; juſt as many Iſlands are ſwallowed up, and others thruſt up in their ſtead. From this Syſtem, which is very agreeable to Scripture, the great Difficulties that clog all the other Syſtems, are eaſily ſolved. It is no longer a Wonder, that Shells, and Shell-Fiſh, and the Bones of Fiſhes, and four-footed Creatures, with Fruits, *&c.* ſhould be found in Beds, and Quarries, in Mountains, and Valleys, and the very Bowels of the Earth: For here they bred in the Antediluvian Sea, thither they were elevated with the Hills and Mountains, in the Time of the *Deluge*; there they fell into, were abſorbed, and buried in Chaſms, and Holes, and Clefts, that would neceſſarily happen in the Extraſion of the Earth. *Lowth. Abridg. Philoſoph. Tranſact.* V. III. p. 428.

DEMAIN, or DEMEAN, or DEMEASN, or DEMESNE, in the Popular Senſe of the Word, is the Lord's Manour Place, with the Lands thereto belonging; which he, and his Anceſtors have from Time to Time kept in their own Manual Occupation. See MANOUR.

DEMAIN, or DEMESNE, in a Law-Senſe, otherwiſe written *Domain*, ſignifies, according to *Hottoman*, *Patrimonium Domini*, the Lord's Patrimony, call'd alſo by the Civilians, *Dominicum*; The ſame Author proves thoſe Lands to be *Demain*, which a Man holdeth originally of himſelf, and thoſe to be *Feodum*, which he holdeth of a ſuperior Lord.

In *England*, no common Perſon has any *Demain*, ſimply underſtood, for all depends either mediately, or immediately on the Crown; For when a Man in Pleading, would ſignify his Land to be his own, he ſaith, That he is, or was ſeiz'd thereof in his *Demain*, as of Fee; whereby he means, that, although his Land be to him, and his Heirs for ever, yet it is no true *Demain*, but depends upon a ſuperior Lord, and he holdeth by Service, or Rent, in lieu of Service, or by both Service and Rent.

The Word is ſometimes alſo taken more largely for Lands, and Tenements, held for Life, *&c.* and ſometimes more ſtrictly, for ſuch only as are generally held in Fee.

It is ſometimes again uſed for a Diſtinction between thoſe Lands that the Lord of a Manour has in his own Hands, or in the Hands of his Leſſee, demiſed upon a Rent, for Term of Years, or Life; and ſuch other Lands, pertaining to the ſaid Manour, which belongs to the Free, or Copy-holders. And the Reaſon why the Copy-hold is accounted *Demain*, is, that becauſe they, who are Tenants to it, are judged in Law to have no other Right, but at the Will of the Lord; ſo that it is reputed ſtill, after a Sort, to be in the Lord's Hands: And yet in common Speech that is ordinarily call'd *Demain*, that is, neither Fee, nor Copy.

DEMAIN, again, is us'd in a more ſpecial Signification, in Oppoſition to *Frank-Fee*: Thus, Thoſe Lands, which were in the Poſſeſſion of *Eduard the Confeſſor*, are call'd, *Ancient Demain*, and others are call'd, *Frank-Fee*; and the Tenants, which hold any of thoſe Lands, are call'd, *Tenants in ancient Demain*, and the others, *Tenants in Frank-Fee*, and alſo, *Tenants of the Common-Law*; the Reaſon is, becauſe *Tenants in Ancient Demain* cannot be ſued out of the Lord's Court.

DEMAND, in its Popular Senſe, is a calling for, or requiring one's due. But it has alſo a ſpecial Signification in Law, as contra-diſtinguiſh'd from *Plaint*: For all Civil Actions are purſued, either by *Demands*, or *Plaints*; according to which the Purſuer is call'd either *Demandant*, or *Plaintiff*; *viz.* in Real Actions, *Demandant*: and in Perſonal Actions, *Plaintiff*. Add, that where the Party purſuing is call'd *Demandant*, the Party purſued is call'd *Tenant*; and where *Plaintiff*, *Defendant*.

There are two Kinds of *Demands*, the one in *Deed*, *de Facto*, as in every Precipe; The other in *Law*, *de Jure*; ſuch is Entry in Land, Diſtreſs for Rent, *&c.*

If a Man releaſe another *from all Demands*, it is the beſt Releaſe the Releaſee can have, and ſhall redound moſt to his Advantage. A Releaſe of Facts is more large, than of Quarrels, or Actions; and a Releaſe of *Demands*, more large, and beneficial than either: By a Releaſe of all *Demands* to the Diſſeiſor, the Right of Entry into the Land, and all contain'd therein, is releaſed: And he that releaſeth all *Demands*, excludes himſelf from all Actions, Entries, and Seizures. But it is no Bar in a Writ of Error to releaſe an Outlawry.

DEMANDANT, *Petens*, is he who is Actor, or Plaintiff in a real Action; Thus call'd, becauſe he *demands* Lands, *&c.* See DEMAND.

DEMARCHUS, a Magiſtrate, or Chief of a People, that is, of a Region, or Diſtrict in the Country.

The *Athenians* divided their Country into certain Regions, or Diſtricts, which they call'd Δημοὶ, *Demi*, i. e. People; and eſtabliſh'd a Magiſtrate at the Head of each, under the Denomination of Δήμαρχος, *Demarchos*, of δῆμος, and ἀρχὴ.

DEMEMBREE, in Heraldry, is when an Animal is diſmember'd, *i. e.* the Limbs cut off its Body. See DISMEMBER'D.

DEMI, a Word of the ſame Uſe and Effect in the *French* Language, with *Semi*, in the *Latin* and *Engliſh*; being form'd from *dimidium*, and uſed in Compoſition with other Words, to ſignifie *half*.

In Words borrowed from the *Latins*, we uſe *Semi*, and in thoſe from the *French*, we retain their *Demi*. See SEMI.

DEMI, or DEMY, in Heraldry, ſignifies the *half* of any Thing; as, a *Demy-Lion*, &c. *Colombiere* has what he calls *Croiz & demy*, a Croſs and an half; being a Shaft croſs'd in the upper Part like the *Calvary* Croſs, and having but one Arm at the lower Part. See CROSS.

DEMI-*Air*, or *Demi-Volt*, in Horſemanſhip, is one of the ſeven artificial Motions of an Horſe, being an Air, in which its Fore-parts are more raiſed than in *Terra a Terra*, but the Motion of the Horſes Legs is more quick in the latter, than in the *Demi-Volt*.

DEMI-*Baſtion*, is a Kind of Fortification, that has only one Face, and one Flank. See BASTION.

DEMI-*Canon*, a Piece of Ordnance, uſually about 6 Inches bore, and 5400 Pound Weight; 10 or 11 Foot long, and carrying a Shot of 30 Pound Weight. See CANON, and ORDNANCE.

It carries Point blank 150 Paces; its Charge of Powder is 14 Pound Weight.

There are alſo two Sizes of *Demi-Canon* above this, which are ſomething larger, as the ordinary *Demi-Canon*, which is 6 Inches $\frac{1}{6}$ bore, 12 Foot long, weighs 5600 Pound; its Charge of Powder is 17 Pound 8 Ounces, carries a Shot 6 Inches and a half Diameter, and whoſe Weight is 32 Pound, and this Piece ſhoots blank 162 Paces.

Demi-Canon of the largeſt Size, is 6 Inches $\frac{6}{8}$ bore, 12 Foot long, of 6000 Pound Weight; its Charge is 18 Pound of Powder, and it carries 180 Paces.

DEMI-*Culvering*, is a Piece of Ordnance, commonly $4\frac{1}{2}$ Inches bore, 10 Foot long, of 2700 Pound Weight; its Charge is 7 Pound 4 Ounces of Powder; and it carries a Shot of 10 Pound, 11 Ounces; and ſhoots Point blank 175 Paces: *Demi-Culvering* of the leaſt Size, is $4\frac{1}{4}$ Inches bore, 10 Foot long, of 2000 Pound Weight; it carries a Ball of 4 Inches Diameter, its Charge is 6 Pound 4 Ounces of Powder, and its level Range is 174 Paces. *Demi-Culvering* of the elder Sort, is 4 Inches $\frac{5}{8}$ bore, 10 Foot long, its Charge of Powder is 8 Pound, and 8 Ounces, the Ball is $4\frac{1}{2}$ Inches Diameter, weighs 12 Pound 11 Ounces, and the Point blank ſhoots 178 Paces. See ORDNANCE, and CULVERING.

DEMI-*God*, &c. See SEMI-*God*.

DEMI-*Gorge*, in Fortification, is half the Gorge, or Entrance into the Baſtion; not taken directly from Angle to Angle, where the Baſtion joins to the Courtine, but from the Angle of the Flank, to the Centre of the Baſtion, or

or the Angle the two Courtins would make, were they thus protracted to meet in the Baſtion. See GORGE.

DEMI-*Lune*, *Half-Moon*, in Fortification, an Outwork, as EFGHK (*Tab. Fortific. Fig.*5.) conſiſting of Faces, and Flanks; frequently built before the Angle of a Baſtion, and ſometimes alſo before the Courtine, tho' now much diſuſed. See OUTWORK.

DEMI-*Quaver*, is a Note in Muſick; two of which are equal to the Quaver. See QUAVER, and NOTE.

DEMISE, in Law, is applied to an Eſtate, either in Fee-ſimple, Fee-tail, or for Term of Life, and ſo it is commonly taken in many Writs: The King's Death is in Law termed, *The Demiſe of the King*.

DEMOCRACY, a Form of Government, wherein the Soveraignty, or ſupreme Authority, is lodged in the People, who exerciſe the ſame by Perſons of their own Order, deputed for that Purpoſe. This is the moſt ancient Form of Government.

The moſt flouriſhing *Democracies* were thoſe of *Rome* and *Athens*. The modern Republicks, as *Venice*, and the *United Provinces*, are rather *Ariſtocracies* than *Democracies*. The Government of *Baſil*, however, is a *Democracy*; ſo are ſome of the free Cities in *Germany*.

The Word is form'd of the *Greek* δημος, *People*, and κρατεῖν, *command*.

DEMON, or DÆMON, a Name the Ancients gave to certain Spirits, or *Genii*, which appeared to Men, either to do them Service, or to hurt them. See GENIUS.

The firſt Notion of *Demons* was brought from *Chaldæa*; Whence it ſpread it ſelf among the *Perſians*, *Egyptians*, and *Greeks*. *Pythagoras* and *Thales* were the firſt, who introduced *Demons* into *Greece*. *Plato* fell in with the Notion, and explain'd it more diſtinctly, and fully, than any of the former Philoſophers had done. By *Demons*, he underſtood Spirits inferior to Gods, and yet ſuperior to Men; which inhabiting the middle Region of the Air, kept up the Communication between Gods and Men, carrying the Offerings and Prayers of Men to the Gods, and bringing the Will of the Gods to Men. But he allowed of none but good, and beneficent Ones. Tho' his Diſciples, afterwards, finding themſelves unable to give the Reaſon of Evil, adopted another Sort of *Demons*, who were Enemies to Men.

There is nothing more common in the Heathen Theology, than theſe good, and evil *Genii*. And the ſame ſuperſtitious Notion got footing among the *Iſraelites*, by their Commerce with the *Chaldæans*. But by *Demons*, they did not mean the Devil, or a wicked Spirit: They never took the Word *Demon* in that Senſe, nor was it ever uſed in ſuch a Signification, but by the Evangeliſts, and ſome modern Jews. The Word is *Greek*, δαίμων.

Gale endeavours to ſhew, that the Origin, and Inſtitution of *Demons*, was an Imitation of the *Meſſiah*. The *Phœnicians* call'd them בעלים *Baalim*. For they had one ſupreme Being, whom they call'd *Baal* and *Moloch*, and various inferior Deities, call'd *Baalim*, whereof we find frequent mention in the Old Teſtament. The firſt *Demon* of the *Egyptians* was *Mercury*, or *Theut*. The ſame Author finds ſome Reſemblance between the ſeveral Offices aſcribed to the *Demons*, and thoſe of the *Meſſiah*.

DEMONIAC, or DÆMONIAC, is applied to a Perſon poſſeſs'd with a Spirit, or *Demon*.

In the *Romiſh* Church, there is a particular Office for the Exorciſm of *Demoniacs*. See EXORCISM.

DEMONIACS, are alſo a Party, or Branch of the *Anabaptiſts*, whoſe diſtinguiſhing Tenet it is, that the Devils ſhall be ſaved at the End of the World.

DEMONSTRABLE, a Term chiefly uſed in the Schools, ſignifying ſomewhat that may be clearly and evidently proved. It is *demonſtrable*, that the Side of a Square is incommenſurable with the Diagonal. The Problem of the Motion, or Reſt of the Earth, is not *demonſtrable*, by reaſon the ſame Appearances reſult from either Suppoſition.

DEMONSTRATION, in Philoſophy, a Syllogiſm in Form, containing a clear and invincible Proof of a Propoſition: Or, a convincing Argument, the two firſt Propoſitions whereof are certain, clear, and evident; whence of Neceſſity ariſes an infallible Concluſion. See SYLLOGISM.

A *Demonſtration* uſually conſiſts of 3 Parts: The *Explication*, *Preparation*, and *Concluſion*. The *Explication* is the laying down the Things ſuppoſed to be given, or granted; from which the Demonſtration is to be made. The *Preparation* is a Suppoſition to be made, according to the Nature of the Demonſtration intended. The *Concluſion* is a Propoſition that concludes the Thing to be *demonſtrated*, fully perſwading, and convincing the Mind. See CONCLUSION.

The Method of *demonſtrating* Things in Mathematicks, is the ſame with that of drawing Concluſions from Principles in Logicks. In Effect, the *Demonſtrations* of Mathematicians, are no other than a *Series* of *Enthymemes*; ſo that every Thing is concluded by Force of Syllogiſm, only omitting the Premiſſes, which either occur of their own Accord, or are recollected by means of Quotations. To have the *Demonſtration* perfect, the Premiſſes of the Syllogiſms ſhould be proved by new Syllogiſms, till at length you arrive at a Syllogiſm wherein the Premiſſes are either Definitions, or Identic Propoſitions.

Indeed it might be demonſtrated, that there cannot be a genuine *Demonſtration*, i. e. ſuch a one as ſhall give full Conviction, unleſs the Thoughts be directed therein according to the Rules of Syllogiſm. *Clavius*, 'tis known to every body, reſolved the *Demonſtration* of the firſt Propoſition of *Euclid* into Syllogiſm: *Herlinus*, and *Daſipodius*, demonſtrated the whole ſix firſt Books of *Euclid*, and *Heniſchius*, all Arithmetic, in the Syllogiſtic Form.

Yet People, and even Mathematicians, uſually imagined, that Mathematical *Demonſtrations* are concluded in a Manner far remote from the Laws of Syllogiſm; ſo far are they from allowing, that thoſe derive all their Force and Conviction from theſe. But we have Men of the firſt Rank on our Side the Queſtion. Mr. *Leibnitz*, for Inſtance, declares that *Demonſtration* to be firm and valid, which retains that Form preſcribed by Logic. And Dr. *Wallis* confeſſes, that what is propoſed to be proved in Mathematicks, is deduced by means of one, or more Syllogiſms. The great *Huygens* too obſerves, that Paralogiſms frequently happen in Mathematicks, through Want of obſerving the Syllogiſtic Form. See SYLLOGISM.

Problems conſiſt of three Parts: A *Propoſition*, *Reſolution*, and *Demonſtration*.

In the *Propoſition* is indicated the Thing to be done. See PROPOSITION.

In the *Reſolution*, the ſeveral Steps are orderly rehearſed, whereby the Thing propoſed is perform'd. See RESOLUTION.

Laſtly, in the *Demonſtration* it is ſhewed, that the Things injoyned by the *Reſolution* being done, that required in the Propoſition is effected. As often, therefore, as a Problem is to be demonſtrated, it is converted into a *Theorem*, the *Reſolution* being the *Hypotheſis*, and the *Propoſition* the *Theſis*: For the general Tenor of all Problems to be demonſtrated is this, that the Thing preſcrib'd in the *Reſolution* being perform'd, the Thing required is done. See PROBLEM.

The School-Men make two Kinds of *Demonſtration*: The one διοτι, or, *propter quod*; wherein an Effect is proved by the next Cauſe: As when it is prov'd, that the Moon is eclypſed, *by reaſon the Earth is then between the Sun and Moon*. The ſecond ὅτι, or, *quia*; wherein the Cauſe is proved from a remote Effect: As when it is proved, *that Fire is hot*, becauſe *it burns*; Or, *that Plants don't breath*, becauſe *they are not Animals*.

Affirmative DEMONSTRATION, is that, which proceeding by affirmative and evident Propoſition, dependent on each other, ends in the Thing to be demonſtrated.

A *Negative* DEMONSTRATION, is that, whereby we ſhew a Thing to be ſuch from ſome Abſurdity that would follow if it were otherwiſe. This we alſo call a *Demonſtration ab impoſſibili*.

A *Geometrical* DEMONSTRATION, is that, framed of Reaſoning drawn from the Elements of *Euclid*.

A *Mechanical* DEMONSTRATION, is that, the Reaſonings whereof are drawn from the Rules of Mechanicks.

A DEMONSTRATION *A priori*, is that, whereby an Effect is proved from a Cauſe, either a next, or remote one; or a Concluſion proved by ſomething previous, whether it be a Cauſe, or only an Antecedent.

A DEMONSTRATION *A poſteriori*, is that, whereby either a Cauſe is proved from an Effect; or a Concluſion is proved by ſomething poſterior, whether it be an Effect, or only a Conſequent.

DEMONSTRATIVE, in Rhetoric, one of the *Genera*, or Kinds of Eloquence; being that uſed in the Compoſing of Panegyricks, Invectives, &c. See PANEGYRIC.

Rhetoric is divided into three Parts; Deliberative, *Demonſtrative*, and Judiciary. See RHETORIC.

DEMONSTRATIVE, in Grammar, is applied to Pronouns that ſerve to ſhew, point out, or indicate a Thing; As, *This here*, *That there*, *Thoſe yonder*, &c. See PRONOUN.

DEMURRAGE, in Traffick, is an Allowance to the Maſter of a Ship, by the Merchants, for ſtaying in a Port longer than the Time firſt appointed for his Departure.

DEMURRER, in Law, from the French *Demeurer*, to ſtay, or dwell, is a Kind of Pauſe, or Stop, put to the Proceeding of any Action, upon ſome difficult Point, which muſt be determin'd by the Court, 'ere any further Proceedings can be had therein.

In

In every Action, the Controverſy is either as to Fact, or to Law: The firſt, decided by the Jury; the ſecond, by the Judge. Now if any Thing turn up in the Cauſe ſo rare and difficult, that the Judge cannot pronounce upon it, a *Demurrer*, or Stop is made, and a Time taken, either for the Court to conſider, and agree of it among themſelves; or otherwiſe for the Judges, to meet in the Exchequer-Chamber, there, after hearing Council on both Sides, to determine what is Law. This *Demurrer* is expreſs'd in our Records by *Moratur in Lege*. See MORATUR *in Lege*.

In Common Law, the Defendant ſometimes *demurreth* to the Plaintiff's Count, or Declaration; And ſometimes the Plaintiff *demurreth* to the Defendant's Plea, by averring, that it is not a ſufficient Plea in Law, *&c.*

In Chancery, the Defendant *demurreth* to the Plaintiff's Bill, averring it to be defective in ſuch and ſuch a Point; and demands the Judgment of the Court thereupon, whether he ſhall be compell'd to make any farther, or other Anſwer thereunto.

DENARIATUS *Terræ*, in our ancient Law-Books, as much Land as is worth a Penny by the Year. *Sibylla Bartholot tenet unam Acram, & 5 Denariatos Terræ in eodem Tenemento.* Du Cange.

DENARIUS, in Antiquity, the *Roman Penny*; a Silver Coin, equivalent to, from ſix to ſeven Pence Half-Penny Sterling. See COIN, MONEY, PENNY, *&c.*

The *Romans* having for a long Time uſed Braſs Money, which they call *As*, quaſi *Æs*; or *Libra* and *Pondo*, becauſe it was a Pound Weight, began in the Year of *Rome* 585 to coin Silver; and coin'd firſt the *Denarius*, which was mark'd with the Letter X, becauſe it was worth Ten *Aſſes*, and divided into two *Quinarii*, mark'd with V, which was ſubdivided into two *Seſtertia*, mark'd with theſe three Letters, IIS.

The firſt, or *Conſular Denarius*, was worth more than the after, or *Imperial*. The firſt weigh'd a juſt Drachm, or an 8th Part of an Ounce, and was worth about 7 Pence half Penny of our Money. The ſecond was only the 7th Part of an Ounce, and worth 6 Pence, or 6 Pence half Penny.

Mr. *Tillemont* obſerves, that the *Denarius* was held ſufficient to keep a Perſon handſomely for a Day; and upon the whole ſeems to intimate, that it was equal to 12 *French Sous*, or 11 *Engliſh* Pence. But this is to over-rate it. *Budæus* ſhews, that the *Denarius* current in our Saviour's Time, was only worth about 3 Pence half Penny Sterling. *Jeſus Chriſt* was ſold for thirty *Denarii*, which were afterwards ſpent in purchaſing a Field.

The Impreſſion on the firſt *Denarius* was on one Side a Figure of *Janus*; and on the other, the Veſſel that brought him to *Italy*. Afterwards, the Reverſe was a *Caſtor* and *Pollux*, and ſometimes a Victory, driving a Chariot with two or 4 Horſes; whence the *Denarii* were call'd *Bigati*, or *Quadrigati*, or *Ratiti*.

DENARIUS is alſo uſed in our Law-Books for an *Engliſh* Penny. See PENNY.

Denarius Angliæ, qui nominatur Sterlingus *rotundus, ſine Tonſura, ponderabit* 32 *Grana Frumenti in medio Spicæ*; *&* 20 Denarii *facient* Unciam; *&* 12 *Unciæ facient* Libram. Stat. Edu. I. de Menſuris. See MEASURE, POUND, *&c.*

DENARIUS *Dei*, *Earneſt Money*, call'd alſo *Argentum Dei*, and by the French *Deniers de Dieu*, and in ſome Parts of our Country, *Arles*, or *Earls*. *Ita quod neuter Mercatorum ab illo Contractu poſſe diſcedere, vel reſilire poſtquam* Denarius Dei *inter Perſonas contrahentes datus fuerit & receptus.* Charta Eduardi I.

DENATES, in Antiquity, Domeſtic Gods, call'd alſo *Penates*. See PENATES.

Dionyſius Halicarnaſſæus, Lib. I. ſpeaking of the *Dii Penates*, tells us, that the Hiſtorian *Timæus* has wrote, that the Figure, Statue, or Effigy of the *Denates*, or *Penates*, was nothing but a crooked Iron, or Copper Rod, and a *Trojan* Veſſel of Potters Ware: And that this was all *Æneas* brought from *Troy*. But, for himſelf, he aſſures us, he had ſeen a Temple at *Rome*, near the *Forum*, where thoſe Gods were repreſented ſitting, under the Form of two young Men, having each of them a Dart in his Hand: He adds, that the Inſcription was DENATES, for that the Ancients, before the Invention of the Letter P, uſed a D inſtead thereof. But *Dionyſius* might be miſtaken: For the Bottom of the P is frequently ſo very ſmall on Medals, that there is no ſenſible Difference between a P, and a D; which might be the Caſe in the Inſcription that Author mentions; For that the ancient Inhabitants of *Italy* had no P, is a Miſtake ſufficiently refuted by many proper Names ſtill remaining of the moſt early Ages, *e.gr. Capys, Capetus, Picus, Pallas.* Nor were the *Trojans* without the ſame, witneſs *Palinurus, Paris, Priamus*, &c.

DENCHEE, or DENCHED, or ENDENCHEE, in Heraldry, is applied to the Ordinaries in a Shield, when they are edg'd with Teeth, or indented.

They make this Difference between what is *denched*, and what is engrail'd, that in the former, the Points, or Teeth, are pretty large, and cut ſtraight, like the Teeth of a Saw; whereas in the latter, the Teeth are ſmall, and the Intervals hollow, and a little rounded. See ENGRAILED.

DENDRITES, in natural Hiſtory, a Sort of whitiſh, or aſh-colour'd Stones, whereon are ſeen Trees, Shrubs, and other ruſtic Figures, repreſented in Miniature in blackiſh, or yellowiſh Figures. See FIGURED *Stone*.

Some rank the *Dendrites* in the Claſs of Stone-Plants: But againſt this it is urged; Firſt, That the Branches of Trees, *&c.* painted in Miniature on the *Dendrites*, are never confounded together, nor ſhoot a-croſs each other, as thoſe of Stone-Plants uſually are. Secondly, That the Fire ſtrips the *Dendrites* of all its Figures, without deſtroying the Stone, and reducing it to Aſhes; which does not hold of any Stone-Plant. From hence it appears, that the Figures of the *Dendrites* are external, and the Effect of a Colour applied on the Stone not Artificially, but by Nature. Two poliſh'd Marbles being applied on each other with Oil between; upon parting them again, the Oil running into certain Tracks, its Impreſſion exhibits divers Figures like thoſe on the *Dendrites*; the Ramification always beginning on the Side the Marbles are begun to be ſeparated of. So that it appears, the Figures of the *Dendrites* are form'd by ſome bituminous Liquor inſinuating between the Beds, or *Strata* of the Stones; and accordingly, we actually find, that the *Dendrites* being expoſed to the Fire, yields a bituminous Smell. This ſame Liquor ouzes out of the Stone it ſelf, filtrating through its Pores, as, in all Probability, it is the Cold, and Preſſure of the upper Beds, that brings it forth.

In ſome *Dendrites*, the Figures penetrate quite through, in others they go but to the Middle, and in others not ſo deep.

DENDROPHORIA, in Antiquity, a Heathen Ceremony, conſiſting in the carrying of one or more Trees through a City, in certain Sacrifices, and in Honour of certain Deities.

The *Dendrophoria* was perform'd in the Sacrifices of *Bacchus*, *Cybele*, and the God *Sylvanus*. *Arnobius*, Lib. V. makes mention of that perform'd in the Sacrifices of the Mother of the Gods. It conſiſted in carrying a Pine in Proceſſion through the City; which Pine was afterwards planted in Memory of that, where under *Atys*, the Favourite of the Goddeſs, mutilated himſelf. The Branches of this Tree they crown'd, in Memory of *Cybele*'s doing the ſame; and they cover'd its Trunk with Wool, by reaſon the Goddeſs cover'd *Atys*'s Breaſt with the ſame.

The Perſons who perform'd the Office of Carrying the Tree, were call'd *Dendrophori*.

In the *Roman* Hiſtory we find mention made of a Company, or College of *Dendrophori*, who attended the Army: And the Criticks have been in great Pain to aſſign their Office. Some hold, that they hew'd, and form'd the Wood for the Tents: Others, that they provided the Wood neceſſary for the Military Works, Machines of War, *&c.* *Salmaſius* in his Notes on the Life of *Caracalla* by *Spartian*, owns this the general Opinion of all the Learned Men of his Time; but aſſures with his uſual Modeſty, that they were all miſtaken, and that the *Dendrophori* of the Army were the ſame with thoſe of the Sacrifices.

The Word is form'd of δένδρον, Tree, and φέρω, I bear.

DENEB, in Aſtronomy, a fix'd Star, call'd alſo *Cauda Lucida*, or the *Lion's Tail*; Its Longitude, Latitude, *&c.* ſee under LEO.

DENELAGE, or DANELAGE, the Law made by the *Danes* in *England*. See MERCHENLAGE.

DENIER, the *French* Penny; a ſmall Copper Coin, 12 whereof make a *Sol*, or *French* Shilling. See SOL, SHILLING, PENNY, COIN, *&c.*

The French *Denier* is about $\frac{1}{13}$th Part of the *Engliſh* Penny. It is ſubdivided into two *Mailles*, and the *Maille* into two *Oboles*.

Anciently, *Denier* was a general Name for all Sorts of Monies in *France*; as *Nummus* was for thoſe in *Rome*. Thus, a Piece of Gold Money, was call'd *Denier d'Or*; Silver Money, *Denier d'Argent*: After the ſame Manner as the *Romans* ſaid, *Nummus Aureus*, and *Nummus Argenteus*. There were two Kinds of *Deniers*, the one *Tournois*, the other *Pariſis*; whereof the latter was worth a fourth Part more than the former, and was call'd *Monnoye Royale*, or *Forte Monnoye*, and ſometimes *Denier d'Or*, and *Denier a Valeur d'Or*.

DENIZEN, in Law, (from the French *Donaiſon*, i. e. Donation) an Alien that is Enfranchiſed here in *England* by the King's Charter, and Donation; and thereby enabled, in many Reſpects, to do as the King's Native Subjects do, namely, to purchaſe, and poſſeſs Lands, to hold any Office, or Dignity, *&c.* Yet is *Denizenſhip* ſhort of *Naturalization* by Parliament. For a Stranger naturalized, may inherit Lands by Deſcent; which a *Denizen* cannot. Beſides that, in the Charter, whereby a Perſon is made a *Denizen*,

there is usually some Clause, or other, which abridges him of that full Benefit, which natural Subjects enjoy.

When a Man is thus Enfranchised, he is said to be, *Ad Fidem Regis Angliæ*, or, *under the King's Protection*; till such Time his Goods may be seiz'd to the King's Use.

DENOMINATION, that whereby one Thing takes a Name, from the Name of another, on Account of some Relation between the two: or, more strictly, it is a Name whereby something is call'd, in Consequence of some Form, or Property thereof. See NAME.

Hence, as the Form is of two Kinds, *viz. Internal*, and *External*; *Denomination* becomes two-fold.

Internal DENOMINATION, is that founded on the inner Form, or arising from the Intrinsic Form; thus *Peter* is denominated *Learned*, on Account of his Learning, which is something Intrinsic.

External DENOMINATION, is that founded, or arising from the external Form. Thus, a Wall is said to be *seen*, and *known* from the Vision, and Cognition employ'd upon it; and thus *Peter* is denominated, *honoured*, by reason of Honour, which is not in the Person honoured, but in him that honours.

DENOMINATOR, in Arithmetic, a Term only used in speaking of Fractions, or broken Numbers. See FRACTION.

The *Denominator of a Fraction* is the lower Number; or that below the Line; shewing into how many Parts the Integer is supposed to be divided by the Fraction. Thus in the Fraction $\frac{7}{12}$, *seven twelfths*, the Number 12 is the *Denominator*; and shews, that the Integer is here divided into 12 Parts. The *Denominator* always represents an Integer.

The Number above the Line 7, is call'd the *Numerator*. See NUMERATOR.

DENOMINATOR *of a Ratio*, is the Quotient arising from the Division of the greater Term by the less. Thus 6 is the *Denominator* of the Proportion 30: 5. because 5) 30 (6. The *Denominator* is what we otherwise call the *Exponent of the Ratio*. See EXPONENT.

DENSITY, that Property, or Habitude of Bodies, whereby they contain such a Quantity of Matter, under such a Bulk. Accordingly, a Body that contains more Matter than another, under the same Bulk, is said to be *denser* than the other. *Density* stands in Opposition to *Rarity*. See RARITY, and CONDENSATION.

Hence, since the Mass is proportional to the Gravity, a *denser* Body is specifically heavier than a *rarer*; and a specifically heavier is *denser* than a specifically lighter. See WEIGHT, and GRAVITY.

The *Densities*, and Bulks of Bodies, are the two great Points, whereon all Mechanicks, or Laws of Motion turn: 'tis an Axiom, that Bodies of the same *Density* contain equal Masses, under equal Bulks. If the Bulks of two Bodies be equal, their *Densities* are as their Masses: Consequently, the *Densities* of equal Bodies, are as their Gravities. If two Bodies have the same *Density*, their Masses are as their Bulks: And hence, the Gravities of Bodies of the same *Density*, are in the *Ratio* of their Bulks. The Masses of two Bodies are in a *Ratio* compounded of their *Densities*, and Bulks; consequently, their Gravities are in the same *Ratio*: And if their Masses, or Gravities be equal, their *Densities* are reciprocally as their Bulks. The *Densities* of any two Bodies are in a *Ratio* compounded of the direct *Ratio* of their Masses, and the reciprocal one of their Bulks.

The Peripateticks define *Density*, a secondary Quality, whereby a Body is full of it self; its Parts cohering without any Interstice. So that the Form of *Density* consists in the immediate Coherence of Parts. Hence *Porphyry* in his Predicaments defines a *dense* Body, that whose Parts are placed so near each other, that no other Body can come between them; as Gold. The efficient Cause of *Density* they usually attribute to cold: *Scaliger*, and some others, attribute it to Moisture. Many of the Moderns take the Smalness of the Parts of Bodies, to contribute much to their *Density*; as by this means the Pores are left the smaller. Tho' 'tis added, that the *Density* of Bodies does not only depend on the Smalness of the Pores, but also on their Fewness; Far are we from having any Body absolutely *dense*, in the Sense of the Ancients: Gold it self, the *densest*, and heaviest of all natural Bodies, Sir *Is. Newton* observes, does contain a great deal more Pore, or Vacuity, than Substance. See PORE.

When the Pressures of two Liquids are equal, the Quantities of Matter in Columns which have equal Bases, do not differ; wherefore the Bulks, that is, the Heights of the Columns are inversely as the *Densities*; whence may be deduced the Method of comparing them together: After this Manner: pour Mercury into a curb Tube A, so as to fill the lower Part of the Tube from B to C; (*Tab. Hydrostaticks Fig.* 1.) pour in Water in one Leg from B to E; in the other Leg pour in Oil of Turpentine, till both the Surfaces of the Mercury B C, be in the same Horizontal Line, and the Height of the Oil be CD: These Heights will be as 87 to 100, which is the inverse *Ratio*, that the *Density* of Water has to the *Density* of Oil of Turpentine; and therefore those *Densities* are to each other as 100 to 87. The Mercury is poured in, lest the Liquids should be mixed in the Bottom of the Tube.

The *Densities* of Liquids are also compared together by immerging a Solid into them; for if a Solid lighter than the Liquids to be compared together, be immersed successively into different Liquids, the immersed Parts will be inversely as the *Densities* of the Liquids; for, because the same Solid is made Use of, the Portions of the different Liquors, which in every Case would fill the Space taken up by the immersed Parts, are of the same Weight; therefore the Bulks of those Portions, that is the immersed Parts themselves are inversely as the *Densities*. See further under SOLIDS *immersed in Liquids*.

The DENSITY *of the Air*, is a Property that has much imploy'd the later Philosophers, since the Discovery of the Torricellian Experiment, and the Air-pump. See RAREFACTION, and CONDENSATION.

'Tis demonstrated, that in the same Vessel, or even in Vessels communicating with each other, at the same Distance from the Centre, the Air has every where the same *Density*. The *Density of the Air* always increases in Proportion to the Compression, or the compressing Powers. See PRESSURE.

And hence, the lower Air is always *denser* than the upper: Yet the *Density* of the lower Air is not proportional to the Weight of the Atmosphere, by reason of Heat and Cold, which make notable Alterations as to Rarity, and *Density*. If the Air be rendred *denser*, the Weight of Bodies therein is diminish'd; and if rarer, increased; by reason Bodies lose more in heavier than in lighter *Medium's*. See SPECIFIC GRAVITY.

And hence, if the *Density of the Air* be sensibly alter'd, Bodies equally heavy in a lighter Air, if their specific Gravities be considerably different, will have their *Equilibrium* taken away in a *denser* Air, and the specifically heavier will preponderate; which is the Foundation of the *Manoscope*, an Instrument for measuring the Alterations in the *Density* of the Air. See MANOSCOPE.

DENTAL, *Dentalis*, is applied to Letters, in the Pronunciation whereof the Teeth have a principal Share. See LETTER.

Grammarians, and especially the *Hebrew* ones, distinguish the Letters into *Dental*, *Labial*, *Guttural*, *Lingual*, *Palatal*, &c. See GUTTURAL, *&c.*

DENTALIS *Lapis*, or *Dentalium*, is a Kind of Shell, which the Apothecaries pulverize, and use in several Medicaments, as an excellent *Alcali*. The genuine *Dentalis*, described by Mr. *Tournefort*, is of a tubular, or Conical Form, about 3 Inches long; of a shining, greenish white; hollow; light, and divided lengthwise by Parallel Lines, running from Top to Bottom. It is about the Thickness of a Feather, and bears some Resemblance to a Dog's Tooth. 'Tis very scarce; and therefore in lieu of it, they usually substitute a Shell of divers Colours found among the Sand when the Sea is withdrawn; but not channel'd, or fluted like the *Dentalis*.

D. *Lister*, in the *Philosoph. Transact.* makes mention of two Species of *Dentalia*; the first commonly enough found about the Island of *Guernsey*, &c. being a long, slender, round Pipe, a little bending, and tapering, and hollow at both Ends; whence it is also call'd, *the Dog-like-tooth*: The other properly call'd *Entalium*, longer, and thicker than the former; and besides, streak'd with Ridges; whence the *Italian* Term *Intaglia*. See ENTALIUM.

DENTED, *Indented*, Tooth'd. See INDENTED.

DENTED *Verge*, among Botanists, is applied to such Leaves of Plants as are notched, or jagged about the Edge, or Brim; whereof some are *fine dented*; others *large*, or *deep dented*, i. e. cut into the Leaf. See LEAF.

DENTED *Wheel*, *Rota Dentata*. See WHEEL.

DENTES, in Anatomy. See TEETH.

DENTICLES, or DENTILS, in Architecture, an Ornament in Corniches, bearing some Resemblance to Teeth; particularly affected in the *Ionic*, and *Corinthian* Orders.

They are cut on a little square Member, properly call'd *Denticulus*; and the Notches, or Ornaments themselves, *Dentes*, from *Dens*; as having the Appearance of a Set of Teeth.

Anciently, *Dentils* were never used but in the *Ionic* Cornich: Yet we find them in the Remains of the Theatre of *Marcellus*; which is an Argument with some, that *Vitruvius* had not the Direction of that Building. *Vitruvius* prescribes the Breadth of each *Dentil*, or Tooth, to be half its Height; and the Indenture, or Interval between each two, he orders to be $\frac{2}{3}$ of the Breadth of the *Dentil*.

The same Author, *C.* 2. of his IVth Book, observes, that the *Greeks* never used *Dentils* underneath Modillions; by reason Modillions represent Forces; and *Dentils* represent Ends of Rafters, which can never be plac'd underneath Forces. See MODILLION.

The

The *Romans* were not ſo ſcrupulous as to this *Decorum*; excepting in the *Pantheon*, where there are no *Dentils* under the Modillions, neither in the *Portico*, nor in the Inſide of the Building. The *Italians* call them *Dentelli*, and *Denticoli*.

DENTIFORMIS *Proceſſus*, the ſame as *Pyrenoides*. See PYRENOIDES.

DENTIFRICE, in Medicine, Tooth-Powder; a Remedy to rub the Teeth withal, in order to cleanſe, or faſten them. See TOOTH.

There are *Dentifrices* of divers Kinds, and Forms: Some in Form of a Powder, compoſed of Corals, Pumice-Stone, Salt, Alumn, Egg-Shells, Lobſters, Harts-Horn, Cuttle-Bone, Tartar vitriolated, *&c.* Others in Form of an Electuary, or Opiate, conſiſting of the ſame Powders, mix'd up with Honey.

There are others, prepar'd with Roots boil'd with Alum, and dried in the Oven. Others in Form of a Liqnor, drawn by Diſtillation from drying Herbs, and aſtringent Medicines.

The *Dutch* hold Butter the beſt *Dentifrice*, to keep the Teeth white and ſound; And the *Spaniards*, Urine.

DENTITION, the Act of breeding, or cutting the Teeth. The Time of *Dentition*, is uſually from about 7 Months old, to 17. The *Inciſores* come firſt; then the *Maxillares*; and laſtly the *Canini*, or Eye-Teeth. See TEETH.

Dentition, *Hippocrates* obſerves, is uſually proceeded with an Itching of the Gums, Convulſions, Fevers, and Looſeneſs; eſpecially when the Canine-Teeth are cut.

The like Symptoms, Dr. *Liſter*, on this Paſſage of *Hippocrates*, obſerves, happen to Birds upon Moulting, or Caſting their Feathers, on which Occaſion they become mute, and ſullen. See MOULTING.

The Germen, or Seed of the Tooth, ſays *Dolæus*, is a ſlender, mucous Matter, like the White of an Egg, contain'd in the Cells, or *Alveoli* of the Jaw-bone, which grows harder and bigger every Day, till it be fit to break through the Gum. In this Rupture the poor Child is afflicted with terrible Symptoms, Inflammations of the Jaws, Gripes, Waking, Inquietude, Terrours, Dejections, Vomiting, Salivation, Epilepſy, Abſceſſes, and frequently Death.

There are two Terms, or Periods of *Dentition*; The one, when the Tooth makes its firſt Endeavour to get out of the Maxillary Bone, and wherein the outer, and upper Part of the Gum uſes to be incompaſſed with a whitiſh Circle. The other, when the Tooth, conſiderably enlarged in Bulk, renders the Gum tumid, and ſtrives with all its Force to break its Way through the ſame. The Remedies againſt the Symptoms of *Dentition* are Abſorbents, and gentle Purgatives.

DENUNCIATION, a ſolemn Publication, or Promulgation of any Thing.

All Veſſels are lawful Prize after *Denunciation*, or Proclamation of War. See PRIZE.

The *Denunciation* of excommunicated Perſons, is, that the Sentence may be the more fully executed, that the Perſons may be known, the Entrance into the Church refuſed them, and that other People may be warned, not to have any Communication with them. See EXCOMMUNICATION.

DEOBSTRUENTS are ſuch Medicines as open Obſtructions. See OBSTRUCTION, and DETERGENT.

It muſt be obſerv'd, however, that there is ſomething further intimated by *Deobſtruent*, than by *Detergent*: For a Medicine may be *deobſtruent*, that is not in the ſtricteſt Senſe *detergent*; as, in Effect, are moſt made of metalline Subſtances; ſuch as Steel, and Mercury; which obtain this Appellation from their Acting by their natural Weight, whereby they increaſe the *Momentum* of their circulating Fluid, and make it ſtrike againſt the ſecretory Outlet with greater Force; becauſe the *Momenta*, or *Vis Percuſſionis* of all Projectils, of which Kind is a circulating Fluid, is as their Solidities, ſuppoſing their Velocities equal. The more therefore the Animal Fluids are ſaturated with denſe, and ſolid Particles, with the greater Force they diſtend the Veſſels, and more eaſily break through, where the Structure favours their Eſcape; and upon that Account are Medicines, which add to theſe Qualities in the Fluids, call'd *Deobſtruents*.

DEODAND, in our Cuſtoms, a Thing given, or forfeited, as it were, to God, for the Pacification of his Wrath in a Caſe of Miſadventure, whereby a Chriſtian Soul comes to a violent End, without the Fault of any reaſonable Creature: As if a Horſe ſtrike his Keeper, and kill him; If a Man, in driving a Cart, falls ſo as the Cart-Wheel runs over him, and preſſes him to death; If one be felling a Tree, and gives Warning to the Standers by, to look to themſelves; yet a Man is kill'd by the Fall thereof: In the firſt Place the Horſe; in the ſecond, the Cart-Wheel, Cart, and Horſes; and in the third, the Tree, is, *Deo dandus*, q. d. *to be given to God*, that is, to the King, to be diſtributed to the Poor by his Almoner, for Expiation of this dreadful Event; tho' effected by unreaſonable, nay ſenſeleſs, and dead Creatures.

Omnia quæ movent ad Mortem ſunt Deodanda.
What moves to Death; or kills him dead,
Is *Deodand*, and forfeited.

This Law ſeems to be an Imitation of that in *Exodus*, Chap. XXI. *If an Ox gore a Man, or a Woman, with his Horn, ſo as they die; the Ox ſhall be ſton'd to Death; and his Fleſh not be eat; So ſhall his Owner be innocent.*

Fleta ſays, the *Deodand* is to be ſold, and the Price diſtributed to the Poor, for the Soul of the King, his Anceſtors, and all faithful People departed this Life.

DEOPPILATIVE, a Remedy proper to ſoften, reſolve, and remove Obſtructions. See OBSTRUCTION.

Deoppilatives are the ſame with what we otherwiſe call *Deobſtruents*. See DEOBSTRUENT.

DEPART, a Method of refining, or purifying Gold by means of *Aqua fortis*. See GOLD.

There are three Ways of refining Gold; The firſt by *Antimony*: The ſecond by *Sublimate*: and the third, which is the moſt uſual, by *Aqua fortis*. The two former, ſee under the Article REFINING.

For the Operation of the *Depart*, they take at the Rate of 1 Pound of impure Gold, and 2 of Silver; theſe they fuſe together in a Crucible, and when fuſed, caſt them into cold Water, where they become divided into Grains of the Bigneſs of Peas. Theſe Grains taken out, and dried by the Fire, are put in a *departing* Veſſel, which is a Stone Matraſs, and to the Metal is added 4 Pounds of *Aqua fortis*. Then taking the Veſſel, they ſet it on the Coals, and in about an Hours Space, the refining is done. For upon opening the Veſſel, they find nothing therein but the *Aqua fortis*, and the Gold reduced into a *Calx*, or Sand: The Silver being all diſſolv'd, and imbibed by the Water.

To raiſe the Gold to its due Fineneſs, they uſually give it the *Aqua fortis* again, and again; uſing for the firſt Time, half a Pound; and for the ſecond, a Quarter of a Pound of the Water, to 8 Ounces of Metal. If the third Water be found good, and clear, the Operation is ended: And the *Calx* of the Gold being waſh'd in repeated Water, is melted down again in a Crucible, firſt by a gentle, and afterwards a vehement Fire, to be caſt into Ingots, or Wedges.

It muſt be added, that the Silver, with the Impurities of the Gold, are ſo throughly incorporated with the Water, that to the Eye there does not appear any Thing beſide the pure Liquid; yet is not this Silver loſt. To recover it again out of the *Menſtruum*, they divide their Stock of *Aqua fortis* into ſeveral Stone Veſſels, which they fill up with Spring Water, obſerving to put 7 or 8 times as much of this, as that. This done, in each Veſſel they put a Quantity of Copper; and leaving the whole for 24 Hours, at the End thereof they find the Spirits of the *Aqua fortis* have quitted the Silver, and are incorporated with the Copper, leaving the former in Form of a *Calx*, or Aſhes at Bottom. This *Calx* being dried, is melted into an Ingot, with a little Salt-petre.

To husband the *Aquæ fortes*, and make them ſerve again for a ſecond Operation; they diſtil them in an Earthen, or Glaſs Alembic; and when the Diſtillation is about a third over, change the Recipient. The Water of the firſt Recipient, ſerves for the firſt Operation of *Depart*, and the reſt for the ſubſequent ones.

If the *Aqua fortis*, having quitted the Silver, and being united with the Copper, be then filtrated, it is call'd, *Aqua ſecunda*; In which if you ſteep an Iron-Plate ſome Hours, you will have another *Depart*. For the *Menſtruum* will let go the Copper, and prey on the Iron, leaving the Copper in Powder on the Iron-Plate. And filtrating this *Diſſolution*, you may get the Iron out of it by laying in it a Piece of *Lapis Calaminaris*; for the Iron in that Caſe will *depart* to the Bottom, and the *Lapis* be diſſolv'd. And if you again filtrate this Water, and pour on it the Liquor of fix'd Nitre, you will have another *Depart*; the *Lapis* precipitating to the Bottom. And laſtly, filtrating this Water, as before, and evaporating Part of it, you will have Cryſtals of Salt-petre.

DEPARTURE, or DEPARTER, in Law, a Term properly applied to a Perſon, who firſt pleading one Thing in Bar of an Action, that being replied to, he waves it, and inſiſts on ſomething different from his firſt Plea. Or it may be applied to a Plaintiff, who in his Replication ſhews a new Matter from his Declaration. So if a Man plead a general Agreement in Bar; and in his Rejoynder alledge a ſpecial one; it ſhall be adjudged a *Departure* in Pleading. *The Defendant hereupon demurred, becauſe it was a* Departure *from the Declaration.* Coke II. Part, fol. 147.

DEPARTURE *in Deſpight of the Court*, is when the Tenant, or Defendant appears to the Action brought againſt him, and has a Day over in the ſame Term; he not appearing, but making a Default, it is a *Departure in Deſpight of the Court*, and therefore he ſhall be condemn'd. The *Departure* is always on the Part of the Tenant, or Defendant; and its Entry is, *quod prædictus A, licet ſolemniter Exactus, non revenit, ſed* in contemptum Curiæ receſſit.

DE-

DEPARTURE, in Navigation, is the Eaſting, or Weſting of a Ship, with reſpect to the Meridian it *departed*, or ſail'd from. See MERIDIAN.

Or 'tis the Difference of Longitude, either Eaſt or Weſt, between the preſent Meridian the Ship is under, and that where the laſt Reckoning, or Obſervation was made. See LONGITUDE.

This *Departure* any where, but under the Equator, muſt be accounted according to the Number of Miles in a Degree proper to the Parallel the Ship is under. See *Mercators*-SAILING.

DEPHLEGMATED, in Chymiſtry, an Epithet applied to Spirits that are well clear'd of Water, or Phlegm. See SPIRIT, and PHLEGM.

To effect which, they *rectify* them, *i.e.* diſtil them over and over, till they be left quite pure. See DISTILLATION, and RECTIFICATION.

DEPHLEGMATION, in Chymiſtry, is the Act of purifying, or clearing a Fluid of its Phlegm, or Water.

This is perform'd by diſtilling the Spirit, or other Fluid over and over; by which means, the ſpirituous Part all riſes, and leaves the Phlegm, or Water behind. When the Spirit is thus diſengag'd of all its Phlegm, or, at leaſt, as much as it can be, it's call'd, a *dephlegmated Spirit*. See PHLEGM.

DEPILATORY, or DEPILATIVE, in Medicine, a Plaſter, or Medicine, applied on any hairy Place, in order to bring off the Hair. See HAIR.

Depilatories are principally compoſed of Orpiment, which is a very cauſtic, and even a dangerous Mineral. For Hairs growing on the Fore-head of a young Girl, I preſcribed the following *Dropax*, or *Depilative Liniment*, *Degori*.

The Word is form'd of the Particle *De*, and *Pilus*, Hair.

DEPONENT, in the *Latin* Grammar, a Term applied to Verbs, which have Active Significations, but Paſſive Terminations, or Conjugations, and want one of their Participles Paſſive: As, *Minor*, I threaten, which has for Participles, *Minans*, *Minaturus*, and *Minatus*, but no *Minandus*, which ſhould be the Participle Paſſive. See VERB.

They are call'd *Deponents*, as having *depoſited*, or laid a-ſide their Paſſive Signification.

DEPOPULATION, a Waſting, Pilling, Deſtroying, Deſolating, or *Unpeopling* any Place. *Cokes Inſtit. Part* III. *fol.* 204.

Hence; *Depopulatores Agrorum. Stat.* 4. *Henr.* IV.

DEPORTATION, a Sort of Baniſhment in Uſe among the *Romans*, whereby ſome Iſland, or other Place was allotted a Criminal for the Place of his Abode, with a Prohibition not to ſtir out of the ſame on Pain of Death. See BANISHMENT.

Ulpian makes this Difference between *Deportation*, and Relegation, that the former confined the Party to one certain Place for ever; whereas Relegation was frequently revoked, and allowed a little more Liberty. By *Deportation* that Perſon loſt the Rights of a *Roman* Citizen. See RELEGATION.

DEPOSITION, in Law, a Teſtimony given in Court by a Witneſs upon Oath. In Chancery, *Depoſition* is a Teſtimony ſet down in Writing, by Way of Anſwer to the Interrogatories exhibited in Chancery, where ſuch Witneſs is call'd *Deponent*. When ſuch Witneſs is examin'd in open Court, he is ſaid to be examin'd *viva Voce*.

DEPOSITION is alſo uſed for the ſequeſtring, or depriving a Perſon of his Dignity, and Office.

Depoſition only differs from Abdication, in that the latter is ſuppoſed voluntary, and the Act of the Dignitary, or Officer himſelf; and the former of Compulſion, being the Act of a ſuperior Power, whoſe Authority extends thereto.

Some ſay the *Depoſition*, and ſome the Abdication of King *James* II. See ABDICATION.

The Pope pretends to a Power of *depoſing* Kings. *Gregory* VII. we are aſſured by *Onuphrius Pavinius*, and *Otho de Friſinga*, was the firſt, who ever attempted the *Depoſition* of Kings.

Depoſition does not differ from Deprivation: We ſay indifferently a *depoſed*, or deprived Biſhop, Official, *&c.* See DEPRIVATION.

Depoſition differs from Suſpenſion, in that it abſolutely and for ever ſtrips, or diveſts a Prieſt, *&c.* of all Dignity, Office, *&c.* whereas Suſpenſion only exhibits, or reſtrains the Exerciſe thereof. See SUSPENSION.

Depoſition only differs from Degradation, that the latter is more formal, and attended with a few more Circumſtances than the former: But in Effect and Subſtance they are the ſame; thoſe additional Circumſtances being only Matter of Shew, firſt ſet on foot out of Zeal, and Indignation, and kept up by Cuſtom, but not warranted by the Laws, or Canons. See DEGRADATION.

DEPOSITORY, in Law, a Perſon entruſted as Keeper, or Guardian of any Thing. See DEPOST.

Ordinary Depoſitories are not to warrant the Thing left with them, in Caſe it be loſt, or ſtolen. They are only to anſwer for a Fraud, or Breach of Faith, not for Negligence. But a *Neceſſary Depoſitory*, as an Inn-keeper, is accountable for a Theft, or Robbery, if there have been any Negligence in the Caſe.

DEPOST, *Depoſitum*, a Thing put in the Hands of another to be kept *gratis*. See DEPOSITORY.

The Civilians divide a *Depoſitum* into Simple, and Judiciary.

Judiciary, is that conteſted between ſeveral Perſons, and *depoſited* in the Hands of ſome third Perſon, by Decree of a Judge.

Simple is either Voluntary, or Neceſſary. *Neceſſary* is that done in Caſe of Hoſtility, Shipwrack, Fire, *&c.*

Inn-holders are reſponſable for the Baggage brought to them, as being a *Neceſſary Depoſt*.

DEPRECATION, in Rhetoric, a Figure whereby the Orator invokes the Aid, or Aſſiſtance of ſome one; or prays for ſome great Evil, or Puniſhment to befal him who ſpeaks falſely; either himſelf, or his Adverſary.

DEPRECATIVE, in Theology, a Term only uſed in the Phraſe, *Deprecative Form*, which is applied with regard to the Manner of performing ſome Ceremonies in the Form of Prayer.

Among the *Greeks*, the Form of Abſolution is *deprecative*, being conceiv'd in theſe Terms, *May God abſolve you*; Whereas in the *Latin*, and even ſome of the Reformed Churches, it is in the declarative Form, *I abſolve you*.

DEPRESSION *of Equation*. See EQUATION.

DEPRESSION *of the Pole*: So many Degrees as you ſail, or travel towards the Zenith; ſo many you are ſaid to *depreſs* the Pole, becauſe it becomes, reſpectively, ſo much lower, or nearer to the Horizon. See ELEVATION *of the Pole*.

DEPRESSOR, in Anatomy, a Name common to divers Muſcles, from their Office in Lowering, or bringing down the Parts they are faſten'd to. See MUSCLE.

DEPRESSOR *Labii ſuperioris*, in Anatomy, a Muſcle call'd alſo *Conſtrictor Alæ Naſi*. See CONSTRICTOR *Alæ Naſi*.

DEPRESSOR *Labii inferioris proprius*, a Muſcle placed between the *Depreſſores Labiorum communes*, on the Part call'd the *Chin*. It appears to be but one Muſcle, aſcending with a twofold Order of fleſhy Fibres, and terminating in the lower Lip. Its Office is ſhewn by its Name; To let fall the lower Lip.

DEPRESSOR *Labiorum communis*, by ſome call'd *Depreſſor Labii ſuperioris*, is common to both Lips. It ariſes with a broad Origin from the lower Margin of the under Jaw, by the Side of the Chin, and is inſerted with a narrow Tail into each Lip near their Coalition; ſerving to draw them obliquely down.

DEPRESSOR *Maxillæ inferioris*. See DIGASTRICUS.

DEPRESSOR *Oculi*, a Pair of Muſcles ſpringing from each Corner of the Eye, and anſwered by another of like Figure and Structure in the lower Eye-lid. Theſe are often conſider'd together by Anatomiſts as one Orbicular Muſcle; the Fibres invironing the Eye-lids, and inſerted into them, not unlike the Sphincters of other Parts.

DEPRIMENS, in Anatomy. See DEPRESSOR.

DEPRIVATION, in the Canon Law, the Act of bereaving, diveſting, or taking away a ſpiritual Promotion, or Dignity: As when a Biſhop, Vicar, Prebend, or the like, is depoſed, or deprived of his Preferment for ſome Matter, or Fault in Fact, or in Law.

Deprivation is of two Kinds; *A Beneficio*, *& ab Officio*.

DEPRIVATION *a Beneficio*, is when for ſome great Crime, a Miniſter is wholly, and for ever *deprived* of his Living, or Preferment: which differs from Suſpenſion, in that the latter is only a temporary *Deprivation*. See SUSPENSION.

DEPRIVATION *ab Officio*, is when a Miniſter is for ever *deprived* of his Orders; Which is the ſame in Reality, with what we otherwiſe call *Depoſition*, and *Degradation*; and is uſually for ſome heinous Crime, deſerving Death, and perform'd by the Biſhop, in a ſolemn Manner. See DEGRADATION.

DEPTH, in Geometry, *&c.* See ALTITUDE, HEIGHT, *&c.*

DEPTH *of a Squadron*, or Battallion, is the Number of Men in a File; which in a Squadron is three, and in a Battallion generally ſix. See SQUADRON, FILE, *&c.*

The Enemies Horſe were drawn up 5 *deep*.

DEPURATION, in Pharmacy, the ſame as *Clarification*, or *Purification*, viz. the purging a Body of all the Lees, Fæces, and other craſs, coarſe, and excrementitious Parts adhering therein. See CLARIFICATION, PURIFICATION, *&c.*

Fermentation ſerves to *depurate* Liquors: Syrups, Juices, *&c.* are *depurated* by paſſing them through the *Manica Hippocratis*, or Straining-Bag. See FILTER, *&c.*

DE-

DEPUTATION, a Miſſion of certain ſelect Perſons out of a Company, or Body, to a Prince, or Aſſembly, to treat of Matters in their Name; or to proſecute ſome Affair therein. See DEPUTY.

Deputations are more or leſs ſolemn, according to the Quality of thoſe who ſend them, and the Buſineſs they are ſent upon.

Deputation is not properly applied where a ſingle Perſon ſends another with ſuch Commiſſion; but only where a Body are concern'd. The Parliament *deputed* the Speaker, and 6 Members, to preſent their Addreſs to his Majeſty. The Chapter *deputed* two Canons, to ſollicit their Affair in Council.

DEPUTY, a Perſon ſent, or *deputed* by ſome Community, in their Name, and Behalf. See DEPUTATION.

The ſeveral Provinces of the *French* Dominions ſend *Deputies* to the King every Year, to preſent him the *Cayer des Etats:* There are always three *Deputies*, one from each Order. 'Tis the *Deputy* of the firſt Order, that makes the Compliment to the King.

In the Cities of *Turky*, there are always *Deputies*, to treat with the Grand Seignior's Officers, as to Taxes, and other Concerns. Theſe *Deputies* are three or four of the richeſt, and moſt conſiderable among the Burgeſſes.

DEPUTY, is alſo frequently uſed among us, for an Office, or Employ; not a Dignity; and ſtands indifferently for a Vice, or Lieutenant. See LIEUTENANT, and VICE.

Among the Ancients, *Deputatus* was applied, Firſt, to Armorers, or Workmen employ'd in the making of Armour in the Forges, &c. And ſecondly, to a Sort of buſie People, who followed the Army, and in Engagements were charged to bring off, and take Care of the Wounded.

DEPUTATUS, ἀπόστατος, was alſo an inferior Officer in the Church of *Conſtantinople*, whoſe Buſineſs was to call Perſons of Condition the Patriarch had a Mind to ſpeak withal, and to keep off the Crowd where the Prelate walk'd. This *Deputy* appears to have been a Sort of *Uſher*, or Tip-Staff. But he had likewiſe the Care of the ſacred Veſtments; in which he approach'd the Office of a Sacriſtan.

DERELICTS, in the Civil-Law, are ſuch Goods as are wilfully thrown away, or relinquiſh'd by the Owner. The Term is alſo uſed for ſuch Lands, as the Sea receding from leaves dry, and fit for Cultivation.

DERIVATION, in Grammar, the Connexion, or Affinity one Word has with another, by having been originally form'd from it. See ETYMOLOGY.

DERIVATION, in Medicine, the diverting a Humour, which flows on ſome noble Part, and drawing it to ſome other neighbouring Part, where it is leſs dangerous. See HUMOUR.

Thus, in Defluxions upon the Eyes, or Teeth, they apply a Bliſter behind the Neck to draw the Matter thither: And in a Squinancy, they preſcribe Bleeding in the *Ranulæ*, or Veins under the Tongue, to divert the Humour from falling on the Throat. See DEFLUXION, and FLUXION.

DERIVATIVE, in Grammar, a Word, or Diction, which takes its Origin from another Word, call'd its *Primitive*. See PRIMITIVE.

Such is the Word *Derivative*, which takes its Origin from the Primitive *Rivus*, a Rivulet, or Channel, out of which leſſer Streams are drawn; and thus *Manhood*, *Deity*, *Lawyer*, &c. are *derived* from *Man*, *Deus*, *Law*, &c.

DERMA, in Anatomy, the *Cutis*, or Skin of an Animal; or the Tegument inveſting the whole Body immediately under the Cuticle, or Scarf-Skin. See CUTIS.

The *Derma* conſiſts of two Parts, the *Corpus reticulare*, and the *Papillæ pyramidales*. See SKIN, RETICULARE, and PAPILLÆ.

The Word comes from the *Greek* δέρειν, *to flea*, or *excoriate*.

DERNIER *Reſſort*. See RESSORT.

Whatever Power is committed by the King to any other, the *Dernier Reſſort* is ſtill remaining in himſelf; ſo that he may ſit in Court, and take Cognizance of Cauſes; except in Felonies, Treaſons, and other Caſes, where he himſelf is a Party.

DEROGATION, an Act contrary to a preceeding one, and that annuls, deſtroys, and revokes it.

Derogations, in general Terms, are not regarded in Judicature; they muſt be in ſpecific, and in formal Terms.

A new Law imports a *Derogation* of a former one: A ſecond Teſtament is a *Derogation* of a firſt.

DEROGATORY, a Clauſe importing *Derogation*. If a Perſon own himſelf indebted in a certain Sum; notwithſtanding any Quittance he has obtain'd for the ſame, the Act is *derogatory*.

DERVIS, or DERVICHES, a Sort of Monks among the *Turks*, who lead a very auſtere Life, and profeſs extream Poverty; tho' allowed to marry.

The *Dervis*, call'd alſo *Mevelavites*, are a *Mahometan* Order of Religious; the Chief, or Founder whereof was one *Mevelava*. They are now very numerous. Their firſt Monaſtery is that near *Cogni* in *Natolia*; where the General makes his Reſidence; and where all the Aſſemblies of the Order are held: the other Houſes being all dependent of this; which Privilege *Ottoman* I. granted this Monaſtery.

The *Dervis* effect a World of Modeſty, Patience, Humility, and Charity. They always go bare-legged, and open-breaſted, and frequently burn themſelves with hot Iron, to enure themſelves to Patience. They always faſt on Wedneſdays, eating nothing on thoſe Days till after Sun-ſet. Tueſdays and Fridays they hold Meetings, at which the Superior of the Houſe preſides. One of them plays all the while on a Flute, and the reſt dance, turning their Bodies round and round with the greateſt Swiftneſs imaginable. Long Cuſtom to this Exerciſe from their Youth, has brought them to ſuch paſs, that it does not maze, or diſcompoſe them at all. This Practice they obſerve with great Strictneſs, in Memory of *Mevelava* their Patriarch's turning miraculously round, for the Space of four Days, without any Food, or Refreſhment; his Companion *Hamſa* playing all the while on the Flute; after which he fell into an Extaſy, and therein receiv'd wonderful Revelations for the Eſtabliſhment of his Order. They believe the Flute an Inſtrument conſecrated by *Jacob*, and the Shepherds of the Old Teſtament; by reaſon they ſang the Praiſes of God thereon. They profeſs Poverty, Chaſtity, and Obedience, and really keep it while they remain *Derviſes*; But if they chuſe to go out, and marry, they are always allowed.

The Generality of *Derviſes* are Charletans: Some apply themſelves to Legerdemain, Poſtures, &c. to amuſe the People; Others give into Sorcery, and Magic: But all of them, contrary to *Mahomet*'s Precept, drink Wine, Brandy, and other fuddling Liquors, to give them the Degree of Gayety their Order requires.

Beſide their great Saint *Mevelava*; there are particular Saints honour'd in ſome particular Monaſteries: As *Kederle*, greatly rever'd in the Monaſteries of *Egypt*, and held by ſome to be St. *George*, and by others, with more Probability, the Prophet *Elias*. The *Derviſes* are great Travellers; And under Pretence of preaching, and propagating their Faith, are continually paſſing from one Place to another: On which Account they have been frequently uſed as Spies.

There are alſo *Derviches* in *Perſia*, call'd in that Country *Abdals*, q. d. *Servants of God*. They lead a very penurious, auſtere Life, and preach the Alcoran in the Streets, Coffee-Houſes, and wherever they can meet with Auditors. The Perſian *Derviches* retail little but Fables to the People, and are in the laſt Contempt among the Men of Wit, and Letters.

The Word is originally *Perſian* דרויש, ſignifying a *Beggar*, or Perſon who has nothing. And by reaſon the Religious, and particularly the Followers of *Mevelava*, profeſs not to poſſeſs any Thing; they call both the Religious in general, and the *Mevelavites* in particular, *Dervis*, or *Derviches*.

DESCANT, in Muſic, the Art of Compoſing in ſeveral Parts. See COMPOSITION.

Deſcant is three-fold; viz. *Plain*, *Figurate*, and *Double*.

Plain DESCANT, is the Ground-work, or Foundation of Muſical Compoſition, and conſiſts altogether in the orderly Placing of many Concords; anſwering to *ſimple Counter-point*.

Figurate, or *Florid* DESCANT, is that wherein Diſcords are concern'd as well, tho' not ſo much, as Concords. This may be well term'd, the Ornamental, or Rhetorical Part of Muſick; in Regard that in this are introduced all the Varieties of Points, Figures, Syncopes, Diverſities of Meaſures, and whatſoever elſe is capable of adorning the Compoſition.

Double DESCANT, is when the Parts are ſo contrived, that the Treble may be made the Baſs; and on the contrary, the Baſs the Treble. See HARMONY, COUNTER-POINT, &c.

DESCENDANT, in Genealogy, a Term relative to *Aſcendant*, and applied to a Perſon, who is born, or iſſued from ſome other here referr'd to. See ASCENDANT.

Adam infected all his *Deſcendants* with Original Sin. See ORIGINAL *Sin*.

The *Deſcendants* from the Brothers of the Maid of *Orleans*, are confirm'd in their Exemption from all Taxes, and Impoſts, by a Regulation of the Year 1634.

DESCENDING, ſomething that falls, or moves from above, downwards. There are *Aſcending*, and *Deſcending Stars*: *Aſcending*, and *Deſcending Degrees*. See ASCENDING, &c.

DESCENDING *Latitude*, is the Latitude of a Planet in its Return from the *Nodes* to the *Equator*. See LATITUDE.

There are *Aſcending*, and *Deſcending* Veins, ſpringing out of the *Cava*: *Aſcending*, and *Deſcending* Arteries, riſing out of the *Aorta*. See CAVA, and AORTA.

DESCENSION, in Aſtronomy, is either *Right*, or *Oblique*.

Right DESCENSION *of a Star*, or *Sign*, is a Point, or Arch of the Equator, which *deſcends* with the Star, or Sign below the Horizon, in a right Sphere. See *Right* SPHERE.

Oblique DESCENSION, is a Point, or Arch of the Equator, which deſcends at the ſame Time with a Star, or Sign below the Horizon, in an oblique Sphere. See *oblique* SPHERE.

Deſcenſions, both *Right*, and *Oblique*, are accounted from the firſt Point of *Aries*, or the Vernal Interſection; according to the Order of the Signs; that is, from Weſt to Eaſt. And as they are unequal, when it happens that they anſwer to equal Arches of the Ecliptick, as *e. gr.* to the 12 Signs of the Zodiack, it follows, that ſometimes a greater Part of the Equator riſes, or *deſcends* with a Sign, in which Caſe the Sign is ſaid to aſcend, or *deſcend rightly*: And ſometimes again a leſs Part of the Equator riſes, or ſets with the ſame Sign; in which Caſe it is ſaid to aſcend, and *deſcend* obliquely. See ASCENSION.

Refraction of the DESCENSION, *&c.* See REFRACTION.

DESCENSIONAL *Difference*, is the Difference between the *Right*, and *Oblique Deſcenſion* of the ſame Star, *&c.* See DIFFERENCE.

DESCENT, or DISCENT, in Law, an Order, or Manner wherein Lands and Tenements are derived to any Man from his Anceſtors.

Thus, to *make his Deſcent* from his Anceſtors, is to ſhew how, and by what particular Degrees, the Land in Queſtion came to him from his Anceſtors.

Deſcent is either *Lineal*, or *Collateral*.

Lineal DESCENT, is that convey'd down in a right Line from the Grand-Father to the Father, and from the Father to the Son, from the Son to the Grand-Son, *&c.*

Collateral DESCENT, is that ſpringing out of the Side of the Line, or Blood, as from a Man to his Brother, Nephew, or the like. See COLLATERAL, and DEGREE.

If one dies ſeiſed of Land, wherein another has Right to enter, and it *deſcends* to his Heir, ſuch *Deſcent* ſhall take away the other's Right of Entry, and put him to his Action for Recovery thereof. *Stat.* 32. *Hen.* VIII.

DESCENT, in Genealogy, and Heraldry, the Order, or Succeſſion of *Deſcendants* in a Line, or Family. See DESCENDANT.

One *Deſcent*, two *Deſcents*, &c. A Gentleman is of perfect Blood, who has four *Deſcents* of Gentility, both by his Father, and Mother's Side, *i. e.* whoſe Great-Grand-Father, Grand-Father, and Father, on both Sides, were all Gentlemen. See GENTLEMAN.

DESCENT, is alſo uſed in Heraldry, to expreſs the coming down of any Thing from above.

Thus a *Lyon en Deſcent*, is a Lion with his Head to one of the baſe Points, and his Heels towards one of the Corners of the Chief; as if he were leaping from ſome high Place.

DESCENT, *Fall*, in Mechanicks, *&c.* is the Motion, or Tendency of a Body towards the Center of the Earth, either directly, or obliquely. See CENTER, and MOTION.

It is to be here obſerv'd, Firſt, That a Body cannot *deſcend*, unleſs it can divide, and ſeparate the *Medium*; which it cannot do, unleſs it be ſpecifically heavier than the *Medium*. For ſince Bodies cannot penetrate each other, one muſt give Way 'ere the other can move: And again, Tho' a *Medium*, e. gr. *Water* be diviſible, yet if it be ſpecifically heavier than another, e. gr. *Wood*, it is only heavier as it contains more Particles of Matter in the ſame Bulk; all which have an Impulſe downwards, and conſequently in Water there is a greater Impulſe than in the ſame Bulk of Wood. See SPECIFIC *Gravity*.

Secondly, The *Deſcending* Body loſes as much of its Weight, as is the Weight of the *Medium*, with the Force of its Coheſion. See MEDIUM.

Thirdly, The leſs the Bulk of the *Deſcending* Body is, the more of its Gravity does it loſe in the ſame *Medium*. For tho' the Proportion of the ſpecific Gravity of the one to the other be ſtill the ſame in a greater, or leſs Bulk, yet the leſs the Body, the more the Surface, in Proportion to the Maſs; and the more the Surface, the more the Friction, or Reſiſtance. See FRICTION, and RESISTANCE.

The *Cauſe* of this *Deſcent*, or Tendency downwards, has been greatly controverted. There are two oppoſite *Hypotheſes* advanced; the one holding it to proceed from an internal, and the other from an external Principle. The firſt maintained by the Peripateticks, and *Epicureans*, and *Newtonians*; and the latter by the *Carteſians*, and *Gaſſendiſts*.

The Peripateticks teach, that heavy Bodies fall by certain motive Powers, flowing from their Forms towards the Centre of the Earth, as their proper Element, or Place in the Univerſe. Theſe Powers they call *Impetus's*; and will have them to have been impreſs'd on the ſeveral Parts of the Earth, at the Creation; being a Tendency of the Parts to the whole. And they ſuppoſe, that it is by means hereof, that the whole is ſtill preſerved in its Integral State. Adding, that if there were a perfect Vacuity in any Part of the Air round us, a Stone placed therein would not at all fall, or tend towards the Earth, as being no longer a Part thereof, nor having the natural *Impetus*.

The ancient *Epicureans*, or *Atomiſts*, with the modern *Newtonian* Philoſophers, hold, that all Bodies gravitate, or tend downwards, and that the more ſtrongly, as they contain the more Matter; conſequently perfectly ſolid Bodies, ſuch as they ſuppoſe Atoms, or primitive Corpuſcles to be, the moſt of all. See GRAVITY.

The *Carteſians* aſcribe the *Cauſe of Deſcent* of Bodies to a circular Motion of the *Æther*, which they feign for this very Purpoſe. According to them, all circular Motion is unnatural; and therefore is continually endeavouring to recede from its Center, and to change into a Recti-linear Motion; conſequently ſuch as have the more Motion, recede the more, and in receding, depreſs, or thruſt down ſuch as have leſs Motion. And thus the Air being moved with the moſt vehement Velocity, recedes more than ſolid Bodies, and by that means drives them towards the Center.

The *Gaſſendiſts* account for the *Deſcent* of heavy Bodies, by ſuppoſing certain magnetick Rays proceeding out of the Earth, and conſiſting of contiguous Particles, which by their continual Emiſſion retain the Rigidity of Rods, or ſtretched Cords. Theſe Rays being diffuſed every way from the Earth, as a Center, ſtrike, or impinge on what ſolid Bodies they meet withal in their Progreſs, and penetrate the ſame, ſome directly, and others obliquely, and refractedly, after the Manner of Rays of Light. Theſe Rays, ſay they, are a Kind of Arms; and the Defections, and Curvatures of their Extreams, as it were Fingers, or Hooks, which pull, or draw Bodies from above towards the Earth. And they add, that theſe Rays being the more rare, as they are more remote from the Center; their Effect is the more feeble; and the *Deſcent* of Bodies is the more ſlow, in Proportion as they are higher.

Laws of the DESCENT *of Bodies.*

I. Heavy Bodies in an unreſiſting *Medium* fall with an uniformly accelerated Motion. See the *Laws of uniformly accelerated Motion* under the Articles ACCELERATION, and MOTION.

Hence, 1. The Spaces *deſcended* are in duplicate *Ratio* of the Times, and Velocities; and increaſe according to the uneven Numbers 1, 3, 5, 7, 9, *&c.* 2. The Times, and Velocities, are in a ſubduplicate *Ratio* of the Spaces. 3. The Velocities of *deſcending* Bodies, are proportionate to the Times from the Beginning of their Falls. 4. The Spaces deſcribed by a falling Body, are as the Squares of the Times from the Beginning of the Fall.

A Body ſpecifically heavier *deſcends* in a fluid *Medium*, ſpecifically lighter, (*e.gr.* the Air,) with a Force equal to the Exceſs of the Weight of the Body above an equal Bulk of the *Medium*. For a Body only deſcends in a *Medium* with the Force remaining, after a Part has been ſpent in overcoming the Reſiſtance of the *Medium*. And this Reſiſtance is equal to the Weight of an equal Bulk of the *Medium*: Conſequently the Body only falls with the Exceſs of its Weight above that of an equal Bulk of the *Medium*.

Hence, the Power that ſuſtains a Body in a ſpecifically lighter *Medium*, is equal to the Exceſs of the abſolute Weight of the Body above an equal Bulk of the *Medium*. Thus $47\frac{1}{3}$ Pound of Copper in Water loſe $5\frac{1}{3}$ of their Weight. A Power, therefore, of 42 Pounds is able to ſuſtain them.

In ſuppoſing heavy Bodies to *deſcend* in an unreſiſting *Medium*, we conceive them free of all external Impediments, from what Cauſe ſoever. So that we even ſet a-ſide that oblique Impulſe given to Bodies while in falling, by the Rotation of the Earth, tho' this produce no ſenſible Irregularity in a little Diſtance.

Galilæus, who firſt diſcover'd the *Law of the Deſcent* of heavy Bodies by Reaſoning, afterwards confirm'd the ſame by Experiments; the Reſult of which, repeated an hundred times over, was, that the *Deſcent* was as the Square of the Times.

Grimaldo and *Ricciolus* made Experiments to the ſame Effect, tho' in a different Manner, by letting fall a Number of Balls, weighing 8 Ounces a Piece, from the Tops of ſeveral Towers, and meaſuring the Times of falling by a *Pendulum*. Theſe Experiments are exhibited in the following Table.

Vibrations of the *Pendulum*.	Time.		Space at the End of the Time.	Space *deſcended* each Time.
	″	‴	Rom. Foot.	Rom. Foot.
5	0	50	10	10
10	1	40	40	30
15	2	30	90	50
20	3	20	160	70
25	4	10	250	90
6	1	0	15	15
12	2	0	60	45
18	3	0	135	75
24	4	0	240	105

Since

Since then the Experiments of *Ricciolus*, made in ſuch conſiderable Diſtances, agree ſo well to the Theory, 'tis ſcarce worth taking Notice of what is urged to the contrary by *Dechales*, in his *Mund. Math.* who writes, that he had found by Experiment, that heavy Bodies in half a Second of Time *deſcend* $4\frac{1}{4}$ Feet; in two $16\frac{1}{2}$; in three 36; in four 60; in five 90; in ſix 123. 'Tis ſufficient, that he deduces the Irregularity from the Reſiſtance of the Air, which we ſuppoſe out of the Queſtion.

II. If a heavy Body *deſcend* in an unreſiſting *Medium* through an Interval not over-large, the Space it deſcribes is ſubduple of that which it would deſcribe in the ſame Time with the Velocity acquired at the End of the Fall.

III. The Time wherein a Body falls from a given Height being given, to determine the Spaces it fell in the ſeveral Parts of that Time.

Suppoſe the given Altitude $=a$ the Time $=t$ and the Space it fell in 1 Part of Time x: Then

$$\frac{1 : x = t^2 : a}{t^2 x = a}$$
$$x = a : t^2$$

Therefore the Space paſs'd over in the firſt Part of Time is $a : t^2$; Conſequently that paſs'd over in the ſecond Time $= 3^a : t^2$; That in the third $= 5^a : t^2$ *&c.*

E. gr. In the Experiments of *Ricciolus* above deliver'd; the Ball fell 240 Feet in 4 Seconds. Therefore the Space fell the firſt ſecond was $= 240 : 16 = 15$. The Space in the ſecond was $= 15.3 = 45$. That in the third $= 15.5 = 75$. And that in the fourth $15.7 = 105$.

IV. The Time wherein a Body falls a given Space, being given; to determine the Time wherein it will fall any other given Space in the ſame *Medium*.

Since the Spaces are as the Squares of the Times: To the Space which the Body falls in the given Time, the Space in the Queſtion, and the Square of the given Time find a fourth Proportional, which will be the Square of the Time ſought. The Square-Root, therefore, being extracted therefrom, the Problem is ſolved.

For Example, one of *Ricciolus*'s Balls in 4 Minutes Time falling 240 Foot, it is required in what Time it would fall 135 Foot? The Anſwer will be found $= \sqrt{}(135 : 16 : 240) = \sqrt{}(135 : 15) = \sqrt{}9 = 3$.

V. The Space a Body falls in a given Time, being given, to determine the Space it will fall in any other given Time.

To the Square of the Time wherein the Body falls the given Space, the Square of the Time wherein it ſhould fall the Space required, and the given Space, ſeek a fourth Proportional; This will be the Space required.

For Inſtance, *Ricciolus*'s Ball falling 60 Foot in 2 Seconds, 'tis aſk'd what Space it will fall in 4 Seconds? The Anſwer is, $16.60 : 4 = 4.60 = 240$.

For the *Laws of the* Deſcent *of Bodies on inclined Planes*. See *Inclined* PLANE.

For the *Laws of* Deſcent *in Cycloids*. See CYCLOID, and PENDULUM.

Line of quickeſt DESCENT, is that which a Body falling by the Action of Gravity deſcribes in the ſhorteſt Time; which is prov'd by Geometricians to be the *Cycloid*. See CYCLOID, and alſo CELERRIMI *Deſcenſus* LINEA.

DESCENTS, in Fortification, ſignify the Holes, Vaults, and hollow Places, made by undermining the Ground: ſuch as the Counter-ſcarps, or Covert-way.

A *Deſcent* into the Moat, or Ditch, is a deep digging into the Earth of the Covert-way, in Form of a Trench; of which the upper Part is cover'd with Madriers, or Clays againſt Fires, to ſecure the Paſſage into the Moat.

DESCRIBENT, is a Term in Geometry, expreſſing ſome Line, or Surface, which by its Motion produces a Plane Figure, or a Solid.

DESCRIPTION, a ſuperficial, imperfect, or unaccurate Definition of a Thing; giving a Sort of Knowledge thereof from ſome Accidents, and Circumſtances peculiar to it, which determine it enough to give an Idea that may diſtinguiſh it from other Things; but without explaining its Nature, or Eſſence.

Grammarians content themſelves with *Deſcriptions:* but Philoſophers require exact Definitions of Things. See DEFINITION.

DESCRIPTION, in Philoſophy, Logic, *&c.* is an Enumeration of divers Attributes of a Thing, moſt of which are only accidental: As when a Perſon is *deſcribed* by his Deeds, his Sayings, his Writings, his Honours, *&c.* See DEFINITION.

A *Deſcription*, as to its outward Appearance, reſembles a *Definition*; and is even convertible with the Thing *deſcribed*; but does not explain it. For inſtead of bringing ſeveral Things eſſential to the Thing *deſcribed*, it only brings a Number of Accidents belonging thereto. *E. gr.* Peter *is the tall, young Man who lives on the Green, wears black Clothes, frequents the College, Courts N. . . . &c.* where it is evident, we do not give any Explication of *Peter*, as not bringing Things that are in *Peter*, but only Circumſtances, or Things about him, *Tall, Young, Living, Wearing, Frequenting, Courting*, &c. a *Deſcription*, therefore, is no proper Anſwer to the Queſtion, *Quid* eſt, *What* is he? but to that, *Quis* eſt? *Who* is he?

Deſcriptions, in Effect, are principally uſed for Singulars, or Individuals: For Things of the ſame Species do not differ in Eſſence, but only as to *Hic*, and *Ille*, which Difference contains nothing very notable, or diſtinguiſhable. But Individuals of the ſame Kind, differ much in Accidents; *E. gr.* George *is King, and* William *a Citizen*; Charles *is a Male, and* Anne *a Female*; Henry *is wiſe, and* John *a Blockhead*, &c. Thus, a *Deſcription* is an Accumulation of Accidents, whereby Things are notably diſtinguiſh'd from each other, tho' they ſcarce differ at all in Eſſence.

Some Authors call a *Deſcription* a *Quaſi*-Definition; As Body *is a Thing diviſible, moveable, ſolid, extended*, &c. only wanting of a Definition in this, that inſtead of the Form, or Eſſence of a Thing, it gives one, or more Properties ariſing from the Form, or Eſſence. See DEFINITION, ESSENCE, FORM, *&c.*

DESCRIPTION, in Rhetoric. See DEFINITION.

DESCRIPTION, in Geometry. To *deſcribe* a Circle, Ellipſis, Parabola, *&c.* is to conſtruct, or form thoſe Figures, with Rules, Compaſſes, *&c.* See CONSTRUCTION, and FIGURE.

DESERT, or DESART, a Wilderneſs; or wild, uncultivated, uninhabited Place: As the *Deſerts* of *Lybia*, of the *Thebaide*.

Geographers uſe the Word in the general for all Countries little, or not at all inhabited. See WILDERNESS.

In Scripture, we find ſeveral Places in the *Holy Land*, or Places adjoyning thereto, call'd *Deſarts*. The *Deſart*, or Wilderneſs, ſimply, is that Part of *Arabia* on the South of the *Holy Land*, wherein the *Iſraelites* wandred forty Years, from the Time of their Evacuating *Egypt* to their Entry into the promis'd Land. The *Deſart* of *Berſabea* was that Part of the *Deſart* juſt mention'd, which border'd on the *Holy Land*, running towards the *Mediterranean*. The *Deſart* of *Idumea*, is *Idumea* it ſelf, a barren, mountainous Country. The *Deſarts* of *Betharen, Bethſaide, Cadeſh, Damaſcus, Dibla, Engaddi, Ethom, Gibeon, Horeb, Jernel, Juda, Moab, Pharan, Sin, Sinai, Sur, Ziph*, &c. are ſo many dry, uncultivated, and frequently mountainous Places, like our Downs, *&c.* where there are few, or no Habitations, or Inhabitants; whence the *Hebrews* call'd them by *Antiphraſis* מדבר, which properly ſignifies *human Word*, or *Speech*, by reaſon there was none heard there.

DESERTER, in War, a Soldier on the Muſter-roll, who quits his Company without Leave; or liſts himſelf under another Officer.

All Soldiers found half a League from a Garriſon, or Army, going towards an Enemies Country, or Quarters, without a Paſs, are deem'd, and treated as *Deſerters*.

The Puniſhment of *Deſertion*, is Death.

The ancient Church excommunicated *Deſerters*, as having violated their Oath.

DESHABILLE, a *French* Term, naturalized of late. It properly ſignifies a Toilette, Night-Gown, and other Neceſſaries, made uſe of in dreſſing, or undreſſing. Mr. . . . is not to be ſpoke withal; he is yet in his *Deſhabille*, i. e. undreſs'd, or in his Night-Gown.

The Word is a Compound of the Privative *de*, and *s'habiller*, to dreſs.

DESHACHEE, in Heraldry, is when a Beaſt has its Limbs ſeparated from the Body, ſo as they ſtill remain on the Eſcutcheon, with only a ſmall Separation from their natural Places.

DESIGN, or *Draught*, with regard to the Arts and Sciences, ſignifies the Thought, Plan, Geometrical Repreſentation, Diſtribution, and Conſtruction of a Painting, Poem Book, or Building.

This Painter has ſhewn the firſt *Deſign* of his Piece, in which the Figures are well diſpoſed. The *Deſign* of that Poem or Book is artfully laid.

Claudian never ſees his whole *Deſign* together: When he compoſes a Part, he thinks of nothing elſe; and works up every Member, as if it were ſeparate from all the reſt.

In Building, one may uſe the Term *Ichnography*, when by *Deſign* is only meant the Plan of a Building, or a flat Figure drawn on Paper. See ICHNOGRAPHY.

Orthography, when ſome Face, or Side of the Building is rais'd from the Ground. See ORTHOGRAPHY.

And *Scenography*, when both Front and Sides are ſeen in Perſpective. See SCENOGRAPHY.

DESIGN, in the Manufactories, the Figures wherewith the Workman enriches his Stuff, or Silk; and which he copies after ſome Painter.

In undertaking ſuch Kinds of figured Stuffs, 'tis neceſſary, that before the firſt Stroak of the Shuttle, the whole *Deſign* be repreſented on the Threads of the Warp; we don't mean

mean in Colours, but with an infinite Number of little Pack-threads, which being diſpoſed ſo as to raiſe the Threads of the Warp, let the Painter ſee from Time to Time what Kind of Silk is to be put in the Eye of the Shuttle, for Woof.

This Method of preparing the Work, is call'd *reading the Deſign*, or reading the Figure; which is perform'd after the following Manner.

A Paper is provided conſiderably broader than the Stuff, and of a Length proportionate to what is intended to be repreſented thereon. This they divide length-wiſe by as many black Lines as there are intended to be Threads in the Warp; and croſs theſe Lines, by others drawn breadth-wiſe; which with the former make little equal Squares. On the Paper thus ſquared, the Painter *deſigns* his Figures, and heightens them with Colours as he ſees fit. When the *Deſign* is finiſh'd, a Workman reads it, while another lays it on the Simblot.

Now, to read the *Deſign*, is to tell the Perſon, who manages the Loom, the Number of Squares, or Threads comprized in the Space he is reading; intimating at the ſame Time, whether it is Ground, or Figure.

To put what is read on the Simblot, is to faſten little Strings to the ſeveral Pack-Threads, which are to raiſe the Threads named. And thus they continue to do, till the whole *Deſign* is read.

Every Piece being compoſed of ſeveral Repetitions of the ſame *Deſign*; when the whole *Deſign* is drawn, the Drawer, to re-begin, as I may ſay, the *Deſign* a-freſh, has nothing to do, but raiſe the little Strings with Slip-knots to the Top of the Simblot, which he had let down to the Bottom. And this he is to repeat as often as is neceſſary, till the Whole be manufactured.

The Ribbond-Weavers have likewiſe a *Deſign*, but much more ſimple than that now deſcribed. 'Tis drawn on Paper, with Lines, and Squares, repreſenting the Threads of the Warp, and Woof. But in lieu of Lines, whereof the Figures of the former conſiſt, theſe only conſiſt of Points, or Dotts, placed in certain of the little Squares, form'd by the Interſection of the Lines. Theſe Points mark the Threads of the Warp that are to be raiſed; and the Spaces left blank, *deſign* the Threads that are to keep their Situation. The reſt is manag'd as in the former.

DESIGN, is particularly uſed in Painting, for the firſt Idea of a large Work drawn roughly, and in little; with Intention to be executed, and finiſh'd in large. See PAINTING.

In this ſimple Senſe, the *Deſign* is the ſimple *Contour*, or *Outline* of the Figures, or Things intended to be repreſented; or the Lines that terminate, and circumſcribe them. See CONTOUR, and DESIGNING.

Such *Deſign* is ſometimes drawn in Crayons, or Ink, without any Shadows at all: Sometimes it is *hatch'd*, that is, the Shadows are expreſs'd by ſenſible Lines, uſually drawn a-croſs each other with the Pen, Crayon, or Graver. Sometimes, again, the Shadows are done with the Crayon rub'd, ſo as there does not appear any Lines: Sometimes, the Grain, or Strokes of the Crayon appear, as not being rubb'd: Sometimes the *Deſign* is *waſh'd*, that is, the Shadows are done with a Pencil, in *Indian* Ink, or ſome other Liquor: And ſometimes the *Deſign* is *colour'd*, that is, Colours are laid on, much like thoſe intended for the Grand Work.

The Qualities, or Parts required in a *Deſign*, are *Correctneſs*, *Good Taſte*, *Elegance*, *Character*, *Diverſity*, *Expreſſion*, and *Perſpective*.

Correctneſs depends principally on the Juſtneſs of the Proportions, and a Knowledge of Anatomy. *Taſte* is an Idea, or Manner of *Deſigning*, which ariſes either from the Complexion and natural Diſpoſition, or from Education, the Maſters, Studies, *&c.* *Elegance* gives the Figures a Kind of Delicacy, which ſtrikes People of Judgment, and a certain Agreeableneſs, which pleaſes every body. The *Character* is what is peculiar to each Thing; In which there muſt be a *Diverſity*; in as much as every Thing has its particular Character, to diſtinguiſh it. The *Expreſſion* is the Repreſentation of an Object according to its Character, and the ſeveral Circumſtances it is ſuppoſed to be in. The *Perſpective* is the Repreſentation of the Parts of a Painting, or Figure, according to the Situation they are in, with reſpect to the Point of Sight.

The *Deſign*, or *Draught*, is a Part of the greateſt Import, and Extent in Painting. 'Tis acquired chiefly by Habit, and Application; Rules being of leſs Avail here than in any of the other Branches of the Art, as *Colouring*, *Clair-Obſcure*, *Expreſſion*, &c.

The principal Rules that regard the Deſign, are: That Novices accuſtom themſelves to copy good Originals at firſt Sight: Not to uſe Squares in drawing; for Fear of ſtinting and confining their Judgment: To ſtay till they can *deſign* well after the Life 'ere they begin the Practice of Perſpective Rules: In *Deſigning* after the Life, to learn to adjuſt the Bigneſs of their Figures to the viſual Angle, and the Diſtance of the Eye, from the Model or Object: To mark out all the Parts of their *Deſign*, before they begin to ſhadow: To make their Contours in great Pieces, without taking Notice of the little Muſcles, and other Breaks: To make themſelves Maſters of the Rules of Perſpective: To obſerve every Stroak as to its perpendicular Parallel, and Diſtance; and particularly ſo to compare, and oppoſe the Parts that meet upon, and traverſe the Perpendicular, ſo to form a Kind of Square, in the Mind; which is the great, and almoſt the only Rule of *Deſigning* juſtly: To have a regard not only to the Model, but alſo to the Part already *deſign'd*; there being no ſuch Thing as *deſigning* with ſtrict Juſtneſs, but by comparing, and proportioning every Part to the firſt.

The reſt relates to *Perſpective*: As, that thoſe Objects are ſeen at one View, whoſe Rays meet in a Point: That the Eye and Object be always conceiv'd as immoveable: That the Space, or *Medium* between them, be conceiv'd tranſparent: And that the Eye, Object, and Picture, be at a juſt Diſtance; which is uſually double the Bigneſs of the Subject, or Picture. See PERSPECTIVE.

DESIGNING, the Art of Delineating, or Drawing the Appearance of natural Objects, by Lines, on a Plane. See DESIGN.

To *deſign* according to the Rules of Mathematicks, makes the Subject of perſpective. See PERSPECTIVE, and SCENOGRAPHY.

To *deſign* by the *Camera Obſcura*. See CAMERA *Obſcura*.

A Mechanical Method of DESIGNING *Objects.*

Provide a ſquare Piece of Glaſs fitted into a Frame, ABDC, (*Tab. Perſpective Fig. 9.*) and waſh, or ſmeer it over with Water, wherein a little Gum has been diſſolved. When 'tis well dried again, turn it towards the Object, or Objects to be *deſign'd*, ſo as that the Whole thereof may be ſeen through a *Dioptra*, or Sight GH, fix'd thereto. Then proceed to work; and applying the Eye to the Sight, with a Pen and Ink draw every Thing on the Glaſs, as you ſee it appear thereon. Having finiſh'd the Draught, lay a fair, moiſt Paper thereon; and preſſing it pretty tight down, the whole will be transferr'd from the Glaſs to the Paper. The Method is very good, eaſy, and exact; and deſerves to be more uſed by Painters.

DESIGNATION, the Act of marking, or making a Thing known. The *Deſignation* of ſuch an Eſtate is made by the Tenants, Butments, and Boundings.

Among the *Romans* there were *Deſignations* of the Conſuls, and other Magiſtrates, ſome Time before their Election.

DESIGNATOR, a *Roman* Officer, who aſſigned, and mark'd each Perſon his Place, and Rank in publick Ceremonies: Or, a *Maſter of the Ceremonies*, who regulated the Seats, March, Order, *&c.*

There were *Deſignators* at funeral Solemnities, at the Games, Theatres, and Shews, who not only aſſign'd every body his Place, but alſo led him to it; as appears from the Prologue to the *Pœnulus* of *Plautus*.

The Word is form'd from the Verb *deſignare*.

DESPOT, a Title, or Quality given to the Princes of *Walachia*, *Servia*, and ſome of the neighbouring Countries.

The Word in its firſt Origin ſignifies the ſame with the Latin *Herus*, and the Engliſh *Maſter*. But in Time it underwent the ſame Fate on Medals, as, among the Latins, *Cæſar* did with regard to *Auguſtus*; ΒΑΣΙΛΕΥΣ, anſwering to *Auguſtus*; and ΔΕΣΠΟΤΗΣ, *Deſpotes*, to *Cæſar*. Thus, *Nicephorus*, having order'd his Son *Stauracius* to be crown'd; the Son, out of Reſpect, would only take the Name ΔΕΣΠΟΤΗΣ; leaving to his Father that of ΒΑΣΙΛΕΥΣ. For it is to be noted, that it was juſt about the Time that the Emperors began to ceaſe to uſe *Latin* Inſcriptions. This Delicacy, however, did not laſt long; For the following Emperors prefer'd the Quality of ΔΕΣΠΟΤΗΣ to that of ΒΑΣΙΛΕΥΣ, particularly *Conſtantin*, *Michael Ducas*, *Nicephorus Botoniates*, *Romanus Diogenes*, the *Commenii*, and ſome others. In Imitation of the Princes, the Princeſſes likewiſe aſſumed the Title of ΔΕΣΠΟΙΝΑ.

'Twas the Emperor *Alexis*, ſurnamed the *Angel*, that firſt created the Dignity of *Deſpot*; and made it the firſt after that of *Emperor*, above that of *Auguſtus*, or *Sebaſtocrator*, and *Cæſar*. The *Deſpots* were uſually the Emperors Sons, or Sons in Law, and their Collegues, or Co-partners in the Empire, as well as their preſumptive Heirs. The *Deſpots* that were Sons of the Emperors, had more Privileges and Authority, than thoſe that were only Sons in Law. *Codin*, p. 38. deſcribes the Habit, and Ornaments of the *Deſpot*. See the Notes of *Fa. Goar* on that Author.

Under the Succeſſors of *Conſtantin* the *Great*, the Title, *Deſpot of Sparta*, was given to the Emperor's Son, or Brother, who had the City of *Sparta*, or *Lacedemon*, by Way of Apannage.

DESPOTISM, or DESPOTIC *Government*, a Form of Government wherein the Prince is abſolute and arbitrary, doing whatever he liſts, without being check'd by any other

other Power. Such are moſt of the Eaſtern Governments, as thoſe of the *Mogol*, *Grand Seignior*, *Sophi*, &c.

DESPOUILLE, in Heraldry, is the whole Caſe, Skin, or Slough of a Beaſt, with the Head, Feet, Tail, and all Appurtenances; ſo as being filled, or ſtuffed, it looks like the entire Creature.

DESPUMATION, is the *Clarification* of any Liquor, by throwing up its Foulneſs in a Froth, and taking that off. See FROTH, CLARIFICATION, &c.

DESQUAMATION expreſſes the cleanſing carious bones, which flake off like Scales. See SCALES, SQUAMMÆ, &c.

DESSERT, the laſt Service brought on the Tables of People of Quality; when the Meats are all taken off. The *Deſſert* conſiſts of Fruits, Paſtry-Works, Confections, &c.

DESSICATIVE, or DESICCATIVE, in Medicine, Chirurgy, and Pharmacy, a Remedy that has the Virtue of *drying* up ſuperfluous Moiſture; uſed to ſkin over old Sores, &c. A *Deſſicative* Unguent, &c. Pimprenella, &c. is held very deterſive, *deſſiccative*, and vulnerary. *Lemery*.

DESTILLATION, or *Diſtillation* in Chymiſtry. See DISTILLATION.

DESTINY, the Order, Diſpoſition, or Chain of ſecond Cauſes, appointed by Providence; and importing, or carrying with it a Neceſſity of the Event. See FATE.

According to many of the Heathen Philoſophers, *Deſtiny* was a ſecret, and inviſible Power, or Virtue, which with incomprehenſible Wiſdom, conducts what to us appears irregular, and fortuitous: Which amounts to what we call *God*. See GOD,

The *Stoicks* by *Deſtiny* underſtood a certain Concatenation of all Things, which from all Eternity follow each other of abſolute Neceſſity; there being no Power able to interrupt their Connexion; which is our Idea of *Providence*. See PROVIDENCE.

But the *Stoicks* made even the Gods themſelves ſubject to the Neceſſity of this *Deſtiny*. The Truth is, the *Stoicks* rather define what the Word *Deſtiny* ſhould ſignify, than what it did ſignify in common Language: For they had no diſtinct Idea of this Power to whom they attributed thoſe Events. They had only a vague, confuſed Idea of I know not what *Chimera*, or unknown Cauſe, to which they referr'd that invariable Diſpoſition, and the eternal Concatenation of all Things. There is no real Being that the Name *Deſtiny* can agree to. The Heathen Philoſophers, who had fram'd an Idea thereof, ſuppoſed it to exiſt without knowing preciſely what they meant by it. But Men, not daring on the one Side, to impute to Providence the Evils and Misfortunes that befel them, as they imagined undeſervedly; and on the other Side, not being willing to allow that it was their own Fault, form'd this Phantom of *Deſtiny*, to bear the Weight of all the Evil. *Thomaſſin*.

DESTINIES, in Mythology. See PARCÆ.

DESTRUCTION, paſſively taken, is the Corruption, or Annihilation of ſomething before Exiſting. A Thing paſſes *ab Eſſe ad Non-eſſe*; either by *Corruption*, when nothing of the Subſtance is loſt, but only the Accidents, *viz.* Diſpoſition of Parts. See CORRUPTION.

Or, by *Annihilation*, when both Subſtance and Accidents are loſt. See ANNIHILATION.

DESUDATION, expreſſes a profuſe, and inordinate Sweating; from what Cauſe ſoever. See SWEAT.

DESULTOR, in Antiquity, a Vaulter, or Leaper; who jumps off one Horſe upon another.

Among the *Scythians*, *Indians*, and *Numidians*, the Cavaliers, or Horſe-men, who ſerved in the Wars, were very expert *Deſultores*; that is, they always carried with them at leaſt two Horſes, and when that they were mounted on grew weary, or wanted Breath, they leap'd with great Agility and Addreſs upon the other, which they led in the Hand. The *Greeks* and *Romans* borrow'd the Practice from thoſe barbarous Nations; but they only uſed it in their Games, Courſes, and funeral Solemnities, and never, that we read of, in War. The *Deſultores*, therefore, were among the People of *Aſia*, and *Africa*, Soldiers; but among the *Romans*, &c. they were no more than Tumblers, and Poſture-Maſters. *Euſtatheus* on *Homer*'s *Iliad*, Lib. IV. aſſures us, that inſtead of two, they had ſometimes four, or ſix Horſes, all a-breaſt, and would jump from the firſt to the fourth, or ſixth, which was the Maſter-piece of their Art.

DETACH'D *Pieces*, in Fortification, are Demi-Lunes, Ravelins, Horn- and Crown-Works, and even Baſtions, when ſeparated, or at a Diſtance from the Body of the Place.

In Painting, the Figures are ſaid to be well *detach'd*, or looſen'd, when they ſtand free, and diſengag'd from each other, are no where confounded together, but ſtand out with a ſtrong *Relievo* from the Ground, and each other.

DETACHMENT, a Military Term, ſignifying a certain Number of Soldiers, taken out of a greater Body, on Purpoſe to be employ'd in the Undertaking of ſome particular Enterprize; as to form a Kind of flying Camp, to relieve a Party already engag'd in Battel, to joyn a ſeparate Army, to aſſiſt at the Siege of a Place, or enter into ſome Garriſon, &c.

DETENTION, a Poſſeſſion, or Holding of an Heritage, or the like, from ſome other Claimant.

The Word is chiefly uſed in an ill Senſe, for an unjuſt Holding, &c. The Canons condemn a Perſon who has intruded into a Benefice, to make Reſtitution of all the Fruits thereof, during the Time of his *unjuſt Detention*. See BENEFICE.

DETERIORATION, an Act whereby a Thing is rendred worſe.

When the *Deterioration* of a Commodity, ſeiz'd by an Officer, ariſes from the Fault of the Keeper, he is anſwerable for the ſame. *J. Frideric Mayer*, Profeſſor at *Leipſic*, printed a Treatiſe of *Deterioration*, in the Year 1695. under the Title of, *Tractatus de Deterioratione*.

DETERGENT, in Medicine, is applied to Remedies that cleanſe, mundify, and carry off viſcid, and glutinous Humours adhering to Bodies.

The Plant, call'd *Harts-Horn*, *deterges*, and conſolidates Wounds. *Rhaponticum* is aperitive, and good againſt the Gravel and Stone; It alſo *deterges*, and expels Poyſon.

Detergents are not only ſoftening, and adheſive, but alſo, by a peculiar Activity, or Diſpoſition to Motion, joyn'd with a ſuitable Configuration of Parts, are apt to abrade, and carry along with them ſuch Particles as they lay hold on in their Paſſage. All Medicines of this Intention are ſuppoſed to cleanſe, and heal, that is, incarnate, or fill up with new Fleſh all Ulcerations, and Foulneſſes, occaſioned thereby, whether internal, or external.

To do this, in all internal Caſes eſpecially, the Medicine muſt be ſuppoſed to maintain its primary Properties, until it arrives at the Place of Action, and there it does what entitles it to the Appellation of a *Detergent*, and a *Vulnerary*, firſt by its adheſive Quality, which conſiſts in the comparative Largeneſs of Surface, and Flexibility of its component Parts: For by this it very readily falls into Contact with, and adheres to the Slough of ulcerous Exudations, which by their looſe Situations are eaſily carried along with the Medicine, and when ſuch Matter is ſo carried away, which is the cleanſing, and *deterging* Part, what was inſtrumental in this Office, will afterwards ſtick to, and adhere with the cutaneous Filaments, until by their Addition, and the Protruſion of proper Nouriſhment *ab interno* to the ſame Place, the Waſte is made up, that is, the Ulcer is healed.

After the ſame Manner is the Operation of ſuch Subſtances to be accounted for in external Application. By the Warmth of their Parts they rarify, and by their adheſive Quality, they joyn with, and take off along with them, in every dreſſing, what is thrown upon the Place to which they are applied, until a more convenient Matter is brought thither by the circulating Juices, which it aſſiſts in adhering to, and incarnating the eroded Cavities. Only this may be taken Notice of, that internally, whatſoever of this Kind is mixed with the Animal Fluids, by the known Laws of Circulation, they will be firſt ſeparated, and left behind. For all thoſe Parts, which are ſpecifically heavieſt, will move neareſt the Axis of the Canals, becauſe their Moments are the greateſt, and will carry them as near as can be in ſtreight Lines; but the lighter Parts will always be joſtled in the Sides, where they ſooneſt meet with Outlets to get quite off, or are ſtruck into ſuch Cavities, we are here ſpeaking of, in which they adhere, and make Part of the Subſtance.

This is underſtood of the milder Degree of *Detergents*; and it is eaſy to conceive from hence, how an Increaſe of thoſe Qualities of Activity and Adheſion conjointly, may make a Medicine ariſe to the greateſt Efficacy in this reſpect. And it is upon this Foot, that all thoſe Medicines operate, which are given to cleanſe Obſtructions, or Foulneſſes in any of the *Viſcera*, or Paſſages; and which may be increaſed in Efficacy ſo far, as to fetch off even the Membranes, and Capillary Veſſels.

DETERMINATE, or DETERMINED *Problem*, in Geometry, is that which has but one, or at leaſt but a certain, definite Number of Solutions; in Contra-diſtinction to an *Indeterminate* Problem, which admits of infinite Solutions.

Such, *e. gr.* is the Problem, *To deſcribe an Iſoſceles Triangle on a given Line, whoſe Angles at the Baſe ſhall be double that at the Vertix:* which has only one Solution; as that which follows has two, viz. *To find an Iſoſceles Triangle, whoſe Area and Perimeter are given.* See PROBLEM.

A *Determinate* Problem may either be *Simple*, or *Linear*, *Plane*, *Solid*, or *Surſolid*. See PLANE, SOLID, &c.

DETERMINATION, in Phyſicks, the Diſpoſition, or Tendency of a Body towards one Way, rather than another.

Heavy Bodies have a *Determination* towards their Centre. See CENTRE.

DETERMINATION *of Motion*. See MOTION.

DETERMINATION, in Philoſophy, the Action whereby a Cauſe is limited, or reſtrained to act, or not act, this, or that, and in this, or that Manner.

Hence, we ſay, by a *Determination*, an Agent indifferent to ſeveral Things, is in ſome Meaſure actuated.

This, ſay the School-men, proceeds either from an *Efficient* Cauſe, in which Caſe the *Determination* is call'd *Effective*; as when an Artiſt *determines* an Inſtrument to a certain Action: Or from the *Form*, as that *determines* the Indifferency of the Matter; And thus our Senſes are ſaid to be *Determinations*, to have Ideas upon the Preſence of external Objects.

A *Determination* to be pleas'd with certain Forms, or Ideas, a late excellent Author calls, *an Internal Senſe*; and a *Determination* to be pleas'd with virtuous Actions, Characters, Manners, *&c. a Moral Senſe*: Or, the *Determination* is from the *Matter*, or Subject that receives the Action; And thus, the *Heating* of Fire upon Clay *determines* it to harden, upon Wax to ſoften, *&c.* Or it is from the *Object*; as when we ſay, *Colour determines the Viſive Power*: Or laſtly, it is from the *End*; as *the End* determines *the Deſire*.

Determination is either *Moral*, or *Phyſical*: A *Moral Determination* is that proceeding from a Cauſe, which operates *Morally*, i. e. by Commanding, Perſuading, or Adviſing ſome Effect. *Phyſical Determination*, is an Act whereby God excites, and applies a ſecond Cauſe to act antecedently to all Operation of the Creature. Such a *Determination*, the *Thomiſts* and *Dominicans* maintain neceſſary to all, and ſingular Action of every Creature. The *Jeſuits*, on the contrary, deny that God thus *determines* even ſecond Cauſes; and hold, that God has no Influence on the ſecond Cauſes, but only with the ſecond Cauſe on the Action. And thus they exclude a *Phyſical Determination* both from natural Cauſes, as ſuppoſing them already *determin'd* by Nature to act; ſo that there needs no other external *Determination* from God to the ſeveral Actions; and from free Cauſes, as ſuppoſing ſuch a *Prædetermination* contrary to our Natural Liberty. See CAUSE, THOMISTS, *&c.*

DETERSIVE, in Medicine, the ſame with *Detergent*. See DETERGENT.

A Clyſter is a *deterſive* Medicine, which cleanſes the lower Venter. *Deterſive* Unguents are uſually call'd *Mondificatives*. See MONDIFICATIVE.

The Leaves, and Summets of the Straw-berry are *deterſive*, and aſtringent.

DETINET, in Law. See DEBITO, and DEBET and *Solet*.

DETINUE, a Writ that lies againſt a Man, who having Goods or Chattels deliver'd to keep, refuſes to re-deliver them: anſwering, in great Meaſure, to the *Actio Depoſiti* of the Civilians.

He takes his *Action of Detinue*, to recover the Thing *detain'd*, not the Damages ſuſtain'd by the *Detinue*.

DETONATION, or *Fulmination*, in Chymiſtry, the Noiſe which Minerals make when they begin to heat in Crucibles; by the volatile Parts ruſhing out with Impetuoſity, and the Humidity eſcaping.

Detonation is much the ſame with *Decrepitation*, only its Action more forcible, and the Noiſe greater. Thus, *Aurum fulminans* heated, *&c.* goes off with a violent Crack, *i. e.* makes a great *Detonation*.

Detonation takes away the impure, volatile Sulphur from Bodies.

The Word is form'd of *de*, and *tono*, I thunder.

In the Chymical Senſe, *Detonation* is the Act, or Operation of expelling the impure, volatile, and ſulphureous Parts out of Bodies, and leaving behind the fix'd, and internal Parts. It is perform'd by means of Salt-petre, *&c.*

DETRANCHEE, among the *French* Heralds, ſignifies a Line bend-wiſe, which does not come from the very Angle, but either from ſome Part of the upper Edge, and thence falling a-thwart, or Diagonally; or from Part of the Dexter-Side.

They ſay, *Tranchee*, *Detranchee*, and *Retranchee*, to denote, that there are two Diagonal Lines, making two Partitions in the Eſcutcheon, and coming from the Angles, and a third from ſome of the other Parts abovementioned.

DEVASTAVERUNT *Bona Teſtatoris*, a Writ lying againſt Executors, for paſſing Legacies, and Debts, without Specialties, to the Prejudice of the Creditors that have Specialties before the Debts on the ſaid Specialties are due. In which Caſe the Executors are as liable to Actions, as if they had notoriouſly waſted the Goods of the Teſtator, or converted them to their own Uſe; and are compellable to pay ſuch Debts by Specialty out of their own Goods.

DEVENERUNT, a Writ anciently directed to the Eſcheator, after the Death of a Tenant of the King holding in *Capite*; And that, of his Son, and Heir, within Age, and in the King's Cuſtody; commanding the Eſcheator to enquire, upon the Oaths of good and lawful Men, what Lands and Tenements, by the Death of the Tenant, come to the King.

DEVIATION, in the old Aſtronomy, a Motion of the Deferent, or Excentric, whereby it advances to, or recedes from the Ecliptic. See DEFERENT.

The greateſt *Deviation* of *Mercury* is 16 Minutes: that of *Venus* only ten. See EXCENTRICITY.

DEVIL, *Diabolus*, an evil Angel; and one of thoſe celeſtial Spirits caſt down from Heaven, for pretending to equal himſelf with God. See DÆMON.

We find no mention of the *Devil* in the Old Teſtament, but only *Satan*. See SATAN.

Nor do we meet with the Word *Devil* in any Heathen Authors, in the Signification attach'd to it among Chriſtians, that is, as a Creature revolted from God; their Theology went no further than to evil *Genii*, or *Dæmons* who harraſſed, and perſecuted Mankind. Thus, the *Chaldæans* believed both a good Principle, and an evil Principle, which was an Enemy of Mankind.

The Relations we have of the Religion of the *Americans*, aſſure us of ſome idolatrous Nations, who worſhip the *Devil*: But the Term *Devil* muſt not here be taken in the Scripture Senſe: Thoſe People have an Idea of two Collateral Independent Beings, one whereof is good, and the other evil. And they place the Earth under the Guidance, and Direction of the evil Being; which our Authors, with ſome Impropriety, call the *Devil*.

The Word is form'd from the Latin *Diabolus*, which comes from the *Greek* Διάβολος, *Accuſer*, or *Calumniator*. The *Æthiopians* paint the *Devil* white, to be even with the *Europeans*, who repreſent him black. *Ludolph.*

DEVISE, in Heraldry, a Name common to all Figures, Cyphers, Characters, Rebus's, Motto's, Sentences, Proverbs, *&c.* which, by Alluſion to the Names of Perſons, or Families, denote their Nobility, or Qualities. See CYPHER, CHARACTER, BADGE, MOTTO, PROVERB, REBUS, *&c.*

Deviſe, in this Senſe, is of a much older Standing, than Heraldry it ſelf; being that which gave the firſt Riſe to Armories: Thus, the *Eagle* was the *Deviſe* of the *Roman* Empire: Thus S P Q R was the *Deviſe* of the *Roman* People; and ſtill continues to be what they call the Eſcutcheon of the City of *Rome*. See ARMS.

The firſt *Deviſes* were ſimple Letters diſtributed on the Borders of the Liveries, Houſings, and Banners, and at length on the Shields. Thus the K. was the *Deviſe* of the *French* Kings of the Name of *Charles*, from *Charles* V. to *Charles* IX.

There were alſo *Deviſes* by Rebus's, Equivocals, or Alluſions, both to Names, and Arms. The Dukes of *Guiſe* took for their *Deviſe* an A in an O, to ſignifie *each in his Turn*. And the Houſe of *Senecai*, *In Virtute & Honore Seneſces*. Some that had Towers in their Arms, *Turris mea Deus*, &c. See REBUS.

There are alſo Enigmatical *Deviſes*: As that of the *Golden Fleece*, with *Autre n'aurai*; Intimating that *Philip the Good*, who inſtituted that Order, renounced every other Woman, but *Iſabella* of *Portugal*, whom he then married. See ENIGMA.

Deviſes ſometimes contain entire Proverbs; As that of *Cæſar Borgia*, *aut Cæſar aut Nihil*. See PROVERB.

The Word *Deviſe* is form'd from the Latin *dividere*, and was applied to the Things juſt mentioned, as well as thoſe hereafter mentioned, by reaſon they ſerved to divide, ſeparate, and diſtinguiſh Perſons, Parties, *&c.* *Fa. Menetrier* obſerves, that there as many different Kinds of *Deviſes*, as there are different Manners of diſtinguiſhing one another, or as there are ſimple Figures, or Words, capable of expreſſing Qualities, Offices, Virtues, Actions, *&c.* of Perſons, and of notifying, or diſtinguiſhing them from others.

DEVISE, is now taken in a more reſtrain'd Senſe, for an Emblem; or a Repreſentation of ſome natural Body, with a Motto, or Sentence applied in a figurative Senſe to the Advantage of ſome Perſon. See EMBLEM.

In this Senſe, the Figure, or Image, is call'd the *Body*, and the Motto the *Soul* of the *Deviſe*.

A *Deviſe* is a Sort of Metaphor, repreſenting one Object by another wherewith it has ſome Reſemblance. So that a *Deviſe* is only true, when it contains a Metaphorical Similitude, and may it ſelf be reduced into a Compariſon. Laſtly, it is a Metaphor painted, and viſible, and that ſtrikes the Eye. All theſe Circumſtances are required to a *Deviſe*; and without them, a Figure only makes a Hieroglyphic, and the Word, only a Diction, or Sentence. See ALLUSION, METAPHOR, HIEROGLYPHIC, SIMILE, *&c.*

Fa. Bouhours gives a clean and accurate Explication of the Word *Deviſe*, in an Extract inſerted in the *Journal de Trevoux*. A *Deviſe*, ſays he, is a Compoſition, or Aſſemblage of Figures drawn from Nature and Art, call'd the *Body*; and of a few Words adapted to the Figure, and call'd the *Soul*. Such a Compound, adds he, we make uſe of to denote our Thought, or Intention by Compariſon; for the Eſſence of the *Deviſe* conſiſts in a Compariſon taken from Nature, or Art, and founded on a Metaphor. This he illuſtrates in the following Inſtance: A young Nobleman of great Courage, and Ambition, bore for his *Deviſe*, in the laſt Carrouſel at the Court of *France*, a Rocket mounted in the Air, with this *Italian* Motto, *Poco duri purche m'inalzi*, I would laſt little, provided I might riſe high; which ſeems to hold forth the following Diſcourſe: As

the

the Rocket riſes a great Pitch, tho' it only endures a little while; ſo it does not concern me to live long, provided I attain to Glory, and Eminence: which is a juſt Compariſon. See COMPARISON.

On this footing, a *Deviſe*, to define it rightly, is a painted Metaphor; or rather, an Enigma inverted: For, whereas Enigma's repreſent Nature, or Art, by the Events of Hiſtory, and the Adventures of Fables, a *Deviſe* is a Repreſentation of human Qualities by natural, or artificial Bodies. Thus, to expreſs the Character of *Louis* XIV. a Sun was painted, which yet, luminous as it is, has more Virtue than Luſtre. And the better to determine the Senſe of the Painting to this Signification, the *Caſtillian* Motto is added, *Mas virtud que Luz*. The perſonal Merit of *Mary*, Queen of *Scots*, was repreſented by a Pomegranate, with theſe Words, *Mon Prix n'eſt pas de ma Couronne*. And the Talent of an Apoſtolical Perſon, who became all Things to all Men, by a Looking-Glaſs, with thoſe Words of St. *Paul*, *Omnibus Omnia*.

Deviſes are uſed on Coins, Counters, Seals, Shields, Triumphal Arches, Artificial Fire-Works, and other Solemnities. They are a Sort of Images, very pertinently, and artfully repreſenting the Enterprizes, and Intrigues of War, Love, Piety, Study, Fortune, *&c.*

The *French* have diſtinguiſh'd themſelves in this Way, eſpecially ſince the Time of Cardinal *Mazarin*, who had a wonderful Fancy for them.

The *Italians* have reduced the Making of *Deviſes* into an Art, and laid down the Laws, and Rules thereof. Some of the principal are, 1. That there be nothing monſtrous, or extravagant in the Figures; nothing contrary to the Nature of Things, or to the common Opinion of Mankind. 2. That Figures be not joyn'd which have no Affinity, or Relation to each other; the Metaphor being to be founded on ſomething real, and not on Hazard, or Imagination; excepting ſome whimſical Unions eſtabliſh'd in Fables, which Cuſtom, and the Authority of the Poets have made paſs for Natural. 3. That the human Body be never taken into *Deviſes*; as this would be to compare a Man with himſelf. 4. That there be a Sort of Unity in the Figures that make the Body: We don't mean, that there muſt only be a ſimple Figure; but that, if there be ſeveral, they have a Relation, and Subordination to each other: So that there be one principal Figure, whereon all the reſt depend. Tho' ſtill the fewer Figures there are in the Body of the *Deviſe*, and the leſs they are confuſed, the more perfect and elegant is the *Deviſe*. 5. The Motto, which is to animate the Figure, muſt agree ſo accurately thereto, as that it could not ſerve for any other. 6. Nothing to be named that appears to the Eye, and which the bare Inſpection may make known. 7. The Motto not to have a compleat Senſe of it ſelf; for being to make a Compound with the Figure, it muſt only be a Part, and conſequently muſt not ſignify the whole. If the Words alone have a compleat Signification, you have a full, and diſtinct Notion independently of the Figure; whereas the Signification ſhould reſult from both. 8. The ſhorter the Motto, the more beautiful: and a Suſpenſion of the Senſe, which leaves ſomewhat to gueſs, is one of the principal Graces of the *Deviſe*. Laſtly, it is accounted a Happineſs, where the Words of a Poet are applied in a Senſe which he never dream'd of, and yet ſo pertinently, that it ſhould ſeem they had been intended for the ſame.

DEVISE, or DIVISE, in common Law, the Act whereby a Teſtator gives, or bequeaths his Lands, or Goods, by his laſt Will in Writing: He who makes the *Deviſe* being call'd the *Deviſor*, and he, to whom it is made, the *Deviſee*.

The Words of a *Will*, the Law interprets in a larger, and more favourable Senſe, than thoſe of a *Deed*: For if Land be *deviſed* to a Man to have to him for ever, or to have to him, and his Aſſigns; In thoſe Caſes the *Deviſee* ſhall have a Fee ſimple. Yet if given in the ſame Manner by Feoffment, he has but an Eſtate for Life. So, if one *deviſe* Land to an Infant in his Mother's Belly; it is a good and valid *Deviſe*; tho' 'tis otherwiſe by Feoffment, Grant, or Gift: for in thoſe Caſes there ought to be one of Ability, to receive preſently, otherwiſe it is void. See WILL, and DEED.

DEUNX, a Diviſion of the Roman *Libra*, or Pound; containing 11 Ounces; or eleven *Twelfths* of any Thing. See As, and LIBRA.

DEVOLVED, ſomething acquired by Right of *Devolution*. See DEVOLUTION.

Such a Right is devolved *to the Crown. Such a Succeſſion* devolved *to N.... by the Death of N....*

The Word is alſo uſed for a Right acquired by a Superior of conferring a Benefice, when the Inferior, and Ordinary Collator, has neglected to confer, or has conferr'd it on an unqualified Perſon. If a Patron neglects to preſent to a Benefice in ſix Months, the Preſentation *devolves* upon the Biſhop, and from thence to the Primate.

DEVOLUTION, a Right acquired by Succeſſion, from one Degree to another.

Devolution in general, is an Impediment provided by the Cuſtoms of ſeveral Nations, whereby the Husband who ſurvives his Wife, or the Wife ſurviving her Husband, is prohibited to alienate the real, and immoveable Effects of the deceaſed, and obliged to preſerve them for the Children iſſued from that Marriage. So that they ſucceed thereto in Excluſion of thoſe born of a ſecond Marriage.

DEVOTION, a ſincere, ardent Worſhip of God.

Monſr. *Jurieu* defines *Devotion* a Softening, and Yielding of Heart, with an inward Conſolation, which the Soul of the Faithful feels in the Exerciſes of Piety.

Under the Name of *Devotions*, are uſually underſtood certain Religious Practices, which a Perſon makes it a Law with him to diſcharge regularly; and with Reaſon; this Exactitude be founded on ſolid Piety; otherwiſe 'tis Vanity, or Superſtition.

Among the *Romans*, *Devotion* was a Sort of Sacrifice, or Ceremony, whereby they conſecrated themſelves to the Service of ſome Perſon. The Ancients had a Notion, that the Life of one might be redeem'd by the Death of another: And hence were thoſe *Devotions* ſo frequent for the Lives of the Emperors. See VOTA.

The *Devotion* of *Decius*, who, after *devoting* himſelf to his Country, threw himſelf into the Hands of his Enemies, and was kill'd, is ſaid to have gain'd the *Romans* the Victory.

But *Devotion* to any particular Perſon was not known till *Auguſtus*. The Day after the Title *Auguſtus* had been given *Octavius*; *Pacuvius*, a Tribune of the People, began to ſay, he would *devote*, and conſecrate himſelf to him, as was practiſed among the barbarous Nations, to obey him even at the Expence of Life, if he were commanded. His Example was immediately followed by all the reſt; and it came at length to be eſtabliſh'd into a Cuſtom, never to go to ſalute the Emperor, without declaring they were *devoted* to him. *Auguſtus*, tho' ſeeming to oppoſe this vile and infamous Flattery, yet rewarded the Author.

DEVOURING, in Heraldry. When Fiſhes are born in an Eſcutcheon in a feeding Poſture, the Heralds denominate it by *devouring*; by reaſon Fiſhes ſwallow all their Food whole. See FISHES.

DEUTERONONICAL, in the School-Theology, a Term applied to certain Books of Holy Scripture, which were added to the Canon after the reſt; either by reaſon they were not wrote till after the Compilation of the Canon, or by reaſon of ſome Diſpute as to their Canonicity. See CANON.

The Jews, 'tis certain, acknowledge ſeveral Books in their Canon, which were put there later than the reſt. They ſay, that under *Eſdras*, a great Aſſembly of their Doctors, which they call by Way of Eminence, the *Great Synagogue*, made the Collection of the Sacred Books, which we now have in the Old *Hebrew* Teſtament. And they agree, that they put Books therein which had not been ſo before the *Babyloniſh* Captivity; ſuch are thoſe of *Daniel*, *Ezekiel*, *Haggai*, &c. and thoſe of *Eſdras*, and *Nehemia*.

And the Church has ſince added others to the *Canon*, that were not, nor could not be in the *Canon* of the Jews; by reaſon ſome of them were not compoſed till after. Such is the Book of *Eccleſiaſticus*; with ſeveral of the *Apocryphal* Books, admitted by the *Romaniſts*, as the *Macchabees*, *Wiſdom*, &c. Others were added ſtill later, by reaſon their Canonicity had not been yet examin'd: And till ſuch Examen, and Judgment they might be ſet a-ſide at Pleaſure.

But ſince ſhe has pronounced as to the Canonicity of theſe Books, there is no more room now to doubt of them, than there was for the Jews to doubt of thoſe of the Canon of *Eſdras*. And the *Deuterononical* Books are as Canonical, as the Proto-canonical. The only Difference between them conſiſting in this, that the Canonicity of the one was not generally known, examin'd, and ſettled ſo ſoon as that of the others.

The *Deuterononical* Books in our Canon, are the Book of *Eſther*, either the whole, or at leaſt the ſeven laſt Chapters thereof. The Epiſtle to the *Hebrews*; that of *James*; and that of *Jude*; the ſecond of St. *Peter*; the ſecond, and third of St. *John*; and the *Revelation*. The *Deuterononical* Parts of Books, are, in *Daniel*, the Hymn of the three Children; the Prayer of *Azariah*; the Hiſtories of *Suſannah*, of *Bel*, and the *Dragon*; the laſt Chapter of St. *Mark*; the bloody Sweat, and the Appearance of the Angel, related in St. *Luke* Chapter XXII; and the Hiſtory of the adulterous Woman in St. *John*, Chapter VIII.

The Word is *Greek*, being compounded of δεύτερος, *Second*, and κανονικὸς, *Canonical*.

DEUTERONOMY, one of the Sacred Books of the Old Teſtament; being the laſt of thoſe wrote by *Moſes*. See PENTATEUCH.

It does not appear, that *Moſes* made any Diviſion of what he wrote into Books; or that he gave different Names and Titles to the different Parts of his Work; nor do the Jews, even at this Day, diſtinguiſh them in the Copies they uſe in the Synagogues; but write them all running as one ſingle Work, without any other Diſtinction beſide

ſide that of little and great Paraſches. 'Tis true, in the other Copies, uſed by private Perſons, they are divided into five Parts, as among us; But they give them no other Name, but the firſt Word wherewith each Diviſion begins: much as we do in quoting a Decree, or Chapter of the Canon-Law.

Thus, the firſt Part of *Moſes*'s Work they call בראשית *Bereſchit*, becauſe beginning with that Diction. The ſecond they call ואלה שמות *Ve Elleh Schemot*: The third, ויקרא *Vajickrah*; The fourth, וידבר *Vajiedabber*; and the fifth, אלה הדבריכם *Elleh haddebarim*; which is one of the firſt Words thereof. This Cuſtom is very ancient among the *Rabbins*, as appears from the ancient Commentaries on thoſe Books, call'd, בראשית רבה *Bereſchit Rabba*, ואלה שמות רברה *Veelleh Schemot Rabba*, &c. and from the *Prologus Galeatus* of St. *Jerom*.

It was the *Greeks*, when they firſt tranſlated the Law, that gave the five Parts, into which it was divided, the Names of *Geneſis*, *Exodus*, *Leviticus*, *Numbers*, and *Deuteronomy*. Accordingly the Names are *Greek*; excepting that of *Leviticus*, which is *Hebrew*. And they expreſs what is contain'd in thoſe Books, or at leaſt the moſt remarkable Things contain'd therein; which is the *Greek* Manner of giving Titles.

The Book of *Deuteronomy* was ſo call'd, becauſe this laſt Part of the Work of *Moſes* comprehends the Repetition, or Recapitulation, which that Legiſlator made to the *Iſraelites* before his Death, of the Law he had before deliver'd them at length. And hence *Deuteronomy* is ſtill call'd by the *Rabbins* משנה *Miſchneh*, Repetition, משנה תורה *Repetition of the Law*; *ſecond Law*. They likewiſe call it ספר תוכחות *the Books of Reprimands*, on Account of the XXVIIIth Chapter, which is full of Bleſſings promiſed to ſuch as keep the Law; and of Curſes threaten'd ſuch as tranſgreſs it.

Deuteronomy was wrote the fortieth Year after the Delivery from *Egypt*, in the Country of the *Moabites* beyond *Jordan*: *Moſes* being then in the 120th Year of his Age. It contains in *Hebrew* eleven Paraſches, tho' only Ten in the Edition of the *Rabbins* at *Venice*; XX Chapters, and 955 Verſes. In the *Greek* and *Latin* Verſions it contains XXXIV Chapters. The laſt is not of *Moſes*. Some ſay it was added by *Joſhua* immediately after *Moſes*'s Death; which is the moſt probable Opinion. Others will have it added by *Eſdras*.

The Word is *Greek*, compounded of δεύτερος, *Second*, and νόμος, *Law*.

DEW, *Ros*, a thin, light, inſenſible Miſt, or Rain, falling while the Sun is below the Horizon.

Naturaliſts uſually rank *Dews* among the Number of Meteors of the watery Kind. Some define it a Vapour liquified, and let fall in Drops. Others a Vapour having a like Relation to Froſt, as Rain has to Snow, *&c.* Among the Diſſertations of Monſr. *Huet* is a Letter, to ſhew that *Dew* does not fall, but riſes.

To us, *Dew* appears only to differ from Rain as more, and leſs. Its Origin, and Matter, no doubt, is from the Vapour, and Exhalation of the Earth and Water, rais'd, as ſhewn under the Article VAPOUR. The thin *Veſiculæ*, whereof Vapours conſiſt, being once detach'd from their Bodies, we all know, keep riſing in the Atmoſphere, till they arrive at ſuch a Stage of the Air, as is of the ſame ſpecific Gravity with themſelves: Then their Riſe is ſtopp'd. Now, as 'tis the Warmth, or Fire, that, dilating the Parts of Water, forms the *Veſiculæ* ſpecifically lighter than Air, and capable of aſcending therein; So when that Heat declines, or is loſt, as by the Approach, or Contiguity of any colder Body, the *Veſiculæ* condenſe, become heavier, and deſcend. In the Day-time, therefore, the Sun warming the Atmoſphere by a continual Influx of his Rays, the Vapours once rais'd, continue their Progreſs, as meeting with nothing to increaſe their Gravity, till ſuch Time as they are got far out of the Reach of the reflected Warmth of the Earth, in the middle Region of the Atmoſphere. Here condenſing, they form *Clouds*, from which ariſe *Rain*, as ſhewn under CLOUDS, and RAIN.

But when the Sun is below the Horizon, the Caſe is ſomewhat different: For the Atmoſphere then cooling, the Vapours rais'd by the Warmth of the Earth, and of the Rays of the Sun, lodg'd therein the preceeding Day, begin to condenſe a-pace, as ſoon as they are got out of the Air, ſpending their Stock of Fire and Heat on the cold, moiſt Air they paſs through. Their Aſcent, therefore, becomes ſhort; and by that Time they are got a few Fathoms high, being exhauſted of their Fire, and reſtor'd to the natural Dimenſions, and Gravity of their conſtituent Water; they precipitate, and fall back again in little Spherules, or Drops, as ſhewn of *Rain*.

From theſe Principles the other Phœnomena of *Dews* are eaſily accounted for. Hence, *e.gr.* it is, that *Dews* are more copious in the Spring, than in the other Seaſons; there being then a greater Stock of Vapour in Readineſs, through the ſmall Expence thereof in the Winter's Cold and Froſt, than at other Times. Hence, what *Pliny* relates of *Egypt*, that it abounds in *Dews* throughout all the Heats of Summer; For the Air there being too hot to conſtipate the Vapours in the Day-time, they never gather into Clouds, and hence they have no Rain; But we know, that in Climates where the Days are exceſſive hot, the Nights are remarkably cold; So that the Vapours raiſed after Sunſet, are readily condenſed into *Dews*. Or, perhaps, that notable Coldneſs is rather the Effect, than the Cauſe of the Quantity of *Dews*. For a deal of Vapour being raiſed by the great Heat of the Earth, and the Stock of Fire ſpent on it in the Day-time, the Influx of ſuch a Quantity of cold Moiſture muſt greatly chill the Air.

May-DEW whitens Linen, and Wax; The *Dew* of Autumn is converted into a white Froſt. Out of *Dew* putrified by the Sun, ariſe divers Inſects, which change a-pace out of one Species into another: what remains is converted into a fine, white Salt, with Angles like thoſe of Salt-peter, after a Number of Evaporations, Calcinations, and Fixations.

There is a Spirit drawn from *May-Dew*, which has wonderful Virtues attributed to it. The Method of gathering, and preparing it, is preſcribed by *Hanneman*, Phyſician at *Kiel*. 'Tis to be gather'd in clean linen Cloths expoſed to the Sun in cloſe Vials; then diſtill'd, and the Spirit thrown upon the *Caput Mortuum*; this is to be repeated till the Earth unite with the Spirit, and become liquid; which happens about the 7th, or 8th Cohobation, or Diſtillation. By ſuch means you gain a very red, odoriferous Spirit. *Stolterfolth*, a Phyſician of *Lubec*, thinks *May-Dew* may be gather'd in Glaſs-Plates, eſpecially in ſtill Weather, and before Sun-riſe. And *Etmuller* is of the ſame Sentiment. It might likewiſe be gather'd with a Glaſs-Funnel, expoſed to the Air, having a crooked Neck to bring the *Dew* into a Vial in a Chamber. See *Philoſ. Tranſact.* 1665. *May*. *Hoffmann*, and others. 'Tis apparently from the Preparation of this *Dew*, that the Brothers of the *Roſy-Croſs* took their Denomination. See ROSYCRUCIANS.

In the *Philoſoph. Tranſact.* we have an Account of a very extraordinary Kind of *Dew*. For a good Part of the Winter 1695, ſays the Biſhop of *Cloyne*, there fell in many Parts of the Provinces of *Munſter*, and *Leimſter*; a Kind of thick *Dew*, which the Country-People call'd *Butter*, from its Conſiſtency and Colour; being ſoft, clammy, and of a dark yellow. It fell always in the Night, and chiefly in low, mooriſh Places, on the Top of the Graſs, and oft on the Thatch of Cabbins. 'Twas ſeldom obſerv'd in the ſame Place twice. It commonly lay on the Earth a fortnight without changing Colour, but then died, and turn'd black. It fell in Lumps; and had a ſtrong Smell like that of Graves. Mr. *R. Vans*, in the ſame *Tranſactions*, gives an Account of the like at the ſame Time, in *Limeric*, and *Tipperary*; adding, that if one rubb'd it with the Hand, it melted; but laying it by the Fire, it dried, and grew hard.

DEXTANS, in Antiquity. See As.

DEXTER, in Heraldry, is applied to the *Right* Side, as *Sinister* is to the *Left*. See ESCUTCHEON.

DEXTER-*Point*. See POINT.

DEXTER-*Baſe* is the right Side of the Baſe. See BASE.

DEXTER-*Chief*, the Angle on the right Hand of the Chief. See CHIEF.

The Word is pure *Latin*, ſignifying *Right-hand*; whence the Word *Dexterity* for Addreſs, and Ability in the performing of any Thing.

DEXTROCHERE, or DESTROCHERE, in Heraldry, is applied to the right Arm, which is painted in a Shield, ſometimes naked, ſometimes cloath'd, or adorn'd with a Bracelet, and ſometimes arm'd, or holding ſome Moveable, or Member uſed in the Arms.

The *Dextrochere* is ſometimes placed as the Creſt.

The Word is form'd from the Latin *Dextrocherium*, which ſignifies a Bracelet wore on the right Wriſt, mention'd in the Acts of the Martyrdom of St. *Agnes*, and the Life of the Emperor *Maximus*.

DIA, the Beginning of divers Terms in Medicine, Chirurgery, Pharmacy, *&c.*

Where theſe three Letters begin the Name of a Remedy, Unguent, Plaſter, Cataplaſm, *&c.* they ſignify *Compoſition*, and *Mixture*; as in *Diaplaſm*, *Diachylon*, &c. See DIAPLASM, DIACHYLON, *&c.*

Dia is likewiſe the Beginning of many Terms in the other Arts, and even in common Uſe; As, *Diameter*, *Dialogue*, &c. on all which Occaſions, *Dia*, which is an inſeparable Particle, or Prepoſition, is borrowed from the *Greek* διὰ, *ex*, or *cum*; which begins the ſame Words in the *Greek*.

Indeed we have Words wherein *Dia* is no Prepoſition borrowed from a foreign Language, tho' 'tis poſſible, the Words themſelves may; as in *Diamant*, *Dial*, *Diana*, &c.

DIABETES, in Medicine, a haſty, and profuſe Evacuation of the Drink by the Urinary Paſſages; accompanied with

with an ardent Thirſt, and a Leanneſs of the whole Body. See URINE.

The Drink thus diſcharged, is uſually a little alter'd from what it was when taken down, and turn'd chilous, and milky; but ſometimes not at all. See DRINK.

The *Diabetes* ſeems owing to a too great Laxity of the Fibres of the Arteries of the Kidneys; or too great Quantity of ſharp Salts in the Blood, which diſſolve the Maſs of Blood, or diſunite the Parts thereof; So that the Seroſity is eaſily ſeparated from the ſame.

According to Dr. *Quincy*, the Evident, and moſt common Cauſe of the *Diabetes* is the too great Uſe of ſpirituous Liquors, wherewith the *Serum* becomes ſo impregnated, that it will not attract, and joyn with the *Cruor*, or Globules of the Blood, but runs off through the Kidneys ſweet, or inſipid.

There is another Kind of *Diabetes*, wherein the Perſon affected renders a great deal more by Urine, than he drinks, nay, ſometimes more than he both eats and drinks. Some Phyſicians attribute this exceſſive Quantity of Liquor to the Air he reſpires, which, they ſuppoſe, becomes converted into Water; Or, at leaſt, the Water in the Air reſpired is here abſorbed, and collected. But others, with more Probability, attribute it to a Colliquation of the Blood, fat, and even the ſolid Parts of the Body.

The Word *Diabetes* is derived from the *Greek* διαβαίνειν, *to paſs quick.*

DIABETES, in Hydraulicks, is applied to a Syphon, the two Leggs, or Branches whereof are incloſed in one another; As in the Glaſs deſcribed by *Hero*, which runs it ſelf quite empty, without being inverted, as ſoon as the Water is arrived at the Height of the upper Branch of the Syphon.

DIABOTANUM, in Pharmacy, and Chirurgery, a Plaſter, wherewith Wens, *&c.* are reſolved and diſcuſs'd.

The *Diabotanum* is ſoveraign for the *Hydatides.*

DIABROSIS, in Medicine, a Solution of the Continuity of a Part, cauſed by ſharp, corroſive Humors gnawing, and devouring the ſame.

The Word is *Greek*, compounded of διὰ, *per*, through, and βρώσκειν, *to eat.*

DIACALCITEOS, in Chirurgery, and Pharmacy, a Plaſter applied after the Amputation of a Cancer.

The *Emplaſtrum Diacalciteos* is compoſed of Oil, *Axungia*, and *Chalcitis*; from the laſt of which Drugs it derives its Name.

DIACARYON, or *Dianucum*, in Pharmacy. See DIANUCUM.

Galen is ſaid to have prepar'd his *Diacaryon* with the Juice of Walnuts, mix'd with as much Honey as ſufficed to render it an agreeable Compoſition.

The Word is form'd from καρύα, *Wal-nut.*

DIACARTAMI, in Pharmacy, an Electuary compoſed of Turbit, Manna, Scammony, Hermodactyls, and other Purgatives; with the Addition of the Medulla, or Seed of the *Carthamus*, which gives it the Denomination. See CARTHAMI.

Diacartami chiefly purges *pituita.* It is preſcribed in Diſeaſes of the Brain; and is frequently mix'd in Medicines along with other Purgatives.

DIACAUSTIC *Curve*, or the *Cauſtic by Refraction*, is a Species of *Cauſtic Curves*, thus conceiv'd: Imagine an infinite Number of Rays; as BA, BM, BD, *&c.* (*Tab. Geom. Fig.* 23.) iſſuing from the ſame Luminous Point B, to be refracted from, or to the Perpendicular MC, in the Curve AMD; and ſo, as that CE the Sines of the Angles of Incidence CME be always to CG, the Sines of the refracted Angles CMG, in a given *Ratio*: Then the Curve-Line, which touches all the refracted Rays, is call'd the *Diacauſtic.* See CAUSTIC.

DIACHYLON, in Pharmacy, a Name given to divers Plaſters, on Account of the Mucilages mix'd therein, which are viſcid Juices, call'd by the *Greeks* χυλοὶ; drawn from certain Plants. See MUCILAGE.

White, or *Simple* DIACHYLON, is compounded of common Oil, Litharge of Gold, and Mucilages, drawn from the Root of the *Althæa*, and the Seeds of Line, and Fenigreck. It is proper to ſoften, digeſt, ripen, and reſolve.

The DIACHYLON, call'd *Direatum*, has for its *Baſis* the common *white Diachylon*, with a Pound of which, an Ounce of Powder of *Iris* is mix'd. This Plaſter digeſts, incides, and ripens with more Force than the *ſimple Diachylon.*

There is alſo the *Great* DIACHYLON, *Diachylon magnum*, compoſed of Litharge of Gold, Oils of *Iris*, Camomile, and Aneth, Turpentine, Reſin of the Pine, yellow Wax, and Mucilages, of Line, and Fenigreck, with new Figs, Raiſins of *Damaſcus*, *Icthyocolla*, Juices of *Iris*, *Squillæ*, and Hyſſop. This *Diachylon* ſoftens Schirrus's, and reſolves, and diſſipates Tumors. 'Tis call'd, *the Great*, not only on Account of its extraordinary Virtues, but alſo becauſe compounded of a greater Number of Ingredients, than the reſt.

The *Diachylon Gummatum*, is the *great Diachylon*, with the Addition of Gum Ammoniac, *Galbanum*, and *Sagapenum*, diſſolv'd with Wine, and boil'd to a Conſiſtence of Honey. This Plaſter is the moſt powerful of all for digeſting, ripening, and reſolving.

DIACODIUM, in Pharmacy, a Medicine prepared from Poppies Heads.

There are two Kinds: *Simple*, and *Compound.*

Simple DIACODIUM, is a Kind of Opiate, made of the Juice expreſs'd from the Heads of Poppies, both white, and black; and made up with the *Sapa*, or Sugar. It is preſcribed to ſoften ſharp, ſerous Humours, to appeaſe Coughs, and to provoke Sleep. This Preparation was of great Uſe among the Ancients; but is now laid a-ſide, ſince it has been found, that the Syrup of white Poppies, which is what we now call *Diacodium*, produces the ſame Effect.

Compound DIACODIUM is made of the *ſimple*, with the Addition of the Troches of Ramich, *Hypociſtis*, Myrrh, Saffron, and Balauſtes. It is good to ſtop, and ſoften Catarrhs, Hemorrhoids, and Fluxes of the Belly.

The Word is form'd from the *Greek* διὰ, *per*, and κώδεια, *Poppies Head.*

DIACONESSE, and DIACONATE. See DEACON, and DEACONRY.

DIACONI, in Antiquity, was the Name of a Faction at *Athens.*

That City, we read, was divided into two Parties: The one Favourers of an Oligarchy, who would only have a few Perſons employ'd in the Government. The other conſiſted of ſuch as were for a Democratical, or Popular Government, wherein the whole People ſhould have a Share. The firſt were call'd *Diaconi*, and the latter *Pediaci*; the latter inhabiting the lower, and the former the upper Quarter, or Part of the City.

The Laws of *Solon* imported, that *Piſiſtratus* ſhould be Chief of the *Diaconi*. Tho' the Scholiaſt on *Ariſtophanes*'s Comedy, *the Waſps*, affirms, that *Pandion* diſtributed the Quarter of the *Diaconi* among his Sons, and put *Lycus* at their Head.

DIACONICON, Sacriſty, a Place about the ancient Churches, where the ſacred Veſtments, with the Veſſels, and other Ornaments of the Altar were preſerv'd.

The firſt Council of *Laodicea*, in the 21ſt Canon, forbids the Prieſts living in the *Diaconicon*, ἐν τῷ διακονικῷ; or touching the holy Utenſils. An ancient *Latin* Verſion of thoſe Canons renders it, *In Secretario:* But the Copy at *Rome*, as well as *Dionyſius Exiguus*, retain the Word *Diaconicon* in *Latin.* 'Tis true, *Zonarus* and *Balſamon* underſtand that Expreſſion in the 21ſt *Canon* of the Order of a Deacon, and not of a Building, to which Opinion *Leo Allatius* alſo adheres in his Treatiſe, *De Templis Græcorum:* But all the other Interpreters are agreed as to its being a Sacriſty. Beſide the Ornaments of the Prieſt-hood, and the Altar, there were likewiſe here depoſited the Relicks of the Church.

The Word is *Greek*, and form'd from διακονέω, *I ſerve*, by reaſon here were kept every Thing belonging to Divine Service. It was alſo call'd Ασπασόριον, and in Latin *Salutatorium:* becauſe it was here the Biſhop received, and ſaluted Strangers. Sometimes, too, it was call'd Μετατώριον, or Μιτατώριον, *Menſa*, by reaſon of the Tables therein, for diſpoſing the ſacred Ornaments on; or rather from Μιτάτον, an *Inn.*

DIACOUSTICKS, or DIAPHONICKS, is the Conſideration of the Properties of Sound refracted in paſſing through different Mediums; that is, out of a denſer into a more ſubtile, or out of a more ſubtile into a denſer *Medium.* See SOUND, and REFRACTION. See alſo ACONSTICKS, and PHONICKS.

The Word is form'd from the *Greek* διὰ, *per*, through, which intimates a Paſſage; and ἀκούω, *I hear*, q. d. the Conſideration of the Paſſages of the Sounds we hear.

DIACYDONITES, in Pharmacy, is applied to Things, and Remedies, wherein Quinces are an Ingredient: Thus the Confection *Diacydonites* is a Confection of Quinces, or wherein Quinces have a Share.

The Word comes from διὰ, and κυδώνιον, *Quince.*

DIADEM, in Antiquity, a Royal Head-band, or Fillet, wore by Kings as a Badge of their Royalty; while the Crown was left to the Gods. See CROWN.

The *Diadem* was a Sort of Ribbon, or Band wove of Silk, Thread, or Wool, more or leſs broad. It was tied round the Temples, and Fore-head; the two Ends being knotted behind, and let fall on the Neck.

It was uſually white, and quite plain, tho' ſometimes embroider'd with Gold, and ſet with Pearls, and precious Stones. In latter Times it likewiſe came to be twiſted round Crowns, Laurels, *&c.* and appears to have been wore in divers Parts of the Body: Thus *Phavorinus* obſerves, that *Pompey* was ſuſpected of aſpiring to the Royalty, becauſe of his wearing a white Garter, which was no other than a

Ligature for an Ulcer he had on his Leg, but which the People conſtrued a *Diadem*.

Pliny Lib. VII. C. 5. obſerves, that *Bacchus* was the firſt Inventor of the *Diadem*: *Athenæus* aſſures us, that it was the Topers, and good Fellows, who firſt made Uſe of it, to preſerve themſelves from the Fumes of Wine, by tying it right round their Heads; and that it afterwards came to be a Royal Ornament.

The *Diadem* remain'd a long Time the peculiar Badge of Kings; At length it was aſſumed by the *Roman* Emperors, as the Mark of Empire.

Authors are not agreed about the Time when the *Roman* Emperors firſt aſſum'd the *Diadem*. Some refer it to *Caligula*, others to *Aurelian*, and others to *Conſtantine* the *Great*. The younger *Victor* ſays poſitively, that *Aurelian* took the *Diadem*, which no Emperor had dared to do before him. For tho' it ſhould ſeem from the ſame Writer, that *Caligula* had done the like, yet *Suetonius* aſſures us, he had it only in View, and that he never executed it. *Heliogabalus*, indeed, took a *Diadem*, but it was only in the Palace he wore it, and never appear'd with it in publick. *Jornandus* even goes as low as *Dioclesian* for the Introduction of the *Diadem*; But 'tis certain, there is a Medal of *Aurelian*, with a Crown like one of our Ducal Crowns, which is ſuſtain'd by a Border of Pearls, that bears a very great Affinity to a *Diadem*. And the Authors, who have explain'd that Medal, are all agreed it is one. Mr. *Spanheim* alſo allows *Aurelian* to have taken it: His Succeſſors imitated him therein; And yet the Ornament did not become common till the Time of *Conſtantine*. After him the Empreſſes were allowed to wear it: accordingly we find them repreſented therewith on Medals: Tho' till then, we have no Inſtance either of Crown, or *Diadem* on a Woman's Head, in all the *Roman* Empire.

An Author of the Vth Century quoted by *Bollandus*, pretends, that *Conſtantine* firſt wore the *Diadem*, and that he only took it to bind his Hair, and keep it in Order. But this is not very probable; and 'tis certain, that at leaſt ſome Emperors had wore it before him, as *Aurelius*, and *Carinus*. *Euſebius* attributes it to *Conſtantius Chlorus*, when only *Cæſar*; which is confirm'd by one of his Medals, wherein he is repreſented with a *Diadem*, adorn'd with Rays; Tho' even after *Conſtantine*, when the *Diadem* was become the uſual Ornament of the *Auguſti*, it was not always given to the *Cæſars*. Indeed, we ſee it on ſome of the Medals of *Julian*, while only *Cæſar*; tho' 'tis pretty certain, he did not wear it till he became *Auguſtus*. *Du Cange* will not maintain, that *Conſtantine* firſt took the *Diadem*; but only, that he firſt made it into a Kind of Caſk, or Cloſe-Crown, as is ſeen in ſome of his Medals, and thoſe of his Succeſſors.

The Word comes from the Latin *Diadema*, of the *Greek* διάδημα, *a little Band encompaſſing the Head*, of the Verb διαδέω, *Alligo*, I tye.

DIADEM, in Heraldry, is applied to certain Circles, or Rims, ſerving to bind, or incloſe the Crowns of Soveraign Princes; and to bear the Globe, and Croſs, or the Flower *de Lis* for their Creſt.

The Crowns of Soveraigns differ in this, that ſome are bound with a greater, and ſome with a leſs Number of *Diadems*.

Prelates likewiſe appear to have anciently wore a Sort of *Diadem*: Thus *Baronius* writes, that St. *James* the Apoſtle wore a gold Plate on his Fore-head, as a Mark of his Epiſcopal Dignity.

In Blazoning, the Bandage about the Heads of *Moors*, on Shields, is ſometimes alſo call'd *Diadem*.

DIAGLYPHICE, the Art of Engraving, Cutting, or otherwiſe working hallow, or concave Figures, in Metals; Such as Seals Intaglia's, the Matrices, or Coins for Medals, &c. See ENGRAVING, and SCULPTURE.

DIAGNOSTIC, in Medicine, a Term applied to thoſe Signs, or Symptoms, which indicate, or diſcover the preſent State of a Diſeaſe, its Nature, and Cauſe. See SIGN, and INDICATION.

The Phyſicians have *Diagnoſtic*, and *Prognoſtic* Signs; the firſt with regard to the preſent State of the Diſeaſe, and the Patient; and the ſecond to the future. See PROGNOSTIC.

The Word is compounded of the *Greek* διὰ, *per*, through, or by; and γίνωσκω, *I know*.

DIAGONAL, in Geometry, a right Line drawn a-croſs a Figure of ſeveral Sides, from the Vertex of one Angle to that of another: Such is the Line PN (*Tab. Geometr. Fig.* 24.) drawn from the Angle P, to N. See FIGURE.

Some Authors call it *Diameter*, and others *Diametral* of the Figure. See DIAMETER.

It is demonſtrated, 1. That every *Diagonal* divides a Parallelogram into two equal Parts. 2. Two *Diagonals* drawn in any Parallelogram, biſſect each other. 3. The *Diagonal* of a Square is incommenſurable with one of its Sides. See PARALLELOGRAM, SQUARE, &c.

Add 4. A very noble Theorem, in Elementary Geometry, firſt demonſtrated by Mr. *Lagny*, in the *Memoires de l'Academie Royale des Sciences*, An. 1706. That *the Sum of the Squares of the two Diagonals of every Parallelogram, is equal to the Sum of the Squares of the four Sides.*

'Tis evident, at firſt Sight, that the famed 47th Propoſition of *Euclid*, ſo richly worth the Hecatomb it coſt its Author, is only a particular Caſe of this Propoſition: For if the Parallelogram be rectangled, it follows of Courſe, that the two *Diagonals* are equal; and, of Conſequence, that the Square of a *Diagonal*, or, which is the ſame Thing, the Square of the Hypothenuſe of a right Angle, is equal to the Squares of the two Sides. If a Parallelogram be oblique-angled, and of Conſequence, the two *Diagonals* unequal, as is the more uſual Caſe; the Propoſition becomes of more extenſive Uſe.

The Demonſtration in oblique-angled Parallelograms is thus: Suppoſe the oblique-angled Parallelogram ABCD, (*Tab. Geometry Fig.* 25.) whereof BD is the greater *Diagonal*, and AC the leſſer: From the Point A, of the obtuſe Angle DAB, let fall a Perpendicular AE, to the Side CD; and from the Point B another Perpendicular BF to the Side DC. Then are the Triangles ADE, BCF equal, and ſimilar, as AD is equal to BC, and the Angles ADE, BCF, as well as AED, BCF, are alſo equal; conſequently DE is equal to CF. Now, by *Euclid*, Prop. 12. Lib. II. in the obtuſe-angled Triangle BDC, the Square of the Side BD is equal to the Sum of the Squares of BC, and CD, and over and above, to double the Rectangle of CF by CD; and by 13th, Lib. II. In the Triangle DAC, the Square of the Side AC is equal to the Sum of the Squares of AD, and CD, abating double the Rectangle of the ſame CD, by DE, equal to CF. Conſequently, the former Exceſs preciſely compenſating this Defect; the Sum of the Squares of the two *Diagonals* is equal to the Sum of the Squares of the four Sides QED.

Hence, In every *Rhombus*, or Lozange, knowing one Side, and a *Diagonal*; the other *Diagonal* will likewiſe be known: For as the four Sides are equal; ſubſtracting the Square of the given *Diagonal* from Quadruple the Square of the given Side; the Remainder is the Square of the *Diagonal* required.

The Propoſition is likewiſe of great Uſe in the Theory of compound Motions: For in an oblique-angled Parallelogram, the greater *Diagonal* being the Subtenſe of an obtuſe; and the leſſer, of an acute Angle, which is the Complement of the former; the greater will be the greater, and the leſs, the leſs, as the obtuſe Angle is the greater: So that if the obtuſe Angle be conceiv'd to grow till it be infinitely great with regard to the acute one, or, which amounts to the ſame Thing, if the two contiguous Sides of the Parallelogram be extended directly, End to End in a right Line; the great *Diagonal* becomes the Sum of the two Sides, and the leſſer one, nothing. Now, two contiguous Sides of a Parallelogram being known, together with the Angle they include, 'tis eaſy to find, the Subtenſe of that Angle, *i.e.* one of the *Diagonals* of the Parallelogram, in Numbers; which done, Mr. *de Lagny*'s Propoſition gives the other. Which ſecond *Diagonal* thus found, is the Line that would be deſcribed by a Body impell'd at the ſame Time by two Forces, which ſhould have the ſame *Ratio* to each other, as the contiguous Sides have, and act on thoſe two Directions; which *Diagonal*, the Body would deſcribe in the ſame Time, as it would have deſcribed either of the contiguous Sides in, if only impell'd by the Force correſponding thereto. This is one of the great Uſes of the Propoſition: For the *Ratio* of two Forces, and the Angle they make, being given, it is frequently neceſſary to determine, in Numbers, the Line a Body impell'd by the two Forces would deſcribe in a certain Time. See *Compound* MOTION.

All the Sides of a recti-linear Figure, as AB, BC, CD, DE, (*Fig.* 26.) excepting one EA, and the Angles O, and Y, being given; to find the *Diagonals*.

In the Triangle ABE, the Sides AB, and AE being given, the Angle O is eaſily found by Trigonometry; and from this, the *Diagonal* BS. And after the like Manner the Triangle BCD is reſolved, and the *Diagonal* BD found.

Since Ichnographies, or Plans, are beſt taken by having all the Sides, and *Diagonals*; The Uſe of this Problem in Planimetry is of ſome Importance; eſpecially to ſuch as are willing to have their Work accurate, tho' at the Expence of Calculation. See ICHNOGRAPHY, &c.

DIAGRAM, in the ancient Muſic, was what we call the *Scale*, or *Gammut* in the modern. See SCALE, and GAMMUT.

The Extent of the *Diagramma*, which they alſo call'd, *Syſtema perfectum*, was a *Diſdiapaſon*, or two Octaves in the *Ratio* 1:4. In that Space they had eighteen Chords, tho' theſe had not all different Sounds. See CHORD.

To explain it, they repreſent to us eighteen Chords, or Strings of an Inſtrument, as the Lyre, ſuppoſed to be tuned according to the Proportions in any of the *Genera*, viz.

Dia-



TAB. DIALLING.

Fig. 1. Declinator

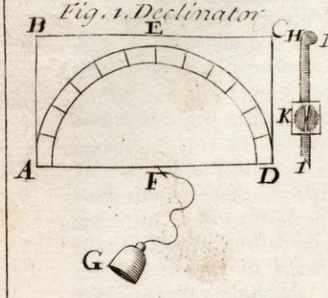


Fig. 2. Declinator

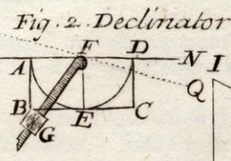


Fig. 3. Declinator

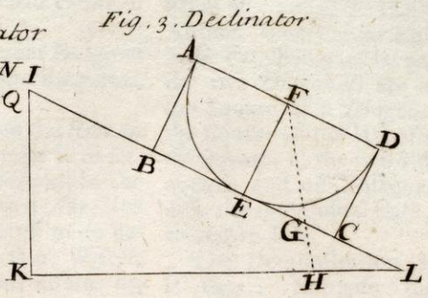


Fig. 4. Equinoctial Dial.

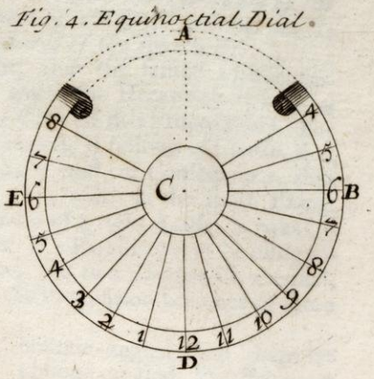


Fig. 5. Equinoctial Dial

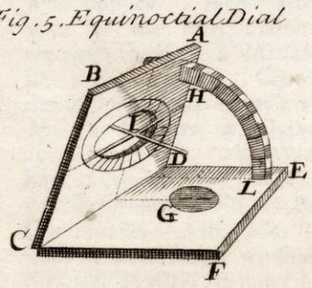


Fig. 6. Horizontal Dial

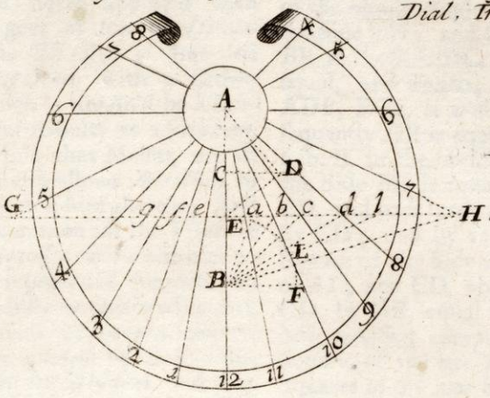


Fig. 7. Horizontal Dial, Trigonometrically

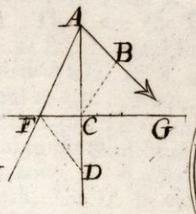


Fig 7 Ring Dial

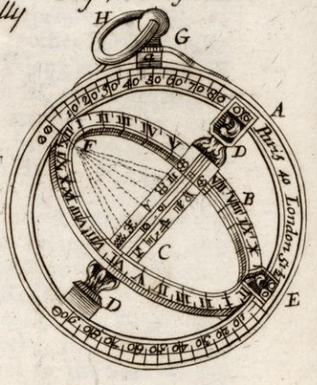


Fig. 8. Vertical Dial

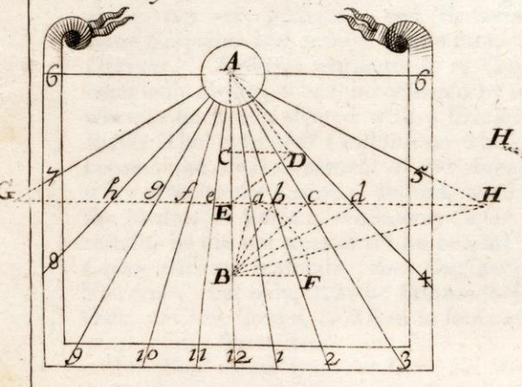


Fig. 9 & 10. Vertical North Dial

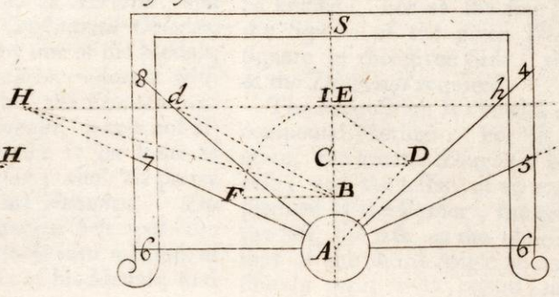


Fig. 11. East Dial

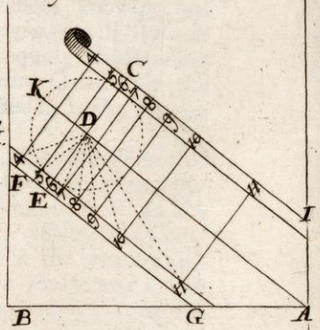


Fig. 12. Polar Dial

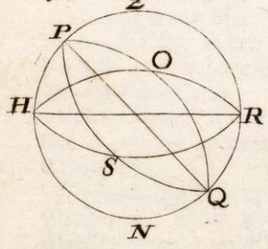


Fig. 13. Polar Dial

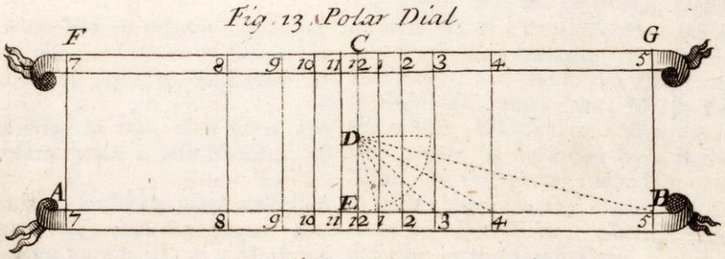


Fig. 14. Dials.

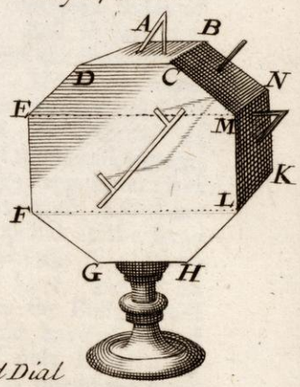


Fig. 15. Vertical Declining Dial, Trigonometrically

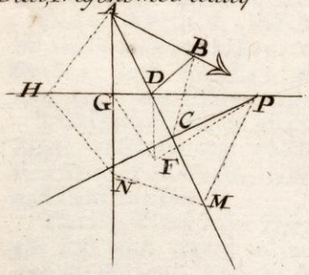


Fig. 16. Vertical Declining Dial, Geometrically.

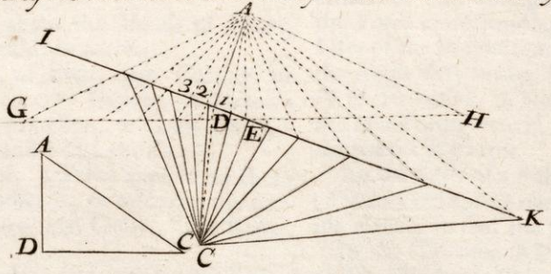


Fig. 17. Inclined Dial

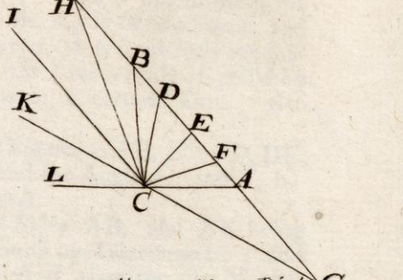


Fig. 18. Universal Mechanical Dial

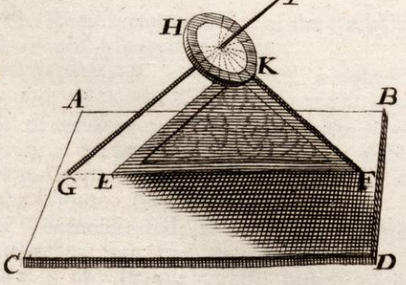


Fig. 19 Moon Dial

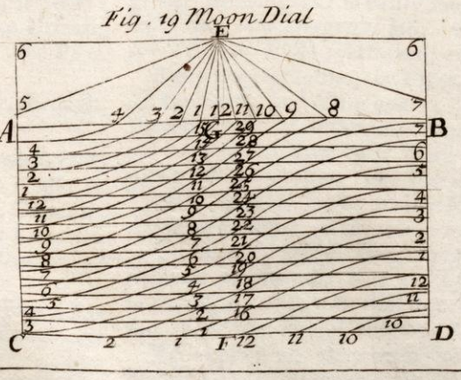
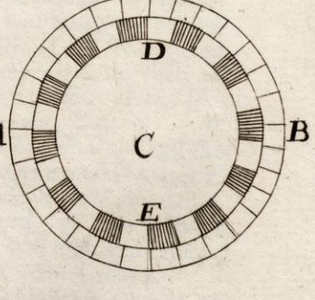


Fig. 20. Moon Dial



Diatonic, Enharmonic, or Chromatic. See GENERA, DIATONIC, &c.

As the Lyre was improv'd, and more Chords added to it; ſo was the *Diagramma:* By ſuch means it came from 4 Chords to 7, then 8, then 10, then 14, and at laſt 18. See LYRE.

To each of theſe Chords, or Sounds, they gave a particular Name, taken from its Situation in the *Diagramma*, or the Lyre. Their Names, and Order, commencing from the loweſt, are as follows: *Proſtambanomenos, Hypate-Hypaton, Parhypate-Hypaton, Lychanos-Hypaton, Hypate-Meſon, Parhypate-Meſon, Lychanos-Meſon, Meſe, Trite-Synem, Trite-Synem-menon, Paranete-Synem-menon, Nete-Synem-menon, Para-Meſe, Trite-Diezeugmenon, Paranete-diezeugmenon, Nete-Diezeugmenon, Trite-Hyperbolæon, Paranete-Hyperbolæon, Nete-Hyperbolæon.*

Guido Aretine improved this Scale, or *Diagram*, very greatly. Finding it of too ſmall Extent, he added five more Chords, or Notes to it; lay'd them all down on a Staff of 5 Lines; and inſtead of the long *Greek* Names abovementioned, named all his Notes by *Gregory*'s ſeven Letters. See NOTE, and GAMMUT.

The firſt, or loweſt Note of his Scale, he marked Γ, and call'd *Gamma*; whence the whole Scale came to be denominated *Gammut.*

DIAGRAM, in Geometry, &c. a Scheme, for the Explanation, or Demonſtration of any Figure, or the Properties thereto belonging. See FIGURE.

DIAGRYDIUM, in Pharmacy, is prepar'd Scammony. See SCAMMONY.

The Preparation is ordinarily perform'd by boiling the Scammony in a Quince. Others make it receive the Fumes of lighted Sulphur, whence it is call'd, *Sulphurated, Diagrydium ſulphuratum.* Some incorporate it with a Quantity of Spirit of *Vitriol roſat.* ſufficient to make a Sort of Liquid paſt, which is afterwards ſet to dry in the Sun, or by a gentle Fire. And this Preparation they call *Diagrydium Roſatum.* The End of all theſe Preparations is to correct the Scammony; But many more are of Opinion, it has nothing that needs Correction, and that it may be uſed in its natural State. See SCAMMONY.

The Word *Diagrydium* is form'd, by Corruption, from διακρύδιον, *little Tear.*

DIAHEXAPTA, or DIAHEXAPTE, among Farriers, a Drink made for Horſes, denominated from the ſix Ingredients it conſiſts of; *viz.* Birthwort, and Gentian Roots, Juniper Berries, Bayberries, Drops of Myrrh, and Ivory Shavings, mix'd together. It is an excellent Counter-Poiſon, cures Bites of venomous Beaſts, Colds, Conſumptions, &c.

DIAL, or *Sun*-DIAL, an Inſtrument ſerving to meaſure Time, by means of the Shadow of the Sun. See TIME, and SHADOW.

The Word is form'd from the Latin *Dies*, Day, becauſe indicating the *Hour of the Day.* See HOUR.

The *Greeks* call it *Sciatericum*, from its doing it by the *Shadow.* See SCIATERICUM.

Dial is more accurately defin'd, a Draught, or Deſcription of certain Lines on a Plane, or Surface of a Body given, ſo contriv'd, as that the Shadow of a Style, or a *Gnomon*, or a Ray of the Sun paſs'd through a Hole therein, ſhall touch certain Points at certain Hours. See STYLE.

The Diverſity of *Sun-Dials* ariſes from the different Situation of the Planes, and the different Figure of the Surfaces whereon they are deſcribed; whence they become denominated *Equinoctial, Horizontal, Vertical, Polar, Direct, Erect, Declining, Inclining, Reclining, Cylindrical*, &c. See DIALLING.

Dials are ſometimes diſtinguiſh'd into *Primary*, and *Secundary.*

Primary DIALS, are thoſe, either drawn on the Plane of the Horizon, call'd *Horizontal Dials*; or perpendicular thereto, on the Planes either of the Meridian, or Prime Vertical, call'd *Vertical Dials*; to which Number are uſually added thoſe drawn on the Polar, and Equinoctial Planes, tho' neither Horizontal, nor Vertical. See PLANE.

Equinoctial DIAL, is that deſcrib'd on the Equinoctial Plane, or a Plane repreſenting that of the Equinoctial. See EQUINOCTIAL.

A Plane oblique to the Horizon, either hangs over towards it, and makes an acute Angle with the Plane of the Horizon; or it falls off backwards from it, and makes an obtuſe Angle therewith. This latter is call'd a *Reclining Plane*; which, if it recline back equal to the Complement of the Latitude of the Place, it lies in the Plane of the Equinoctial; and a *Dial* drawn thereon, is denominated an *Equinoctial Dial.*

Equinoctial Dials are uſually diſtinguiſh'd into *Upper*, which look towards the *Zenith*; and *Lower*, which reſpect the *Nadir.*

Now, as the Sun only illumines the upper Surface of an Equinoctial Plane, while he is in our *Hemiſphere*, or on the Northern Side of the Equator, an *Upper Equinoctial Dial* will only ſhew the Hour during the Spring, and Summer-Seaſon.

And again, as the Sun only illumines the lower Surface of an Equinoctial Plane, while he is in the Southern *Hemiſphere*, or on the other Side the Equator; a *Lower Equinoctial Dial* will only ſhew the Hour in Autumn, and Winter.

To have an *Equinoctial Dial*, therefore, that ſhall ſerve all the Year round, the *Upper* and *Lower* muſt be joyned together; that is, it muſt be drawn on each Side of the Plane.

And ſince the Sun ſhines on one Side or other of an Equinoctial Plane the whole Day; ſuch a *Dial* will ſhew all the Hours of an Artificial Day.

To deſcribe an Equinoctial DIAL *Geometrically.*

The *Equinoctial* is the firſt, eaſieſt, and moſt natural of all *Dials:* But the Neceſſity of drawing it double, prevents its being much in Uſe. However, as its Structure ſhews the reaſon of the other Kinds; and as it even furniſhes a good Mechanical Method of drawing all the other Kinds of *Dials*, it ſhall be here laid down.

Firſt, then, *to deſcribe an Upper* Equinoctial DIAL: From a Center C (*Tab. Dialling, Fig.* 4.) deſcribe a Circle ABDE, and by two Diameters AD, and BE, interſecting each other at right Angles, divide it into Quadrants AB, BD, DE, and ER. Subdivide each Quadrant into ſix equal Parts by their right Lines C 1, C 2, C 3, &c. which Lines will be Hour-Lines. Through the Centre C drive a Style, or Pin, perpendicular to the Plane ABDE.

The *Dial* thus deſcrib'd, being raiſed ſo as to be in the Plane of the Equator, the Line C 12, in the Plane of the Meridian, and the Point A looking towards the South; the Shadow of the Style will ſhew the Hours both of the Fore-noon and After-noon.

For, Horary Circles include Arches of the Equator of fifteen Degrees each. (See HORARY *Circle.*) Conſequently the Plane of ABDE being ſuppoſed in the Plane of the Equator, the Horary Circle will likewiſe include Arches of 15 Degrees of the Circle ABDE. Wherefore, ſince the Angles 12 C 11, 11 C 10, 10 C 9, &c. are each here ſuppoſed 15 Degrees, the Line C 12, C 11, C 10, C 9, &c. are Interſections of Horary Circles, with the Plane of the Equinoctial.

Again, ſince the Style paſſing through the Centre C, is the Axis of the World; its Diſtance from the Centre of the Earth being inconſiderable, and it being the common Diameter of the Horary Circles; its Shadow will cover the Hour C 12, when the Sun is in the Meridian, or Circle of 12 a-Clock; C 11, when in the Circle of 11 a-Clock; C 10, when in the Circle of 10 a-Clock, &c.

Secondly, *To deſcribe a Lower* Equinoctial DIAL: The Method is the ſame as that for the Upper *Dial* already deſcribed; except that no Hour-Lines are to be drawn beyond that of 6 a-Clock.

Thirdly, *To deſcribe an Univerſal* Equinoctial DIAL: Joyn two Metal, or Ivory Planes ABCD, and CDEF, (*Fig.* 5.) ſo as to be moveable at the Joynt. On the upper Surface of the Plane ABCD, deſcribe an *Upper Equinoctial Dial*, and upon the lower a *Lower*, as already directed; and through the Center I drive a Style. In the Plane DEFC cut a Box, and put a Magnetical Needle G therein; fit on the ſame Plane a Braſs Quadrant nicely graduated, and paſſing through a Hole cut in the Plane ABCD. Now, ſince this may be ſo plac'd, by means of the Needle, as that the Line I 12, ſhall be in the Plane of the Meridian: And, by means of the Quadrant, may be ſo raiſed, as that the Angle BCE ſhall be equal to the Elevation of the Equator; it will ſerve as a *Dial* in any Part of the World.

Horizontal DIAL, is that deſcribed on a Horizontal Plane, or a Plane Parallel to the Horizon. See HORIZON.

Since the Sun may illumine a Horizontal Plane at all Times of the Year, while he is above the Horizon; a *Horizontal Dial* may ſhew all the Hours of the Artificial Day, throughout the Year: So that a more perfect *Dial* cannot be requir'd.

To deſcribe an Horizontal DIAL *Geometrically.*

Draw a Meridian Line B, (*Fig.* 6.) on the given immoveable Plane; or aſſume it, at Pleaſure, on a moveable one. See MERIDIAN *Line.*

From a Point taken at Pleaſure, as C, erect a Perpendicular CD, and make the Angle CAD equal to the Elevation of the Pole. In D make another Angle CDE equal likewiſe to the Elevation of the Pole, and draw the right Line DC meeting AB in E. Then make EB equal to ED, and from the Centre B with the *Radius* EB, deſcribe a Quadrant EBF, which divide into 6 equal Parts. Through E draw the right Line GH, cutting AB at right Angles. From the Centre B through the ſeveral Diviſions of the Quadrant EF draw right Lines B a, B b, B c, B d, BH, meet-

meeting the Line GH, in the Point a BC d H. From E upon the right Line EG set off the Intervals E a, E b, &c. *viz.* E a from E to e, E b from E to f, E c from E to g, &c. From the Centre A describe a little Circle, and applying a little Ruler to A, and the several Points of Division a, b, c, d, H and e, f, g, h, G, draw the Lines A 11, A 10, A 9, A 8, A 7, and A 1, A 2, A 3, A 4, A 5. Through A draw a right Line 6,6 perpendicular to AB. Continue the right Line A 7, beyond the little Circle to 7, A 8 to 8, A 5 to 5, and A 4 to 4. Round the whole Scheme draw a Square, Circle, or Oval Figure. And lastly in A fix an Index, making an Angle DAC with the Meridian AB equal to the Elevation of the Pole: Or in C erect a perpendicular Style equal to CD; or at AE fix a Triangular Plate ADE perpendicular to the Plane of the *Dial*.

Now, the Lines A 11, A 10, A 9, &c. are the Hour-Lines of the Fore-noon; and A 1, A 2, A 3, &c. those of the After-noon: and the Shadow of any of the *Gnomon's*, or Styles above mention'd, at the several Hours, will fall on the respective Hour-Lines.

A Horizontal DIAL, *Trigonometrically.*

In large *Dials*, where the utmost Accuracy is required, Geometrical Lines are best set a-side; and in lieu thereof, the Lines of the *Dial* to be determin'd by Trigonometrical Calculation. Monsr. *Clapies*, in the *Memoires de l'Academie Royale des Sciences*, An. 1707, has done us good Service herein; having render'd the Calculation of the Hour-Lines, which before had been operose enough, exceeding easy and expeditious: His Canons, or Analogies we shall lay down under the respective Kinds of *Dials*.

And, first, For a *Horizontal Dial*: The Elevation of the Pole of the Place being given, to find the Angles, which the Hour-Lines make with the Meridian, in the Centre of the *Dial*.

Analogy, or *Canon*.

As the whole Sine is to the Sine of the Elevation of the Pole of the Place; so is the Tangent of the Sun's Distance from the Meridian, for the Hour required; to the Tangent of the Angle requir'd. That is, As the Side FC (*Fig.* 7.) is to DC: So is the Tangent of FDC; to the Tangent FC of the Angle FAC. See TANGENT, &c.

Vertical DIAL, is that drawn on the Plane of a Vertical Circle. See VERTICAL.

Of these there are several Varieties, according to the Vertical pitcht upon. The Verticals chiefly used are the Prime Vertical, and the Meridian; from which respectively arise *South*, *North*, *East*, and *West Dials*.

Dials, which respect the Cardinal Points of the Horizon, are particularly call'd *Direct Dials*. See DIRECT.

If any other Vertical be chose, the *Dial* is said to *Decline*. See DECLINER.

Further, If the Circle, whose Plane is used, be perpendicular to the Horizon, as is supposed to be the Case in all those now mention'd, the *Dials* are particular denominated *Erect*. E. gr. *Erect South*; *Direct North*, &c. See ERECT, &c.

Otherwise, the Plane being oblique to the Horizon, they are said either to *Incline*, or *Recline*. See INCLINER, RECLINER, &c.

South DIAL, or more particular an *Erect Direct South* DIAL, is that described on the Surface of the Prime Vertical Circle, looking to the South. See SOUTH.

Since the Sun then illumines the Plane of the Prime Vertical, looking to the South, when, in its Progress he passes from the Prime Vertical to the Meridian, or returns back from this to that; in which he is employ'd six Hours before, and six after Noon; A *South Dial* shews the Hours from six in the Morning to six at Night.

To draw a Vertical South DIAL.

On the Plane of the Prime Vertical looking Southwards, draw a Meridian Line AB (*Fig.* 8.) and taking the Interval AC at Pleasure for the Magnitude of the future *Dial*; In C erect a Perpendicular of an indefinite Length CD, and making an Angle CAD equal to the Elevation of the Equator, draw a right Line AD meeting the Perpendicular CD in D. Then in the Point D make the Angle CDE likewise equal to the Elevation of the Equator, and draw the right Line DE cutting the Meridian in E. Through E draw the right Line GH, cutting the Meridian AB at right Angles. Take EB equal to ED, and with this *Radius* describe a Quadrant EF. The rest is perform'd as in a *Horizontal Dial*; except that the Hours of the After-noon are to be wrote on the right Hand, and those of the Fore-noon on the left, as in the Figure. Lastly, in the Point A fix an oblique Style in an Angle equal to the Elevation of the Equator: Or in C erect a perpendicular Style equal to CD: Or, lastly, a Triangular Plate ADE upon AE, so as to be perpendicular to the Plane of the *Dial*.

Then will the Shadow of any of these Indexes touch the several Hour-Lines at their respective Hours.

North DIAL, *or Erect Direct North* DIAL, is that described on the Surface of the Prime Vertical, looking Northward. See NORTH.

Since the Sun only illumines this Surface, while he advances from the East to the Prime Vertical, and proceeds from the same Vertical to the West; and since he is in the Prime Vertical at six a-Clock in the Morning, and six in the Evening; a *North Dial* shews the Hours before six in the Morning, and those after six in the Evening. And hence, as in Autumn, and Winter Time, the Sun does not rise before six, and yet sets before six in the Evening; a *North Dial* is of no Use all that Time. But being joyn'd with a *South Dial*, it supplies the Defects thereof.

To describe a Vertical North DIAL.

Draw a Meridian Line EB (*Fig.* 9.) and from A describe a little Circle at Pleasure. At A make the Angle DAC equal to the Elevation of the Equator, and from the Point C taken at Pleasure, erect a Perpendicular CD meeting AD in D. Make another Angle CDE likewise equal to the Elevation of the Equator, and draw likewise a Line DE meeting AE in E. Then take IB equal to ED. And through I draw GH, cutting SB at right Angles. And from the Centre B with the *Radius* IB describe a Quadrant; which divide into six equal Parts. Through the two extream Divisions draw Lines from the Centre B, *viz.* B d, and BH, meeting GH in little d, and H, and make I h equal to I d, and IG equal to IH. Then applying a Ruler to A and d, and H; and again to A and h, and G, draw the right Lines A 5, A 4, A 7, and A 8. Lastly, in A fix an oblique Index AD, making an Angle DAE with the Meridian Line in the Plane of the Meridian, equal to the Elevation of the Equator: Or a perpendicular Index in C equal to CD: Or, instead of an Index, a Triangular Plate EDA on the Meridian Line EA, perpendicular to the Plane of the *Dial*.

Then will A 4, A 5, A 6, be the Hours of the Fore-noon; and A 6, A 7, A 8, those of the After-noon; and accordingly will be pointed out by the Shadow of the several Indexes.

Or thus: In a *South Dial* (*Fig.* 10.) If the Hour-Lines 4 and 5, as also 7 and 8, be continued beyond the Line 6 A 6; and the Triangle ADE turned about its Pole A till AE fall directly against A 12; it is evident, a *North Dial* is hereby had: only observing what has been said about writing the Hours.

A Vertical North, or *South* DIAL *Trigonometrically.*

These only differ from the *Horizontal Dial*, in that the Angle CAB is equal to the Complement of the Elevation of the Pole of the Place; so that the same Analogy serves as for the Horizontal one: Only making the second Term the Complement of the Elevation of the Pole of the Place.

East DIAL, or *Erect Direct East* DIAL, is that drawn on the Plane of the Meridian, looking to the East. See EAST.

Since the Sun only illumines the Plane of the Meridian, looking Eastward before Noon; an *East Dial* can only shew the Hours till Noon.

To describe an East DIAL.

On the Eastern Side of the Plane of the Meridian draw a right Line AB (*Fig.* 11.) parallel to the Horizon, and to this joyn AK, making with it an Angle KAB, equal to the Elevation of the Equator. Then with the *Radius* DE describe a Circle, and through the Centre D draw AC perpendicular to AK; by which means the Circle will be divided into 4 Quadrants. Each of these Quadrants subdivide into six equal Parts. And from the Centre D thro' the several Divisions draw right Lines, D 4, D 5, D 6, D 7, D 8, D 9, D 10, D 11. Lastly, in D erect a Style equal to the *Radius* DE, perpendicular to the Plane; or, on two little Pieces perpendicular fix'd in EC, and equal to the same *Radius* DE, fit an Iron Rod parallel to AC.

Thus will each Index at the several Hours project a Shadow to the respective Hour-Lines 4, 4 5, 5 6, 6 &c.

West DIAL, or *Erect Direct West*-DIAL, is that described on the Western Side of the Meridian. See WEST.

As the Sun only illumines that Side of the Plane of the Meridian, looking to the West after Noon, a *West-Dial* can only shew the Hours from Noon to Night.

This, therefore, joyn'd with an *East-Dial* shews all Hours of the Day.

To draw a West DIAL.

The Construction is perfectly the same as that of an *East Dial*: Only that its Situation is inverted, and the Hours wrote accordingly.

Polar DIAL, is that described on a Plane passing through the Poles of the World, and the East, and West Points of the Horizon. It is of two Kinds: The first, looking up towards the *Zenith*, and call'd *Upper*; the latter down to the *Nadir*, call'd *Lower*.

The *Polar Dial*, therefore, is inclin'd to the Horizon in an Angle equal to the Elevation of the Pole.

Since

Since the Polar Plane POQS (*Fig.*12.) passes through the East and West Points O and S, a Quadrant of the Equator is intercepted between it, and the Meridian: Consequently the *Upper* Surface is illumined by the Sun from six in the Morning to six at Night; and the *Lower* from the Sun's Rise to six in the Morning, and from six in the Evening to Sun-set. A *Lower Polar Dial*, therefore, shews the Hour of the Morning from Sun-Rise to six a-Clock, and that of the Evening from six to Sun-set; And an *Upper*, the Hours from six in the Morning to six in the Evening.

To draw an Upper Polar DIAL.

Draw a right Line AB (*Fig.*13.) parallel to the Horizon, and if the Plane be immoveable, find the Meridian Line CE. Divide CE into two equal Parts, and through C draw a right Line FG parallel to AB. Then from the Centre D with the Interval DE, describe a Quadrant, which divide into six equal Parts. And from the same Centre D through the several Points of Division draw right Lines D 1, D 2, D 3, D 4, D 5; and the Intervals E 1, E 2, E 3, E 4, E 5, set off the contrary Way from E 11, 10, 9, 8, and 7. From the Points 5, 4, 3, 2, 1, *&c.* raise Perpendiculars meeting the Line FG in the correspondent Points. Lastly, in D erect a perpendicular Style equal to DE; or on two equal Pieces E and C, fix a cross Iron Rod.

Then will 12, 12, 1, 1, 2, 2, 3, 3, *&c.* be Hour-Lines, to be pointed out at the proper times by the Shadow of the Indices.

An *Upper Polar* DIAL only differs in Situation, and the Manner of writing in the Hours, from *East*, and *West Dials* joyn'd together in the Line of six a-Clock.

A *Lower Polar Dial* is had by putting out the Hours of the Fore-noon 9, 10, and 11, and those of the After-noon 1, 2. and 3, with the Noon-hour 12 it self: and only leaving the Hours 7 and 8 of the Morning, and 4 and 5 in the Evening.

To draw all the Primary DIALS *on the same Block, or Post.*

1. Let the Plane ABCD (*Fig.*14.) in the proper Position of the Block be supposed Horizontal; And thereon describe a *Horizontal Dial*. See *Horizontal* DIAL.

2. Draw the right Lines EM, and FL parallel to DC, which accordingly, in the proper Position of the Block, will be parallel to the Horizon. Then let the Plane BNMC make an Angle with EM, equal to the Elevation of the Pole, CME: and thereon describe an *Upper Polar Dial*. See *Polar* DIAL.

3. Let the Opposite Plane ADE make with EM an Angle DEM, equal to the Elevation of the Equator: And on this draw an *Upper Equinoctial Dial*. See *Equinoctial* DIAL.

4. Let the Plane KLHI make with FL an Angle HLF: And on this inscribe a *Lower Equinoctial Dial*. See *Equinoctial* DIAL.

5. Let the opposite Plane FG make with FL an Angle FGL equal to the Elevation of the Pole: And here draw a *Lower Polar Dial*. See *Polar* DIAL.

6. Let the Plane MNKL, and the opposite one EE be perpendicular to FL: And on that draw a *South Dial*, and on this a *North Dial*. See *South North* and DIAL.

7. In the Plane EMLF describe a *West Dial*; and on the opposite Plane an *East Dial*. See *East* and *West* DIALS.

If then the Block be so placed, as that the Plane MNKL looks to the South, and the Plane of the Meridian bisect it by the Line of 12 a-Clock in the Horizontal *Dial* ABCD, and South *Dial* MNKL; They will all tell the Hour of the Day.

Secundary DIALS.

Secundary DIALS are all those drawn on the Planes of other Circles, beside the *Horizont*, *prime Vertical*, *Equinoctial*, and *Polar Circles*: Or those, which either *Decline*, *Incline*, *Recline*, or *Deincline*.

Declining DIALS are *Erect*, or *Vertical Dials*, which *decline* from any of the Cardinal Points; Or, more strictly, which cut either the Plane of the Prime Vertical, or of the Horizon at oblique Angles.

The Use of *Declining Dials* is very frequent; as the Walls of Houses, whereon *Dials* are usually drawn, commonly deviate from the Cardinal Points. See DECLINER.

Of *Declining Dials* there are several Kinds, denominated from the Cardinal Points, which they seem most to respect, but from which they have a real *Declination*: *Decliners from the South*, and *from the North*, and even *from the Zenith*.

Vertical Declining DIALS, *Trigonometrically*.

Prob. 1. The *Declination* of the Plane, and the Elevation of the Pole of the Plane, being given: To find the Angle form'd in the Centre of the *Dial*, by the Meridian, and Substyle.

Analogy: As the whole Sine is to the Tangent of the Complement of the Height of the Pole of the Place GF; (*Fig.*15.) so is the Sine of the *Declination* of the Plane GFD to the Tangent GD, of the Angle required, GAD.

Prob. 2. The *Declination* of the Plane being given, and the Elevation of the Pole of the Place; to find the Angle form'd in the Centre of a *Vertical Declining Dial*, by the Substyle and Axis.

Analogy: As the whole Sine is to the Sine of the Complement of the Elevation of the Pole GF; so is the Sine of the Complement of the *Declination* of the Plane DGF, to the Side DF, the Sine of the Angle DAB required.

Prob. 3. The *Declination* of the Plane, and the Elevation of the Pole, given; to find the Difference of Longitudes, that is, the Arch of the Equator comprehended between the Meridian of the Place, and the Meridian of the Plane.

Analogy: As the whole Sine is to the Sine of the Height of the Pole; so is the Tangent of the Complement of the *Declination* of the Plane, to the Tangent of the Complement of the Difference of Longitudes.

Prob. 4. The Angle of the Difference of Longitudes, and that of the Axis, with the Substyle, being given; to find the Angles form'd in the Centre of a *Vertical Declining Dial*, between the Substyle and Hour-Lines.

This *Problem* admits of three Cases. For the Hour-Lines, whose Angles are sought, may be, either, 1. Between the Meridian, and Substyle; or, 2. Beyond the Substyle; or, 3. On that Side the Meridian the Substyle is not. In the two first Cases, the Difference is to be taken between the Sun's Distance from the Meridian that Hour, and the Angle of the Difference of Longitudes found by the last *Problem*: And in the third Case, the Sum of those two Angles is to be taken; and the following *Analogy* used.

Analogy: As the whole Sine is to the Sine of the Angle between the Axis and Substyle, CM; so is the Tangent of the Difference of the Sun's Distance from the Meridian, and the Difference of Longitudes, or of the Sum of those two Angles; to the Tangent of the Angle required.

Prob. 5. The Angle form'd by the Substyle, with the Hour-Lines, and that of the Substyle, with the Meridian, given; to find the Angles form'd between the Meridian, and Hour-Lines in the Centre of *Vertical Declining Dials*.

1. The Angles of the Hour-Lines between the Meridian, and Substyle, are found by substracting the Angle form'd by the Substyle, with the Hour-Line, from the Angle form'd by the Substyle, with the Meridian.

2. The Angles beyond the Substyle, and on the Side opposite to that of the Meridian, are found by adding those two Angles.

3. Those on the other Side the Meridian, are found by taking their Difference.

To describe a Vertical DIAL, *declining from the South to the East*, or *West*, Geometrically.

Find the *Declination* of the Plane, as already taught under the Article DECLINATION, and DECLINER.

Then draw upon Paper a *Horizontal Dial*, supposing the Line of Contingency of the Horizontal, with the Equinoctial Plane to be GH, (*Fig.*16.) Through the Point E, wherein the Meridian Line AE cuts the same, draw a right Line IK, making with GH an Angle HEK equal to the *Declination* of the given Plane. Thus, as GH represents the Intersection of the Prime Vertical, with the Horizon; IK will be the Intersection of the Inclining Plane, and the Horizon; Whence we also conceive, that the Part IE must be raised above GE, in Case the given Plane *decline* to the West: Or be depress'd below the same GE, in Case it *decline* to the East. Draw a right Line parallel to the Horizon on the given Plane, or Wall, to answer to IK, and assuming a Point therein, answering to E set off from the right Line IK on the Paper, the several Horary Distances E 1, E 2, E 3, *&c.* Then from the Point E erect a Perpendicular EC, equal to the Distance of the Centre of the *Horizontal Dial*, from its Line of Contingency. Draw Lines thence to the several Points of the Hour-Lines E 1, E 2, E 3, *&c.* let fall a Perpendicular AD from the Centre of the *Horizontal Dial* A to the Line of Contingency IK, and transfer the Distance ED from the Point E upon the Wall; then will CD be the Substylar Line. See SUBSTYLE.

Wherefore, joyning AD and DC at right Angles; the Hypothenuse AC will be an oblique Index to be fasten'd on the Wall in the Point C, according to the Angle DCA.

To draw a Vertical DIAL *declining from the North towards the East, and West.*

Take the *Declination* of the Plane, as already taught: Then, as *North Dials* are only *South Dials* inverted, draw a *Vertical Dial declining from the South*, and invert it in such manner, as that the Centre C look to the Horizon, and the Point E to the *Zenith*; and the Hours on the right

Hand ſet off towards the Left, and contrarywiſe; Omitting all Hour-Lines, which in ſuch a Plane cannot be ſhewn.

For the Practice the beſt Way is, after drawing a *South Decliner* upon Paper, to prick the ſeveral Points thereof through with a Pin; Then applying the Face of the Paper to the Wall, the Back-ſide thereof will ſhew you all the Points neceſſary for the *North Declining Dial*.

Inclined DIALS, are thoſe drawn on Planes not *Erect*, but *Inclining*, or leaning forward towards the South, or Southern Side of the Horizon, in an Angle, either greater or leſs than the Equinoctial Plane. See INCLINATION.

Such an *Inclined* Plane is conceived by ſuppoſing one Part of the Plane of the Equator lifted up toward the *Zenith*, and the other depreſs'd toward the *Nadir*; and thus to revolve upon a Line drawn from the Eaſt to the Weſt Points of the Horizon.

To draw an Inclined DIAL.

1. The *Inclination* of the Plane, as DC (*Fig.* 17.) being found by a *Decliner*, as taught under INCLINATION; If it fall between the Equinoctial Plane CE, and the Vertical one CB, in ſuch manner, as that the Angle of *Inclination* DCA is greater than the Elevation of the Equator ECA: On the Upper Side draw a *North Dial*; and on the Lower a *South Dial* to the Elevation of the Equator, which is equal to the Aggregate of the Elevation of the Equator of the given Place, and the Complement of the *Inclination* to a Quadrant.

2. If the *Inclined* Plane CF fall between the Horizontal one CA, and the Equinoctial CE, ſo that as the Angle of *Inclination* FCA is leſs than the Elevation of the Equator ECA: deſcribe an Horizontal *Dial* to an Elevation of the Pole, equal to the Aggregate of the Elevation of the Pole of the given Place, and the *Inclination* of the Plane.

Dials thus *inclined*, are drawn after the ſame manner as *Primary Dials*, except, that the Index in the former Caſe muſt be fitted under the Angle ADC, and in the latter under the Angle DFC: And that the Diſtance of the Centre of the *Dial* from the Line of Contingency in the former Caſe is DC, and in the latter FC.

Reclining DIALS, are thoſe drawn on Planes not *Erect*, but *Reclined*, or leaning backwards from the *Zenith* towards the North, in an Angle greater, or leſs than the Polar Plane.

A *Reclined* Plane is conceived by ſuppoſing one Part of the Polar Plane raiſed toward the *Zenith*, and the other depreſſed towards the *Nadir*: And thus revolving about a Line drawn from Eaſt to Weſt. To find the *Reclination* of a Plane. See RECLINATION.

To draw a Reclining DIAL.

1. If the *Reclined* Plane HC fall between the Vertical Plane BC, and the Polar Plane IC; ſo as that the Angle of *Reclination* BCH is leſs than the Diſtance of the Pole from the *Zenith* BCI: Deſcribe two Vertical *South* and *North Dials* to an Elevation of the Equator, equal to the Difference between the Elevation of the Equator of the given Place, and the Angle of *Reclination*.

2. If the *Reclined* Plane, as KC fall between the Polar Plane IC, and the Horizontal one CL; ſo as that the Angle of *Reclination* BCK is greater than the Diſtance of the Pole from the *Zenith* ICB: Deſcribe a Horizontal *Dial* thereon to the Elevation of the Pole, equal to the Difference between the Angle of *Reclination*, and the Elevation of the Equator in the given Place.

Inclining, and Reclining DIALS, *Trigonometrically.*

The *Inclination*, or *Reclination* of the Plane, and the Elevation of the Pole being known; to find the Angles made in the Centre of an *Inclining*, or *Reclining Dial*, by the Meridian, and Hour-Lines.

Such *Dial* is properly a *Horizontal Dial*, for a Latitude equal to the particular Elevation of the Pole on the Plane of the *Dial*. Its Angles, therefore, are found by the Analogy laid down for *Horizontal Dials*.

As to the Elevation of the Pole, on the *Dial* Plane, 'tis thus found: The Plane being *inclined*; Either its *Inclination* is greater than the Elevation of the Pole of the Place; or leſs; or equal thereto. In the two firſt Caſes, for Upper *South*, or Lower *North Dials*, the particular Elevation of the Pole on the Plane, is had by taking the Difference between the Elevation of the Pole of the Place, and the *Inclination* of the Plane: And in the latter Caſe, the *Dial* is a *Polar Dial*, wherein the Hour-Lines will be parallel, by reaſon the Plane being *inclined* on the Axis of the World, neither of the Poles can be repreſented thereon.

For Upper *North*, and Lower *South Dials*: 1. If the *Inclination* be greater than the Elevation, the Complement of the *Inclination* muſt be added to the Complement of the Elevation. 2. If it be leſs, the *Inclination* muſt be added to the Elevation. 3. If it be equal, the *Dial* will be an *Equinoctial Dial*, wherein the Angles at the Centre will be equal to the Sun's Diſtance from the Meridian.

Deinclined DIALS, are thoſe which both *decline*, and *incline*, or *recline*. See DEINCLINED.

The Uſe of *Inclined*, *Reclined*, and eſpecially *Deinclined Dials*, is very rare: The Geometrical, and Trigonometrical Conſtruction of theſe laſt, therefore, as being ſomewhat intricate withal, we here chuſe to omit, and refer ſuch as may have a Fancy for ſuch a *Dial*, to an Univerſal Mechanical Method of drawing all Kinds of *Dials* here ſubjoyn'd.

An eaſy Method, to deſcribe a DIAL, *on any Kind of Plane, by means of an* Equinoctial Dial, *or Circle.*

Suppoſe, *e. gr.* A *Dial* requir'd on a Horizontal Plane: If the Plane be immoveable, as ABDC (*Fig.* 18.) find a Meridian Line GF: Or if moveable, aſſume the Meridian at Pleaſure. Then by means of the Triangle EKF, whoſe Baſe is applied on the Meridian Line raiſe the Equinoctial *Dial* H, till ſuch Time as the Index GI becomes parallel to the Axis of the World, (which is had, if the Angle KEF be equal to the Elevation of the Pole) and the 12 Clock Line on the *Dial* hang over the Meridian Line of the Plane, or the Baſe of the Triangle. If then in the Night-time a lighted Candle being ſucceſſively applied to Axis GI, ſo as the Shadow of the Index, or Style GI fall upon one Hour-Line after another; The ſame Shadow will mark out the ſeveral Hour-Lines on the Plane ABCD.

Noting the Points, therefore, on the Shadow, draw Lines through them to G: Then an Index being fix'd in G, according to the Angle IGF, its Shadow will point out the ſeveral Hours by the Light of the Sun.

If a *Dial* were requir'd *on a Vertical Plane*; having raiſed the Equinoctial Circle, as above directed, puſh forward the Index GI, till the Tip thereof I, touch the Plane.

If the Plane be *Inclined* to the Horizon, the Elevation of the Pole ſhould be found on the ſame; and the Angle of the Triangle KEF made equal thereto.

Note, Beſide the ſeveral Species of *Dials*, abovemention'd, which are ſaid to be *with Centres*, there are others, call'd *Dials without Centres*.

DIALS *without Centres*, are thoſe whoſe Hour-Lines do really converge, but ſo ſlowly that the Centre they converge towards, cannot be expreſs'd on the given Plane.

Horizontal DIALS *without Centres* are to be made for Places the Elevation of whoſe Pole is very ſmall; or very great.

Vertical DIALS *without Centres* for Places the Elevation of whoſe Pole is very great.

For the Furniture of Dials. See FURNITURE.

Ring-DIAL. } See { RING *Dial.*
Portable DIAL. } See { RING *Dial.*
Quadrantal DIAL. } See { *Horodictic* QUADRANT.
Reflecting DIAL. } See { REFLECTING *Dial.*

Nocturnal, or *Night*-DIAL, is that which ſhews the Hours of the Night.

Of this there are two Kinds, *Lunar*, and *Siderial*.

Moon-DIAL, or *Lunar* DIAL, is that which ſhews the Hour of the Night, by means of the Light, or Shadow of the Moon projected thereon from an Index.

To deſcribe a Moon-DIAL.

Suppoſe, *e. gr.* A Horizontal *Moon-Dial* required: Draw firſt a Horizontal *Sun-Dial*: Then erect two Perpendiculars AB, and CD, (*Fig.* 19.) to the Line of 12 a Clock, and dividing the Interval GF into 12 equal Parts; Through the ſeveral Points of Diviſion draw Lines parallel thereto. Now, appropriating the firſt Line CD to the Day of the New Moon, and the ſecond to the Day, when the Moon comes an Hour later to the Meridian than the Sun, their Interſections with the Hour-Lines will give Points, through which to draw a Curve Line 12, 12, for the Meridian Line of the Moon. After the like manner determine the other Hour-Lines 11, 22, 33, *&c.* which the Shadow of the Moon projected from the Style of the *Dial* interſects at the reſpective Hours. Blot out the Hour-Lines of the *Sun-Dial*, together with the Perpendiculars, whereby the Lunar-Hours were drawn, and divide the Interval GF, by other Parallel Lines into 15 equal Parts, anſwering to the 15 Days between New and Full Moon. Laſtly, to theſe Lines write the ſeveral Days of the Moon's Ages.

Now, the Moon's Age being learnt from a Calendar; the Interſection of the Lines of the Moon's Age, with the Lunar Hour-Lines, will give the Hour of the Night.

After the ſame manner may any other *Sun-Dial* be converted into a *Moon-Dial*.

To draw a Portable Moon-DIAL.

On a Plane that may be raiſed according to the Elevation of the Equator deſcribe a Circle AB (*Fig.* 20.) and divide its Circumference into 29 equal Parts. From the ſame Centre C deſcribe another moveable Circle DE, which divide into 24 equal Parts, or Hours. In the Centre C erect an Index, as for an Equinoctial *Dial*.

The

This *Dial* being duly plac'd after the manner of an Equinoctial *Dial*, and the 12 a-Clock Line brought to the Day of the Moon's Age: The Shadow of the Index will give the Hour.

To uſe a Solar, as a Lunar-Dial, i. e. to find the Hour of the Night by a Sun-Dial.

Obſerve the Hour, which the Shadow of the Index points at by Moon-Light: Find the Moon's Age in the Calendar, and multiply the Number of Day by $\frac{3}{4}$, the Product is the Number of Hours to be added to the Hour ſhewn by the Shadow, to give the Hour required.

DIALECT, the peculiar Language of ſome Province, or Part of a Nation, form'd by Corruption of the general, or national Language. See LANGUAGE.

Homer could ſpeak 5 different Languages in one Verſe, *i. e.* five *Dialects*, viz. the *Attic*, *Jonic*, *Æolic*, *Doric*, and the common Language of the *Greeks*. See GREEK, ATTIC, JONIC, *&c.*

The *Bolonneſe*, *Bergamas*, *Toſcan*, &c. are the *Dialects* of the *Italian*. See ITALIAN.

The *Gaſcon*, and *Piccard*, are the *Dialects* of the *French*. See FRENCH, *&c.*

DIALECTICA, the Art of Logic; or, of Thinking, and Reaſoning juſtly. See LOGIC.

Zeno Eleates was the firſt who diſcover'd the natural Series of Principles, and Concluſions, obſerved in Reaſoning, and form'd an Art thereof, in Form of Dialogue, which for this reaſon was call'd *Dialectica*.

The Word comes from the *Greek* διαλεκτικὴ, of the very διαλέγεσθαι, *diſſerere*, to diſcourſe, reaſon.

The *Dialectica* of the Ancients is uſually divided into ſeveral Kinds: The firſt was the *Eleatica*, that of *Zeno Eleates*; which was threefold: viz. *Conſecutionum*, *Colloquutionum*, and *Contentiarum*. The firſt conſiſting of Rules for deducing, or drawing Concluſions: The ſecond, the Art of *Dialogue*, which became of ſuch univerſal Uſe in Philoſophy, that all Reaſoning was call'd *Interrogation*. Then, Syllogiſm being laid a-ſide, the Philoſophers did all by *Dialogue*; it lying on the Reſpondent, to conclude, and argue from the ſeveral Conceſſions made. See DIALOGUE.

The laſt Part of *Zeno*'s *Dialecticks*, ἐριστικὴ, was Contentious, or the Art of Diſputing, and Contradicting; tho' ſome, particularly *Laertius*, aſcribe this Part to *Protagoras*, a Diſciple of *Zeno*.

The ſecond is the *Dialectica Megarica*, whoſe Author is *Euclid*, not the Mathematician, but another, of *Megara*. He gave much into the Method of *Zeno*, and *Protagoras*: Tho' there are two Things appropriated to him: The firſt, that he impugned the Demonſtrations of others, not by Aſſumptions, but Concluſions; continually making Illations, and throwing in *Ergo*, *Ergo*, *Ergo*. The ſecond, that he ſet a-ſide all Arguments drawn from Compariſon, or Similitude, as invalid.

He was ſucceeded by *Eubulides*, from whom the Sophiſtic Way of Reaſoning is ſaid to be deriv'd. In his Time the Art is deſcribed as manifold: *Mentiens*, *Fallens*, *Electra*, *Obvelata*, *Acervalis*, *Cornuta*, and *Calva*. See SOPHISM.

The third is the *Dialectica* of *Plato*, which he propoſes as a Kind of *Analyſis*, to direct the human Mind, by dividing, defining, and bringing Things to the firſt Truth; where being arrived, and ſtopping there a little, it applies it ſelf to explain ſenſible Things; but with a View to return to the firſt Truth, where alone it can reſt. Such is the Idea of *Plato*'s Analyſis. See ANALYSIS, PLATONISM, ACADEMIC, *&c.*

The fourth is *Ariſtotle*'s *Dialectica*, containing the Doctrine of ſimple Words, deliver'd in his Book of *Prædicaments*: The Doctrine of Propoſitions, in his Book, *de Interpretatione*: That of the ſeveral Kinds of Syllogiſms, in his Books of Analyticks, Topicks, and Elenchus's. See SYLLOGISM, TOPIC, ELENCHUS, PROPOSITION, *&c.*

The fifth is the *Dialectica* of the *Stoicks*, which they call a Part of Philoſophy, and divide into *Rhetoric*, and *Dialectic*: to which ſome add *Oric*, or Definitive, whereby Things are juſtly defin'd; comprehending likewiſe the Canons, or Criterions of Truth. See CRITERION, *&c.*

The *Stoicks*, ere they come to treat of Syllogiſms, have two principal Places, the one about the Word ſignifying; the other about the Thing ſignified. On Occaſion of the firſt, they conſider Abundance of Things belonging to the Grammarians Province, what, and how many Letters, what is a Word, Diction, Speech, *&c.* On Occaſion of the latter, they conſider Things themſelves, not as without the Mind, but as in it, receiv'd in by means of the Senſes. Accordingly, they firſt teach, that, *Nil ſit in Intellectu, quod non prius fuerit in Senſu*, Whatever is in the Mind, paſſes thither by the Senſes; and that, *Aut Incurſione ſui*, as *Plato*, who meets the Sight; *Aut Similitudine*, as *Cæſar* by his Effigy; *Aut Proportione*, either by Enlarging, as a Giant, or by Diminiſhing, as a Pigmy; *Aut Tranſlatione*, as a Cyclops; *Aut Compoſitione*, as a Centaur; *Aut Contrario*, as Death; *Aut Privatione*, as a blind Man. See STOICKS.

The ſixth is *Epicurus*'s *Dialectic*. For tho' he ſeems to have deſpiſed *Dialectic*, he cultivated it with Vigour: He was only averſe to that of the *Stoicks*, who, he thought, attributed too much thereto; as pronouncing him alone wiſe, who was well verſed in *Dialecticks*. For this Reaſon *Epicurus* ſeeming to ſet a-ſide the common *Dialecticks*, had recourſe to another Way, *viz.* to certain Canons, which he ſubſtituted in their ſtead, the Collection whereof he call'd *Canonica*. And as all Queſtions in Philoſophy are either, *de Re*, or *de Voce*; he gave ſeparate Rules for each. See CANONICA.

DIALECTICAL *Arguments*, in Logick, are ſuch as are barely probable, and do not convince, or determine the Mind to either Side of the Queſtion. See PROBABILITY.

DIALLING, the Art of drawing *Sun*, *Moon*, and *Star-Dials* on any given Plane, or the Surface of any given Body. See DIAL.

The *Greeks* and *Latins* call it *Gnomonica*, and *Sciaterica*, by reaſon it diſtinguiſhes the Hours by the *Shadow* of a *Gnomon*. Some call it *Photo-ſciaterica*, by reaſon the Hours are ſometimes ſhewn hy the Light of the Sun. Laſtly, others call it *Horologiography*. See GNOMONICA, SCIATERICA, *&c.*

The Antiquity of *Dials* is beyond doubt. Some attribute their Invention to *Anaxemenes Mileſius*; and others to *Thales*. *Vitruvius* mentions one made by the ancient *Chaldee* Hiſtorian *Beroſus*, on a Reclining Plane, almoſt parallel to the Equinoctial, call'd *Hemicyclus*. *Ariſtarchus Samius* invented the Hemiſphere Dial. And there were ſome Spherical ones, with a Needle for a *Gnomon*. The *Diſcus* of *Ariſtarchus* was an Horizontal Dial, with its Limb raiſed up all a-round, to prevent the Shadows ſtretching too far.

But it was late 'ere the *Romans* became acquainted with Dials. The firſt Sun-Dial at *Rome* was ſet up by *Papyrius Curſo*, about the Year of the City 447, before which Time, ſays *Pliny*, there is no mention of any Account of Time but by the Sun's Riſing, and Setting: It was ſet up in the Temple of *Quirinus*, but went ill: About 30 Years after, *M. Valerius Meſſala* being Conſul, brought out off *Sicily* another Dial, which he ſet up on a Pillar near the *Roſtrum*; but for Want of its being made for that Latitude, it could not go true. They made uſe of it 11 Years; till *Martius Philippus* ſet up another more exact.

But there ſeem to have been *Dials* among the *Jews* much earlier than any of theſe. Witneſs the *Dial* of *Ahaz*, who liv'd 400 Years before *Alexander*, and within 12 Years of the Building of *Rome*; mentioned by *Iſaiah* Chap. XXXVIII. Verſe 8.

Dialling is wholly founded on the firſt Motion of the heavenly Bodies, and chiefly the Sun; or rather on the Diurnal Rotation of the Earth; So that the Elements of Sphericks, and the Spherical Aſtronomy ſhould be maſter'd, 'ere a Perſon advances to the Doctrine of *Dialling*. The Doctrine, or Theory, we ſay, for as to the Practice, or the Operations themſelves, diſtinct from the Demonſtrations, nothing is more eaſy, and obvious.

The firſt profeſs'd Writer on *Dialling*, is *Clavius*; who demonſtrates all, both the Theory, and the Operations, after the rigid Manner of the ancient Mathematicians; But ſo intricately, that no body, we dare ſay, ever read them all. *Dechales*, and *Ozanam*, give much eaſier in their *Courſes*, and *Wolfius* in his *Elements*. Mr. *Picard* has given a new Method of making large Dials, by calculating the Hour-Lines; And Mr. *de la Hire*, in his *Dialling*, printed in 1683. a Geometrical Method of drawing Hour-Lines from certain Points determin'd by Obſervation. *Eberhardus Welperus*, in 1625. publiſh'd his *Dialling*, wherein he lays down a Method of drawing the Primary Dials on a very eaſy Foundation. The ſame Foundation is deſcrib'd at length by *Sebaſtian Munſter*, in his *Rudimenta Mathematica*, publiſh'd in 1551. *Sturmius*, in 1672. publiſh'd a new Edition of *Welperus*'s *Dialling*, with the Addition of a whole ſecond Part, about Inclining, and Declining Dials, *&c.* In 1708. the ſame Work, with *Sturmius*'s Additions, was republiſh'd with the Addition of a fourth Part, containing *Picard*'s, and *de la Hire*'s Methods of drawing large Dials, which makes much the beſt, and fulleſt Book on the Subject. *Peterſon*, *Michael*, and *Muller*, have each wrote on *Dialling*, in the *German* Tongue; *Coetſius*, in his *Horologiographia plana*, printed in 1689. *Gauppenius*, in his *Gnomonica Mechanica*, and *Bion*, in his *Uſe of Mathematical Inſtruments*.

DIALLING-*Globe*, is an Inſtrument made of Braſs, or Wood, with a Plane fitted to the Horizon, and an Index; particularly contrived to draw all Sorts of Dials, and to give a clear Exhibition of the Principles of that Art.

DIAL-

DIALLING-*Sphere*, is an Inſtrument made of Braſs, with ſeveral Semi-Circles ſliding over one another, on a moving Horizon, to demonſtrate the Nature of the Doctrine of Spherical Triangles, and to give the true Idea of drawing Dials on all manner of Planes.

DIALLING-*Lines*, or *Scales*, are graduated Lines, placed on Rules, or the Edges of Quadrants, and other Inſtruments, to expedite the Conſtruction of Dials. See SCALE.

The principal of theſe Lines are, 1. A *Scale of ſix Hours*, which is only a double Tangent, or two Lines of Tangents each of 45 Degrees, joyn'd together in the Middle, and equal to the whole Line of Sines, with the Declination ſet againſt the Meridian Altitudes in the Latitude of *London*, ſuppoſe, or whatever Place it is made for. The *Radius* of which Line of Sines is equal to the *Dialling-Scale of ſix Hours*. 2. A *Line of Latitudes*, which is fitted to the Hour-Scale, and is made by this Canon; As *Rad.* to the Chord of 90 Degrees: So are the Tangents of each reſpective Degree of the Line of Latitudes to the Tangents of other Arcs. And then the natural Sines of thoſe Arcs are the Numbers, which taken from a Diagonal Scale of equal Parts, ſhall graduate the Diviſions of the Line of Latitudes to any *Radius*. The Line of Hours, and Latitudes is general for pricking down all Dials with Centres.

DIALLING, in a Mine, call'd alſo *Plumming*, is the uſing of a Compaſs, (which they call *Dial*) and a long Line, to know which Way the Load, or Vein of Oar inclines, or where to ſhift an Air-Shaft, or bring an Adit to a deſir'd Place. See MINE.

The Manner thereof, See under the Article TIN.

DIALIA, in Antiquity, Sacrifices perform'd by the *Flamen Dialis*. See DIALIS.

'Twas not, however, of ſuch abſolute Neceſſity, that the *Dialia* were perform'd by the *Flamen Dialis*; but that others might officiate. We find in *Tacitus Annal.* Lib. III. Cap. 58. that if he were ſick, or detain'd by any other public Employ, the Pontifices took his Place.

DIALIS, in Antiquity, a *Latin* Term, ſignifying ſomewhat that belongs to *Jupiter*, to Ζεὺς Διὸς.

The *Flamen Dialis*, then, was a Prieſt of *Jupiter*. He was never permitted to ſwear. See FLAMEN.

DIALOGUE, a Converſation of two or more Perſons, either by Word of Mouth, or in Writing.

The Word is form'd from the Latin *Dialogus*, of the *Greek* Διάλογος, which ſignifies the ſame Thing.

Dialogue, is the moſt ancient Form of Writing. See DIALECTIC.

The firſt Authors wrote moſt of their Treatiſes therein. The Arch-Biſhop of *Cambray* gives an admirable Painting of the Advantages of *Dialogue*, at the Head of his Paſtoral Inſtruction. See the Word DRAMATIC.

The Holy Spirit himſelf has not diſdain'd to teach us in *Dialogue*, viz. Patience, in the Book of *Job*, and Love of God, in the *Canticles*. *Juſtin Martyr* open'd this Way, in his Controverſy againſt the Jews; and *Minutius Felix* follow'd it in his againſt the Idolaters. 'Tis in this Form, that *Origen* jug'd he could beſt refute the Error of *Marcion*. The great *Athanaſius* thought it no Diminution to the Majeſty of Myſteries of Faith, to maintain them by the Familiarity of *Dialogue*. This Way of Writing St. *Baſil* choſe as the moſt proper to convey thoſe Rules, which have ſince illumined all the Eaſt. The Arts of *Dialogue* were admirably put in Practice by *Gregory Nazianzen*, and his Brother *Cæſarius*, for conveying the ſublimeſt Truths. *Sulpitius Severus* could not do better, than publiſh the Wonders of Solitude in a Kind of Converſations. A Volume of St. *Cyril* of *Alexandria*, is almoſt fill'd with *Dialogues*, wherein he explains the moſt Dogmatical Truths, relating to the Incarnation. The Myſtery of *Jeſus Chriſt* is treated of in the ſame manner, by the Learned *Theodoret*. St. *Chryſoſtom* found no Method more promiſing to expreſs the Eminence, and Danger of the Prieſthood. Who is not acquainted with the beautiful *Dialogue* of St. *Jerom*, wherein he refutes the *Luciferians*? Who does not admire St. *Auguſtine*'s *Dialogues*, and eſpecially thoſe on free Will, where he goes back to the Origin of Sin; againſt the *Manichees*? The Tradition of the Solitaries in the Deſert, is finely illuſtrated in the Conferences of *Caſſian*, which have ſpread the ſame Light through the Weſt, that the Eaſt receiv'd from St. *Baſil*. *Gregory* the *Great* deem'd *Dialogue* worthy the Gravity of the Apoſtolic See. The *Dialogues* of St. *Maximus*, on the Subject of the Trinity, are famous throughout all the Church. St. *Anſelm* ſhew'd the Force of his *Genius* in his *Dialogues* on the Fundamentals of Religion. Profane Antiquity likewiſe made Uſe of the *Art of Dialogue*, and that, not only on humourous, and comical Subjects, as *Lucian* did, but alſo on the moſt ſerious, and abſtract; Such are the *Dialogues* of *Plato*, and thoſe of *Cicero*, which turn altogether on Subjects of Philoſophy, or Politick. Among the Moderns, the principal *Dialogiſts*, are Monſr. *de Fenelon*, Arch-Biſhop of *Cambray*; Mr. *Paſchal*, in his *Provincial Letters*; *F. Bouhours*, in his *Entretiens d'Ariſte, & Eugene*; Monſr. *Fontenelle*, in his *Dialogues* on the Dead, and Plurality of Words, *&c.*

DIALOGUE, in Muſic, is a Compoſition for at leaſt two Voices, or two Inſtruments, which anſwer each other; and which frequently uniting make a *Trio* with the Thoro'-Baſs.

There are Abundance of *Dialogues* in the *Italian* Opera's.

DIALTHÆA, in Pharmacy, an Unguent thus call'd from its *Baſis*, which is the Root of the *Althæa*.

It conſiſts of Mucilages drawn from that Root, and from the Seeds of Line, *Squillæ*, and Fennigreek. The other Ingredients are common Oil, yellow Wax, Reſin, Turpentine, *Galbanum*, and Ivy-Gum.

It is eſteem'd proper to ſoften, and reſolve; aſſwages Pains of the Side, ſoftens Callus's, and ſtrengthens the Nerves. 'Tis applied, by rubbing it on the Parts affected.

DIALYSIS, in Grammar, a Character conſiſting of two Points .. placed over two Vowels of a Word, which would otherwiſe make a Diphthong; but are here parted into two Syllables. See VOWEL, and DIPHTHONG.

DIAMARGARITON, in Pharmacy, a Medicine denominated from Pearls, call'd in Latin *Margaritæ*; which are a principal Ingredient therein. See PEARL.

There are two Kinds: The *Hot*, and the *Cold*.

The *Hot Diamargariton*, is a Powder compoſed of Pearls, Pellitory, Ginger, Nutmeg, Cinnamon, and divers other hot Ingredients. It is reputed Hyſteric, ſtrengthens the Womb, promotes the *Menſes*, and aſſiſts in Digeſtion.

Cold Diamargariton, is a ſolid Electuary, compoſed of Pearls ground-fine, and white Sugar diſſolved in Roſe-Water, or Buglos, and boil'd to a Conſiſtence. It ſtrengthens the Stomach, moderates the too abundant Acids, ſtops the ſpitting of Blood, and Looſeneſs of the Belly.

Compound Cold Diamargariton, is a Powder made of Pearls, red Roſes, Flowers of Nenuphar, and Violet, *Lignum Aloes*, red and Citron Santal, Tormentle Root, Seeds of Melon, Endive, *&c.* It is applied to give Vigour, facilitate Reſpiration, and reſiſt the Malignity of Humours.

DIAMASTIGOSIS, in Antiquity. It was a Cuſtom among the *Lacedemonians*, for the Children of the moſt diſtinguiſh'd Families, to flaſh and tear each others Bodies with Rods before the Altars of the Gods: The Fathers, and Mothers, who were preſent at the Spectacle, animating and exciting them all the while, not to give the leaſt Sign of Pain, or Concern.

This they call'd *Diamaſtigoſis*, a *Greek* Term, derived from Διαμαστιγοῦν, *to whip, cudgel*.

The Deſign hereof, apparently, was no other than to harden their Youth, and enure them betimes to Blows, Wounds, *&c.* that they might deſpiſe them when they came to War.

DIAMETER, in Geometry, a right Line paſſing thro' the Centre of a Circle, and terminating on each Side by the Circumference thereof. See CIRCLE.

Or, the *Diameter* may be defined a Chord paſſing thro' the Centre of a Circle: Such is the Line A E (*Tab. Geometry Fig.* 27.) paſſing through the Centre C. See CHORD.

Half a *Diameter*, as CD, drawn from the Centre C to the Circumference, is call'd the *Semi-Diameter*, or *Radius*. See RADIUS, *&c.*

The Properties of the DIAMETER.

1. The *Diameter* divides the Circumference into equal Parts. And hence we have a Method of deſcribing a Semi-Circle upon any Line; aſſuming a Point therein for the Centre. See SEMICIRCLE.

2. The *Diameter* is the greateſt of all the Chords.

3. *To find the Ratio of the* Diameter *to the Circumference.*

This *Ratio* has been greatly ſought for by the Mathematicians: And no wonder: in as much as if this were juſtly given, the Quadrature of the Circle where atchiev'd. See QUADRATURE.

Archimedes firſt propoſed a Method of finding it by Regular Polygons, inſcrib'd in a Circle; till arriving at a Side ſubtending an exceeding ſmall Arch, and then ſeeking the Side of a Similar Polygon circumſcrib'd: Each of theſe being multiplied by the Number of Sides of the Polygon, gave the Perimeter of the Polygon both inſcrib'd, and circumſcrib'd. In which Caſe the *Ratio* of the *Diameter* to the Circumference of the Circle was greater than that of the ſame *Diameter* to the Perimeter of the circumſcrib'd Polygon, but leſs than that of the *Diameter* to the Perimeter of the Polygon inſcrib'd. The Difference between both gives the *Ratio* of the *Diameter* to the Circumference in Numbers nearly true.

That Divine Author, as already obſerved, by Polygons of 96 Sides, found the *Ratio* of the *Diameter* to the Circumference to be as 7 to 22. *viz.* Suppoſing the *Diameter* 1, the

the Perimeter of the inſcribed Polygon is found $3\frac{10}{71}$, and that of the circumſcribed $3\frac{1}{7}$.

After his Example, later Authors have found out *Ratio's* nearer Truth; but none ſpent ſo much Time on it as *Van Ceulen*, who, after immenſe Pains, found, that ſuppoſing the *Diameter* 1, the Circumference is leſs than 3. 1 41592653589793238462643383879 50, and yet greater than the ſame Number with the laſt Figure o changed into 1. But as ſuch prolix Numbers are too unweildy for Practice, many of our preſent practical Geometricians aſſume the *Diameter* to be to the Circumference as 100 to 3145 or in greater Circles as 10000 to 31415, in which Proportion *Ptolomy*, *Vieta*, and *Huygens* agree with *Van Ceulen*.

Ad. Metius gives us the *Ratio* 113 to 355, which is the moſt accurate of all thoſe expreſs'd in ſmall Numbers; as not erring 3 in 100000000.

4. The *Diameter* of a Circle given, to find the Circumference, and *Area*; and the Circumference given, to find the *Diameter*.

The *Ratio* of the *Diameter* to the Circumference being had, as in the laſt Article, that of the Circumference to the *Diameter* is had likewiſe. Then the Circumference being multiplied into the fourth Part of the *Diameter*, gives the *Area* of the Circle. Thus, if the *Diameter* be 100, the Circumference will be 314, and the *Area* of the Circle 7850. But the Square of the *Diameter* is 10000: Therefore, this is to the *Area* of the Circle as 10000 to 7850, that as 1000 to 785 nearly.

5. The *Area* of a Circle being given, to find the *Diameter*. To 785, 1000, and the given *Area* of the Circle 246176 find a fourth Proportional, *viz.* 3113 6000, which is the Square of the *Diameter*. Out of this extract the Square-Root, and it is the *Diameter* it ſelf.

DIAMETER *of a Curve*, or *Conick Section*, is a right Line, as AD, (*Tab. Conicks Fig.* 5.) biſſecting all the Ordinates MM, *&c.* in P, *&c.* This, when it cuts the ſaid Lines at right Angles, is particularly call'd the *Axis of the Curve*, or *Section*.

A *Tranſverſe* DIAMETER, is a right Line, as AB (*Tab. Conicks Fig.* 6.) which being continued each Way between two Curves, biſſects parallel right Lines between the ſame, as MM. See TRANSVERSE.

Conjugate DIAMETER, is a right Line, biſſecting Lines drawn parallel to the *Tranſverſe Diameter*. See CONJUGATE.

DIAMETER *of a Sphere*, is the *Diameter* of the Semi-Circle, by whoſe Rotation the Sphere is generated; call'd alſo *Axis of the Sphere*. See SPHERE.

DIAMETER *of Gravity*, is a right Line paſſing through the Centre of Gravity. See CENTRE *of Gravity*.

DIAMETER, in Aſtronomy. The *Diameters* of the heavenly Bodies, are either *Apparent*, i. e. ſuch as they appear to the Eye; or *Real*, i. e. ſuch as they are in themſelves.

The *Apparent Diameters* meaſur'd with a Micrometer, are found different, in different Circumſtances and Parts of their Orbits.

	Greateſt	Mean.	Leaſt.
	′ ″		
Appar. DIAM. *of the* Sun *accord. to Ptolomy.*	33 20	32 18	31 20
to Tycho	32 0	31 0	30 0
Kepler	31 4	30 30	30 0
Ricciolus	32 8	31 40	31 0
Caſſini	32 10	31 40	31 8
de la Hire	32 43	32 10	31 38
of the Moon *accord. to Ptolomy*	35 20	——	31 20
Tycho in the Conjunct.	28 48	——	25 36
in the Oppoſ.	36 0	——	32 0
Kepler	32 44	——	30 0
de la Hire	30 33	——	29 30
of Jupiter *according to Tycho*	2 12	1 50	1 34
Hevelius	0 19	0 16	0 14
Huygens	——	——	30 0
of Saturn *according to Tycho*	3 59	2 45	2 14
Hevelius	0 24	0 18	0 14
Huygens	——	——	1 14
of Mars *according to Tycho*	6 46	1 40	0 57
Hevelius	0 20	0 5	0 2
Huygens	——	——	30 0
of Venus *according to Tycho*	4 40	3 15	1 52
Hevelius	1 5	0 16	0 9
Huygens	——	——	1 25
of Mercury *accord. to Tycho*	3 57	2 10	1 29
Hevelius	0 11	0 6	0 4

That notable Difference between *Tycho*, and the other two Aſtronomers, is owing to this, that *Tycho*, in Imitation of the Ancients, meaſured the *Diameters* as they appear to the naked Eye; whereas *Hevelius* and *Huygens* uſed Teleſcopes, whereby a deal of ſpurious Luſtre, which otherwiſe makes them appear bigger than they are, is ſhaven off.

For the true *Diameters* of the Sun, and Planets, and their Proportion to each other. See SEMIDIAMETER.

DIAMETER *of a Column*, is that taken juſt above the Baſes. From this the Module is taken, which meaſures all the other Parts of the Column. See MODULE.

DIAMETER *of the Swelling*, is that taken at the Height of one Third from the Baſe.

DIAMETER *of the Diminution*, is that taken from the Top of the Shafts. See DIMINUTION.

DIAMOND, in Natural Hiſtory, by the Ancients call'd *Adamant*, a pretious Stone, the firſt in Rank, Value, Hardneſs, and Luſtre, of all Gems. See PRECIOUS *Stone*.

The Goodneſs of *Diamonds* conſiſts in their Water or Colour, Luſtre, and Weight: The moſt perfect Colour is the White. Their Defects are Veins, Flaws, Specks of red or black Sand, and a bluiſh, or yellowiſh Caſt. In *Europe*, the Lapidaries examine the Goodneſs of their rough *Diamonds*, their Water, Points, *&c.* by Day-Light: In the *Indies*, they do it by Night; In order to which, a Hole is made in a Wall, a foot-ſquare, and therein a Lamp placed, with a thick Wick, by the Light whereof they judge of the Stone, holding it in their Fingers. The Water, call'd *Cæleſtis*, is the worſt of all, and yet is ſomewhat difficult to diſcover in a rough *Diamond*. The only infallible Way is to examine it in the Shade of ſome tufted Tree.

As to the Diſtinguiſhing *Diamonds* from other Stones, Dr. *Wall*, in our *Philoſophical Tranſactions*, ſeems to have found an infallible Method: A *Diamond*, with an eaſy, ſlight Friction in the Dark, with any ſoft, animal Subſtance, as the Finger, Woollen, Silk, *&c.* appears luminous in its whole Body: Nay, if you keep rubbing for ſome Time, and then expoſe it to the Eye, 'twill remain ſo for ſome Time. If the Sun be 18 Degrees below the Horizon; holding up a Piece of Bays, or Flannel ſtretch'd right between both Hands, at ſome Diſtance from the Eye; and another rubbing the other Side of the Bays, or Flannel, pretty briſkly with a *Diamond*; the Light is much more vivid and pleaſant than any other Way. But what he judges moſt ſurprizing is, that a *Diamond* being expoſed to the open Air, in View of the Sky, gives almoſt the ſame Light of it ſelf, without rubbing, as if rubb'd in a dark Room: But, if in the open Air, you put the Hand, or any Thing a little over it, to prevent its immediate Communication with the Sky; it gives no Light; which is a diſtinguiſhing Criterion of a *Diamond*.

A *Rough* DIAMOND, is that not yet cut, but juſt as it comes out of the Mine.

A *Facet* DIAMOND, is that cut in Faces both a-top, and Bottom, and whoſe Table, or principal Face a-top is flat.

A *Roſe* DIAMOND, is that quite flat underneath, but its upper Part cut in divers little Faces, uſually Triangles, the uppermoſt whereof terminate in a Point.

A *Table* DIAMOND, is that which has a large ſquare Face a-top, encompaſs'd with four leſſer.

Diamonds are only found in the *Eaſt-Indies*, and that only in the Kingdoms of *Golconda*, *Viſapour*, *Bengale*, and the Iſland of *Borneo*. There are four Mines, or rather two Mines, and two Rivers, whence *Diamonds* are drawn. The Mines are, 1. That of *Raolconda*, in the Province of *Carnatica*, five Days Journey from *Golconda*, and 8 from *Viſapour*. It has been diſcover'd about 200 Years. 2. That of *Gani*, or *Coulour*, 7 Days Journey from *Golconda*, Eaſtwardly. It was diſcover'd 120 Years ago by a Peaſant, who digging in the Ground found a natural Fragment of 25 Carats. 3. That of *Soumelpour*, a large Town in the Kingdom of *Bengale*, near the *Diamond-Mine*. This is the moſt ancient of them all. It ſhould rather be call'd that of *Goual*, which is the Name of the River, in the Sand whereof theſe Stones are found. Laſtly, the 4th Mine, or rather the ſecond River, is that of *Succudan*, in the Iſle of *Borneo*.

DIAMOND-*Mine of* Raolconda.

In the Neighbourhood of this Mine, the Earth is ſandy, and full of Rocks, and Copſe. In theſe Rocks are found ſeveral little Veins, of half, and ſometimes a whole Inch broad, out of which the Miners, with a Kind of hooked Irons, draw the Sand, or Earth, wherein the *Diamonds* are; breaking the Rocks, when the Vein terminates, that the Track may be found again, and continued. When a ſufficient Quantity of Earth, or Sand is drawn forth, they waſh it two or three times, to ſeparate the Stones therefrom. The Miners work quite naked, except for a thin linnen Cloth before them, and beſides this Precaution, have likewiſe Inſpectors, to prevent their Concealing of Stones: which, however, maugre all this Care, they frequently find means to do; by watching Opportunities when they are not obſerved, and ſwallowing them down.

DIAMOND-*Mine of* Gani, *or* Coulour.

In this Mine are found a great Number of Stones from 10 to 40 Carats, and even more; And it was here that famous *Diamond* of *Aureng-Zeb*, the *Great Mogul*, which before it was cut, weighed 780 Carats, was found.

The Stones of this Mine are not very clear, and their Water is uſually tinged with the Quality of the Soil, being black where that its Marſhy, red where it partakes of red, and ſometimes green, and yellow, if the Ground happen to be of thoſe Colours. Another Defect of ſome Conſequence is a Kind of fat Appearing on the *Diamond*, when cut, which takes off Part of its Luſtre. There are uſually no leſs than 60000 Perſons, Men, Women, and Children at Work in this Mine. When the Miners have found a Place where they intend to dig, they level another ſomewhat bigger in the Neighbourhood thereof, and incloſe it with Walls about 2 Foot high, only leaving Apertures from Space to Space, to give Paſſage to the Water. After a few ſuperſtitious Ceremonies, and a Kind of Feaſt, which the Maſter of the Mine makes the Workmen, to encourage them, every one goes to his Buſineſs, the Men digging the Earth in the Place firſt diſcover'd, and the Women and Children carrying it off into the Wall round. They dig 12, or 14 Foot deep, and till ſuch Time as they find Water. Then they ceaſe digging, and the Water thus found ſerves to waſh the Earth two or three times, after which it is let out at the Aperture reſerv'd for that End. This Earth being well waſh'd, and well dryed, they ſift it in a Kind of open Sieve, or Riddle, much as we do Corn in *Europe*; then thraſh it, and ſift it a-freſh; And laſtly ſearch it well with the Hands to find the *Diamonds*. They work naked as in the Mine of *Raolconda*, and are watch'd after the like manner by Inſpectors.

DIAMOND-*Mine of* Soumelpour, *or River of* Goual.

Soumelpour is a large Town built all of Earth, and cover'd with Branches of Cacao-Trees, and the River of *Goual* runs by the Foot thereof, in its paſſing from the high Mountains towards the South to the *Ganges*, where it loſes its Name. 'Tis from this River are brought all our fine *Diamond* Points, or Sparks, call'd *Natural Sparks*. They never begin to ſeek for *Diamonds* in this River till after the great Rains are over, that is, after the Month of *December*; And they uſually even wait till the Water is grown clear, which is not before *January*. The Seaſon at hand, 8, or 10000 Perſons of all Ages, and Sexes, come out of *Soumelpour*, and the neighbouring Villages. The moſt Experienced among them ſearch, and examine the Sand of the River, going up it from *Soumelpour* to the very Mountains whence it ſprings. A great Sign that there are *Diamonds* in it, is, the Finding of thoſe Stones which we *Europeans* call *Thunder-Stones*. When all the Sand of the River, which at that Time is very low, has been well examin'd, they proceed to take up that wherein they judge *Diamonds* likely to be found; which is done after the following manner: They dam the Place round with Stones, Earth, and Faſcines, and lading out the Water, dig about 2 Foot deep: the Sand thus got is carried into a Place wall'd round on the Bank of the River. The reſt is perform'd after the ſame manner as at *Coulour*, and the Workmen watch'd with equal Strictneſs.

DIAMOND-*Mine in the Iſland of* Borneo, *or River of* Succudan.

We are but little acquainted with this Mine; The Queen who reigns in that Part of the Iſland not allowing Strangers to have any Commerce in theſe Stones: Tho' there are very fine Ones to be bought at *Batavia*, brought thither by Stealth. They were anciently imagin'd to be ſofter than thoſe of the other Mines, but Experience ſhews, they are in no reſpect inferior to them. Beſide theſe four *Diamond-Mines*, there have been two others diſcover'd; one of them between *Coulour* and *Raolconda*, and the other in the Province of *Carnatica*; but they were both cloſed up almoſt as ſoon as diſcover'd: That of *Carnatica*, by reaſon the Water of the *Diamonds* was always either black, or yellow; and the other, on Account of their cracking, and flying in Pieces when cut, and ground.

The *Diamond*, we have already obſerv'd, is the hardeſt of all precious Stones. It can only be cut, and ground by it ſelf, and its own Subſtance. To bring it to that Perfection, which augments its Price ſo conſiderably, they begin by rubbing ſeveral againſt each other, while rough; after having firſt glued them to the Ends of two Sticks, or Blocks, thick enough to be held in the Hand. 'Tis this Powder thus rubb'd off the Stones, and receiv'd in a little Box for the Purpoſe, that ſerves to grind, and poliſh the Stones.

Diamonds are cut, and poliſh'd by means of a Mill, which turns a Wheel of ſoft Iron ſprinkled over with *Diamond* Duſt mixt with Oil of Olives. The ſame Duſt well ground, and diluted with Water and Vinegar, is uſed in the ſawing of *Diamonds*; which is perform'd with an Iron, or Braſs Wiar, as fine as a Hair. Sometimes in lieu of ſawing the *Diamonds* they cleave them, eſpecially if there be any large Shivers therein. But the *Europeans* are not daring, or expert enough to run the Riſque of cleaving, for fear of breaking.

A *Rough* DIAMOND muſt be choſen uniform, of a good Shape, tranſparent, not quite white, and free of Flaws, and Shivers. Black, rugged, dirty, flawing, veiny Stones, and all ſuch as are not fit for cutting, they uſe to pound in a Steel Mortar made for that Purpoſe; and when pulverized, they ſerve to ſaw, cut, and poliſh the reſt. Shivers are occaſion'd in *Diamonds* by this, that the Miners, to get them more eaſy out of the Vein; which winds between two Rocks; break the Rocks with huge Iron Leavers, which ſhakes, and fills the Stone with Shivers.

The Ancients had two miſtaken Notions with regard to the *Diamond*: The firſt, That it became ſoft, by ſteeping it in hot Goat's Blood. And the ſecond, That it is malleable, and bears the Hammer. Experience ſhews us the contrary; there being nothing capable of mollifying the Hardneſs of this Stone; tho' its Hardneſs be not ſuch, that it will endure being ſtruck at Pleaſure with the Hammer.

The fineſt *Diamonds* now in the World are that of the *Great Mogul*, weighing 279 Carats; that of the Great Duke of *Toſcany*, weighing 139 Carats; and that known in *France* under the Name of *Grand Sancy*, which is one of the Crown Jewels, weighing 106 Carats, whence its Name *Sancy*, which is a Corruption of *Cent ſix*, that is 106. *Tavernier*, by a Rule which he had made for Eſtimating the Value of *Diamonds*, computes that of the *Great Mogul* at a 110000072328 *French* Livres, equivalent to 879244 Pound Sterling; and that of the Duke of *Toſcany*, at 2618335 Livres, or 195374 Pound Sterling.

The following is a Rate, or Manner of Eſtimating the Value of *Diamonds*, drawn up by a Perſon exceedingly well verſed in ſuch Matters, and which, for its Curioſity, as well as the Uſe it may be of, to Perſons who deal in precious Stones, we judge, will be highly acceptable.

DIAMONDS *cut Facet- or Table-wiſe.*

Dutch Cut.

A *Diamond* weighing 1 Grain, is worth from	Lib.	Sh.		Lib.	Sh. Sterl.
1.	1.	0	to	1.	1.
1½.	1.	16.	to	1.	17.
2.	2.	15.	to	3.	0
2½.	3.	12.	to	3.	15.
3.	4.	15.	to	5.	0
4.	7.	17.	to	8.	0
5.	15.	0	to	15.	15.
6.	22.	0	to	25.	0
7.	30.	0	to	34.	0
8.	42.	0	to	45.	0
9.	60.	0	--	--	-
10.	75.	0	--	--	-
12.	112.	0	to	120.	0
15.	187.	0	to	220.	0
19.	330.	0	to	380.	0
24.	450.	0	--	---	-
30.	700.	0	to	735.	0
40.	1500.	0	to	1800.	0
50.	3500.	0	to	4500.	0
60.	4500.	0	to	5620.	0

Antwerp Cut.

A *Diamond* weighing 1 Grain, is worth from	Lib.	Sh.		Lib.	Sh. Sterl.
1.	0	15.	to	0	18.
1½.	1.	6.	to	1.	10.
2.	2.	2.	to	2.	5.
3.	3.	12.	to	3.	15.
4.	6.	0	to	6.	7.
5.	10.	10.	to	11.	5.
6.	13.	10.	to	15.	0
7.	18.	15.	to	22.	10.
8.	24.	0	to	26.	0
9.	33.	15.	--	--	-
10.	37.	0	to	40.	0
12.	55.	0	to	58.	0
15.	112.	0	to	130.	0
18.	247.	0	--	---	0
24.	315.	0	--	---	0
40.	900.	0	to	970.	0
50.	2200.	0	to	2300.	0
60.	3500.	0	to	4500.	0

It muſt be obſerv'd, however, that Defects in the Water, or Shape; red, or black Spots; Shivers, and other Failings, frequently found in theſe Stones, reduce the Price by one third, and ſometimes more.

As to *Brillant*, or *Roſe*-DIAMONDS, the Price is always leſs by one third, than that of *Table-Diamonds*; tho' the Weights be the ſame; the reaſon is, that the latter ſhew themſelves a great deal more when ſet in their Collets, than the former.

Attempts have been made to produce *Artificial Diamonds*, but with no great Succeſs.

The

The *Factitious* DIAMONDS made in *France*, call'd *Temple Diamonds*, on Account of the *Temple* at *Paris*, where the beſt of them are made, are vaſtly ſhort of the genuine Ones; accordingly they are but little valued, tho' the Conſumption thereof is pretty conſiderable for the Habits of the Actors on the Stage, *&c.*

DIAMOND. The *Diamond* is of conſiderable Uſe in the Glaſs-Manufacture, for ſquaring the large Plates, or Pieces; and among Glaziers, for cutting their Glaſs.

Theſe *Diamonds* are differently fitted up. That uſed for Looking-Glaſſes, and other large Pieces, is ſet in an Iron Ferril two Inches long, and a Quarter of an Inch Diameter. The reſt of the Cavity of the Ferril is filled with melted Lead, which keeps the *Diamond* firm in its Place.

The Glaziers have a Handle of Box, or Ebony, fitted into the Ferril to hold it by. In the former there is a little Piece of Box croſſing the Ferril, in Form of a little Plane, cover'd at Bottom with a thin Copper-Plate.

DIAMOND, in Heraldry, is uſed to expreſs the black Colour in the Atchievements of Noblemen. *Gwillim* diſlikes the Way of Blazoning the Coats of Peers by precious Stones, inſtead of Metals, or Colour. But Practice allows it. See COLOUR.

DIAMOND *Glaſs.* } See { GLASS.
DIAMOND *Pavement.* } See { PAVEMENT.

DIAMORUM, a Compoſition in Pharmacy, either *Simple*, or *Compound*.

Simple DIAMORUM, is the common Syrup of Mulberries, made of Mulberry-Juice, and Sugar. It is good againſt Diſeaſes of the Throat, and to ſtop Dyſſenteries. There is alſo a Sort of *Simple Diamorum* made of Mulberry Juice and Honey, call'd alſo *Mulberry Rob*.

Compound DIAMORUM is made with Mulberry Juice, Sapa, Verjuice, Myrrh, and Saffron. It is uſed to deterge Phlegm from the Stomach, and Breaſt, and eaſe Reſpiration.

The Word is form'd from *Morus*, Mulberry.

DIANA'S *Tree*, *Arbor Dianæ*, a very curious Phænomenon in Chymiſtry, being the juſt Figure of a Tree, with Branches, Leaves, Fruit, *&c.* ſhooting up in a Diſſolution of Silver in an Acid Spirit.

There are divers Manners of procuring *Diana's Tree*; but moſt of them exceeding tedious, except the following one of Monſr. *Homberg*, which may be done in a Quarter of an Hours time. Take four Drachms of Filings of fine Silver, with which make an *Amalgama*, without Heat, with two Drams of Quickſilver. Diſſolve the *Amalgama* in 4 Ounces of *Aqua fortis*; and pour the Solution into 3 Gallons of common Water; ſtir it about a while to mingle it well together; and then keep it in a Glaſs Veſſel well ſtopp'd.

When you would make the Experiment, take about an Ounce of it, and put it in a ſmall Viol, wherein likewiſe put the Quantity of a ſmall Pea of the ordinary *Amalgama* of Gold, or Silver; which ſhould be as ſoft as Butter; and ſet the Viol at reſt for 2 or 3 Minutes. Immediately after this you will ſee ſeveral ſmall Threads, or Filaments, ariſing perpendicularly from the little Bulb of the newly put in *Amalgama*, which will ſenſibly grow, and thruſt out, on the Sides, ſmall Branches in Form of a Tree. The Bulb, or Ball of the *Amalgama* will grow hard, and be like a Pellet of white Earth; and the little Tree of the Colour of bright Silver.

The Form of this Metalline Tree may be varied almoſt at Pleaſure. The ſtronger you make the firſt deſcribed Water, the thicker will the little Tree be in Branches, and the ſooner form'd. The ſame Author ſhews, how divers other Kinds of Trees may be produced by Cryſtallization, and Digeſtion. See MARTIS *Arbor*.

DIANUCUM, in Pharmacy, a Kind of Rob, made of the Juice of green Walnuts, and Sugar, boil'd together by a moderate Fire, to the Conſiſtence of Honey.

It is good to ſtrengthen the Stomach, promote Sweat, and reſiſt Poiſon.

The Word is form'd from *Nux*, *Nucis*; Nut.

DIAPALMA, in Pharmacy, a Deſiccative, or drying Plaſter, denominated from the Wood of the Palm-Tree, whereof the *Spatula* is made, that is to ſtir it while boiling.

It is compoſed of common Oil, Hogs-fat, and Litharge of Gold.

It is good to dry, reſolve, deterge, and cicatrize: And is the Plaſter moſt uſed for Wounds, and Ulcers.

DIAPASMA, a common Name for all Perfumes applied on the Body, of what Form ſoever they be, whether Powders, Eſſences, Pomatum's, or the like.

The Word comes from the *Greek* διαπάσσειν, *to water*.

DIAPASON, in Muſic, a Muſical Interval, by which moſt Authors, who have wrote on the Theory of Muſic, uſe to expreſs the Octave of the *Greeks*; as they uſe *Diapente*, *Diateſſaron*, *Hexachord*, and *Tetrachord*, to expreſs *Fifths*, *Fourths*, *Thirds*, and *Sixths*. See OCTAVE.

The *Diapaſon* is the firſt, and moſt perfect of the Concords: If conſider'd *Simply*, it is but one Harmonical Interval; tho' if conſider'd *Diatonically*, by Tones and Semi-tones, it contains ſeven Degrees, *viz.* three greater Tones, two leſſer Tones, and two greater Semi-tones. See DEGREE.

The Interval of a *Diapaſon*, that is, the Proportion of its grave Sound to its acute, is *duplicate*, that is, as 2 to 1. See INTERVAL.

DIAPASON, among the Muſical Inſtrument-makers, is a Kind of Rule, or Scale, whereby they adjuſt the Pipes of their Organs, and cut the Holes of their Flutes, Haut-Bois, *&c.* in due Proportion, for performing the Tones, Semi-tones, and Concords juſt.

A Square being divided into eight equal Parallelograms; the Points wherein a Diagonal interſects all theſe Parallelograms, expreſs all the uſual Intervals in Muſic: And on this Principle it is, that the *Diapaſon* is founded.

There is a particular Kind of *Diapaſon* for Trumpets; ſerving as a Standard, or Meaſure, for the different Magnitudes, they muſt have to perform the four Parts of Muſic. See TRUMPET.

There is another for Sack-buts, and Serpets, ſhewing how far they are to be lengthen'd, or ſhorten'd, to riſe or fall from one Tone or Interval to another.

The Bell-founders have likewiſe a *Diapaſon*, or Scale, ſerving to regulate the Size, Thickneſs, Weight, *&c.* of their Bells. See *Bell*-FOUNDERY.

DIAPASONDIAEX, in Muſic, a Kind of compound Concord; whereof there are two Sorts: The greater, which is in the Proportion of 10 to 3; and the leſs, in that of 16 to 5. See CONCORD.

DIAPASONDIAPENTE, in Muſic, a compound Conſonance, in the Triple Ratio, or as 3 to 9. See CONCORD.

The *Diapaſon-diapente* is a Symphony made when the Voice proceeds from the 1ſt to the 12th Tone.

The Word is properly a Term in the *Greek* Muſic: We ſhould now call it a *Twelfth*.

DIAPASONDIATESSARON, in Muſic, a compound Concord, founded on the Proportion of 8 to 3.

The *Diapaſon-diateſſaron* is a Symphony, wherein the Voice proceeds from its firſt Tone to its eleventh. This the Moderns would rather call the *Eleventh*.

DIAPASONDITONE, in Muſic, a Concord, whoſe Terms are in the Proportion of 10 to 4, or 5 to 2.

DIAPASONSEMIDITONE, a Concord, whoſe Terms are in the Proportion of 12 to 5.

DIAPEDESIS, in Medicine, an Eruption, or oozing of Blood through the Coats of the Veins, or Arteries; occaſioned either by the Bloods becoming too much diſſolved, or attenuated; or by the Pores of the Veſſels becoming too patent, and open. See BLOOD.

There are ſome able Phyſicians who deny there can be any ſuch a Tenuity of Blood, as that it ſhall exude thro' the Veſſels, without any Apperture made therein.

The Word is compounded of διὰ, *through*; and πηδάω, *I leap*.

DIAPENTE, in the ancient Muſic, an Interval making the Second of the Concords; and with the *Diateſſaron*, an Octave.

This is what in the modern Muſic we more uſually call a *Fifth*. See FIFTH.

The *Diapente* is a ſimple Concord; yet if conſider'd Diatonically, it contains four Terms, two greater Tones, a leſſer Tone, and a greater Semi-tone. The *Diapente* is the greateſt Part of the Diapaſon, or Octave, harmonically divided. It is produced when the Voice paſſes from its firſt Tone to its fifth.

DIAPENTE, is alſo uſed in Pharmacy, for a Compound of five ſeveral Drugs, or Ingredients.

The Word is form'd of διὰ, and πέντε, *five*.

DIAPHANOUS, in Philoſophy, *Tranſparent*, or *Pellucid*, is ſomewhat that gives Paſſage to the Rays of Light; as Water, Air, Glaſs, Talc, fine Porcelane, *&c.* See TRANSPARENT.

The Word is form'd of διὰ, *three*, and φαίνω, *luceo*, I ſhine.

DIAPHANEITY, in the Schools, the Quality of a tranſparent Body; or that which denominates it ſuch. See TRANSPARENCY.

The *Carteſians* hold the *Diaphaneity* of a Body to conſiſt in the Rectitude of its Pores; that is, in their being ſituate in right Lines; ſo as that there is no intermediate Subſtance to prevent the Paſſage of the Rays. And hence argue, that the rendring Glaſs malleable is an Impoſſibility: For aſſoon as it becomes malleable, its Pores will ceaſe to be ſituate directly againſt each other; and of Conſequence it will loſe its *Diaphoneity*, the principal Character of Glaſs. See GLASS.

Sir

Sir *Iſaac Newton* accounts for *Diaphaneity* from another Principle, *viz.* from the Homogeneity, and Similarity between the *Medium*, wherewith the Pores are filled, and the Matter of the Body it ſelf. For the Refractions the Rays undergo in paſſing thus out of the Matter into the Pores, *i. e.* out of one *Medium* into another, being but ſmall, the Progreſs of the Ray is not ſo much interrupted, but that it can make its Way through the Body. See OPACITY, REFRACTION, *&c.*

DIAPHOENIC, in Pharmacy, a ſoft Purgative Electuary, thus call'd from the Dates, which make its *Baſis*; the Palm-Tree, whoſe Fruit they are, being call'd by the *Greeks* φοίνιξ. See DATE.

The other Ingredients are the Penides, Almonds, Turbith, Ginger, white Pepper, Mace, Cinnamon, Rice, Fennel, *Daucus*, and Honey.

Diaphœnic purges chiefly Seroſities, and excites the Menſes. It is alſo uſed in Dropſies, Lethargies, Apoplexies, and Palſies.

DIAPHORESIS, in Medicine, includes all Diſcharges made through the Skin; but chiefly that by inſenſible Perſpiration, and Sweat: Whence *Diaphoretic*, &c.

DIAPHORETIC, in Medicine, is applied to Remedies that promote the Expulſion of Humours by inſenſible Perſpiration. See PERSPIRATION.

Diaphoretic is much of the ſame Import as *Sudorific*: Except that the latter promote ſenſible, and the former inſenſible Perſpiration. Their only Difference, therefore, is in the Degree of Action. See SUDORIFICKS, *&c.*

DIAPHORETIC *Antimony*, or *Mineral Diaphoretic*, is a Preparation of Antimony, the Proceſs whereof ſee under the Article ANTIMONY.

DIAPHRAGM, in Anatomy, popularly call'd *Midriff*, and by Anatomiſts, likewiſe, *Septum*, or *Medium Tranſverſum*, is a nervous Muſcle, ſeparating the Breaſt, or *Thorax*, from the *Abdomen*, or lower Venter; and ſerving as a Partition between the Natural, and the Vital Parts. See VENTER.

Its Figure is round, reſembling a Ray, or Thornback. It conſiſts of two Circles, the one Membranous, the other fleſhy; tho' others will have both of them Muſcular: of two Arteries; and two Veins, call'd *Phrenicæ*; and ſeveral Branches of Nerves.

The firſt, or ſuperior Circle ariſes from the *Sternum*, and the Ends of the laſt Ribs: The ſecond, or inferior, comes from the *Vertebræ* of the Loins. The upper is cover'd a-top with a Membrane deriv'd from the *Pleura*; and the lower lined at bottom with another from the *Peritoneum*. Its Situation is oblique; being extended from the *Cartilago Xiphoides*, by the Extremes of the Ribs, to the Region of the Loins.

It is pierced in the middle for the Paſſage of the *Vena Cava*; and in its lower Part for the *Oeſophagus*; and between the Productions of the inferior Circle paſs the *Aorta*, *Thoracic Duct*. and *Vena Azygos*. In its natural Diſpoſition it is convex on the upper Side towards the Breaſt, and concave on the lower towards the Belly. Hence it has two Motions; the one of Contraction, the other of Relaxation. By the Contraction, or Swelling of the Fibres, the *Diaphragm* becomes flat on each Side; the Conſequence of which is, that the Cavity of the Breaſt is enlarged, to give Liberty for the Lungs to receive the Air in Inſpiration; and the Cavity of the *Abdomen* leſſen'd, and conſequently the Stomach and Inteſtines preſs'd, for the Diſtribution of the Chyle. In its Relaxation, whereby it reſumes its natural Situation, the Cavity of the Breaſt is diminiſh'd, and the Lungs preſs'd for the Expulſion of the Air in Exſpiration. See RESPIRATION.

It was *Plato*, as *Galen* informs us, that firſt call'd it *Diaphragm*, from the Verb διαφράτ]ειν, *to ſeparate*, or be between two. Till his Time it had been call'd φρένες, *Underſtanding*; from a Notion, that an Inflammation of this Part produced Phrenzy: which is not at all warranted by Experience, no more than that other Tradition, that a tranſverſe Section of the *Diaphragm* with a Sword cauſes the Patient to die laughing. The *Latins* call it *Septum tranſverſum*, q. d. *Partition laid a-croſs*.

Dr. *Hook* obſerves, that an Animal may be kept alive, without *Thorax*, or *Diaphragm*, by blowing Air into the Lungs with a Bellows: Of which he had made the Experiment.

DIAPHRAGM is alſo a general Name, among the Learned, for all Partitions, or Separations between two Parts of a Thing; As the little perforated Partitions in the Tubes of long Teleſcopes. See TUBE, *&c.*

DIAPHRAGMATIC, is applied to the Arteries, Veins, and Nerves diſtributed through the Diaphragm.

They are alſo call'd *Phrenic*, or *Phrenetic*. See PHRENIC.



DIAPRE, or DIAPER, in Heraldry, a Dividing of a Field into Planes, or Compartiments, in the manner of Fret-work; and filling the ſame with Variety of Figures. See FRET.

This chiefly obtains on Bordures, which are *diaper'd*, or fretted over, and the Frets charg'd with Things proper to Bordures: As in the adjoyning Figure.

DIAPRUNUM, in Pharmacy, a ſoft, purgative Electuary, thus call'd from the Pulp of *Damaſcus* Prunes, which is its Baſe.

Diaprunum is either *Simple*, or *Compound*.

Simple DIAPRUNUM conſiſts of the Pulp afore-mentioned, with *Caſſia*, Tamarinds, Rhubarb, red Roſes, Violet Seeds, Santals both red and Citron, Scrapings of Ivory, Liquorice Juice, and the four cold Seeds. It is good to prepare, and ſoften the Humours.

Compound, or *Solutive* DIAPRUNUM, is only the Simple, with the Addition of half an Ounce of Scammony to every Pound of the Electuary, to render it more purgative.

DIARRHÆA, in Medicine, a *Looſeneſs*, or Flux of the Belly; or a profuſe Evacuation of liquid Excrements by Stool. See EVACUATION, and STOOL.

The Word, in the general, is uſed for any Kind of *Flux* of the Belly; but properly for that wherein the Humour, or Excrement flows out either pure, or mix'd; with, or without Pain, in a fluid State. See FLUX.

Diarrhœa's are of divers Kinds, according to the Diverſity of the Excrements: Some being bilious; ſome ſerous; ſome pituitous; and ſome purulent. The Purulent always ariſes from ſome Abſceſs open'd in the Body; the reſt either from morbid Humours irritating the Inteſtines, and expreſſing the Juices out of the adjacent Parts; or from a Laxneſs of the Inteſtinal Fibres; or an extraordinary Fermentation in the Blood, whereby it diſcharges its Excrements into the Inteſtines.

There are alſo *Diarrhœa's* ariſing from unwholeſome Foods, and Stoppage of the other Excretions, particularly Perſpiration.

It is a ſtanding Obſervation, that ſuch as perſpire but little, are ever ſubject to a *Diarrhœa*; and on the contrary, People who perſpire much, are commonly bound.

Baglivi mentions *Diarrhœa's* as one uſual great Effect of Grief; as likewiſe of immoderate Anger; without which a Fever would be produced.

In the Cure of *Diarrhœa's*, from whatever Cauſe they ariſe, the Stomach muſt be corroborated, and Sudorificks to be mix'd with Abſorbents. The Patient to drink ſparingly. Quince and Wine burnt with Aromaticks is good. *Wainwright* obſerves, that a Flannel Shirt contributes much to the Cure of an habitual *Diarrhœa*.

Stolterfoth, a Phyſician of *Lubeck*, relates, that a Mechanic of that City had a continual *Diarrhœa* from 30, to the Age of 65 Years, which always gave him 5 or 6 Stools a Day, yet he was in good Health all the while, having a good Appetite, and ſufficient Strength and Vigour. But in his 65th Year taking ſome aſtringent Medicines, he ſtopp'd his Flux; upon which he was immediately ſeiz'd with a violent Pain in the Kidneys, Difficulty of Breathing, Loſs of Digeſtion; He gave up his Food as he took it, grew cold at the Extremes of the Body, ſwell'd in the Thighs, had an inſupportable Thirſt, and more Appetite, and urined, with much Difficulty, a thin watery Humour, deſtitute of all Sulphur.

The Word is form'd of the *Greek* διὰ, *through*, and ῥέειν, *to flow*.

DIARRHODON, in Pharmacy, a Name given to divers Compoſitions, wherein red Roſes are an Ingredient.

DIARRHODON *Abbatis*, is a Cordial Powder, denominated from the Abbot who invented it. It conſiſts of red Roſes; red, and Citron Santals, *Lignum Aloes*, Cinnamon, Rhapontic, Spikenard, Ivory, Harts-horn, Saffron, Maſtic, Pearls, Amber-gris, Musk, *&c.* It is uſed to ſtrengthen the Heart, Stomach, and Liver, to aſſiſt in Digeſtion, and prevent Vomiting.

There are alſo *Trochiſci* DIARRHODON, compoſed of red Roſes, Scrapings of Ivory, the Santals, Liquorice, Maſtic, Saffron, Camphor, and Roſe-Water. They are good to fortify the Heart, Stomach, and Liver, and to ſtop Diſſenteries, and other Fluxes of the Belly.

Pillulæ DIARRHODON are compoſed of Aloes, *Trochiſci Diarrhodon*, Wormwood Leaves, Maſtic, and Rock-Salt. They purge, then fortify the Stomach, promote Digeſtion, and prevent a ſtinking Breath.

The Word is form'd of διὰ, and ῥόδον, *Roſe*.

DIARTHROSIS, in Anatomy, a Kind of Articulation, or Juncture of the Bones, which being pretty lax, affords room for a manifeſt Motion. See ARTICULATION.

It is oppoſed to *Synarthroſis*, wherein the Articulation is ſo cloſe, that there is no ſenſible Motion at all. See SYNARTHROSIS.

Diarthroſis is of three Kinds: 1. When the Head of the Bone is big, and long, and the Cavity that receives it, deep; it is call'd *Enarthroſis:* Such is that of the Thigh, with the Hip. 2. When the Head of the Bone is flat, and the Cavity that receives it ſuperficial, it is call'd *Arthrodia:* ſuch is that of the Jaws, with the Bones of the Temples. 3. When two Bones receive each other reciprocally, and are moveable in each other, it is call'd *Ginglymus:* Thus the *Cubitus* receives the *Radius*, at the ſame Time that the *Radius* receives the *Cubitus*. See ENARTHROSIS, GINGLYMUS, *&c.*

DIARTHROSIS *Synarthroidalis*, call'd alſo *Amphiarthroſis*, is a Kind of neutral, or dubious Articulation; being neither abſolutely *Diarthroſis*, as not having a manifeſt Motion; nor abſolutely *Synarthroſis*, as not being quite immoveable.

Thus the Articulations of the Ribs, with the *Vertebræ*, and thoſe of the Bones of the *Carpus*, and *Tarſus*, among each other, are *Synarthroidal Diarthroſes*. See RIBS, *&c.*

The Word comes from διὰ, and ἄρθρον, *Junƈture, Aſſemblage.*

DIARY *Fever*, is a Fever of one Day. See EPHEMERA.

DIASCORDIUM, in Pharmacy, a Kind of Electuary, or Opiate, firſt deſcribed by *Fracaſtorius*, and denominated from *Scordium*, which is an Ingredient therein. See SCORDIUM.

The other Ingredients are red Roſes, Bole, Storax, Cinnamon, *Caſſia Lignea*, *Dittany*, Tormentille Roots, Biſtort, Gentian, *Galbanum*, Amber, *Terra Sigillata*, *Opium*, Long Pepper, Ginger, *Mel Roſatum*, and Malmſey.

It is uſed againſt malignant Fevers, the Plague, Worms, the Colic, to provoke Sleep, and reſiſt Putrefaction.

DIASEBESTEN, in Pharmacy, a ſoft, purgative Electuary, whereof *Sebeſtes* are the *Baſis*. See SEBESTES.

The other Ingredients are Prunes, Tamarinds, Juices of Iris, *Anguria*, and *Mercurialis*, *Penidia*, *ſimple Diaprunum*, Violet Seed, the four cold Seeds, and *Diagrydium*. It is good in intermitting, and continued Fevers, appeaſes Thirſt, promotes Sleep, and expels the morbid Humors by Urine.

DIASENNA, in Pharmacy, a ſoft, purgative Electuary, thus call'd from *Senna*, which is its Baſe. See SENNA.

The other Ingredients are Sugar Candy, Cinnamon, *Lapis Lazuli*, Silk, Cloves, *Galanga Minor*, black Pepper, *Nardus Indicus*, Seed of the *Baſilica*, Leaves of Cloves, *Cardamomum*, Saffron, Ginger, Zedoary, Roſemary Flowers, Long Pepper, *Lapis Armenius*, and Honey.

Diaſenna eaſes and comforts the Melancholic, and Splenetic; and is good againſt all Diſeaſes ariſing from an *Atrabilis*.

DIASTEM, in Muſick, a Name the Ancients gave to a ſimple Interval; in Contra-diſtinction to a compound Interval, which they call'd a *Syſtem*. See INTERVAL.

Muſicians divide Intervals into two Kinds: One of them call'd *Syſtem*, which is to contain at leaſt two Intervals in any Kind of Muſic whatever; but many, contain more.

The other, call'd *Diaſtem*, is a mere, or ſingle Interval; The proper Signification of the *Greek* διάστημα being *Interval*. See SYSTEM.

DIASTOLE, in Anatomy, *Dilatation*, or *Diſtention*; a Term expreſſing that Motion of the Heart, and Arteries, whereby thoſe Parts dilate, or diſtend themſelves: The other oppoſite Motion is call'd the *Syſtole*, and *Artery*; wherein they contract themſelves. See HEART.

The *Diaſtole* of the Heart is properly the Receſs of the Parietes of the two Ventricles from each other; the Enlargement of their Cavities and Diminution of their Lengths, or their Approximation to a Spherical Form. See SYSTOLE.

The *Diaſtole*, or Dilatation of the Heart, ariſes from the Blood brought, by the Veins, into its Ventricles; and that of the Arteries, from the Blood thrown into their Cavities by the Contraction of the Heart. So that the *Diaſtole* of the Heart, and Arteries, is not effected at the ſame Time; the *Diaſtole* of the Heart happening when the Arteries are contracted, and that of the Arteries when the Heart is contracted.

What we call the Beating of the Pulſe, is only the *Diaſtole* of the Arteries. See PULSE.

The Lungs and Breaſt have likewiſe their *Syſtole*, and *Diaſtole*; ſo has the Brain. See LUNGS, *&c.*

The Word is *Greek*, form'd from the Verb διαστέλλειν, *to ſeparate, open.*

The true Cauſe of the *Diaſtole* of the Heart was but lamely accounted for before Dr. *Drake*. That the Heart is a Muſcle, is made evident beyond all doubt by Dr. *Lower*; and that the Motion of all Muſcles conſiſts in Conſtriction, is not to be doubted. By ſuch means the *Syſtole* is eaſily accounted for. But in as much as the Heart has no Antagoniſt Muſcle, the *Diaſtole* has puzzled the greateſt Wits. Dr. *Lower* unhappily attributes it to a *Motion of Reſtitution*. As the Motion of the Heart, ſays he, is perform'd by Contraction; and as the Fibres of the Heart are alone form'd for Conſtriction; it is evident, all the Motion of the Heart lies in its *Syſtole*; And that the Fibres, in the ſeveral Contractions, being ſtretch'd beyond their Tone, aſſoon as the *Niſus* is over, the Heart relaxes again by a Motion of Reſtitution, *A nullo enim Cordis Motu, niſi Tenſionem ejus remittente, & ab irruente Sanguine*, Diaſtole *ejus libratis Vicibus ſuccedit.* de Corde, p. 75. Mr. *Cowper* accounts for the *Diaſtole* from the Analogy the Heart of an Animal bears to the *Pendulum's* of thoſe Artificial *Automata*, Clocks and Watches: its Motion is perform'd like that of other Muſcles, the Blood doing the Office of a *Pondus*, or Weight. Both theſe Notions Dr. *Drake* refutes; and with great Reaſon and Probability maintains the Weight of the Atmoſphere to be the *Pondus*, or Counterpoiſe to the contractive Force of the Heart. See HEART.

It has long been known, that the *dura Mater* has a *Syſtole* and *Diaſtole*, exactly correſponding to thoſe of the Heart. But its Cauſe was not ſo well known. Dr. *Ridley*, in the *Philoſoph. Tranſact*, having bored a Hole in the upper Part of the *Bregma* of a Dog, firſt perceived the alternate Vibrations of the *dura Mater*; then, continuing the Hole to the Brain, he found both by his Eye, and even afterwards by Touch, very ſenſibly, that there was a like briſk *Syſtole* and *Diaſtole* of the Brain. See BRAIN.

DIASTOLE, in Grammar, a Figure whereby a Syllable naturally ſhort, is made long. Thus it is, that *Virgil* begins a Verſe with the Word *Italus*, the firſt Syllable whereof is ſhort.

DIASTYLE, in the ancient Architecture, an Edifice, where the Columns ſtand at ſuch Diſtance one from another, that eight Modules, or four Diameters, are allowed for the Intercolumniation. See INTERCOLUMNIATION.

DIASYRMIS, in Rhetoric, a kind of Hyperbole; or an Exaggeration of ſome low ridiculous Thing. See HYPERBOLE.

DIATESSARON, in Pharmacy, a Sort of Treacle, thus call'd becauſe conſiſting of four Ingredients, which are Roots of *Ariſtolochia*, and Gentian, Laurel-berries, and Myrrh. See TREACLE.

It is alſo call'd *Theriaca Pauperum*, becauſe made at a very eaſy Expence, and in a ſhort Time. It is good againſt Stingings of venomous Beaſts, Epilepſies, Convulſions, Colicks, to ſtrengthen the Stomach, and promote the Menſes.

The Word is *Greek*, and ſignifies a Compoſition of *four* Drugs.

DIATESSARON, in the ancient Muſic, was a Concord or harmonical Interval, compoſed of one greater Tone, one leſſer, and one greater Semi-tone; Its Proportion being as 4 to 3. See CONCORD.

In the modern Muſic, it is call'd a perfect *Fourth*. See FOURTH.

DIATHESIS, a Term uſed by ſome Writers, in the ſame Senſe with *Conſtitution*. See CONSTITUTION.

DIATONIC, an Epithet given the common Muſic, as it proceeds by different Tones, or Degrees, both aſcending, and deſcending. See MUSIC, and GENERA.

Authors divide the Sorts of Muſic into *Diatonic*, *Chromatic*, and *Enharmonic*.

DIATONIC *Muſic* only allows of three Degrees; the greater and leſſer Tone, and the greater Semi-tone. See TONE, and DEGREE.

Hence *Diatonic Muſic* appears the moſt natural, and of Conſequence is the moſt ancient. The *Genus*, or Kind, which makes the Character of the *Diatonic Muſic*, is call'd the *Diatonic Kind*, or *Genus*.

In the *Diatonic Muſic* there is a Tone between every two Notes, except between *Mi* and *Fa*, and *Si* and *Ut*, where there is only a greater Semi-tone. See SCALE.

DIATRAGACANTH, in Pharmacy, is applied to certain Powders, whereof Gum Adraganth is the Baſe. There are two Kinds, *Cold* and *Hot*.

Powder of *Cold Diatragacanth* is compoſed of the Gums Adraganth and Arabic, Liquorice, Starch, white Poppy Seed, and the four great cold Seeds. It is good to thicken, and ſoften the too ſharp, and ſubtile ſerous Humours falling on the Breaſt, to aſſuage Coughs, and promote Spitting.

Powder of *Hot Diatragacanth* is compoſed of Gum Adraganth, Cinnamon, Hyſſop, Almonds, Lin-Seed, and Fennegreek, Liquorice, Juice of Liquorice, and Ginger. It is good againſt Aſthma's, to promote Expectoration, ſtrengthen the Stomach, and aſſiſt Digeſtion.

DIAZEUTIC *Tone*, in the ancient *Greek* Muſic, was that which disjoyn'd two Fourths, one on each Side of it, and which being joyn'd to either, made a Fifth. This, in their Muſic was from *Meſe* to *Parameſe*; that is, in ours, from A to B: Suppoſing *Mi* to ſtand in B *ſub Mi*. They allowed to this *Diazeutic Tone*, which is our *La, Mi*, the

Proportion of 9 to 8, as being the unalterable Difference of *Diapente* and *Diateſſaron*.

DICHOTOMY, *Biſſection*, a Term uſed by Aſtronomers for that *Phaſis*, or Appearance of the Moon, wherein ſhe is biſſected, or ſhews juſt half her Diſk, or Circle. See PHASIS.

The Time of the Moon's *Dichotomy*, is of conſiderable Uſe in fixing the Sun's Diſtance from the Earth. But 'tis very difficult to fix the preciſe Moment when the Moon is biſſected, or in her true *Dichotomy*. Obſervation informs us, that when ſhe is 30 Minutes diſtant from the Quadratures, ſhe appears biſſected; but ſhe appears ſo too in the Quadratures themſelves, and ſome time afterwards, as *Ricciolus* acknowledges in his *Almageſt*. So that ſhe appears *Dichotomized* at leaſt for the Space of a whole Hour: In which Time, any Moment may be taken for the true Point of the *Dichotomy*, as well as any other. But the infinite Number of Moments of Time give an infinite Diverſity of Diſtances. The Moment in which the true *Dichotomy* happens, being thus uncertain; but it being granted withal that it happens before the Quadrature, *Ricciolus* takes the middle Point between the Quadrature, and the Time when it is firſt dubious, whether the Moon be *Dichotomized*, or not, for the true *Dichotomy*, Keill.

The Word is *Greek*, form'd of Διχοτομέω, *I biſſect*, or cut in two, of δὶς, *twice*; and τέμνω, τέτομα, *I cut*.

DICTAMNUM, *Dittany*, a Medicinal Plant, much valued among the Ancients, and particularly applauded by their Poets.

It was eſteemed a Specific for Wounds of Arrows, which it drew out with wonderful Eaſe, and according to them, only grew in the Iſland of *Crete*, and even only in a little obſcure Corner thereof; whence its Appellation *Dictamnus Creticus*. At preſent we ſcarce know whether there be any Remains thereof in that Iſland.

The modern *Dictamnus*, call'd alſo *White Dittany*, or *Fraxinella*, from its Leaves, which reſemble thoſe of the Aſh, call'd by the Latins *Fraxinus*, is ſcarce in leſs Eſteem than that of the Ancients. Its Root, wherein all its Virtue is lodged, is about the Thickneſs of a Finger, and is frequently divided into a Number of little Branches; its Colour is white, its Taſte bitter, its Smell ſtrong, ſomewhat like that of a He-goat, its Stem is about two Foot high, reddiſh, and full of Leaves; at the Top of the Stem is a Flower not unlike a *Spica*, or Ear; in the Middle of the Flower is a Piſtil with five little Pieces wherein the Seed is contain'd, which is black, ſhining, and oval. The Root is excellent againſt the Bite of venomous Beaſts, as alſo againſt Worms, the Colick, *&c.* It muſt be choſen white, both Inſide and Outſide, not fibrous, and well cleaned.

There are ſeveral other Kinds of *Dittany*, but all of leſs Value: As the *Baſtard Dittany*, whoſe Leaves are much leſs; the *Wild Dittany*, which neither bears Flowers, nor Fruit.

The Ancients have a Tradition, that the wounded Deer firſt diſcover'd the Virtue of the *Dictamnus Creticus*, which being eaten, preſently drew out the Arrows ſticking in 'em. Thus *Pliny* Lib. VIII. C. 27. And the like Account we have from *Cicero de Natur. Deor.* Lib. II. *Virgil. Æneid.* Lib. XII. v. 412. *Tertull. de Pœnit.* C. XI. Tho' *Cicero*, more prudent and reſerved than *Pliny*, is contented to ſpeak of it as by hear-ſay. *Ariſtotle* Lib. *de Mirabilib. Auſcult.* relates it of the Roe-buck. *Pliny* ſays expreſsly, that the Juice of this Plant taken inwardly, expels Arrows, and cures Wounds made with other Arms: He adds, that it ſtops Suppurations, provokes the Menſes, and Delivery, and is good in Frictions and Fumigations.

DICTATE, *Dictamen*, in the Schools, a Suggeſtion, Motion, or Sentiment of a Man's Conſcience.

A good Action becomes evil if done contrary to the *Dictates* of one's own Conſcience.

DICTATE, *Dictata*, is likewiſe uſed in the Schools for a Leſſon, or Exerciſe, wherein the Maſter reading, or ſpeaking ſomething, the Scholars take it down in Writing after him. Here the Act of the Maſter is likewiſe call'd *Dictating*.

DICTATOR, a *Roman* Magiſtrate, created by the Senate, or People, on ſome extraordinary, and eminent Occaſion, to command, with ſoveraign Authority, for a certain Time never exceeding ſix Months.

Recourſe was never had to ſuch an Officer, but in dangerous, and difficult Times; as in ſudden Wars, Popular Factions, *&c.*

He had abſolute, and Monarchic Power while his *Dictature* laſted: And ſome will even have it, his Power went beyond that of the Kings. He was Arbiter of Peace and War, and had Command of Life and Death, without any Appeals lying to the People. 24 Axes were bore before him, whereas only 12 before the Conſul. See FASCES.

T. Largius Flavius was the firſt *Dictator*, appointed in the Year of *Rome* 255. *Sylla* was the firſt perpetual *Dictator*, and *Cæſar* the next. After *Cæſar* there were no more *Dictators*. The firſt *Dictator* choſe from among the People, was *Marcus Rutilius*, created in 399.

Dionyſius Halicarnaſſæus derives the Word *ab Edicendo*, becauſe they ordained, and appointed what they pleaſed. But *Varro* will have the Word taken hence, that the Conſul named him, which the *Latins* call *dicere*, L. IV. *de Lingua Latina*. Dictator *quod a Conſule dicebatur, cujus dicto audientes omnes eſſent.*

DICTION, the Phraſe, Elocution, or Style of a Writer, or Speaker. See STYLE.

The *Diction* of a Tragedy, *&c.* is that which expreſſes the Sentiments. See SENTIMENT.

The *Diction* of an Orator ſhould be pure, proper to the Subject, rich without Affectation, ſtrong and cloſe without Dryneſs, and ſuitable to the Perſon, Time, Place, and Audience. The *Diction*, or Language of *Tragedy* is accounted the fourth of the Eſſential Parts thereof. It is of the leaſt Importance of any; yet muſt peculiar Care be taken herein to make every Paſſion ſpeak its proper Language. See TRAGEDY, *&c.*

DICTIONARY, a Collection, or Catalogue of all the Words of a Language, or an Art, with their Significations; rang'd in Order of Alphabet. See ALPHABET.

What the *Latins*, and we after them, call *Dictionary*, the *Greeks* call *Lexicon*. See LEXICON.

For the proper Character, Nature, Office, *&c.* of a *Dictionary*, ſee the Preface to this Work. See alſo the Article VOCABULARY.

The moſt ancient *Dictionaries* for the *Latin* Tongue, are, that call'd *Papias*, compiled by *Solomon*, Abbot of St. *Gall*, Biſhop of *Conſtance*, who liv'd about the Year 1409: Another was made in 1469, call'd *Gemma Vocabularum*: And a third in 1502, call'd *Gemma Gemmarum*: Another by *Dionyſius Neſtor*, a Cordelier.

But the moſt celebrated one was that of *Ambroſe Calepine*, a Hermit of St. *Auguſtin* at *Bergamo*, and Son of the Count of *Calepin*. *Conrad Geſsner* is ſaid to have augmented it with four thouſand Words. *Paulus Manutius* increaſed it ſtill more; and *Paſſerat* after him; and yet *Matthias Martinus* made two Volumes of their Omiſſions.

There is another noted Latin *Dictionary* of *Criſpinus*; To ſay nothing of *Cowper*, *Holyoke*, *Goldman*, *Littleton*, and numerous others of leſs Conſideration.

For the *Greek*, we have thoſe of *Henry Stephens*, and *Scapula*: For the *Spaniſh*, that of *Covarruvias*: For the *Italian*, that of the Academy *della Cruſca*: For the *French*, thoſe of *Nicod. Fa. Monet*, *Fa. Gaudin*, *Trevoux*, and that of the *French* Academy: For the *Engliſh*, we have ſcarce any worth the Mentioning, unleſs perhaps that of *Philipps*: Tho' we are in Expectation of one from a good Hand, on the Model of that of the *French* Academy.

Junius has a *Dictionary*, or Alphabet of the *Gothic*, *Runic*, and *Anglo-Saxon*. There is another in the *Malaya* Language, which is a dead Language, famous throughout the *Eaſt Indies*, where it ſtands the ſtead of the *Latin* among us.

There are alſo *Hiſtorical*, and *Geographical Dictionaries*, as that of *Charles Stephens*, which is tranſlated into *French*, and augmented by *Morery*: Another of *Hoffmann*, printed at *Baſil*, in 1677. in two Volumes *Folio*; which were followed by a Continuation of as many Volumes in 1683. Another of Mr. *Bayle*, under the Title of *Hiſtorical*, and *Critical Dictionary*, printed at *Rotterdam*, in 1697. in two large Volumes. A *Philoſophical Dictionary* of Mr. *Chauvin*, of *Berlin*; *Law Dictionaries*; *Phyſical Dictionaries*, *Family Dictionaries*, *Dictionaries of Arts*, *of Commerce*, &c.

DIDACTIC, in the Shools, ſignifies the manner of ſpeaking, *&c.* adapted to teach, or explain the Nature of Things. There are many Words that are only uſed in the *Didactic*, and Dogmatick Way. The Word is form'd from the *Greek* Μανθάνω, *diſco*, I learn.

DIDYMI, the ſame with *Gemelli*, or *Twins*. See GEMINI.

DIEM *clauſit Extremum*, a Writ iſſued out of Chancery to the Eſcheator of the County, upon the Death of any of the King's Tenants *in Capite*, to enquire by a Jury of what Lands he died ſeiz'd, and of what Value, and who was the next Heir to him.

DIÆRESIS, *Section*, *Diſſection*, in Chirurgery, an Operation ſerving to divide, and ſeparate the Parts whoſe Union and Continuity were an Obſtacle to the Cure; or which were joyn'd, and conglutinated contrary to the Order of Nature. See SECTION.

There

There are four manners of performing the *Diæresis*: viz. by *Cutting*, *Pricking*, *Tearing*, *Drawing*, and *Burning*. See CUTTING, BURNING, TAPPING, CAUTERY, &c.

The Word in its Original *Greek* Διαίρεσις, ſignifies *Diviſion*.

DIÆRESIS, Διαίρεσις, is alſo uſed in Medicine for the Eating out, or Conſuming of the Veſſels, or Canals of an Animal Body: when, from ſome cutting, or corroding Cauſe certain Paſſages are made, which naturally ought not to have been, or certain natural Paſſages are dilated beyond ordinary; So that the Juices which ſhould have been contain'd therein, extravaſate, or run over. *Blanchard*.

DIÆRESIS, in Grammar, a Figure whereby a Diphthong is divided into two Syllables. As *Aulæ* into *Aulai*. See DIPHTHONG.

DIÆRESIS, is alſo uſed in the general for any Diviſion of one Syllable into two; as in that Verſe of *Tibullus*, *Stamina non ulli diſſolüenda Deo*, for *diſſolvenda*.

This is uſually noted by two Points placed over a Letter, to ſhew that it is founded by it ſelf, and not joyn'd with any other, ſo as to make a Diphthong: Thus *Aëra*, by the Points over the *e*, is diſtinguiſh'd from *Æra*.

It is alſo a Kind of *Metaplaſm*, or Addition to a Word, by dividing one Syllable into two; as *Aulae*, by a *Diæreſis*, is of three Syllables, inſtead of *Aulæ*.

DIES. See DAY.

DIES, in common Law. There are two Kinds of *Days*: *Juridici*, & *Non Juridici*.

DIES *Juridici*, or *Faſti*, are all Days wherein Juſtice is adminiſter'd in Court. See FASTI.

DIES *Non Juridici*, or *Nefaſti*, are all Sundays in the Year; and in Eaſter Term, the Feaſt of the Aſcenſion of our Lord; In Trinity Term, the Nativity of St. *John* the Baptiſt; In Michaelmas Term, the Feaſt of All Saints, and All Souls; And in Hillary Term, the Purification of the Bleſſed Virgin.

The ſame Diſtinction holds not only as to Legal Proceedings in Court, &c. but alſo as to Contracts.

In ſome ancient Authors, *Dies* is alſo uſed for daily Proviſion. *Et reddebat dimidium Diem Mellis*, q.d. as much Honey as ſerv'd the King's Family half a Day.

DIES *datus*, is a Day, or Time of Reſpite given to the Tenant, or Defendant by the Court. See DEPARTURE.

DIESIS, in Muſic, a Diviſion of a Tone, leſſer than a Semi-tone; or an Interval conſiſting of a leſſer, or imperfect Semi-tone. See TONE.

The *Dieſis* is the ſmalleſt, and ſofteſt Change, or Inflexion of the Voice imaginable. It is alſo call'd a *Feint*, and expreſs'd by a St. *Andrew*'s Croſs, or Saltier.

Ariſtotle calls *Dieſes* the Elements of Voice, as Letters are thoſe of Diſcourſe. Indeed, *Ariſtotle*'s *Dieſes* were apparently different from ours: And we find *Vitruvius* expreſsly making the *Dieſis* a fourth Part of a Tone. But the *Pythagoreans*, who are held the Inventors of the Name *Dieſis*, did not make it ſo ſmall; they only divided the Tone into two unequal Parts, and call'd the leſſer *Dieſis*, which we call the leſſer Semi-tone; and the greater, which we call the greater Semi-tone, they call'd *Anatome*. See SEMITONE.

But in After-times, when the Tone came to be divided into three and four Parts, the Name *Dieſis* was retain'd to them all. And hence thoſe different Accounts we meet withal in Authors, of the Quantity of the *Dieſis*.

The *Enharmonical* DIESIS is the Difference between a greater, and leſſer Semi-tone.

Dieſes are divided into three Kinds: The *Leſſer Enharmonical Dieſis*, or *Simple Dieſis*, denoted by a ſingle Croſs, raiſes the Note following by two Comma's, or about $\frac{1}{4}$ of a Tone: The *Chromatic*, or *double Dieſis*, denoted by a double Croſs, raiſes the following Note by a leſſer Semi-tone, or about 4 Comma's; which is the common *Dieſis*: The *Greater Enharmonical Dieſis*, denoted by a triple Croſs, raiſes the Note by 6, or 7 Comma's, or about $\frac{3}{4}$ of a Tone. None but the *double Dieſis* is uſed in Muſic. A Flat is frequently uſed to take away the *Dieſis*, and a *Dieſis* to take away a Flat.

When Semi-tones are placed where regular Tones ſhould be; or a Tone where there ſhould be a Semi-tone, it is call'd a *Dieſis*, or a *Feint*.

DIESPITER, in Antiquity, a Name given to *Jupiter*. Some Authors will have it the ſame with *Dios pater*, *Jupiter*, Father, *Jupiter* being call'd in *Greek* Ζεὺς, or Δεὺς; whence the oblique Caſes Διὸς, Δῒ, &c. Others hold *Dieſpiter* to ſignifie *Diei pater*, Father of the Day. St. *Auguſtin* derives the Name from *Dies*, Day; and *Partus*, Production, Bringing forth; it being *Jupiter* that brings forth the Day. Of which Sentiment are *Servius*, and *Macrobius*; the former adding, that in the Language of the *Oſci*, they call'd him *Lucentius*; and *Dieſpiter* in *Latin*. *Struvius Antiq. Rom. Synt.* C. I. ſeems to intimate, that *Dieſpiter* is *Pluto*; But if that be his meaning, he is apparently miſtaken: For both in *Cicero*, and in the Inſcription he quotes from *Gruter* XXI. 8. we have only *Diſpater*, and not *Dieſpater*.

DIET, in Medicine, &c. a ſpare Regimen or Courſe of living, out of regard to Health. See REGIMEN, and HEALTH.

Diet is a ſoveraign Remedy againſt all Diſeaſes ariſing from Repletion. See DISEASE, REPLETION, &c.

Diet is founded on this, that Nature ought not to be buſied, and diſtracted in the Concocting of Food, but left wholly to her Work of digeſting, and expelling the morbific Matter. See FOOD.

The Word is form'd from the *Greek* Δίαιτα, which ſignifies *Regimen*, or *Rule of Life*, preſcribed by Phyſicians. And as the Phyſicians uſually order a ſpare, ſcanty *Modicum*, leſs than is uſually taken; *Diet* has paſs'd into a Name for this Retrenchement, or Diminution of the ordinary Quantity of Food, whether it be by Advice of a Phyſician, or by a Perſon's own Choice: provided it be to remove, or prevent ſome Diſorder.

For the Advantages of a *ſpare ſimple Diet*, ſee ABSTINENCE, and FASTING.

Dr. *Cheyne* ſhews, how one may ſupply the Place of Medicines by *Diet*: Any one, ſays he, may loſe a Pound of Blood, take a Purge, or a Sweat, by dropping the great Meal, or Abſtaining from Animal Food, and ſtrong Liquors for four or five Days, in Chronical Caſes, as effectually as by opening a Vein, ſwallowing a Doſe of Pills, or taking a Sudorific *Bolus*. He adviſes therefore all Gentlemen of a ſedentary Life, and of learned Profeſſions, to uſe as much Abſtinence as poſſibly they can, conſiſtently with the Preſervation of their Strength, and Freedom of Spirits. This they ought to have recourſe to, aſſoon as they find any Heavineſs, Inquietudes, reſtleſs Nights, or Averſion to Application: Either by leſſening one half their uſual Quantity of Animal Food, and ſtrong Liquors, till ſuch Time as they regain their wonted Freedom, and Indolence; Or by living a due Time wholly on *Vegetable Diets*, as Sago, Rice, Pudding, and the like, and drinking only Wine and Water. *Eſſay on Health*, &c.

DIET, or DYET, is alſo uſed for an Aſſembly of the States, or Circles of the Empire, or *Poland*, to deliberate, and concert Meaſures for the public Good. See STATE, PARLIAMENT, &c.

The *Diets* of the Empire are ordinarily held at *Ratisbon*. See COLLEGE, EMPIRE, ELECTOR, &c.

The *General Diet* of *Poland* is by the Laws only to be held every two Years. But preſſing Occaſions convene them every Year. The Laws confine their Sitting to 15 Days; but they frequently protract it to ſix Weeks. Its uſual Place is at *Warſaw*, the Capital of the Kingdom; tho' it has been often held at other Places: In Effect, as by the Laws every third *Diet* is to be convened at *Grodno*, in *Lithuania*; whenever for particular Reaſons it is judg'd meet to baulk the Turn, and hold it elſewhere, the Nobility of the Grand Dutchy muſt conſent to it. 'Tis the King fixes the Time, and ſummons it by Circular Letters ſent to all the Palatins. In an *Interregnum*, the Arch-Biſhop of *Gneſen* calls the *Diet*. The ſeveral *Particular Diets*, which are held ſix Weeks before the *General* One, do each ſend three Deputies choſe out of the Members thereof. In *Poland* there are likewiſe *Diets* on Horſe-back, held in the Campagne, or Country. Such are thoſe wherein they chuſe their King. They are call'd *Poſpolites*.

There are likewiſe *Diets* held in *Switzerland*: *Diets* of the Proteſtant Cantons; *Diets* of the Catholick Cantons; and *General Diets*. The firſt aſſemble at *Arau*, and are convoked by the Canton of *Zurich*: The ſecond at *Lucern*, convoked by the Canton of that Name. The third, compoſed of the Deputies of all the Cantons, both Proteſtant and Catholick, is held twice a Year, at the End of *June*, and the Beginning of *December*, and meets at *Baden*. 'Tis the Canton of *Zurich* has the Right of convening it.

The Word *Diet* in this Senſe comes from *Diæta*, which originally ſignified a *Hall*, or *Banquetting Room*; and at length an Aſſembly of the States, by reaſon the *Germans* held moſt of their Councils at Table.

DIETA, in our old Law-Books, denotes a Journey, or Days-Journey: *Omnis Rationabilis* Dieta *conſtat ex viginti Miliaribus*. Fleta.

DIETETIC, or *Diætetica*, that Part of Phyſic, which conſiders the way of living with Relation to Food, or *Diet*, ſuitable to particular Caſes. See FOOD, and DIET.

DIEU & *mon Droit*, q. d. *God and my Right*, the Motto of the Arms of *England*, firſt given by King *Richard* I. to intimate, that he held not his Empire in Vaſſalage of any Mortal. See MOTTO.

It was afterwards taken up by *Edward* III. when he firſt claim'd the Crown of *France*; and was continued without Interruption to the Time of King *William* III. who uſed the Motto, *Je maintiendray*; tho'

ſho' he commanded the former to be retain'd on the great Seal. The ſame is to be underſtood of the late Queen *Anne*, who uſed the Motto, *Semper Eadem*; which had been before uſed by Queen *Elizabeth*.

DIFFAMATORY, a Term chiefly uſed in the Phraſe *Diffamatory Libel*, ſignifying a Writing intended to ſcandalize, or diſcredit a Perſon, *&c.* See LIBEL.

By the *Roman* Law, and the ancient Ordonnances of *France*, the Makers of *diffamatory Libels* were puniſh'd with Death. See *Balduin. Commentarius ad Leges de Libellis famoſis.*

The Hiſtorian tells us, that Cardinal *Ximenes* was inſenſible to all *Diffamatory Libels*. He found it but reaſonable, to leave Inferiours the Liberty of venting their Grief by Writings, which only laſt while the Perſon is offended at them, and loſe all their Spirit and Malignity when deſpis'd, or diſregarded.

DIFFAREATION, among the *Romans*, a Ceremony whereby the Divorce of their Prieſts was ſolemnized. See DIVORCE.

Diffareation was properly the diſſolving of Marriages contracted by Confarreation; which were thoſe of the Pontifices. *Feſtus* ſays, it was perform'd with a wheaten Cake; and that it was call'd *Diffarreation* from *Far*, Wheat. *Vigenere* will have Confarreation and *Diffareation* to be the ſame Thing. See CONFARREATION.

The Word comes from the Prepoſition *Dis*, which is uſed in Compoſition for Diviſion, or Separation; and *Fareation*, a Ceremony with Wheat, of *Far*, Wheat.

DIFFERENCE, in Logic, an Eſſential Attribute belonging to ſome Species, and not found in the *Genus*; being the univerſal Idea that defines the Species. See GENUS, and SPECIES.

Thus, Body and Spirit are the two Species of Subſtance, which in their Ideas include ſomething more than is included in the Idea of Subſtance. In Body, for Inſtance, is found Impenetrability, and Extention; In Spirit, a Power of Thinking, and Reaſoning. So that the *Difference* of Body is *impenetrable Extenſion*; and the *Difference* of a Spirit is *Cogitation*. See DEFINITION.

DIFFERENCE, in Mathematicks, the Exceſs of one Quantity above another.

This Angle is 60 Degrees, and that 90; Their Difference is 30. See ANGLE.

When a leſs Quantity is ſubſtracted from a greater, what remains is call'd the *Difference*. See SUBSTRACTION.

DIFFERENCE *of Longitude* of two Places, is an Arch of the Equator intercepted between the Meridians of the Places. See LONGITUDE.

Aſcenſional DIFFERENCE, in Aſtronomy, is an Arch of the Equator comprehended between the Circle of ſix a-Clock, and the Horary Circle of the Sun. See ASCENSIONAL.

DIFFERENCES in Heraldry, are certain Additaments to Coat Armour, whereby ſomething is alter'd, or added to diſtinguiſh the younger Families from the elder, or ſhew how far they are removed from the principal Houſe. They are call'd in Latin *Diminutiones*, and *Diſcernicula Armorum*, and by the French *Briſures*. See DIMINUTION.

Of theſe Differences *Sylv. Morgan* gives us nine, which obtain principally among us: *viz.* the *Label*, which denotes the firſt, or eldeſt Son: The *Creſcent*, the ſecond: The *Mullet*, the Third: The *Martlet*, the fourth: The *Annulet*, the fifth: The *Flower de Lis*, the ſixth: The *Roſe*, the ſeventh: The *Eight foil*, the eighth: And the *Croſs Moline*, the ninth. See each under its proper Article, LABEL, *&c.*

Again, as the firſt *Differences* are ſingle for the Sons of the firſt Houſe, or Deſcent; the Sons of the younger Houſes are differ'd by combining or putting the ſaid *Differences* upon each other. As the firſt *Differences* are the *Label*, *Creſcent*, &c. for the firſt Houſe; the *Difference* for the ſecond Houſe is the *Label* on a *Creſcent*, for the firſt of that Houſe: For the third Brother of the ſecond Houſe a *Mullet* on a *Creſcent*, &c.

The Original of *Differences* is controverted. *Cambden* will have them to have begun about the Time of King *Richard*. *Paradin* aſſigns *Differences* wore as early as the Year 870. The Preſident *Fauchet* obſerves *Differences* to have been hereditary in the *French* Families before the Time of *Louis le Gros*, who came to the Crown in the Year 1110. *Moreau* refers them to the Time of St. *Louis*; and *Lallonette*, *Belle-foreſt*, &c. to that of *Philip Auguſtus*. The Occaſion of their Riſe is well accounted for by *Colombiere*.

All Nations, ſays he, prefer the elder Brothers to the younger; whence thoſe, in a direct Line, ſucceeding their Fathers, and becoming Maſters of their Lands, took on them their Coat Armour, without any Change, or Alteration; and tranſmitted the ſame again to their eldeſt Sons; the younger Brothers, or Baſtards not being allowed to bear the ſame Arms, without ſome additional Mark, to diſtinguiſh them from the elder. Hence ſome Heralds, he goes on, have endeavour'd to confine them to certain fix'd, and determinate Figures, for diſtinguiſhing the ſecond from the firſt, the third from the ſecond; and ſo on to the ſixth: Aſſigning the ſecond a *Label*, the third a *Bordure*, the fourth an *Orle*, the fifth a *Battoon*, and the ſixth a *Bend*, or *Cottice*.

And the Deſcendents of theſe to bear double *Differences*, or *Differences* charg'd on one another, *viz.* the eldeſt Son of the ſecond Son to retain his paternal Coat, with the *Difference* of the *Label* of 3 Points; the ſecond the *Label* of 4 Points; the third ſuch a *Label* on a Chief; the fourth a *Label* charged with certain Figures, as *Eaglets*, *Lioncels*, *Martlets*, *Creſcents*, *Roſes*, &c. And for the ſame reaſon, the ſecond Son of the third Son ſhall bear a *Bordure* engrailed, the third a *Bordure* charged with Bezants, or Tourteaux, *&c.*

But the ſame Author judges the fixing any certain invariable *Differences* at all an Abuſe; by reaſon they may happen not to be agreeable to the paternal Coat, but very much deface, and blemiſh it. He adds, that many other Figures beſide thoſe abovementioned, may be uſed as *Differences*; As Shells, Bezants, Cinque-foils, and a thouſand more. Some younger Families have made the *Difference* in their Arms by only diminiſhing the Ordinaries, or changing the Poſture; And others by only changing the Metal, or Colour.

It muſt be added, that the *Differences* may be of Metal on Metal, or Colour on Colour; which in other Caſes is falſe Heraldry.

DIFFERENTIAL, *Differentiale*, in the higher Geometry, an infinitely ſmall Quantity, or a Particle of a Quantity ſo ſmall as to be incommenſurable thereto, or leſs than any aſſignable one. See QUANTITY.

It is call'd a *Differential*, or *Differential Quantity*, becauſe frequently conſider'd as the Difference of two Quantities; and as ſuch is the Foundation of the *Differential Calculus*: Sir *Iſaac Newton*, and the *Engliſh*, call it a *Fluxion*, as being conſider'd as the momentary Increaſe of a Quantity. See FLUXION.

Mr. *Leibnitz*, and others, call it an *Infiniteſimal*. See INFINITESIMAL.

DIFFERENTIAL *of the firſt, ſecond*, &c. *Degree*. See DIFFERENTIO-DIFFERENTIAL.

DIFFERENTIAL *Calculus*, or *Methodus*, is a Method of *differencing* Quantities; that is, of finding a *differential*, or infinitely ſmall Quantity, which taken an infinite Number of Times, is equal to a given Quantity.

This Method is one of the fineſt, and ſubtileſt in all Mathematicks, Mr. *Leibnitz*, who claims the Invention thereof to himſelf, calls it *Differentialis Calculus*, as conſidering the infinitely ſmall Quantities found hereby as the *Differences* of the Quantities; and accordingly expreſſing them by the Letter *d* prefix'd: as the *differential* of *x*, by dx; that of *y* by dy, &c.

Sir *Iſaac Newton*, who has a better Title to the Diſcovery, calls it the *Method of Fluxions*, as conſidering the infinitely little Quantities rather as Fluxions, or momentary Increments, *e. gr.* of a Line, generated by the Fluxion of a Point; of a Surface, by the Flux of a Line; or a Solid, by the Flux of a Surface; and inſtead of *d* notes 'em by a *dot*; e. gr. the Fluxion of *x*, inſtead of dx he writes $\dot{x}$; that of *y*, $\dot{y}$, &c. which is the only Difference between the *Differential Calculus*, and the *Method of Fluxions*.

For the *Hiſtory*, *Doctrine*, *Uſe*, &c. thereof, ſee FLUXIONS.

DIFFERENTIO-DIFFERENTIAL *Calculus*, is a Method of differencing Differential Quantities.

As the Sign of a *Differential* is the Letter *d*; that of a *Differential* of dx, is ddx; and the *Differential* of ddx, $dddx$, or d^2x, d^3x, &c; or $\ddot{x}$, $\dddot{x}$, &c.

Thus, we have *Powers*, or *Degrees of Differentials*.

The *Differential* of an ordinary Quantity is call'd a DIFFERENTIAL *of the firſt Power*, or *Degree*; as dx.

A DIFFERENTIAL *of the ſecond Power*, or *Degree*, is an *Infiniteſimal* of a *Differential* Quantity of the firſt Degree; as ddx, or $dxdx$, or dx^2, $dxdy$, &c.

A DIFFERENTIAL *of the third Degree*, is an *Infiniteſimal* of a *Differential* Quantity of the ſecond Degree; as $dddx$, dx^3, $dxdydz$, and ſo on.

The *Powers of Differentials*, as dx^2, are *differenced* after the ſame Manner, as the Powers of ordinary Quantities. And again, as Compound *Differentials* either multiply, or divide each other, or are Powers of *Differentials* of the firſt Degree; *Differentials* are *differenced* after the ſame manner as ordinary Quantities. And, therefore, the *Differentio-Differential Calculus*, is the ſame, in Effect, with the *Differential*.

DIFFERENTIAL, in the Doctrine of Logarithms. *Kepler* calls the Logarithms of Tangents, *Differentiales*; which we uſually call *Artificial Tangents*. See LOGARITHM and TANGENT.

DIF-

DIFFORM, is a Word uſed in Oppoſition to *Uniform*, and ſignifies, that there is no manner of Regularity in the Form, or Appearance of a Thing. See UNIFORMITY.

The Botaniſts uſe it as a Diſtinction of the Flowers of Plants. See FLOWER.

DIFFUSE, *Diffuſive*, is chiefly uſed for a prolix, ſpecious Manner of Writing, *&c.* See PROLIX.

A Dictionary cannot be too *diffuſive:* For a Man is never too much inform'd of the Word he wanted; and he is not oblig'd to read the reſt.

A *Diffuſe* Style is proper for Diſcourſes in the demonſtrative Kind. *Demoſthenes* is cloſe, and conciſe; *Cicero* on the contrary *diffuſive*, &c. See STYLE.

DIFFUSION, a *Quaſi-fuſion*, or Diſperſion of any Thing, upon ſeveral Bodies, or Parts of Space.

The School-men make 3 Kinds of *Diffuſion:* The firſt that whereby a pure Quality is *diffuſed*; as *Cold*, *Force*, &c. This they diſtinguiſh into *Equal*, whereby equal Portions, or Degrees of the Quality are diſtributed upon equal Parts of the *Medium:* Thus, when a direct Motion is impreſs'd on a moveable, all the Parts of the moveable receive an equal *Impetus*: And *Unequal*, when unequal Degrees of the Quality are diſtributed on different Parts of the Subject; Thus it is, that *Force* is impreſs'd on a Lever, and *Cold* propagated thro' a *Medium*.

The ſecond Kind of *Diffuſion* is that perform'd by the Motion of Bodies; Such is the *Diffuſion* of *Light*, *Sound*, *Smell*, *Magnetick*, *Electric Virtues*, &c.

The third is perform'd partly by the Motion of Corpuſcles, and partly by the *Diffuſion* of a Quality; and thus they hold Fire to be *diffuſed*.

But the modern Philoſophers reject the Notion of Qualities, and their *Diffuſion*. According to them, there is no other *Diffuſion*, but that of Corporal Subſtance, emitted in minute *Effluvia*, or Particles, into a Kind of Atmoſphere all a-round the Body; which *Diffuſion* of Corpuſcles ſome call *Atmoſpherical*, as being ſuppoſed to be terminated by a Circle, whereof the *diffuſing* Body is the Centre. Every Body, it is now proved, has its Sphere of Activity, or *Diffuſion*, within which the Particles, or Corpuſcles, torn from it, and flying away, have a ſenſible Effect, as we ſee in odorous, ſonorous, *&c.* Bodies: See QUALITY; where the Phyſical Law of the *Diffuſion* of Qualities is laid down. See alſo SPHERE *of Activity*, ATMOSPHERE, EFFLUVIA, *&c.*

DIGAMY the ſame with *Bigamy*. See BIGAMY.

DIGASTRICUS, in Anatomy, a Muſcle thus call'd, as having a double Belly; from δὶς, *bis*, twice; and γάστηρ, *Belly*. See MUSCLE.

It ariſes fleſhy from the upper Part of the *Proceſſus Maſtoidæus*, and deſcending, contracts into a round *Tendon*, which paſſes thro' the *Stilohyoidæus*, and an annular Ligament, which is faſten'd to the *Os Hyoides*; then it grows fleſhy again, and aſcends towards the Middle of the Edge of the lower Jaw, where it is inſerted. When it acts, it pulleth the lower Jaw down, by the Help of an annular Pully, which alters its Direction.

DIGEST, a Collection of the *Roman* Laws, rang'd and digeſted under proper Titles, by Order of the Emperor *Juſtinian*.

That Prince gave his Chancellor *Tribonianus* a Commiſſion for this Purpoſe; who, in Conſequence thereof, choſe 16 *Juriſconſulti*, or Lawyers, to work upon the ſame. Theſe, accordingly, took out the beſt, and fineſt *Deciſions* from the two thouſand Volumes of the ancient *Juriſconſulti*, and reduced them all into one Body; which was publiſh'd in the Year 533, under the Name of *Digeſt*. This the Emperor gave the Force of a Law, by a Letter at the Head of the Work, which ſerves it as a Preface. See JURISCONSULTI.

The *Digeſt* makes the firſt Part of the *Roman* Law, and the firſt Volume of the *Corpus*, or Body of the Civil-Law. See CIVIL-*Law*.

It was tranſlated into *Greek* under the ſame Emperor, and call'd *Pandecta*. See PANDECT.

The Method of quoting it is by a double *ff*, on Account of the *Greek* Name *Pandect*, which being firſt abbreviated by a Figure of two ΠΠ; to abbreviate it yet further, the two Characters were joyn'd into one ΠΙ, which the *Latin* Copiſts miſtook for *ff*.

Cujas ſays, that *Digeſt* is a common Name for all Books diſpoſed in a good Order, and Oeconomy: And hence it is, that *Tertullian* calls the Goſpel of St. *Luke*, *Digeſt*.

DIGESTER, or *Digeſtor*, an Artificial Means, or Inſtrument, ſerving to *digeſt*, or diſſolve Meats out of the Stomach, by a Way analogous to that of Animal Digeſtion.

Mr. *Leigh*, in the *Philoſoph. Tranſact.* gives us an Artificial *Digeſtor* to illuſtrate the Natural one: It is prepared from Spirit of Sulphur, Spirit of Harts-horn, the Chyle of a Dog, and its *Saliva*. A Piece of Veal, Mutton, Beef, or the like, of the Bigneſs of a Nut, being put in a Dram of this Preparation, and ſet on a Digeſting Furnace two Hours, drew from the Fleſh a Juice, that had the Colour and Taſte of Chyle, and left the Meat light, dry, and inſipid. Dr. *Havers* prepares a *Digeſtor* of Oil of Turpentine, mix'd with Oil of Vitriol; in which, raw Fleſh, and Crums of Bread being put, and the whole committed for four Hours to *digeſt* in *Balneo Mariæ*, the Meat is found diſſolv'd, and the whole together forms a thickiſh Pulp: Hence, thoſe Authors, each of 'em, conclude the Food in the Stomach to be *digeſted* by ſome ſuch *Menſtruum's*. See DIGESTION.

But the moſt noted *Digeſtor* is *Papin's Digeſtor*, the Effect whereof bears a more near Reſemblance to the Operation of the Stomach. It is a Sort of Veſſel, wherein Meat being put, together with ſo much Water as ſerves exactly to fill it, a Lid is ſcrew'd cloſe on, ſo as to admit of no external Air. Then, by the Application of two, or three lighted Char-Coals, or even a ſingle ſmall Lamp-flame, the Meat is in a few Minutes (ſix or eight) reduced into a perfect Pulp, or rather Liquor. By a little Increaſe of the Fire, or the Addition of a few Minutes in time, the hardeſt Bones themſelves are brought into a Pulp, or Gelly.

The Effect is accounted for from the ſtrict Cloſure of the Engine, which excluding the Intervention, or Eſcape of Air, the Succuſſions occaſion'd by the Expanſions, and Oſcillations of Air included in the Fleſh, are equable and ſtrong, and ſo reſolve the whole into one ſeemingly homogeneous Body, and mix the aqueous, ſaline, oleous, and other Particles, ſo ſtrongly together, as ſcarce to be ſeparable; but while hot, to appear one Liquor, and when cold a Gelly, of a Strength proportionate to the Quantity of Fleſh, or Bones diſſolved in the Water.

This Experiment ſeems to hold a cloſe Analogy with the Operation of the Stomach. For tho' the Stomach do not ordinarily diſſolve, either ſo ſtrongly, or ſo quick; yet in Proportion to its Heat and Conſtriction, Dr. *Drake* takes it to do the ſame Thing: Thereby breaking and reſolving into ſmall, the Bodies which it included, ſo mix'd, *inter Minima*, with its Humours. Theſe, thus reduced into a Fluor, and intimately mix'd with the Liquids of the Drink, and Juices of the Stomach, compoſe that lacteſcent Liquor, call'd *Chyle*, or *Chyme*. See CHYLE.

DIGESTION, in Medicine, call'd alſo *Concoction*, that Change of the Food taken in at the Mouth, which it undergoes in the Stomach, in order to afford fit Matter to compoſe or diſtend an Animal, till it arrives at its deſtined Bulk; and to repair the Loſs of thoſe Particles, which the Body, in its natural State, neceſſarily undergoes. See CONCOCTION.

The Operation of *Digeſtion* ſucceeds to *Maſtication*, and *Deglutition*. See MASTICATION, and DEGLUTITION.

It includes *Chylification*, and is ſucceeded by *Sanguification*, and *Nutrition*. See SANGUIFICATION, and NUTRITION.

The Cauſe, Manner, and means of *Digeſtion*, have been infinitely controverted: It would be endleſs to enter into all the Syſtems, and Hypotheſes, that have been fram'd by Philoſophers, and Phyſicians, to account for this important Operation. Some contend, that it is done by a Kind of *Elixation*, or boiling of the ſolid, and groſſer Parts of the Food, in the liquid, by the Heat of the Stomach, and the adjacent Parts, the Liver, Spleen, *&c.* See ELIXATION.

Others, by *Attrition*; as if the Stomach by thoſe repeated Motions, which are the Effects of Reſpiration, rubb'd, or ground off the minuter Particles from the groſſer Matters; and agitating, and driving the reſt againſt each other, attenuated, and diſſolved them. See TRITURATION.

Others think the *Bilious* Juice; Others the Spirits, *&c.* chiefly concern'd in the Affair.

Others will have the Food diſſolved by a *Menſtruum*, or *Diſſolvent:* But theſe are greatly divided, as to the Nature, and Origin of this *Menſtruum*; Some ſuppoſing it an *Acid*, furniſh'd by the Glands of the Stomach; Others a *Nitro-aereous* Spirit, which by penetrating the Maſs of Food, breaks the Connexion of the moſt ſolid Parts; And others, a *Saline* Juice, which divide, and volatilize the Parts of the Food. See MENSTRUUM.

Others again ſuppoſe *Digeſtion* to be perform'd by means of a *Ferment*, or *Leaven*; which, mixing with the Aliment, excites an inteſtine Motion in the Parts thereof, by whoſe mutual Fractions, and Colliſions, the Parts are attenuated, and diſſolved. See FERMENT.

But theſe, too, differ in their Opinions of this *Ferment*; Some taking it to be the Remains of the Food laſt *digeſted*, which by its Continuance in the Stomach, has contracted an Acid Quality, which conſtitutes it a *Ferment*: Others take the *Ferment*, or Principles of Fermentation to be contain'd in the Aliment it ſelf; which when incloſed in the Stomach, and heated thereby, being put in Motion, enters on its Office of Fermentation: But theſe, too, are divided; Some taking it to be the ſpirituous Part; and ſome the Air in Foods. See DIGESTER.

Others ſuppoſe this Ferment ſupplied by the Glands of the Stomach: And laſtly, others contend for the *Saliva*,

and make that the Ferment ſerving principally for the *Digeſtion* of the Food.

All theſe Syſtems are now reduced to three principal Ones; which we ſtill find explain'd, and defended in the ſeveral Writings on that Subject: The firſt holding *Digeſtion* to be perform'd by *Fermentation*; The ſecond by *Trituration*; And the third by *Fermentation*, and *Trituration* together.

The *firſt* Opinion was for a long Time the only one. The Retainers hereto hold, that the Food, after it is receiv'd into the Stomach, is there impregnated with certain menſtruous Juices, which being aſſiſted by the natural Heat of the Stomach, raiſes a Fermentation in the Foods, which diſſolves, attenuates, and converts them into Chyle.

This was the Syſtem of the Ancients; who, tho' they only expreſs themſelves in general Terms, as diſſolving, ſoftening, ſubduing, Concretion, Qualities, *&c.* yet ſeem to have had the Notion of what we call *Fermentation*. Thus *Empedocles* and *Hippocrates* teach, that *Digeſtion* is perform'd by a Putrefaction of the Foods, after the like manner as the ſame *Empedocles* holds Water to be converted by Putrefaction into Wine. *Hippocrates*, and *Ariſtotle* uſe the Term *Concoction*, which we likewiſe find in *Erotian*, *Plutarch*, and *Actuarius*, to expreſs the manner of Fruits ripening, the Muſt's changing into Wine, and Paſt's riſing. *Hippocrates* expreſsly names *Effervescence*, and *Fermentation*, *de vetere Medicina*, C. 5. and *Galen* likewiſe, *L. de Conſuetudine*, C. 2. And in another Place he aſſerts, that a certain Seroſity of the Stomach concurs with the Bile and Spirits to effect *Digeſtion*. To ſay nothing of *Cicero*, who, according to the prevailing Opinion of his Time, attributes *Digeſtion* to the Heat of the Stomach. *Lib.* II. *de Nat. Deor.*

The Juices, or Ferments in the Stomach, to whoſe Action *Digeſtion* is ſuppoſed owing, are, the Saliva, Bile, and Pancreatic Juice. This is ſo true, that in certain voracious Animals, which eat, and *digeſt* faſt, particularly Wolves, Oſtriches, and Porcupines, the Bile diſcharges it ſelf immediately into the Cavity of the Stomach; And we have obſerved a Diſpoſition analogous thereto in a Man that had been a great Eater.

There are only three Marks to know the Fermentation of Dough and Muſt by: Firſt, In that the Dough riſes, and ſwells; and the Muſt boils, and rarifies. Secondly, In that the Bread and Wine made by theſe Fermentations, have different Taſts and Qualities from thoſe the Flower and Muſt had before. Thirdly, In that the Bread, and Wine, by Diſtillation, yield Principles that differ in thoſe reſpects from thoſe drawn from Flower and Muſt. Now, all theſe Characters are found in the Change made in the Food by *Digeſtion*.

Againſt this Syſtem it is objected by Mr. *Hecquet*, and others, that in every 24 Hours there is prepared a Pound of Saliva, half a Pound of Bile, and at leaſt two Ounces of Pancreatic Juice; to which is to be added that Stomach-Liquor, reſembling Saliva; the whole amounting to about 2 Pounds, or 13824 Grains of Ferment. Now, ſay they, it is allowed by the Chymiſts, that one Grain of Ferment is ſufficient for 803 Grains of Matter to be fermented; conſequently 2 Pounds of Ferment would ſuffice for 1200 Pounds of Food: Whereas a Man ordinarily does not take above 4 Pounds in a Day.

Now, this, ſay they, is an Argument, that Fermentation is not the only, or principal Intention of theſe Juices; ſince, if it had, they would have been better proportioned to the Occaſion. And, further, it furniſhes an Objection, ſince ſuch a Quantity of ſaline, menſtruous Humour, having ſo little Buſineſs to employ it in fermenting the Food, muſt act on the Stomach, corrode and deſtroy the fine Membrane it is lined withal, and do other Miſchiefs.

But to this it is anſwered, 1. That, according to Mr. *Hecquet* himſelf, the Faculty of fermenting only belongs to the Salts, and that, by his own Computation, half a Pound of Bile only contains 30 Grains of Salt; and a Pound of Saliva, with two Ounces of Pancreatic Juice, and the Stomach-Liquor, contain but 14 Grains more: So that the Ferment of the Stomach produced each Day, only amounts to about 44 Grains, which were ſcarce enough for 2 Pounds of Food. But Mr. *Hecquet* diminiſhes the Quantity of theſe Salts too much, which *Verheyen*, and others, make a deal more. To which is to be added the volatile Salt, mix'd with the Phlegm and Spirits. 2. It is not true, that there is always required a Grain, and only a Grain of Leaven for 800 Grains of Matter. Experience contradicts this Rule. In ſome Fermentations there is no need of any Leaven at all, and in others a deal leſs. As to the Ferment's acting on the Membranes of the Stomach; 'tis certain, it does act on, and vellicate the ſame when there is no Food to employ it; and this it is, that occaſions the Senſation of Hunger. But as faſt as they are corroded, they are repair'd again by the Nouriſhment proper to them. The Stomach is ſometimes gnawed, and incommoded by the *Menſtruum*; but ordinarily it is preſerv'd by a viſcid Matter, wherewith its inner Coat is lined.

Another Objection againſt this Doctrine, is, that the Chyle yields no inflammable Spirit; which it ſhould, were it the Effect of Fermentation: But Monſr. *Aſtruc* anſwers, that all Fermentations don't produce any ſuch Spirit: That of Dough, for Inſtance, affords none, nor that of rotten Fruits, nor of Acids, or pure Alcali's. The inflammable Spirit, in Effect, requires a fine attenuated Sulphur, which is not found in all Fermentations.

The *ſecond* Syſtem was invented, or at leaſt renewed in the preſent Age; and has been maintain'd with a deal of Zeal, and Vivacity, as is commonly the Caſe in any Thing that has the Appearance of Novelty. Thoſe who eſpouſe this Opinion, contend, that 'tis a mere continual Attrition, or Grinding, that breaks, attenuates, and reduces the Food, and with the Addition of a proper Fluid, forms it into that whitiſh Subſtance, call'd *Chyle*; much as Corn is ground between the Stones of a Mill. Which Opinion ſeems to be confirm'd by ſomething obſerv'd in Birds: Their Gizzard, or Crop, is compoſed of two ſtrong, ſolid, compact Muſcles, which rubbing againſt each other, and being aſſiſted by little angular Stones, or Grains of Sand ſwallow'd by the Birds, break and grind the dry Food thoſe Animals live on: And when the Sand is grown ſmooth, they caſt them off with their other Excrements, and ſwallow freſh ones.

This Sentiment is thus explain'd by an able Aſſertor thereof, Mr. *Hecquet*, in his Treatiſe of *Digeſtion*. Every thing in the Body is Veſſel, conſequently, every thing therein is hollow. Every thing therein lives, after its Manner; conſequently, every thing is in Motion; Animal Life being nothing but Motion; and conſequently all the Veſſels are in Motion. Now, the Parts of a Body that are to move, will move towards thoſe Sides, where they find the leaſt Reſiſtance. But the Place of the leaſt Reſiſtance in Tubes is the Cavity; conſequently, the Motion of the Parts of Veſſels is towards their Axes. The Parts of Veſſels that are to move, are the Parietes, or Sides, becauſe flexible, and elaſtic; and this Motion can only be effected by an Approximation of thoſe Parts: Conſequently, the Motion of the Veſſels conſiſts in an Approximation of their Parietes; It is, therefore, a Sort of Contraction, Preſſion, or Coarctation: Hence, as all the Parts of the Body are only Veſſels, they all undergo a Syſtole, Preſſion, or Contraction. Further, all theſe Veſſels contain Juices in their Cavities; And, therefore, all the Juices, or Liquids in the Body are continually compreſs'd. This Preſſion is the Action of an Elaſtic Force; conſequently the Preſſion will be ſuch as is the Force; and, therefore, alternative: Conſequently, it is a Pulſe, or Palpitation; and therefore the Juices are continually beaten. Now, theſe Juices are exceedingly diviſible; and conſequently are continually attenuated, and divided: And a Diviſion effected by a Pulſation, or Beating, is a *Trituration*; and conſequently, the Juices in the Body are continually triturated, or ground. The reaſon why the compreſſive Force ſhould be alternative, is, that the Membranes, which compoſe the Veſſels, conſiſt of two Plans, or Series of Fibres; the one longitudinal, the other circular, cutting the longitudinal at right Angles: The Longitudinal are tendinous, and Elaſtic; the Circular are muſcular, or motive, like Sphincters, which compreſs. The Circular are over the Longitudinal, and embrace, or gird them round. The former, we have already obſerved, are Elaſtic; and their Elaſticity oppoſes the Compreſſion of the latter. From this Oppoſition, or Reſiſtance, ariſes a reciprocal Action, and Reaction, which is the alternative grinding Force required.

To ſuch as account for *Digeſtion* from a Ferment, theſe Philoſophers object, that *Digeſtion* is a Diſſolution; that to prepare the Matters for this Diſſolution, they muſt be ſoften'd; that the proper Effect of acid Ferments, is, to gnaw, or tear the hardeſt Matters, and to harden the ſofter, to thicken the fluid, fix the fat, and coagulate the milky: Conſequently, that an acid Ferment ſhould rather impede, than promote *Digeſtion*. Add, that beſide the Force to grind the Juices, and the Veſſels to compreſs them, there are likewiſe Liquors to dilute, and temper them, *viz.* the Saliva, and Stomach-Liquor. And Mineral Matters, which the Stomach-Liquor cannot diſſolve, are found to be worn, and poliſh'd after having ſtay'd ſome time in the Stomach. Now poliſhing is the Effect of Triture, or grinding, not of corroding. Accordingly we find Pelotoons, or Balls of Hairs, or Threads in the Stomach of Cattel, very ſmooth, and ſhining, and far from any Marks of Corroſion.

The Authors of Trituration require three Things for *Digeſtion* to proceed: A Liquor, to wet and dilute the Food, which they find in the Saliva, and Stomach-Liquor: A Veſſel, which is the Stomach: And a moving Power to grind, which they imagine to have found in the Muſcles of the Stomach, Diaphragm, and Abdomen. The moving Force in the Muſcles of the Stomach they maintain to be equivalent to a Weight of 248235 Pounds; and the Force of the Stomach alone, to a Weight of 12951 Pounds: A Power more than equal to that of one of the ableſt Mill-ſtones. See *Traite de la Digeſtion par Monſr.* Hecquet.

Borelli, on the footing of the *Equilibrium* of Fluids, has demonſtrated, that the Force of the Flexor of the loſt Articulation of the Thumb is equal to 3720 Pounds: Whence *Pitcairn* deduces, that the Force of the Fibres of the Stomach is equal to 12951, and that of the Diaphragm, and Muſcles of the lower Venter, to 248235 Pounds. His Way of Eſtimating is this: The Flexor only weighs 122 Grains, and yet may ſuſtain 3720 Pounds: Conſequently, the Fibres of the Stomach weighing 8 Ounces, and the Diaphragm with the Muſcles of the lower Venter, weighing together 8223 Grains, have the Force abovemention'd. But this Argumentation ſeems founded on a Miſtake; for 'tis not in Virtue of its Weight of 122 Grains, that the Flexor Muſcle is equivalent to 3720 Pounds: Beſides that it would follow hence, that the heavier the Muſcles of the Stomach, Diaphragm, and Abdomen, are, the more Force they would have, and conſequently the more eaſy, and expedite would the *Digeſtion* be: which is falſe.

The Patrons of this Syſtem compare the Brain to the Arbor, or Screw of a Preſs, the Heart to a Piſton, the Lungs to Bellows, the Mouth to a Mill-ſtone or Peſtle, the Stomach to a Preſs, and the Inteſtines to a Receiver, or Vat. They contend, that *Caſtellus*, a Phyſician of *Meſſina*, was the firſt of the Moderns, who expreſsly eſpouſed the Syſtem of Ferments, and that he was followed by *Van Helmont*, and *Willis*.

But even the Partiſans of Trituration are not perfectly agreed among themſelves: *Pitcairn* will have it perform'd by a total Contraction of the Stomach: And Mr. *Hecquet*, by a ſucceſſive, periſtaltic, or vermicular Contraction.

Aſtruc, in his Treatiſe, *de la Cauſe de la Digeſtion*, refutes this Syſtem of Trituration at length. He makes a ſtrong Oppoſition to the *Calculus*, which raiſes the moving Force of the Stomach, &c. ſo very high. The Contraction of the Fibres of the Stomach, to compreſs the Food, he ſhews, cannot exceed three Ounces; and 'tis even *gratis* that he allows ſo much: That of the Diaphragm, and Abdomen, he computes at about 4 Pounds. He obſerves, that *Pitcairn*, ſurprized, in all Probability, with what he had aſſerted of this Force, durſt not purſue the Proportion whereon his *Calculus* was founded, and according to which, one of the Forces would be found equivalent to 117088 Pounds, and the other to 250734; which together make 367822 Pounds. The Diaphragm in its Motion has two Forces; the one direct, which is that, whereby its Muſcles draw from the Centre to the Circumference: the other lateral, whereby it reſts, or preſſes on the Stomach; The latter very ſmall in Compariſon of the former. Now, what has deceiv'd *Meſs. Pitcairn* and *Hecquet*, is, their taking the direct for the lateral Force; the Contraction of Fibres for their Preſſure on the Stomach. And the ſame Overſight they are guilty of in the Muſcles of the Abdomen, whoſe Preſſure againſt the Abdomen is only lateral. Add, that there are voracious Animals without any Diaphragm at all; as Fiſhes, which reſpire through their Gills: and others that have only a ſingle Membrane; as Birds, in whom the Muſcles of the lower Venter are very ſmall, and feeble, and in a Situation that incapacitates them from acting at all on the Stomach.

The Membranes of the Stomach being very ſoft, and having only a ſlender Motion, ſeem very unfit for the Office of a Mill-ſtone. 'Tis true, in certain Fowls the Stomach conſiſts of a cloſe, compact, fleſhy Muſcle exceeding ſtrong, ſo as to break little Stones, and Bits of Glaſs. But to this it is urged, that it is no *Digeſtion*, which in theſe Animals is effected in the Inteſtines. And the Structure of our Stomach compared with the Gizzard, or Crop of granivorous Birds, does, on the contrary, furniſh a very cogent Argument againſt Trituration. The Gizzard is provided on the Out-ſide with four fleſhy Muſcles, the Tendons whereof meet in two oppoſite Points: The Inſide is lined with a hard, thick, cartilagenous Membrane; eſpecially in the Places where the Tendons meet. By this Mechaniſm Nature plainly intimates the Office of the Gizzard to be the Grinding of the Grain by the Friction of its Parietes, or Sides: Whereas, the Membrane in the Stomach of a Man is exceedingly thin and fine, furniſh'd with a few fleſhy Fibres, cover'd with a tender, ſenſible Kind of Down; and the Stomach it ſelf is of a great Capacity. And the Stomach in rapacious Birds, who devour huge Pieces of raw Fleſh without chewing, is a ſtill finer Membrane. Laſtly, on the Syſtem of Trituration there ſeems no accounting for Hunger, Nauſea's, Indigeſtions, Crudities, &c.

In the Syſtem of Trituration it ſeems impoſſible to explain, why certain Things eaſy to grind, *e. gr.* Cabbage Flowers, cannot be *digeſted* in certain Stomachs, which yet find no Difficulty in *digeſting* more hard, and ſolid Meats, as Beef, and Mutton: Whereas, the Difference of Diſſolvents gives a natural, and eaſy Solution. Hydropic People continue to *digeſt*, notwithſtanding the Fibres of the Stomach, as well as the reſt of the Body, are extreamly relax'd through the Abundance of Humour. And the total, prompt Change of Nature induced in Foods can be the Effect of nothing elſe but Fermentation; which even diſcovers it ſelf by Belches, &c. while it goes on. The Iron, Needles, Pins, &c. ſometimes found undiſſolved in the Stomach, are no Objection to the Syſtem of Fermentation; it being notorious, that no Diſſolvent diſſolves all Bodies. In Birds, which feed on Grain, the Fermentation is manifeſt, firſt, in the Crop where the Grain is prepar'd for *Digeſtion*, by being macerated in a Liquor like Saliva; and afterwards in the Gizzard, where the *Digeſtion* is perfected by a Diſſolvent pour'd into it by a conglomerate Gland. But the Thing is ſtill more apparent in Ruminating Animals, which are provided with four Stomachs; the two firſt whereof, tho' form'd of a nervous Membrane, make but little Alteration in the Aliment, for Want of a Ferment, or *Menſtruum*; So that it returns to be chew'd again; and only becomes well *digeſted* in the fourth Stomach, whither a Diſſolvent is pour'd from a conglomerate Gland.

The Partiſans of the *third* Opinion allow it inconteſtable, that there are Acids in the Stomach, which mix with the Foods, and act on them; and hold likewiſe, that their Action is aided, and promoted by the Motion of the Syſtole, and Diaſtole in the *Viſcera*: They add, that the Acids produce a Fermentation; and the Oſcillatory Motion of the *Viſcera* a Trituration; and that thus *Digeſtion* is the Effect of Fermentation, and Trituration at the ſame Time.

Be it as it will with each of the three Syſtems; thus much we may venture to lay down from 'em all, as the real Proceſs of *Digeſtion*: The End of this Operation being to prepare the Foods, ſo as they may ſerve for Nutrition; thoſe Foods muſt be conſider'd from the Time the Man takes them in, till being converted into Chyle, they mix with the Blood, which conveys them into all Parts of the Body. The Foods then we take, are either crude, as Oiſters, Fruits, certain Pulſe, &c. or dreſs'd, as Fleſh, and Fiſh, which are roaſted, boil'd, fried, &c. and ſeaſon'd a thouſand divers Ways with Salt, Pepper, and other Spices, Vinegar, Wine, &c. to heighten and enrich the Taſte as much as to aſſiſt *Digeſtion*. See Food, Dressing, &c.

Further, there are ſome Foods we ſwallow without chewing, as Liquids; and others, which we break and comminute by chewing, as Bread, Fleſh, &c. 'Tis of theſe laſt we ſhall here ſpeak, as undergoing more Preparations, and more Changes to fit them for Food, than the others.

The Food, then, is firſt broke, and divided by the Teeth, and, at the ſame Time, moiſten'd with a Liquor ſupplied by the Salival Glands, and thus form'd into a Kind of Paſte. See Mastication.

Thus prepar'd, it is paſs'd through the *Oeſophagus* into the Stomach, there to ferment. See Deglutition.

This Fermentation is cauſed, 1. By the Salival Juice, which is a Ferment, and has the ſame Effect on the Aliment, that Leaven, or Barm has on Paſte. 2. By the Heat of the Stomach, *Viſcera* of the Abdomen, and even Excrements; which here has nearly the ſame Effect on Foods, as the Dunghill has on Matters laid by the Chymiſts to *digeſt* therein. 3. By the Remains of Foods left adhering in the *Rugæ*, or Folds of the Stomach, and there turn'd ſour, and acrimonious. 4. By the Compreſſion of the Muſcles of the Abdomen, and Diaphragm. 5. By the Liquor which the repeated Compreſſion of thoſe Muſcles occaſions to drip from the Glands of the Stomach. 6. According to the Sentiment of ſome modern Phyſicians, by the Air it ſelf, which being mix'd, and embaraſs'd in the Aliments, dilates by the Heat of the Stomach, and ſeparates the Parts of the Foods. Theſe Cauſes all contribute to attenuate, and divide the Food, ſo as to convert them into a cineritious Matter, call'd *Chyle*. See Chyle.

From the Stomach the Chyle deſcends into the *Ducodenum*, where it is further perfected by the Pancreatic Juice, and the Bile, which thin it, precipitate its groſſer Parts, and render it more fluid. The Chyle thus perfected and attenuated, enters the Lacteal Veins, which convey it into the Receptacle, where it is further diluted by the *Lympha*, which is brought hither in Abundance. Hence it riſes into the Thoracic Duct, and enters the Subclavian Vein; where being taken up by the aſcending *Cava*, it is pour'd into the right Ventricle of the Heart.

The Chyle thus mixing with the Blood, embaraſſes the Globules thereof, and thus abates its Motion: And hence that Inclination to go to ſleep after Meals. But, by Degrees, the Blood communicates its Motion to the Chyle; and by its volatile, and exalted Parts, together with the Saline and Nitrous Parts of the Air, ſubtilizes, and gives it its laſt Perfection. Then the *Digeſtion* is finiſh'd: and the Foods being by ſo many Changes render'd the immediate Matter of Nutrition, are carried by the Blood into all Parts of the Body, to repair, and fill the Vacancies of ſuch as are continually diſſipating, and exhaling; or even to add new ones. See Nutrition.

As to the groſſer Parts of the Foods ſeparated from the Chyle by the Bile and Pancreatic Juice, they aſſume the Colour of Excrements from the Bile; and that rank Smell, they derive from the coarſer Sulphurs thereof. Theſe Sulphurs, and Salts of the Excrements, ſerve, after they have paſſed through the Inteſtines, and are arrived at the laſt, which is the

the *Rectum*, to vellicate the Muſcles thereof, and diſpoſe 'em to relax, and thus to apprize Nature of a Neceſſity to diſcharge. See EXCREMENT.

The Separation of the Urine from the Blood, may be eſteem'd a Part of perfect *Digeſtion*; the Deſign of ſuch Separation being to render the Blood more pure and balſamic, and of Conſequence more fit for Nutrition; which the Salts the Urine abounds withal, greatly prevented. This Separation is thus perform'd: The Branches of the emulgent Arteries, which terminate in the Glands, whereof the Subſtance of the Kidneys is compoſed, carry the Blood thither; where a Seroſity is ſeparated from the Blood, by means of the Pores in the Glands of the Kidneys; thoſe Pores repreſenting the Holes in a Sieve, which only let paſs ſuch Things as are of a leſs Diameter than themſelves. This Seroſity, call'd Urine, is diſcharged hence into ſeveral little Tubes, which joyning into a Kind of Pyramids, yield their Humour into the *Pelvis*, whence it runs through the Ureters into the Bladder. See URINE.

DIGESTION, in Chymiſtry, is a Preparation of Plants, Minerals, Metals, and other Bodies beaten, or ground, by putting 'em in a Veſſel, and heating them gradually over a gentle Fire, like the Heat of an Animal Body. See FIRE.

Digeſtion is a previous Kind of Diſpoſition to a perfect Diſſolution of a Body, made by means of Fire, or fiery Particles, beating and looſening the Pores of the Body, and attenuating the Parts of the Fluids, that their Connexion with the harder Matter may be more eaſily, and perfectly diſſolved. *Bohnius* ſeems to deſcribe it pretty adequately by an inſenſible Action and Reaction of the Particles of a Maſs, moving together by ſome ſubtile, ambient Fluid, to which it was expoſed for *Digeſtion*. By calling *Digeſtion* a reciprocal Action, their Motion is intimated, by means whereof they are torn from the contiguous Ones; and in a Word, differently modified: So that the Motion ended, the digeſted Maſs, differs either wholly, or in Part, from the ſame Maſs before *Digeſtion*; ſometimes in Colour, ſometimes in Smell, ſometimes in Tranſparency, ſometimes in Taſte, ſometimes in Conſiſtence, and other Affections. That *Digeſtion* is effected by Motion, is evident from an Obſervation of Dr. *Grew*; who bringing a Mixture of Salt of Tartar, and Oil of Turpentine, ſeveral Days Journey with him in a Coach to *London*, found it had undergone a more intimate Mixion, than if it had been expoſed to a long *Digeſtion*.

Digeſtion is ordinarily confounded with *Maceration*; but the two Things differ, in that there is Heat required to *Digeſtion*; whereas *Maceration* is done in the Cold. See MACERATION.

Digeſtion is uſually perform'd with the Addition of ſome *Menſtruum* ſuitable to the Matter: Thus, Roſes and Poppies Heads are put to *digeſt* in Oil, or Water, to make Unguents, or Syrups; Calcined Lead, and Ceruſs, are *digeſted* in diſtill'd Vinegar, to make the Magiſtery thereof, or the *Sal Saturni*. Hence Dr. *Quincy* defines *Digeſtion* to be the Solution of Bodies, made by *Menſtruum's*, with the Aſſiſtance of Fire.

To conceive the Nature of Chymical *Digeſtion*, it may be neceſſary to ſhew, how the Particles of Bodies can by this Proceſs be diffuſed every Way, and ſuſtain'd in the *Menſtruum*; which deſerves the more to be accounted for, becauſe thoſe ſolid Particles have not the ſame ſpecific Gravity, as the Liquors have in which they ſwim. Tho' the Nature of a perfectly fluid Body be ſuch, as that the Particles, which conſtitute it, do very readily give Way upon the ſmalleſt Impulſe, and recede from one another; yet there is found in moſt Liquors ſome Degree of Tenacity; and from hence ariſes ſuch a Coheſion of Parts, as cannot be broken without ſome Force. And tho' indeed this Force of Coheſion in Liquors ſeems to be but little, or none at all, when compared with what we experience in Solids, yet we find, it can make ſome Reſiſtance. And as the Force in Liquors is either ſtronger or weaker, ſo it produces a Variety of Effects, differing more or leſs from the Phenomena, which would naturally flow from a perfect Fluid; So that, tho' by the Laws of Hydroſtaticks, every Corpuſcle, how ſubtil ſoever, if put into a Fluid, which is ſpecifically lighter, muſt neceſſarily ſink to the Bottom; yet we find ſome heavy Bodies, ſuch as Gold, *&c.* when reduced into thin Plates, will be ſuſtained in Spirit of Wine. This Force, therefore, of Tenacity, which reſiſts the Motion of Bodies in a Fluid, is proportional to the Number of Parts, which are to be ſeparated, or to the Surface of the Body, which we would have move in the Fluid. Hence it is, that ſince the Surface of a Body may be enlarged, without altering any Thing of its Gravity, the Reſiſtance of a Fluid may be ſo augmented, as to equal the Force of Gravity, which carries the Body downwards. And a Body, tho' ſpecifically heavier than a Fluid, in which it is immerſed, may be very well ſuſtained in that Fluid, provided it be reduced into very ſmall Particles; becauſe the Gravity of a Body thus reduced into ſmall Particles, decreaſes in a much greater Proportion, than the Surface does, or, which is proportional to it, the Tenacity of the Fluid: So that at length the Reſiſtance ariſing from its Tenacity, will be equal to the Gravity of the Particle, and ſo hinder its Deſcent. And, therefore, both in Solution, and *Digeſtion*, it is a general Rule, that if the Gravity of a Body be to the Tenacity of the Fluid, as P to 1; and if the Body be then ſubdivided, ſo that the Diameters of the Parts be to that of the whole, as 1 to P; the Reſiſtance which the Particles will meet with in their Deſcent, will be equal to their Gravity: for ſince their Weight is $\frac{1}{P^3}$, but their Surface $\frac{1}{P^2}$, the Gravity will be to the Reſiſtance as $\frac{P}{P^3}$, to $\frac{1}{P^2}$, or as 1 to 1. So that by this we may underſtand, how the Corpuſcles of Metals ſwim in *Menſtruum's*, which are ſpecifically lighter, as Gold in the Spirit of Nitre, which is drawn off from Bezoar Mineral, tho' the Gravity of Gold be 15 times greater. And in the ſame manner we may underſtand, how Corpuſcles ſpecifically heavier, are ſuſpended in any other *Menſtruum*. And it is for the ſame Reaſon, that ſuch as are lighter, cannot riſe up to the Surface: for the Preſſure of Fluids being equal every Way, the ſuperior Parts act reciprocally on the inferior; ſo that the ſame Force, which keeps the heavy Particles from ſinking, will not permit thoſe, which are lighter, to aſcend.

The Uſe of *Digeſtion*, in Pharmacy, is, to extract the Particles, which are more volatile, by a certain *Menſtruum*, and to mix them intimately with it. To this End a gentle Fire is commonly uſed, that the Corpuſcles, which are moſt volatile, may ſeparate, as it were of their own Accord: for a fierce Fire forces out the Fæces, as well as the finer Particles; and if it does not abate the Strength of the Liquor, it will not fail of ſpoiling its Clearneſs.

DIGESTION, in Chirurgery, is applied to Impoſthumes, or Abſceſſes; and expreſſes their Diſpoſition to ripen, and come to Suppuration. See DIGESTIVE.

Tumors ariſing on the Parotides of Children, are of eaſy *Digeſtion*: They ripen in a little Time. *Dionis.*

DIGESTION is alſo uſed for *Maturation*, or that State of a Diſeaſe, wherein the morbific Matter is ſo changed in Bulk, Figure, Coheſion, Mobility, *&c.* by the Uſe of proper Medicines, or even by the Force of Nature, as to be leſs noxious and hurtful, and conſequently to abate the Violence of the Diſtemper. See MATURATION.

The *Greeks* call it πεπάσμος. The Matter of the Diſeaſe ſo far *digeſted*, as to become next a-kin to ſalubrious, or healthy Matter, is ſaid to be *reſolved*. See CRUDITY, and CRISIS.

DIGESTIVE. The ancient Philoſophers admitted a *Digeſtive Faculty*, or *Quality* in the Body; as not knowing how otherwiſe to account for the Act of *Digeſtion*. See FACULTY, and DIGESTION.

DIGESTIVE is alſo uſed in Medicine for ſuch Remedies as ſtrengthen, and increaſe the Tone of the Stomach, and aſſiſt in the Digeſtion of Foods. To this Claſs belong all *Stomachicks*, and *Strengtheners*, or Corroborants. See STOMACHIC, and STRENGTHENER.

DIGESTIVE, in Chirurgery, is a Sort of Unguent, Plaſter, or the like, that ripens, and prepares the Matter of Wounds, *&c.* for Suppuration. It is uſually compoſed of Turpentine, Yolk of Eggs, Oil of *Hypericum*, *Unguentum Baſilicum*, and Tincture of Aloes. The Wound muſt be dreſs'd the firſt Day with a *Digeſtive*, to bring it to Suppuration.

DIGITATED, among Botaniſts, is applied to the Leaf of a Plant, which is either compoſed of many ſimple Leaves ſet together upon one Foot-Stalk, as in the Cinque-foil, Vetches, *&c.* or elſe when there are many deep Gaſhes, or Cuts in the Leaf, as in thoſe of Straw-berries, Hops, *&c.* See LEAF.

DIGIT, *Digitus*, in Anatomy. See FINGER.

DIGIT, in Aſtronomy, is the Meaſure whereby we eſtimate Eclipſes; amounting to the 12th Part of the Diameter of the Luminary eclipſed.

The Diameter of the Body, or Diſk of the Sun, or Moon, is divided into 12 Parts, call'd *Digits*; and an Eclipſe is ſaid to be of ten *Digits*, when ten of thoſe Parts are hid. See ECLIPSE.

Theſe *Digits*, *Wolfius*, and ſome others, call *Digiti Eclyptici*.

DIGIT, in Arithmetick, ſignifies any Integer under Ten, as 1, 2, 3, 4, 5, 6, 7, 8, 9. See UNITS.

DIGIT, is alſo a Meaſure taken from the Breadth of the Finger.

A *Digit* is properly 3 Fourths of an Inch, and contains 4 Grains of Barley, laid breadth-wiſe ſo as to touch each other. See MEASURE.

DIGLYPH, a Kind of imperfect Triglyph, conſole, or the like, with only two Channels, or Engravings. See TRIGLYPH.

DIGNITARY, in the Canon Law, and particularly in Chapters, a Perſon who holds a *Dignity*, that is, a Benefice, which gives him Pre-eminence in the Choir above mere Prieſts, and Canons. Such is a *Dean*, and *Arch-deacon*; tho' the Word

Word is alſo abuſively applied to a mere Prebend, or Canon.

Dignities are ſometimes ſimple, ſometimes with Cure of Souls, and ſometimes with Juriſdiction and Adminiſtration of ſacred Things. The Canoniſts even define *Dignity*, *Adminiſtratio cum Juriſdictione & Poteſtate conjuncta.* If the *Dignity* have no Contentious, or Exterior Juriſdiction, 'tis a ſimple *Parſonage*, and only gives Pre-eminence.

Of *Dignities*, including Prebends, *Cambden* reckons in *England* 544 in Number.

DIHELIOS, in the Elliptical Aſtronomy, a Name *Kepler* gives to that Ordinate of the Ellipſis, which paſſes through the *Focus*, wherein the Sun is ſuppoſed to be placed. See ELLIPSIS.

DIJAMBUS, a Foot of *Latin* Verſe, of four Syllables; compounded of two Jambics; ſo that the firſt and laſt are ſhort, and the two middle long. See JAMBUS.

DIKE, or *Dam*, a Work of Stone, Timber, or Faſcines, raiſed to oppoſe the Entrance, or Paſſage of the Waters.

Dikes are uſually Elevations of Earth, with Hurdles of Stakes, Stones, and other Matters.

The *Dike* of *Rochel* is made with Veſſels faſten'd to the Bottom. The *Dikes* of *Holland* are frequently broke thro', and drown large Tracts of Land.

The Word comes from the Flemiſh *Dyk*, a Heap of Earth to bound, or ſtem the Water. *Salmaſius*, and *Menage* take them to have borrowed the Word from the *Greek* τεῖχος. *Guichard* derives it from the Hebrew *Daghah.*

DILAPIDATION, is a waſtful Deſtroying, or letting Buildings run to Ruin, and Decay, for Want of neceſſary Reparation: 13 *Eliz. Cap.* 13.

The Money recover'd for *Dilapidations*, by 14 *Eliz.* 11. ſhall be employed in the Repair of the ſame Houſes.

DILATATION, in Medicine, *&c.* is the laying open any Orifice, or the Lips of a Wound wider; or the Extenſion of any Veſſel: whence *Dilatorium.*

DILATATION, in Phyſicks, a Motion of the Parts of a Body, whereby it expands, or opens it ſelf to a greater Space. See EXPANSION.

The Generality of our Authors confound *Dilatation* with Rarefaction; but the more accurate, eſpecially the Foreigners, diſtinguiſh between them; defining *Dilatation* to be the Expanſion of a Body into a greater Bulk, by its own Elaſtic Power: And Rarefaction, the ſame Expanſion produced by means of Heat. See RAREFACTION.

The Moderns have obſerved, that Bodies, which, after being compreſs'd, and again left at Liberty, reſtore themſelves perfectly, do endeavour to *dilate* themſelves with the ſame Force whereby they are compreſs'd; and accordingly, they ſuſtain a Force, and raiſe a Weight equal to that whereby they are compreſſed.

Again, Bodies, in *dilating* by their Elaſtic Power, exert a greater Force at the Beginning of their *Dilatation*, than towards the End; as being at firſt more compreſs'd; and the greater the Compreſſion, the greater the Elaſtic Power, and endeavour to *dilate*. So that theſe three, the Compreſſing Power, the Compreſſion, and the Elaſtic Power, are always equal. See ELASTICITY.

Again, The Motion whereby compreſſed Bodies reſtore themſelves, is uſually accelerated: Thus, when compreſſed Air begins to reſtore it ſelf, and *dilate* into a greater Space, it is ſtill compreſſed; and conſequently, a new *Impetus* is impreſſed thereon, from the *dilatative* Cauſe, and the former remaining, with the Increaſe of the Cauſe, the Effect; that is, the Motion and Velocity muſt be increaſed likewiſe: Thus an Arrow ſhot from a Bow, does not quit the String, till after that be perfectly reſtored to its Natural State; Nor does the Arrow move a whit ſwifter than the String; And if the String, 'ere it have perfectly reſtored it ſelf to its right Line, be ſtopp'd, the Arrow will not go its full Length: Which is a Proof, that it is continually acquiring a new *Impetus* from the String. And ſince Projects at the Beginning of their Motion, are little, or nothing retarded, but rather accelerated, it is evident, that the Motion of a String reſtoring it ſelf, is likewiſe accelerated. Indeed it may happen, that where the Compreſſion is only partial, the Motion of *Dilatation* ſhall not be accelerated, but retarded. As is evident in the Compreſſion of a Spunge, ſoft Bread, Gawze, *&c.*

DILATORES *Alæ Naſi*, in Anatomy, a Pair of Muſcles common to the *Alæ Naſi*, and Upper Lip. See MUSCLE.

They ariſe thin, broad, and fleſhy, from the Cheek-bones under the Orbits of the Eyes, and deſcend obliquely with a two-fold Order of fleſhy Fibres in each Muſcle, which partly terminate in the Upper Lip, and partly in the *Alæ Naſi*. They draw the *Alæ* from each other, and widen the External Openings of the Noſtrils.

DILEMMA, in Logic, an Argument conſiſting of four or more Propoſitions, ſo diſpoſed, that grant which you will of them, you will be preſs'd by the Concluſion. See SYLLOGISM.

Or *Dilemma* is an Argument conſiſting of two contrary Parts, or Sides, either of which catches the Adverſary. And hence it is alſo call'd *Syllogiſmus cornutus*, a horned Syllogiſm, its Horns being ſo diſpoſed, that if you avoid the one, you run upon the other.

It is alſo call'd *Crocodilinus*, by reaſon, that as the Crocodile leads ſuch as follow it, into the *Nile*, and purſues ſuch as fly it, to deſtroy them; ſo, whatever the Adverſary either affirms, or denies in this Kind of Syllogiſm, is turned to his Diſadvantage. See CROCODILUS.

Take an Example: A Philoſopher once diſſwaded a Man from marrying, by this Argument: *Either the Woman you marry will be handſome, or ugly: If handſome, ſhe will give you Jealouſy; if ugly, Diſpleaſure.*

Cicero uſes this fine *Dilemma*, to prove, that all Pain is to be bore with Patience: *Omnis Dolor aut eſt vehemens, aut levis: Si levis, facile feretur; Si vehemens, certe brevis futurus eſt.*

The ſame *Cicero*, by another *Dilemma*, proves, that no Meſſengers ſhall be ſent to *Anthony*: *Legatos decernitis; Si ut deprecentur, contemnet: Si ut Imperetis, non audiet.* Nor muſt we here omit that beautiful *Dilemma* of *Tertullian*, whereby he clears the Chriſtians, and accuſes *Trajan*, who had forbad the ſeeking them out, and yet order'd them to be puniſh'd, when found: *O Sententiam Neceſſitate confuſam! Negat inquirendos, ut Innocentes; & mandat puniendos, ut Nocentes: parcit & ſævit, diſſimulat & animadvertit. Quid temetipſum Cenſura circumvenis? Si damnas, cur non & inquiris? Si non inquiris, cur non & abſolvis?*

For a *Dilemma* to be legitimate, there are two Things required: 1. A full Enumeration of Parts: Thus that of *Ariſtippus* abovementioned, whereby he diſſwades from Marriage, is invalid, as being defective in the Enumeration; there being a middle Degree, or Form between *handſome* and *ugly*.

2. That the *Dilemma* preſs the Adverſary alone, and that the Perſon, who makes it, be not liable to have it retorted upon him. This was the Caſe in that celebrated *Dilemma* of the Sophiſt *Protagoras*, which the *Areopagites*, with all their Wiſdom, were not able to ſettle.

A Youth named *Evathlus*, put himſelf to *Protagoras*, to learn Dialectic, upon this Condition, that he ſhould pay him a large Sum of Money, the firſt Cauſe he pleaded, in Caſe he gain'd the ſame. *Evathlus*, when fully inſtructed, refuſing to pay the Condition; *Protagoras* brings his Action, arguing thus: You muſt pay the Money, however the Cauſe go; for if I gain, you muſt pay in Conſequence of the Sentence, as being caſt in the Cauſe: And if you gain it, you muſt pay in Purſuance of our Covenant. Nay, retorts *Evathlus*, which Way ſoever the Cauſe go, you'll have nothing: For if I prevail, the Sentence gives it, that nothing is due to you; and if I loſe, then there is nothing due by the Covenant.

After the like Manner, an ancient Prieſteſs diſſwading her Son from Haranguing the People, by this *Dilemma: Nam ſi injuſta ſuaſeris*, ſays ſhe, *habebis Deos iratos: Sin vero juſta, Iratos habebis homines:* The Youth thus returned the *Dilemma* on his Mother; *Imo*, ſays he, *expedit ad Populum Verba facere, nam ſi juſta dixero Dii me ababunt; ſi injuſta Homines.*

The Word *Dilemma* is form'd from the *Greek* δὶς, *bis*, twice, and λῆμμα, *Sumptio.*

DILUTE. To *dilute* a Body, is to render it liquid; or, if it were liquid before, to render it more ſo, by the Addition of a thinner thereto.

Thoſe Things thus added, are call'd *Diluents*, or *Dilutors*; ſuch are common Wheys, Ptiſans, and Juleps, which in reſpect of the Blood in a State of Viſcidity are thinner, and therefore are ſaid to thin, or *dilute* it.

Flower muſt be well *diluted*, to make it into Paſte. Oker is *diluted* with Oil, to paint Beams, Doors, *&c.*

DIMENSION, is the Extenſion of a Body, conſider'd as meaſurable. See EXTENSION, and MEASURE.

Hence, as we conceive a Body extended, and meaſurable both in Length, Breadth, and Depth; we conceive a *Trine Dimenſion*, viz. *Length*, *Breadth*, and *Thickneſs*. The firſt call'd a *Line*, the ſecond a *Surface*, the third a *Solid*. See LINE, SURFACE, and SOLID.

DIMENSION, is particularly uſed with regard to the Powers of the unknown Quantity of an Equation, which are call'd the *Dimenſions* of thoſe Quantities.

Thus in a ſimple Equation, the unknown Quantity is only of *one Dimenſion*, as $x=a+b$: 2. In a quadradic Equation it is of *two Dimenſions*, as $x^2=a^2+b^2$. In a Cubic, of *three*, as $x^3+a^3-b^3$. &c. See EQUATION, POWER, *&c.*

DIMINISH'D *Column*, in Architecture. See COLUMN, and DIMINUTION.

DIMINISH'D *Interval*, in Muſic, is a defective Interval, or an Interval which is ſhort of its juſt Quantity by a leſſer Semi-tone. See INTERVAL, and SEMI-TONE.

A *diminiſh'd Interval* is mark'd with a flat, or a double *Dieſis*.

DIMINUTION, in Rhetoric, is the Augmenting, and Exaggerating what you have to ſay, by an Expreſſion that ſeems to weaken, and *diminiſh* it.

As, for Inſtance, when a Man ſays with a certain Tone, *This Woman is not ugly*; meaning, ſhe is very handſome.

Some Authors take *Diminution* in a ſtricter Senſe, *viz.* for ſaying leſs than a Man really means, as: *You are not indeed to be commended*; where a greater Reproach is ſecretly meant.

DIMINUTION, in Muſic, is when there are a Number of Words, which are to make Tones and ſeveral quick Motions in the Space of a Cadence; ſeveral Quavers, and Semiquavers, correſponding to a Crochet, or Minim.

DIMINUTIONS, in Heraldry, a Term uſed by the *Latins* for what we more uſually call *Differences*, and the French *Briſures*. See DIFFERENCES.

DIMINUTION, in Architecture, a Contraction of the upper Part of a Column, whereby its Diameter is made leſs than that of the lower Part. See COLUMN.

To attain thoſe two important Points in Architecture, Strength, and the Appearance of Strength, all Architects have made their Columns leſſer above than below; which is call'd their *Diminution*. Some have likewiſe made them a little bigger towards the middle than at the Bottom, which is call'd their *Swelling*. The *Gothic* Architects, indeed, obſerve neither *Diminution*, nor *Swelling*: Their Columns are perfectly Cylindrical; for which reaſon they are properly call'd *Pillars*, in Contra-diſtinction to *Columns*. See PILLAR.

The *Diminution* generally commences from one Third of the Height of the Column. Some make it begin from the very *Baſis*, and hold tapering to the Capital; but this has not ſo good an Effect. *Vitruvius* would have the *Diminution* of Columns differ according to their Height, and not according to their Diameter. Thus, a Column 15 Foot high, he *diminiſhes* a ſixth Part of its Diameter, and another of 50 Foot, only an 8th Part; but we don't find this Rule obſerv'd in the Antique.

The Difference of Orders, Mr. *Perrault* obſerves, does not infer a Difference of *Diminution*; there being ſmall and great *Diminutions* in different Works of the ſame Order: Excepting, however, the *Tuſcan*, which *Vitruvius* diminiſhes by a 4th Part; tho' *Vignola* only makes it a 5th, and the *Trajan* Column a 9th. The *Diminutions* are very differently adjuſted in the different antique Buildings, as well as in the different modern Authors.

DIMINUTIVE, in Grammar, a Word form'd from ſome other, to ſoften, or *diminiſh* the Force, and Effect thereof: Or, to ſignify a Thing that is little in its Kind.

Thus Bullock is a *Diminutive* of *Bull*; *Cellule* of *Cell*.

The *Italians* abound in *Diminutives*; Every Author being at Liberty to make as many as he pleaſes. The *French* are a good deal more reſerved in that reſpect; tho' their old Authors were every whit as licentious as the *Italians*, witneſs *Belleau*, &c.

In *Engliſh* we have very few; not that our Language is hard, and incapable of the ſofteſt Expreſſions, but by reaſon we lay all our Tenderneſs in our Sentiments: Or rather, our Language is tender like a Perſon of Diſcretion, who always ſpeaks Senſe, even in ſpeaking of his Paſſion.

In *Latin*, *Italian*, *Engliſh*, and moſt other Tongues, *Diminutives* are form'd from Primitives, by the Addition of a few Letters, or Syllables: In *French*, the Caſe is frequently otherwiſe, the *Diminutive* being ſometimes ſhorter than the Primitive, ſometimes the ſame Length.

Some Grammarians call *at leaſt* a *diminutive* Conjunction, as ſerving to leſſen, or *diminiſh* the Force of what went before. See CONJUNCTION.

DIMISSORY *Letters*, *Dimiſſoriæ Literæ*, in the Canon Law, a Letter given by a Biſhop to a Candidate for holy Orders, born, or inhabiting in his Dioceſe; directed to ſome other Biſhop, and giving Leave for the Bearer to be ordain'd by him. See ORDINATION.

When a Perſon produces Letters of Ordination, or Tonſure conferr'd by any other than his own Dioceſan, he muſt at the ſame Time produce the *Letters Dimiſſory* given by his own Biſhop, on Pain of Nullity.

Letters Dimiſſory cannot be given by the Chapter *Sede vacante*; This being deem'd an Act of voluntary Juriſdiction, which ought to be reſerv'd to the Succeſſor.

DIMOCRITÆ, a Name given the *Apollinariſts*. Thoſe Hereticks at firſt held, that the Word only aſſum'd a human Body, without taking a reaſonable Soul like to ours. But being at length convinc'd by formal Texts of Scripture, they allowed, that he did aſſume a Soul, but without Underſtanding; the Word ſupplying the Want of that Faculty. From this Way of ſeparating the Underſtanding from the Soul, they became denominated *Dimocrites*, q. d. Dividers, Separaters, of δια, and μείρω, *I divide*. See APOLLINARIST.

DINNER, the great Meal, or that taken about the Middle of the Day. See MEAL.

Monks are ſaid to *dine* at eleven o' Clock, the common People about 12, and the Men of Buſineſs about 2. The *Grand Tartar*, Emperor of *China*, after he has *dined*, makes Publication by his Heralds, that he gives Leave to all the other Kings and Potentates of the Earth, to go to *Dinner*; as if they waited for his Leave.

The Word is form'd from the French *Diſner*, which *du Cange* derives from the barbarous Latin *diſnare*. *Henry Stephens* derives it from the *Greek* δειπνειν; and will have it wrote *Dipner*. *Menage* deduces it from *deſinare*, uſed for *deſinere*, as the *Italians* ſtill ſpeak it.

In the general, 'tis agreed to be the moſt ſalutary, to make a ſpare Supper, and to eat the more plentifully at *Dinner*; eſpecially for tender, valetudinary People. This is the Sentiment of the *Schola Salernitana*:

Ex magna Cœna Stomacho fit maxima Pœna:
Ut ſis Nocte levis, ſit tibi Cœna brevis.

Yet *Bernardinus Paternus*, an eminent *Italian* Phyſician, maintains the contrary in a Treatiſe expreſs. See FOOD.

The *Romans*, we are aſſur'd, never minded *Dinner*; but deferr'd their good Cheer to the Evening, which they made their grand Meal. *Dacier*.

DIOCESE, the Circuit, or Extent of the Juriſdiction of a Biſhop, or Arch-Biſhop. See BISHOP.

Dioceſe is alſo uſed in ancient Authors, &c. for the Province of a Metropolitan. See PROVINCE, and METROPOLITAN.

The Word is form'd from the *Greek* Διοίκησις, *Government*, *Adminiſtration*, form'd of διοικέω, which the ancient Gloſſaries render *adminiſtro*, *moderor*, *ordino*; Hence διοίκησις τῆς πόλεως, the *Adminiſtration*, or *Government of a City*.

Διοίκησις, *Diœceſis*, was originally a Civil Government, or Prefecture compoſed of divers Provinces. The firſt Diviſion of the Empire into *Dioceſes* is ordinarily aſcribed to *Conſtantine*; who diſtributed the whole *Roman* State into four, viz. the *Dioceſe* of *Italy*, the *Dioceſe* of *Illyria*, that of the *Eaſt*, and that of *Africa*. And yet long time before *Conſtantine*, *Strabo*, who wrote under *Tiberius*, takes Notice *Lib.* XIII. *p.* 432. that the *Romans* had divided *Aſia* into *Dioceſes*, and complains of the Confuſion ſuch a Diviſion occaſioned in Geography, *Aſia* being no longer divided by Peoples, but by *Dioceſes*, each whereof had a *Tribunal*, or Court where Juſtice was adminiſter'd. *Conſtantine*, then, was only the Inſtitutor of thoſe large *Dioceſes*, which comprehended ſeveral Metropoles, and Governments; the former *Dioceſes* only comprehending one Juriſdiction, or Diſtrict, or the Country that had Reſort to one Judge, as appears from this Paſſage in *Strabo*, and before *Strabo*, from *Cicero* himſelf, *Lib.* III. *Epiſt. ad famil. ep.* 9. and *Lib.* XIII. *ep.* 67.

Thus, at firſt, a Province included divers *Dioceſes*; and afterwards a *Dioceſe* came to comprize divers Provinces. In After-times the *Roman* Empire became divided into XIII. *Dioceſes*, or Prefectures; tho' including *Rome*, and the ſuburbicury Regions, there were XIV. Theſe XIV *Dioceſes* comprehended 120 Provinces: Each Province had a Proconſul, who reſided in the Capital, or *Metropolis*; And each *Dioceſe* of the Empire had a Conſul, who reſided in the principal City of the Diſtrict.

On this Civil Conſtitution, the Eccleſiaſtical one was afterwards regulated: Each *Dioceſe* had an Eccleſiaſtical Vicar or Primate, who judg'd finally of all the Concerns of the Church within his Territory. See ECCLESIASTICAL.

At preſent there is ſome further Alteration: For *Dioceſe* does not now ſignify an Aſſemblage of divers Provinces; but is limitted to a ſingle Province under a Metropolitan, or even to the ſingle Juriſdiction of a Biſhop. *Gul. Brito* affirms *Dioceſe* to be properly the Territory, and Extent of a Baptiſmal, or Parochial Church; whence divers Authors uſe the Word to ſignifie a ſimple Pariſh. See PARISH.

DIOCLETIAN *Epocha*. See EPOCHA.

DIONYSIAN *Period*. See PERIOD.

DIONYSIACA, Feaſts held among the Ancients, in Honour of *Bacchus*, on the third Day of *September*. See FEAST.

The *Latins* call'd them *Liberalia*, and the *Feaſt of Vintages*, by reaſon *Bacchus*, *Liber* in the Heathen Syſtem is reputed the God of Wine; ſee *Varro* Lib. 5. See LIBERALIA.

The Word is form'd from the *Greek* Διονύσια, of Διονύσιος, *Bacchus*; and that of Διὸς, the Genitive of Ζεὺς, *Jupiter*, and *Nyſa*, a City in *Egypt* on the Frontiers of *Arabia*, where *Bacchus* is ſaid to have been educated by the Nymphs.

Others derive Διονύσιος from *Du*, and *Dy*, *Lord*; and *Niſa*, put by *Metatheſis*, or Tranſpoſition, for *Sina*; So that,

that, according to *Tzetzes*, Διονύσιος signifies no more than Δεῦνος καὶ ἄναξ Νύσσης, *Lord and King of Nyſſa.*

DIOPTER, or *Dioptra*, in the Writers of Aſtronomy, is frequently uſed for the Holes pierced in the *Pinnulæ*, or Sights of an Alhidade. See SIGHTS.

DIOPTRA, among Surgeons, is an Inſtrument whereby one may ſee into the *Matrix*, and inſpect any Ulcers therein, call'd alſo SPECULUM *Matricis*, and DILATATORIUM.

DIOPTRICKS, the Doctrine of refracted Viſion, call'd alſo *Anaclaſticks*. See VISION.

Dioptricks is properly the third Branch of Opticks; Its Office being to conſider, and explain the Effects of Light refracted by paſſing through different *Mediums*, as Air, Water, Glaſs, &c. and eſpecially *Lens's*. See OPTICKS.

The Word *Dioptricks* is originally *Greek*, being form'd of διὰ, *per*, through, and ὄπτομαι, *I ſee*; whence διόπτρομαι ſhould be to *ſee through any Thing.*

The Laws of Dioptricks, *ſee deliver'd under the Articles* REFRACTION, LENS, &c. *and the Application thereof, in the Conſtruction of Teleſcopes, Microſcopes, and other* Dioptrical *Inſtruments, under the Articles* TELESCOPE, MICROSCOPE, &c.

DIPHRYGES, in Pharmacy, the *Scoria*, Sediment, or Calx of melted Copper gather'd in the Furnace, when the Metal is run out. See SCORIA.

Dioſcorides makes three Kinds of *Diphryges*: One call'd *Natural*, tho' made of a Kind of Clay, or Bole dried in the Sun: That made of Marcaſſite, or Pyrites burnt; and that of the *Fæces* of Copper. See COPPER.

It is moderately ſharp, and aſtringent, and is reputed good for Ulcers that cicatrize with Difficulty.

The Word is form'd from the *Greek* δὶς, *twice*, and φρύγειν, *to roaſt.*

DIPLOE, in Anatomy, a ſpongy, medullary Subſtance, ſeparating the two Tables of the *Cranium*, and together with them conſtituting the Skull. See CRANIUM.

The Subſtance of the *Diploe* being ſpongeous, eaſily imbibes the Blood, and is found ſeparated into an infinite Number of little Cells of different Magnitudes, which receive little Branches of Arteries from the Brain, and give Paſſage to little Veins that proceed to the *Sinus's* of the *dura Mater.*

DIPLOMA, an Inſtrument given by ſome Colleges, and Societies, on Commencement to any Degrees, or paſſing Examination, as a Proof of Qualification for any Advancement to Title, or Power.

DIPPING-*Needle*, or *Inclinatory-Needle*, a Magnetical Needle, ſo hung, as that inſtead of playing horizontally, and pointing out North and South, one End *dips*, or inclines to the Horizon, and the other Points to a certain Degree of Elevation above it. See NEEDLE, and MAGNET.

Or, a *Dipping-Needle* may be defined with Mr. *Whiſton*, to be a long ſtaight Piece of Steel, (repreſented *Tab. Navigation Fig.* 11.) every way equally pois'd on its Centre, and afterwards touch'd with a Load-ſtone; but ſo contriv'd, as not to play on the Point of a Pin, as does the common horizontal Needle, but to ſwing in a Vertical Plane, about an Axis parallel to the Horizon: And this in Order to diſcover the exact Tendency of the Power of Magnetiſm. See MAGNETISM.

The Inventor of the *Dipping-Needle*, Mr. *Whiſton* obſerves, was, without all Queſtion, an *Engliſhman*, *Robert Norman* by Name, a Compaſs-maker at *Wapping*, about the Year 1576; which is not only teſtified by his own Account, in his *New Attractive*; but was allow'd by Dr. *Gilbert*, and other Writers of that Time. The Occaſion of the Diſcovery he himſelf relates: *viz.* that it being his Cuſtom to finiſh, and hang the Needles of his Compaſſes, before he touch'd 'em; he always found, that immediately after the Touch, the North-Point would bend, or decline downward, under the Horizon; Inſomuch, that to balance the Needle again, he was always forc'd to put a Piece of Wax on the South End, as a Counter-poize.

The Conſtancy of this Effect led him at Length to obſerve the preciſe Quantity of the *Dip*, or to meaſure the greateſt Angle which the Needle would make with the Horizon.

This in the Year 1576 he found at *London* to be 71° 50′. But the *Dip* varies as well as the Horizontal Direction; and is now found, at the ſame Place, to be 75° 10′.

Burrows, *Gilbert*, *Ridley*, *Bond*, &c. endeavour'd to apply this Diſcovery of the *Dip*, to the finding of the Latitude; and the laſt Author, going further, likewiſe propoſed the finding of the Longitude thereby: but for Want of Obſervations, and Experiments, he could go no length.

Mr. *Whiſton*, being furniſh'd with the further Obſervations of Col. *Windham*, Dr. *Halley*, Mr. *Pound*, Mr. *Cunningham*, *Pere Noel*, Mr. *Feuillee*, and his own, has improved very much on the Doctrine, and Uſe of the *Dipping-Needle*, brought it to more certain Rules, and endeavour'd in good Earneſt to find the Longitude thereby.

In Order to this, he obſerves, I. That the true Tendency of the North, or South End of every Magnetic Needle is not to that Point in the Horizon to which the Horizontal Needle points, but towards another directly under it in the ſame Vertical; and in different Degrees under it, in different Ages, and at different Places.

II. That the Power by which a Horizontal Needle is govern'd, and all our Navigation ordinarily directed, is prov'd to be but one Quarter of the Power, by which the *Dipping-Needle* is moved; which ſhould render the latter far the more effectual, and accurate Inſtrument.

III. That a *Dipping-Needle* a Foot long, will plainly ſhew an Alteration of the Angle of Inclination in theſe Parts of the World in half a Quarter of a Degree, or $7\frac{1}{2}$ Geographical Miles; *i. e.* ſuppoſing that Diſtance taken along, or near a Meridian. And a Needle of 4 Foot, in two or three Miles.

IV. A *Dipping-Needle* 4 Foot long, in theſe Parts of the World, will ſhew an equal Alteration along a Parallel; As one of a Foot long will ſhew along a Meridian, *i. e.* this will with equal Exactneſs ſhew the Longitude, as that the Latitude.

This depends on the Poſition of the *Lines of equal Dip*, in theſe Parts of the World, which are found to lye about 14 or 15 Degrees from the Parallels.

Hence he argues, that as we can have Needles of 5, 6, 7, 8, or more Feet long, which will move with Strength ſufficient for exact Obſervation; And ſince Microſcopes may be applied to the Viewing the ſmalleſt Diviſions of Degrees on the Limb of the Inſtrument, it is evident, the Longitude at Land may be found thereby to leſs than four Miles.

And as there have been many Obſervations made at Sea with the ſame Inſtrument by *Noel*, *Feuillee*, &c. which have determin'd the *Dip* uſually within a Degree, ſometimes within $\frac{1}{2}$ or $\frac{1}{3}$ of a Degree, and this with ſmall Needles of 5, or 6, or at the moſt 9 Inches long; 'tis evident, the Longitude may be found even at Sea, to leſs than half a Quarter of a Degree.

Thus much premis'd, the Obſervation it ſelf follows.

To find the Longitude, or Latitude by the DIPPING-*Needle:*

If the Lines of equal *Dip* below the Horizon be drawn on Maps, or Sea-Charts, from good Obſervations, it will be eaſy from the Longitude known to find the Latitude; and from the Latitude known to find the Longitude, either at Sea, or Land.

Suppoſe, *e. gr.* you were travelling, or ſailing along the Meridian of *London*, and found the Angle of *Dip*, with a Needle of one Foot to be 75°; the Chart will ſhew, that this Meridian, and the Line of *Dip* meet in the Latitude of 53° 11′; which, therefore, is the Latitude ſought. See LATITUDE.

Or, ſuppoſe you were travelling, or ſailing along the Parallel of *London*, i. e. in 51° 32′ North Latitude, and you find the Angle of *Dip* to be 74°. This Parallel, and the Line of this *Dip* will meet in the Map in 1° 46′ of Eaſt Longitude from *London*; which is, therefore, the Longitude ſought. See LONGITUDE.

DIPTERE, or DIPTERON, in the ancient Architecture, a Temple ſurrounded with two Rows of Columns, which from a Sort of Portico's, call'd *Wings*, or *Iſles*. See TEMPLE.

The Word is *Greek*, form'd from δὶς, *twice*, and πτέρον, *Ala*, Wing.

DIPTHONG, in Grammar, a *double Vowel*, or the Union, or Mixture of two Vowels pronounced together, ſo as only to make one Syllable; as the Latin *ae*, or æ, *oe*, or œ; the *Greek* ει, the Engliſh *ai*, *au*, &c. See VOWEL, and SYLLABLE.

The *Latins* pronounced the two Vowels in their *Dipthongs* much as we do; with this Exception, that the two were not heard equally, but the one was ſomewhat weaker than the other, tho' the Diviſion was made with all the Delicacy imaginable.

Among us, moſt of the Latin *Dipthongs* are loſt in the Pronunciation: Their æ and œ are only ſpoke as *e*'s; So alſo the Engliſh *ea*, *oa*, &c. tho' wrote with two Characters, are pronounced as ſimple Sounds.

In *Engliſh*, *French*, and divers other Languages, one may diſtinguiſh *Dipthongs* with regard to the Eyes, from *Dipthongs* with regard to the Ears.

A *Dipthong* with regard to the Eye, is form'd of two Vowels meeting in the ſame Syllable, whether the particular Sound of each of them be heard in the Pronunciation, whether the Sound of one of them be drown'd; or laſtly, whether a new Sound different from either of them reſult from both. In the two latter Occaſions, 'tis with ſome Impropriety, that we call them *Dipthongs*. The firſt only are real *Dipthongs*, as being ſuch both to the Eye, and Ear.

Dipthongs with regard to the Ear, are either form'd of two Vowels, meeting in the ſame Syllable, or whoſe Sounds

are

are ſeverally heard; Or of three Vowels in the ſame Syllable, which only afford two Sounds in the Pronunciation.

On this laſt Occaſion, *Dipthongs* with regard to the Ear, are Tripthongs with regard to the Eye.

Engliſh *Dipthongs*, with regard both to the Eye and Ear, call'd *Proper Dipthongs*, are *ai*, as in *fair*; *au*, in *Laud*; *ee*, in *bleed*; *oi*, in *void*; *oo*, in *Food*; and *ou*, in *Houſe*.

Engliſh *Improper Dipthongs*, or *Dipthongs* with regard to the Eye, are *aa*, pronounced only like *a*; as in *Aaron*; *ea*, like *a*, as in *Swear*, *Heart*; or like *e*, as *already*; or like *ee*, as *Veal*: *eo*, like *e*, in *Feoffee*; or like *o*, in *George*: *eu*, or *ew*, like *u*, as *Deuteronomy*: *ie*, like *e*, as *Cieling*, *Field*: *ei*, like *a*, in *feign*, or like *e*, in *Deceit*: *oa*, as in *Cloak*, *Doat*: *oe*, as in *Doe*, *Oeconomy*: *ue*, as in *gueſs*: And *ui*, as *guile*, *recruit*.

The Word is form'd from the Latin *Diphthongus*, and that from the *Greek* Διφθόγγος, which ſignifies the ſame Thing.

DIPTOTES, in Grammar, a Kind of irregular Nouns, having no more but two Caſes: As, *Suppetiæ*, *Suppetias*, &c. See CASE.

DIRECT, in Opticks. *Direct Viſion* is that perform'd by *direct* Rays; in Contra-diſtinction to Viſion by refracted, or reflected Rays. See VISION.

Direct Viſion, is the Subject of Opticks, which preſcribes the Laws, and Rules thereof. See OPTICKS.

DIRECT *Rays* are thoſe which paſs in right Lines from the Luminary to the Eye, without being turn'd out of their Rectilinear Direction by any intermediate Body, either opake, or pellucid. See RAY.

DIRECT, in Arithmetic. The Rule of three *Direct* is that oppoſite to the *Inverſe*. In the *Direct*, the 4th Number required increaſes the Proportion; and in the Inverſe diminiſhes it. See RULE *of Proportion*.

DIRECT, in Aſtronomy. We conſider the Planets in three States, viz. *direct*, *ſtationary*, and *retrograde*. See PLANET.

They are ſaid to be *direct*, when they appear to move forward, according to the Succeſſion of the Signs; and *retrograde*, when they go the contrary Way. See RETROGRADATION, and STATION.

DIRECT, in Matters of Genealogy, is underſtood of the principal Line, or the Line of Aſcendants, and Deſcendants; in Contra-diſtinction to the Collateral-Line. See LINE.

Thus the Houſe of *Bourbon* is ſaid to deſcend in a *direct* Line from St. *Louis*.

The Heirs in a *direct* Line always precede thoſe in the Collateral Lines. See COLLATERAL.

A very good Hiſtorian uſes the Phraſe DIRECT *Speech*, or *Harangue*, when he introduces any one ſpeaking, or haranguing of himſelf; And he calls it *Indirect*, when the Hiſtorian ſpeaks, and only rehearſes the chief Points of the Perſon mentioned.

DIRECT { *Erect* / *Eaſt* / *Weſt* } *Dials* are thoſe whoſe Planes lye directly open to the Eaſt, or Weſt-Points of the Heavens, or parallel to the Meridian of the Place. See DIAL.

DIRECT *South*, or *North* { *Inclining* / *Reclining* } *Dials*. See DIAL.

DIRECT *Sphere*. See RIGHT *Sphere*.

DIRECTION, in Aſtronomy, the Motion, and other Phænomena of a Planet, when *direct*. See STATION, and RETROGRADATION.

DIRECTION, in Aſtrology, is a Kind of *Calculus*, whereby they pretend to find the Time wherein any notable Accident ſhall befal the Perſon whoſe Horoſcope is drawn. See HOROSCOPE.

For Inſtance, having eſtabliſh'd the Sun, Moon, or Aſcendant, as Maſters, or Significators of Life; and Mars, or Saturn, as Promiſers, or Portenders of Death; *Direction* is a Calculation of the Time wherein the Significator ſhall meet the Portender.

The Significator they likewiſe call *Aphetes*, or Giver of Life; and the Promiſer, *Anereteſ*, *Promiſſor*, or Giver of Death.

They work the *Directions* of all the principal Points of the Heavens, and Stars, as the Aſcendant, Mid-heaven, Sun, Moon, and Part of Fortune. The like is done for the Planets, and fix'd Stars, but all differently, according to the different Authors.

DIRECTION, or *Line of Direction*, in Mechanicks, is particularly uſed for a Line paſſing from the Centre of the Earth thro' the Centre of Gravity of a Body, and the Support or *Fulcrum* that bears it. A Man muſt neceſſary fall down as ſoon as the Centre of his Gravity is out of the *Line of Direction*. See CENTRE, &c.

DIRECTION *of the Load-ſtone*, that Property whereby the Magnet always preſents one of its Sides towards one of the Poles of the World, and the oppoſite Side to the other Pole. See MAGNET, and POLE.

The Attractive Property of the Magnet was ſhewn long before its *Directive*; and the *Directive* long before the Inclinatory. See NEEDLE, COMPASS, &c.

DIRECTION *Magnetical*, is alſo uſed in the general for the Tendency, or Turning of the Earth, and all Magnetical Bodies to certain Points. See MAGNET, and MAGNETISM.

The Situation of our Earth, we know, is ſuch, that its Axis is in the Axis of the Univerſe; and therefore its Poles, and Cardinal Points, exactly correſpond to thoſe thereof. This Situation ſome account for hence, that it is the moſt commodious with regard to the Aſpects, and Influences of the heavenly Bodies, and renders it the fitteſt Habitation for Man. Others hold this Poſition of the Earth an Effect of a Magnetic Virtue; and ſuppoſe a Celeſtial Pole, endued with a like Magnetic Virtue; which extending as far as our Earth, draws the correſpondent Part thereof, the Pole, towards it ſelf. See EARTH, and POLE.

Line of DIRECTION, in Mechanicks, that wherein a Body moves, or endeavours to proceed. See LINE.

Angle of DIRECTION, in Mechanicks, is that comprehended between the Lines of *Direction* of two conſpiring Powers. See ANGLE.

DIRECTLY. In Geometry, we ſay, two Lines lie *directly* againſt each other, when they are Parts of the ſame right Line.

In Mechanicks, a Body is ſaid to ſtrike, or impinge *directly* againſt another, if it ſtrike in a right Line perpendicular to the Point of Contact.

A Sphere, particularly, ſtrikes *directly* againſt another, when the Line of *Direction* paſſes through both their Centres. See PERCUSSION.

DIRECTOR *Penis*, in Anatomy, a Muſcle of the Penis, call'd more uſually *Erector*. See ERECTOR.

DIRIGENT, a Term in Geometry, expreſſing the Line of Motion, along which the deſcribent Line, or Surface is carried in the *Geneſis* of any Plane, or ſolid Figure. See GENESIS.

Thus, if the Line AB (*Tab. Geometry Fig.* 33.) move parallel to it ſelf, and along the Line AC, ſo that the Point A always keeps in the Line AC, a *Parallelogram*, as ABCD, will be form'd, of which the Side AB is the Deſcribent, and the Line AC the *Dirigent*: So alſo, if the Surface ABCD be ſuppoſed to be carried along the Line CE, in a Poſition always parallel to it ſelf in its firſt Situation, the Solid ADFH will be form'd, where the Surface AD is the Deſcribent, and the Line CE is the *Dirigent*.

DIS, a Particle inſeparable from divers Words; the Effect whereof is, either to give them a Signification contrary to what the ſimple Words had; As in *Diſgrace*, *Diſparity*, *Diſproportion*, &c. Or to intimate a Separation, Detachment, Diſtribution, &c. as in *diſcerning*, *diſcourſing*, *diſtracting*, *diſpoſing*, &c.

DISABILITY, in Law, is when a Man is *diſabled*, i. e. made incapable to inherit, or take the Benefit, which otherwiſe he might do; which may happen four Ways, *viz.* by the Act of the Anceſtor; by the Act of the Party; by the Act of Law; and by the Act of God.

DISABILITY *by the Act of the Anceſtor* is, if a Man be attainted of Treaſon, or Felony; by this Attainder his Blood is corrupted, and thereby himſelf and his Children are *diſabled* to inherit.

DISABILITY *by the Act of the Party* himſelf, as if one Man make a Feoffment to another, who then is ſole, upon Condition, that he ſhall enfeoff a Third before N, and when ſuch Feoffment is made, the Feoffee takes a Wife; he has by that *diſabled* himſelf to perform the Condition, according to the Truſt in him repoſed, and therefore the Feoffer may enter, and out him. Alſo, if a Man be excommunicated, he cannot, during that Time, ſue any Action, but ſhall be thereby *diſabled*, and ſo in other Caſes.

DISABILITY *in Act of Law*, is properly, when a Man by the ſole Act of Law is *diſabled*; Thus is an Alien born; and therefore, if a Man born out of the King's Ligeance, will ſue an Action, the Tenant, or Defendant, may ſay, he was born in ſuch a Country out of the King's Ligeance, and demand Judgment, if he be anſwered; for the Law is our Birth-Right, to which an Alien is a Stranger, and therefore *diſabled* from taking any Benefit thereby.

DISABILITY *by the Act of God*, as when the Party is *Non Compos Mentis*, or, *Non ſanæ Memoriæ*, which ſo *diſables* him, that in all Caſes, where he gives, or paſſes any Thing, or Eſtate out of him, after his Death it may be diſannull'd, and voided.

DISC, DISK, or *Diſcus*, in Antiquity, a Kind of round *Quoit*, or Palet of Stone, or Metal, about a Foot over, uſed by the Ancients in their Exerciſes. See EXERCISE.

The *Diſcus* of the Ancients was flat and round, reſembling the apparent Figure of the Sun.

The

The Exercise of the *Discus* was one of those practised in the Solemnities of their public Games: It consisted in pitching, or throwing a *Discus* either upward, or straight forward; and he who threw it highest, or furthest, bore away the Prize.

Those who practis'd at this Game, were call'd *Discoboli*, i. e. Throwers of the *Discus*.

Hyacinth, a Favourite of *Apollo*, playing at the *Discus* with that God, was kill'd by a Blow of *Apollo*'s *Discus*, which his Rival *Zephyrus* diverted from its Course, and cast on the Boy's Head.

The *Discus* was thrown by means of a little Cord made of Hair, as appears from *Claudian* Lib. II. in *Eutrop. Carm.* 20. v. 359. *& seq.* *Ovid* describes this Sport *Metam.* Lib. X. v. 175. The *Romans* learnt the Game of the *Discus* of the *Greeks*, and practis'd it among themselves.

Dempster, *Parallip. in Rosini Antiq. Rom.* L. V. C. I. and *Pet. Faber. Agonisticon* L. II. C. I. treat of the Diversion of the *Discus*.

DISC, DISK, or *Discus*, in Astronomy, the Body, or Face of the Sun, or Moon; such as it appears to us. See SUN, *&c.*

In a total Eclipse of either of those Luminaries, the whole *Disk* is obscured, or darken'd; In a partial Eclipse, only Part of them. See ECLIPSE.

Half the Moon's *Disk* was immerged in the Shadow of the Earth in such an Eclipse.

The *Disc* is conceiv'd to be divided into twelve equal Parts, call'd *Digits*; by means whereof it is, that the Magnitude of an Eclipse is measur'd, or estimated. Such an Eclipse was so many Digits, or Parts of the Sun, or Moon's *Disk*. Mercury and Venus are sometimes seen in the Sun's *Disk*, transiting the Sun's *Disk*. See TRANSIT.

DISC, in Opticks, the Magnitude of Telescope Glasses; or the Width of their Apertures, whatever their Figure be, whether Plain, Convex, Menisicus, &c.

DISC, *Discus*, in Botany, is applied to the central, or middle Part of radiated Flowers; as being round and plain like a Quoit. See DISCOUS *Flower*.

This is sometimes also call'd the *Pelvis*, or *Bason*.

The *Disc* is composed of several Fleurons perpendicularly placed.

DISC, in the *Greek* Liturgy, is the same Thing with the *Patena* in the *Latin*.

In the *Greek* Church the consecrated Bread is laid on a *Discus*, as in the *Latin* Church it is on a *Patina*. The *Discus* only differs from the *Patina*, in that it is bigger, and deeper; as resembling a Plate, which was the proper Signification of the Word *Discus* among the Ancients.

DISCENT. See DESCENT.

DISCERNING, an Act of the Mind whereby it distinguishes between Idea's. See IDEA.

On this Faculty of *Discerning*, depends the Evidence and Certainty of several, even general Propositions, which pass for innate Truths; and which in Reality flow from this clear *discerning* Faculty of the Mind, whereby it perceives two Idea's to be the same, or different.

In being able nicely to distinguish one Thing from another, where there is the least Difference, consists in great Measure the Exactness of Judgment, and Clearness of Reason, which is to be observ'd in one Man above another; which is quite opposite to Wit, which consists most in the Assemblage of Idea's, and putting those together with Quickness and Variety, which have the least Resemblance to form agreeable Visions: whereas Judgment separates carefully those Idea's, wherein can be found the least Difference, to prevent Error, and Delusion. To the well-distinguishing our Idea's, it chiefly contributes, that they be clear, and determinate; and when they are so, there will not arise any Confusion, or Mistake about them, tho' the Senses should convey them from the same Object differently on different Occasions. See JUDGMENT.

DISCIPLINE, primarily signifies Instruction and Government; But is figuratively applied to a stated Method of living, according to the Rules of some Profession.

Thus we say the *Military Discipline*, the *Ecclesiastic*, or *Church Discipline*, the *Regular*, or *Monastic Discipline*, *&c.*

We don't say *Civil Discipline*, but instead thereof, *Policy*. See POLICY.

DISCIPLINE, is also used in a peculiar Sense, for the Chastisement, or bodily Punishment inflicted on a Religious, who has been caught delinquent; Or even for that they voluntarily undergo, or inflict on themselves by way of Mortification. See PENANCE.

Among all the Austerities practised by the ancient Monks and Solitaries, *Dupin* observes, there is no mention made of *Discipline*: In Effect, it does not appear to have been in Use in Antiquity, unless to punish the Monks, who had been taken tripping.

'Tis commonly said to be St. *Dominic*, and *Peter Damian*, who first introduced the Use of *Discipline*: But *Fa. Mabillon* notes, that *Guy*, Abbot of *Pomposia*, and others, had practised it before them. 'Tis pretty certain, the Practice was first establish'd in the eleventh Century, with Design to redeem the Penances the Canons impos'd on divers Offences; and at length, they came not only to redeem for themselves, but also for others. See *Fa. Mabillon*.

DISCIPLINE, is also frequently used for the Instrument, wherewith a Monk chastises, or mortifies himself; which is usually made of Ropes, knotted Hair, or twisted Parchment. St. *Jerom* is painted with *Disciplines* of Iron Chains, with Spur Rowels, *&c.*

DISCLAIMER, in Law, a Plea, containing an express Denial, renouncing, or disclaiming of a Thing alledged: As if the Tenant sue a Replevin upon a Distress taken by the Lord, and the Lord avow, saying, that he holds of him as his Lord, and that he destrained for Rent not pay'd, or Service not perform'd; then the Tenant denying to hold of such Lord, is said to *disclaim*: And the Lord proving the Tenant to hold of him, the Tenant loses his Land.

Also, a Man denying himself to be of the Blood, or Kindred of another in his Plea, is said to *disclaim* his Blood. If a Man arraign'd of Felony, *disclaim* Goods; being clear'd, he loses 'em.

DISCONTINUANCE, an Interruption, Intermission, or Cessation of the Course of a Thing: As, *Discontinuance of Possession*; *of a Plea*; *Process*, &c.

The Effect of a *Discontinuance of Possession*, is this, that a Man may not enter on his own Land, or Tenement alienated, whatever his Right be to it, of himself, or by his own Authority; but must bring his Writ, and seek to recover Possession by Law. As if a Man alien the Lands he holdeth in Right of his Wife; Or if a Tenant in Tail make any Feoffment, or Lease for Life not warranted by the *Stat.* 32. *Hen.* VIII. by Fine, or Livery of Seisin; Such Alienations are call'd *Discontinuances*. See POSSESSION.

The Effect of *Discontinuance of Plea*, is, that the Opportunity of Prosecution is lost, and not recoverable, but by beginning a new Suit. For to be *discontinued*, and to be put off without a Day, are the same Thing; and nothing less than to be finally dismiss'd the Court.

If a Justice-Seat be *discontinued* by the not coming of the Justices, the King commonly renews the same by his Writ, *&c.* *Crompton Jurisd.* See PLEA.

DISCORD, in Music, the Relation of two Sounds which are always, and of themselves, disagreeable, whether applied in Succession, or Consonance. See SOUND.

If two simple Sounds are in such a Relation of Tune, that is, have such a Difference of Tune, as that being sounded together, they make a Mixture, or compound Sound, which the Ear receives with Displeasure, it is call'd a *Discord*; As, on the contrary, if it receive it with Pleasure, it is call'd a *Concord*: And whatever two Sounds make an agreeable, or disagreeable Compound, they will have the same Effects respectively, if they be applied in Succession. See TUNE, CONCORD.

As Concords are denominated *Harmonical Intervals*; so may *Discords* be denominated *Unharmonical Intervals*. See INTERVAL.

Discords are distinguish'd into *Concinnous*, and *Inconcinnous Intervals*.

The *Concinnous*, by the Ancients call'd *Emmeli*, are such as are apt, or fit for Music, next to, and in Combination with Concords. These are Relations, which in themselves are neither very agreeable, nor disagreeable; and have only a good Effect in Music by their Opposition, as they heighten, and illustrate the more natural and essential Principles of the Pleasure we seek for; or, as by their Mixture, and Combination with them, they produce a Variety necessary to our being better pleas'd.

Notwithstanding this they are still call'd *Discords*; as the Bitterness of some Things may help to set off the Sweetness of others, and yet still be bitter.

The *Inconcinnous Discords*, by the Ancients call'd *Ecmeli*, are such as are never chosen in Music; as having too great a Harshness in them: Tho' even the greatest *Discord* is not without its Use. See CONCINNOUS, *&c.*

The Essential Principles of Harmony, Harmonical Intervals, or Concords, are but few, in Number only eight; the indefinite Number of other *Ratio's* are all *Discords*. Hence Mr. *Malcolm* shews the Necessity of taking some of the less untoward of these *Discords* into the System of Music: In order to this, he considers the Effect of having none but harmonical Intervals in the System of Music.

1. With respect to a single Voice; If that should move always from one Degree of Tune to another, so as every Note, or Sound to the next were in the *Ratio* of some Concord; the Variety, which is Life of Music, would soon be exhausted,

ſted. For to move by no other, than Harmonical Intervals, would not only want Variety, and ſo weary us with a tedious Repetition of the ſame Things, but the very Perfection of ſuch Relations of Sounds would cloy the Ear in the ſame Manner as ſweet and luſcious Things do the Taſte, which for that reaſon are artfully ſeaſon'd with the Mixture of Sower and Bitter. See DEGREES.

2. With reſpect to Muſic in Parts, *i. e.* when two, or more Voices joyn in Conſonance, the general Rule is, that the ſucceſſive Sounds of each be ſo order'd, that the ſeveral Voices ſhall be all Concords. Now there ought to be a Variety in the Choice of thoſe ſucceſſive Concords, and alſo in the Method of their Succeſſions; all which depends on the Movement of the ſingle Parts. So that, if theſe could only move in an agreeable Manner by harmonical Diſtances, there are but a few different Ways wherein they could move from Concord to Concord; and hereby we ſhould loſe much of the Raviſhment of Sounds in Conſonance. As to this Part then, the Thing demanded is a Variety of Ways whereby each ſingle Voice, or more in Conſonance, may move agreeably in the ſucceſſive Sounds, ſo as to paſs from Concord to Concord, and meet at every Note in the ſame, or a different Concord, from what they ſtood in at the laſt Note.

In what Caſes, and for what Reaſons *Diſcords* are allow'd, the Rules of Compoſition muſt teach; But only joyning theſe two Conſiderations, *&c.* we ſee how imperfect Muſic would be without any other Intervals than Concords. See COMPOSITION.

Beſide the *Concinnous Diſcords* uſed deſignedly in Muſic; there are ſeveral other *Diſcord* Relations, which happen unavoidably, in a Kind of accidental, and indirect Manner. Thus in the Succeſſion of ſeveral Notes there are to be conſider'd not only the Relations of thoſe which ſucceed others immediately, but alſo of thoſe betwixt which other Notes intervene. Now the inmediate Succeſſion may be conducted ſo as to produce good Melody; yet among the diſtant Notes there may be very groſs *Diſcords*, that would not be tolerable in immediate Succeſſion, and far leſs in Conſonance. And ſuch *Diſcords* are actually contain'd in the Scale of Muſic. Thus, taking any one Species, *e. gr.* that with the greater Third, and marking the Degrees betwixt each Term and the next; and tho' the Progreſſion be melodious, as the Terms refer to one common Fundamental, yet there are ſeveral *Diſcords* among the mutual Relations of the Terms, *e. gr.* from 4th to 7th *g* is 32 : 45; and from 2d *g* to 6th *g*, is 27 : 40; and from 2d *g* to 4th is 27 : 32 all *Diſcords*.

The Species of Counterpoint, wherein there is a Mixture of *Diſcords*, is call'd *Figurative Counterpoint*; Of which there are two Kinds: That wherein the *Diſcords* are introduced occaſionally, to ſerve as Tranſitions from Concord to Concord; and that wherein the *Diſcord* bears a chief Part in the Harmony. See FIGURATIVE *Counterpoint*.

Upon the unaccented Parts of the Meaſure, *Diſcords* may tranſiently paſs without any Offence to the Ear: This is call'd *Suppoſition*, by reaſon the tranſient *Diſcord* ſuppoſes a Concord immediately following. See SUPPOSITION.

The *Harmony of Diſcords* is that wherein the *Diſcords* are made Uſe of as the ſolid and ſubſtantial Part of the Harmony. For by a proper Interpoſition of a *Diſcord*, the ſucceeding Concords receive an additional Luſtre. Thus the *Diſcords* are in Muſic what the ſtrong Shades are in Painting. See HARMONY.

The *Diſcords* are the 5th when joyn'd with the 6th; the 4th joyn'd with the 5th, the 9th is of its own Nature a *Diſcord*; ſo is the 7th.

The *Diſcords* are introduced into the Harmony with due Preparation, and muſt be ſucceeded by Concords; which is commonly call'd the *Reſolution of the Diſcord*. The *Diſcord* is prepar'd by ſubſiſting firſt in the Harmony in the Quality of a Concord; that is, the ſame Note which becomes the *Diſcord* is firſt a Concord to the Baſs-Note immediately preceding that to which it is a *Diſcord*.

The *Diſcord* is *reſolved* by being immediately ſucceeded by a Concord deſcending from it by the Diſtance only of greater 2d, or leſſer 2d.

Apple of DISCORD, *Pomum Diſcordiæ*, a Phraſe uſed to ſignify the Subject, or Occaſion of ſome Miſunderſtanding in a Society.

It is borrow'd from Mythology: The Poets feign, that at the Marriage of *Thetis* and *Peleus*, the Goddeſs of *Diſcord* threw a golden Apple whereon were wrote theſe Words, *To the Faireſt*, which immediately ſtirr'd up a Diſſention betwen *Juno*, *Pallas*, and *Venus*, each pretending a Title to the Apple.

DISCOVERY, in Dramatic Poetry, a Manner of Unravelling a Plot, or Fable, very frequent in Tragedies, Comedies, and Romances; wherein, by ſome unforeſeen Accident, a *Diſcovery* is made of the Name, Fortune, Quality, and other Circumſtances of a principal Perſon, before unknown. See UNRAVELLING, FABLE, *&c.*

A late Author defines the *Diſcovery* by a Change, which bringing us from Ignorance to Knowledge, produces either Love or Hatred in thoſe whom the Poet has a Deſign to make either happy, or miſerable. For a *Diſcovery* ſhould never be in vain, by leaving thoſe who thus *diſcover* one another in the ſame Sentiments they were in before: In Effect, thoſe *Diſcoveries*, which are immediately follow'd by a *Peripetia*, or Change of Fortune of ſome principal Character, whereon the Unravelling depends, are the moſt beautiful. See PERIPATIA.

One of the fineſt *Diſcoveries* ever brought upon the Stage, is that of *Oedipus* in *Socrates*; For the minute he finds himſelf the Son of that *Jocaſta*, who was then his Wife, he becomes of the moſt happy, the moſt miſerable of all Men.

There are three Sorts of *Diſcoveries*: The firſt by certain Marks in the Body, either natural, or accidental; Such is that of *Ulyſſes*, who having receiv'd a Wound in the Thigh by a Boar, before the *Trojan* War, is *diſcover'd* by the old Nurſe, upon waſhing his Legs after his Return home *incognito*.

The ſecond by Tokens; as the Caſket of Things, which the Prieſts found with *Ion* when he was expoſed, *diſcovers Creuſa*, whom he was a-going to kill, to be his Mother.

The third is made by Remembrance, that is, when the Sight, or Hearing of any Thing occaſions us to recollect our Misfortunes. Thus, when *Ulyſſes* heard *Domodocus* ſing his Actions at *Troy*, the Memory of them ſtruck him, and drew Tears from his Eyes, which *diſcover'd* him to *Alcinous*.

But the fineſt Sort is that, which ariſes from the Subject, or Incidents of the Fable; as that of *Oedipus* from his exceſſive Curioſity; and the Letter that *Iphigenia* ſent by *Pylades*. See FABLE.

DISCOUNT, in Commerce, a Sum deducted, or retain'd in Hand, upon paying a greater. It is much uſed among Mechanics, and Manufactures, who keep Workmen, Journymen, Labourers, *&c.* for the Sums advanced them before hand, which are *diſcounted* when the Payments are made in Courſe.

DISCOUNT, is particularly uſed for an Allowance made on a Bill of Exchange, or any other Debt not yet become due; to induce the Acceptor, or Debtor, to advance the Money. See EXCHANGE.

Diſcounts are alſo frequently made for the Payment of dubious, or bad Debts. See REBATE.

DISCOUNT is alſo us'd among Merchants when they buy Commodities on Truſt, with a Condition, that the Seller ſhall *diſcount* ſo much with him *per Cent.* for each Payment made before the Time expir'd. See PROMPT *Payment*.

The *Sieur de la Porte* diſtinguiſhes between theſe two Kinds of *Diſcount*: The firſt, or that upon Bills of Exchange, is reckon'd like the Exchange, at the Rate of ſo much *per Cent.* e. gr. at 2 *per Cent. Diſcount* on an hundred, there is only ninety eight Pound to pay: whereas that on Commodities, is not only laid on the hundred Pound, but on the hundred and *Diſcount* added together. So that *diſcounting* for Goods at 10 *per Cent.* there is only 8 abated on an hundred and eight, and not on the hundred. This laſt, he ſays, is the true *Diſcount*.

DISCOUNT, is alſo us'd for the Tare, or Waſte of any Commodity, Sum, *&c.* There are 12 Shillings *Diſcount* in this Bag.

The Cag of Oil ſent me from *Spain* leaks; there are fifty Pints *Diſcount*. See TARE, *&c.*

DISCOURSE, an Operation of the human Mind, whereby it paſſes, or procedes from one Thing to another; that is, from a known Thing to an unknown. See REASONING.

The School-men define it an Act of Cognition, whereby the Mind deduces one Thing from another: This it does, when in Conſequence of an Aſſent given to one Propoſition, is gives Aſſent to another; So that *Diſcourſe* conſiſts in a Dependancy of Aſſents; and ſuppoſes ſuch an Order betwen the Acts, that that belonging to the Conſequent ariſes from that belonging to the Antecedent. So that the Intellect is then ſaid, *diſcurrere*, to diſcourſe, when from an Aſſent to one, or more Propoſitions, it draws an Aſſent to another.

The Object of *Diſcourſe*, therefore, or that about which the Intellect is employ'd in *Diſcourſing*, is the Connexion of Extreams conſider'd with regard to ſome Third, or *Medium*: Thus, when it judges, that every reaſonable Animal is riſible, affirming, that there is a Connexion between Riſibility, and Rationality; and then finds, there is likewiſe a Connexion betwixt Man and reaſonable Animal; And afterwards gathering from the Connexion found between Riſible and Man, with Rational, that Man and Riſible have likewiſe a Connexion, as both are connected with Rational: it is ſaid to *diſcourſe*.

Hence it appears, that *Diſcourſe*, whereof Men uſe to value themſelves, does really betray the Infirmity of the human Underſtanding; as it denotes a Chain or Scale of ſeveral

ral ſucceſſive Acts of Cognition neceſſary to arrive at a Truth. So that there is no *Diſcourſe* in God, who underſtands all Things truly. See KNOWLEDGE.

DISCOUS *Flower*. Botaniſts reckon two Kinds of Plants with a *Diſcous Flower*: 1. Such as have the Flower compounded, and the Seed pappous, but the Leaves and Stalks not milky, when broken. 2. The *Corymbiferous* Plants, whoſe Flowers are compounded into a *Diſcous* Figure, but their Seeds are not pappous.

Of the former Kind, are the Flea-Banes, Ragweeds, Groundſels, *&c.* and of the latter, are Daiſies, Chamomile, Tanſy, Wormwood, *&c.*

DISCRETE, or *Disjunct Proportion*, is, when the *Ratio* between two Pairs of Numbers, or Quantities is the ſame, and yet there is not the ſame Proportion between all the four Numbers. See RATIO, and PROPORTION.

Thus if the Numbers 6 : 8 : : 3 : 4, are conſider'd, the *Ratio* between the firſt Pair, 6 and 8, is the ſame as that between 3 and 4, and therefore theſe Numbers are *Proportional*; but it is only *diſcretely*, or *disjunctly*, for 6 is not to 8, as 8 to 3; that is, the Proportion is broken off between 8 and 3, and is not continued all along, as it is in theſe following, which are call'd *Continual Proportionals*, viz. 3 : 6 : : 12 : 24.

DISCRETE *Quantity*, is ſuch, as is not continued, and joyn'd together. See QUANTITY.

Such is a Number, whoſe Parts being diſtinct Units, cannot be united into one *Continuum*; for in a *Continuum* there are no actual determinate Parts before Diviſion, but they are potentially infinite; wherefore it is uſually and truly ſaid, that Continued Quantity is diviſible in *Infinitum*. See CONTINUITY.

DISCRETIVE *Propoſitions*, are thoſe, where various Judgments are made, and denoted by the Particles *but*, *notwithſtanding*, or Words of the like Nature either expreſs'd, or underſtood. See PROPOSITION.

Thus, Fortune may deprive me of my Wealth, *but* not of my Virtue; They who croſs the Seas change their Climate, *but* not their Diſpoſition, are call'd *Diſcretive Propoſitions*.

DISCUS, among the Ancients, a Name which was given to a round Shield, conſecrated to the Memory of ſome famous *Hero*; and hung up in the Temples of their Gods, as a Trophy of ſome great Action. From the Figure of this *Diſcus*, or rather of that, which the *Greeks* and *Romans* uſed to divert themſelves with, eſpecially at their public Games, and which is a round Quoit of Braſs, comes the Word ſo much in Uſe among Aſtronomers, *viz.* the *Disk* of the Sun, or Moon. See DISC.

DISCUSSION, in Matters of Literature, ſignifies a clear Treating, or Handling of any Point, or Problem; where the Word imports a *Shaking off* the Difficulties with which it was embarraſs'd. In which Senſe we ſay, ſuch a Point was well *diſcuſs'd*, when it was well treated of, and clear'd up.

DISCUSSION, is alſo uſed in a Medicinal Senſe, for a Diſperſing the Matter of any Tumor, or Swelling in the Body.

In which Senſe the Surgeons define it an Evacuation of ſome thin Matter gather'd in any Part, by inſenſible Perſpiration. See DISCUTIENTS.

DISCUTIENTS, or DISCUSSIVES, in Medicine, are Remedies proper to open the Pores, and evacuate the redundant Humours of the Body, by inſenſible Perſpiration; or to diſcharge Flatulencies, Swellings, *&c.* by ſhaking, jumbling, *&c.*

Diſcutients are the ſame with what we otherwiſe call *Diaphoreticks*, and *Reſolvents*. See DIAPHORETICK, CARMINATIVE, *&c.*

DISDIAPASON, in Muſic, a compound Concord, deſcribed by *Fa. Parran* as Quadruple of 4 to 1, or of 8 to 2. See CONCORD.

The *Diſdiapaſon* is produced when the Voice goes from the firſt Tone to the 15th, and may be call'd a *Fifteenth*.

The Voice ordinarily does not go further than from its firſt Tone, to the *Diſdiapaſon*, i. e. it does not go beyond the Compaſs of a double Octave, for the *Diſdiapaſon* is an Octave doubled. See OCTAVE.

The Voice may ſometimes riſe ſeveral Tones above a *Diſdiapaſon*, but the Effort or Struggle diſfigures it, and makes it falſe.

The antient Scale, or Diagramma, only extended to a *Diſdiapaſon*. See DIAGRAMMA.

DISDIAPASON-*Diapente*, in Muſic, a Concord in a Sextuple *Ratio* of 1 to 6.

DISDIAPASON-*Diateſſaron*, a compound Concord in the Proportion of 16 to 3.

DISDIAPASON-*Diton*, a compound Conſonance in the Proportion of 10 to 2.

DISDIAPASON-*Semi-diton*, a compound Concord in the Proportion of 24 to 5.

DISEASE, in Medicine, that State of a living Body, wherein it is prevented the Exerciſe of any of its Functions, whether Vital, Natural, or Animal: Or, *Diſeaſe* is an Indiſpoſition contrary to Nature, whereby the Action of ſome Part is immediately injured. See FUNCTION.

An ingenious Author of a late *Latin* Treatiſe, *de Purgatione*, holds the Eſſence of a *Diſeaſe* to conſiſt in a Want of that *Equilibrium* between the ſolid, and fluid Parts, which is neceſſary to the Maintenance of Health: Others add, that all *Diſeaſes* ariſe either from too lax, or too ſtrict a Tenſion of the Fibres. See HEALTH.

Of all Animals, Man is ſubject to the moſt *Diſeaſes*; and of them, the ſtudious and ſpeculative are moſt expoſe dhereto. Other Animals have their *Diſeaſes*; but they are in ſmall Number: Nor are Plants without them; tho' their Maladies ſcarce exceed half a ſcore.

The Antients deified their *Diſeaſes*: *Voſſius de Idolol. Lib.* VIII. *C.* V.

Several Authors have given us very compendious Theories of *Diſeaſes*; reducing 'em all to ſome one general Diſaffection: Thus, *du Broue* deduces all the *Diſeaſes* of the human Frame from the *Scorbutus*; *Muſgrave* from the *Arthritis*; and Dr. *Woodward* from the *Bile*: Others imagine them the Effects of a *Pocky Virus*, which has lurk'd in the Seed ever ſince the Sin of *Adam*: *Helmont*, and *Serreinus* the *Dane*, take 'em to depend on ſome extraneous *Ferment*, form'd in, or out of us. Laſtly, it appearing from the Obſervations of *Pliny*, *Kircher*, *Langius*, and *Bononio*, that there are little Worms in feveriſh Blood, Puſtules, Carbo's, and the Itch; divers Phyſicians have took Occaſion to ſuſpect, that all the *Diſeaſes* ariſe from *Worms*. See WORMS, ITCH, *&c.*

A *Diſeaſe* is well deſcrib'd to be a deprav'd, and diſorderly State of the ſolid, and fluid Parts, whereby all, or ſome of the Functions either of the Body, or Mind, or both, are either aboliſh'd, or impair'd.

For ſome *Diſeaſes* only impair the Uſe of the Part, as the *Ophthalmia*, *Gout*, &c. Others deſtroy it entirely; as the *Gutta ſerena*, *Palſy*, &c. Some affect the whole Body, as the *Fever*, *Apoplexy*, *Epilepſy*, &c. Others only impair a Part, as the *Aſthma*, *Colic*, *Dropſy*, &c. Some only affect the Body, as the *Palſy*; Others diſturb the Mind, as *Melancholy*, *Delirium*, &c. Laſtly, others affect both the Body and Mind, as the *Mania*, *Phrenzy*, *Pains*, &c.

As the Actions, or Conditions of the Body, ſo alſo the *Diſeaſes*, or Defects thereof, may be reduced to three general Heads: *viz.* 1. *Diſeaſes of the Solid Parts*: 2. *Thoſe of the fluid Parts*: And 3. *Diſeaſes compounded* of both.

A Popular *Syllabus* of *Diſeaſes* may be given, as follows: The Solid Parts, *i. e.* the Bones and Fleſh may be diſorder'd five Ways: *viz.* Render'd turgid, by *Tumors*; Cut, with *Wounds*; Corroded by *Ulcers*, or *Caries's*; Removed out of their Places, as in *Hernia's*, *Deſcents*, and *Diſlocations*; Or *diſcontinued* by *Fractures*, and *Contuſions*.

Diſeaſes of the Fluids are either in the Maſs of the *Blood*, or the *Spirits*: Thoſe of the Blood are reducible to two Kinds; thoſe that thicken, and inſpiſſate, or which amounts to the ſame, retard its Motion; and thoſe which attenuate, and diſſolve, and of Conſequence accelerate it.

To this latter Kind belong *Fevers*, and feveriſh Affections alone: All the other *Diſeaſes* of the Blood belong to the former. See FEVER.

In too thick a State of the Blood, its Principles are too craſs, and its Molecules too big, whence a *Lentor*, lazy Motion, and even Stoppage, particularly in the ſinous Paſſages of the Glands: Hence *Obſtructions*, *Inflammations*, *Schirrhus's*, *Sarcoma's*, *Verrucæ*, *Puſtules*, *Oedemata*, *Impetigines*, and other *Tumors*, and *Congeſtions* both in the *Viſcera*, and *Habit* of the Body: And hence, again, *Drowſineſs*, *Melancholy*, *Hypochondriacal* Affections, *&c.* If this thick Blood be too much replete with ſharp acid Salts, it will deſtroy the Texture of the Parts, and break out in *Ulcers*, as in *Phthyſical*, *Scrophulous*, *Scorbutic*, and *Venereal* Diſeaſes, *Gangrenes*, *Carbo's*, *Cancers*, and other Eroſive Tumors, according to the Quality and Degree of Saltneſs and Acrimony. And from the ſame Source ariſe *Cephaalgia's*, *Cardialgia's*, *Colicks*, *Gouts*, *Rheumatiſms*, *Pleuriſies*, &c. which by abrading the ſolid Subſtance, frequently emaciate the Body.

The *Diſeaſes* of the Animal Spirits, ariſe either, 1. from an Intermiſſion, or Retardation of their Motion; or a Diminution of Quantity; or, 2. from a Diſorder in their Organiſm, or Quality.

To the firſt Claſs are reduced the *Catalepſis*, *Apoplexy*, *Coma*, *Carus*, *Palſy*, *Stupor*, *Tremor*, &c. To the ſecond, belong the *Mania*, *Phrenſy*, *Delirium*, *Fooliſhneſs*, *Melancholy*, *Vertigo*, *Spaſms*, *Epilepſy*, *Hyſteric* Affections, *Horror*, &c. Add, that as all *Diſeaſes* of the *Blood* ariſe from external Cauſes, *viz.* ſome one or more of the Non-Naturals, as Food, Air, Evacuation, *&c.* ſo thoſe of the *Spirits* generally proceed from Diſorders of the Blood.

Laſtly, the *Diſeaſes* of the Fluids, whether thoſe in the Blood, or Spirits, are ſeldom confin'd long thereto; but preſently come to diſturb, and impede ſome of the Functions affected to the ſolid Parts; and at laſt corrupt the Subſtance of the Solids themſelves. Hence *Compound Diſeaſes*; which are infinitely various.

But

But the Learned *Boerhaave* furniſhes us a much more accurate, and ſcientifical Diviſion of *Diſeaſes*.

Diseases *of the Solids*, he conſiders, either as of the ſimple, and *Similar* Parts; Or of the *Organical*.

I. *Similar Diſeaſes*, are, 1. Thoſe of the laſt, and ſmalleſt *Fibres*; which are reducible to too great *Tenſion*, and *Laxneſs*, too great *Strength*, or *Weakneſs*, and a *Solution of their Continuity*. See Fibre, *&c.*

2. Thoſe of the *Membranes*, which being only Aſſemblages of the Fibres juſt mention'd, are ſubject to the ſame Diſorders. See Membrane.

3. Thoſe of the laſt, and *ſmalleſt Canals*, which are formed of ſuch Membranes.

4. Of the *Membranes* compoſed of ſuch Canals.

5. Of *Canals* compoſed of ſuch Membranes, which are all the greater Veſſels of the Body.

6. Of the *ſolid Parts*, which are compoſed of Canals compreſs'd, and grown together, ſo as to be void of Humour to diſtend 'em; Or Canals growing into one conſiſtent Part, the Humour hardening together with the Veſſel that contain'd it.

Laſtly, Suppoſing theſe Parts all ſound, *Diſeaſes* may befal them with reſpect to their Structure, from a Vice, or vicious Application of the Matter of Nutrition. See Solid.

II. *Organical Diſeaſes*. An Organical Part conſiſting of the ſeveral ſimple Parts abovemention'd, and fitted to perform any Office by means of ſome Humour contain'd in it; may be conſider'd, either in it ſelf, as a ſolid Part, or with reſpect to the Humour it contains: In the firſt View, *Organical Diſeaſes* are reducible to four Claſſes.

1. *Diſorders* in the *Figure*, and the Circumſtances thereof, as Roughneſs, Solidity, Cavity, *&c.* To this belong the ἀναγόμωσις, when one Veſſel opens into another; the Διαπύησις, when a Rupture is made; and Διαιρέσις, when a Breach is occaſion'd by Corroſion; the ἐμφράξις, which is a total Obſtruction of the Cavity, by a viſcous, grumous Matter; the γενοχωρία, or Narrowneſs of the Paſſage; the θλίψις, or Compreſſion of the Sides of the Cavity; συμφύσις, when the Sides are quite cloſed up; and συνίζησις, when the Veſſel is ſo emptied, that the Sides falling together, the Cavity is loſt.

2. In the *Number*, where 'tis either deficient or redundant: But the Parts ſeldom err in this reſpect, ſo as to occaſion a *Diſeaſe*.

3. In *Magnitude*; to which belong *Nodes*, *Exoſtoſes*, and *Callus's*.

4. In the *Situation*, and *Connexion*; as when the *Ligaments* are too long, or too ſhort, when broke, or deprav'd; alſo *Diſtortions*, *Luxations*, *Subluxations*, *Herniæ*, or Ruptures in the Groin, Scrotum, Bladder; *Procidentiæ* of the Womb, Bladder, and Rectum; Diſorders of the Tendons, and Muſcles, particularly their flying out of their Places; the Relaxation, or Rupture of the Membranous Ligament that ſhould retain 'em.

Laſtly, there is a *Diſeaſe* common both to *Similar*, and *Organical* Parts, call'd *Solution of Continuity*.

Diseases *of the Fluids*, conſidering thoſe Fluids ſimply, and in themſelves, may be reduced to Diſorders in reſpect of Quantity, and Quality: But conſidering them as contain'd in Solids, they may err, too, in Place and Proportion.

As to the firſt, ſuch an Abundance of the Humours, as diſturbs the Animal Functions, is call'd a *Plethora*: *Diſeaſes* from the Defect of Humours, we ſcarce know of any.

As to the ſecond, ſuch Quality of the Humours, as diſturbs the Animal Functions, is call'd *Cacochymia*. Now, this is either in the Fluids conſider'd in themſelves, their own Parts, and Compoſition; Or conſider'd as they concur towards conſtituting ſome Part of the Body.

If the Morbid Quality be conſider'd in the Particles of the Humour, it muſt either conſiſt in an Augmentation of *Bulk*, whence the *Emphraxis*, *Atrophy*, *Symphyſis*, and *Synezeſis*; or in the Diminution thereof, as in the *Diapnoe*, and *Ceneangeia*: Or an Increaſe of *Solidity*, whence too great an *Attenuation*; or a Decay thereof, whence a *Lentor*, *Stagnation*, and *Coheſion*: Or in the *Figure*, as when of Spherical it becomes Angular, and conſequently, with reſpect to the Part 'tis applied to, ſharp; whence *Acrimonies*, both acid, alcaline, muriatic, ammoniac, ſaponaceous, vitriolic, *&c.* and *Oleoſities*: Or in *Rigidity*, and *Flexibility*: Or in *Elaſticity*: Or in *Coheſion*, and Diviſibility.

Again, all the Juices conſider'd together, the principal Diſorders they are ſubject to, are too great *Fluidity*, or Tenacity: too much *Velocity* in their Veſſels, or too little.

Laſtly, conſidering the Fluids as contain'd in the Solids, there ariſe divers *Diſeaſes* merely from their changing of Place; which may be reduced to two Claſſes, *viz.* the groſſer Humours *intruding* themſelves into the finer Canals; and the Humours *extravaſating*, or getting out among the ſolid Parts; whence *Inflammations*, *Aneuriſma's*, *Varices*, *Enchymoſes*, *Oedema's*, *Puſtules*, *Dropſy*, *ſpungeous Membranes* of the Head, Breaſt, Abdomen, and Uterus; and *Empkyſema's*.

Add, that the Humours collected, and ſtagnating among the Parts, grow *putrid*, *purulent*, *ichorous*, *eroſive*, and *ſharp*; and thus deſtroy the tender Stamina, or Solids; whence *Sinus's*, *Fiſtula's*, *Ulcers*, *Gangrenes*, *Sphacelus's*, *Cancers*, and the like.

Theſe are the prime Differences of the *Diſeaſes* of the Body; and from theſe ariſe moſt of the reſt: So that they may be regarded, not only as *Diſeaſes*, but as the Cauſes of *Diſeaſes*. *See each further explain'd under its reſpective Article in this Work.*

There is another Diviſion of *Diſeaſes*, in Uſe among Phyſicians, taken from certain external Accidents, which are common to a great many different *Diſeaſes*: which Diſtinction, too, has its Uſe; tho' they generally run it too far. *Diſeaſes*, then, are diſtinguiſh'd, 1. With reſpect to their *Cauſe*, into *Idiopathy*, *Sympathy*, *Protopathy*, *Deuteropathy*, *Hereditary*, *Connate*, and *Acquired*. 2. With reſpect to their *Subject*, into *Diſeaſes* of *old Age*, *Children*, *Adults*, *Men*, *Women*, *Maids*, *Pregnant*, *Parturient*, *Endemical*, *Epidemical*, &c. 3. With reſpect to *Duration*, into *moſt acute*, which terminate in four Days; *Acute*, in twenty; and *Chronical*, which are all thoſe of longer Continuance. 4. With reſpect to *Seaſons*, into *Vernal*, *Autumnal*, *Continued*, and *Intermitting*. 5. With reſpect to their *Effects*, into *Benign*, *Malignant*, *Curable*, *Incurable*, *Mortal*, and *Contagious*. And 6. With reſpect to their *State*, into *Beginning*, *Progreſs*, *State*, *Declenſion*, and *End*.

Diseases *of Plants*. Monſr. *Tournefort*, in an expreſs Diſſertation on this Subject, in the *Memoires de l'Academie des Sciences*, refers all the *Diſeaſes of Plants* to the following Cauſes:

1. The too great Abundance of the Nutritious Juice. 2. The Defect, or Want of this Juice. 3. Some ill Qualities it acquires. 4. Its unequal Diſtribution in different Parts of the Plant. And 5. External Accidents.

The *Diſeaſes* principally obſerved by our Gardeners, are, 1. *Barrenneſs*, when the Tree, tho' outwardly freſh and healthy, bears no Bloſſoms; or if it does, they fall; or if they ſet, the Fruit drops e're it come to Maturity. See Barrenness.

2. *Blaſting of the Buds*, occaſion'd by a Froſt happening when the Leaves and Bloſſoms are wet. By this means the Pores are ſhut, and the vital Juices ſuffocated; when, if the Sun break out on a ſudden, they turn yellow, with round fiery Specks growing on them; whence frequently procede Tumours like Warts, which rotting, grow full of Maggots. Mr. *Mortimer* adds, that the Want of Rain at Bloſſoming Time, often occaſions the Dropping off of the Bloſſoms for Want of Sap; he, therefore, recommends the watering 'em.

3. *Conſumption*, proceeding from a Want of Suſtenance, through the Failure of the nouriſhing Juices; or from Obſtructions of the Veins, and Roots; or ill Digeſtion, and Secretion of Humours, *&c.*

4. The *Moſs*; an Account of which, ſee under the Article Moss. See alſo Parasite.

5. The *Jaundice*, which, tho' it does not hinder the Tree from appearing ſound, yet when it begins to ſprout, the Leaves become of a whitiſh green, and as they grow bigger, turn yellow. It frequently ariſes from external Cauſes, as the Mildew; but chiefly from a ſtony, or chalky Soil, impregnated with an acid Salt.

6. *Mildew*, a Kind of Epidemical *Diſeaſe*, moſt frequent and fatal in the Spring Seaſon. It is properly a corroſive, and nipping Dew, proceeding from pent up Vapours now exhaled, and returned back on the tender opening Buds, which infects 'em by its Acrimony, and obſtructs the Circulation of the nutritive Juices. By which means the Leaves begin to fade, and wither, and both the Bloſſoms and Fruit are much prejudiced. See Mildew.

7. A *thick Fog*, or too abundant Dew, *Agricola* aſſures us, occaſions the ſame *Diſeaſe* as the Mildew, only in a leſs Degree.

8. *Falling of the Leaves*, which happens when the Trees ſprouting too ſoon, are either ſurprized by exceſſive Heat, or Cold.

9. *Uredo*, or *Scorching*, of which there are two Kinds; the firſt happening upon the Fall of a ſubtil Dew, or ſmall Rain, immediately followed by the piercing Beams of the Sun, which ſuddenly cloſes the Pores before dilated, and burns up the Leaves: The ſecond happening from the like Fervour in the internal Parts of the Tree, *viz.* in the Pith; occaſion'd by ſome inner Failing. *Agricola* imputes it to the Fault of the Gardeners, who in tranſplanting Trees, frequently cut off the leſſer Filaments, and Roots, as alſo the greater Roots, without covering the Wounds with Wax, or the like.

10. *Scurf*, or *Leproſy*, a *Diſeaſe* chiefly of the Bark, cauſed by a too great Dilatation of the Pores, whereby too much perſpirable Matter tranſuding it, hangs and hardens on the Bark, which by this means chaps, and cracks, and thus

a Sort

a Sort of Lepra is form'd, Perſpiration obſtructed, &c. Add, that this ſcurfy Skin proves a Harbour for Vermine, which live both on the Bark and Tree.

11. The *Worm*, a little Animal generated in the corrupted Subſtance of the Bark, Bloſſoms, Fruit-Leaves, Pith, and Roots. Mr. *Gentil* mentions another Kind, call'd *Cockchaffers*, which ſtick to the Roots of young tender Trees, and Bark, and kill them. There is a third Sort, call'd *Breezes*, or Gad-flies, which gnaw the Roots. The Worm is a very frequent *Diſeaſe*; whereby young hopeful Trees are all of a ſudden brought to languiſh, and decay.

12. *Rotten Roots*, occaſion'd chiefly by their being planted too deep. This *Diſeaſe* is incurable.

13. *Blights*. A particular Account whereof, ſee under Blight.

DISEMBOGUE. When a Ship paſſeth out of the Mouth of ſome Gulph, they call it *diſemboguing*: They ſay alſo of a River, that at ſuch a Place, or after it has run ſo many Leagues, it *diſembogues* it ſelf into the Sea.

DISFRANCHISE, the contrary to *Enfranchiſe*; ſignifying the taking away one's Freedom, or Privilege. See Enfranchise.

DISHERISON, an old Word of the ſame Import as *Diſinheriting*.

Our Lord the King, conſidering his own Damage, and Diſheriſon *of the Crown*, &c. *Stat.* 8. *Rich.* II. *Hen.* IV.

DISHERITOR, a Perſon who *diſinherits*, or puts another out of his Inheritance.

The Sheriff ſhall forthwith be puniſh'd as a Diſheritor *of our Lord the King, and his Crown.* Stat. 3. *Edu.* I.

DISJUNCT *Proportion*. See Discrete *Proportion*.

DISJUNCTIVE, ſomething that ſeparates, or *disjoyns*. Thus *Or* and *Neither* are call'd *Disjunctive Conjunctions*, which, in binding a Diſcourſe, do yet ſeparate the Parts thereof. See Conjunction.

Aut Cæſar, aut Nullus; Either *Cæſar*, or nothing. He neither advanced, nor gave back.

Disjunctive Conjunctions may alſo be call'd *Partitive*, *Diſtributive*, and *Alternative*.

Disjunctive *Propoſitions*, in Logic, are compound Propoſitions conſiſting of two Members, or Parts connected by a *Disjunctive Conjunction*. See Proposition.

The firſt Propoſition of a *Dilemma* is always a *Disjunctive Propoſition*:

You muſt either obey the King, or be a Rebel.
But you muſt not be a Rebel,
Therefore you muſt obey the King.

DISK. See Disc.

DISLOCATION, the putting a Bone out of Joint, by ſome Violence; uſually call'd by the Phyſicians, *Luxation*. See Luxation.

DISMEMBER'D, in Heraldry, is applied to Birds that have neither Feet, nor Legs: As alſo to Lions, and other Animals, whoſe Members are ſeparated.

DISMES, *Decimæ*, in our Law-Books, *Tiths*. See Tith.

DISMOUNTING, in the Military Art, the Act of *Unhorſing*.

Thus, to *diſmount* the Cavalry, is to make 'em a-light. They alſo ſay to *diſmount* the Canon, when they are thrown off the Carriages, and broken; Horſes are alſo *diſmounted* when they are render'd unfit for Service.

DISORIENTATED, a Term applied to a Thing that is turned from the Eaſt, or ſome other of the Cardinal Points. See Cardinal *Point*.

The Dials drawn on this Stone, do not go well, by reaſon it has been moved, and *diſorientated*: It no longer looks Eaſt and Weſt.

But the Word is moſt frequently us'd in a figurative Senſe, for the *Diſconcerting*, or putting a Man out of his Way, or Element. Speak of Law to a Phyſician, or of Phyſic to a Lawyer, and they will all be *diſorientated*.

An. Marvel uſes the Word *diſoccidentated*, inſtead of *diſorientated*.

Geneva had *diſoccidentated* our Geographer.

The Word is form'd of the privative Particle *de*, and *Oriens*, Eaſt.

DISPARAGEMENT, is properly uſed for the Matching an Heir, &c. in Marriage, below his, or her Degree, or Condition; or againſt the Rules of Decency.

The Word is a Compound of the privative Particle *Dis*, and *Par*, equal.

DISPATCH, a Letter on ſome Affair of State, or other Buſineſs of Importance, ſent, with Care and Expedition, by a Courier expreſs.

The Buſineſs of *Diſpatches* lies on the Secretaries of State, and their Clerks. The King gives Directions to his Miniſters abroad by *Diſpatches*.

The Word is alſo us'd for the Packet, or Mail containing ſuch Letters. *The Courier has deliver'd his* Diſpatches.

The *French*, during the Reign of the late *Louis* XIV. had a *Conſeil des Depeches*, Council of Diſpatches, held in the King's Preſence, at which the *Dauphin*, the Duke of *Orleans*, the Chancellour, and four Secretaries of State aſſiſted.

DISPAUPER. When any Perſon, by reaſon of his Poverty, (atteſted by his own Oath, of not being worth 5 Pound, his Debts being pay'd) is admitted to ſue *in Forma Pauperis*; If afterwards, before the Suit be ended, the ſame Party have any Land, or perſonal Eſtate fall to him; or that the Court, wherein his Suit is depending, thinks fit, for that, or other reaſon, to take away the Privilege from him; he is then ſaid to be *diſpauper'd*. See Forma *Pauperis*.

DISPENSARY, or, as ſome write it, DISPENSATORY, a Name given to divers Collections of compound Medicines, wherein are ſpecified the Ingredients, Proportions, and the chief Circumſtances of the Preparation and Mixture; the ſame with what we otherwiſe call a *Pharmacopœia*, or *Antidotary*.

Such are the *Diſpenſaries* of *Meſue*, *Cordus*, the College of Phyſicians at *London*, *Quincy*, &c.

The Apothecaries, in and about *London*, are oblig'd to make up their compound Medicines according to the Formules preſcrib'd in the *College Diſpenſary*; and are enjoyn'd to keep always ready in their Shops all the Medicines there enumerated.

Dispensary, is likewiſe uſed for a Magazin, or Office of Medicines kept ready to be *diſpenſed* at the prime Coſt of the Ingredients, for the Benefit of the ſick Poor.

Of which Kind we have two or three in *London* maintain'd by the College of Phyſicians. One at the College it ſelf, firſt begun in the Year 1696; another in St. *Peter*'s Alley, *Cornhill*; and a third in St. *Martin*'s Lane: where the beſt Medicines are ſold for their intrinſic Value, and Patients are adviſed every Day, but Sunday, at one of the three Places. See College.

DISPENSATION, in Law, &c. a Permiſſion to do ſomething contrary to the ſtanding Laws: Or a Relaxation, or Suſpenſion of a Law on ſome juſt Occaſion.

Some confound *Diſpenſation* with *Equity*; but they are very different Things: For Equity is only the Correction, or Modification of a Law, which is too general; But a *Diſpenſation* ſuſpends the Obligation of the Law it ſelf, and can, therefore, be only given by the Legiſlative Power. See Equity.

The King grants *Diſpenſations* of Age to ſome Officers, to be admitted before the Legal Age.

But the greateſt Dealer in *Diſpenſations* is the Pope, who claims the Office *Jure divino*, and extends it to every Thing. Indeed, the more ſober of the *Romaniſts* themſelves deny, that he can give a *Diſpenſation* for a Thing contrary either to the divine Law, or the Law of Nature; and confine him to what is contrary to poſitive Laws, as to Things relating to Faſts, Marriages, holding ſeveral Benefices, &c. And even in theſe Things they put Bounds: Thus, ſay they, a *Diſpenſation* in the firſt Degree of Affinity, as of Father and Daughter, Brother and Siſter, would be abuſive, and null. But 'tis certain, the Papal See does not apprehend it ſelf under any ſuch ſevere Reſtrictions.

The Right of giving *Diſpenſations*, they thus argue: 'Tis certain, the Church has a Power to make Laws; A Power, which the Apoſtles themſelves exerciſed, and which their Succeſſors have continued to exerciſe after them. Whoever can make a Law, can annul it; and much more can he *diſpenſe* with it in certain Caſes: The Church, then, may *diſpenſe* with the Laws it ſelf has made; And we find it to have done accordingly, in all Ages. In the firſt Times, it left it to the Judgment of the Biſhops to *diſpenſe* with the Length of the Penance enjoyn'd by the Canons; And the IV Council of *Carthage* allows of the Tranſlation of Biſhops, and Prieſts, when the Churches Occaſion ſhould require it.

The Author of a Treatiſe of *Diſpenſations*, printed in 1713, reduces all the Cauſes of *Diſpenſation* to the Neceſſity and public Service of the Church, and not to the private Advantages of the Perſons who ſollicit the *Diſpenſation*; otherwiſe, Cauſes, he obſerves, will never be wanting.

The ſame Author maintains, that *Diſpenſations* ſhould be diſpatch'd *gratis*: *Marcellus* II. he obſerves, was reſolv'd to have it ſo. That Pope uſed to ſay, that if *Diſpenſations* were juſt, they ſhould be granted *gratis*; and if unjuſt, they were to be refuſed. And Pope *Pius* V. refuſed a large Sum of Money offer'd by a *Spaniſh* Lord for a *Diſpenſation*, which that Pope granted, becauſe he judg'd it juſt. The 9 Prelates, whom *Paul* III. conſulted for the Reformation of the Court of *Rome*, recommended the ſame Thing; Except for *Diſpenſations* of Marriages contracted malgre ſome known Impediment.

Dispensation, in Pharmacy, the Diſpoſition, and Arrangement of ſeveral Medicines, either ſimple or compound,

all weigh'd in their proper Doſes, or Quantities; in order to be employ'd in the making a Compoſition.

DISPERSION, in Dioptricks. *Point of Diſperſion* is a Point from which refracted Rays begin to diverge, when their Refraction renders them divergent. See DIVERGENT.

It is call'd *Point of Diſperſion*, in Oppoſition to the *Point of Concourſe*, which is the Point wherein converging Rays concur after Refraction. See CONCOURSE.

But the latter is more uſually call'd *Focus*, and the former *Virtual Focus*. See VIRTUAL, and FOCUS.

DISPLAYED, in Heraldry, is underſtood of the Poſition of an Eagle, or other Bird, when it is erect, with its Wings expanded, or ſpread forth. See EAGLE.

DISPONDEE, in the *Greek*, and *Latin* Poetry, a double Spondee; or a Foot conſiſting of four long Syllables; as *Juramentum*, *Mœcenates*. See SPONDEE.

DISPOSITION, in Rhetoric, is defined by *Cicero*, the Diſtribution of the Things, or Arguments invented, or found out, into a proper Order; Or a due placing, or ranging the ſeveral Parts of a Speech, or Diſcourſe. See DISTRIBUTION.

The *Diſpoſition* is one of the grand Parts, or Diviſions of Rhetoric. See RHETORIC.

The *Diſpoſition* is of the ſame Neceſſity in Oratory, as the marſhalling an Army, in order to a Battel; or a beautiful Compoſition in Architecture, Painting, *&c.* *Horace* enjoyns it expreſsly in Poetry. *Singula quæque Locum tenant ſortita decenter.*

The *Diſpoſition*, then, is the Order, or Arrangement of the Parts of an Oration: which Parts are uſually reckon'd four, *viz.* the *Exordium*, or Beginning; the *Narration*; the *Confirmation*; and the *Peroration*, or *Concluſion*.

Tho' ſome make 'em ſix: *viz.* the *Exordium*, *Diviſion*, *Narration*, *Confirmation*, *Confutation*, and *Peroration*; as indicated in that Popular Verſe,

Exorſus, narro, ſeco, firmo, refuto, peroro.

But the Diviſion is more naturally referr'd to the Exordium; and the Confutation to the Confirmation.

The *Diſpoſition* is either *Natural*, or *Artificial*. *Natural*, is the Order the Parts are above rehearſed in. *Artificial*, is, when for ſome particular reaſon we recede from the Order of Nature. See each Part under its proper Article, EXORDIUM, *&c.*

DISPOSITION, in Architecture, is the juſt placing of all the ſeveral Parts of an Edifice, according to their proper Order.

DISPROPORTION, a Term of Relation, implying a Want of Proportion, or Suitableneſs. See PROPORTION, DEFORMITY, *&c.*

DISPUTE, or DISPUTATION, in the Schools, *&c.* a Conteſt, or Combat, either by Word or Writing, on ſome Point of Learning, or Religion, for a Degree, Prize, Exerciſe, or even for the mere ſake of Truth, or Advantage of a Party, or the Honour of a Triumph.

The *Port Royaliſts* take Occaſion to obſerve, that nothing gives ſo many different Lights, and Openings for diſcovering the Truth, as *Diſputing*. The Movements of a Mind employ'd ſingly in the Examination of any Subject, are uſually too cool, and languid: It needs a certain Degree of Heat, to wake its Idea's. Now, by the Oppoſitions in a Diſpute, we come to find wherein the Difficulty lies, and the *Impetus* the Mind has acquired, enables it to ſurmount it.

DISQUISITION, an Enquiry into the Nature, Kinds, and Circumſtances of any Problem, Queſtion, or Topick; in order to gain a right Notion of it, and to diſcourſe clearly about it.

DISSECTION, in Anatomy, the Operation of cutting, and dividing the Parts of an Animal Body, with a Knife, Sciſſers, *&c.* in order to ſee, and conſider each of them a-part. See ANATOMY.

The Ancients made *Diſſections* of living Men; as we read of *Herophilus*, and *Eriſiſtratus*, and in our own Times, of *Carpus*, and *Veſalius*.

Yet, *le Gendre* obſerves, that the *Diſſection* of a human Body, even dead, was held a Sacrilege till the Time of *Francis* I; And the ſame Author aſſures us, he has ſeen a Conſultation held by the Divines of *Salamanca*, at the Requeſt of *Charles* V. to ſettle, whether or no it were lawful, in Point of Conſcience, to *diſſect* a human Body, in order to learn the Structure thereof.

DISSEISIN, in Law, an unlawful Diſpoſſeſſing a Man of his Land, Tenement, or other immoveable, and incorporeal Right.

Hence, the Aſſiſes are call'd *Writs of Diſſeiſin*, which lie againſt *Diſſeiſors* in any Caſe: Whereof ſome are term'd *little Writs of Diſſeiſin*, as being Vicontial, that is, ſuable before the Sheriff in the County Court, becauſe determinable by him without Aſſiſe. See ASSISE.

Diſſeiſin is of three Sorts; viz. *Simple Diſſeiſin*, committed by Day, without Force, and Arms: and *Diſſeiſin by Force*; for which ſee DEFORCEOR; and FRESH *Diſſeiſin*. See alſo RE-DISSEISIN, and POST-DISSEISIN. *Wrongful Diſſeiſin* is no Deſcent in Law.

DISSEISOR, he who *diſſeiſeth*, or puts another out of his Land: As *Diſſeiſee*, is he who is ſo put out.

For the Difference between *Diſſeiſor*, and Intruder, and Deforceor, ſee INTRUDER, and DEFORCEOR.

DISSEMINATE *Vaccum*. See VACUUM *Diſſeminatum*.

DISSENTERS, a general Denomination, of equal Import with *Non-conformiſts*.

It expreſſes certain Sects, or Parties in *England*, who in Matters of Religion, Church Diſcipline, and Ceremonies, *diſſent* from, or diſagree with the Church of *England*, and have a Toleration by Law for the ſame. See TOLERATION.

Such, particularly, are the *Presbyterians*, *Independents*, *Anabaptiſts*, and *Quakers*. See PRESBYTERIANS, INDEPENDENTS, *&c.*

DISSIMILAR *Leaves*, are the two firſt Leaves of any Plant at its firſt ſhooting out of the Ground. See LEAVES.

They are thus call'd, becauſe they uſually are of different Form from the common Leaves of the grown Plant.

Theſe Dr. *Grew* obſerves to be nothing but the very Lobes of the Seed expanded, and thus advanced. See GERMINATION.

Their Uſe is for Protection of the Plume; which, being young, and tender, is thus guarded on each Side, and has alſo ſome Rain, and Dew gradually convey'd down to it by this means. See PLUMULA.

DISSIMILAR, in Anatomy. Authors divide the Parts of the Body into *Similar*, and *Diſſimilar*.

Diſſimilar Parts, by ſome call'd *Compound*, and *Organical*, are ſuch as may be divided into various Parts of different Structure, *&c.* Thus the Hand is diviſible into Veins, Muſcles, Bones, *&c.* whoſe Diviſions are neither of the ſame Nature, nor Denomination. See SIMILAR.

DISSIMILITUDE, in Geometry, *&c.* See SIMILITUDE.

DISSIMILITUDE, or, *a Diſſimili*, in Rhetoric, *&c.* an Argument, wherein, from *diſſimilar*, or unlike Things, other *diſſimilars* are deduced.

Thus *Cicero*, *Si barbarorum eſt in diem vivere*; *Noſtra Concilia ſempiternum tempus ſpectare debent*. *Catullus* furniſhes a very beautiful Argument from *Diſſimilitude*:

Soles occidere & redire poſſunt,
Nobis cum ſemel occidit brevis Lux,
Nox eſt perpetua una dormienda.

DISSIPATION, in Phyſicks, an inſenſible Loſs, or Conſumption of the minute Parts of a Body; or, properly, the Flux whereby they fly off, and are loſt. See EFFLUVIA.

Thus, we don't ſay *Diſſipation*, but *Loſs* of Blood, in ſpeaking of the Blood loſt at a Wound, or in any other ſenſible Manner: On the contrary, we ſay with Mr. *Lemery*, the *Diſſipation* of the Spirits is in greater Abundance than that of the ſolid Parts, conſequently the Reparation thereof muſt be more frequent and copious.

DISSOLVENT, ſomething that *diſſolves*, i. e. divides, and reduces a Body into its ſmalleſt Parts. See DISSOLUTION.

Thus, *Aqua Regia* is the *Diſſolvent* of Gold; *Aqua fortis* of Silver, and other Metals; Water, of Salts and Gums; Spirit of Wine, of Reſins; Spirit of Vinegar, of Pearls, Corals, *&c.*

Sea-Salt is found the proper *Diſſolvent* of Gold: This, in almoſt any Form, whether as a Fluid, or a Solid, or a Spirit, does the Buſineſs: Accordingly, this is the *Baſis*, or fundamental Ingredient of *Aqua Regia*. See GOLD, and *Aqua* REGIA.

So Nitre is the proper *Diſſolvent* of Silver; and has that Effect, in whatever Form applied: and accordingly is the *Baſis* of *Aqua fortis*. See SILVER, and *Aqua* FORTIS.

Spirit of Nitre added to that of Sea-Salt, makes it *diſſolve* Gold the better: But Spirit of Sea-Salt added to Spirit of Nitre, diſables it from having any Effect on Silver.

Mr. *Homberg*, however, in the Memoirs of the *French* Academy, furniſhes an Inſtance of a *Diſſolution* of Silver, made by the *Diſſolvent* of Gold. An *Aqua Regia* may be compoſed of Spirit of Salt, and Spirit of Nitre, only in ſuch ſmall Quantity each, that they may float ſeparately in a third Liquor, and not meet often enough to unite, at leaſt not in any Quantity. This Water may be made ſo weak, as not to *diſſolve* Gold, but only extract a ſlight yellow Tincture from it, that ſcarce takes off any thing of the Weight of the Metal: Nor will it *diſſolve* Silver; as being too weak: So that both Metals are ſafe from it. But this *Aqua Regia*, after it has *diſſolved* Gold as far as it can do, that is, after it has extracted a yellowiſh Tincture from it, is in a Condition to *diſſolve* Silver. This Phænomenon Mr. *Homberg* accounts for hence: That Spirit of Salt, whether alone, or joyn'd with Spirit of Nitre, being employ'd in keeping thoſe few Particles of Gold diſſolved; will not meddle with the Silver: Which, by this means,

receiving

receiving the Impreſſion of the greater Quantity of Spirit of Nitre alone, is *diſſolved* thereby. But the Experiment cannot be inverted, i. e. *Aqua Regia* cannot begin with *diſſolving* Silver lightly firſt, and afterwards *diſſolve* Gold; by reaſon Spirit of Nitre does not hinder Spirit of Salt from acting on Gold; as Spirit of Salt does Spirit of Nitre from acting on Silver. See GOLD, and SILVER.

Diſſolvents are uſually call'd by the Chymiſts *Menſtruums*. See MENSTRUUM.

Univerſal DISSOLVENT. See ALCAHEST.

DISSOLUTION, in Phyſicks, a Diſcontinuation, or *Analyſis* of the Structure of a mixt Body; whereby, what was one, and contiguous, is divided into little Parts, either homogeneous, or heterogeneous.

Diſſolution, then, is a general Name for all Reductions of concrete Bodies into their ſmalleſt Parts, without any regard either to Solidity, or Fluidity: Tho' in the uſual Acceptation of the Word among Authors, it is reſtrained to the Reduction of ſolid Bodies into a State of Fluidity; which is more properly expreſſed by *Solution*, as a Branch of *Diſſolution*. See SOLUTION.

According to the Opinion of *Fr. Tertius de Lanis*, now confirm'd by that of the Learned *Boerhaave*, in his Chymiſtry, the Power, or Faculty of *Diſſolving*, is lodged in Fire alone. See FIRE.

Other Fluids, commonly ſuppoſed *Diſſolvents*, only produce their Effect by means of the fiery *Spiculi* they abound withal. Even Air, which is judg'd a powerful *Menſtruum*, owes all its Force to the Rays of Light diffuſed therein. See AIR, and MENSTRUUM.

Sir *Iſaac Newton* accounts for all *Diſſolutions*, and the ſeveral Phænomena thereof, from the great Principle of *Attraction*; And, in Effect, the Phænomena of *Diſſolution* furniſh a great Part of the Arguments, and Conſiderations, whereby he proves the Reality of that Principle. See ATTRACTION.

A Specimen of that great Author's Way of Philoſophizing on the Subject of *Diſſolution* take as follows:

When Salt of Tartar *diſſolves* by lying in a moiſt Place, is not this done by an Attraction between the Particles of the Salt of Tartar, and thoſe of the Water, which float in the Air in Form of Vapours? And why does not common Salt, or Salt-petre, or Vitriol do the like; but for Want of ſuch an Attraction. And when *Aqua fortis*, or Spirit of Vitriol, pour'd on Steel-filings, *diſſolves* the Filings, with a great Heat, and Ebullition; is not this Heat and Ebullition effected by a violent Motion of the Parts? And does not that Motion argue, that the acid Parts of the Liquor ruſh towards the Parts of the Metal with Violence, and run forcibly into its Pores; till getting between the outmoſt Particles, and the main Maſs of Metal, they looſen 'em therefrom, and ſet 'em at Liberty to float off into the Water? When a Solution of Iron in *Aqua fortis* diſſolves *Lapis Calaminaris*, and lets go the Iron; Or a Solution of Copper *diſſolves* Iron immerſed in, and lets go the Copper; Or a Solution of Mercury in *Aqua fortis* pour'd on Iron, Copper, Tin, or Lead, *diſſolves* the Metal, and lets go the Mercury; does not this argue, that the acid Particles of the *Aqua fortis* are attracted more ſtrongly by the *Lapis Calaminaris*, than by Iron; by Iron than by Copper; by Copper than by Silver; and by Iron, Copper, Tin, and Lead, than by Mercury? And is it not for the ſame reaſon, that Iron requires more *Aqua fortis* to *diſſolve* it, than Copper; and Copper more than the other Metals; And that of all Metals Iron is *diſſolved* moſt eaſily, and is moſt apt to ruſt; and next after Iron, Copper? When *Aqua fortis* diſſolves Silver, and not Gold; and *Aqua Regia* diſſolves Gold, and not Silver; may it not be ſaid, that *Aqua fortis* is ſubtile enough to penetrate the Pores of Gold as well as of Silver, but wants the attractive Force to give it Entrance; and the ſame of *Aqua Regia*, and Silver? And when Metals are *diſſolved* in acid *Menſtruums*, and the Acids in Conjunction with the Metal, act after a different Manner; So as that the Taſte of the Compound is milder than that of the Simples, and ſometimes a ſweet one; is it not becauſe the Acids adhere to the Metallic Particles, and thereby loſe much of their Activity? And if the Acid be in too ſmall a Proportion to make the Compound diſſoluble in Water; will it not, by adhering ſtrongly to the Metal, become unactive, and loſe its Taſte; and the Compound become a taſteleſs Earth? For ſuch Things as are not diſſoluble by the Moiſture of the Tongue, are inſipid. *Newt. Opt. in Calce.*

Monſr. *Geoffroy* furniſhes ſome curious Experiments on *Cold Diſſolutions*, in the *Memoires de l'Academie Royale des Sciences*; which have been tranſlated in the *Philoſophical Tranſactions*: 'Tis nothing ſurprizing, that a ſimple *Diſſolution* ſhould be cold; that common Water, for Inſtance, wherein Sea-Salt, or *Sal Ammoniac*, or Vitriol, has been caſt, ſhould become the colder, by the Mixture of ſuch Salts; It being obvious, that the Salts, being of themſelves deſtitute of Motion, and coming to ſhare that which the Fluidity gives the Water, muſt diminiſh it, when they become intimately mix'd therewith by *Diſſolution*; And it is generally agreed among Philoſophers, that Heat is a Motion, and Cold a Ceſſation, or at leaſt a Diminution of Motion.

Yet, notwithſtanding this general Principle; 'tis no great Wonder all *Diſſolutions* are not Cold, as thoſe are of all volatile Alcalies in common Water; But that ſome are Hot, as thoſe of all fix'd Alcalies. The Difference may be accounted for hence, that all fix'd Alcalies having been calcined by a vehement Fire, they have impriſon'd, and retain'd in their Pores ſome of the Particles thereof.

But it is ſurprizing, that *Diſſolutions* accompanied with Fermentation, *i. e.* where the Matters boil, and ſwell, and that with a great Noiſe, ſhould be cold, and make the Thermometer fall, when immerged therein.

This Coldneſs, with ſo conſiderable an Augmentation of Motion, is ſomewhat extraordinary. But this is not all: For, of theſe cold Fermentations, there are ſome that emit hot Vapours. Thus it is, with a Mixture of Oil of Vitriol, and *Sal Ammoniac*; for a Thermometer being plunged in the Mixture, and another a little higher, to receive only the Fumes thereof; the firſt Thermometer is ſeen to fall very haſtily, through the Coldneſs of the Fermentation, and the latter to riſe through the Heat of the Vapours. Monſr. *Geoffroy* adds an Experiment, ſhewing that cold Water is render'd ſtill colder for a few Moments, by throwing a large Quantity of live Coals therein.

DISSOLUTION, in Chymiſtry, Pharmacy, *&c.* the Reduction of a compact, hard, or ſolid Body into a fluid State, by the Action of ſome fluid *Menſtruum*, or *Diſſolvent*. See MENSTRUUM, and DISSOLVENT.

Dr. *Quincy* gives us a Mechanical Account of *Diſſolution*, in the Inſtance of Salt *diſſolved* in Water, which is the moſt ſimple Operation that falls under this Head. This Motion he aſcribes to that attractive Force, which is ſo very extenſive in Natural Philoſophy, that there is no Kind of Matter, but what is under its Influence. It may be obſerved, that the Corpuſcles of Salts, which are the moſt ſimple of any, are withal very minute, and for their Bulk very ſolid, and, therefore, exert a very ſtrong attractive Force, which, *cæteris Paribus*, is proportional to the Quantity of Matter. Hence it comes to paſs, that the Particles of Water are more ſtrongly attracted by the ſaline Particles, than they are by one another: The Particles of Water, therefore, cohering but looſely, and being eaſily moveable, approach the Corpuſcles of Salts, and run, as it were, into their Embraces; and the Motion of them is quicker, or ſlower, according to their leſs, or greater Diſtances; the attractive Force in all Bodies being ſtrongeſt, at the Point of Contact. Therefore, if Salt be thrown into the middle of a Diſh full of Water, we ſhall find the aqueous Particles, which are in the middle of the Diſh, ſharp, and pungent to the Taſte; but the Water upon the Sides of the Veſſel almoſt inſipid; ſo that, when ſuch a Motion once ariſes, the aqueous Particles are carried with the ſame Force towards the Salts; and the Moment of them is to be eſtimated from the *Ratio* of their Weight, and Celerity, conjunctly. By the Force of this Impulſe, they open to themſelves a Paſſage into the Pores of the Salts, which are very numerous; and at length break, and divide their Texture, that all Coheſion of their Parts is deſtroyed: Hereupon, being ſeparated, and removed to a convenient Diſtance from one another, they are diſperſed, and float here and there about the Water. See FUSION, SALT, SOLUTION, *&c.*

DISSOLUTION of Metals, *&c.* by Fire, is particularly call'd *Fuſion*. See FUSION.

DISSOLUTION *of the Blood*, is an Affection of that Humor, directly oppoſite to *Coagulation*. See COAGULATION.

The *Diſſolution* is ſuch a Comminution of the fibrous Parts of the Blood, as indiſpoſes it for that Separation of the *Craſſamentum* from the ſerous Part, which always enſues in healthy Blood on its cooling out of the Body. See BLOOD.

This *Diſſolution* is frequently the Conſequence of malignant, and peſtilential Fevers, and ſhews it ſelf in *Petechiæ*, or Purple Spots; alſo of certain Poiſons, particularly the Bites of venomous Beaſts, *&c.* See FEVER, POISON, *&c.*

DISSOLUTION *of Parliament*. See PARLIAMENT, and PROROGATION.

DISSONANCE, or DISCORD, in Muſic, a falſe Conſonance, or Concord. See CONCORD, and CONSONANCE.

A *Diſſonance* is properly the Reſult of a Mixture, or Meeting of two Sounds, which are diſagreeable to the Ear: Such are *Ditones*, *Tritones*, *Falſe Fifth*, *Redundant Fourth*, *Seventh*, &c.

Diſſonances are uſed in Muſic, and have a good Effect therein; tho' it be only by Accident. See DISCORD.

DISSUASION, in Rhetoric. See PERSUASION.

DISSYLLABLE, a Word of two Syllables; as *Fortune*, *Lament*, &c. See FOOT.

The Spondee, Trochee, Jambus, and Pyrrhichius, are *diſſyllabic* Feet. See SPONDEE.

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DISTANCE, is properly the ſhorteſt Line between two Points, Objects, &c.

The Word is alſo us'd figuratively for an Interval, not only in reſpect of Place, but alſo of Time, and Quality.

Thus, we ſay the *Diſtance* of the Creation of the World from the Nativity of *Jeſus Chriſt* is upwards of 4000 Years: The *Diſtance* between the Creator and Creature, is infinite.

For the Viſion of DISTANCE, or the manner wherein we come by the Idea of *Diſtance* in Objects. See VISION.

DISTANCES, in Geometry, are meaſur'd by the *Chain*, *Decempeda*, &c. See CHAIN, &c.

Inacceſſible DISTANCES are found by taking Bearings thereto from the two Extremes of a Line whoſe Length is given. See PLAIN TABLE, THEODOLITE, &c.

DISTANCE, in Geography, is the Arch of a great Circle interſected between two Places.

To find the *Diſtance* of two Places A and B, (*Tab. Geography Fig.* 4.) far remote from each other: Aſſume two Stations C and D, from which both the Places A and B may be ſeen, and with a proper Inſtrument find the Angles ADC CDB ACD and DCB, and meaſure the *Diſtance* CD.

Then in the Triangle ACD we have two Angles given ACD and ADC, together with a Side, from which, by an eaſy Rule in Trigonometry, found under the Article TRIANGLE, we find AD.

So alſo in the Triangle CBD the Baſe DC, and the Angles at the ſame being given, DB is found.

Laſtly, in the Triangle ADB, having the Sides AD and DB, together with the included Angle ADB, the *Diſtance* required AB is found by the Rules given for the Reſolution of Triangles. See TRIANGLE.

The Height of a remote Object being known, to find its *Diſtance*, when the Eye firſt deſcries it; And again, the Height of the Eye given, to find the *Diſtance* to which the Eye can reach on the Surface of the Sea, or Land: Add the Height of the Eye AB, (*Fig.* 5.) to the Semi-Diameter of the Earth BC, by which you have AC: And ſince in the Rectangle Triangle ADC, the Sides AC and DC are given, the Angle DCA is found by the common Rule for Reſolution of Triangles; the Quantity of which Angle forms the Arch DB; which Arch converted into Feet, or the like, gives the *Diſtance* required.

Suppoſe, *E. gr.* the Height of the Eye AB; which is ſomewhat leſs than in a Man of ordinary Stature. Since BC is 19695539, AC will be 19695544, and the Angle DAB will be found 89° 57″ Minutes, 43 Seconds. Conſequently DCB, or the Arch DB is 2′ 17″ or 137″: And, therefore, ſince 1° or 3600″ make 343752 *Paris* Feet, DB 13081$\frac{2}{3}$ of a Foot. After the ſame manner we find the *Diſtance* AB, to which an Object of a given Altitude DB may be ſeen, and conſequently we know what *Diſtance* we are off from an Object of a given Altitude, when we firſt diſcover the Top thereof.

DISTANCE, in Navigation, is the Number of Degrees, or Leagues, &c. that a Ship has ſail'd from any Point. See SAILING.

DISTANCE, in Aſtronomy. The *Diſtance* of the Sun, Planets, and Comets, is found from their *Parallax*. See PARALLAX.

That of the fix'd Stars, as having no ſenſible *Parallax*, we can little more gueſs at. See FIXED STAR.

The *Diſtances* of the Planets from the Sun and Earth, in Semi-diameter of the Earth, ſuppoſing the greateſt Horizontal *Parallax* 6″; and the Dimenſions of the Orbits, as aſſign'd by *Kepler*, are as follow.

Diſt. from the Sun.	Greateſt.	Mean.	Leaſt.	*Diſt.* from the Earth.	Greateſt.	Mean	Leaſt.
Jupiter	346601	326925	308290	♄	380556	327544	274532
Saturn	187254	178640	170026	♃	222250	179259	136268
Mars	57226	52326	47426	♂	92221	52944	13668
Earth	34995	34377	33758	☉	34996	34377	33759
Venus	25061	24889	24718	♀	60056	34548	9041
Mercury	16142	13340	10537	☿	51138	37179	23221
				☽			

Mr. *Caſſini* makes the *Diſtances* ſomewhat leſs; as ſuppoſing the Sun's *Parallax* a little greater.

Diſt. from the Earth.	Greateſt.	Mean.	Leaſt.	*Diſt.* from the Earth.	Greateſt.	Mean	Leaſt.
Jupiter	244000	210000	176000	Venus	38000	22000	6000
Saturn	143000	155000	87000	Mercury	33000	22000	11000
Mars	59000	33500	8000	Moon	61	57	53
Sun	22374	22000	21626				

Dr. *Hook*, by exact Obſervations with a Teleſcope of 16 Foot, perpendicularly placed, firſt diſcover'd, that the *Diſtances of the Stars from the Zenith* is not the ſame at all Times of the Year; Particularly the bright Star in the Dragon's-head he found 27, or 30 Seconds nearer the Zenith of *Greſham* College, in the Brumal Solſtice, than in the Eſtival. And after him Mr. *Flamſteed* obſerved the like Variations in the Pole-Star.

DISTANCE *of the Sun from the Moon's Node, or Apogee*, is an Arch of the Ecliptic, intercepted between the Sun's true Place, and the Moon's Node, or Apogee. See NODE.

Curtate DISTANCE, is the *Diſtance* of the Planets Place from the Sun, reduced to the Ecliptic. See CURTATE.

Line of DISTANCE, in Perſpective, is a right Line drawn from the Eye to the principal Point: Such is the Line OF, (*Tab. Perſpective Fig.* 10.) drawn between the Eye O, and the principal Point F.

This, as it is perpendicular to the Plane, or Table, can only be the *Diſtance* of the Eye from the Table.

Point of DISTANCE, in Perſpective, is a Point in the Horizontal Line at ſuch *Diſtance* from the principal Point, as is that of the Eye from the ſame. See POINT.

Such is the Point P, or Q, (*Tab. Perſpective Fig.* 11.) in the horizontal Line PQ; whoſe *Diſtance* from the principal Point F, is equal to that of the Eye from the ſame F.

DISTANCE *of the Baſtions*, in Fortification, is the Side of the exterior Polygon. See BASTION.

DISTASTE, or DISGUST, a Loſs of Appetite, or an Averſion, or Repugnance to Foods which are commonly eaten. See NAUSEA.

Diſtaſte is held by Phyſicians one of the principal Diſorders of the Stomach. It ariſes from a Want of Senſation in the Upper Orifice of the Ventricle; which may be occaſioned various Ways: as, by a too great Abundance of Food; thick, heavy Humors in the Stomach; fat, viſcid Aliment; Obſtructions of the Lacteals; Suppreſſions of the uſual Evacuations; Intermiſſions of the ordinary Exerciſes; a Defect in the Nerves, in having their natural Faculty aboliſh'd, or ſuſpended, as in a Lethargy, and Apoplexy; and, according to *Silvius*, by a groſs, viſcid Saliva, or a thick Bile, aſcending out of the ſmall Guts into the Stomach.

DISTEMPER, in Medicine. See DISEASE.

DISTEMPER, is alſo us'd in Painting, for the working up of Colours with ſomething elſe beſides bare Water, or Oil. See COLOUR.

If the Colours are prepar'd with the former of theſe, that Kind of Painting is call'd *Limning*; and if with Oil, it is call'd *Painting in Oil*, and ſimply *Painting*. See LIMNING, and PAINTING.

If the Colours are mix'd with Size, Whites of Eggs, or any ſuch proper glutinous, or unctuous Subſtance, and not with Oil, they then ſay, it is done in *Diſtemper*; as the admirable Cartons at *Hampton-Court*.

DISTENSION, the Act of ſtretching a Thing; alſo the State of a Thing violently ſtretch'd, and *diſtended*.

The *Calculus* is a hard, ſolid, &c. Body, cauſing a Stupor, Obſtructions, and *Diſtentions*. Degori.

DISTICH, a Piece of Poetry, the Senſe whereof is comprehended in two Lines.

There are excellent Morals in *Cato*'s *Diſtichs*. See *Vigneul de Marville on the* Diſtichs *of* Cato, *T.* 1. *p.* 54, 55.

Hexameter, and Pentameter Verſes, otherwiſe call'd Elegiacks, are diſpoſed in *Diſtichs*. See VERSE.

DISTICHIASIS, in Medicine, a Diſorder of the Eye-lids, wherein, inſtead of one, they have two Rows of *Cilia*, or Hairs. See CILIA.

In the *Diſtichiaſis*, over the common, and natural Hairs, there grows another extraordinary Row, which frequently eradicates, and tears up the former, and pricking the Membrane, immediately inveſting the Eye, occaſions Pain, and draws Defluxions upon it.

'Tis cur'd, by plucking up the ſecond Row of Hairs with Nippers, and burning the Pores, out of which they iſſued.

The Word is form'd of δὶς, *twice*, and στίχος, or στοῖχος, *Order*, *Rank*.

DISTILLATION, or DESTILLATION, in Chymiſtry, and Pharmacy, the Art, or Act of ſeparating, or drawing off the ſpirituous, aqueous, oleaginous, or ſaline Parts of a mix'd Body from the groſſer, and more terreſtrial Parts, by means of Fire; and collecting, and condenſing them again by Cold. See HEAT, &c.

The Uſe of *Diſtillation* is very great; it being by means hereof, that Waters, Spirits, Eſſences, and Extracts are chiefly made. See WATER, SPIRIT, &c.

Diſtillation is uſually perform'd by means of Fire rais'd to a greater, or leſſer Degree, as Circumſtance leaſt require. See FIRE.

The Fire is either applied immediately to the Veſſels wherein the Matters are to be *diſtilled*; or it is applied mediately, by means of Water, Sand, Iron-filings, &c. Theſe different Methods of applying the Fire, are call'd *Baths*, *Balnei*;

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Balneum Mariæ or *Maris*, *Balneum Arenoſum*, &c. See BALNEUM.

They are alſo call'd *Heats*; as *Sand-heat*, *Water-heat*, &c. See HEAT.

Diſtillation is two-fold, 1. *Per Aſcenſum*, by *Aſcent*; when the Matter to be *diſtill'd* is above the Fire, and the Spirit, or other Principle, is raiſed from it.

2. *Per Deſcenſum*, by *Deſcent*; when the Matter which is to be *diſtill'd* is below the Fire, and the Vapour drawn from it, precipitated to the Bottom of the Veſſel.

DISTILLATION *by Aſcent*, is either *Right*, or *Oblique*.

Right DISTILLATION, is perform'd with a common Alembick, or Cucurbite, wherein the Liquor is rais'd, and deſcends again, in Form of Drops, into a Receiver: And is chiefly us'd when the Texture of the Body is ſuch as allows of an eaſy Aſcent, as in Vegetables. See ALEMBICK.

Oblique DISTILLATION, is perform'd ſide-ways, and in crooked Veſſels, as *Retorts*. Its Uſe is for ſuch Bodies as conſiſt of heavier Particles, and which cannot be raiſed without a ſtrong Impulſe, nor even by the ſtrongeſt ſo high as the Top of the Alembick; of which Kind are almoſt all Minerals, and Metals. See RETORT.

DISTILLATION *by Deſcent*, is where the Fire is apply'd on the Top, and all around the Veſſel, whoſe Orifice is at the Bottom; and conſequently, the Vapour not being able to riſe upwards, it is forc'd to precipitate, and *diſtil* down to the Bottom.

There is a ſecond Kind of *Diſtillation by Deſcent*, call'd *Per Deliquium*; which is a Natural Liquifying, or Reſolving of Salts into a Liquor, by means of Moiſture. See DELIQUIUM.

In the Reſolution of Simples, an excellent Method to preſerve their Virtues, is, in lieu of Fire, or any other foreign Heat, which might alter, or deſtroy theſe Virtues, to make Uſe of the Heat of a Dunghil made of putrified Herbs of the ſame Kind with thoſe to be *diſtilled*.

The Proceſs, and Meaſures of *Diſtillation*, are very different, according to the different Subjects to be *diſtill'd*.

Acid Spirits are uſually drawn in a Reverberatory Furnace, and with a vehement Fire: *Ponderous Woods*, as Guaiacum, Box, Amber, &c. are *diſtill'd* in a Retort, after the ſame Manner. In theſe, firſt comes a little Phlegm, and then, the Fire increaſing, the Spirits fly out in white Clouds. When they ceaſe to come, the Matter in the Receiver is filtrated through a Tunnel, which lets paſs the Spirits, leaving a black fetid Oil behind.

Odoriferous Plants, as Balm, Wormwood, Sage, Hyſſop, &c. are *diſtill'd* by the Cucurbite, or *Veſica*; firſt pouring a ſtrong Decoction of the ſame Plant hot, upon the Plant it ſelf bruis'd, and letting the whole digeſt in a cloſe Veſſel two Days. Then about half the Water, or Spirit is drawn away by *Diſtillation*; and what remains, being preſs'd, filtrated, and evaporated to the Conſiſtence of Honey, is the *Extract* of the Plant. Laſtly, drying what remain'd in the Cloth after Expreſſion, and burning it, they make a *Lixivium* of its Aſhes; which being filtrated, and evaporated to Dryneſs, what remains is the fix'd Salt of the Plant.

Plants not odoriferous, are generally manag'd thus: The Plant being pounded, and two Thirds of the Alembic, or Retort fill'd with it, they pour a good Quantity of the expreſs'd Juice of the ſame Plant upon it, ſo as the bruis'd Matter may float therein, without ſticking any where to the Veſſel. Then they draw off about half as much Water, as there was Juice, which is the *diſtill'd* Water of that Plant. What remains, being preſs'd in a Cloth, and the Juice ſettled, they filtrate, and evaporate it to two Thirds, and ſetting it in a cool Place, the *Eſſential Salt* ſhoots into Cryſtals.

There is alſo a Method of Diſtilling *Cold*; which is thus perform'd: They take, for Inſtance, 4 Pounds of Flowers, more or leſs, and put 'em in 3 or 4 Pints of Water, and the whole in a Capital, which they lute exactly; then they place the Alembick in a Veſſel half fill'd with Ice, beaten and ſalted, as if they meant to freeze the Water; then fit on a Receiver, and lute it well; Then wetting a linnen Cloth in hot Water, they cover the Capital therewith, repeating this ſeveral times: by which means the fineſt Parts are raiſed from the Flowers. But Care muſt be taken, that all the ſuperfluous Water have been firſt emptied out of the Capital.

Dr. *Beal*, in the *Philoſophical Tranſactions*, mentions an extraordinary Kind of *Cold Diſtillations*, viz. made by Froſt and cold Air: His Thermometer being expoſed out of Doors, during the ſevere Froſts of 1665; fine clear Drops, like Dew, aſcended to the Top of the Tube, which afterwards, in time, re-deſcended into the Stem, and fill'd the Space of half an Inch; which, tho' the Spirit of Wine it ſelf was tinged very deep, yet this ſecond Spirit was clearer and brighter than any Cryſtal. The like he did by Expoſing his Thermometer to the hot Air in the middle of Summer. And hence takes Occaſion to recommend a further Proſecution of this *Pſychrotechnia*.

The Aſcent of Fluids, we are taught by Philoſophy, is effected two Ways: 1. On Account of their Specific Gravity; and 2. By Impulſe.

The firſt Way of *Elevation* is manifeſt from this *Lemma*, viz. That Particles of Bodies which ſwim in any Fluid, if they are ſpecifically lighter, muſt be born upwards by that Fluid. Hence, as *diſtilled* Liquors are carried upwards thro' the Air, it is to be inquired, how they come to be ſpecifically lighter than Air.

Now, a Fluid will be ſpecifically lighter than another, when, under a larger Surface, it has an equal, or a leſs Gravity: According to this Proportion, the Bulk of the Fluid ought to be increaſed in *Diſtillation*; and how eaſily, by the Help of Fire, it may be increaſed, or, which is the ſame Thing, rarefied, will appear from what we have ſaid under the Articles RAREFACTION, HEAT, &c.

It is known by Computation, that the Proportion of the ſpecific Gravity of Water to that of Air, is ſomething more than 800 to 1. Since, therefore, ſimilar Spheres, or Solids, are as the Cubes of their Diameters, and the ſpecific Gravity decreaſes reciprocally, in the very ſame Proportion, as the Cubes of their Diameters increaſe: In order to make a Particle of Water lighter than a Particle of Air, no more is neceſſary than to rarefy it, till its Diameter becomes ten times greater, which in this Caſe is but a very ſmall Degree of Rarefaction: for the Cube of the Diameter in a Particle ſo rarefied, is 1000. If the Diameter be made 11 times greater, the Cube will be 1331; and if twelve, 1728. So that Water, when rarefied but 12 Degrees, will be above double lighter than Air. And if the Rarefaction be carried on farther, it may eaſily be collected from the Increaſe of the Numbers, that a Particle of Water may be render'd almoſt infinitely lighter than Air. Now, the Elevation of Bodies equally fluid, and heavy, is always proportionable to their different Aptitude to be rarefied; that is, they aſcend quicker, upon the Application of any Force, the more ſuſceptible they are of Rarefaction: but in Bodies, whoſe Aptitude to rarefy is equal, the Time of Aſcent is to be determined by their ſpecific Gravity.

But 'tis not only ſpecific Gravity that ſerves to elevate Bodies in *Diſtillation*, but an external Impulſe may alſo cauſe their Aſcent: The Impulſe, we have here to do with, comes from the Fire, whoſe Particles, tho' extreamly ſmall and light, yet may raiſe Bodies much heavier than themſelves, by acting upon them with a certain Degree of Force: For ſince the Moment of a Body, or that Force, by which it acts upon another, is in a compound *Ratio* of the Quantity of Matter, and Celerity; the Celerity may be ſo increaſed, as to give a ſufficient Force to the Body, tho' the Quantity of Matter in it be ever ſo ſmall. Let ſome heavy Body, therefore, be ſuppoſed to deſcend, with no other Moment than what it receives from its own Gravity; in this Caſe, then, the Air, which is much lighter, may be moved with ſuch Celerity, as not only to ſuſtain that Body, but to mount it up higher; and the more rapid the *Impetus* of the Air is, or the Surface of the Body more diffuſed, the higher and ſwifter will the Elevation be.

So Fire, tho' it be a Body of the minuteſt Size, may be moved with that Rapidity, as to acquire, and communicate what Force can be deſired towards removing any Obſtacles. When, therefore, the Moment of Fire is augmented in the manner explain'd, ſo as to exceed the Force of the *diſtill'd* Body, it will remove it from its former Situation; or what is here the ſame Thing, becauſe the Direction of its Motion tends upwards, will carry it up. And thus, Particles ſpecifically heavier than the Air contain'd in the Retort, as thoſe of acid Spirits are, aſcend by a more violent Impulſe of the Fire us'd in *Diſtillation*.

Another Thing, to be noted, is, That the ſame Quantity of Matter is elevated ſo much the eaſier, in Proportion, as the Surface is enlarged; for the more this is diffuſed, the more Particles of Fire it receives: having, therefore, this united Force to drive it up, it more eaſily aſcends; ſo that, by the ſame Degree of Fire, Bodies will not equally ariſe, tho' they are equally heavy, if there be that Difference in their Surfaces already ſuppoſed.

The Air alſo has no ſmall Share in the Buſineſs of Impulſe; for being rarefied by the Fire, it is not only impelled upwards it ſelf, but carries other Particles up with it: and it may be learned by many very familiar Experiments, what *Impetus* Bodies ſo rarefied exert. Whoſoever, therefore, well conſiders theſe three Things, *viz.* Specific Levity; an Impelling Force; and the Extent of Surface; and what may be effected by them, and how many Ways, and in what Proportions all of them may be changed, will very eaſily account for all the Variety, which is found in the ſeveral Proceſſes of *Diſtillation*.

DISTINCT *Notion*, or *Idea*, according to Mr. *Leibnitz*, is, when we can enumerate Marks and Characters enough whereby to recollect a Thing. *E. gr.* That a Circle is a Figure bounded with a Curve Line that returns into it ſelf; all the Points whereof are equally diſtant from one middle Point. See NOTION, and IDEA.

DISTINCT *Baſe*, in Opticks, is that preciſe Diſtance from the Pole of a convex Glaſs, in which Objects, beheld through

it, appear *diſtinct*, and well defin'd; So that the *Diſtinct Baſe* coincides with what we otherwiſe call the *Focus*. See Focus.

The *Diſtinct Baſe* is caus'd by the Collection of the Rays proceeding from a ſingle Point in the Object, into a ſingle Point in the Repreſentation; and, therefore, Concave Glaſſes, which do not unite, but ſcatter, and diſſipate the Rays, can have no real *Diſtinct Baſe*. See Concave.

DISTINCTION, a Diverſity of Things, or Conceptions: Or, as Logicians define it, an Aſſemblage of two, or more Words, whereby deſparate Things, or their Conceptions, are denoted.

Hence it is evident, that *Diſtinction* ariſes out of Diviſion. See Division.

A *Metaphyſical* Distinction, call'd alſo by the Schoolmen *Alietas*, *Alteritas*, and *Diverſitas*, is a Non-agreement of being, whereby this Entity is not that, or one is not another.

There are three Kinds of *Diſtinctions* taken from the three different Modes of Exiſtence; the firſt *Real*, the ſecond *Model*, and the laſt *Rational*.

A *Real* Distinction, is that between Things which may exiſt, or be conceiv'd to exiſt a-part from each other; ſuch is that between two Subſtances, or the Modes of two Subſtances.

A *Modal* Distinction, is that between ſeveral Things, one whereof may exiſt without the other, but not *vice verſa*, the other without that; ſuch is that between the Mind, and an Act of Will; between Wax, and its Hardneſs; Water, and its Freezing, *&c.*

A Distinctio *Rationis*, or *Rational Diſtinction*, is that between ſeveral Things, which are really one and the ſame, and whereof one cannot exiſt without the other, nor *vice verſa* the other without this: Such is that between a Thing, and its Eſſence; between the Eſſence, and Properties, *&c.*

Of this *Diſtinction* ſome Authors admit two Kinds; the one *Founded*, barbarouſly call'd *Rationis Ratiocinatæ*, and having ſome Foundation in Things; as when we diſtinguiſh the Juſtice of God from his Mercy: The other *Not-founded*, call'd *Rationis Ratiocinantis*, which has no Foundation at all, and therefore is by many quite rejected.

Tho' others contend, that there is no *Diſtinctio Rationis*, but is at the ſame Time a *Real Diſtinction*: Thus, ſay they, God, and juſt God, are to each other as Milk and white Milk; and a juſt God, and merciful God, as white Milk and ſweet Milk. But when I ſay, Milk is diſtinguiſh'd from white Milk, or white Milk from ſweet Milk, the *Diſtinction* falls between Whiteneſs and Sweetneſs, which is a *Real Diſtinction*. See Abstraction.

Distinction, or Distinguo, in the Schools, an Expedient to evade an Argument, or to clear up, and unfold an ambiguous Propoſition, which may be true in one Senſe, and falſe in another.

The Reſpondent was hard preſs'd, but he diſengag'd himſelf by a Diſtinguo.

Moliere makes *T. D.* ſay to his Miſtreſs, who had told him, he muſt ſubmit to the Will of a Perſon he loved: Diſtinguo, *Madamoiſelle*; *pour l'Intereſt de ſon Amour*, Concedo: *Contre ſa Paſſion*, Nego.

DISTORTION, in Medicine. *Diſtortio Oris*, or *Diſtortion of the Mouth*, is a Contraction, or Shortening of one Side of the Mouth, occaſion'd by a Convulſion, or a Palſy of the Muſcles of one Side the Face. See Convulsion.

When the *Diſtortion* ariſes from a Convulſion, it is on the ſame Side with the Convulſion, the Force of the convulſed Part being ſuperior to that of the ſound Part: On the contrary, when it ariſes from a Palſy, it is on the oppoſite Side, the paralytic Part being here ſurmounted by the ſound. See Palsy.

In a *Diſtortion of the Mouth* the Patient can only ſpit on one Side; and if you make him laugh, or oblige him to pronounce the Letter O, you'll eaſily perceive, that he only moves one Side of his Mouth.

The *Greeks* call this Diſorder σπασμος κυνικὸς. See Spasmus.

There is alſo a *Diſtortion of the Eye*, call'd *Squinting*, or *Strabiſmus*. See Strabismus.

DISTORTOR *Oris*, in Anatomy, a Muſcle of the Mouth, call'd alſo *Zygomaticus*. See Zygomaticus.

DISTRACTION, in Medicine, the Act of pulling a Fibre, Membrane, or the like, beyond its natural Extent; and what is capable of this Enlargement, is ſaid to be *diſtractible*. See Fibre.

DISTRAIN, in Law. To *diſtrain* is to attach, or ſeize on one's Goods, for the Satisfaction of a Debt. See Distress.

DISTRESS, in Law, ſignifies a Compulſion in certain real Actions, whereby to bring a Man to appear in Court, or to pay Rent, or other Duty denied.

The uſual Effect of *Diſtreſs* is to drive the Party *diſtrained* to replevy the *Diſtreſs*, and ſo take his Action of Treſpaſs againſt the *Diſtrainer*; or elſe to compound with him for the Debt, or Duty, for which *Diſtreſs* was made.

Diſtreſs is divided by *Briton* into *Real*, and *Perſonal*.

Perſonal Distress is made by *diſtraining* a Man's moveable Goods, and ſeiſing all the Profits of his Lands, and Tenements from the Teſte, or Date of his Writ; for the Defendant's Contempt in not appearing to an Action brought againſt him, when he was ſummoned, or attach'd: And the Iſſues ſo return'd by the Sheriffs, are forfeited to the King, and eſtreated into the Exchequer.

Real Distress is made on immoveable Goods. It differs from an Attachment in this, that it cannot be taken by any common Perſon, without the Compaſs of his own Fee; except it be preſently after the Cattel, or other Things, are driven, or bore off the Ground, on Purpoſe to avoid *Diſtreſs*. See Attachment.

Diſtreſs is alſo divided into *Finite*, and *Infinite*.

Finite Distress, is that limited by Law, how often it ſhall be made to bring the Party to Trial of the Action, *viz.* once, twice, *&c.*

Infinite Distress, is, without Limitation, till the Party come; as againſt a Jury, which refuſes to appear upon Certificate of Aſſiſe, the Proceſs is *Venire facias*, *Habeas Corpus*, and *Diſtreſs Infinite*.

Laſtly, *Diſtreſs* is again divided into *Grand Diſtreſs*, by *Fitzherbert* call'd *Magna Diſtrictio*; and *Ordinary Diſtreſs*.

Grand Distress, is that made of all the Goods and Chattels the Party hath within the County. See Grand *Diſtreſs*.

There are ſeveral Things not *diſtrainable*: For a *Diſtreſs* muſt be of a Thing, whereof a valuable Property is in ſome body; and, therefore, Dogs, Bucks, Coneys, *&c.* that are *feræ Naturæ*, cannot be *diſtrained*.

Again, altho' it be of a valuable Property, as an Horſe, (yet when a Man, or Woman is riding on him) or an Ax (in a Man's Hand cutting Wood) and the like, are for that Time privileged, and cannot be *diſtrained*.

Again, valuable Things ſhall not be *diſtrained* for Rent, which are for the Benefit, and Maintenance of Trades, and which, by Conſequence, are for the Common-Wealth, and are by Authority of the Law there; as an Horſe in a Smith's Shop; Materials in the Weaver's Shop for making Cloth; Cloth, or Garments in the Taylor's Shop; Sacks of Corn, or Meal in a Mill, or a Market; nor any Thing *diſtrained* for Damage-feaſant, for it is in *Cuſtodia Legis*.

Again, nothing ſhall be *diſtrained* for Rent, which cannot be render'd again in as good a Plight, as it was at the Time of the *Diſtreſs* taken; as Sheaves, or Shocks of Corn cannot be *diſtrained* for Rent, but for Damage-feaſant they may. Again, Beaſts belonging to the Plow ſhall not be *diſtrained*.

Laſtly, Furnaces, Cauldrons, or the like, fix'd to the Freeholds, or Doors, or Windows of an Houſe, or the like, cannot be *diſtrained*: When a *Diſtreſs* is taken, that has Life in it, it muſt be brought into the common Pound, or kept in an open Place, where the Owner may give it Food.

DISTRIBUTION, the Act of dividing a Thing into ſeveral Parts, in order to the diſpoſing each in its proper Place. See Division.

A Dramatic Poet ſhould have *diſtributed* his Subject into Acts and Scenes, ere he proceed to the Verſification, *&c.* See Act, *&c.*

Orators *diſtribute* their Harangues into *Exordium*, *Narration*, *Confirmation*, &c.

The *Jewiſh* Nation was *diſtributed* into 12 Tribes. See Tribe.

The *Digeſt* is *diſtributed* into 50 Books. See Digest.

The *Diſtribution* of the Food throughout all the Parts of the Body, is one of the greateſt Wonders in Nature. See Digestion, and Nutrition.

Manual, and *Quotidian* Distributions, are certain ſmall Sums of Money, appointed by the Donors, or Founders thereof, to be *diſtributed* to ſuch of the Canons of a Chapter as are actually preſent, and aſſiſtant at certain Obits, and Offices.

Distribution, in Rhetoric, a Kind of *Deſcription*; or a Figure, whereby an orderly Diviſion, and Enumeration is made of the principal Qualities of a Subject.

For Example, *He has the Light to ſee our Faults, the Juſtice to reſtrain 'em, and the Authority to puniſh 'em. Their Throat is an open Sepulchre, they flatter with their Tongues; the Poiſon of Aſps is under their Lips; their Mouth is full of Curſing, and Lyes; and their Feet ſwift to ſhed Blood.*

Distribution, in Printing, the taking a Form a-ſunder, ſeparating the Letters, and diſpoſing 'em in the Caſes again, each in its proper Cell. See Printing.

Di-

DISTRIBUTION, in Architecture. *Diſtribution of the Plan*, is the dividing, and diſpenſing the ſeveral Parts, and Pieces, which compoſe the Plan of a Building. See BUILDING.

DISTRIBUTION *of Ornaments*, is an equal, orderly placing of the Ornaments in any Member of Architecture. See ORNAMENT.

DISTRIBUTIVE *Juſtice*, is that whereby we give every Perſon what belongs to him. See JUSTICE.

DISTRICT, the Territory, or Extent of Juriſdiction of a Judge. See JURISDICTION.

A Judge, or Officer cannot judge, or act out of his own *Diſtrict*. See JUDGE.

DISTRICT, is properly the Place wherein a Man has the Power of diſtraining; or, the Circuit, or Territory, wherein one may be compell'd to appear.

Where we ſay, *Hors de ſon Fee*; others ſay, *Extra Diſtrictum ſuum*.

DISTRINGAS, a Writ directed to the Sheriff, or other Officer, commanding him to diſtrain one for a Debt to the King; or for his Appearance at a certain Day. See DISTRESS.

DISVELLOPED, in Heraldry, is uſed much in the ſame Senſe with *Diſplay'd*. Thus Colours ſaid in an Army to be *flying*, are in Heraldry ſaid to be *diſvelloped*.

DITCH, in Fortification, call'd alſo *Foſs*, and *Moat*, a Trench dug round the Rampart, or Wall of a fortified Place between the Scarp and Counterſcarp. See MOAT.

Some *Ditches* are *dry*; others *full of Water*: Each whereof have their Advantages.

The Earth dug out of the *Ditch* ſerves to form the Rampart. See RAMPART.

The *Ditch* ſhould be of ſuch Breadth as that the Talleſt Tree may not reach over it, *i. e.* from 15 to 20 Fathoms; Tho' the Rule others give for the Dimenſions of the *Ditch*, is, that it afford Earth enough to build the Rampart of due Magnitude.

The Space between the Rampart and *Ditch*, being about 6 Foot, is call'd the *Berm*, or *Liſt*. See BERM.

DITHYRAMBIC, belonging to the *Dithyrambus*; as *Dithyrambic* Verſe, *Dithyrambic* Poet, *Dithyrambic* Heat, *&c.*

A Compound, *Dithyrambic* Word, Mr. *Dacier* obſerves, has ſometimes its Beauty and Force. Some Moderns call Compoſitions in the Taſte of the Ode, only not diſtinguiſh'd into Strophes, and conſiſting of all Kinds of Verſe indifferently, *Dithyrambic Odes*. See DITHYRAMBUS.

Dithyrambic Poetry owes its Birth to *Greece*, and the Tranſports of Wine. It ſavours ſtrongly of its Original; as admitting of no Rules, but the Sallies of a fiery Imagination. And yet Art is not quite excluded; but delicately applied, to guide and reſtrain the *Dithyrambic* Impetuoſity, and only indulge it in Flights that are pleaſing. In effect, what our Poets ſay of the Ode, is more true of the *Dithyrambus*, than of the Ode, that its Diſorder is an Effect of Art. See PINDARIC.

DITHYRAMBUS, in the ancient Poetry, a Hymn in Honour of *Bacchus*, full of Tranſport, and Poetical Rage.

The Meaſure, which is what diſtinguiſhes this Kind of Poetry, is ſaid to have been invented by *Dithyrambus*, a *Theban*; but *Pindar* attributes it to the *Corinthians*; and the modern Etymologiſts furniſh us with another Origin of the Word.

In effect, the Verſe might be call'd thus from the God it was conſecrated to, who himſelf was call'd *Dithyrambus*; Either on Account of his having been brought twice into the World, according to the Fable of *Semele* and *Jupiter*, or on Account of his having triumph'd twice; the Word being a Compound of Δὶς, *twice*, and θρίαμβος, *Triumph*.

Be this as it will, the Ancients, as we are told by *Ariſtotle* and *Horace*, gave the Appellation *Dithyrambus* to thoſe Verſes wherein none of the common Rules, or Meaſures were obſerv'd, much like thoſe call'd by the French *Vers Libres*, by the Italians *Verſi Sciolti*, and by the modern Greeks, *Politici*, a Name they give to Proſe, which theſe Verſes reſemble more than Poetry. See PINDARIC.

We have now no Remains of the *Dithyrambi* of the ancient Poets, ſo that we cannot ſay preciſely what their Meaſure was: All we know is, that it was very bold, and irregular. The Poets not only took the Liberty to forge new Words for the Purpoſe, but made double, and compound Words, which contributed very much to the Magnificence of the *Dithyrambus*.

Horace has ſometimes imitated 'em. *Dacier*, *Fa. Commire*, and ſome other modern Writers, have compoſed *Latin* Pieces of all Kinds of Verſe indifferently, according as the Subject, and Words preſented themſelves, without any Order, or Diſtribution into Strophes, and call 'em *Dithyrambi*.

DITONE, *Ditonum*, in Muſic, an Interval comprehending two Tones. See INTERVAL, and TONE.

The Proportion of the Sounds that form the *Ditone* is 4 to 5; and that of the *Semi-ditone*, as 5 to 6. *Fa. Parran* makes the *Ditone* the 4th Kind of ſimple Concords, as comprehending two Tones, a greater, and a leſſer: Others make it the firſt Diſcord; dividing the *Ditone* into 18 equal Parts, or Comma's, the Nine on the acute Side make the greater Tone, as aſſerted by *Salomon de Caux*.

The Word is form'd of Δὶς, *twice*, and τόνος, *Tone*.

DITRIGLYPH, in Architecture, the Space between two Triglyphs. See TRIGLYPH.

DIVAL, in Heraldry, the Herb *Night-ſhade*, uſed by ſuch as blazon with Flowers and Herbs, inſtead of Colours and Metals, for *Sable*, or Black. See SABLE.

DIVALIA, in Antiquity, a Feaſt held among the ancient *Romans* on the 21ſt of *December*, in Honour of the Goddeſs *Angerona*; whence the *Divalia* were alſo call'd *Angeronalia*.

This Feaſt was eſtabliſh'd on Occaſion of a Diſeaſe which deſtroyed Man and Beaſt: That Diſeaſe was a Kind of Squinancy, or Inflammation and Swelling of the Throat, call'd in Latin *Angina*; whence the Appellation *Angeronalia*, as *Macrobius* relates *Lib.* I. *Saturn. C.* 12. See ANGERONALIA.

On the Day of this Feaſt, the Pontifices perform'd Sacrifice in the Temple of *Volupia*, or the Goddeſs of Joy and Pleaſure, who was the ſame with *Angerona*; and ſuppoſed to drive away all the Sorrows and Chagrins of Life.

DIVAN, a Council-Chamber, or Court wherein Juſtice is adminiſtred, in the Eaſtern Nations, particularly among the *Turks*.

Travellers relate Wonders of the Silence, and Expedition of the *Divans* of the Eaſt.

We ſay, *The Grand Vizier has held a* Divan; meaning, he has aſſembled the Grandees of the Port, to deliberate of the Affairs of the Empire.

Divan is an *Arabic* Word, ſignifying an *Eſtrade*, or the ſame with *Sofa* in the *Turkiſh* Dialect. See SOFA.

The Word is alſo us'd for a *Hall*, in the private Houſes of the Orientals: The Cuſtom of *China* does not allow the receiving of Viſits in the inner Parts of the Houſe, but only at the Entry, in a *Divan* contriv'd on Purpoſe for Ceremonies. *Le Compte*.

DIVAN-*Begui*, or *Beghi*, one of the Miniſters of State in *Perſia*. The *Divan-Begui* is the Controller of Juſtice: His Place is the laſt of the ſix Miniſters of the ſecond Rank, who are all under the *Etmadauler*, or firſt Miniſter.

To the Tribunal of the *Divan-Begui* Appeals lye from Sentences paſs'd by the Governours. He has a fix'd Stipend, or Appointment of 50000 Crowns, that he may render Juſtice *gratis*. All the Sergeants, Uſhers, *&c.* of the Court, are in the Service of the *Divan-Begui*. He takes Cognizance of the Criminal Cauſes of the *Cams*, Governours, and other great Lords of *Perſia*, when accuſed of any Fault, and receives Appeals from the *Daruga*.

There are *Divan-Beghi's* not only at Court, and in the Capital, but alſo in the Provinces, and other Cities of the Empire. He is not confin'd by any other Law, or Rule in the Adminiſtration of Juſtice, but the Alcoran; which, too, he interprets at Pleaſure. He only takes Cognizance of Criminal Cauſes.

DIVERGENT, or DIVERGING *Lines*, in Geometry, are ſuch whoſe Diſtance is continually increaſing. See LINE.

Lines which converge one Way, *diverge* the oppoſite Way. See CONVERGING.

DIVERGENT, or DIVERGING, in Opticks, is particularly applied to Rays, which iſſuing from a radiant Point, or having in their Paſſage undergone a Refraction, or Reflection, do continually recede further from each other. See RAY.

In which Senſe the Word is oppoſed to *Convergent*, which implies the Rays to approach each other; or to tend to a Centre, where being arrived, they interſect, and if continued further, become *diverging*. See CONVERGING.

Concave Glaſſes render the Rays *diverging*; and Convex ones, converging. See LENS.

Concave Mirrors make the Rays converge; and Convex ones, *diverge*. See MIRROR, and alſo CONVEXITY, CONCAVITY, RAY, REFRACTION, and REFLEXION.

'Tis demonſtrated, in Opticks, that as the Diameter of a pretty large Pupil does not exceed 2″ or $\frac{1}{5}$ of a Digit; *Diverging* Rays, flowing from a radiant Point, will enter the Pupil, parallel, to all Intents and Purpoſes, if the Diſtance of the radiant from the Eye be 40000 Feet. See LIGHT.

DIVERGING *Hyperbola*, is one whoſe Legs turn their Convexities towards one another, and run towards quite contrary Ways. See HYPERBOLA.

DIVERSION, in War, is when you attack an Ennemy in one Place, where he is weak, and unprovided, with Deſign to make him call his Forces from another Place, where he was going to make an Irruption.

The *Romans* had no Way to drive *Hannibal* out of *Italy*, but to make a *Diverſion*, by attacking *Carthage*.

DI-

DIVERSION, in Medicine, is the turning of the Courſe, or Flux of Humours from one Part to another, by proper Applications. See REVULSION, and DERIVATION.

DIVERSITY differs from *Diſtinction* in this, that the latter is the Work of the Mind; but the former is in Things themſelves, antecedent to any Operation of the Mind. For Things that are ſeveral, are *different*; even tho I do not conceive 'em. See DISTINCTION, and DIFFERENCE.

The *Diverſity*, or *Difference* of Things, therefore, ariſes from their eſſential Attributes.

DIVESTING, properly ſignifies *Undreſſing*, or ſtripping off one's Garments, in Contra-diſtinction to *Inveſting*. See INVESTITURE.

In Law, it is us'd for the Act of ſurrendring, or relinquiſhing one's Effects. By a Contract of Donation, or Sale, the Donor, or Seller are ſaid to be *diſſeiſed*, and *diveſted* of their Property in ſuch a Commodity, and the Donee, or Purchaſer becomes *inveſted* therewith.

Demiſſion is a general *Diveſtiture*, which the Fathers and Mothers make of all their Effects, in Favour of their Children.

DIVIDEND, in Arithmetick, the Number given to be *divided*; Or that whereof the *Diviſion* is made. See DIVISION.

The *Dividend* muſt always be greater than the Diviſor. The Quotient always contains as many Unites, as the *Dividend* contains the Diviſor times. See DIVISION.

DIVINATION, the Art of foretelling future Events. See PROPHESY.

Divination is divided by the Ancients into *Artificial* and *Natural*.

Artificial is that, which proceeds by reaſoning upon certain external Signs, which it conſiders as Indications of Futurity: *Natural* is that, which preſages Things from a mere internal Senſe, and Perſuaſion of the Mind, without any Aſſiſtance of Signs.

Natural DIVINATION is of two Kinds: the one *Native*; the other by *Influx*.

The firſt is founded on this Suppoſition, that the Soul, collected within it ſelf, and not diffuſed among the Organs of the Body, has, from its own Nature and Eſſence ſome Fore-knowledge of future Things; Witneſs what is ſeen in Dreams, Extaſies, the Confines of Death, *&c.*

The ſecond is founded on this, that the Soul receives, after the Manner of a Mirror, ſome ſecundary Illumination from the Preſence of God, and other Spirits.

Artificial DIVINATION is alſo of two Kinds: the one arguing from *Natural Cauſes*; ſuch are the Predictions of Phyſicians about the Events of Diſeaſes, from the Pulſe, Urine, *&c.* ſuch alſo are thoſe of the Politician, *Oh Venalem Urbem, & cito perituram ſi Emptorem Inveneris.*

The ſecond proceeds from Experiment and Obſervations arbitrarily inſtituted; and is moſtly ſuperſtitious.

Infinite are the Syſtems of *Divination* reducible to this Head: By *Birds*, the Entrails of *Beaſts*, *Dreams*, *Lines* of the Hand, *Points* mark'd at Random, *Numbers*, *Names*, the Motion of a *Sieve*, the *Air*, *Fire*, the *Sortes Præneſtinæ*, *Virgilianæ*, and *Homericæ*; Numerous others, with the principal Species whereof, with their Names, are:

Pſychomancy, or *Sciomancy*, which conſiſts in calling up the Souls, or Shades of the Deceas'd, to learn of 'em ſomething required. *Dactylomancy*, perform'd by means of one, or more Rings. *Hydromancy*, perform'd with Sea-Water. *Pegomancy*, with Spring-Water. *Ornithomancy*, which was the Buſineſs of the Augurs. *Clidomancy*, perform'd with Keys. *Coskiromancy*, with a Riddle, or Sieve. *Cledoniſm*, by Words, or Voice. *Extiſpicina*, by the Entrails of Victims. *Alphitomancy*, or *Aleuromancy*, by Flower. *Kerannoſcopia*, by the Conſideration of Thunder-bolts. *Capnomancy*, by Smoak. *Alectriomancy*, by Cocks. *Pyromancy*, by Fire. *Lithomancy*, by Stones. *Lychnomancy*, by Lamps. *Necromancy*, by the Dead, or their Bones, *&c.* *Oncrocritica*, by Dreams. *Oroſcopy*, by Eggs. *Lecanomancy*, by a Baſon of Water. *Gaſtromancy*, by the Belly, or by Vials. *Palpitation*, *Saliſſatio*, πάλμὸς, by the Pulſation, or Motion of ſome Member. *Axinomancy*, by a Hatchet, or Cleaver. *Catoptromancy*, or *Cryſtallomancy*, by a Mirror. *Chiromancy*, by the Lines of the Hand. *Geomancy*, by the Earth. *Ceromancy*, by Figures of Wax. *Arithmomancy*, by Numbers. *Belomancy*, by Arrows. *Sycomancy*, &c. all deſcribed by *Cardan* in his IVth Book, *de Sapientia*; and under their proper Articles in this Dictionary. See PSYCHOMANCY, DACTYLOMANCY, SORTES, *&c.*

Flud has ſeveral particular Treatiſes of the ſeveral Species of *Divination*: *Cicero* has two Books of the *Divination* of the Ancients, wherein he refutes the whole Syſtem. All theſe Kinds of *Divination* have been condemn'd by the Fathers, and Councils, as ſuppoſing ſome Compact with the Devil.

In Holy Scripture we find mention made of nine different Kinds of *Divination*.

The firſt perform'd by the Inſpection of Planets, Stars, and Clouds: 'Tis ſuppoſed to be the Practicers of this, whom *Moſes* calls מעונן *Meonen*, of ענן *Anan*, Clouds, *Deuter.* C. XVIII. v. 10. 2. Thoſe, whom the Prophet calls in the ſame Place מנחש *Menacheſeh*, which the Vulgate, and Generality of Interpreters render *Augur*. 3. Thoſe, who in the ſame Place are call'd מוכשף *Mecaſcheph*, which the Septuagint, and Vulgate tranſlate, *A Man given to ill Practices*. 4. Such Authors, whom *Moſes* in the ſame Chapter, *v.* 11. calls חובר *Hhober*. 5. Thoſe, who conſult Spirits, call'd *Python*; or, as *Moſes* expreſſes it in the ſame Book, שאל אוב, thoſe who ask Queſtions of *Python*. 6. Witches, or Magicians, whom *Moſes* calls ידעני *Judeoni*. 7. Thoſe, who conſult the Dead, *Necromancers*. 8. The Prophet *Hoſeah*, C. IV. 12. mentions ſuch as conſult Rods, שאל בקלי, which Kind of *Divination* may be call'd *Rabdomancy*. 9. The laſt Kind of *Divination* mention'd in Scripture, is *Hepatoſcopy*, or the Conſideration of the Liver.

DIVINE, ſomething that comes from, or relates to a God. See GOD.

The Word is alſo us'd, figuratively, for any thing that is excellent, extraordinary, and that ſeems to go beyond the Power of Nature, and the Capacity of Mankind: In this Senſe, the Compaſs, Teleſcope, Clocks, *&c.* are ſaid to be *divine* Inventions. *Plato* is call'd the *divine Author*, the *Divine Plato*; and the ſame Appellation is given to *Seneca*: *Hippocrates* is call'd, *the divine old Man*, Divinus Senex, *&c.*

The *Arabs* give the Appellation of *Divines*, אלהיון *Elahioun*, to their ſecond Sect of Philoſophers, which conſiſts of ſuch as admit a firſt Mover of all Things, a ſpiritual Subſtance free from all Kind of Matter, in a Word, a *God*. By this Name they diſtinguiſh 'em from their firſt Sect, whom they call *Deherioun*, or *Thabaioun*, i. e. Worldly, or Natural, or rather, Worldlings, and Naturaliſts, as admitting of no Principles beyond the Material World, and Nature.

The Word אלהיון *Elahioun*, is deriv'd from אלא *Alla*, God: So that the *Elahioun* are the *Divines*, or Theologues, as *Caſtellus* renders it; or, ſuch as own a God.

DIVINITY, the Nature, and Eſſence of God. See GOD.

Divinity and Humanity are joyn'd together in *Jeſus Chriſt*. 'Tis falſly, that the Atheiſts hold the Notion of a *Divinity* to be a Political Invention of the ancient Legiſlators, to ſecure and warrant the Obſervation of their Laws: On the contrary, 'tis certain, the Legiſlators made Uſe of the Opinion, which they found already impreſs'd on the Minds of the People.

The *Heathen Divinities* may be reduced to three Claſſes: The firſt, *Theological*, repreſenting the Divine Nature under divers Attributes; Thus *Jupiter* denotes the abſolute Power of God, *Juno* his Juſtice, *&c.*

The ſecond Claſs of *Divinities* are *Phyſical*: Thus *Eolus* is that Power in Nature, whereby Vapours and Exhalations are collected to form Winds, *&c.*

The laſt are *Moral Divinities*. Thus the *Furies* are only the ſecret Reproaches and Stings of Conſcience.

DIVINITY is alſo us'd in the ſame Senſe with Theology. See THEOLOGY.

DIVING, the Art, or Act of deſcending under Water to conſiderable Depths, and abiding there a competent Time.

The Uſes of *Diving* are very conſiderable, particularly in the Fiſhing for Pearls, Corals, Spunges, *&c.* See PEARL-*Fiſhing*, SPUNGE, *&c.*

There have been divers Methods propoſed, and Engines contriv'd, to render the Buſineſs of *Diving* more ſafe and eaſy. The great Point is to furniſh the *Diver* with freſh Air, without which, he muſt either make a ſhort Stay, or periſh.

Thoſe who *dive* for Spunges in the Mediterranean, help themſelves by carrying down Spunges dipt in Oil in their Mouths. But conſidering the ſmall Quantity of Air that can be contain'd in the Pores of a Spunge, and how much that little will be contracted by the Preſſure of the incumbent Air, ſuch a Supply cannot long ſubſiſt the *Diver*. For it is found by Experiment, that a Gallon of Air included in a Bladder, and by a Pipe reciprocally inſpired and expired by the Lungs, becomes unfit for Reſpiration in little more than one Minute of Time. For tho' its Elaſticity be but little alter'd in paſſing the Lungs, yet it loſes its vivifying Spirit, and is render'd effete.

In effect, a naked *Diver*, Dr. *Halley* aſſures us, without a Spunge, cannot remain above a couple of Minutes encloſed in Water; nor much longer with one, without Suffocating; nor, without long Practice, near ſo long; ordinary Perſons beginning to ſtifle in about half a Minute. Beſides that, if the Depth be conſiderable, the Preſſure of the Water in the Veſſels makes the Eyes Blood-ſhot, and frequently occaſions a Spitting of Blood.

Hence,

Hence, where there has been Occaſion to continue long at the Bottom, ſome have contriv'd double flexible Pipes, to circulate Air down into a Cavity encloſing the *Diver*, as with Armour, both to furniſh Air, and to bear off the Preſſure of the Water, and give leave to his Breaſt to dilate upon Inſpiration; The freſh Air being forced down one of the Pipes with Bellows, and returning by the other of 'em, not unlike to an Artery, and Vein.

But this Method is inpracticable when the Depth ſurpaſſes 3 Fathoms; the Water embracing the bare Limbs ſo cloſely as to obſtruct the Circulation of the Blood in 'em; and withal preſſing ſo ſtrongly on all the Junctures where the Armour is made tight with Leather; that if there be the leaſt Defect in any of them, the Water ruſhes in, and inſtantly fills the whole Engine, to the great Danger of the *Diver's* Life.

The DIVING-*Bell*, is a Machine contriv'd to remedy all theſe Inconveniencies. In this the *Diver* is ſafely convey'd to any reaſonable Depth, and may ſtay more or leſs Time under Water, as the Bell is greater or leſs.

'Tis moſt conveniently made in Form of a truncated Cone, the ſmaller Baſe being cloſed, and the larger open. It is to be pois'd with Lead, and ſo ſuſpended, that the Veſſel may ſink full of Air, with its open Baſis downward, and as near as may be in a Situation parallel to the Horizon, ſo as to cloſe with the Surface of the Water all at once.

Under this Couvercle the *Diver* ſitting, ſinks down with the included Air into the Depth deſired: And if the Cavity of the Veſſel may contain a Tun of Water, a ſingle Man may remain a full Hour, without much Inconvenience, at 5 or 6 Fathoms deep.

But the lower you go, ſtill, the included Air contracts itſelf, according to the Weight of the Water that compreſſes it; So as at 33 Foot deep, the *Bell* becomes half full of Water; the Preſſure of the incumbent Water being then equal to that of the Atmoſphere: And at all other Depths the Space occupied by the compreſſed Air in the upper Part of the *Bell* will be to the under Part of its Capacity fill'd with Water as 33 Feet to the Depth of the Surface of Water in the *Bell* below the common Surface thereof. And this condenſed Air being taken in with the Breath ſoon inſinuates it ſelf into all the Cavities of the Body, and has no ill Effect, provided the *Bell* be permitted to deſcend ſo ſlowly as to allow Time for that Purpoſe.

One Inconvenience that attends it, is found in the Ears, within which there are Cavities which open only outwards, and that by Pores ſo ſmall as not to give Admiſſion even to the Air it ſelf, unleſs they be dilated, and diſtended by a conſiderable Force. Hence, on the firſt Deſcent of the *Bell*, a Preſſure begins to be felt on each Ear, which, by Degrees, grows painful, till, the Force overcoming the Obſtacle, what conſtringe theſe Pores, yields to the Preſſure, and letting ſome condenſed Air ſlip in, preſently Eaſe enſues. The *Bell* deſcending lower, the Pain is renewed, and again eaſed in the ſame Manner.

But the greateſt Inconvenience of this Engine, is, that the Water entring it, contracts the Bulk of Air into ſo ſmall a Compaſs, that it ſoon heats, and becomes unfit for Reſpiration: So that there is a Neceſſity for its being drawn up to recruit it; beſides the uncomfortable Abiding of the *Diver* almoſt cover'd with Water.

To obviate theſe Difficulties of the *Diving-Bell*, Dr. *Halley*, to whom we owe the preceding Account, contriv'd ſome further Apparatus, whereby not only to recruit and refreſh the Air from Time to Time, but alſo to keep the Water wholly out of it at any Depth: which he effected after the following Manner:

His *Diving-Bell* was of Wood about 60 Cubic Feet in its Concavity, coated externally with Lead ſo heavy that it would ſink empty; a particular Weight being diſtributed about its Bottom, to make it deſcend perpendicularly, and no otherwiſe. In the Top was fix'd a Glaſs like a Window, to let in Light from above; with a Cock, to let out the hot Air: And below, about a Yard under the *Bell*, was a Stage ſuſpended from it by three Ropes, each charg'd with an hundred Weight, to keep it ſteady.

To ſupply Air to this *Bell* when under Water, he had a couple of Barrels, holding 36 Gallons a-piece, caſed with Lead, ſo as to ſink empty, each having a Bung-hole at Bottom, to let in the Water as they deſcended, and let it out again, as they were drawn up again. In the Top of the Barrels was another Hole, to which was fix'd a leathern Pipe, or Hoſe, long enough to hang below the Bung-hole; being kept down by a Weight appended. So that the Air driven to the upper Part of the Barrel by the Encroachment of the Water, in the Deſcent, could not eſcape up this Pipe, unleſs the lower End were lifted up.

Theſe Air-Barrels were fitted with Tackle, to make 'em riſe and fall alternately, like two Buckets; being directed in their Deſcent by Lines faſten'd to the under Edge of the *Bell*: So that they came readily to the Hand of a Man plac'd on the Stage, to receive 'em; and who taking up the Ends of the Pipes, aſſoon as they came above the Surface of the Water in the Barrels, all the Air included in the upper Part thereof was blown forcibly into the *Bell*; the Water taking its Place.

One Barrel thus receiv'd, and emptied; upon a Signal given, it was drawn up, and at the ſame time the other let down: By which alternate Succeſſion freſh Air was furniſh'd ſo plentifully, that the Learned Doctor himſelf was one of five, who were all together in 9 or 10 Fathoms deep of Water for above an Hour and a half, without the leaſt Inconvenience; the whole Cavity of the Bell being perfectly dry.

All the Precaution he obſerved, was to be let down gradually about 12 Foot at a Time, and then to ſtop, and drive out the Water that had enter'd by taking in 4 or 5 Barrels of freſh Air before he deſcended further. And being arrived at the Depth intended, he let out as much of the hot Air that had been breath'd, as each Barrel would repleniſh with cold, by means of the Cock at the Top of the Bell; thro' whoſe Aperture, tho' very ſmall, the Air would ruſh with ſo much Violence, as to make the Surface of the Sea boil.

Thus, he found, any thing could be done that was required to be done underneath. And by taking off the Stage, he could, for a Space as wide as the Circuit of the Bell, lay the Bottom of the Sea ſo far dry as not to be over Shoes therein. Beſides, that by the Glaſs Window ſo much Light was tranſmitted, that, when the Sea was clear, and eſpecially when the Sun ſhone, he could ſee perfectly well to write, or read, much more to faſten, or lay hold of any thing under him that was to be taken up. And by the Return of the Air Barrels he often ſent up Orders written with an Iron Pen on a Plate of Lead, directing how he would be mov'd from Place to Place.

At other times, when the Water was troubled and thick, it would be as dark as Night below; But in ſuch Caſes he was able to keep a Candle burning in the *Bell*.

The ſame Author intimates, that by an additional Contrivance, he has found it practicable for a *Diver* to go out of the *Bell* to a good Diſtance from it; the Air being convey'd to him in a continued Stream by ſmall flexible Pipes, which ſerve him as a Clew to direct him back again to the *Bell*. So that there ſeems little further wanting to the Perfection of *Diving*.

Yet, the famous *Corn. Drebell*, had an Expedient in ſome reſpects ſuperior even to this; if what is related of it, be true. He contrived not only a Veſſel to be row'd under Water, but alſo a Liquor to be carried in the Veſſel, which ſupplied the Place of freſh Air.

The Veſſel was made for King *James* I; carrying 12 Rowers, beſide the Paſſengers. It was tried in the River *Thames*, and one of the Perſons in that ſubmarine Navigation, then living, told it one from whom Mr. *Boyle* had the Relation.

As to the Liquor, Mr. *Boyle* aſſures us, he diſcover'd by a Phyſician, who married *Drebell's* Daughter, that it was us'd from Time to Time, when the Air in the ſubmarine Boat was clogg'd by the Breath of the Company, and unfitted for Reſpiration: At which Time, by unſtopping the Veſſel full of this Liquor, he could ſpeedily reſtore to the troubled Air ſuch a Proportion of vital Parts, as would make it ſerve again a good while. The Secret of this Liquor *Drebell* would never diſcloſe to above one Perſon, who himſelf aſſured Mr. *Boyle* what it was. *Boyl. Exp. Phyſ. Mech. of the Spring of the Air.*

DIVISIBILITY, a paſſive Power, or Property in Quantity, whereby it becomes ſeparable into Parts; either actually, or at leaſt mentally. See QUANTITY, and MATTER.

The School-men define *Diviſibility*, *Capacitas Coextenſionis cum pluribus*, a Capacity of Coextending with ſeveral Things: Thus, a Staff 4 Foot long is *diviſible*, becauſe it may be coextended with 4 Feet, or 48 Inches, *&c.*

This, the Peripateticks, and *Carteſians*, univerſally hold an Affection, or Property of all Matter, or Body: The *Carteſians*, as holding the Eſſence of Matter to conſiſt in Extenſion; For every Part, or Corpuſcle of the Body being extended, has Parts without Parts, and conſequently is *diviſible*. See EXTENSION.

The *Epicureans*, again, hold *Diviſibility* to agree to every Phyſical Continuum, as, without Parts adjacent to Parts, there can be no Continuity, and wherever there are Parts ſo adjacent, there muſt be *Diviſibility*. But they deny, that this Affection agrees to all Bodies: For the primary Corpuſcles, or Atoms they hold perfectly inſecable, and indiviſible. See ATOM.

The principal Argument they alledge, is, that from the *Diviſibility* of all Body, and of every aſſignable Particle of Body, even after any repeated Number of Diviſions, it follows, that the ſmalleſt Corpuſcle is infinitely *diviſible*, which with them is an Abſurdity. For a Body can only be divided into ſuch Parts as it actually contains. But to ſuppoſe infinite Parts

in the ſmalleſt Corpuſcle, ſay they, is to ſuppoſe it infinitely extended: For infinite Parts placed externally to each other, as the Parts of Bodies doubtleſs are, muſt make an infinite Extenſion.

They add, that there is a World of Difference between the *Diviſibility* of Phyſical, and Mathematical Quantities. For every Mathematical Quantity, or Dimenſion, they grant, may be increas'd and diminiſh'd infinitely: But Phyſical Quantity, neither the one nor the other.

An Artiſt, dividing a continued Body, arrives at certain minute Parts, beyond which he cannot go; which we may call *Minima Artis*. In like manner Nature, which may begin where Art ends, will find Bounds; which we may call *Minima Naturæ*: And God, whoſe Power is infinite, beginning where Nature ends, may ſubdivide the *Minima Naturæ*, but he will at length come at certain Parts, to which there being no other Parts continuous, they cannot be taken away. Theſe minute Parts are Atoms.

All we can ſay to the Point, is, that on the one hand 'tis certain, every extended Corpuſcle muſt have two Sides, and conſequently is *diviſible*; for if it had not two Sides, it were not extended; and if it had no Extenſion, an Aſſemblage of divers ſuch Corpuſcles would not compoſe a Body. And on the other hand, the infinite *Diviſibility* ſuppoſes an Infinity of Parts in the minuteſt Corpuſcle: whence it follows, that there is no Body, how ſmall ſoever, but may furniſh as many Surfaces, or Parts, as the whole Globe of the Earth can; nay, and infinitely more; which, to ſay no worſe, is a violent Paradox.

The infinite *Diviſibility* of Mathematical Quantity is thus prov'd, and illuſtrated by the Mathematicians: Suppoſe a Line AD (*Tab. Geometry Fig.* 35.) perpendicular to BF, and another, as GH, at a ſmall Diſtance from A, alſo perpendicular to the ſame Line; with the Centres CCC, &c. and Diſtances CA, CA, &c. deſcribe Circles cutting the Line GH in the Points e, e, &c. Now, the greater the Radius AC is, the leſs is the Part e G: But the Radius may be augmented in *Infinitum*, and therefore the Part e G may be diminiſh'd in the ſame manner; and yet it can never be reduced to nothing; becauſe the Circle can never coincide with the right Line BF. Conſequently, the Parts of any Magnitude may be diminiſh'd in *Infinitum*.

The chief Objections againſt the Doctrine, are: That an Infinite cannot be contain'd by a Finite; That it follows from a *Diviſibility in Infinitum*, either that all Bodies are equal, or, that one Infinite is greater than another: To which it is anſwer'd, that to an Infinite may be attributed the Properties of a finite, and determined Quantity. And who has ever proved, that there could not be an infinite Number of Parts infinitely ſmall in a finite Quantity; or that all Infinites are equal: The contrary is demonſtrated by Mathematicians in innumerable Inſtances. We are not here contending for the Poſſibility of an actual Diviſion in *Infinitum*, we only aſſert, that however ſmall a Body is, it may be ſtill farther divided; which we imagine may be call'd, a Diviſion in *Infinitum*, becauſe what has no Limits, is call'd infinite. See Infinite.

True, there are no ſuch Things as Parts infinitely ſmall; yet the Subtilty of the Particles of ſeveral Bodies is ſuch, that they very much ſurpaſs our Conception; and there are innumerable Inſtances in Nature of ſuch Parts actually ſeparated from one another.

Mr. *Boyle* gives us ſeveral Inſtances. He ſpeaks of a ſilken Thread 300 Yards long, that weigh'd but two Grains and an half. He meaſured Leaf-Gold, and found by weighing it, that 50 ſquare Inches weigh'd but one Grain: If the Length of an Inch be divided into 200 Parts, the Eye may diſtinguiſh 'em all; therefore there are in one ſquare Inch 40000 viſible Parts; and in one Grain of Gold there are 2000000 of ſuch Parts; which viſible Parts no one will deny to be farther *diviſible*.

A whole Ounce of Silver may be gilt with eight Grains of Gold, which is afterwards drawn into a Wire thirteen thouſand Foot long. See Gold, and Ductility.

In Odoriferous Bodies we can ſtill perceive a greater Subtilty of Parts, and even of ſuch actually ſeparated from one another; ſeveral Bodies ſcarce loſe any ſenſible Part of their Weight in a long Time, and yet continually fill a very large Space with odoriferous Particles. See Effluvia.

By Help of Microſcopes, ſuch Objects as would otherwiſe eſcape our Sight, appear very large: There are ſome ſmall Animals ſcarce viſible with the beſt Microſcopes; and yet theſe have all the Parts neceſſary for Life, as Blood, and other Liquors: How wonderful muſt the Subtility of ſuch Parts be, which make up ſuch Fluids! whence is deducible the following Theorem:

Any Particle of Matter, how ſmall ſoever, and any finite Space, how large ſoever, being given; it is poſſible for that ſmall Sand, or Particle of Matter, to be diffuſed through all that great Space, and fill it in ſuch manner, as that there ſhall be no Pore in it, whoſe Diameter ſhall exceed any given Line; as is demonſtrated by Dr. *Keil. Introduct. ad Ver. Phyſ.*

DIVISION, the Act of ſeparating a Whole into the Parts it contains. See Part.

If the whole be compoſed of Parts really diſtinct, call'd Integral Parts, the *Diviſion* made thereof is properly call'd *Partition*: As when a Houſe is *divided* into its Apartments. See Partition.

If the Whole be compoſed of Parts, call'd *Subjective*, that is, if the Whole be only one common Term, the Subjects comprized in the Extent whereof are the Parts, the *Diviſion* thereof is what we properly call *Diviſion*: Such is the *Diviſion* of a Genus into its Species, &c.

Division, in Phyſicks, or *Diviſio Continui*, is the Partition, or Separation of the Parts of a Quantity; whereby, what before was one, is now reduced into ſeveral. See Continuity.

This *Diviſion* is effected by means of Motion, without which there can be no Separation of any Continuum, or even Contiguum.

This Motion is perform'd divers Ways, by *Fraction*, *Sciſſion*, *Section*, *Fiſſion*, *Reſolution*, *Dilution*, *Maceration*, *Diſperſion*, *Effuſion*, *Diſtraction*, &c. See Divisibility.

Division, in Logic, is the ſeparating any Thing into divers Parts, or Idea's: or more ſtrictly, it is the Diſtribution of a Whole into all it contains. See Distribution.

The School-men define it a Diſcourſe, explaining a Thing by its Parts: In which it approaches near to the Nature of a *Definition*, whoſe Character is to define a Thing by its Parts. See Definition, Part, &c.

Diviſion, we have ſaid, is a Diſtribution of a Whole, &c. But the Whole has two Significations, whence two Kinds of *Diviſion*.

A *Whole* is properly what conſiſts of integral Parts; as the Human Body, which contains divers Members: And a Diſtribution into ſuch Parts, is properly call'd *Partition*: Such is that of a Houſe into its Parts. See Partition.

But there is another Sort of Whole, which is properly no other than an abſtract Idea common to more Things than one, as the *Univerſals*: Or a compound Idea comprehending the Subſtance, and its Accidents, or at leaſt moſt of its Accidents.

This Whole admits of a triple *Diviſion*. 1. When the Genus, or Kind, is *divided* by its Species, or Differences; as when Subſtance is *divided* into Body and Spirit; or into Extended, and Thinking. The ſecond, when any Thing is *divided* into ſeveral Claſſes, by oppoſite Accidents; as when the Stars are *divided* into thoſe which ſhine by their own Light, and thoſe that only reflect a borrowed Light. 3. When the Accidents themſelves are *divided* according to the Subjects in which they inhere; as when Goods are *divided* into thoſe of the Body, the Mind, and Fortune.

The Laws of *Diviſion* are, 1. That it be full, and adequate, that is, that the Members of the *Diviſion* entirely exhauſt the whole Thing *divided*: As when all Numbers are *divided* into *Equal*, and *Unequal*. 2. That the Members of the *Diviſion* be oppoſite; as *Equal*, and *Unequal*; *Corporeal*, and *Not Corporeal*; *Extended*, and *Thinking*. 3. That one Member of the *Diviſion* be not contain'd in another, ſo as the other may be affirm'd of it. Tho', in other reſpects, it might be included without any Fault in the *Diviſion*: Thus Extenſion, Geometrically conſider'd, may be *divided* into a *Line*, *Surface*, and *Solid*; tho' the Line be included in the Surface, and the Surface in the Solid. 4. The *Diviſion* not to be made into too many, or too general Parts. Laſtly, the Members, unleſs the Subject require it, not to be too unequal; as if the Univerſe were *divided* into Heaven, and Earth.

The Division *of a Word*, is a Diſcourſe explaining the Latitude, or Comprehenſion of a Word: The *Latitude*, when the Word is univerſal; as when the Genus is *divided* into Species, and Differences: The *Comprehenſion*, when the Word is ambiguous, as *Taurus*, Bull; which ſometimes denotes a Conſtellation, ſometimes a Beaſt, and ſometimes a Mountain.

The Division *of a Mode*, *divides* a Quality into its Degrees. The Philoſophers, after the Phyſicians, ſuppoſe 8 Degrees of every Quality: Hence when a Quality is ſaid to be in the 8th Degree, it marks, that it can be no further intended, or heighten'd. See Degree, and Quality.

Division, in Arithmetick, is the laſt of the four great Rules; being that whereby we find how often a leſs Quantity is contain'd in a greater; and the Overplus.

Diviſion, in Reality, is only a compendious Method of Subſtraction; Its Effect being to take a leſs Number from another greater, as often as poſſible; that is, as oft as 'tis contain'd therein. There are, therefore, three Numbers concern'd in *Diviſion*: 1. That given to be divided, call'd the

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Dividend. 2. That whereby the Dividend is to be divided, call'd the *Diviſor*. 3. That which expreſſes how often the Diviſor is contain'd in the Dividend; or the Number reſulting from the *Diviſion* of the Dividend by the Diviſor, call'd the *Quotient*. See QUOTIENT, *&c.*

There are divers Ways of performing *Diviſion*, one call'd the *Engliſh*, another the *Flemiſh*, another the *Italian*, another the *Spaniſh*, another the *German*, and another the *Indian* Way, all equally good, and juſt, as finding the Quotient with the ſame Certainty, and only differing in the manner of arranging, and diſpoſing the Numbers.

We have likewiſe *Diviſion* in Integers; *Diviſion* in Fractions; and *Diviſion* in Species, or *Algebra*.

Diviſion is perform'd by ſeeking how often the Diviſor is contain'd in the Dividend; and when the latter conſiſts of a greater Number of Figures than the former, the Dividend muſt be taken into Parts, beginning from the left, and proceeding to the Right, and ſeeking how often the Diviſor is found in each of thoſe Parts. For Example, 'tis required to divide 6759 by 3: I firſt ſeek how oft 3 is contain'd in 6, *viz.* twice; then, how oft in 7, which is likewiſe twice, with one remaining. This 1, therefore, is joyn'd to the next Figure 5, which makes 15, and I ſeek how oft 3 in 15; and laſtly, how oft 3 in 9. All the Numbers expreſſing how oft 3 is contain'd in each of thoſe Parts, I write down according to the Order of the Parts of the Dividend, that is, from Left to Right, and ſeparate 'em from the Dividend it ſelf, by a Line, thus.

Diviſor. Dividend. Quotient.
3) 6759 (2253.

It appears, therefore, that 3 is contain'd 2253 times in 6759; or that 6759 being divided into 3, each Part will be 2253. If there be any Remainder, that is, if the Diviſor repeated a certain Number of times is not equal to the Dividend, what remains is wrote over the Diviſor fraction-wiſe. Thus, if inſtead of 6759 the Dividend were only 6758, the Quotient will be the ſame as in the former Caſe, except for the laſt Figure 8; for 3 being only contain'd twice in 8, the laſt Number in the Quotient will be 2; and as twice 3 is only 6, there remains 2 of the Dividend; which I write after the Quotient, with the Diviſor underneath it, and a Line to ſeparate the two; thus,

$$3)\ 6758\ (2252\ \tfrac{2}{3}$$

Proof of DIVISION.

Diviſion is proved by multiplying the Quotient by the Diviſor, or the Diviſor by the Quotient; and adding what remains of the *Diviſion*, if there be any thing. If the Sum be found equal to the Dividend, the Operation is juſt, otherwiſe there is a Miſtake.

DIVISION { *in Decimal Fractions.* / *in Vulgar Fractions.* / *of Proportion.* } See { DECIMAL. / FRACTION. / PROPORTION. }

DIVISION, in Species, or *Algebra*, is perform'd by reducing the Dividend and Diviſor into the Form of a Fraction: This Fraction being the Quotient.

Thus, if ab were to be divided by cd, it muſt be placed thus, $\frac{ab}{cd}$, and that Fraction is the Quotient: tho' others chuſe to write it thus, $cd)\ ab$, or $cd:ab$, or $ab \div cd$, which laſt Mark $\div$ is the moſt common Character for *Diviſion*. See CHARACTER.

To perform the Work of *Diviſion* algebraically, theſe Rules are to be obſerved: 1. When the Dividend is equal to the Diviſor, the Quotient is Unity, and muſt be placed in the Quotient, becauſe every Thing contains it ſelf once.

2. When the Quotient is expreſs'd Fraction-wiſe (as in ſimple *Diviſion*) if the ſame Letters are found equally repeated in each Member of the Numerator, and Denominator; caſt away thoſe Letters, and the Remainder is the Quotient: Thus, $\frac{ab}{b}$ (*a*, and $\frac{abc}{ab}$ (*c*, &c.

3. When there are any Co-efficients, divide them as in common Arithmetic, and to the Quotients annex the Quantities expreſs'd by Letters: Thus, $\frac{360\ ab}{24\ b}$ (= 15 *a*.

4. The general Way of *Diviſion* of compound Quantities, is like the ordinary Way in common Arithmetic, reſpect being had to the Rules of Algebraic Addition, Subſtaction, and Multiplication; as alſo that like Signs give +, and unlike — in the Quotient: taking Care to divide every Part of the Dividend by its correſponding Diviſor, (that is, that whoſe Letters ſhew it of the ſame Kind with the other) to prevent a Fraction, which would otherwiſe ariſe: Thus,

$a+b)\ aa+ab-ca-cb\ (a-c.$

$$\begin{array}{r} aa+ab \\ \hline 0 \qquad 0-ca-cb \\ \qquad\quad -ca-cb \\ \hline \qquad\quad 0 \end{array}$$

That for the ſame reaſon like Signs giving a Poſitive, and unlike a Negative Quotient, do hold in *Diviſion*, as well as in Multiplication, is clear from conſidering the Nature of *Diviſion*; (which is only reſolving the Thing into its Parts) conſequently, ſince every Dividend is nothing elſe but the Product of the Diviſor, and Quotient multiplied by each other, the Quotient muſt conſiſt of ſuch Signs, which could produce the Dividend; therefore, if the Dividend be divided by a Quantity, that has a ſimilar Sign with it, the Quotient muſt be poſitive; if by a Quantity having a diſſimilar Sign, the Quotient muſt be negative. It may be a general Rule in compound *Diviſion* in Algebra, always to place ſuch a Letter in the Quotient, as will, when multiplied into the Diviſor, produce the Dividend, for that is always a Rect-angle under the Diviſor, and the Quotient: As for Example,

$zz-16)\ z^6-8z^4-124\,zz-64\ (z^4+8zz+4.$

$$\begin{array}{r} z^6-16z^4 \\ \hline 8z^4-124\,zz \\ 8z^4-128\,zz \\ \hline 4zz-64 \\ 4zz-64 \\ \hline 0 \end{array}$$

DIVISION *by* { *Nepairs Bones.* / *Logarithms.* } See { NEPAIRS *Bones.* / LOGARITHM. }

DIVISION, in Lines, or *Geometrical* DIVISION, is alſo call'd *Application*; the Deſign of which, when it is employ'd about the Conſtruction of plain Problems, is this, *viz.* a Rectangle being given; as alſo a right Line; to find another right Line, the Rectangle contain'd under which with the right Line given, ſhall be equal to the Rectangle firſt given: Such Effection, or Conſtruction is call'd the *Application* of a given Rectangle to a right Line given; and the right Line ariſing by ſuch Application, is call'd the *Parabola*, or *Geometrical Quotient*.

This is found by the Rule of Three, by making, As the Line given: is to one Side of the Rect-angle :: ſo is the other Side: to the Line ſought. Not unlike to which is *des Cartes*'s Way of working *Diviſion* in Lines, by Scale, and Compaſs: Thus ſuppoſe ac (=6) were to be divided by ad (=3) make any Angle at Pleaſure, and therein ſet off firſt ad (=3) the Diviſor, and then on the ſame Leg au = to Unity: Then on the other Leg of the Angle ſet ac (=6) the Dividend, and joyn dc, and to it, through u, draw ub parallel to dc, which ſhall cut off ab the Quotient ſought; for as $ad:au::ac:ab$; that is, as the Diviſor: is to Unity :: ſo is the Dividend: to the Quotient; on which Reaſon depends all *Diviſion*.

DIVISION, in Muſic, the dividing of the Interval of an Octave into a Number of leſſer Intervals. See OCTAVE, and SYSTEM.

The 4th, and 5th, each of 'em, divide, or meaſure the Octave perfectly, tho' differently. When the 5th is below, and ſerves as a Baſe to the 4th, the *Diviſion* is call'd *Harmonical*; When the 4th is below, the *Diviſion* is call'd *Authentic*. See SCALE. See alſo CONCINNOUS.

DIVISION, in War, is a Batallion, or other Body of Forces in March.

The Lieutenant commanded the firſt *Diviſion* of Muſqueteers; and the ſecond Lieutenant, the ſecond *Diviſion*.

DIVISION, in Sea-Language, the third Part of a Naval Army, or Fleet, or of one of the Squadrons thereof, under the Command of ſome General Officer.

Naval Battals are uſually rang'd in three Lines, according to their three *Diviſions*.

DIVISOR, is the dividing Number; or that which ſhews how many Parts the Dividend is to be divided into. See DIVIDEND, *&c.*

DIVORCE, a Breach, or Diſſolution of the Bond of Marriage. See MARRIAGE.

In our Law *Divorce* is of two Kinds: The one, *a Vinculo Matrimonii*; which alone is properly *Divorce*: The other, *a Menſa & Thoro*; a Separation from Bed and Board.

The Woman divorced *a Vinculo Matrimonii*, receives all again that ſhe brought with her: The other has a ſuitable ſeparate Maintenance allow'd her out of her Husband's Effects.

The firſt only happens through ſome eſſential Impediment, as Conſanguinity or Affinity within the Degrees forbidden, precontract, Impotency, Adultery, *&c.* Of which Impediments the Canon Law allows fourteen, comprehended in theſe Verſes:

Error, Conditio, Votum, Cognatio, Crimen,
Cultus, Diſparitas, Vis, Ordo, Ligamen, Honeſtas,
Si ſis affinis, ſi forte coire nequibis,
Si parochi & duplicis deſit præſentia Teſtis,
Raptave ſit Mulier, nec parti reddita tutæ.

Divorce is a Spiritual Judgment, and, therefore, is paſs'd in the Spiritual Court. Under the old Law, the Woman *divorced* was to have of her Husband a Writing, as St. *Jerom* and *Joſephus* teſtify, to this Effect: *I promiſe, that hereafter I will lay no Claim to thee*; which was call'd a *Bill of Divorce*.

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Divorce was allow'd of in great Latitude both among the *Pagans* and *Jews*. At *Rome*, Barrenneſs, Oldneſs, Diſeaſe, Madneſs, and Baniſhment, were the ordinary Cauſes of *Divorce*. *Carvilius*, 500, or 600 Year after the Building of *Rome*, was the firſt who put away his Wife becauſe ſhe was barren.

Juſtinian afterwards added Impotence, a Vow of Chaſtity, and the Profeſſion of a Monaſtic Life, as valid Reaſons of *Divorce*.

Among the *Jews*, Uglineſs, old Age, or ill Humour in a Wife, were ſufficient Reaſons for giving her a Bill of *Divorce*. Even the Man's own Pleaſure, or his repenting of his Match, were admitted as good Reaſons.

Some hold, that *Jeſus Chriſt* allow'd of *Divorce* in the ſingle Caſe of Adultery. But we take it for a Miſtake: *Divorce* is no where permitted in the New Teſtament for Adultery; but only a Separation. See *Matth.* XIX. 9. *Mark* X. 11. *Paul* 1. *Cor.* X. 39. See alſo the Council of *Florence*; at the End, after the Queſtions propoſed to the *Greeks*. *Tertull. de Monogam.* C. 9. and 10. *Auguſtin. de Bono Conjugio*, & *de Adult. Conjug.* See alſo what we have deliver'd under the Article ADULTERY.

Pope *Innocent* I. in his Decretal to *Exuperus*, declares ſuch as contract a new Marriage after *Divorce*, Adulterers; as well as the Perſons they marry withal. The Occaſion of this Decree was, that ſuch Marriages were then allow'd of by the *Roman* Laws. There is an Exception, however, in the Caſe of Marriage between two Heathens, which the Decrees allow to be diſſolved after the Converſion of one of the Parties. And St. *Paul* ſays the ſame, 1. *Cor.* VII. 15. Yet even in this Caſe, 1. The Marriage is not immediately diſſolv'd by the Converſion of one of the Parties, but they may ſtill live together, and even on ſome Occaſions ought to do ſo. Nor is it even diſſolv'd by the Separation of the infidel Party; for if ſhe be afterwards converted, he is obliged to take back his Wife: as *Innocent* himſelf decides it *L.* IV. *Decret. de Divort. C. Gaudemus.* But the Marriage is diſſolved by a ſecond Marriage of the converted Party with another Perſon.

2. Tho' the Party converted to the Faith, may, the Minute of his Converſion, legally ſeparate himſelf, and contract with another; a Liberty the *Chriſtian* Law allows him; as in Juſtice he is not deem'd to owe any Thing to an Infidel; yet Charity frequently forbids ſuch *Divorce* and Separation: As, *e. gr.* if the Infidel conſent to live with him, and not moleſt him in his Religion; if his Faith be not at all in Danger; if there be any Hopes of converting her; or of gaining the Children; if the Separation would prove a Scandal to the Heathens, and render Chriſtianity odious, &c. See St. *Paul* 1. *Cor.* VII. 13, 14. St. *Auguſtin* L. I. *de adult. Conjug. ad Pollent.*

The 4th Council of *Toledo* decrees, that in a Country where Chriſtianity is the prevailing Religion, the Infidel Party muſt be advertized to become Chriſtian, which if ſhe refuſe, the Marriage to be diſſolv'd.

The Council of *Trent* prohibits *Divorce* on any Occaſion whatever. The Papal Diſpenſations, however, are a *Salvo* for this Piece of Rigor.

In England *Divorces* can only be had by Conſent of Parliament. *Milton* has an expreſs Treatiſe of the Doctrine and Diſcipline of *Divorce*, where he maintains, that *Divorce* ought to be permitted for a mere Incompatibility of Humors.

DIURESIS, from διά, *per*, through, and ῥέω, *fluo*, to flow; is us'd to expreſs that Separation which is made of the Urine by the Kidneys: whence *Diuretic*. See DIURETICKS.

DIURETICKS, in Medicine, are ſuch Remedies as provoke, or promote the Diſcharge of Urine. See URINE.

Such is Water drank plentifully, white Wine drank in a Morning; Alcali Salts of all Kinds; Sea-Salt, *Sal Gemmæ*, Nitre, Borax, Alumn, Tartar, Ammoniac, Whey, ſour Milk, Lemmon Juice, &c.

Aqueous Liquors are generally *Diuretic*, eſpecially if mix'd with Salt, and drunk cold. Fermented Liquors are the leaſt *Diuretic* of all; and the leſs as they are the fatter. Sharp thin ſour Wines, *Rheniſh*, &c. as alſo acid Spirits of Vinegar, Salt, Sulphur, Alumn, Vitriol, &c. Aſparagus, bitter Almonds, Smallage, Eryngium, Eupatorium, Saſſafraſs, &c. do the ſame.

DIURNAL, in Aſtronomy, ſomething relating to the *Day*: In Oppoſition to *Nocturnal*, which regards the *Night*. See DAY, and NIGHT.

DIURNAL *Circle*, is an immoveable Circle, in which any Star, or Point in the Surface of the mundane Sphere, moves by a *Diurnal* Motion. See CIRCLE.

Thus, if a right Line be conceiv'd to be continued from the Centre of a Star, perpendicular to the Axis of the World, as far as the Surface of the Sphere of the World; it will deſcribe a *Diurnal Circle* thereon, in making one Revolution about its Axis.

DIURNAL *Arch*, is the Arch, or Number of Degrees, that the Sun, Moon, or Stars deſcribe between their Riſing, and Setting.

DIURNAL *Motion* of a Planet is ſo many Degrees and Minutes, &c. as any Planet moves in 24 Hours. See MOTION.

The Motion of the Earth about its Axis (in the Copernican Syſtem) is call'd its *Diurnal Motion*, which cauſes the Viciſſitudes of Days and Nights.

The DIURNAL *Motion* of the Earth is its Rotation round its Axis, the Space whereof conſtitutes the Natural *Day*. See DAY.

The *Diurnal Rotation* of the Earth is now paſt all Diſpute. See EARTH.

DIURNAL is alſo us'd in ſpeaking of what belongs to the *Nycthemeron*, or Natural Day of 24 Hours, in which Senſe it ſtands oppoſed to *Annual*, *Menſtrual*, &c. as *Diurnal Motion*, *Diurnal Rotation*, &c.

The *Diurnal* Phænomena of the heavenly Bodies are ſolv'd from the *Diurnal* Revolution of the Earth; that is, from one Revolution of the Earth round its own Axis in 24 Hours. To illuſtrate this: Suppoſe the Circle PRTH, (*Tab. Aſtronomy Fig.* 13.) to denote the Earth; C the Centre of the Earth, through which its Axis is conceiv'd to paſs, a-round which, its *Diurnal* Revolution is perform'd: B denotes any Place on the Earth; the Line EW the viſible Horizon of the Place; E the Eaſt Point of the ſaid Horizon, W the Weſt: the Circle a b c d e f the Circumference of the Heavens; the Circle S the Sun in the Heavens, the Semi-Circle PRT, the enlighten'd Hemiſphere of the Earth, or that Half of it, oppoſite to the Sun; and laſtly, the Semi-Circle PHT the darken'd Hemiſphere of the Earth.

Now, the Earth ſuppoſed in this Situation, and moving round its Axis towards the Sun; it is evident, the Place P of the Earth, will then juſt begin to be enlighten'd by the Sun, and ſo the Sun will appear there to be juſt *riſing*, or aſcending the Horizon at E the Eaſt Point of it. The Earth being moved round its own Axis, ſo as the Place P of the Earth, which afore was under the Point a in the Heavens, is now under the Point b; it is evident, the Horizon of the ſaid Place P, will be now ſo ſituated, as that the Sun will appear to a Spectator at P, as deſcended conſiderably above E the Eaſt End of the Horizon. And while by the Revolution of the Earth round its Axis, the Place P paſſes from under the Point b in the Heavens, to the Point c, the Horizon of the Place P will continually ſink lower and lower in reſpect of the Sun, and ſo the Sun will appear to aſcend higher and higher, till P is come under c, where the Sun will appear in its greateſt Height above the Horizon for that Day; and ſo it will be *Noon*, or *Mid-Day*, at the Place P. The Earth moving on, as the Place P paſſes from under c to d, the Weſt Point of its Horizon will aſcend higher and higher, and ſo the Sun will appear more and more to deſcend, as is repreſented by the Horizon at the Point of the Earth under d. The Place P being carried by the *Diurnal* Revolution of the Earth from under d to under e, the Sun will then appear juſt on W, the Weſt Point of the Horizon, and ſo will appear to be juſt *ſetting*. The Place P being come under f, it will be then *Mid-night* there. Laſtly, the Place P being come round again under a, it will be there *Sun-Riſing* again. The ſame holds good as to any other of the Celeſtial Lights, and the Earth; as is obvious from the Figure: the Circle repreſenting the Sun being taken to denote any other Star, Planet, &c.

It remains to obſerve, that whereas by the *Diurnal* Revolution of the Earth, all the ſeveral Celeſtial Lights ſeem to move in the Heavens from Eaſt to Weſt, hence this ſeeming *Diurnal* Motion of the Celeſtial Lights is call'd their *common Motion*, as being common to all of them. Beſides which all the Celeſtial Lights, but the Sun, have a proper Motion; from which ariſe their proper Phænomena: As for the proper Phænomena of the Sun, they likewiſe ſeem to ariſe from the proper Motion of the Sun; but are really produc'd by another Motion, which the Earth has, and whereby it moves round the Sun once every Year, whence it is call'd the *Annual Motion of the Earth*. See SUN.

DIURNARY, *Diurnarius*, an Officer in the *Greek* Empire, who wrote down in a Book for that Purpoſe, whatever the Prince did, order'd, regulated, &c. every Day. See the 8th Law of the *Theodoſian* Code, *de Cohort.*

DIVUS, DIVA, in Antiquity, Names attributed to Men and Women, who had been deified, or placed in the Number of the Gods. See GOD, DEIFICATION, &c.

Hence it is, that on Medals ſtruck for the Conſecration of an Emperor, or Empreſs, they give 'em the Title of *Divus*, or *Diva*: For Example, DIVUS JULIUS. DIVO ANTONINO PIO. DIVO PIO. DIVO CLAUDIO. DIVA FAUSTINA AUG. &c.

DIZZINESS. See VERTIGO.

DOCK, DOCKING, in Law, a Means, or Expedient for cutting off an Eſtate Tail in Lands, or Tenements; that the Owner may be enabled to ſell, give, or bequeath them. See TAIL.

To effect this, a feigned Writ of Entry *ſur Diſſeiſin in le Poſt* is brought of the Lands whereof he intends to *dock* the Entail; and in a feigned Declaration made thereon, 'tis pretended he was diſſeis'd by a Perſon, who by a feigned Fine, or Deed of Bargain, and Sale, is named, and ſuppoſed to be Tenant of the Lands.

The feigned Tenant, if it be a ſingle Recovery, is made to appear, and vouch the Bag-bearer of Writs for the *Cuſtos Brevium* in the Court of Common Pleas; who making Default, a Judgment is by ſuch Fiction of Law enter'd, that the Demandant ſhall recover, and have a Writ of Seiſin for the Poſſeſſion of the Lands demanded; and that the Tenant ſhall recover the Value of the Lands, againſt the Lands of the Vouchee Bag-bearer, a poor, unlanded, illiterate Perſon; which is feigned to be a Satisfaction to the Heir in Law; tho' he never be to expect it. See RECOVERY.

DOCK, in the Sea Language, a Pit, great Pond, or Creek by the Side of an Harbour, made convenient to work in, in order to build, or repair Ships.

This is of two Sorts: 1. A *Dry Dock*, where the Water is kept out by great Flood-gates, till the Ship is built, or repaired, but afterwards can be eaſily let into it again to float, and launch her.

2. A *Wet Dock*, is any Place in the Ouze, out of the Tide's Way, where a Ship may be haled in, and ſo *dock* herſelf, or ſink herſelf a Place to lie in.

DOCKET, a little Bill tied to Wares, or Goods, and directed to the Perſon, and Place they are to be ſent to.

DOCTOR, a Perſon who has paſs'd all the Degrees of a Faculty, and is impower'd to teach, or practiſe the ſame. See DEGREE.

The Title of *Doctor* was firſt created towards the Middle of the XIIth Century; to ſucceed to that of *Maſter*, which was become too common, and familiar. See MASTER.

The Eſtabliſhment of *Doctorates*, ſuch as now in Uſe among us, is ordinarily attributed to *Irnerius*, who himſelf drew up the Formulary. The firſt Ceremony of this Kind was perform'd at *Boulogne*, in the Perſon of *Bulgarus*, who began to profeſs the *Roman* Law, and on that Occaſion was ſolemnly promoted to the Doctorate, *i. e.* inſtall'd *Juris utriuſque Doctor*.

But the Cuſtom was ſoon borrow'd from the Faculty of Law to that of Theology: The firſt Inſtance whereof was given in the Univerſity of *Paris*, where *Peter Lombard*, and *Gilbert de la Porree*, the two top Divines of thoſe Days, were created *Doctors* in Theology, *Sacræ Theologiæ Doctores*.

Spelman gives another Turn to the Thing: He takes the Title *Doctor* not to have commenced till after the Publication of *Lombard*'s Sentences, about the Year 1140, and affirms, that ſuch as explain'd that Work to their Scholars, were the firſt that had the Appellation of *Doctors*.

Others go much higher, and hold *Bede* to have been the firſt *Doctor* at *Cambridge*, and *John de Beverley* at *Oxford*, which latter died in the Year 721. But *Spelman* will not allow *Doctor* to have been the Name of any Title, or Degree in *England*, till the Reign of King *John*, about the Year 1207.

To paſs *Doctor of Divinity* at *Oxford*, 'tis neceſſary the Candidate have been 4 Years Batchelor of Divinity. For *Doctor of Laws*, he muſt have been 7 Years in the Univerſity to commence Batchelor of Law; 5 Years after which he may be admitted *Doctor of Laws*. Otherwiſe, in three Years after taking the Degree of Maſter of Arts, he may take the Degree of Batchelor in Law; and in four Years more, that of *LL.D.* which ſame Method and Time are likewiſe required to paſs the Degree of *Doctor in Phyſic*.

At *Cambridge*, to take the Degree of *Doctor in Divinity*, 'tis required the Candidate have been 7 Years Batchelor of Divinity. Tho' in ſeveral of the Colleges, the taking of the Batchelor of Divinity's Degree is diſpenſed with, and they may go out *per Saltum*. To commence *Doctor in Laws*, the Candidate muſt have been five Years Batchelor of Law, or ſeven Years Maſter of Arts. To paſs *Doctor in Phyſic*, he muſt have been Batchelor in Phyſic 5 Years, or 7 Years Maſter of Arts.

DOCTOR *of the Law*, was a Title of Honour, or Dignity among the *Jews*.

The *Jews*, 'tis certain, had *Doctors* long before *Jeſus Chriſt*. The Inveſtiture, if we may ſo ſay, of this Order, was perform'd by putting a Key, and a Table-Book in their Hands; which is what ſome Authors imagine our Saviour had in View, *Luke* XI. 52. where, ſpeaking of the *Doctors of the Law*, he ſays, *Woe unto you* Doctors of the Law, *for you have taken away the Key of Knowledge; you enter'd not in your ſelves, and them that were enter'd, you hinder'd.*

The *Greek* Text of St. *Luke* calls 'em Νομικοὶ; and the Vulgate *Legisperiti*; agreeably to which our *Engliſh* Tranſlators call 'em *Lawyers*. But the *French* Verſion of *Docteurs de la Loi*, ſeems the moſt adequate. In effect, the Word *Legisperitus* is only found in St. *Luke*, and St. *Paul*, *Titus* III. 13. and Νόμικος in St. *Matthew*, XXII. 35. is render'd by the Vulgate, *Legis Doctor*; tho' the *Engliſh* Verſion ſtill retains, *Lawyer*.

Theſe *Jewiſh Doctors* are the ſame whom they otherwiſe call *Rabbins*. See RABBIN.

DOCTOR *of the Church*, a Title given to certain of the Fathers who have publiſh'd Books, and whoſe Doctrines and Opinions have been the moſt generally followed, and authorized by the Church.

We uſually reckon four *Doctors* of the *Greek* Church, and four of the *Latin*. The firſt are St. *Athanaſius*, St. *Baſil*, St. *Gregory Nazianzen*, and St. *Chryſoſtom*. The latter are St. *Ambroſe*, St. *Jerom*, St. *Auguſtin*, and *Gregory* the *Great*.

In the *Romiſh* Breviary there is a particular Office for the *Doctors*. It only differs from that of the Confeſſors by the Anthem of the *Magnificat*, and the Leſſons.

The Appellation *Doctor* has ſince been adjoyn'd to ſeveral ſpecific Epithets, expreſſing wherein the Merit of ſuch as the Schools own'd for their Maſters, conſiſted.

Thus *Alexander Hales* is call'd the *Irrefragable Doctor*, and the *Fountain of Life*, as mention'd in *Poſſevinus*. *Thomas Aquinas* is call'd the *Angelical Doctor*; St. *Bonaventure* the *Seraphic Doctor*; *John Duns* Scotus, the *Subtile Doctor*; *Raimond Lully* the *Illuminated Doctor*; *Roger Bacon* the *Admirable Doctor*; *William Ocham* the *Singular Doctor*: *John Gerſon*, and *Card. Cuſa* the *Moſt Chriſtian Doctors*; *Dionyſius* the *Carthuſian*, the *Extatic Doctor*; and an Infinity of others to be met withal in Eccleſiaſtical Writers.

DOCTOR, διδάσκαλος, in the *Greek* Church, is a particular Officer, appointed to interpret Part of the Scriptures. He who interprets the Goſpels, is call'd *Doctor of the Goſpels*: He who interprets St. *Paul*'s Epiſtles, *Doctor of the Apoſtle*: He who interprets the Pſalms, *Doctor of the Pſalter*.

DOCUMENT, in Law, a Proof given of any Fact aſſerted; but chiefly with regard to ancient Matters.

Thus we ſay, The Antiquity of the Foundation of ſuch a Church is proved by a Number of authentic Titles and *Documents*.

DODECAEDRON, in Geometry, one of the regular Bodies, comprehended under twelve equal Sides each whereof is a Pentagon. See REGULAR *Body*.

Or a *Dodecaedron* may be conceiv'd to conſiſt of twelve Quinquangular Pyramids, whoſe Vertices, or Tops meet in the Centre of a Sphere conceiv'd to circumſcribe the Solid; conſequently they have their Baſes and Altitudes equal.

To find the Solidity of the Dodecaedron; find that of one of the Pyramids, and multiply it by the Number of Baſes, *viz.* 12, the Product is the Solidity of the whole Body. Or its Solidity is found by multiplying the Baſe into $\frac{1}{3}$ of its Diſtance from the Centre, 12 times: And to find this Diſtance, take the Diſtance of two parallel Faces: the Half is the Height. See SOLID, and SOLIDITY.

The Diameter of the Sphere being given, the Side of the *Dodecaedron* is found by this Theorem: *The Square of the Diameter of the Sphere is equal to the Rectangle under the Aggregate of the Sides of a Dodecaedron* and *Hexaedron* inſcribed in the ſame, and triple the Side of the *Dodecaedron*. Thus, if the Diameter of the Sphere be 1, the Side of the *Dodecaedron* inſcribed will be $(\sqrt{\frac{5}{3}} - \sqrt{\frac{1}{3}}) : 2$; Conſequently, that, is to this, as 2 to $(\sqrt{\frac{5}{3}} - \sqrt{\frac{1}{3}})$ and the Square of that, to the Square of this, as 4 to $5 - \sqrt{3}$. Therefore the Diameter of the Sphere is incommenſurable to the Side of an inſcribed *Dodecaedron* both in it ſelf, and its Power.

DODECAGON, a regular Polygon, or Figure with twelve equal Sides and Angles. See POLYGON.

Dials are ſometimes drawn on all the Sides of a *Dodecagon*. See DIAL.

In Fortification, a Place ſurrounded with twelve Baſtions, is call'd a *Dodecagon*: Such is *Palma Nova*, in *Friuli*, &c.

DODECATEMORY, in Aſtronomy, the 12th Part of a Circle. See CIRCLE, ARCH, &c.

The Term is chiefly applied to the twelve Parts of the Zodiac of the *Primum Mobile*, to diſtinguiſh 'em from the 12 Signs.

DODECATEMORY, is alſo a Denomination ſome Authors give to each of the twelve Signs of the Zodiac, by reaſon they contain a twelfth Part of the Zodiac a-piece. See SIGN.

DODONÆUS, DODONIAN, in Antiquity, an Epithet given to *Jupiter*, as adored, or worſhipp'd in the Temple of *Dodona*, in *Dodona*'s Grove, or Foreſt.

Dodona, whence the Appellation ariſes, is an ancient City of *Epirus*, celebrated on divers Accounts, as the *Foreſt of Dodona*, the *Oracle of Dodona*, and the *Fountain of Dodona*,

Dodona's Foreſt, was a Wood, or Grove of Oaks, all conſecrated to *Jupiter*. In this Wood was a Temple of that God, wherein was the moſt famous, and as 'tis ſaid, the moſt ancient Oracle of all *Greece*. See ORACLE.

Indeed, 'twas not in the Temple only, that Oracles were deliver'd; The Pidgeons that inhabited the Wood, are ſaid to have done the ſame.

The Origin, and Occaſion of this Fable, we have from *Herodotus*, who obſerves, it was founded on this, that Πελειάδες, which in the *Theſſalian* Language ſignifies a Pidgeon, does likewiſe ſignify a Witch, or Propheteſs. But what is more extraordinary, is, another Tradition among the Poets, as if the very Oaks of the *Foreſt of Dodona* ſpoke, and deliver'd Oracles.

This Fable is eaſily deduced from the former: The Pidgeons in the Oaks being ſuppoſed to ſpeak, 'twas no great Flight of a Poetical Fancy, to introduce the Trees themſelves ſpeaking, &c. See *Voſſius de Idolol.* L. I. 7. p. 27.

The *Fountain of Dodona*, was in the Temple of *Jupiter*. The ancient Naturaliſts aſſure us, it had a Property of rekindling Torches, &c. newly extinguiſh'd. This, no doubt, it did by means of the ſulphureous Fumes exhaling from it; as we ſtill find a Fountain in *Dauphine*, call'd the *Burning Fountain*, Do. 'Tis alſo ſaid, to have extinguiſh'd lighted Torches; which is no great Miracle, ſince plunging them into a Place where the Sulphur was too denſe, *i. e.* into the Water, muſt have that Effect.

DODRANS, in Antiquity, a Diviſion of the As. See As.

DOG, in Aſtronomy, a Name common to two Conſtellations, call'd the *Great*, and *Little Dog*; but among Aſtronomers, more uſually, *Canis Major*, & *Minor*. See CANIS *Major & Minor*.

DOG-*Draw*, in the Foreſt-Law, a manifeſt Deprehenſion of an Offender againſt Veniſon in a Foreſt; when he is found *drawing* after a Deer by the Scent of a Hound, led in his Hand.

There are four of theſe Offences noted by *Manwood*, viz. *Stable-Stand*, *Dog-draw*, *Back-bear*, and *Bloody hand*. See STABLE-*Stand*, &c.

DOG-*Days*, *Dies Caniculares*, are certain Days, in which the Dog-Star riſes, and ſets with the Sun; the Weather being exceſſive hot, and ſultry.

They begin about *July* 24th, and end about *Auguſt* 28th. See CANICULAR *Days*.

Bite of a Mad DOG. See HYDROPHOBIA.

DOGE, the chief Magiſtrate in the Republicks of *Venice*, and *Genoa*.

The Word properly ſignified *Duke*, being form'd from the Latin *Dux*; as *Dogate*, and *Dogado*, from *Ducatus*, Dutchy.

The *Dogate*, or Office and Dignity of *Doge*, is elective: At *Venice*, the *Doge* is elected for Life; at *Genoa*, only for two Years: He is addreſs'd under the Title of *Serenity*, which among the *Venetians* is ſuperior to that of Highneſs. See SERENITY.

The *Doge* is the Chief of the Council, and the Mouth of the Republic; he being always to anſwer for her. Yet the *Venetians* do not go into Mourning at his Death, as not being their Soveraign, but only their firſt Miniſter. In effect, the *Doge* of *Venice* is no more than the Fantom, or Shadow of the Majeſty of a Prince; all the Authority thereof being reſerv'd to the Republic. He only lends his Name to the Senate: The Power is diffuſed throughout the whole Body, tho' the Anſwers be all made in the Name of the *Doge*. If he give any Anſwers on his own Bottom, they muſt be very cautiouſly expreſs'd, and in general Terms, otherwiſe he is ſure to meet with a Reprimand. So that 'tis abſolutely neceſſary he be of an eaſy, pliable Diſpoſition.

Anciently, the *Doges* were Soveraigns; but Things are much alter'd; and at preſent, all the Prerogatives affected to the Quality of *Doge*, are theſe which follow. He gives Audience to Embaſſadors; but does not give 'em any Anſwer on his own Head, in Matters of any Importance: Only, he is allowed to anſwer as he judges good, to the Compliments they make to the Signory; ſuch Anſwers being of no Conſequence. The *Doge*, as being firſt Magiſtrate, is Head of all the Councils; and the Credentials which the Senate furniſhes its Miniſters in foreign Courts, are wrote in his Name; and yet he does not ſign 'em, but a Secretary of State ſigns them, and ſeals 'em with the Arms of the Republic. The Embaſſadors direct their Diſpatches to the *Doge*; and yet he may not open 'em, but in Preſence of the Councellors. The Money is ſtruck in the *Doge's* Name, but not with his Stamp, or Arms. All the Magiſtrates riſe, and ſalute the *Doge*, when he comes into Council; and the *Doge* riſes to none, but foreign Embaſſadors.

The *Doge* nominates to all the Benefices in the Church of St. *Mark*; He is Protector of the Monaſtery *delle Virgine*; and beſtows certain petty Offices of Uſhers of the Houſhold, call'd *Commanders* of the Palace. His Family is not under the Juriſdiction of the Maſter of the Ceremonies; and his Children may have Staff-Officers, and Gondoliers in Livery.

His Grandeur, at the ſame Time, is temper'd with Abundance of Things, which render it burdenſome. He may not go out of *Venice*, without Leave of the Councellors; and if he does go out, he is liable to receive Affronts, without being entitled to demand Satisfaction; and if any Diſorder ſhould happen where he was, it belongs to the *Podeſta*, as being inveſted with the public Authority, to compoſe it.

The Children, and Brothers of the *Doge*, are excluded from all the chief Offices of State. They may not receive any Benefice from the Court of *Rome*; but are allowed to accept of the Cardinalate, as being no Benefice, nor including any Juriſdiction. The *Doge* may not diveſt himſelf of his Dignity, for his Eaſe; and after his Death, his Conduct is examined by three Inquiſitors, and five Correctors, who ſift it with a deal of Severity.

DOGGER, a ſmall Ship, built after the *Dutch* Faſhion, with a narrow Stern, and commonly but one Maſt; us'd in fiſhing on the *Doggers* Bank. See FLOATING *Veſſel*.

DOGMA, a Maxim, Axiom, Tenet, ſettled Propoſition, or Principle; particularly in Matters of Religion, and Philoſophy.

Thus we ſay, the *Dogmata of Faith*: Such a *Dogma* was condemn'd by ſuch a Council. The *Dogmata* of the *Stoicks* were moſt of 'em Paradoxes. Speculative *Dogmata*, which do not lay any reſtraint on Men, appear to them more eſſential to Religion, than Virtues, which reſtrain, and confine 'em; nay, they often perſuade themſelves, that it is allowable to maintain thoſe *Dogmata*, at the Expence of the Virtues.

DOGMATICAL, originally ſignifies Inſtructive, Scientific, or ſomething relating to an Opinion, or Science.

In common Uſe, a *Dogmatical* Philoſopher is ſuch a one as aſſerts Things poſitively; in Oppoſition to a *Sceptic*, who doubts of every Thing.

And a *Dogmatical Phyſician*, he, who, on the Principles of the School Philoſophy, rejects all Medicinal Virtues not reducible to manifeſt Qualities. See DOGMATIST.

DOGMATICI, DOGMATISTS, a Sect of ancient Phyſicians, call'd alſo *Logici*, Logicians, from their uſing of the Rules of Logic in Subjects of their Profeſſion. See MEDICINE.

They laid down Definitions, and Diviſions, reducing Diſeaſes to certain *Genera*, thoſe *Genera* to Species, and furniſhing Remedies for 'em all; ſuppoſing Principles, drawing Conſequences, and applying thoſe Principles and Conſequences to the particular Diſeaſes under Conſideration. In which Senſe the *Dogmatiſts* ſtand contra-diſtinguiſh'd to *Empericks*, and *Methodiſts*. See EMPERICI, &c.

Others define *Dogmatiſts* to be thoſe who brought Phyſic into a Form, and Arrangement, like thoſe of other ſpeculative Sciences; defining, dividing, laying down Principles, and drawing Concluſions: And hence alſo the Appellation of *Logici*.

They alſo applied themſelves to ſeek the Cauſes of Diſeaſes, the Nature of Remedies, &c.

Eriſiſtratus, a famous *Dogmatiſt*, went ſo far, that not contented to diſſect Dogs, and other brute Animals, he begg'd condemn'd Criminals of the Magiſtrates, open'd them while alive, and ſearch'd in their Entrails. See PHYSICIANS.

DOLE, in the *Saxon* Tongue, ſignifies a Part, or Portion, moſt commonly, of a Meadow. The Word ſtill ſignifies a *Share*; a diſtributing, or dealing of Alms, or a liberal Gift made by a great Man to the People.

Hence alſo *Dole-Meadow*, is a Meadow wherein ſeveral Perſons have Shares.

DOLIMAN, a Kind of long Soutanne, wore by the Turks, hanging down to the Feet, with narrow Sleeves, button'd at the Wriſt.

The *Turks*, both Men and Women, wear Drawers next the Skin; over that a Shift, or Shirt; and over the Shirt a *Doliman*. In Summer it is Linnen, or Muſſelin; in Winter, Sattin, or Stuff.

DOLLAR, or DALLER, a Silver Coin nearly of the Value of the Piece of Eight, or *French* Crown. See COIN.

Dollars are coin'd in divers Parts of *Germany*, and *Holland*; and have their Diminutions, as *Semi-Dollars*, *Quarter-Dollars*, &c.

They are not all of the ſame Fineneſs, nor Weight. The *Dutch Dollars* are the moſt frequent. In the *Levant* they are call'd *Aſlani*, from the Impreſſion of a Lion thereon.

DOLPHIN, *Delphinus*, in Aſtronomy. See DELPHINUS.

DOM, or DON, a Title of Honour, originally *Spaniſh*, tho' us'd occaſionally in ſome other Countries. See TITLE.

It is equivalent to *Maſter*, *Sir*, or *Lord*, *Monſieur*, *Sieur*, *Mynheer*, &c. See SIR, MONSIEUR, &c.

Gollut in his *Memoires de Bourg.* L. V. C. 11. assures us, that the first, on whom the *Spaniards* conferr'd the Title, was *Dom Pelayo*; when, upon their being routed, and driven out by the *Sarazens*, at the Beginning of the VIIIth Century, they rallied again on the *Pyrenians*, and made him King. In *Portugal*, no body is allow'd to assume the Title of *Dom*, which is a Badge or Token of Nobility, without the King's Leave.

The Word is likewise us'd in *France* among some Orders of Religious, as the *Chartreux*, *Benedictins*, &c. The Reverend Father *Dom Calmet*, *Dom Alexis*, *Dom Balthasar*, &c. In the Plural they write *Doms*, with an *s*, in speaking of several RR PP. *Doms Claude du Ruble*, and *Jacques Douceur*.

It is form'd from the Latin *Dominus*; of which it is an Abbreviature. *Domnus* is found in divers Authors of the corrupter *Latin*. *Onuphrius* assures us, it was a Title first given the Pope alone; then to the Bishops, Abbots, and others, who held any Ecclesiastical Dignity, or were eminent for Virtue, and Religion. At length it was usurp'd by the mere Monks.

Some say, they declined the Title *Dominus* out of Humility, as belonging to God alone; and assuming that of *Domnus*, as expressing Inferiority, *quasi minor Dominus*. Indeed, the Appellation *Domnus* for *Dominus* appears very ancient, if we consider the Surname of *Julia*, Wife of the Emperor *Septimus Severus*, who is call'd on Medals, JVLIA DOMNA, for JVLIA DOMINA.

DOMAIN, the Inheritance, Estate, Habitation, or Possession of any one.

Of how much Evil was Cause, not thy Conversion, but those rich Domains. *Milton.*

Menage derives the Word from *Domanium*, wrote in the barbarous *Latin* for *Dominium*.

DOM-*Book*. See DOMES-*Day*.

DOME, or DOOM, by the *Saxons* call'd *Dom*, signifies Judgment, Sentence, Ordnance, or Decree.

The Homagers Oath in the Black-Book of *Hereford* ends thus: *So help me God at his Holy* Dome, *and by my Trowthe*.

DOME, in Architecture, a spherical Roof; or a Work of a Spherical Form rais'd over the Middle of a Building, as Church, Hall, Pavillion, Vestible, Stair-Case, &c. by Way of Crowning, or Acroter. See ROOF, and CROWNING.

Domes are the same with what the *Italians* call *Couppolas*; and we frequently *Cupola's*: The *Latins*, according to *Vitruvius*, *Tholi*. See CUPOLA.

They are usually made round; tho' we have Instances of square Ones; as those of the *Louvre*: and others, that are Polygons, as that in the Jesuites Church in the *Rue* St. *Anthoine* at *Paris*. They have usually Columns rang'd around their Out-sides, both by Way of Ornament, and to support the Vault.

A *Flat* DOME is that whose Sweep, or Contour, is less than a Hemisphere.

The Word is form'd from the Latin *Doma*, which among the Ancients signified a *Roof*, or *Open Porch*; as is observ'd by *Papias*. 'Tis frequent in the corrupt *Latin* Authors, who borrowed it from the *Greeks*, among whom *Trullus*, or *Trullum*, is a common Name for any round Building, such as the Palace of *Constantinople*, wherein was held the Council; thence call'd *in Trullo*. See TRULLUS.

DOME, in Chymistry, the arched Cover of a Reverberatory Furnace. See REVERBERATORY.

DOMES-*Day*, or DOOMS-*Day-Book*, denominated *Liber Judiciarius*, *vel Censualis Angliæ*, i. e. the Judicial Book, or Book of the Survey of *England*, is a most ancient Record made in the Time of *William* the *Conqueror*; upon a Survey, or Inquisition of the several Counties, Hundreds, Tithings, &c. Its Name is form'd from *Dom*, Doom, Judgment, Sentence; and *Day*, which has the same Force: So that *Dome-Day* is no more than a Reduplicative, sounding, *Judgment Judgment*.

The Stress, or Design of the Book, is to be a Register, by which Sentence may be given in the Tenures of Estates; and from which that noted Question, whether Lands be ancient Demesne, or not, is still decided. Its Contents are summ'd up in the following Verses.

Quid deberent fisco, quæ, quanta Tributa,
Nomine quid Census, quæ Vectigalia, quantum
Quisque teneretur feodali solvere Jure.
Qui sunt Exempti, vel quos Angaria damnat,
Qui sunt vel Glebæ Servi, vel Conditionis,
Quove Manumissus Patrono Jure ligatur.

This Book is still remaining in the Exchequer, fair and legible; consisting of two Volumes, a Greater, and a Less; the Greater comprehending all the Counties of *England*, except *Northumberland*, *Cumberland*, *Westmoreland*, *Durham*, and Part of *Lancashire*; which were never survey'd; And except *Essex*, *Suffolk*, and *Norfolk*, which are comprehended in the Lesser Volumn, which concludes with these Words: *Anno Millesimo Octogesimo Sexto ab Incarnatione Domini, vigesimo vero Regis Wilhelmi, facta est ista Descriptio non solum per hos tres Comitatus, sed etiam alios.*

It is call'd *Liber Judicialis*, by reason a just, and accurate Description of the whole Kingdom is contain'd therein; with the Value of the several Inheritances, &c.

It was begun by five Justices, assign'd for the Purpose in each County, in the Year 1081. and finish'd in 1086. *Cambden* calls it, *Guilielmi Librum Censualem*, King *William*'s Tax-Book.

Our Ancestors had many *Dome-Books*. We are told by *Ingulphus*, that King *Alfred* made a like Register, with that of *William* the *Conqueror*. It was begun upon that Prince's dividing his Kingdom into Counties, Hundreds, Tithings, &c. when an Inquisition being taken of the several Districts, it was digested into a Register, call'd *Domboc*, q. d. the Judgment-Book, and reposited in the Church of *Winchester*; whence it is also call'd the *Winchester Book*, and *Magna Rolla Winton*. And upon the Model of this Domboc it is, that the *Doom-Day* of the Conqueror was form'd.

That of King *Alfred* referr'd to the Time of King *Ethelred*.

And that of the *Conqueror*, to the Time of *Eduard* the *Confessor*: The Entries being thus made, *C. tenet Rex Guilielmus in Dominico, & valet*, &c. *ibi ducatæ*, &c. T. R. E. *valebat*; q. d. It was worth so much *Tempore Regis Eduardi*, in the Time of King *Eduard*.

There is a third *Dom-Boc*, or *Domes-Day-Book* in 4°. differing from the other in *Folio*, rather in Form, than Matter. It was made by order of the same Conqueror; and seems to be the more ancient of the two.

A fourth Book there is in the Exchequer, call'd *Domes-Day*; which, tho' a very large Volume, is only an Abridgment of the other two. It has Abundance of Pictures, and gilt Letters at the Beginning, which refer to the Time of *Eduard* the *Confessor*.

DOMESTIC, a Term of somewhat more extent than that of *Servant*; The latter only signifying such as serve for Wages, as Footmen, Lacqueys, Porters, &c. Whereas *Domestic* comprehends all who act under a Man, compose his Family, and live with him, or are supposed to live with him. Such are Secretaries, Chaplains, &c.

Sometimes, *Domestic* goes further, being applied to the Wife and Children.

DOMESTIC, *Domesticos*, Δομέσικος, in Antiquity, was a particular Officer in the Court of the Emperors of *Constantinople*.

Fabrot in his Glossary on *Theophilax Simocatta*, defines *Domestic*, in the general, to be any Person intrusted with the Management of Affairs of Importance; a Councellour *cujus fidei graviores alicujus Terræ, & Sollicitudinis committuntur*.

Others hold, that the *Greeks* call'd *Domestici* those who at *Rome* were call'd *Comites*; particularly, that they began to use the Name *Domesticus*, when that of Count was become a Name of Dignity, and ceas'd to be the Name of an Officer in the Prince's Family. See COUNT.

Domestici, therefore, were such as were in the Serviee of the Prince; and assisted him in the Administration of Affairs, both those of his Family, those of Justice, and of the Church.

The *Grand Domestic*, or *Megadomesticus*, call'd also by Way of Eminence the *Domesticus*, served at the Emperor's Table, in Quality of what we Occidentals call *Dapifer*. Others say, he was rather what we call *Majordomo*.

The *Domesticus Mensæ* did the Office of Grand Seneshal, or Steward.

The *Domesticus Rei Domesticæ* acted as Master of the Houshold.

Domesticus Scholarum, or *Legionum*, had the Command of the reserved Forces, call'd *Scholæ Palatinæ*, whose Office was to execute the immediate Orders of the Empire. See SCHOLA.

Domesticus Murorum, had the Superintendance of all the Fortifications.

Domesticus Regionum, that is, of the East and West, had the Care of public Affairs, much like our Attorney or Solicitor General.

Domesticus Icanatorum, or of the Military Cohorts.

There were divers other Officers of the Army, who bore the Name *Domesticus*, which signified no more than Commander, or Colonel. Thus, the *Domestic of the Legion*, call'd *Optimates*, was the Commander thereof. See LEGION.

Domesticus Statorum.

Domesticus Chori, or *Chantor*, whereof there were two in the Church of *Constantinople*; the one on the right Side of the Church, and the other on the left. They were also call'd *Protopsalptes*, ἀρχωδὸς. *Dom. Macri* distinguishes three Kinds of *Domestici* in the Church. *Domestic of the Patriarchal Clergy*, The *Domestic of the Imperial Clergy*, that is, the Master of the Empresses Chappel: And the *Domesticus Despinicus*, or of the Empress. There was another

Order

Order of *Domeſticks*, inferior to any of thoſe abovemention'd, call'd *Patriarchal Domeſticks*.

DOMESTICI was alſo a Body of Forces in the *Roman* Empire. *Pancirollus* takes 'em to have been the ſame with thoſe call'd *Protectores*; who had the chief Guard of the Emperor's Perſon, in a Degree above the *Pretorians*; and who under the Chriſtian Emperors had the Privilege to bear the Grand Standard of the Croſs.

They are ſuppoſed to have been 3500 before *Juſtinian*'s Time, who added 2000 more to the Number. They were divided into ſeveral Companies, or Bands, which the *Latins* call'd *Scholas*, ſome whereof are ſaid to have been inſtituted by *Gordian*. Some of 'em were Cavalry, and ſome Infantry. Their Commander was call'd *Comes Domeſticorum*. See COUNT.

DOMIFYING, *Domification*, in Aſtrology, the dividing or diſtributing the Heavens into twelve Houſes; to erect a Theme, or Horoſcope; by means of ſix great Circles, call'd *Circles of Poſition*. See HOROSCOPE.

There are divers Ways of *Domifying*, according to divers Authors. That of *Regiomontanus*, which is the moſt uſual, makes the Circles of Poſition paſs through the Interſections of the Meridian, and Horizon. Others make 'em paſs thro' the Poles of the World, or the Equator; and others through the Poles of the Zodiac.

DOMINATION, in Theology, the 4th Order of Angels, or bleſſed Spirits, in the Hierarchy; reckoning from the Seraphim. See HIERARCHY, and SERAPH.

DOMINICAL *Letter*, in Chronology, popularly call'd *Sunday-Letter*, one of the ſeven Letters of the Alphabet, A B C D E F G, us'd in Almanacks, Ephemerides, *&c.* to denote the Sundays throughout the Year. See SUNDAY.

The *Dominical Letters* were introduced into the Calendar by the Primitive Chriſtians, in lieu of the *Nundinal Letters* in the *Roman* Calendar. See LETTER.

The Word is form'd from *Dominica*, or *Dominicus Dies*, Lord's-Day, Sunday.

Theſe Letters, we have obſerved, are ſeven: And, that in a common Year, the ſame Letter ſhould mark all the Sundays, will eaſily appear; In as much as all the Sundays are ſeven Days a-part; and the ſame Letter only returns in every ſeventh Place.

But in Biſſextile, or Leap-Year, the Caſe is otherwiſe: For by means of the Intercalary Day, either the Letters muſt be thruſt out of their Places, for the whole Year afterwards, ſo, *e.gr.* as that the Letter, which anſwers to the firſt of *March*, ſhall likewiſe anſwer to the ſecond, *&c.* or elſe the Intercalary Day muſt be denoted by the ſame Letter as the preceeding one. This latter Expedient has been judg'd the better, and accordingly the Sundays after the intercalary Day have another *Dominical Letter*.

Hence, 1. As the common *Julian*, and *Gregorian* Year conſiſts of 365 Days, *i.e.* of 52 Weeks, and one Day. The Beginning of the Year, every common Year, goes backwards by one Day; thus, *e.gr.* if this Year the Beginning, or firſt Day fall on a Sunday, the next Year it will fall on Saturday, the next on Friday, *&c.* Conſequently, if A be the *Dominical Letter* of the preſent Year, G will be that of the next Year.

2. As the *Julian*, and *Gregorian* Biſſextile, or Leap-Year, conſiſts of 366 Days, *i.e.* 52 Weeks, and 2 Days, the Beginning of the next Year after Biſſextile goes back 2 Days. Whence, if in the Beginning of the Biſſextile Year, the *Dominical Letter* were A, that of the following Year will be F.

3. Since in Leap-Years the Intercalary Day falls on the 24th of *February*, in which Caſe the 23d, and 24th Days are denoted by the ſame Letter; After the 24th Day of *February* the *Dominical Letter* goes back by one Place: Thus, if in the Beginning of the Year the *Dominical Letter* be A, it will afterwards be G.

4. As every fourth Year is Biſſextile, or Leap-year, and as the Number of Letters is 7; The ſame Order of *Dominical Letters* only returns in 28 Years; which, without the Interruption of Biſſextiles, would return in 4 Years. See BISSEXTILE.

5. Hence the Invention of the Solar Cycle of 28 Years; upon the Expiration whereof the *Dominical Letters* are reſtored ſucceſſively to the ſame Days of the Month, or the ſame Order of the Letters returns. See CYCLE *of the Sun*.

To find the DOMINICAL *Letter of any given Year.*

Seek the Cycle of the Sun for that Year; as directed under CYCLE: And the *Dominical Letter* is found correſponding thereto. Where there are two; the propoſed Year is Biſſextile; and the firſt obtains to the 24th of *February*; and the laſt for the reſt of the Year.

By the Reformation of the Calendar under Pope *Gregory*, the Order of the *Dominical Letters* was again diſturbed in the *Gregorian* Year: For the Year 1582, which at the Beginning had G for its *Dominical Letter*; by the Retrenchment of 10 Days after the 4th of *October*, came to have C for its *Dominical Letter*; by which means the *Dominical Letter* of the ancient *Julian* Calendar is four Places before that of the *Gregorian*: The Letter A in the former anſwering to D in the latter.

DOMINICAL, in Church-Hiſtory. The Council of *Auxerre* held in 578, decrees, that Women communicate with their *Dominical*. Some Authors contend, that this *Dominical* was a linnen Cloth, wherein they receiv'd the Species; as not being allowed to receive 'em in the bare Hand. Others will have it a Kind of Veil, wherewith they cover'd the Head. The moſt probable Account is, that it was a Kind of linnen Cloth, or Handkerchief, wherein they receiv'd, and preſerv'd the Euchariſt in Times of Perſecution, to be taken on Occaſion.

DOMINICANS, an Order of Religious, call'd in ſome Places *Jacobins*, and in others, *Prædicants*, or *Preaching Fryars*. See JACOBINS, PRÆDICANTS, *&c.*

The *Dominicans* take their Name from their Founder *Dominic de Guſman*, a *Spaniſh* Gentleman, born in 1170, at *Calarvega*, in Old *Caſtile*. He was firſt Canon and Arch-Deacon of *Oſma*; and afterwards preach'd with a deal of Zeal, and Vehemence againſt the *Albigenſes* in *Languedoc*, where he laid the firſt Foundation of his Order. It was approv'd of in 1215, by *Innocent* III. and confirm'd in 1216, by a Bull of *Honorius* III. under the Rule of St. *Auguſtin*, and the Title of *Preaching Fryars*.

The firſt Convent was founded at *Tholouſe*, by the Biſhop thereof, and *Simon de Montfort*. Two Years afterwards they had another at *Paris* near the Biſhop's Houſe, and ſome time after, a third in the *Rue* St. *Jacques*, St. *James*'s Street, whence the Denomination of *Jacobins*.

St. *Dominic*, at firſt, only took the Habit of the Regular Canons, that is, a black Soutanne, and Rochet; But this he quitted in 1219, for that which they now wear, which, 'tis pretended, was ſhewn by the bleſſed Virgin herſelf to *Renaud* at *Orleans*.

This Order is diffuſed throughout the whole Earth. It has 45 Provinces under the General, who reſides at *Rome*; and 12 particular Congregations, or Reforms, govern'd by Vicars General.

They reckon three Popes of this Order, above 60 Cardinals, ſeveral Patriarchs, 150 Arch-Biſhops, and about 800 Biſhops. Beſide Maſters of the ſacred Palace, whoſe Office has been conſtantly diſcharg'd by a Religious of this Order, ever ſince St. *Dominic*, who held it under *Honorius* III. in 1218.

The *Dominicans* are alſo Inquiſitors in many Places. See INQUISITION.

The Dogma's of the *Dominicans* are uſually oppoſite to thoſe of the *Franciſcans*. See FRANCISCAN.

There are alſo Nuns, or Siſters of this Order, call'd in ſome Places, *Preaching Siſters*. Theſe are even more ancient than the Fryars; St. *Dominic* having founded a Society of Religious Maids, at *Prouilles*, ſome Years before the Inſtitution of his Order of Men, *viz.* in 1206.

There is alſo a *Third Order* of *Dominicans*, both for Men and Women. See THIRD *Order*.

DOMINIUM, DOMINION, or DOMAINE, in ancient Cuſtoms, is a Rent due to the Lord, where the Property is not his. With reſpect to Signory, he who pays Rent, has the *Dominium utile* of the Lands; and the Lord he pays it to the *Dominium directum*.

Directum Dominium is the Title alone of *Dominium*; And *Dominium utile*, the Profit redounding from it.

The Wife retains the *Dominium directum* of her Jointure, and the *Dominium utile* paſſes to her Husband.

DOMINUS, in ancient Times, being prefix'd to a Name, uſually denoted the Perſon to be either a Knight, or a Clergyman. Tho' the Title was ſometimes given to a Gentleman not dubb'd; eſpecially, if he were a Lord of a Manour. See DOM, SIR, and GENTLEMAN.

DONATION, a public Act, or Contract, whereby a Man transfers to another, either the Property, or the Uſe of the Whole, or a Part of his Effects.

A *Donation* to be valid, and compleat, ſuppoſes a Capacity both in the Donor, and the Donatory; and requires Conſent, Acceptance, Regiſtring, and Delivery.

DONATISTS, ancient Schiſmaticks in *Africa*, denominated from their Leader, *Donatus*.

They had their Origin in the Year 311; when, in the room of *Menſurius*, who died the preceeding Year, on his Return to *Rome*, *Cecilian* was elected, whom the People refuſed to acknowledge, and to whom they oppoſed *Majorinus*, who, accordingly, was ordain'd by *Donatus*, Biſhop of *Caſis nigris*. They were condemn'd in a Council held at *Rome*, two Years after their Separation, and afterwards in another at *Arles*, the Year following.

The Errors of the *Donatiſts*, beſide their Schiſm, were 1. That Baptiſm conferr'd out of the Church, that is, out of their Sect, was null. 2. That there was no Church but in *Africa*: All the reſt of the Churches they held as proſtitute, and

and fallen. *Donatus* ſeems likewiſe to have given into the Doctrine of the *Arians*, with whom he was cloſely allied; And accordingly, St. *Epiphanius*, *Theodoret*, and ſome others, accuſe the *Donatiſts* of *Arianiſm*. But St. *Auguſtin Ep.* 185. to Count *Boniface*, affirms, that the *Donatiſts*, in this Point, kept clear of the Errors of their Leader.

In 344, under the Empire of *Theodoſius* the *Great*, there aroſe a Schiſm among the *Donatiſts* themſelves, by which they were broke into two Parties. For *Parmenian*, their Biſhop, being dead, ſome elected *Primian*, and were call'd *Primianiſts*; and others, *Maximian*, call'd *Maximianiſts*. The *Donatiſts* had likewiſe other Appellations, as *Circumcelliones*, *Montenſes*, or *Mountaineers*, *Campites*, *Rupites*, &c.

They held three Councils, or *Conciliabules*; that of *Cirta* in *Numidia*, and two at *Carthage*. *Conſtantine* decreed Exile, and even Death, againſt the *Donatiſts*. *Conſtans*, and *Honorius*, made Laws for their Baniſhment: And *Theodoſius*, and *Honorius*, condemn'd 'em to grievous Mulcts.

DONATIVE, *Donativum*; a Preſent made any Perſon, call'd alſo GRATUITY.

The *Romans* made large *Donatives* to their Soldiers. *Julia Pia*, Wife of the Emperor *Severus*, is call'd on certain Medals, MATER CASTRORVM, by reaſon of the Care ſhe took of the Soldiery, by Interpoſing for the Augmentation of their *Donatives*, &c.

The *Donative* was properly the Gift made the Forces in the Army; as the *Congiarius* was that made the People.

Salmaſius in his Notes on *Lampridius*, in the Life of *Heliogabalus*, mentioning a *Donative* that Emperor gave of three Pieces of Gold *per* Head, obſerves, that this was the common, and legitimate Rate of a *Donative*. *Caſaubon* in his Notes on the Life of *Pertinax*, by *Capitolinus*, obſerves, that *Pertinax* made a Promiſe of three thouſand *Denarii* to each Soldier; which amounted to upwards of 97 Pounds Sterling. See COIN.

The ſame Author writes, that the legal *Donative* was 20000 *Denarii*; and that it was not cuſtomary to give leſs, eſpecially to the *Pretorian* Soldiers; that the Centurions had double, and the Tribunes, *&c.* more in Proportion.

DONATIVE, in the Cannon Law, a Benefice given, and collated to a Perſon, by the Founder, or Patron; without either Preſentation, Inſtitution, or Induction by the Ordinary. See BENEFICE.

If Chappels founded by Laymen, be not approv'd by the Dioceſan, and, as 'tis call'd, *ſpiritualized*, they are not accounted proper Benefices, neither can they be conferr'd by the Biſhop, but remain to the pious Diſpoſition of the Founders: So that the Founders, and their Heirs, may give ſuch Chappels without the Biſhop. *Gregorius de Beneficiis.* See CHAPPEL.

Gwin obſerves, that the King might of ancient Time found a free Chappel, and exempt it from the Juriſdiction of the Dioceſan. So may he by Letters Patents give Liberty to a common Perſon to found ſuch a Chappel, and make it *Donative* Not-preſentable. And the Chaplain, or Beneficiary, ſhall be deprivable by the Founder, or his Heir, and not by the Biſhop. And this ſeems to be the Original of *Donatives* in *England*.

All Biſhopricks in ancient Time were *Donative* by the King.

Again, where a Biſhop has the Gift of a Benefice, it is properly call'd a *Donative*, becauſe he cannot preſent to himſelf. See BENEFICE, PATRON, PRESENTATION, COLLATION, *&c.*

DONJON. See DUNGEON.

DONJON, in Fortification, is generally taken for a large Tower, or Redoubt of a Fortreſs, where the Garriſon may retreat in Caſe of Neceſſity, and capitulate with greater Advantage.

DONOR, in Law, he who gives Lands, or Tenements to another in Tail: And *Donee*, is he to whom the ſame are given. See DONATION, *&c.*

DOOR, in Architecture, an Aperture in a Wall, to give Entrance, and Exit in, and out of the Building, or an Apartment thereof. See HOUSE, BUILDING, APERTURE, *&c.*

It ought to be a Rule, that the *Doors* of a Houſe be as few in Number, and as moderate in Dimenſions, as poſſible: For, in a Word, all *Openings are Weakenings*. 2. That they do not approach too near the Angles of the Walls; It being a moſt glaring Solleciſm to weaken that Part, which muſt weaken all the reſt: A Precept, well recorded, but ill practiſed by the *Italians* themſelves, particularly at *Venice*. 3. That the *Doors*, if poſſible, be right over one another; that void may be over void, and full over full. 4. That, if poſſible, they be oppoſite to each other, ſo as that one may ſee from one End of the Houſe to another; which will not only be graceful, but alſo convenient; as it affords a Means of cooling the Houſe in Summer, by letting in Air; and of keeping out the Wind in Winter, which Way ſoever it ſit. 5. 'Tis not only Ornamental, but ſecure, to turn Arches over *Doors*; as it diſcharges 'em in great Meaſure of the ſuperincumbent Weight.

The Proportions of *Doors* are adjuſted by thoſe of a Man: In larger Buildings they muſt always be larger than in ſmaller; but in none ſhould they be leſs than 6 Foot high, to admit a Man of juſt Stature, erect; And as the Breadth of a Man, with his Arms placed a-kimbo, is nearly ſubduple his Height, the Width ſhould never be leſs than 3 Foot.

Some Architects give us theſe Dimenſions: In ſmall Buildings the Breadth of the *Door* 4 Foot, or 4 and a half; in middling Buildings, 5 or 6; in large Ones, 7 or 8: In Chambers of the firſt, 3 and a half, $3\frac{3}{4}$, or 4; of the ſecond, 4, or 4 and a half; and of the third, 5, or 6; in Churches, 7 or 8; in Gates, 9, 10, or 12: hence their Height is eaſy determin'd; except for the Gates of Cities, which ſhould only be $\frac{4}{5}$ of their Breadth.

'Tis an Obſervation of the excellent *Palladio*, that the principal *Door*, or Entrance of a Houſe, muſt never be regulated by any certain Dimenſions, but by the Dignity of the Perſon that is to live in it: yet, to exceed rather in the more, than the leſs, is a Mark of Generoſity; and may be excuſed with ſome noble Emblem, or Inſcription, as that of the Conte *di Bevilacqua* over his large Gate at *Verona*, where had been committed a like Diſproportion, *Patet Janua, Cor magis.*

DORIC, in Grammar. The *Doric Dialect* is one of the five *Dialects*, or Manners of ſpeaking which obtain'd among the *Greeks*. See DIALECT.

It was firſt us'd by the *Lacedemonians*, and particularly thoſe of *Argos*; thence it paſs'd into *Epirus*, *Lybia*, *Sicily*, the Iſlands of *Rhodes*, and *Crete*.

In this *Dialect*, *Archimedes* and *Theocritus* wrote, who were both of *Syracuſe*; and likewiſe *Pindar*. Port Royal.

In Strictneſs, however, we ſhould rather define *Doric* the Manner of ſpeaking peculiar to the *Dorians*, after their Receſs near *Parnaſſus*, and *Aſopus*; and which afterwards came to obtain among the *Lacedemonians*, &c.

Some even diſtinguiſh between the *Lacedemonian*, and *Doric*; but in Reality they were the ſame; ſetting aſide a few Particularities in the Language of the *Lacedemonians*; as is ſhewn by *Rulandus* in his excellent Treatiſe, *de Lingua Græca, ejuſque Dialectis*, L. V.

Beſide the Authors already mention'd to have wrote in the *Doric* Dialect, we might add *Architas* of *Tarentum*, *Bion*, *Callinus*, *Simonides*, *Bacchylides*, *Cypſelas*, *Alcman*, and *Sophron*.

Moſt of the Medals of the Greater *Greece* and *Sicily* favour of the ſame Dialect in their Inſcriptions; Witneſs, AMBRAKIΩTAN, ΑΠΟΛΛΩΝΙΑΤΑΝ, ΑΧΕΡΟΝΤΑΝ, ΑΧΤΡΙΤΑΝ, ΗΡΑΚΛΕΩΤΑΝ, ΤΡΑΧΙΝΙΩΝ ΘΕΡΜΙΤΑΝ, ΚΑΤΑΟΝΙΑΤΑΝ, ΚΟΠΙΑΤΑΝ, ΤΑΤΡΟΜΕΝΙΤΑΝ, *&c.* Which ſhews the Countries wherein the *Doric* Dialect was uſed.

The general Rules of this Dialect are thus given by the *Port Royaliſts*.

D'ᵓΗτα, d'ω grand, d'ε d'ο & d'ᵓ la fait le Dore.
D'ει fait ῆτα. d'ᵓ, ω, & d'ω αυ fait Encore.
Oſte ι de l Infini: & pour le Singulier
Se ſert au Feminin du Nombre Plurier.

But they are much better explain'd in the IVth Book of *Rulandus*; where he even notes the minuter Differences of the Dialects of *Sicily*, *Crete*, *Tarentum*, *Rhodes*, *Lacedemon*, *Laconia*, *Macedonia*, and *Theſſaly*.

DORIC, in Architecture, is the ſecond of the five Orders; being that between the *Tuſcan* and *Ionic*. See ORDER.

The *Doric* Order ſeems the moſt natural, and beſt proportioned of all the Orders; all its Parts being founded on the natural Poſition of ſolid Bodies. Accordingly, the *Doric* is the firſt, and moſt ancient of the Orders of Architecture, and is what gave the firſt Idea of regular Building. See ARCHITECTURE.

At its firſt Invention it was more ſimple than at preſent; and when in After-times they came to adorn, and enrich it more, the Appellation *Doric* was reſtrain'd to this richer Manner, and the primitive ſimple Manner they call'd by a new Name the *Tuſcan* Order. See TUSCAN.

The Tradition is, that *Dorus*, King of *Achaia*, having firſt built a Temple of this Order at *Argos*, which he dedicated to *Juno*, occaſion'd it to be call'd *Doric*: Tho' others derive its Name, I know not how, from its being invented, or us'd by the *Dorians*.

Some time after its Invention they reduced it to the Proportions, Strength, and Beauty of the Body of a Man. Hence, as the Foot of a Man was judg'd the 6th Part of his Height, they made the *Doric* Column, including the Capital, 6 Diameters high, *i.e.* ſix times as high as thick. Afterwards they added another Diameter to the Height, and made it 7 Diameters; with which Augmentation it might be ſaid to be nearer the Proportion of a Man: The human Foot, at leaſt in our Days, not being a 6th, but nearly a 7th Part of the Body. See COLUMN.

The Characters of the *Doric* Order, as now manag'd, are, the Height of its Column, which is 8 Diameters; its Frize, which is enrich'd with Triglyphs, Drops, and Metopes; its Capital, which is without Volutes; and its admitting of Cymatiums. See TRIGLYPH, CYMATIUM, *&c.*

The Ancients, we have already obſerv'd, had two *Doric* Orders: The firſt, which was the more Simple and Maſſive, they us'd chiefly in Temples; The ſecond, which was the more light and delicate, ſerv'd in Portico's, and Theatres.

Vitruvius, indeed, complains of the *Doric* as very troubleſome, and perplexing, on Account of the Triglyphs, and Metopes, ſo as ſcarce to be capable of being us'd, except in the Pycnoſtyle, by putting a Triglyph between each two Columns, or in the Araeoſtyle, by putting 3 Triglyphs between each two Columns. See INTERCOLUMINATION.

The Moderns, on Account of its Solidity, uſe it in large ſtrong Buildings; as in the Gates of Cities, and Citadels, the Outſides of Churches, and other maſſy Works, where Delicacy of Ornaments would be unſuitable.

The moſt conſiderable ancient Monument of this Order, is the Theatre of *Marcellus*, at *Rome*, wherein the Capital, the Height of the Frize, and its Projecture, are much ſmaller than in the modern Architecture.

Vignola adjuſts the Proportions of the *Doric* Order thus: The whole Height of the Order, without Pedeſtal, he divides into 20 Parts, or Models; one of which he allows the Baſe, 14 to the Shaft, or Fuſt, one to the Capital, and 4 to the Entablature.

The particular Proportions, *&c.* of the ſeveral Parts, and Members, ſee under their reſpective Articles, SHAFT, CAPITAL, ENTABLATURE, PEDESTAL, BASE, ARCHITRAVE, FRIZE, and CORNICH.

DORIC *Cymatium*. See CYMATIUM.

DORIC, in Muſic. The *Doric Mode* is the firſt of the authentic Modes of the Ancients.

Its Character is to be ſevere, temper'd with Gravity, and Joy; And it is proper for Occaſions of Religion, and War. It begins with *D*, *Sol*, *Re*. See MODE.

Plato admires the Muſic of the *Doric* Mode; and judges it proper, to preſerve good Manners, as being Maſculine. And on this Account allows of it in his Common-wealth.

The Ancients had likewiſe their *Subdoric Mode*, which was one of their Plagal Modes. Its Character was to be very grave, and ſolemn. It began with *G Ut*, a Diateſſaron lower than the *Doric* Mode.

DORMANT, is the Herald's Term for the Poſture of a Lyon born *ſleeping*, in a Coat of Arms.

DORMANT-*Tree*, in Building, a Name the Workmen frequently give to a great Beam lying a-croſs the Houſe; uſually call'd a *Summer*. See SUMMER.

DORMANT-*Tyles*. See TYLE.

DORMER, or DORMANT, in Architecture, is a Window made in the Roof of an Houſe, or above the Entablature; being rais'd upon the Rafters. The *Latins* call it *Lucerna*, whence the French *Lucerne*, and our *Luthern*.

There are divers Kinds; Square, Round, *&c.* See LUTHERN.

DORMITORY, a Gallery in Convents, or Religious Houſes, divided into ſeveral Cells, wherein the Religious lodge, or lye, *&c.* See CONVENT.

'Tis deem'd a Crime in a Religious to lye out of the *Dormitory*. By Chap. XXII. of *The Rule* of St. *Benedict*, it appears, that the ancient *Dormitories* were not divided into Cells, but were a Kind of large open Halls, fill'd with Beds, as in our Hoſpitals. See CELL.

The Word is form'd from the Latin *Dormitorium*, of *dormire*, to ſleep.

DORSAL *Nerves*. See NERVES.

DORSALIS *Tabes*. See CONSUMPTION, and PHTHYSIS.

DORSI *Latiſſimus*, in Anatomy. See LATISSIMUS *Dorſi*.

DORSI *Longiſſimus*, a Muſcle common to the Loins, and the Back: It riſes from the upper Part of the *Os ſacrum*, *Ilium*, and firſt *Vertebræ* of the Loins, and in its Beginning is confounded, if not the ſame with the *Sacro Lumbalis*. It runs upwards along the whole Tract of the Back, and is connected to every tranſverſe Proceſs in its Way; ending ſometimes in the firſt *Vertebra* of the Back, and ſometimes in the firſt of the Neck.

DORSIFEROUS, or DORSIPAROUS *Plants*, are thoſe of the Capillary Kind; which are without Stem, and bear their Seeds on the Backſide of their Leaves. See CAPILLARY.

DORSUM, in Anatomy, is the hind Part of the *Thorax*; tho' commonly tranſlated, *Back*.

It includes the Loins. See LOINS.

DORSUM *Manus*, and *Pedis*, is the Outſide of the Hand, and Foot; Or that Part oppoſite to the *Palm*, and *Sole*. See PALM, and SOLE; as alſo HAND, and FOOT.

DORSUM *Naſi*, is the *Ridge* of the Noſe, which runs the whole Length of that Part. See NOSE.

In thoſe we call *Roman* Noſes, the *Dorſum* is higher, and more prominent about the Middle, than in the reſt; which Part is call'd the *Spina*. See SPINA.

DOSE, in Pharmacy, *&c.* the Quantity of any Medicine to be taken at one Time: Or the Weight, or Meaſure of the ſeveral Ingredients in a medicinal Compoſition. See MEDICINE.

A Secret in Phyſic is nothing, unleſs the *Doſe* be known. Authors, and Diſpenſatories, that deſcribe the ſame Remedy, frequently the *Doſe* is different; which occaſions a great Difference in its Effect.

The Word is form'd from the *Greek* Δόσις, which ſignifies the ſame Thing.

Dr. *Cockburn* has given us an Eſſay towards determining the *Doſes* of purgative Medicines, on Mechanical Principles. See PURGATIVE.

DOSITHEANS, an ancient Sect among the *Samaritans*. See SAMARITAN.

Mention is made in *Origen*, *Epiphanius*, *Jerom*, and divers other *Greek* and *Latin* Fathers, of one *Doſitheus*, the Chief of a Faction among the *Samaritans*; But the Learned are not at all agreed, as to the Time wherein he lived. St. *Jerom* in his Dialogue againſt the *Luciferians*, makes him before our Saviour; wherein he is followed by *Druſius*, who in his Anſwer to *Serrarius*, places him about the Time of *Senaccherib*, King of *Aſſyria*. But *Scaliger* will have him ſince our Saviour's Time. And, in effect, *Origen* intimates him to have been contemporary with the Apoſtles; in obſerving, that he endeavour'd to perſuade the *Samaritans*, that he was the *Meſſiah* foretold by *Moſes*.

He had many Followers; and his Sect was ſtill ſubſiſting at *Alexandria* in the Time of the Patriarch *Eulogius*; as appears from a Decree of that Patriarch, publiſh'd by *Photius*. In that Decree *Eulogius* accuſes *Doſitheus* of injuriouſly treating the ancient Patriarchs, and Prophets; and attributing to himſelf the Spirit of Prophecy. He makes him cotemporary with *Simon Magus*; and accuſes him of corrupting the Pentateuch in divers Places, and of compoſing ſeveral Books, directly contrary to the Law of God.

Arch-Biſhop *Uſher* takes *Doſitheus* for the Author of all the Changes made in the *Samaritan* Pentateuch; which he proves by the Authority of *Eulogius*. But all we can juſtly gather from the Teſtimony of *Eulogius*, is, that *Doſitheus* corrupted the *Samaritan* Copies ſince us'd in that Sect. But that Corruption did not paſs into all the Copies of the *Samaritan* Pentateuch, now in Uſe among us, which vary but little from the *Jewiſh* Pentateuch. See PENTATEUCH.

And in this Senſe we are to underſtand that Paſſage in a *Samaritan* Chronicle, where it is ſaid, that *Douſis*, i. e. *Doſitheus*, altered ſeveral Things in the Law of *Moſes*.

The Author of that Chronicle, who was a *Samaritan* by Religion, adds, that their High-prieſt ſent ſeveral *Samaritans*, to ſeize *Douſis*, and his corrupted Copy of the Pentateuch. *Epiphanius* takes him to have been a *Jew* by Birth, and to have abandon'd the *Jewiſh* Party for that of the *Samaritans*.

He imagines him likewiſe to have been the Author of the Sect of *Sadducees*; which is inconſiſtent with his being later than our Saviour. And yet the Jeſuit *Serrarius* agrees to make *Doſitheus* the Maſter of *Sadoc*, from whom the *Sadducees* are derived. See SADDUCEES.

Tertullian, making mention of the ſame *Doſitheus*, obſerves, that he was the firſt who dared to reject the Authority of the Prophets, by denying their Inſpiration. But he makes that a Crime peculiar to this Sectary, which, in Reality, is common to the whole Sect, who have never allowed any but the five Books of *Moſes* for divine.

DOUBLE *Plea*, in Law, is that wherein the Defendant alledges for himſelf two ſeveral Matters in Bar of the Action; whereof, either is ſufficient to effect his Deſire, in debarring the Plaintiff. See PLEA.

This is not admitted in the Common Law: for which reaſon it is to be well obſerv'd, when a Plea is *double*, and when not; for if a Man alledge ſeveral Matters, one nothing dependant on another, the Plea is accounted *Double*; But if they be mutually depending on each other, then it is accounted but *Single*.

DOUBLE *Quarrel*, *Duplex Querela*, a Complaint made by a Clerk, or other, to the Arch-Biſhop of the Province, againſt an inferior Ordinary, for delaying Juſtice in ſome Eccleſiaſtical Cauſe; as to give Sentence, inſtitute a Clerk preſented, or the like.

Its Denomination ſeems owing to this, that it is commonly made both againſt the Judge, and him, at whoſe Suit Juſtice is delay'd.

DOUBLE *Ratio*. See DUPLE.

DOUBLE *Veſſel*, in Chymiſtry, is when the Neck of one Bolt-Head, or Matraſs, is put, and well luted into the Neck of another.

It is alſo call'd a *Pellican*. See PELLICAN, and MATRASS.

Of

Of these there are divers Kinds and Forms, us'd in the Circulation of Spirits, in order to their being exalted, and refin'd as high as can be. See CIRCULATION, COHOBATION, RECTIFICATION, &c.

DOUBLE *Letter*, in Grammar, a Letter, which has the Force and Effect of two; as the Hebrew *Tſade*, which is equivalent to the Latin *T* and *S*; the *Greek* Ξ, &c. See LETTER.

These Letters are evidently equal to two; And even, when we pronounce the Latin *Axis*, or the Engliſh *Axillary*, we give the *x* the ſame Sound, as if it were wrote with two *cc*, *Accis*, *Accillary*, or a *c* and *s*, *Acſis*, *Acſillary*. *Double Letters*, along with the σ, or *s*, include one of the Mutes.

The *Greeks* have three Ζ Ξ Ψ: The *Latins* only two *X*, and Z. And moſt of the modern Languages have the ſame.

DOUBLE { *Deſcant*, in Muſic. / *Feaſt*. / *Fever*. / *Tenaille*. / *Time*, in Muſic. } See { DESCANT. / FEAST. / FEVER. / TENAILLE. / TIME. }

Inſtances of DOUBLE *Children*, DOUBLE *Cats*, DOUBLE *Pears*, &c. are frequent in the *Philoſoph. Tranſact.* and elſewhere. See MONSTER.

Sir *John Floyer*, in the ſame *Tranſactions*, giving an Account of a *Double Turkey*, furniſhes ſome Reflections on the Production of *Double* Animals in general. Two Turkies, he relates, were taken out of an Egg of the common Size, when the reſt were well hatch'd, which grew together by the Fleſh of the Breaſt-Bone; but in all other Parts were diſtinct. They ſeem'd leſs than the ordinary Size, as wanting Bulk, Nutriment, and Room for their Growth; which latter, too, was apparently the Occaſion of their Coheſion.

For, having two diſtinct Cavities in their Bodies, and two Hearts; they muſt have aroſe from two Cicatricula's; and conſequently, the Egg had two Yolks; which is no uncommon Accident. He has a dried *Double Chicken*, he aſſures us, that, tho' it has four Legs, four Wings, &c. it has but one Cavity in the Body, one Heart, and one Head; and conſequently, was produced from one Cicatricula.

So, *Paræus* mentions a *Double Infant*, with only one Heart: In which Caſe, the Original, or *Stamen* of the Infant was one, and the Veſſels regular; only, the Nerves, and Arteries towards the Extremities dividing into more Branches than ordinary, produced *double* Parts.

The ſame is the Caſe in the *Double Flowers* of Plants, occaſion'd by the Richneſs of the Soil. So it is in the Eggs of Quadrupeds, &c.

There are, therefore, two Reaſons of *Duplicity* in Embryo's: 1. The Conjoyning, or Connexion of two perfect Animals; And, 2. An extraordinary Diviſion, and Ramification of the Original Veſſels, Nerves, Arteries, &c.

DOUBLE-*Fichee*, in Heraldry. A Croſs is denominated *Double-Fichee*, when the Extremities are pointed at each Angle; that is, each Extremity has two Points: In Contradiſtinction to *Fichee*, where the Extremity is ſharpen'd away to one Point. See CROSS.

Leigh calls it *Double Pitchy*, which ſeems to be a Miſtake. *Gibbon* expreſſes it by an *Octagonal Croſs*, the two Points whereof at each Extremity are parted inwards by a ſmall Space of a Line. By which it is diſtinguiſh'd from the Croſs of *Malta*; the two Points whereof proceed from a third Point; or acute Angle between 'em.

DOUBLE *Point*, in the higher Geometry. When all the right Lines tending the ſame Way, with the infinite Leg of any Curve, do cut it in one only Point, (as happens in the Ordinates of the *Carteſian*, and in the Cubical Parabola, and in the right Lines which are parallel to the Abſciſſes of Hyperboliſm-Hyperbola's, and Parabola's;) then you are to conceive, that thoſe right Lines paſs through two other Points of the Curve, placed (as I may ſay) at an infinite Diſtance. Which coincident Interſection, whether it be at a finite, or an infinite Diſtance, Sir *Iſaac Newton* calls the *Double Point*. See CURVE.

DOUBLINGS, in Heraldry, are the Linings of Robes, or Mantles of State; or of the Mantlings in Atchievements. See MANTLE, and FUR.

DOUBLING, in a Military Senſe, is the putting two Ranks, or Files of Soldiers, into one. See RANK, and FILE.

When the Word of Command is, *Double your Ranks*, then the ſecond, fourth, and ſixth Ranks are to march up into the firſt, third, and fifth; ſo that of ſix Ranks they make but three, leaving double the Interval there was between them before: But it is not ſo when they *double the half Files*, becauſe then three Ranks ſtand together, and the three others come up to *double* them; that is, the firſt, ſecond, and third, are *doubled* by the fourth, fifth, and ſixth; or on the contrary.

Double your Files, directs each other to march to that next to it on the Right, or Left, according to the Word of Command; In which Caſe the ſix Ranks are turned into twelve, the Men ſtanding twelve deep; the Diſtance between the Files being now *double* of what it was before.

DOUBLING *a Cape*, or *Point*, in Navigation, ſignifies the coming up with it, paſſing by it, and leaving it behind the Ship.

The *Portugueze* pretend to be the firſt that ever *doubled* the *Cape of good Hope*, under their Admiral *Vaſquez de Gama*: But we have Accounts in Hiſtory, particularly in *Herodotus*, of the *Egyptians*, *Carthagenians*, &c. having done the ſame long before them.

DOUBLON, DUBLOON, a *Spaniſh* Coin, being the *Double* of a Piſtole. See PISTOLE.

DOUBTING, the Act of Withholding a full Aſſent from any Propoſition; on Suſpicion, that we are not thoroughly appriz'd of the Merits thereof; Or from our not being able peremptorily to decide between the Reaſons for, and againſt it. See FAITH, LIBERTY, &c.

The *Scepticks*, and *Pyrrhonians*, *doubt* of every Thing: The Character of their Philoſophy is, not to allow any Thing for true; but to withhold the Aſſent, and keep the Mind free, and in Suſpence. See SCEPTICKS.

The *Epicureans* truſt their Senſes, and *doubt* of their Reaſon: Their leading Principle is, that our Senſes always tell Truth; That they are the firſt, and only Criterions of Truth; and that go ever ſo little from them, and that you come within the proper Province of *Doubting*. See EPICUREANS.

The *Carteſians*, on the contrary, of all Things bid us *doubt* our Senſes; They are perpetually inculcating the Deceitfulneſs of our Senſes; and we are to *doubt* of every one of their Reports, till they have been examined, and confirm'd by Reaſon. See CARTESIANS; as alſo TRUTH, FALLACY, &c.

DOUBTING, in Rhetoric, a Figure wherein the Orator appears ſome time fluctuating, and undetermined what to do, or ſay. *What ſhall I do? Shall I apply to thoſe I once neglected, or implore thoſe who now forſake me.*

Tacitus furniſhes us a famous Inſtance of *Doubting*, in thoſe Words of *Tiberius*, wrote to the Senate. *Quid ſcribam, P. S. aut quomodo ſcribam, aut quid omnino non ſcribam hoc Tempore, Dii me Deæque pejus perdant, quam perire quotidie ſentio, ſi ſcio.*

DOUCINE, in Architecture, a Moulding, or Ornament on the higheſt Part of the Cornice, in Form of a Wave, half convex, and half concave. See CORNICHE.

The *Doucine* is the ſame with a *Cymatium*, or *Gula*. See CYMATIUM, and GULA *Recta*, and *Inverſa*.

DOVE-*Tail*, in Carpentry, the ſtrongeſt of the Kinds of Jointings, or Aſſemblages; wherein the *Tenon*, or Piece of Wood that enters the other, goes widening to the Extreme, and ſo cannot be drawn out again, by reaſon the Tip, or Extreme is bigger than the Hole.

It has its Denomination from the Reſemblance the Tenon bears to a *Dove's* Tail.

The *French* call it *Queue d'Aronde*, Swallow's Tail; which Name the *Engliſh* themſelves retain in Fortification. See QUEUE *d'Aronde*.

DOVETAILING, in Architecture, is a Way of faſtening Boards, or Timbers together, by letting one Piece into another indentedly, with a *Dove-tail* Joint, or with a Joint in the Form of a *Dove's* Tail.

DOWAGER, *Dotiſſa*, (*q. d.* a Widow *endowed*, or that has a Jointure) a Title, or Addition applied to the Widows of Princes, Dukes, Earls, and Perſons of Honour only. *Queen Dowager*. See QUEEN.

DOWER, or DOWRY, by the *Latins* call'd *Dos*, is properly the Money, or Fortune, which the Wife brings her Huſband in Marriage, to have the Uſe of it, during her Marriage, towards ſupporting the Charge thereof. See MARRIAGE.

It is otherwiſe call'd *Maritagium*, Marriage Goods. See MARITAGIUM.

Among the *Germans* it was anciently cuſtomary for the Husband, to bring a *Dowry* to his Wife. *Romanis non in Uſu fuit Uxoribus* Dotes *retribuere*; *ideo Verbo genuino carent quo hoc dignoſcitur*; *& Rem ipſam in Germanorum Moribus Miratur Tacitus*: Dotem, *inquit*, *non Uxor Marito*, *ſed Uxori Maritus affert*. Spelman.

At preſent, in *Germany*, the Women of Quality have but very moderate Fortunes. For Inſtance, the Princeſſes of the Electoral Houſe of *Saxony*, have only 30000 Crowns: Thoſe of other Branches of the ſame Family, 20000 Florins: Thoſe of *Brunſwic*, and *Baden*, only 1500 Florins; beſides a Sum for Cloaths, Toys, and Equipages.

DOWER, is alſo us'd in a Monaſtic Senſe, for a Sum of Money given along with a Maid, upon entering her in ſome Religious Order.

In *France*, the *Dowry* of Perſons entering a Monaſtery, to make Profeſſion of a Religious Life, is limited by Law. That, *e. gr.* given upon entering a Monaſtery of *Carmelites*, *Urſelines*, and others, not regularly founded, but eſtabliſh'd ſince the Year 1600, by Letters Patents, muſt not exceed the

Sum

Sum of 8000 Livres, in Towns where Parliaments are held; nor 6000, in other Places.

Dower, by the Latins *Dotarium*, or *Doarium*, is alſo a Portion of Lands, or Tenements, which the Wife enjoys for Term of Life, from her Husband, in Caſe ſhe ſurvives him; and which at her Death, deſcends to their Children.

Among the *Goths*, the *Dower* was only the tenth Part of the Husband's Eſtate: Among the *Lombards*, a fourth; among the *Romans*, and *Sicilians*, a third: which is the Rate that ſtill obtains among us, and moſt other Nations.

Our Law-Book diſtinguiſh five Kinds of *Dower*: viz. *Dower per Legem communem*: *Dower per Conſuetudinem*: *Dower ex Aſſenſu Patris*: *Dower ad Oſtium Eccleſiæ*: And *Dower de la plus belle*.

Dower *by the common Law*, is a third Part of ſuch Lands, as the Husband was ſole ſeiz'd of in Fee, during the Marriage; which the Wife is to enjoy during her Life, and for which there lies a *Writ of Dower*.

Dower *by Cuſtom*, gives the Wife, in ſome Places, half her Husband's Lands, ſo long as ſhe lives ſingle; as in Gavelkind. And as Cuſtom may enlarge, ſo may it abridge *Dower*, and reſtrain it to a fourth Part.

In Dower *ex Aſſenſu Patris*; and *ad Oſtium Eccleſiæ*, the Wife may have ſo much *Dower*, as ſhall be aſſign'd, or agreed upon; but it ought not to exceed the third Part of the Husband's Lands. If this be done before Marriage, it is call'd a *Jointure*.

Dower *de la plus belle*. By this ſhe is endowed with the faireſt, and beſt Part of her Husband's Eſtate.

DOWNS, an Elevation of Stone, or Sand, which the Sea gathers, and forms along its Banks; and which ſerves it as a Barrier.

The Word is form'd from the French *Dune*, or the German *Duins*. *Charles de Viſch* in his *Compend. Chronolog. Exord. & Progreſſ. Abbat. Clariſſ. B. Mariæ, de* Dunis, ſays, *Vallem reperit Arenarum Collibus* (*quos Incolæ* Duynen *vocant*) *undique cinctam*.

Downs are particularly uſed for a famous Road for Ships, along the Eaſtern Coaſt of the County of *Kent*; from *Dover*, to the North Foreland.

This Road has excellent Anchorage, and is well defended by the Caſtles of *Sandwich*, *Deal*, and *Dover*.

Here it is, the *Engliſh* Fleets uſually meet. *The Fleet is yet in the* Downs: *Sail'd from the* Downs.

The Word is form'd from the French *Dune*, of the Celtic *Dun*, a Mountain, or Eminence.

DOXOLOGY, a Church Term, applied by the *Greeks* to the 14th Verſe of the ſecond Chapter of St. *Luke*, *Glory be to God on High*, &c. becauſe beginning with the *Greek* Word δόξα, *Glory*.

This they diſtinguiſh by the Name of *Great Doxology*: The *Gloria Patri*; *Glory be to the Father*, they call the *Leſs Doxology*, as beginning with the ſame Word δόξα. See Gloria *Patri*.

Philoſtorgius, *L.* III. *N.* 13. gives three Formula's of the *Leſſer Doxology*. The firſt is, *Glory be to the Father, and to the Son, and to the Holy Ghoſt*. The ſecond, *Glory be to the Father, by the Son, in the Holy Ghoſt*. And the third, *Glory be to the Father, in the Son, and the Holy Ghoſt*.

Sozoman, and *Nicephorus*, give a fourth, viz. *Glory be to the Father, and the Son, in the Holy Ghoſt*.

The firſt of theſe *Doxologies*, is that in common Uſe throughout the Weſtern Church. It was firſt inſtituted about the Year 350, by the Catholicks of *Antioch*, then call'd *Euſtathians*.

The three others were compoſed by the *Arians*: The ſecond was that of *Eunomius*, and *Eudoxus*, and which was approv'd by *Philoſtorgius*. The three were all made about the Year 341, in the Council of *Antioch*, when they firſt began to diſagree among themſelves: *Philoſtorgius* aſures us, that *Flavian*, afterward Patriarch of *Antioch*, was the Author of the firſt, or *Catholic Doxology*; but *Sozoman*, and *Theodoret*, ſay nothing of it; and *Philoſtorgius*, an *Arian* Author, ſcarce deſerves to be credited on his ſingle Word.

There were anciently very great Diſputes, and principally at *Antioch*, as to the Form of *Doxology*: That moſtly us'd among the Orthodox, was the ſame as ſtill obtains; the reſt were affected by the *Arians*, and other Antitrinitarians: Yet, St. *Baſil*, in his Book, *on the Holy Spirit*, defends the ſecond as orthodox, and legitimate, See Eustathian.

Some Authors write *Hymnology*, as ſynonymous with *Doxology*: But there is a Difference; *Hymnology* is applied to Pſalms, or the Recitation of Pſalms; and *Doxology* only to the little Verſe, *Glory be to the Father*, &c. repeated at the End of each Pſalm. See Hymnology.

DOZEIN. See Decennier.

DRACHM, DRACHMA, an ancient Silver Coin, uſed among the *Greeks*. See Coin.

The *Drachma* is ſuppoſed by moſt Authors to have been the ſame among the *Greeks*, with *Denarius*, or Penny, among the *Romans*, which was equivalent to four Seſterces. See Denarius.

Of this Opinion is *Budæus*, *de Aſſe*; who confirms it from the Authorities of *Pliny*, *Plutarch*, *Strabo*, and *Valerius Maximus*, with whom δραχμη is ſynonymous with *Denarius*.

But this is no ſtrong Conviction, that the two Monies were preciſely of the ſame Value: Thoſe Authors, in not treating expreſsly of Coins, might eaſily render the one by the other, provided there were no conſiderable Difference between 'em.

Scaliger, in his Diſſertation, *de Re Nummaria*, does not ſay abſolutely, that the *Denarius* and *Drachma* were the ſame Thing; but from a *Greek* Paſſage *of the Lawyer*, *C.* XXVI. *Mandati*, where the *Drachma* is ſaid to be compoſed of ſix *Oboli*, he concludes, that in the Age of *Severus*, at leaſt, the *Denarius* and *Drachma* were the ſame.

But *Agricola*, *de Menſ. & Ponder. L.* IV. proves from *Pliny*, *Celſus*, and *Scribonius Largus*, that the *Denarius* only contain'd 7 Ounces; and from *Livy*, *Appian*, *Cleopatra*, &c. that the *Drachma* contain'd 8: And maintains, that when ſome *Greek* Authors ſpeak of the Ounce as only containing 7 *Drachms*; they don't mean the *Attic Drachm*, but the *Roman* Denarius, which the *Greek* Authors render by δραχμη.

Gronovius agrees with *Agricola*, viz. that the *Drachma* was the 8th Part of an Ounce. The Opinion is confirm'd by *Iſidore*, *L.* XIV. *C.* 24. by *Fannius*, who ſays as much in expreſs Terms; and by *Voluſius*, who divides the Ounce into 24 *Scriptuli*, or Scruples, whereof the *Drachm* comprehended three.

Thus much ſuppoſed, and ſuppoſing likewiſe the ancient *Roman* Ounce equal to the modern one, and of Conſequence 40 Grains leſs than ours, it follows, that the ancient *Roman* Ounce weigh'd 536 of our Grains, and the *Attic Drachma* 67 Grains. Laſtly, ſuppoſing the Silver at *Athens* of the ſame Fineneſs with ours; and taking ours at the Price it now bears, the *Attic Drachma* will be found equivalent to about 7 Pence 3 Farthings Sterling. See Money.

The *Grecian* Way of accounting Sums of Money, was by *Drachmæ*: 10 of which were equal to 6 Shillings, 5 Pence ½ Penny; and 100 equal to a *Mina*. See Mina.

Drachm, is alſo a Weight, us'd by our Phyſicians; containing juſt ſixty Grains; or 3 Scruples; or the 8th Part of an Ounce. See Grain, and Ounce.

In Averdupois Weight, the *Drachm* is an 8th Part of an Ounce. See Weight.

Drachma was likewiſe an ancient *Jewiſh* Money, having on one Side a Harp, and on the other a Bunch of Grapes.

This Coin was a *half Shekel*; and was ſo call'd by the *Jews*. 'Tis only the *Greeks* call'd it δραχμη. It was equal to 2 *Attic Drachmæ*. See Shekel.

DRACO, *Dragon*, in Aſtronomy, a Conſtellation of the Northern Hemiſphere. See Constellation.

The Stars in the Conſtellation *Draco*, according to *Ptolomy*, are 31; according to *Tycho*, 32; according to *Bayer*, 33; and according to Mr. *Flamſteed*, 49.

The Longitudes, Latitudes, Magnitudes, &c. whereof are as follows.

Stars in the Conſtellation Draco.

Names and Situations of the Stars.	Sign	Longit. ° ′ ″	Latitude. North. ° ′ ″	Magnit.
Laſt of the Tail.	♌	5 59 05	57 13 24	4
Another Subſeq. and Contiguous.		6 29 10	57 30 55	6
		12 33 10	61 10 10	6
Laſt but one of the Tail.		11 51 58	61 43 40	4
That follows this.	♌	11 35 15	61 57 45	5
15				
Preceding the Antepenultimate.	♍	0 31 19	65 21 50	5
Antepenultimate of the Tail.		3 03 11	66 21 43	3
Preceding in the laſt Bend.	♎	0 32 27	71 03 49	3
Subſequent in the ſame Bend.		12 20 34	74 25 09	3
Preced. of two follow. the laſt Bend.		9 58 34	78 27 02	3
10				
North in the third Bend.	♍	0 42 04	81 06 11	6
Laſt of thoſe following the laſt Bend.		29 49 00	81 39 25	6
Middle in the third Bend; double.	♎	0 10 58	83 19 35	6
		1 06 40	83 21 30	6
In the Tongue.	♏	20 11 05	76 14 30	6
15				
Subſequent in the third Bend.	♍	28 35 53	84 47 29	3
That over the Eye.	♐	7 21 37	75 18 35	3
In the Mouth; double.		5 38 33	78 10 38	5 6
		5 42 55	78 10 07	5 6
Preced. of two follow. the third Bend.	♌	20 24 33	86 52 52	6
20				
Subſequent in the ſame.		7 18 11	86 54 30	5
	♐	19 06 14	74 11 06	6
Preced. of the preced. △ in the Belly.	♑	9 10 29	84 07 35	4
Againſt the Jaw.	♐	20 21 13	80 19 43	4
Bright one in the Crown of the Head.		23 35 35	74 58 26	2 3
25				

Names

Names and Situations of the Stars.	Sign.	Longit. ° ′ ″	Latitude. North. ° ′ ″	Magnit.
	♓	29 25 24	84 29 50	5 6
	♒	2 21 19	87 25 03	6
N. of 3. in the first Bend of the Neck.	♍	18 12 21	81 48 48	6
South of the preced. △ in the Belly.	♓	6 46 10	84 50 02	4
North of the same Triangle.		12 02 00	83 30 27	4
30				
Middle in the first Bend.	♍	21 38 02	79 47 27	6
South in the same Bend.		25 31 25	77 44 56	6
Behind the first Bend.	♒	10 55 52	80 49 31	6
		9 35 57	79 06 28	6 7
	♓	3 29 55	81 35 55	5
35				
	♒	6 44 17	76 57 50	6
		4 52 03	74 40 03	5
Preced. of the second △ in the Belly.	♉	16 04 14	83 09 33	5
	♒	15 20 52	77 13 18	5
40		18 48 48	77 44 31	6 7
(the preced. Side.				
N. in the □ against the 2d Bend of	♈	13 10 55	82 51 04	3
South of the same Side.	♓	29 26 46	81 48 28	4 5
	♓	4 56 12	78 38 10	6
North of the second △ in the Belly.	♉	20 32 52	80 37 38	5
South of that Triangle.	♈	27 11 22	80 53 11	6
45				
North of those following, in the □		28 34 21	79 26 17	4
Informis near *Cepheus*'s Arm; double.		2 07 35	77 29 00	5 6
		1 27 34	77 19 45	7
South of those following in the □	♈	16 17 23	78 07 15	5

Draco *Volans*, with the Meteorologists, is a fat, Heterogeneous, Earthy Meteor, appearing long, and sinous, something in the Shape of a flying Dragon. See Meteor.

This Shape they will have to arise from the latter Part of the Matter of this Meteor, being fired with greater Impetuosity, than what comes first out of the Cloud; and they suppose the broken Parts of the Cloud, and the sulphureous Matter which adheres to them, forms the apparent Wings of this imaginary Dragon.

DRACONARIUS, in Antiquity, *Dragon-bearer*.

Several Nations, as the *Persians*, *Parthians*, *Scythians*, &c. bore Dragons on their Standards; whence the Standards themselves were call'd *Dracones*, Dragons. The *Romans* borrowed the Custom from the *Parthians*; or, as *Casaubon* has it, from the *Dacæ*; or, as *Codin*, from the *Assyrians*.

Among the *Romans*, they were Figures of Dragons painted in red, on their Flags; as appears from *Ammian Marcellinus*: But among the *Persians*, and *Parthians*, they were like the *Roman* Eagles, Figures in full *Relievo*; So that the *Romans* were frequently deceiv'd, and took 'em for real Dragons.

The Soldier, who bore the Dragon, or Standard, was call'd by the Romans *Draconarius*; and by the *Greeks* Δρακοναριος, and Δρακοντειοφορος; for the Emperors carried the Custom with them to *Constantinople*.

Pet. Diaconus Chron. Casin. L. IV. *C.* 39. observes, that the *Bajuli*, *Cercostraarii*, *Staurophori*, *Aquiliferi*, *Leoniferi*, and *Draconarii*, all march'd before King *Henry* when he went into *Rome*.

DRACONTIC *Month*, the Space of Time wherein the Moon going from her ascending Node, call'd *Caput Draconis*, returns to the same. See Dragon's *Head*, and Month.

DRACUNCULI, in Medicine, a Disease in Children, wherein they feel a vehement Itching; supposed to arise from little Worms, call'd *Dracunculi*, generated from a viscid Humour under the Skin, about the Back, Shoulders, and Arms. See Worms.

Children seiz'd with the *Dracunculi*, become hectic, and scarce receive any Nourishment at all, tho' they eat plentifully.

The Disease, however, is not so peculiar to Children, but that grown Persons have been sometimes affected with it. The Emperor *Henry* V. is said, to have died of it; having had it from his Birth.

The Women in *Poland* cure their Children of the *Dracunculi*, after the following Manner: The Child is wash'd, and bathed in hot Water, wherein a Quantity of crum'd Bread, and a handful of Ashes have been cast. The Water being pour'd off, and the Bread gather'd into a Mass; when they come to break it again the next Day, they find in it an infinite Quantity of fine Hairs, which some call *Dog's Hairs*, and others, *Worms*; and 'tis those Hairs, or Worms, are supposed to be the Cause of the Disease.

After thus bathing the Children, they rub their Shoulders, and Arms, with Flower steep'd in Vinegar, or Honey; upon which immediately arises on the Skin a great Number of Tubercles, like Poppy-Seed; supposed to be the Heads of Worms. These they scrape off as fast as they appear; otherwise they withdraw beneath the Skin again. The Operation is repeated till such Time as no more Tubercles arise.

The *Dracunculi* is a Disease little known in *England*. The Editors of the *Leipsic* Acts, speaking of it, in the Tome for the Month of *October* 1682, call the Bodies, which put forth at the Pores after bathing, thick Hairs, *Corpuscula Pilorum crassiorum instar densa & spissa*, and not *fine slender Hair*, as *Degori* calls 'em. They add, that these little Corpuscles are hence call'd *Crinones*; and by reason of their devouring the Food, which should nourish the Children, *Comedones*.

Velchius, in a curious Dissertation on the Subject, calls 'em *Capillary Worms*. *Exercitatio de Vermibus Capillaribus Infantum*.

As to the Nature and Figure of these little Bodies, the same Editors observe, that the Microscope has put it past doubt, they are real living Animals, of an Ash Colour, having two long Horns, two large round Eyes, and a long Tail terminated with a Tuft of Hair; that 'tis difficult to draw them out whole, by scraping the Child's Body, in that being very soft, the least rubbing bruises 'em, and breaks 'em. See Vermes.

DRAG, in Building. A Door is said to *drag*, when in Opening and Shutting it hangs, or grates upon the Floor. See Door.

DRAGOMAN, a Term of general Use through the East, for an *Interpreter* whose Office is to facilitate Commerce between the Orientals, and Occidentals. See Interpreter.

The Word is form'd from the Arabic *Tergeman*, or *Tergiman*, of the Verb *Taragem*, *he has interpreted*. From *Dragoman*, the *Italians* have form'd *Dragomano*, and, with a nearer Relation to its *Arabic* Etymology, *Turcimanno*; whence our *Truchеman*, as well as *Dragoman*, and *Drogman*.

DRAGON, in Astronomy, *Dragon's Head*, and *Tail*, or *Caput & Cauda Draconis*, are the Nodes of the Planets; or the two Points, wherein the Ecliptic is intersected by the Orbits of the Planets; and particularly that of the Moon; making with it Angles of 5 Degrees. See Planet, Orbit, and Node.

One of these Points tends Northward; the Moon beginning then to have Northern Latitude: and the other Southward; where she commences South. See Moon.

This her Deviation from the Ecliptic seems (according to the Fancy of some) to make a Figure like to that of a *Dragon*, whose Belly is, where she has the greatest Latitude; the Intersections representing the *Head* and *Tail*, from which Resemblance the Denomination arises.

But note, that these Points abide not always in one Place, but have a Motion of their own, in the Zodiac, and retrogradewise almost 3 Minutes a Day; compleating their Circle in about 19 Years; so that the Moon can be but twice in the Ecliptic, during her Menstrual Period, but at all other Times will have *Latitude*, as they call it. See Latitude.

'Tis in these Points of Intersection that all Eclipses happen. See Eclipse.

They are usually denoted by the Characters ☊ *Dragon's Head*, and ☋ *Dragon's Tail*. See Head, and Tail.

Dragon's *Blood*, *Sanguis Draconis*, call'd also *Lapathum rubrum*, in Medicine. See Blood.

The Ancients had a Notion, that the *Dragon* fighting with the Elephant, suck'd all its Blood through its Eyes and Ears; that the Elephant falling down dead, crush'd the *Dragon*; and that from their Blood, thus mix'd on the Ground, arose what they call'd *Dragon's Blood*, which they held in high Esteem.

This is the Account given by *Solinus*, *Pliny*, *Isidore*, and others after them; but this Combat is a mere Fable, invented by the Merchants.

Avicenna, and *Serapion* likewise give the Appellation *Dragon's Blood* to Cinnabar. See Cinnabar.

But the genuine *Dragon's Blood* is the Juice, or Resin of a large Tree, call'd *Draco*, *Dragon*, growing in *Africa*, and *America*. The Resin is of a dark red, and easily dissolves when brought towards the Fire: if cast into the Fire, it flames: But dissolves with much Difficulty in any Liquor.

It is a good Astringent; and is us'd in Hæmorrhages, and Dysenteries, to fasten the Teeth, and strengthen the Gums.

There is also a counterfeit *Dragon's Blood*, made of the Gum of the Cherry, or Almond-tree, dissolved, and boil'd in a Tincture of *Brazil* Wood; but this is of no Use, except for outward Diseases of Horses.

It derives its Name *Dragon's Blood* from the Redness of its Colour, and gives its Name *Dragon* to the Tree that yields it. Some Botanists talk of the Figure of a *Dragon*, finely represented under the Rind of the Fruit of that Tree. But this is a mere Fiction.

DRAGONNEE, in Heraldry. A *Lyon Dragonne*, is where the upper Half resembles a Lyon; the other Half going off like the hind Part of a *Dragon*.

The ſame may be ſaid of any other Beaſt as well as the Lyon.

DRAGOON, in War, a Kind of Soldier who marches on Horſe-back, but without Boots; and fights on Foot, tho' ſometimes, too, on Horſe-back. See GUARDS.

The *Dragoons* are uſually poſted in the Front of the Camp, and march firſt to the Charge, like a Kind of *Enfans Perdus*.

They are uſually reputed as belonging to the Infantry, and in that Quality have Colonels, and Serjeants; but they have Cornets, too, like Cavalry.

Their Arms are a Sword, Fire-Lock, and Bagonet. When they march on Foot, their Officers bear the Pike, and the Serjeants the Halbert.

Menage derives the Word *Dragoon* from the Latin *Draconarius:* which in *Vegetius* is us'd to ſignify Soldiers. But it is more probably derived from the German *Tragen*, or *Draghen*, which ſignifies *to carry*; as being Infantry carried on Horſe-back.

DRAMS. See CORDIALS.

DRAMA, in Poetry, a Piece compoſed for the Theatre; Or a Piece of Dramatic Poetry. See THEATRE.

A *Drama*, or as we popularly call it, a *Play*, is a Compoſition either in Proſe, or Verſe, conſiſting, not in the ſimple Recitation, but in the actual Repreſentation of an Action.

Our *Drama's*, are Tragedies, Comedies, and Farces: For thoſe Groteſque Entertainments, lately introduced upon the Stage, ſcarce deſerve the Appellation. See TRAGEDY, COMEDY, FARCE, *&c.*

Some Criticks take the Book of *Canticles* for a *Drama*. See CANTICLES.

The Word is *Greek*, Δρᾶμα, which literally ſignifies *Action*; by reaſon, in *Drama's*, or Dramatic Poems, they act, or repreſent *Actions*, as if they really paſſed.

Some ſcrupulous Authors would reſtrain *Drama* to ſerious Pieces; as Tragedies: But with reſpect to the Etymology, a Comedy is as much a *Drama*, as a Tragedy.

DRAMATIC, in Poetry, is an Epithet given to Pieces wrote for the Stage. See STAGE, and DRAMA.

For the Laws of *Dramatic* Poetry. See UNITY, ACTION, CHARACTER, FABLE, *&c.*

DRAPERY, in Painting, and Sculpture, the Repreſentation of the Garments, or Cloathing of human Figures. See FIGURE.

In the general Senſe, *Drapery* includes not only the Garments, but alſo the Tapiſtry, Linings, and moſt other Things that are not *Carnations*, nor Landſkips. See PAINTING.

The Art of *Drapery* conſiſts chiefly in three Points, *viz.* The Order of the Folds, or Plates: The different Quality of the Stuffs: And the Variety of their Colours.

As to the *Folds*, they ſhould be ſo manag'd, that you may eaſily perceive what it is that they cover, and diſtinguiſh it from any Thing elſe. For Inſtance, that you ſee 'tis an Arm that is under the *Drapery*, and not a Leg, *&c.* The Folds, again, muſt be large, as breaking, and dividing the Sight the leſs. There ſhould likewiſe be a Contreaſt between 'em, otherwiſe the *Drapery* will be ſtiff.

The *Quality of the Stuffs* ſhould likewiſe be well conſider'd; ſome making their Folds abrupt, and harſh, and others more ſoft, and eaſy. The Surface of ſome, again, has a Luſtre, others are dead: Some are fine, and tranſparent, others firm, and ſolid.

The Variety of *Colours*, when well manag'd, makes the great Beauty of a Painting; all being not equally amicable, and friendly, with reſpect to each other; and ſome never to be placed near certain others. See COLOURING.

Mr. *de Piles* gives Abundance of good Obſervations, as to *Drapery*. Their firſt Effect, he obſerves, and that which the Painter ought to have principally in View, is, that they expreſs the Thing they are ſuppoſed to cover: They muſt never be made to adhere, and ſtick to the Parts of the Body: A great Lightneſs, and Motion of the *Drapery*, are only proper for Figures in great Agitation, or expoſed to the Mind. The Nudities of the Figures ſhould always be deſign'd, 'ere the Painter proceed to the *Draperies*. *Paolo Veroneſe* excell'd in *Draperies*.

The Word is French, *Drapperie*, form'd from *Drap*, Cloth.

DRASTIC, from Δραστικος, *activus*, briſk; a purgative Medicine that works with Speed, and Vigour; as *Jalap*, *Scammony*, and the ſtronger Catharticks. See PURGATIVE.

DRAUGHT, in Medicine. See POTION.

DRAUGHT, in Trade, is an Allowance made in the weighing of Commodities; the ſame as *Clough*. See CLOUGH.

DRAUGHT, in Painting, *&c.* See DESIGN.

DRAUGHT, or, as 'tis pronounced, DRAFT, in Architecture, the Figure of an intended Building deſcribed on Paper; wherein is laid down, by Scale, and Compaſs, the ſeveral Diviſions, and Partitions of the Apartments, Rooms, Doors, Paſſages, Conveniencies, *&c.* in their due Proportion. See BUILDING.

'Tis uſual, and even exceedingly convenient, 'ere a Building is begun to be rais'd, to have *Draughts* of the *Ichnography*, or Ground-plot of each Floor, or Story; As alſo of the Form and Faſhion of each Front, with the Windows, Doors, Ornaments, *&c.* in an *Orthography*, or Upright. See ICHNOGRAPHY, and ORTHOGRAPHY.

Sometimes the ſeveral Fronts, *&c.* are taken, and repreſented in the ſame *Draught*, to ſhew the Effect of the whole Building, call'd a *Scenography*, or *Perſpective*. See SCENOGRAPHY.

DRAW. A Ship is ſaid to *draw* ſo much Water, according to the Number of Feet ſhe ſinks into it.

Thus, if fifteen Foot from the Bottom of her be under Water, or if ſhe ſinks into the Water fifteen Foot perpendicularly, ſhe is ſaid to *draw* fifteen Foot Water; according as ſhe *draws* more, or leſs, ſhe is ſaid to be of more, or leſs *Draught*.

DRAW-*back*, in Commerce, a *Rebate*, or *Diſcount*, upon the Price of Commodities, purchaſed on certain Conditions. See REBATE, and DISCOUNT.

DRAW-*Bridge*, a Bridge made after the manner of a Floor, to be *drawn* up, or let down, as Occaſion ſerves, before the Gate of a Town, or Caſtle. See BRIDGE.

DRAWING *Medicines*, or DRAWERS. See EPISPASTICKS, and RIPENERS.

DRAWING *of Gold*, or *Silver*, is the paſſing it through a Number of Holes in an Iron, each leſs than other, to bring it into a Wiar. See WIAR *drawing*.

DRAWING *of a Bill of Exchange*, is the Writing, ſigning, and giving it to the Perſon who has already pay'd the Value, or Content thereof, to receive it in another Place. A Perſon ſhould never *draw* a Bill of Exchange, unleſs he be well aſſured, it will be accepted, and pay'd. See BILL *of Exchange*.

DRAWING, in Painting, *&c.* See DESIGNING.

DRAWING, among Hunters, is when they beat the Buſhes after a Fox.

Drawing amiſs, is when the Hounds, or Beagles hit the Scent of their Chace contrary, ſo as to hit it up the Wind, whereas they ſhould have done it down the Wind.

Drawing on the Slot, is when the Hounds touch the Scent, and *draw* on till they hit on the ſame Scent.

DRENCH, among Farriers, a Phyſical Draught, or Potion given a Horſe, by Way of Purge. See POTION.

DRENCHES, or DRENGES, in our old Cuſtoms, a Term about which the Lawyers and Antiquaries are a little divided.

Drenges, ſays an ancient Manuſcript, were *Tenentes in Capite*. *Spelman* ſays, they were *e Genere Vaſſallorum non Ignobilium, cum ſinguli qui in* Domes-day *nominantur ſingula poſſiderent Maneria*. Such, as at the coming in of the Conqueror, being put out off their Eſtates, were afterwards upon Complaint reſtored thereto; for that, they, being before Owners thereof, were neither in *Auxilio*, nor *Concilio* againſt him.

DRESSING *of Meats*, the preparing 'em for Food, by means of Culinary Fire. See MEAT, and FOOD.

The Deſign of *Dreſſing*, is to looſen the Compages, or Texture of the Fleſh, and diſpoſe it for Diſſolution, and Digeſtion in the Stomach. Fleſh not being a proper Food without *Dreſſing*, is alledg'd as an Argument, that Man was not intended by Nature for a Carnivorous Animal. See CARNIVOROUS.

The uſual Operations are *Roaſting*, *Boiling*, and *Stewing*.

In *Roaſting*, it is obſerved, Meat will bear a much greater and longer Heat than either in *Boiling*, or *Stewing*; and in *Boiling*, greater, and longer than in *Stewing*. The reaſon is, that *Roaſting* being perform'd in the open Air, as the Parts begin externally to warm, they extend, and dilate, and ſo gradually let out Part of the rarified included Air, by which means the internal Succuſſions, on which the Diſſolution depends, are much weaken'd, and abated; *Boiling* being perform'd in Water, the Preſſure is greater, and conſequently, the Succuſſions to lift up the Weight, are proportionably ſtrong; by which means the Coction is haſten'd: And even in this Way there are great Differences; for the greater the Weight of Water, the ſooner is the Buſineſs done.

In *Stewing*, tho' the Heat be infinitely ſhort of what is employ'd in the other Ways, the Operation is much more quick, becauſe perform'd in a cloſe Veſſel, and full, by which means the Succuſſions are more often repeated, and more ſtrongly reverberated. Hence the Force of *Papin's Digeſtor*; and hence an *Illuſtration of the Operation of Digeſtion*. See DIGESTOR, and DIGESTION.

Boiling, Dr. *Cheyne* obſerves, draws more of the Rank, ſtrong Juices from Meat, and leaves it leſs nutritive, more diluted, lighter, and eaſier of Digeſtion: *Roaſting*, on the other hand, leaves it fuller of the ſtrong, nutritive Juices, harder to digeſt, and needing more Dilution. Strong, grown, and adult Animal Food, therefore, ſhould be *boil'd*; and the younger, and tenderer, *roaſted*.

DRIE *Exchange*, *Cambium Siccum*, a ſoft Appellation, anciently us'd to diſguiſe Uſury under; intimating ſomething to paſs on both Sides, whereas, in Truth, nothing paſs'd but

but on one: In which reſpect it might be call'd *Dry*. See USURY.

Cambium ſiccum, ſays *Lud. Lopes*, *de Contract. & Negot. eſt Cambium non habens Exiſtentiam Cambii, ſed Apparentiam ad Inſtar Arboris Exſiccatæ*, &c.

DRIE *Rent*. See RENT *Sec.*

DRIFT *of the Foreſt*, an exact View, or Examination of what Cattel are in the Foreſt, that it may be known, whether it be overcharg'd, or not, and whoſe the Beaſts are; and whether they are commonable Beaſts, or not. See FOREST, and COMMON.

DRIFT-*Sail*, in a Ship, is a Sail us'd under Water; it is veer'd out right a-head, upon the Sea in a Storm, having Sheets faſten'd to it as other Sails have; its Uſe being to keep the Ship's Head right upon the Sea.

It is alſo uſeful, to hinder a Ship's driving with a Current, and with that View generally us'd by Fiſher-men, eſpecially in the North-Sea.

DRINK, a Part of our ordinary Food, in a liquid Form, ſerving to dilute, and moiſten the dry Meat. See FOOD.

The *Drinks*, in different Countries, are different. Thoſe, ordinarily us'd among us, are, *Water*, *Malt-Liquors*, and *Wine*. See WATER, MALT-*Liquor*, and WINE.

The Extraordinaries, are, *Cyder*, *Punch*, *Brandy*, *Tea*, *Strong Waters*, &c. which ſee.

The *Malt-Drink* brew'd in *England*, in one Year, *Chamberlayne* aſſures us, amounts to very near 2 Millions of Barrels of ſtrong, and ſmall. See EXCISE.

Water, Dr. *Cheyne* obſerves, was without all Diſpute the primitive original Beverage, as it is the only ſimple Fluid (for there are but three more in Nature, Mercury, Light, and Air, none of which is fit for human *Drink*) fitted for diluting, moiſtening and cooling, the Ends of *Drink* appointed by Nature: And happy had it been for the Race of Mankind, had other mixt, and artificial Liquors never been invented. Water alone is ſufficient, and effectual for all the Purpoſes of human Wants in *Drink*. Strong Liquors were never deſign'd for common Uſe. They were formerly kept, here in *England*, as other Medicines are, in Apothecaries Shops, and preſcribed by Phyſicians, as they do *Diaſcordium*, and *Venice* Treacle, to refreſh the Weary, ſtrengthen the Weak, and raiſe the low-ſpirited. The Effect of the ordinary Uſe of Wine, and ſpirituous Liquors, as natural Cauſes will always produce their Effects, is to inflame the Blood into Gout, Stone, and Rheumatiſm, Fevers, Pleuriſies, Small-Pox, *&c.* to dry up the Juices, and ſcorch and ſhrivel the Solids. Thoſe, whoſe Appetite, and Digeſtion is good, and entire, never want ſtrong Liquors to ſupply 'em with Spirits: Such Spirits are too volatile, and fugitive for any ſolid, or uſeful Purpoſes of Life. Two Ounces of Fleſh Meat, well digeſted, beget a greater Stock of more durable, and uſeful Spirits, than ten times as much ſtrong Liquors.

All ſtrong Liquors are as hard to digeſt, and require as much Labour of the Concoctive Powers, as ſtrong Food it ſelf. Water is the only univerſal Diſſolvent, or Menſtruum, and the moſt certain Diluter of all Bodies proper for Food. There are a great many ſpirituous Liquors, which not only will not diſſolve, but will harden, and make more indigeſtible, eſpecially the Salts of Bodies, wherein their active Qualities, that is, thoſe which can do moſt harm to human Conſtitutions, conſiſt. And we have known Perſons of tender Conſtitutions, who could neither eat, nor digeſt, upon drinking Wine, who, by drinking at Meals common Water, heated, have recover'd their Appetites, and Digeſtion, have thriven, and grown plump. 'Tis true, ſtrong Liquors by their Heat and Stimulation on the Organs of Concoction, by increaſing the Velocity of the Motion of the Fluids, and thereby quickening the other Animal Functions, will carry off the Load that lies upon the Stomach, with more preſent Chearfulneſs. But then, beſide the future Damages of ſuch a Quantity of Wine to the Stomach, and the Fluids by its Heat, and Inflammation, the Food is hurried into the Habit unconcocted, and lays a Foundation for a Fever, fit of the Colic, or ſome Chronical Diſeaſe. *Eſſay on Health*, &c. *p.* 47, 48, *&c.*

DRIP, in Architecture. See LARMIER.

DRIPS, are alſo us'd in Building for a Kind of Steps, on flat Roofs, to walk upon. This Way of Building is much us'd in *Italy*: where the Roof is not made quite flat, but a little raiſed in the Middle; with *Drips*, or Steps, lying a little inclining to the Horizon. See ROOF.

DRIVE, in the Sea-Language. A Ship is ſaid to *drive* when an Anchor being let fall, it will not hold her faſt, but that ſhe ſails away with the Tide, or Wind. See ANCHOR.

The beſt Way to prevent this, is to veer out more Cable; for the more Cable ſhe has, the ſurer, and ſafer ſhe rides; or elſe to let fall more Anchors.

Alſo when a Ship is a *Hull*, or a *Trye*, we ſay, ſhe *drives to Leeward*, or in *with the Shore*, according to the Way ſhe makes.

DROGMAN. See DRAGOMAN.

DROIT, *Jus*, in our Law-Books, ſignifies *Right*, or *Law*: whereof our Lawyers make ſix Kinds, *viz.* 1. *Jus Recuperandi*, Right of Recovering: 2. *Jus Entrandi*, Right of Entring: 3. *Jus Habendi*, Right of Having: 4. *Jus Retinendi*, Right of Retaining: 5. *Jus Percipiendi*, Right of Receiving: 6. *Jus Poſſidendi*, Right of Poſſeſſing. See LAW, and RIGHT; as alſo RECTUM.

DROPAX, in Pharmacy, an external Medicine, in Form of a Plaſter, us'd to take off the Hairs from any Part.

The *Dropax* is of two Kinds, *Simple*, and *Compound*.

The *Simple* is made of an Ounce of dry Pitch, and two Drachms of Oil.

The *Compound* is made with Pitch, Wax, Colophony, common Bitumen, *Sulphur vivum*, Pepper, Euphorbium, Cantharides, and Caſtor. There are alſo other Ways of making it.

It was anciently much in Uſe to warm the Parts, to draw the Blood and Spirits to them, and to cure Atrophies. It was applied hot on the Part affected, after firſt ſhaving it, and was pull'd off again 'ere quite cold, then heated a-freſh, and applied again; and the Operation thus repeated, till the Part were render'd very red.

The Word is form'd from the *Greek* Δρεπειν, *to pluck, to tear*.

DROPPING, or *Dripping*, is a Term us'd among Falconers, when a Hawk mutes directly downwards in ſeveral *Drops*, not yerking her Dung ſtraight forwards.

DROPS, in Meteorology. See RAIN.

The Spherical Form, into which the *Drops* of Fluids conform themſelves, is a Phænomenon that has a little perplex'd the Philoſophers.

The Solution commonly given, was, that the equable, uniform Preſſure of the ambient, or incumbent Atmoſphere cloſed 'em into this Form: But this Account will no longer paſs, now that we find the Phænomenon holds in *Vacuo* as well as in Air.

The *Newtonian* Philoſophers, therefore, aſcribe it to their *Attraction*, which being greater between the ſeveral Particles of the Fluids, than between them, and thoſe of the Medium, they are, as it were concentrated, and brought as near each other, and into as little Compaſs, as may be: which cannot be, without their being ſpherical.

Thus, Sir *Iſaac Newton*: *Guttæ enim Corporis cujuſque fluvei, ut figuram globoſam inducere conentur, facit mutua partium ſuarum Attractio; Eodem modo quo Terra Mariaque in Rotunditatem undique conglobantur, Partium ſuarum Attractione mutua, quæ eſt Gravitas.* Opt. p. 338. See ATTRACTION.

DROPS, in Medicine, a liquid Medicine, whoſe Doſe is eſtimated by a certain Number of *Drops*.

A little Lowneſs of Spirits, ſays Dr. *Cheyne*, ſpeaking of the ſofter Sex under Fits of the Vapours, *&c.* requires *Drops*, which paſs readily down under the Notion of Phyſic: *Drops* beget Drams, and Drams beget more Drams, till they come to be without Weight, and without Meaſure. Higher, and more ſevere Fits, begot by theſe, bring forth farther Neceſſity upon Neceſſity of *Drops*, Drams, and Gills, till at laſt, *&c. Eſſay on Health.*

Engliſh DROPS, or *Volatile Engliſh* DROPS, or *Guttæ Anglicanæ*, is a Liquor drawn by Fire from a great Number of Ingredients, and found a powerful Remedy againſt Coagulations of the Blood, Obſtructions, Apoplexies, malignant Fevers, Small-pox, *&c.*

Its Inventor was Dr. *Goddard*, a Phyſician of *London*. King *Charles* II. had much ado to purchaſe the Secret of him, tho' he offer'd him 5000 Pounds for the ſame. However, he prevail'd at length; but the Phyſician look'd on it as a Favour done the Prince, to impart it to him on ſuch Terms.

Hence it is, that the Remedy took the Name of *Guttæ Anglicanæ*. See GUTTÆ *Anglicanæ*.

DROPS, *Guttæ*, in Architecture, an Ornament in the Doric Entablature, repreſenting *Drops*, or little Bells, immediately under the Triglyphs. See TRIGLYPH.

DROPSY, *Hydrops*, in Medicine, a Diſeaſe occaſion'd by a præter-natural Collection of Serum, or Water, in ſome Part of the Body; Or a too great Proportion thereof in the Blood. See DISEASE.

The Word is derived from the *Greek* ὕδωρ, *Water*, and ὤψ, *Facies*, Face.

The *Dropſy* acquires different Names from the different Parts it afflicts, or the different Parts the Waters are collected in. That of the *Abdomen*, or lower Belly, call'd ſimply, and abſolutely *Dropſy*, is particularly denominated *Aſcites*: That of the whole Habit of the Body, *Anaſarca*, or *Leucophlegmatia*: That of the Head, *Hydrocephalus*: That of the Scrotum, *Hydrocele*. See ASCITES, ANASARCHA, *&c.*

There is alſo a Species of this Diſeaſe cauſed, inſtead of Water, by a Collection of Wind, call'd *Tympanites*, and by *Hippocrates*, the *Dry Dropſy*. See TYMPANITES.

There

There are alſo *Dropſies of the Breaſt*, *Pericardium*, *Uterus*, *Ovaries*, &c.

The Cauſes of *Dropſies*, in general, are whatever may obſtruct the ſerous Part of the Blood, ſo as to make it ſtagnate in the Veſſels; Or bruſt the Veſſels themſelves, ſo as to let the Blood out among the Membranes; Or weaken, and relax the Tone of the Veſſels; Or thin the Blood, and make it watery; or leſſen Perſpiration.

Theſe Cauſes are various, *viz.* ſometimes acute Diſeaſes, ſchirrous Tumors of any of the more noble Viſcera, exceſſive Evacuations, particularly Hæmorrhages, hard Drinking, *&c.*

The *Aſcites*, or *Water-Dropſy* of the Abdomen, is the moſt uſual Caſe, and what we particularly call the *Dropſy*: Its Symptoms are Tumors, firſt of the Feet, and Legs, and afterwards of the Abdomen, which keep continually growing; and if the Belly be ſtruck, or ſhook, there is heard a Quaſhing of Water. Add to this three other Attendants, *viz.* a *Dyſpnœa*; intenſe Thirſt; and ſparing Urine: with which may be number'd Heavineſs, Liſtleſneſs, Coſtiveneſs, a light Fever, and an Emaciation of the Body.

The Curative Indications are two, *viz.* The Evacuation of the Water; and the Strengthening of the Blood, and Viſcera. The firſt is effected by ſtrong Purgatives, particularly *Elaterium*, and *Crocus Metallorum*. For ſuch as are too weak to bear Purgatives, Dr. *Sydenham* recommends Emeticks, whereof the beſt are thoſe made of Lixivial Salts. *Etmuller* prefers Diureticks to either Kind. Along with the Evacuants are to be uſed Stomachicks, eſpecially *Abſynthium*, *Marrhubium*, &c.

Where other means fail for Evacuating the Water, Recourſe is had to the *Paracentæſis*, or Operation of Tapping. See PARACENTÆSIS.

Mayerne recommends *Mercurius dulcis*, and Nitre, and Ants Eggs, for the promoting of Urine, and draining the Tumour. As for the Viſcera, they are reſtored by Chalybeats, and Strengtheners.

Baglivi notes, that in a *Dropſy* ariſing from a morbid Liver, there is always a vehement dry Cough: which is never obſerved in the other Species. *Tycho Brahe* obſerves, that Hydropic Perſons uſually die about full Moon. *Wainwright* extols an Infuſion of Green Tea in *Rheniſh* Wine; as alſo Briony Juice, as excellent in this Diſeaſe.

DROWNING, the Act of Suffocating, or being ſuffocated by Water. See SUFFOCATION.

People not accuſtom'd to diving, Dr. *Halley* obſerves, begin to *drown* in about half a Minute's Time. See DIVING.

Drowning was anciently a Kind of Puniſhment: In the Time of *Louis* XI. of *France*, the Chronicles aſſure us, that they frequently *drown'd* their Criminals, inſtead of hanging them. *Chron. Scand.* See PUNISHMENT.

Natural Hiſtorians, and Phyſicians, furniſh us with divers well atteſted Inſtances of ſurprizing Recoveries of Perſons *drown'd*: Which, if maturely conſider'd, might perhaps let a little Light into the dark Notion of Life, and Death.

Pechlin, de Aer. & Alim. def. C. 10. gives us the Hiſtory of a Gardener of *Tronningholm*, then living, ag'd 65 Years, who 18 Years before ſlipt under the Ice to the Depth of 18 Ells, where he ſtood at the Bottom, upright, as it were, for 16 Hours; when, being drawn out with a Crook ſtruck into his Head, and wrapp'd up in Clothes, from the common Perſuaſion of thoſe People, that he would recover; he was afterwards ſtroak'd, rubb'd with linnen Swaths, and Air blown up his Noſtrils for ſeveral Hours; till the Blood began to move. Laſtly, plying him with Antapoplectic, and Genial Liquors, he was reſtored to Life. In Memory of this Accident, the Queen Mother ſettled a yearly Stipend upon him, *&c.*

Tilaſius, Keeper of the King's Library, gives us the Hiſtory of a Woman he himſelf knew, who was under the Water 3 whole Days, yet brought to Life again after the ſame Manner as the *Tronningham* Gardener: and was ſtill alive.

Laſtly, *Burmannus* aſſures us, that being in the Village *Boneſs*, of the Pariſh of *Pithou*, he aſſiſted at the Funeral Sermon of one *Laur. Jona*, an old Man of ſeventy; where the Preacher related, that when a Youth of 17, he had been buried 7 Weeks under Water, and at length drawn forth, and brought again to Life. *Pechlin. ubi ſup.*

DRUG, in Commerce, a general Name for all Spices, and other Commodities, brought from diſtant Countries, and uſed in the Buſineſs of Medicine, Dying, and the Mechanic Arts.

The *Drugs* us'd in Medicine, are very numerous, and make the greateſt Part of the Commerce of our *Druggiſts*. Some of 'em grow in *England*, *France*, &c. But the greateſt Part are brought from the *Levant*, and the *Eaſt Indies*.

A Liſt of 'em would be endleſs. Some of the Principal, are, *Aloes*, *Amber-gris*, *Amber*, *Aſſa fœtida*, *Antimony*, *Balſams*, *Bezoar*, *Borax*, *Benjoin*, *Camphor*, *Cantharides*, *Cardamum*, *Caſſia*, *Caſtoreum*, *Colloquintis*, *Civet*, *Coral*, *Cubebs*, *Coffee*, *Cocao*, *Gums Animæ Armoniac Adraganth*, *Elemi Galbanum Gutta Labdanum Opoponax Sagapenum Sandarac Lacca*, *Jalap*, *Manna*, *Maſtic*, *Mirrh*, *Muſc*, *Opium*, *Pearls*, *Quinquina*, *Hellebore*, *Galanga*, *Zedoary*, *Rhubarb*, *Sarſaparilla*, *Storax*, *Sanguis Draconis*, *Senna*, *Sperma Ceti*, *Spica Nardi*, *Scammony*, *Sal Ammoniac*, *Sublimate*, *Tamarinds*, *Tea*, *Turpentine*, *Turbith*, *Tutia*, *Tartar Vitriol*, &c. The Natural Hiſtory, *&c.* whereof, ſee under their reſpective Articles.

The *Drugs* uſed by Dyers, are of two Kinds; *Colouring*, which give the Dye, or Colour; And *Not-Colouring*, which only diſpoſe the Stuffs to take the Colours the better, or to render the Colours more ſhining. See DYING.

Of the firſt Kind, are, *Paſtels*, *Wood*, *Indigo*, *Kermes*, *Cochineel*, *Madder*, *Turmeric*, &c.

Of the ſecond Kind, are, *Alumn*, *Tartar*, *Arſenic*, *Realgal*, *Saltpetre*, *Common Salt*, *Sal Gemmæ*, *Sal Ammoniac*, *Cryſtal of Tartar*, *Agaric*, *Spirit of Wine*, *Urine*, *Tin*, *Wheat-or Peaſe-Flower*, *Starch*, *Lime*, *Aſhes*, &c.

There is a third Sort of *Drugs*, that anſwer both Intentions; As the *Root*, *Bark*, and *Leaf of the Walnut-tree*, *Galls*, *Copperoſe*, &c. An Account of each of theſe *Drugs*, ſee under their proper Articles.

DRUGGET, in Commerce, a Sort of cheap Stuff, very thin, and narrow, uſually all Wool, and ſometimes half Wool and half Thread: Sometimes croſs'd; but uſually without Croſſing.

Thoſe croſs'd, are wove on a Loom with two Treddles, after the ſame Manner as Linnen, Camelot, *&c.*

Mr. *Savary* invented a Kind of Gold, and Silver *Druggets*; the Warp being partly Gold- and Silver-thread, and the Woof Thread.

DRUIDS, the Prieſts, or Miniſters of Religion, among the ancient *Celtæ*, or *Gauls*, *Britains*, and *Germans*.

Some Authors derive the Word *Druid*, and *Drus*, from the *Hebrew* דרוש'ם *Deruſſim*, *Druſſim*, or *Driſſim*, which they tranſlate, *Contemplators*.

The *Druids* were the firſt, and moſt diſtinguiſh'd Order among the *Gauls*, and *Britains*: They were choſe out of the beſt Families; and the Honours of their Birth, joyn'd with thoſe of their Function, procured 'em the higheſt Veneration among the People. They were verſed in Aſtrology, Geometry, Natural Philoſophy, Politicks, and Geography; and had the Adminiſtration of all ſacred Things; were the Interpreters of Religion, and the Judges of all Affairs indifferently. Whoever refuſed Obedience to them, was declared impious, and accurſed.

We know but little as to their peculiar Doctrines; only that they believed the Immortality of the Soul, and the *Metempſychoſis*.

They were divided into ſeveral Claſſes, or Branches; *viz.* the *Vacerri*, *Bardi*, *Eubages*, *Semothii*, or *Semnothei*, and *Saronidæ*.

The *Vacerri* are held to have been the Prieſts; the *Bardi* the Poets; the *Eubages*, the Augurs; and the *Saronides*, the Civil Judges, and Inſtructors of Youth. As to the *Semothei*, who are ſaid to have been immediately devoted to the Service of Religion, 'tis probable, they were the ſame with the *Vacerri*. See BARDI, *&c.*

Strabo, however, *L.* IV. *p.* 197. and *Picard* after him, in his *Celtopædia*, do not comprehend all theſe different Orders under the Denomination of *Druids*, as Species under their Genus, or Parts under the Whole; but make 'em quite different Conditions, or Orders.

Strabo, again, only diſtinguiſhes three Kinds; *Bardi*, *Vates*, and *Druids*. The *Bardi* were the Poets; the *Vates*, Οὐάτεις, (apparently the ſame with the *Vacerri*) were the Sacrificers, and Naturaliſts; and the *Druids*, beſide the Study of Nature, applied themſelves likewiſe to Morality. See VATES.

Diogenes Laertius aſſures us in his Prologue, that the *Druids* were the ſame among the ancient *Britains*, with the *Sophi*, or *Philoſophers* among the *Greeks*, the *Magi* among the *Perſians*, the *Gymnoſophiſts* among the *Indians*, and the *Chaldeans* among the *Aſſyrians*. See MAGI, GYMNOSOPHIST, *&c.*

The *Druids* had one Chief, or *Arch-Druid* in every Nation, who acted as High-prieſt, or *Pontifex Maximus*. He had abſolute Authority over all the reſt; and commanded, decreed, puniſh'd, *&c.* at Pleaſure. At his Death he was ſucceeded by the moſt conſiderable among the Survivors; and if there were ſeveral Pretenders, the Matter was ended by an Election, or put to the Deciſion of Arms.

The *Druids*, we have obſerv'd, were in the higheſt Eſteem. They preſided at Sacrifices, and other Ceremonies, and had the Direction of every Thing relating to Religion. The *Britiſh*, and *Gauliſh* Youth flock'd to 'em in Crouds, to be inſtructed by 'em. The Children of the Nobleſſe, *Mela* tells us, they retired withal into Caves, or the moſt deſolate Parts of Foreſts; and kept 'em there, ſometimes for 20 Years, under their Diſcipline.

Beſide the Immortality, and *Metempſychoſis*, they inſtructed in the Motion of the Heavens, and the Courſe of

the

the Stars, the Magnitude of the World, and the Earth, the Nature of Things, the Power and Wiſdom of the Gods, &c. They preſerved the Memory and Actions of great Men in their Verſes, which they never allowed to be wrote down, but made their Pupils get 'em off by Heart. In their common Courſe of Learning, they are ſaid to have taught 'em 24000 ſuch Verſes. They had the *Miſletoe* in ſingular Veneration. *Pliny* relates the Ceremony wherewith they gather'd it every Year. *L.* XV. *C.* 44. They placed a World of Confidence in Serpents Eggs gather'd after a peculiar Manner, and under a certain Diſpoſition of the Moon, deſcribed by *Pliny*; and imagin'd 'em effectual Means for the gaining of Law-Suits, and procuring the good Graces of Princes. And hence, the ſame Author concludes, it is, that the *Caduceus*, or Rod encompaſs'd with two Serpents interwove, has been aſſum'd as a Symbol of Peace. *Suetonius*, in his Life of *Claudius*, aſſures us, they ſacrificed Men; and *Mercury* is ſaid to be the God they made theſe inhuman Sacrifices to. *Diod. Siculus L.* VI. obſerves, it was only upon extraordinary Occaſions they made ſuch Victims; as to conſult what Meaſures to take, to learn what ſhould befal 'em, &c. by the Fall of the Victim, the tearing of his Members, and the manner of his Blood guſhing out. *Auguſtus* condemn'd the Cuſtom: *Tiberius*, and *Claudius*, puniſh'd, and aboliſh'd it. See *Cæſar L.* VI. and *Mela L.* III. *C.* 2.

We learn from *Cæſar*, that they were the Judges, and Arbiters of all Differences and Diſputes, both public and private, took Cognizance of Murders, Succeſſions, Boundaries, and Limits; and decreed Rewards, and Puniſhments. Such as diſobey'd their Deciſions, they excommunicated, which was their principal Puniſhment: the Criminal being hereby excluded from all public Aſſemblies, and avoided by all the World; no body daring to ſpeak to them, for fear of being polluted.

Strabo obſerves, they had ſometimes Intereſt and Authority enough to ſtop Armies, upon the Point of Engaging; and accommodate their Differences.

They held an Aſſembly every Year at a certain Seaſon about the Middle of the Country, and there in a Place conſecrated for the Purpoſe, kept their Aſſizes, and terminated the Differences of the People, who flock'd thither from all Parts.

Cæſar, who had ſeen of the *Druids* in *Britain*, was of Opinion, they had come thence into *Gaul:* But the more able among the Moderns, generally take this for a Miſtake, and believe the very contrary. In effect, it appears pretty probable, that the ancient *Britons* were originally *Gauls*; that the *Celtæ*, or *Belgæ*, *Gauliſh* Nations, were the firſt that enter'd our Iſland, and peopled it. And that the *Druids* went along with 'em.

Picard Celtopæd. L. II. *p.* 58. believes the *Druids* to have been thus call'd from *Druis*, or *Dryuis*, their Leader, the 4th, or 5th King of the *Gauls*, and Father of *Saron*, or *Naumes*. *Pliny*, *Salmaſius*, *Vigenere*, &c. derive the Name from Δρῦς, *Oak*; on Account of their inhabiting, or at leaſt frequenting, and teaching in *Foreſts*; or perhaps, by reaſon, as *Pliny* ſays, they never ſacrificed but under the *Oak*. But 'tis hard to imagine, how the *Druids* ſhould come to ſpeak *Greek*. *Menage* derives the Word from the old Britiſh *Drus*, Demon, Magician. *Borel* from the Saxon *Dry*, Magician; or rather the old Britiſh *Dru*, Oak; whence he takes δρυὺς to be derived. *Gorop. Becanus L.* I. takes *Druis* to be an old *Celtic*, and *German* Word, form'd from *Trowis*, or *Truwis*, a Doctor of the Truth, and the Faith. This Etymology *Voſſius* acquieſces in.

Hornius, in his Hiſtory of Philoſophy, *L.* II. *C.* 12. believes all the Learning and Philoſophy of the *Druids* to have been derived from the Aſſyrian *Magi*, who are ſtill call'd in *Germany*, *Trutten*, or *Truttner:* And that, as *Magus* has loſt its ancient Signification, which was honourable, and now ſignifies a Magician, or Sorcerer; *Druid*, which had the ſame Senſe, has likewiſe degenerated, and now ſignifies no other, than a Perſon who has Commerce with the Devil, or is addicted to Magic. And accordingly, in *Friſeland*, where there anciently were *Druids*, ſuch People are call'd *Druis*. *Gale*, *Dickenſon*, and others, contend, that the *Druids* borrowed all their Philoſophy, as well as Religion, from the *Jews*.

DRUIDE. There were alſo Women, call'd *Druids*, or *Druides*, among the *Gauls*, &c. The Authors of the *Hiſtoria Auguſta*, particularly *Lampridius*, and *Vopiſcus*, make mention thereof.

A *Druide*, ſays *Lampridius*, *p.* 135. told *Alexander Severus* ſomething which denoted he ſhould be unhappy.

Vopiſcus, in the Life of *Aurelian*, relates, that having conſulted the Gauliſh *Druids*, whether or no the Empire ſhould remain in his Family; they gave him for Anſwer, that no Name ſhould be more glorious in the Empire, than that of the Deſcendants of *Claudius*. On which the Hiſtorian takes Occaſion to obſerve, that *Conſtantius*, the Father of *Conſtantine*, was a *Claudius*.

Laſtly, the ſame *Vopiſcus*, in his Life of *Numerianus*, relates, that a *Druide* had foretold *Dioclesian*, he ſhould be Emperor, when he ſhould have kill'd *Aper*, which ſignifies a Boar, and which was the Name of a *Præfectus Prætorii*, whom he kill'd with his own Hand.

Salmaſius, in his Notes on *Lampridius*, is a little in doubt who theſe Women were: But he gives into the moſt eaſy, and plauſible Opinion, that they were either the Wives, or the Children of the *Druids*.

DRUM, *Tympanum*, a Military, Muſical Inſtrument, of Uſe principally among the Foot, ſerving to call the Soldiers together, to direct their March, Attack, Retreat, &c.

The Body of the *Drum* is made of a very thin Oak bent into a Cylinder, and cover'd at each End with Parchment, which is ſtrain'd, or braced more or leſs, according to the Height, or Depth of the Sound required, by Strings; and ſtruck with Sticks. The Height of the *Drum* is equal to its Breadth, which does not exceed two Foot and a half, by reaſon, no Skins can be had to cover bigger. There are alſo *Drums*, whoſe Body is of Braſs.

DRUM, or DRUMMER, is alſo a Soldier deſtined to beat the *Drum*.

In each Company of Infantry there is at leaſt one *Drum*, and a *Drum-Major* in every Regiment.

There are divers Beats of the *Drum*: As the *March*, *Double March*, *Aſſembly*, *Charge*, *Retreat*, *Alarm*, *Chamade*, &c.

DRUM, in Anatomy, or *Ear*-DRUM, a Cavity in the Inner Ear, thus call'd from the Reſemblance it bears to the Figure of a *War-Drum*. See EAR.

Its outer Extreme is cover'd with a Membrane, by Anatomiſts more uſually call'd *Tympanum*, or more properly, *Membrana Tympani*. See TYMPANUM.

The Office of the *Membrana Tympani*, or *Drum of the Ear*, has been greatly controverted among Anatomiſts. The Account beſt warranted, is, that being a *Medium* for the Conveyance of the Sound to the Auditory Nerve, by its different Degrees of Tenſion, it ſerves to modify the Sound, and propagate it to the Nerve well proportioned, and commenſurate thereto.

The ingenious Dr. *Holder* has improved on this Theory. He conceives, that the Action of the Muſcle, whereby the *Drum* is ſtretch'd, and relax'd, does ordinarily, and conſtantly draw it to a moderate Tenſion; but when we have Occaſion to liſten, and give a particular Attention to any Sound, the Action of that Muſcle is then more intenſe, and the *Drum* is drawn to a more than ordinary Tenſion, to facilitate the Paſſage of the Sound. See ATTENTION.

Upon theſe Conſiderations, that Author having a young Gentleman, who was born deaf, put into his Hands; and perceiving the great Defect to lye in the Want of a due Tenſion of the *Tympanum*, he adviſed his Mother to conſult with Phyſicians, whether by ſome aſtringent Fumes, or otherwiſe, it might not be reſtored to a due Tenſion.

In the mean Time he thought of a temporary Way, by the Impulſe of any vehement Sound; as of a *Drum* beaten near him: Which Sound, during its Continuance, muſt needs give the *Tympanum* a Tenſion, by driving and ſwelling it outwards, as a freſh Gale of Wind fills the Sails of a Ship. And the Experiment ſucceeded according to Expectation. For ſo long as he beat a Drum faſt, and loud by him, he could hear thoſe that ſtood by him call him gently by his Name. But when the Drum ceaſed, he could no longer hear the ſame Perſons calling him very loudly. See DEAFNESS.

DRUM, in Architecture. See TAMBOUR.

DRUNGUS, a Body, or Company of Forces, thus call'd, under the *Roman* Empire.

The Name *Drungus*, as appears from *Vegetius*, *L.* III. *C.* 16. was at firſt only applied to foreign, and even hoſtile Troops; but under the Eaſtern Empire, it came in Uſe for the Troops of the Empire it ſelf. On which Occaſion, the Word Δρουγγος was form'd.

It amounts pretty nearly to what we call a *Regiment*, or *Brigade*. *Leunclavius* obſerves, that the *Drungus* was not leſs than 1000 Men, nor more than 4000.

The ſame *Leunclavius* obſerves, that Δρεγγος among the modern *Greeks* ſignifies a *Staff*, or *Rod*, the Badge of a Dignity, or Office, as *Agla* among the *Turks*; and thinks, that the Name may be form'd from the Latin *Truncus*. But it appears from *Vegetius*, that *Drungus* is a Barbarous, not a *Latin* Word.

Spelman takes it for *Saxon*, becauſe at this Day, *Trong*, or *Throng*, in *Engliſh* ſignifies a Multitude. *Salmaſius* derives it from Πυγχος, Beak; on Account of the Battallion's being diſpoſed beak-wiſe, or terminating in a Point.

DRUNKENNESS, phyſically conſider'd, conſiſts in a præter-natural Compreſſion of the Brain, and a Diſcompoſure of its Fibres; occaſion'd by the Fumes, or ſpirituous Parts of Liquors. 'Tis accounted for thus: An immoderate

Quantity of Wine taken into the Stomach, is there heated, and undergoes a Kind of Effervescence; which happens the more readily, as the Liquor abounds the more in Sulphur. By this Action it becomes attenuated, and rarified; So that the grosser Parts being left behind, its finer Parts are fitted to penetrate, and shoot through the Veins to the Brain; or are convey'd through the Veins to the Heart, whence, after a further Heat, and Rarefaction, they are sent through the caroted Arteries, *&c.* to the Brain. Hence necessarily arises a Repletion of the Meninges of the Brain; and a Compression of the Fibres of the Brain it self, from the fresh Stock of rarefied Sulphur, continually exploded into them: Hence also an Obstruction of the Pores, or Passages of the Brain; a frequent, and disorderly Pulsation of the Fibres, and the other Symptoms of this Disease.

Hence it is, that all Liquors will not give *Drunkenness*; but only such as by their Sulphur, or Spirit, are disposed for an Effervescence in the Stomach, and Heart, to diffuse their subtle attenuated Parts plentifully to the Brain. See BRAIN, NERVE, MUSCULAR *Motion*, DELIRIUM, *&c.*

'Tis a popular Mistake, that the only Remedy for Gluttony, is *Drunkenness*; or that the Cure of a Surfeit of Meat, is a Surfeit of Wine: Than which nothing can be more contrary to Nature. *Cheyne.* See DRINK.

The ancient *Lacedemonians* used to make their Slaves frequently *Drunk*, to give their Children an Aversion, and Horror for the same. The *Indians* hold *Drunkenness* a Species of Madness; and in their Language, the same Term *Ramjan*, that signifies a *Drunkard*, signifies also a Phrenetic.

DRY *Measure.* See MEASURE.

DRYADES, in the Heathen Theology, the Nymphs of the Woods; a Sort of imaginary Deities, which the Ancients believed to inhabit the Woods, and Groves; and to hide themselves under the Bark of the Oak, call'd by the *Greeks* Δρυς. See GODDESS.

The *Dryades* differ'd from the *Hamadryades*, in that these latter were attach'd to some particular Tree, with which they were born, and with which they died; whereas the *Dryades* were the Goddesses of the Trees, and Woods in general, and liv'd at large in the Middle thereof. For tho' Δρυς properly signifies an *Oak*; it was also used in the general for *Tree*.

We likewise find mention made in divers Authors of a Kind of Prophetesses, or Witches, among the *Gauls*, call'd *Dryades*, or *Druides*. See DRUIDES.

DUCAL *Coronet.* See CORONET.

DUCAL. The Letters Patents granted by the Senate of *Venice* are call'd *Ducals*: So are the Letters wrote in the Name of the Senate, to foreign Princes. See DOGE.

A Courier was dispatch'd with a *Ducal* to the Emperor, returning him Thanks for renewing the Treaty of Alliance (in 1716) against the *Turk*, with the Republic of *Venice*.

The Name *Ducal* is derived hence, that at the Beginning of such Patents the Name of the *Duke*, or *Doge*, is wrote in Capitals, thus: *N . . . . Dei Gratia Dux Venetiarum*, &c. See DUKE.

The Date of *Ducals* is usually in *Latin*; but the Body *Italian*.

DUCAT, a foreign Coin, either of Gold, or Silver, struck in the Dominions of a *Duke*; being about the same Value with a Piece of Eight, or a *French* Crown, or 4 Shillings and 6 Pence Sterling, when of Silver: and twice as much, when of Gold. See COIN.

The Origin of *Ducats* is referr'd to one *Longinus*, Governour of *Italy*; who revolting against the Emperor *Justin* the Younger, made himself Duke of *Ravenna*, and call'd himself *Exarcha*, i. e. *without Lord*, or *Ruler*. And to shew his Independance, struck Pieces of Money of very pure Gold in his own Name, and with his own Stamp; which were call'd *Ducats:* as *Procopius* relates the Story.

After him, the first who struck *Ducats*, were the *Venetians*, who likewise call'd 'em *Cecchins*, or *Seguins*, from *Zecca*, the Place, where they first were struck. This was about the Year 1280, in the Time of *John Dandulo:* But we have pretty good Evidence, that *Roger*, King of *Sicily*, had coin'd *Ducats* as early as 1240. And *du Cange* scruples not to affirm, that the first *Ducats* were struck in the Dutchy of *Pouille*, in *Calabria*.

The chief Gold *Ducats* now currant, are the single, and double *Ducats* of *Venice*, *Florence*, *Genoa*, *Germany*, *Hungary*, *Poland*, *Sweeden*, *Denmark*, *Flanders*, *Holland*, and *Zurich*. The heaviest of 'em weighs 5 Penny weight 17 Grains, and the lightest 5 Penny weight 10 Grains; which is to be understood of the double *Ducats*, and of the single, in Proportion.

The *Spaniards* have no *Ducats* of Gold, but in lieu thereof make Use of Silver Ones. Not that the Silver *Ducat* is a real Species, but only a Money of Account like our Pound. It is equivalent to 11 Rials. See RIAL.

The Silver *Ducats* of *Florence* serve there for Piasters, or Crowns. See CROWN.

DUCATOON, a Silver Coin, struck chiefly in *Italy*, particularly at *Milan*, *Venice*, *Florence*, *Genoa*, *Lucca*, *Mantua*, and *Parma*; Tho' there are also *Dutch*, and *Flemish Ducatoons*.

They are all nearly on the same footing; and being a little both finer and heavier than the *French* Crown, are valued at 2 Pence, or 3 Pence more; *viz.* at about 4 Shill. 8 Pence Sterl. See COIN.

There is also a Gold *Ducatoon*, struck, and current chiefly in *Holland*. It is equivalent to 20 Florins, or Guldens; on the footing of 1 Shilling, 11 Pence, half Penny, the Florin. See FLORIN.

DUCES *Tecum*, a Writ commanding one to appear at a Day in Chancery, and *to bring with him* some Evidences, or other Things, which the Court would view.

The same is also granted, where a Sheriff having in his Custody a Prisoner, in a personal Action, returns upon a *Habeas Corpus*, that he is *adeo languidus*, that without Danger of Death he cannot have his Body before the Justices.

DUCENARIUS, in Antiquity, an Officer in the *Roman* Army, who had the Command of *two hundred Men*.

The Emperors had also *Ducenarii* among their Procurators, or Intendants, call'd *Procuratores Ducenarii*. Some say, that these were such whose Salary was 200 Sesterces; as, in the Games of the *Circus*, Horses hir'd for two hundred Sesterces, were call'd *Ducenarii*.

Others hold, that *Ducenarii* were such as levied the two hundredth Penny; Or the Officers appointed to inspect the Raising of that Tribute.

The Inscriptions at *Palmyra* have frequently the Word *Ducenarius*, in *Greek* Διακενάριος.

DUCKING-*Stool*, in our Customs. See CUCKING-*Stool*.

DUCKING, or plunging in Water, *Olaus Magnus* tells us, was a Diversion anciently practised among the *Goths*, by Way of Exercise: But among the *Celtæ*, and *Franks*, a Sort of Punishment. *Tacitus* likewise assures us, that it was used among the ancient *Germans* for the Lazy, and Infamous. At *Marseilles*, and *Bourbon*, their Men and Women of scandalous Life are condemn'd to the *Cale*, as they call it, that is, to be shut up naked to the Shift, in an Iron Cage fasten'd to the Yard of a Chaloupe, and *duck'd* several times in the River. The same is done at *Tholouse*, to Blasphemers. It is also a Punishment for the Sea-men; who are thrown into the Sea from the Top of the Yard of a Main-Mast into the Sea, several times, according to the Quality of their Offence. Sometimes a Canon-Ball is fasten'd to their Feet, to make the Fall the more rapid. They have also a Kind of *Dry Ducking*, wherein the Patient is only suspended by a Cord, a few Yards above the Surface of the Water. This is a Kind of *Strapada*. The Punishment is made public by the Discharge of a Canon. See BAPTISING.

DUCT, *Ductus*, in Anatomy, a Term, in its general Sense, applied to all the Canals, or Tubes of a Body, as Veins, Arteries, *&c.* through which the Humors, Spirits, *&c.* are convey'd. See CANAL, TUBE, *&c.*

The Word has also a more immediate Application to several particular Vessels; as the

DUCTUS *Thoracicus.* See *Ductus* THORACICUS.

DUCTUS *Communis Choledochus*, a large Canal form'd by an Union of the *Ductus Cysticus*, and *Hepaticus*. This *Duct* descending about 4 Inches, discharges it self into the *Duodenum*, by an oblique Insertion, which does the Office of a Valve, in preventing the Regress of the Bile convey'd hereby into the Intestines. See BILE.

It sometimes opens into the *Duodenum* at the same Aperture with the *Pancreatic Duct*.

DUCTUS *Hepaticus*, call'd also *Meatus Hepaticus*, and *Bilary Pore*. See PORUS *Bilarius*.

DUCTUS *Cysticus*, or *Meatus Cysticus*, a Canal about the Bigness of a Goose-quill, which arising from the Neck of the Gall-bladder, about 2 Inches Distance therefrom, joyns the *Porus Bilarius*, and together with it constitutes the *Ductus Communis*. See CYSTIC *Duct*.

DUCTUS *Cysti-hepaticus*, or *Hepaticysticus*. See CYST-*Hepatic*.

DUCTUS *Adiposi*, are little Vascules in the *Omentum*, which either receive the Fat separated from the Adipose Loculi, or Cells, or else brings it to them: For the extream Fineness of these Vessels renders it extream difficult to trace their Origin, or Course.

Indeed it remains somewhat doubtful, whether they be hollow, and real *Ducts*; or whether they be not solid Fibres, such as are observed in the Spleen, along which the liquid Fat does, as Dr. *Drake* expresses it, drill its Way, as the easiest it can find. *Malpighi*, their first Discoverer, inclines to the former Opinion. All we know for certain, is, that they terminate in little Globules of Fat, concerning the Use and Progress whereof much remains to be discover'd. See FAT.

DUCTUS *Pancreaticus*, a little Canal arising from the *Pancreas*, and opening into the *Duodenum*, ſerving to diſcharge the Pancreatic Juice into the Inteſtines. See PANCREAS, and PANCREATIC *Juice*.

This *Duct* being firſt diſcover'd by *Virtſungus*, is frequently call'd *Ductus Virtſungianus*.

DUCTUS *Salivales*, the excretory Tubes of the Salival Glands; ſerving to diſcharge the ſecreted *Saliva* into the Mouth. See SALIVAL *Ducts*.

DUCTUS *Lachrymales*, the excretory Veſſels of the *Glandulæ Lachrymales*, ſerving for the Effuſion of Tears. See LACHRYMAL *Ducts*.

DUCTUS *Alimentalis*, a Name that accurate Anatomiſt, Dr. *Tyſon*, gives the Gula, Stomach, and Inteſtines; all which make but one continued Canal, or *Duct*. This *Duct* he makes the proper Characteriſtic of an Animal.

DUCTUS *Urinarius*, the ſame as the *Urethra*. See URETHRA.

DUCTUS *Umbilicalis*. See FUNICULUS *Umbilicalis*.

DUCTUS *Chyliferus*, } the ſame as *Ductus Thoracicus*.
DUCTUS *Roriferus*, }
See THORACIC *Duct*.

DUCTUS *Thoracicus*. See THORACIC *Duct*.

The *Thoracic Duct*, Dr. *Wharton* aſſures us, was obſerved by *Barthol. Euſtachio* in 1563; but its Uſe, and Communication with the *Receptaculum Chyli*, was unknown. And hence *Pecquet*, a Phyſician of *Dieppe*, is commonly ſuppoſed to have firſt diſcover'd it in 1651; whence its Denomination *Ductus Pecquetianus*: Tho' the Deſcription he gives of its Inſertion is faulty. *Van Horne* confounds it with the *Receptaculum*, or as he calls it, *Ciſterna Chyli*.

DUCTILITY, in Phyſicks, a Property of certain Bodies, whereby they become capable of being beaten, preſs'd, drawn, or ſtretch'd forth, without breaking; Or, whereby they are capable of great Alterations in their Figure, and Dimenſions; and of loſing in one Way, as they gain in another. See MATTER, BODY, *&c.*

Such are Metals, which being urg'd by the Hammer, gain in Length and Breadth what they loſe in Thickneſs; or being drawn into Wiar through Iron, grow longer as they become ſlenderer. See METAL.

Such, alſo, are Gums, Glues, Reſins, and ſome other Bodies, which, tho' not malleable, yet may be denominated *Ductile*, in as much as when ſoften'd by Water, Fire, or ſome other Menſtruum, they may be drawn into Threads. See MALLEABLE.

So that we have two Claſſes of *Ductile* Bodies. The one *Hard*, and the other *Soft*: Each of which we ſhall beſtow ſome Conſiderations upon.

The Cauſe of *Ductility* is very obſcure; as depending in great Meaſure on *Hardneſs*, than which there is nothing in Nature we know leſs of. 'Tis true, we uſually account for *Hardneſs* from the Force of Attraction between the Particles of the hard Body; and for *Ductility* from the Particles of the *ductile* Body, being, as it were, joynted, and entangled within each other. See HARDNESS, COHÆSION, *&c.*

Inſtead of fanciful Hypotheſes to account for *Ductility*; we ſhall here entertain the Reader with ſome truly amazing Circumſtances and Phænomena thereof.

One of the Properties of Gold, is to be the moſt *ductile* of all Bodies. See GOLD.

Of this, the Gold-beaters, and Gold Wiar-drawers, furniſh us with abundant Proof. *Fa. Merſenne*, Monſr. *Rohault*, Dr. *Halley*, &c. have made Computations thereof: But they truſted to the Reports of the Workmen. Monſr. *Reaumur*, in the *Memoires de l'Academie Royale des Sciences An.* 1713. took a ſurer Way: He made the Experiment himſelf. A ſingle Grain of Gold, he found, even in the common Gold-Leafs, us'd in moſt of our Gildings, is extended into 36 and a half, ſquare Inches; and an Ounce of Gold, which in Form of a Cube is not half an Inch either high, broad, or long, is beat under the Hammer into a Surface of 146 and a half ſquare Feet: An Extent almoſt double what could be done 90 Years ago. In *Fa. Merſennes* time, it was deem'd prodigious, that an Ounce of Gold ſhould form 1600 Leaves; which together only made a Surface of 105 ſquare Feet. See GOLD-*Beating*.

But the Diſtention of Gold under the Hammer (how conſiderable ſoever) is nothing to that it undergoes in the Drawing Iron. There are Gold-Leaves, in ſome Parts, ſcarce $\frac{1}{360000}$ Part of an Inch thick; but $\frac{1}{360000}$ Part of an Inch is a notable Thickneſs, in Compariſon of that of the Gold ſpun on Silk in our Gold-Thread.

To conceive this prodigious *Ductility*, it is neceſſary, to have ſome Idea of the Manner wherein the Wiar-drawers proceed. The Wiar, and Thread we commonly call *Gold-Thread*, &c. which every body knows is only Silver-Wiar gilt, or cover'd over with Gold, is drawn from a large Ingot of Silver, uſually about 30 Pound Weight. This they round into a Cylinder, or Roll, about an Inch and a half in Diameter, and 22 Inches long; and cover it over with the Leaves prepared by the Gold-beater, laying one over another, till the Cover is a good deal thicker than that in our ordinary Gilding. And yet even then 'tis very thin; as will be eaſily conceiv'd from the Quantity of Gold that goes to gild the 30 Pound of Silver. Two Ounces, ordinarily, do the Buſineſs; and frequently little more than one. In effect, the full Thickneſs of the Gold on the Ingot rarely exceeds $\frac{1}{400}$ or $\frac{1}{300}$ Part, and ſometimes not $\frac{1}{1000}$ Part of an Inch.

But this thin Coat of Gold muſt be yet much thinner: The Ingot is ſucceſſively drawn through the Holes of ſeveral Irons each leſs than other, till it be as fine, or finer than a Hair. Every new Hole leſſens its Diameter; but it gains in Length what it loſes in Thickneſs, and of Conſequence increaſes in Surface. Yet the Gold ſtill covers it; It follows the Silver in all its Extenſion; and never leaves the minuteſt Part bare, not even to the Microſcope. Yet, how inconceivable muſt it be attenuated while the Ingot is drawn into a Thread, whoſe Diameter is 9000 times leſs than that of the Ingot.

Mr. *Reaumur*, by exact weighing, and rigorous Calculation, found, that one Ounce of the Thread was 3232 Feet long, and the whole Ingot 1163520 Feet, *Paris* Meaſure, or 96 *French* Leagues; equal to 1264400 *Engliſh* Feet, or 240 Miles *Engliſh*: An Extent which far ſurpaſſes what *Fa. Merſenne*, *Furetiere*, Dr. *Halley*, &c. ever dreamt of.

Merſenne ſays, that half an Ounce of the Thread is 100 Toiſes, or Fathoms long; on which footing, an Ounce would only be 1200 Foot: whereas Monſr. *Reaumur* finds it 3232. Dr. *Halley* makes 6 Foot of the Wiar one Grain in Weight, and one Grain of the Gold, 98 Yards, and conſequently the ten thouſandth Part of a Grain above one Third of an Inch. The Diameter of the Wiar he found one 186th Part of an Inch; and the Thickneſs of the Gold one 154500th Part of an Inch. But this, too, comes ſhort of Monſr. *Reaumur*: For on this Principle, the Ounce of Wiar would only be 2680 Feet.

But the Ingot is not yet got to its full Length. The greateſt Part of our Gold-Thread is ſpun, or wound on Silk; and before they ſpin it, they flat it, by paſſing it between two Rolls, or Wheels of exceedingly poliſh'd Steel; which Wheels, in flatting it, lengthen it by above one Seventh. So that our 240 Miles are now got to 274. The Breadth, now, of theſe *Laminæ*, or Plates, Monſr. *Reaumur* finds, is only one 8th of a Line, or one 96th of an Inch, and their Thickneſs one 3072th. The Ounce of Gold, then, is here extended to a Surface of 1190 ſquare Feet; whereas, the utmoſt the Gold-beaters can do, we have obſerved, is, to extend it to 146 ſquare Feet.

But the Gold, thus exceedingly extended, how thin muſt it be? From Monſr. *Reaumur*'s Calculus it is found to be one 1750000th of a Line, or one 21000000th of an Inch; which is ſcarce one 13th of the Thickneſs of Dr. *Halley*'s Gold. But he adds, that this ſuppoſes the Thickneſs of the Gold every where equal; which is no ways probable: For in beating the Gold-leaves, whatever Care they can beſtow, 'tis impoſſible to beat 'em equally. This we eaſily find by the greater Opacity of ſome Parts than others. And where the Leaf is thickeſt, it will gild the Wiar the thickeſt.

Monſr. *Reaumur* computing what the Thickneſs of the Gold muſt be where thinneſt, finds it only one 315000000th of an Inch. But what is the one 315000000th Part of an Inch? Yet this is not the utmoſt *Ductility* of Gold: For inſtead of two Ounces of Gold to the Ingot, which we have here computed upon, a ſingle one might have been uſed; And then the Thickneſs of the Gold, in the thinneſt Places, would only be the 630000000th Part of an Inch.

And yet, as thin as the Plates are, they might be made twice as thin, yet ſtill be gilt; by only preſſing 'em more between the Wheels, they are extended to double the Breadth, and proportionably in Length. So that their Thickneſs at laſt will be reduced to one thirteenth, or fourteenth Millionth Part of an Inch.

Yet with this amazing Thinneſs of the Gold, 'tis ſtill a perfect Cover for the Silver. The beſt Eye, nor even the beſt Microſcope, cannot diſcover the leaſt Chaſm, or Diſcontinuity. There is not an Aperture to admit Alcohol of Wine, the ſubtileſt Fluid in Nature, nor even Light it ſelf. Add, that if a Piece of this Gold-Thread, or Gold-plate, be laid to diſſolve in *Aqua fortis*, the Silver will be all excavated, or eat out, and the Gold left entire in little Tubules.

As to the *Ductility of Soft Bodies*, it is not yet carried to that Pitch. The Reader, however, muſt not be ſurprized, that among the *ductile* Bodies of this Claſs, we give the firſt Place to the moſt brittle of all others, *Glaſs*. We all know, that when well penetrated with the Heat of the Fire, the Workmen can figure, and manage it like ſoft Wax. But what is moſt remarkable, is, that it may be drawn, or ſpun out into Threads exceedingly fine, and long.

Our ordinary Spinners don't form their Threads of Silk, Flax, or the like, with half the Eaſe, and Expedition, as the Glaſs-Spinners do Threads of this brittle Matter. We have

of

of 'em us'd in Plumes on Childrens Heads, and divers other Works, much finer than any Hair; and which bend, and wave like them with every Wind.

Nothing is more ſimple and eaſy than the Method of making them: There are two Workmen employ'd: The firſt holds one End of a Piece of Glaſs over the Flame of a Lamp; and when the Heat has ſoften'd it, a ſecond Workman applies a Glaſs-hook to the Metal thus in Fuſion; and withdrawing the Hook again, it brings with it a Thread of Glaſs, which ſtill adheres to the Maſs. Then, fitting his Hook on the Circumference of a Wheel about 2 Feet and a half in Diameter, he turns the Wheel as faſt as he pleaſes; which drawing out the Threads, winds it on its Rim; till after a certain Number of Revolutions it is cover'd with a Skain of Glaſs-Thread.

The Maſs in Fuſion over the Lamp, diminiſhes inſenſibly, being wound out, as it were, like a Pelotoon, or Clue upon the Wheel; and the Parts, as they recede from the Flame, cooling, become more coherent with thoſe next to 'em; and this by Degrees: The Parts neareſt the Fire, are always the leaſt connected together, and of Conſequence muſt give Way to the Effort the reſt make to draw 'em towards the Wheel.

The Contour of theſe Threads is uſually a flat Oval, being three or four times as broad as thick. Some of 'em ſcarce ſeem bigger than the Thread of a Silk-Worm; and are flexible to a Miracle. If the two Ends of ſuch Threads be knotted together, they may be drawn and bent, till the Aperture, or Space in the Middle of the Knot don't exceed one 4th of a Line, or one 48th of an Inch in Diameter.

Hence, Mr. *Reaumur* advances, that as the Flexibility of Glaſs increaſes in Proportion to the Fineneſs of the Threads; had we but the Art of drawing Threads as fine as thoſe of a Spider's Web, we might weave Stuffs, and Cloaths hereof, for Wear.

Mr. *Reaumur* made ſome Experiments this Way: He could make Threads fine enough, as fine, in his Judgment, as any Spider's web, but could never make 'em long enough, to do any Thing with 'em.

The ſame ingenious Author obſerves, that the Matter whereof Spiders and Silk-worms form their Threads, is brittle, when in the Maſs, like dry Gums. As 'tis drawn out of their Bodies, it aſſumes a Conſiſtence, much as Glaſs-threads become hard, as they recede from the Lamp; tho' from a different Cauſe. The *Ductility* of this Matter, and the Apparatus thereto being much more extraordinary in Spiders, than in Silk-worms; we ſhall here only conſider the former. Something has already been ſaid of each under the Article SILK, which ſee.

Near the Anus of the Spider are ſix *Papillæ*, or Teats, repreſented in *Tab. Nat. Hiſtory Fig.* 6. The Extremities of the ſeveral *Papillæ* are furniſh'd with Holes, that do the Buſineſs of Wiar-drawers, in forming the Threads. Of theſe Holes, M. *Reaumur* obſerves, there are enough in the Compaſs of the ſmalleſt Pins-head, to yield a prodigious Quantity of diſtinct Threads. The Holes are perceiv'd by their Effects: Take a large Garden-Spider ready to lay its Eggs, and applying the Finger on a Part of its *Papillæ*, as you withdraw that Finger, it will take with it an amazing Quantity of different Threads.

Monſr. *Reaumur* has often told 70, or 80, with a Microſcope, but has perceiv'd, that there were infinitely more than he could tell. In effect, if he ſhould ſay, that each Tip of a *Papilla* furniſh'd a thouſand, he is perſuaded, he ſhould ſay vaſtly too little. The Part is divided into an Infinity of little Prominences, like the Eyes of a Butter-fly, *&c.* Each Prominence, no doubt, makes its ſeveral Thread; or rather, between the ſeveral Protuberances, are Holes that give Vent to Threads; the Uſe of the Protuberances, in all probability, being to keep the Threads at their firſt Exit, 'ere yet harden'd by the Air, a-part. In ſome Spiders theſe Protuberances are not ſo ſenſible; but in lieu thereof there are Tufts of Hair, which may ſerve the ſame Office, *viz.* to keep the Threads a-part. Be this as it will, there may Threads come out at above a thouſand different Places in every *Papilla*; conſequently, the Spider having ſix *Papillæ*, has Holes for above 6000 Threads. 'Tis not enough, that theſe Apertures are not only immenſely ſmall: The Threads are already form'd 'ere they arrive at the *Papilla*, each of 'em having its little Sheath, or Duct, in which it is brought to the *Papilla* from a good Diſtance.

Monſr. *Reaumur* traces 'em up to their Source, and ſhews the Mechaniſm by which they are made. Near the Origin of the Belly, he finds two little ſoft Bodies, which are the firſt Source of the Silk. Their Form and Tranſparency reſemble thoſe of Glaſs-beads, (ſee *Fig.* 7.) by which Name we ſhall hereafter denote them. The Tip of each Bead, as R, goes winding, and makes an Infinity of Turns, and Returns towards the *Papilla*. From the Baſe, or Root of the Bead, proceeds another Branch much thicker; which winding variouſly, forms ſeveral Knots, and takes its Courſe like the other, towards the Hind-part of the Spider. In theſe Beads, and their Branches, is contain'd a Matter proper to form the Silk, only that it is too ſoft. The Body of the Bead is a Kind of Reſervoir, and the two Branches two Canals proceeding from it. A little further backward, there are two other leſſer Beads, which only ſend forth one Branch a-piece, and that from the Tip. Beſide theſe, there are three other larger Veſſels on each Side the Spider, which Mr. *Reaumur* takes for the laſt Reſervoir, where the Liquor is collected. They are repreſented (*Fig.* 8.) The biggeſt is near the Head of the Inſect, and the leaſt near the Anus. They all terminate in a Point; and from the three Points of theſe three Reſervoirs it is, that the Threads, at leaſt the greateſt Part of the Threads, drawn out at the three *Papillæ*, proceed. Each Reſervoir ſupplies one *Papilla*. Laſtly, at the Roots of the *Papillæ*, are diſcern'd ſeveral fleſhy Tubes: probably, as many as there are *Papillæ*. Upon lifting up the Membrane, or Pellicle, that ſeems to cover theſe Tubes, they appear full of Threads, all diſtinct from each other, and which, of Conſequence, under a common Cover, have each their particular One; being kept like Knives in Sheaths. The immenſe Quantity of Threads contain'd here, Monſr. *Reaumur* concludes, upon tracing their Courſe, do not all come from the Points of the Reſervoirs; but ſome from all the Turns, and Angles; nay probably, from every Part thereof. But by what Conveyances the Liquor comes into the Beads, and out of the Beads into the Reſervoirs, remains yet to be diſcover'd.

We have already obſerv'd, that the Tip of each *Papilla* may give Paſſage to above a thouſand Threads; yet the Diameter of that *Papilla* does not exceed a ſmall Pins-head: But we were there only conſidering the largeſt Spiders.

If we examine the young, riſing Spiders, produced by thoſe; we ſhall find, that they no ſooner quit their Egg, than they begin to ſpin. Indeed their Threads can ſcarce be perceiv'd; but their Webs, form'd thereof, may. They are frequently as thick, and cloſe, as thoſe of Houſe-Spiders; And no Wonder: there being often 4, or 500 little Spiders concuring to the ſame Work. How minute muſt their Holes be? The Imagination can ſcarce conceive that of their *Papillæ*. The whole Spider is perhaps leſs than a *Papilla* of that which produced it.

This is eaſily ſeen: Each big Spider lays 4 or 500 Eggs; theſe Eggs are all wrapp'd up in a Bag; and as ſoon as the young Ones have broke through the Bag, they begin to ſpin. How fine muſt their Threads be?

Yet is not this the utmoſt Nature does: There are ſome Kinds of Spiders ſo ſmall at their Birth, that they are not viſible without a Microſcope. There are uſually found an Infinity of 'em in a Cluſter, and they only appear like a Number of red Points. And yet there are Webs found under them, tho' well nigh imperceptible. What muſt be the Tenuity of one of theſe Threads? The ſmalleſt Hair muſt be to one of theſe what the moſt maſſive Bar is to the fineſt Gold-wiar above mentioned.

The Matter whereof the Threads are form'd, we have obſerved, is a viſcid Matter. The Beads are the firſt Receptacles where it is gather'd, and the Place where it has the leaſt Conſiſtence. 'Tis much harder when got into the ſix great Reſervoirs, whither 'tis carried by Canals from the former: This Conſiſtence it acquires in good Meaſure in its Paſſage; Part of the Humidity being diſſipated in the Way; or ſeparated by Parts deſtined for that Purpoſe.

Laſtly, the Liquor is dried ſtill further, and becomes Thread, in its Progreſs through the reſpective Canals to the *Papillæ*. When theſe firſt appear out at the Holes, they are ſtill glutinous; ſo that ſuch as ſpring out of neighbouring Holes, ſtick together. The Air compleats the drying.

By boiling the Spider, more, or leſs, the Liquor is brought to a greater or leſs Conſiſtence, fit to draw out into Threads, for 'tis too fluid for that Purpoſe, while yet incloſed in its Reſervoirs.

The Matter contain'd in theſe Reſervoirs, when well dried, appears a tranſparent Gum, or Glue, which breaks when much bent: Like Glaſs, it only becomes flexible by being divided into the fineſt Threads. And probably 'twas on this Account Nature made the Number of Holes ſo immenſe. The Matter of the Silk form'd in the Bodies of Spiders being much brittler than that form'd in Silk-worms, needed to be wound ſmaller. Otherwiſe we don't conceive, why ſhe ſhould form a great Number of Threads, which were afterwards to be reunited: a ſingle Canal might have done. See DIVISIBILITY.

DUEL, a ſingle Combat, at a Time and Place appointed, in Conſequence of a Cartel, or Challenge. See CHALLENGE, *&c.*

Duels were anciently allowed by common Law, in Caſes where Proof could not be had. In which Senſe *Fleta* defines *Duel, Singularis Pugna inter duos ad probandam Veritatem Litis, & qui vicit, probaſſe intelligitur.* Stat. de Finib. Levat. 27. *Edu.* I. See COMBAT.

This

This *Duelling* was ſo general a Method of terminating Differences among the Nobles; that even Eccleſiaſticks, Prieſts, and Monks were not excuſed from the ſame. Only, to prevent their being ſtain'd with Blood, they oblig'd 'em to procure Champions to fight in their ſtead; as is ſhewn at large by Father *Dacheri*, in the VIIIth Tome of his *Spicilegium*. See CHAMPION.

None were excepted but Women, ſick People, and Cripples, and ſuch as were under 21 Years of Age, or above 60.

The Cuſtom was for the two Champions to enter a Liſt, or ſmall Encloſure, by the Authority of the ordinary Judge, not only on Criminal Occaſions, but on ſome Civil Ones, for the Maintenance of their Right.

The Monk *Sigebert* even relates, that a Queſtion on a Point of Law being preſented to the Emperor *Otho* I. *viz.* whether the Repreſentation had Place in direct Succeſſion: And the Doctors finding themſelves embarraſs'd in the Reſolution thereof; the Emperor remitted the Deciſion of ſo critical a Point to the Judgment of Arms; and pitch'd on two bold Fellows to maintain the *pro* and the *contra*. The Victory fell to him who contended for the Repreſentation; In Favour of whom a Law was ſtraightway made, which is in Force to this Day.

This Cuſtom came originally from the Northern Nations; among whom it was a Cuſtom to end all their Differences by Arms; as we are aſſured by *Paterculus*. It afterwards paſſed as a Law among the *Germans*, *Danes*, and *Franks*; eſpecially after *Gondebault*, King of the *Burgundians*, admitted it inſtead of Swearing. Mr. *Godeau*, in his Hiſtory of the Church, VII. Cent. ſays, it was the *Lumbards* who firſt introduced into *Italy* the Barbarity of ſingle Combats, whence the Cuſtom ſpread throughout the reſt of *Europe*.

The Form of the Combat was this: The Accuſer and Accuſed giving Pledges to the Judge, on their reſpective Behalf; the Judge took firſt up that of the Defendant, and next that of the Demandant. They were then both clap'd up in ſafe Priſon; and the Chief Juſtice was to furniſh 'em with ſuitable Arms. Such as fought on Foot had only a Sword and Buckler. The Horſe-men were arm'd at all Points, as well as their Horſes.

The Day of Combat being come, they made Choice of four Cavaliers, to guard the Field; and perform'd divers Ceremonies, Prayers, Oaths, *&c.* deſcrib'd by *Paſquier*, and other Authors, quoted by *du Cange*, who mentions an Ordonnance of King *Philip* the *Fair* in 1306, preſcribing the ſeveral Rules, Conditions, and Ceremonies, which are curious to ſee.

The Vanquiſh'd, whether Accuſer, or Accuſed, was puniſh'd with Death, or Mutilation of Members, and ignominiouſly drag'd out of the Camp, hung on a Gibbet, or burnt, according to the Circumſtances of the Caſe.

This Way of trying by *Duel*, was inſtituted as a Method of conſulting Providence, to learn who was the Criminal; and it was imagined, that God thus interrogated, would not fail to declare himſelf in Favour of the Innocent. But it happen'd ſo often, that the unjuſt Accuſer came off victorious; that they began to be convinced, they muſt not preſcribe to his Wiſdom, the Neceſſity of Interrupting the Courſe of ſecond Cauſes. This was giving Rules to Murther, and diſguiſing Aſſaſſinations under Method and Meaſure. See SORTES.

Saxo Grammaticus obſerves, that as early as the Year 981, the Kings of *Denmark* had abrogated the Proof by *Duel*; and in lieu thereof, appointed the Proof by red hot Iron, which was annull'd in its Turn. See ORDEAL.

But *Duels* were condemn'd before by a Council held at *Valence* in 855; where the Perſon who kill'd his Enemy, was excommunicated; and the Perſon kill'd, pronounced unworthy of Burial. Afterwards, the Popes *Nicholas* I. *Celeſtin* III. and *Alexander* III. likewiſe interpoſed; and *Frederic* I. and II. prohibited 'em in *Germany*. St. *Louis* did what he could to aboliſh 'em in *France*; But his Ordonnance only took Place on his own Lands, and not on thoſe of his Vaſſals. After his Example, the Counts *d'Auvergne* and *Poictou*, and ſeveral other Lords, forbad 'em likewiſe. *Philip* the *Fair*, following the Foot-ſteps of his Grand-father, St. *Louis*, forbad all Gages, or Pledges of Battel; and yet he permitted 'em in four Caſes, in the Ordonnance abovementioned of the Year 1306. The laſt *Duel* of Note was in the Year 1547, before King *Henry* II. between *Jarnac* and *Chataigneraye*, mention'd by *Thuanus*, and *de Serres*.

In *England*, the Trial by *Duel* is diſus'd; tho' the Law on which it is founded be ſtill in Force. The laſt Trial of this Kind admitted, was in the 6th Year of King *Charles* I. between *Donnald*, Lord *Rey*, or *Rhee*, Appellant, and *David Ramſey* Eſquire, Defendant, in the painted Chamber at *Weſtminſter*.— *Stephanus de Nerbona omnibus — ſciatis me dediſſe Wilhelmo filio Radulphi de Filungele pro Homagio & Servitio ſuo, & propter* Duellum *quod fecit pro me — duas virgatas Terræ.*

DUEL is alſo uſed for a ſingle Combat on ſome private Quarrel, or Occaſion.

The *Duel* muſt be premeditated; otherwiſe 'tis only a *Rencounter*. See RENCOUNTER.

The Folly, or rather Madneſs of *Duelling* reign'd for ſome Ages in *France*; where the Flower of the Nobleſſe periſh'd thereby. 'Tis one of the Glories of the late *Louis* XIV. to have uſed all his Power and Authority towards aboliſhing *Duels*. The ſevere Edicts and Laws he made againſt *Duelliſts* put a Stop to the Cuſtom.

The Word is form'd from *Duellum*, uſed by the barbarous *Latin* Writers, *quaſi duorum bellum*.

DUKE, a ſoveraign Prince, without the Title, or Quality of King: Such are the *Duke* of *Savoy*; *Duke* of *Parma*, &c. See PRINCE.

There are alſo two Soveraigns, that have the Title of *Great-Duke*: The *Grand-Duke* of *Tuſcany*, and the *Grand-Duke* of *Muſcovy*, now call'd the *Czar*, or Emperor of *Ruſſia*. The Emperor of *Germany* is *Arch-Duke* of *Auſtria*.

The Word is borrowed from the modern *Greeks*, who call *Doucas*, what the *Latins* call *Dux*.

DUKE is alſo a Title of Honour, or Nobility, the next below *Princes*. See NOBILITY, PRINCE, *&c.*

The *Ducate*, or Dignity of *Duke*, is a *Roman* Dignity, denominated *a Ducendo*.

The firſt *Dukes*, *Duces*, were the *Ductores Exercituum*, Commanders of Armies. Under the later Emperors, the Governours of Provinces were entitled *Duces*. In latter Times the ſame Denomination was given to the Governours of Provinces in Time of Peace.

The firſt Governour in Quality of *Duke*, was a *Duke* of the *Marchia Rhetica*, or Griſons, whereof mention is made in *Caſſiodorus*. The *Goths*, and *Vandals*, upon their overrunning the Provinces of the Weſtern Empire, aboliſh'd the *Roman* Dignities wherever they ſettled. But the *Franks*, &c. to pleaſe the *Gauliſh* People, who had long been us'd to that Form of Government, made it a Point of Politicks, not to change any Thing therein; and accordingly divided all *Gaul* into *Dutchies*, and Counties; and gave the Names ſometimes of *Dukes*, and ſometimes of Counts, *Comites*, to the Governours thereof. See COUNT.

In *England*, during the *Saxons* Time, *Cambden* obſerves, the Officers and Commanders of Armies were call'd *Dukes*, *Duces*, after the ancient *Roman* Manner, without any Addition. After the *Conqueror* came in, the Title lay dormant, till the Reign of King *Eduard* III. who created his Son *Eduard*, firſt call'd the *black Prince*, *Duke* of *Cornwall*. After whom, there were more made in ſuch a Manner as that their Titles deſcended to their Poſterity.

They were created with much Solemnity, *per Cincturam Gladii, Cappæque, & Circuli Aurei in Capite Impoſitionem.*

Tho' the *French* retain'd the Names, and Form of the Ducal Government, yet under their ſecond Race of Kings, there was ſcarce any ſuch Thing as *Dukes*; But all the great Lords were call'd *Counts*, *Peers*, or *Barons*. Excepting, however, the *Dukes* of *Burgundy*, and *Aquitaine*; and a *Duke of France*, which was a Dignity, *Hugh Capet* himſelf held, correſponding to the modern Dignity of *Maire de Palais*, or the King's Lieutenant.

By the Weakneſs of the Kings, the *Dukes*, or Governours made themſelves Soveraigns of the Provinces truſted to their Adminiſtration. This Change happen'd chiefly about the Time of *Hugues Capet*; when the great Lords began to diſmember the Kingdom; ſo that that Prince found more Competitors among 'em than Subjects. 'Twas even with a deal of Difficulty they could be brought to own him their Superior, and to hold of him by Faith, and Homage.

By Degrees, what with Force, and what by Marriages, theſe Provinces, both Dutchies, and Counties, which had been rent from the Crown, were re-united. But the Title *Duke* was no longer given to the Governours of Provinces.

From that Time *Duke* became a mere Title of Dignity, affected to a Perſon, and his Heirs Male, without giving him any Domaine, Territory, or Juriſdiction over the Place whereof he is *Duke*. All the Advantages thereof conſiſt in the Name, and the Precedence it gives 'em.

The *Dukes* of our Days retain nothing of their ancient Power, but the Coronet on their Eſcutcheon; which is the only Mark of their departed Soveraignty.

They are created by Patent, Cincture of the Sword, Mantle of State, Impoſition of a Cap, and Coronet of Gold on the Head, and a Verge of Gold in their Hand. See CORONET, GRACE, *&c.*

The eldeſt Sons of *Dukes* are by the Courteſy of *England* ſtyled *Marquiſes*, and the younger Sons, *Lords*, with the Addition of their Chriſtian Name, as Lord *James*, Lord *Thomas*, &c. and take Place of Viſcounts, tho' not ſo privileged by the Laws of the Land. A *Duke* has the Title of *Grace*; and being writ to, is ſtiled, in the Heralds Language, *Moſt high, potent, and Noble Prince*. *Dukes* of the Blood

Royal, are ſtiled, *Moſt high, moſt mighty, and Illuſtrious Princes.*

DUKE-DUKE, a Quality given in *Spain* to a Grandee of the Houſe of *Sylva*, on Account of his having ſeveral Dutchies, by the uniting of two conſiderable Houſes in his Perſon.

Don *Rodrigo de Sylva*, eldeſt Son of Don *Ruy Gomez de Sylva*, and Heir of his Dutchies, and Principalities, married the eldeſt Daughter of the *Duke de l'Infantado*; In Vertue of which Marriage, the preſent *Duke de Paſtrana*, who is deſcended therefrom, and is Grand-ſon of Don *Rodrigo de Sylva*, has added to his other great Titles, that of *Duke-Duke*, to diſtinguiſh himſelf from the other *Dukes*, ſome whereof may enjoy ſeveral Dutchies, but none ſo conſiderable Ones, nor the Titles of ſuch eminent Families.

DULCIFYING, the *Sweetening* of any Thing: a Term uſed in Phyſick, for rendering a Fluid leſs acid, and rough, either by taking away its Salts, or breaking their Points, or covering 'em with ſomething ſmooth, and ſoft.

DUMBNESS, the State of a Perſon who wants the natural Uſe of Speech. People born deaf, are ſaid to be all naturally *dumb*, as not being able to learn Words. See DEAFNESS.

Dumbneſs is ſometimes the Reſult of the Want, or even the ill Conformation, of the Tongue. See TONGUE.

Yet in the 3d Tome of the *Ephem. German.* we have an Account of a Book, entitled, *Jac. Rolandi Agloſſoſtomographia, ſive Deſcriptio Oris ſine Lingua, quod perfecte loquitur*, &c. See MUTE.

DUNG, in Agriculture, and Gardening. See MANURE, and COMPOST.

DUNGEON, DONGEON, or DONJON, the moſt elevated Part of a Caſtle built after the ancient Mode; ſerving as a Watch-Tower, or Place of Obſervation. See CASTLE.

In ſome Caſtles, as that of *Vincennes*, &c. the *Dungeon*, or Donjon, ſerves as a Priſon for Perſons they would have the moſt ſecurely kept; whence our Word *Dungeon*.

Fauchet derives *Dungeon* from *Domicilium*, in that the *Dungeon* being the ſtrongeſt Part of the Caſtle, was uſually the Lord's Apartment. *Menage* derives it from *Domnionus*, which in ſome ancient Writings we find us'd in the ſame Senſe. Others derive it from *Domus Julii Cæſaris*, or *Domus Jugi*; And others from *Domus Juliani*, the Emperor *Julian* having built ſeveral ſuch Caſtles in the *Gauls*, whereof there is one ſtill ſtanding in *Lorraine*, call'd *Dom Julien*. *Du Cange* derives the Appellation from *Duno aut Colle Ædificatum*, which the barbarous Writers have alter'd into *Dunjo*, *Dungeo*, *Dongio*, *Dangio*, *Domgio*, and *Domnio*.

DUO, in Muſic, a Song, or Compoſition to be perform'd in two Parts only; the one ſung, and the other play'd on an Inſtrument; or by two Voices alone.

It is alſo call'd a *Duo*, when two Voices ſing different Parts, accompanied with a Third, which is a thorough Baſs. Uniſons and Octaves muſt rarely be uſed in *Duo's*, except at the Beginning and End.

DUODENA *Arteria*, and *Vena*, a Branch of an Artery, which the *Duodenum* receives from the Cœliac; to which anſwers a Vein of the ſame Name, returning the Blood to the *Porta*. See VEIN, and ARTERY.

DUODENUM, in Anatomy, the firſt of the *Inteſtina tenua*, or ſmall Guts; being that which receives the Food half chylified from the Stomach. See INTESTINES.

It has its Name *Duodenum*, as being about *twelve* Fingers Breadth, long: On which Account, ſome alſo call it *Dodecadactylum*.

The *Duodenum* ariſes from the *Pylorus*, or right Orifice of the Stomach; whence deſcending towards the Spine, from Right to Left, quite ſtraight, it terminates where the Circumvolutions of the reſt begin.

Its Coats are thicker, and its Cavity, or Canal leſs than any of the other Inteſtines. At its lower End are two Canals, opening into its Cavity, one from the Liver, and Gall-Bladder, call'd the *Ductus Communis Cholidicus*; and the other from the *Pancreas*, call'd *Pancreaticus*. See CHOLIDICUS, and PANCREATICUS.

The *Duodenum* is quite ſtraight; but the *Inteſtinum Jejunum* makes divers Windings, and Inflexions: The reaſon is, that the Bile, and Pancreatic Juice mixing at the Beginning thereof, or at the End of the *Duodenum*, would otherwiſe precipitate not only the groſs Parts of the Excrements, but alſo the Chyle it ſelf, too haſtily. See BILE, EXCREMENT, *&c.*

DUPLA, DUPLE, DOUBLE *Ratio*, is where the Antecedent Term is *double* the Conſequent; Or, where the Exponent of the *Ratio* is 2; Thus 6 : 3 is in a *Duple Ratio*. See RATIO.

Sub-DUPLE, *Sub*-DOUBLE *Ratio*, is where the Conſequent Term is *double* the Antecedent; Or, the Exponent of the *Ratio* is $\frac{1}{2}$. Thus, 3 : 6 is in a *Sub-duple Ratio*. See RATIO.

DUPLA-*Seſquialtera* } *Ratio*. { See RATIO.
DUPLA-*Superbipartiens tertias* }

DUPLICATE, a ſecond Inſtrument, or Act, in Writing; as a Brief, Writ, Diſpatch, *&c.* Or a Tranſcript, or Copy of another.

'Tis uſual to write a *Duplicate*, when it is apprehended the firſt Diſpatch, *&c.* is loſt.

In Chancery, *Duplicate* is particularly us'd for ſecond Letters Patent granted by the Lord Chancellour, in a Caſe where he had formerly done the ſame.

The Word is form'd from the Latin *Duploma*, or *Duplum*.

DUPLICATE *Ratio* muſt be well diſtinguiſh'd from *Duple*.

In a Series of Geometrical Proportions, the firſt Term to the third is ſaid to be in a *Duplicate Ratio* of the firſt to the ſecond; or as its Square is to the Square of the ſecond: Thus, in 2, 4, 8, 16, the *Ratio* of 2 to 8, is *Duplicate* of that of 2 to 4; or as the Square of 2 to the Square of 4; wherefore *Duplicate Ratio* is the Proportion of Squares, as Triplicate is of Cubes, *&c.* and the *Ratio* of 2 to 8, is ſaid to be compounded of that of 2 to 4, and of 4 to 8. See RATIO, *&c.*

DUPLICATION, *Doubling*, in Arithmetic, and Geometry, the multiplying a Quantity, either diſcrete, or continued, by *two*. See MULTIPLICATION.

The Term is chiefly us'd in the Phraſe, *Duplication of the Cube*, which is a famous Problem ſought by the Geometricians theſe two thouſand Years. See CUBE.

It was firſt propoſed by the Oracle of *Apollo* at *Delphos*; which, being conſulted about the Manner of ſtopping a Plague then raging at *Athens*, return'd for Anſwer, that the Plague ſhould ceaſe *when his Altar*, which was Cubical, *ſhould be doubled*. Upon this, they applied themſelves, in good Earneſt, to ſeek the *Duplicature* of the Cube, which hence forwards was call'd the *Delian Problem*. See PROBLEM.

The Problem is only to be ſolv'd by finding two mean Proportionals between the Side of the Cube, and double that Side; the firſt whereof will be the Side of the Cube *doubled*: as was firſt obſerv'd by *Hippocrates Chius*. See PROPORTIONAL.

Eutochius, in his Comments on *Archimedes*, gives ſeveral Ways of performing it by the Meſolabe. *Pappus Alexandrinus*, and his Commentator *Commandin*, give three Ways: The firſt, according to *Archimedes*; the ſecond, according to *Hero*; and the third, by an Inſtrument invented by *Pappus*, which gives all the Proportions required.

The Sieur *de Comiers* has likewiſe publiſh'd an elegant Demonſtration of the ſame Problem, by means of a Compaſs with three Legs: But theſe Methods are all Mechanical.

DUPLICATURE, in Anatomy, a Doubling, or Folding of the Membranes, or other like Parts; as the *Duplicatures of the Peritonæum, of the Omentum, of the Pleura*, &c. See PERITONÆUM, OMENTUM, PLEURA, *&c.*

In the Hiſtory of the *French* Academy for the Year 1714. an Account is given of a young Man, who died at the Age of 27 Years, in the *Duplicature* of whoſe Meninges were found little Bones, that ſeem'd to proceed out of the inner Surface of the *dura Mater*, and with their acute Points ſtimulated the *pia Mater*.

That *Duplicature* of the *Peritonæum*, wherein the Ancients placed the Bladder, is not found by the modern Anatomiſts. *Dionis*.

Fabricius ab Aquapendente firſt diſcover'd the *Duplicature* of the *Cuticula*. See CUTICLE.

DUPONDIUS, in Antiquity, a Weight of two Pounds: Or a Money of the Value of two As's. See AS.

As the *As*, at firſt, weigh'd a juſt *Pondo*, or *Libra*; the *Dupondius*, then, weigh'd two. And hence the Name.

And tho' the Weight of the As was afterwards diminiſh'd, and of Conſequence that of the *Dupondius* alſo; they ſtill retain'd the Denomination. See POUND, and LIBRA.

DURESSE, *Hardſhip*, in Law, is, where a Perſon is kept in Priſon, or reſtrain'd of his Liberty, contrary to Order of Law; or threaten'd to be kill'd, maim'd, or beaten.

In which Caſe, if a Perſon ſo in Priſon, or in Fear of ſuch Threats, make any Specialty, or Obligation, by reaſon of ſuch Impriſonment, or Threats; ſuch Deed is void in Law: And in an Action brought on ſuch Specialty, the Party may plead, that it was brought by *Dureſſe*.

Brook, in his Abridgment, joyns *Dureſſe* and *Manaſſe* together, *i. e. Duritiam & Minas*, Hardſhip, and Threatnings.

DURA *Mater*, or DURA *Meninx*, a ſtrong, thick Membrane, which lines, or covers all the inner Cavity of the *Cranium*, and includes the whole Brain; being it ſelf lined on its inner, or concave Side by the *pia Mater*, or *Meninx tenuis*. See MENINGES.

The *dura Mater* ſticks very cloſe to the Baſis of the Skull, and its Sutures by the Fibres, and Veſſels it ſends to the *Pericranium*. See BRAIN, and CRANIUM.

It is faſten'd to the *pia Mater*, and the Brain, by the Veſſels which paſs from one to the other. It gives a Coat, or Covering to all the Nerves which riſe from the Brain; and

and to the *Medulla Spinalis*, and all the Nerves, which riſe from it. See NERVE.

Its Surface is rough towards the Skull, and ſmooth towards the Brain. It is a double Membrane, woven of ſtrong Fibres, which may be plainly ſeen on its Inſide, but very little on its Outſide next the Skull: It has three Proceſſes made by the Doubling of its inner Membrane. See DUPLICATURE.

The firſt reſembles a Sickle, and is therefore call'd *Falx*. See FALX.

The ſecond ſeparates the *Cerebrum* from the *Cerebellum*, down to the *Medulla Oblongata*, that the Weight of the *Cerebrum* may not offend the *Cerebellum*, which lies under it. This Proceſs is very ſtrong, and thick, and in ravenous Beaſts it is for the moſt Part bony, becauſe of the violent Motion of their Brain.

The third is the ſmalleſt, and ſeparates the External Subſtance of the hind Part of the *Cerebellum* into two Protuberances. See CEREBELLUM.

In the *dura Mater* are ſeveral Sinus's, or Channels, which run between its internal and external Membrane: The four principal Ones, are, the *Sinus Longitudinalis*; the ſecond and third Sinus's are call'd the *Laterales*; and the fourth, the *Torcular*. See SINUS, LONGITUDINALIS, *&c.*

Beſides theſe there are more of inferior Note, mention'd by Anatomiſts, as *du Verney*, Dr. *Ridley*, &c. Their Uſe is, to receive the Blood of the adjacent Parts from the Veins, to which they are as ſo many Trunks, and diſcharge the Blood into the internal Jugulars. See JUGULAR.

The Veſſels of the *dura Mater*, are, firſt, a Branch from the Carotidal, while it is in its long Canal, which is diſperſed in its Fore- and lower Part of the *dura Mater*; ſecondly, an Artery, which enters the Hole of the Skull, call'd, *Foramen Arteriæ duræ Matris*: It is diſperſed on the Sides of this Membrane, and runs as high as the *Sinus Longitudinalis*: The Vein which accompanies the Branches of this Artery, goes out of the Skull, by the *Foramen Lacerum*. Thirdly, a Branch of the Vertebral Artery, and Vein, which laſt paſſes through the Hole behind the Occipital *Apophyſis*, where they are diſperſed in the Hind-part of the *dura Mater*. It has alſo Nerves from the Branches of the fifth Pair, which give it an exquiſite Senſe.

It has a Motion of Syſtole, and Diaſtole, which is cauſed by the Arteries, which enter the Skull. No doubt, the great Number of Arteries in the Brain contribute more to it, than thoſe few proper to it ſelf, which may aſſiſt a little, tho' not very ſenſibly, becauſe of their Smallneſs, and Paucity.

The Uſe of the *dura Mater* is to cover the Brain, the Spinal Marrow, and all the Nerves; to divide the *Cerebrum* in two, and to hinder it from preſſing the *Cerebellum*.

DURATION, an Idea we get by attending to the fleeting, and perpetually periſhing Parts of Succeſſion. See SUCCESSION.

The Idea of Succeſſion we get by reflecting on that Train of Ideas, which continually follow one another in our Minds, while awake. The Diſtance between any Parts of this Succeſſion is what we call *Duration*: And the Continuation of the Exiſtence of our ſelves, or any Thing elſe commenſurate to the Succeſſion of Ideas in the Mind, is call'd our *own Duration*, or that of the Thing coexiſting with our Thinking. So that we have no Perception of *Duration*, when that Succeſſion of Ideas ceaſes. See IDEA, and EXISTENCE.

Duration, in Mr. *Lock*'s Philoſophy, is a Mode, or Modification of Space. See SPACE, and MODE.

The ſimple Modes of *Duration*, are any Lengths, or Parts thereof, whereof we have diſtant Ideas; as *Hours*, *Days*, *Weeks*, *Months*, *Years*, *Time*, and *Eternity*, &c. See HOUR, DAY, WEEK, MONTH, YEAR, *&c.*

Duration, as mark'd by certain Periods, and Meaſures, is what we properly call *Time*. See TIME.

1. By obſerving certain Appearances, at regular, and ſeemingly equi-diſtant Periods, we get the Ideas of certain Lengths, and Meaſures of *Duration*, as Minutes, Hours, *&c.* 2. By being able to repeat thoſe Meaſures of Time, as often as we will, we come to imagine *Duration* where nothing really endures, or exiſts: Thus, we imagine, *to morrow*, *next Year*, *yeſterday*, &c. 3. By being able to repeat ſuch Idea of any Length of Time, as of a *Minute*, *Year*, &c. as often as we will, and add 'em to one another, without ever coming to an End, we get the Idea of *Eternity*. See ETERNITY.

Time is to *Duration*, as Place is to Space, or Expanſion. They are ſo much of thoſe boundleſs Oceans of Eternity, and Immenſity, as is ſet out, and diſtinguiſh'd from the reſt; and thus ſerve to denote the Poſition of finite, real Beings, in reſpect of each other in thoſe infinite Oceans of *Duration*, and Space.

DUTCHY-*Court*, a Court wherein all Matters belonging to the *Dutchy*, or County Palatine of *Lancaſter*, are decided by Decree of the Chancellour of that Court. See PALATINE.

The Original of this Court was in *Henry* the IVth Time; who obtaining the Crown by Depoſition of *Richard* II. and having the *Dutchy* of *Lancaſter*, by Deſcent, in Right of his Mother, became ſeiz'd thereof as King, not as Duke. So that all the Liberties, Franchiſes, and Juriſdictions of the ſaid County paſs'd from the King, by his great Seal, and not by Livery, or Attornment; as the Earldom of *March*, and other Poſſeſſions, which deſcended to him by other Anceſtors than the King's, did.

Henry IV. by Authority of Parliament, ſever'd the Poſſeſſions, Liberties, *&c.* of the ſaid *Dutchy* from the Crown: But *Eduard* IV. reſtored 'em to their former Nature.

The Officers belonging to this Court, are the Chancellour, Attorney, Receiver General, Clerk of the Court, and Meſſenger; beſide the Aſſiſtants: as an Attorney in the Exchequer; another in Chancery, and four Councellors. See CHANCELLOR *of the Dutchy*.

The *Dutchy* of *Lancaſter*, ſays *Gwin*, grew out of the Grant of *Eduard* III. who gave that *Dutchy* to his Son *John* of *Gaunt*, and endowed it with Royal Rights, equal to thoſe of the County Palatine of *Cheſter*. And foraſmuch as it came afterwards to be extinct in the Perſon of King *Henry* IV. by reaſon of its Union with the Crown; the ſame King ſuſpecting himſelf more rightfully Duke of *Lancaſter*, than King of *England*, determined to ſave his Right in the *Dutchy*, whatever ſhould befal the Kingdom. Accordingly, he ſeparated the *Dutchy* from the Crown; and ſettled it ſo in his own Perſon, and Heirs, as if he had been no King, or Politic Body at all: In which Condition it continued during the Reigns of *Henry* V. and VI. who deſcended from him; till *Eduard* IV. who, by Recovery of the Crown, recontinuing the Right of the Houſe of *York*, appropriated the *Dutchy* to the Crown again. Yet ſo, as he ſuffer'd the Court, and Officers to remain as he found 'em. In this Manner, it came, together with the Crown, to *Henry* VII. who taking *Henry* IV. Policy, (by whoſe Right, indeed, he obtain'd the Kingdom) re-ſeparated the *Dutchy*, and ſo left it to his Poſterity, who ſtill enjoy it.

DUTY, in Policy, and Commerce, an Impoſt, laid by Authority of a Prince, *&c.* on Merchandizes, and Commodities, either of his own Country, or brought from abroad; towards ſupporting the Expences of the Government. See CUSTOMS.

The *Duties* on various Kinds of Commodities are infinite. The principal are, the

DUTIES *of Exportation*, and *Importation*, pay'd upon the bringing in, or carrying out of the divers Kinds of Goods, Animals, and even Perſons; agreeable to the Tariſs ſettled between the ſeveral Nations. See IMPORTATION, and EXPORTATION.

There is no State in *Europe*, or perhaps in the World, where the *Duties* of Exportation and Importation, are ſo many, and ſo conſiderable, as in *England*. The two principal, are, the *Duties of Tunnage*, and *Poundage*. The firſt charged on Liquors, in Proportion to their Meaſure, and Content. See TUNNAGE.

The ſecond on the other Commodities, and paid according to their Value, ſettled in a Tarif. See POUNDAGE.

Theſe two *Duties*, which have a long Time been on foot in *England*, were re-eſtabliſh'd at the Reſtoration of King *Charles* II. in 1660, upon the Parliament's annulling all the Laws made under *Cromwell*, and decreeing the Execution of the ancient Ordonnances.

To theſe there have been eighteen new *Duties* added ſince that Time: Ten of 'em for Liquids, and the other eight on other Kinds of Commodities.

The *Duties on Liquids*, are the ancient *Duty of Tunnage*, or *old Subſidy*: the *Additional Duty*; *Duty of Exciſe*, *Duty of Coinage*, the *old Impoſition*, the *Additional Impoſition*, the *Orphan's Money*, the *Duty on* French *Wines*, the *New Subſidy*, the *Duty on* Hungary *Wines*, and the *one Third*, *and two Thirds of Subſidies*.

The *Duties* on other Commodities, are the *Ancient Duty of Poundage*: the *Additional Duty of* 1660, *on Linens*, *and Silks*: the *new Impoſition of Poundage*, call'd the *Impoſt of* 1690: Another *Impoſition of four Fifths in* 1693: the *Duty of* 25 *per Cent on* French *Goods*, *impoſed in* 1695: the *new Subſidy of Poundage in* 1697: Another *Additional Subſidy of a Third of Poundage in* 1703: Another *Third in* 1704: *A Duty on Fiſh*, *Oils*, *and Whale Fins*, *in* 1709: Another *on Leather*, *Velom*, *and Parchment*, *in* 1711: A ſecond *on the ſame Goods*, *in* 1712: And laſtly, in the ſame Year, *A Duty on Paper*, *Paſte-Board*, *and Soap*.

We ſhall here enter into a more particular Detail of the *Duties on Liquids*; as *Wines*, *Brandies*, *Vinegars*, *Cyders*, &c.

Firſt, then, the *Duty of Tunnage*, or the *Old Subſidy*, we have already obſerv'd, was eſtabliſh'd in the twelfth Year of King *Charles* II. It was at firſt only granted him for Life; but afterwards continued in the firſt Year of King *James* II. during the Life likewiſe of that Prince. And laſtly, by ſeveral Acts, in the Reign of Queen *Anne*, it was again continued for 96 Years, ending in the Year 1808.

This

This first *Duty of Tunnage*, is 4 Pound 10 Shillings Sterl. *per* Tun, on all *French* Wines brought by *Engliſh* Veſſels into the Port of *London*; and only 3 Pound, into the reſt. The ſame Wine brought by foreign Veſſels into the Port of *London*, pays 6 Pound; and into the other Ports, 4 Pound 10 Shillings Sterl. *French* Vinegar made of Wine, pays 4 Pound 10 Shillings, brought by *Engliſh* Veſſels; and 6 Pound, by foreigns. *French* Cyder, and Perry, and Vinegar made of thoſe Liquors, pay as in the preceeding Article. *Rheniſh* Wine brought into any Port of *England*, pays 1 Pound Sterl. *per* Awine, a Meaſure amounting to the Sixth of a Tun, ſo that the *Duty per* Tun is about 7 Pound 10 Shillings, which is a Fourth more than that of *French* Wine. *Spaniſh*, and *Portugueze* Wines, *Muſcadines*, *Malmſeys*, and other *Greek* Wines, pay the ſame as *French* Wines; and the like is to be underſtood of Vinegars made thereof.

Additional Duty of the old Subſidy. This firſt Augmentation of the old Tunnage, was made in 1660, and continued like the Subſidy itſelf to 1808.

For this *Duty*, *French* Wines pay 3 Pound Sterl. *per* Tun. *Rheniſh* Wines pay as *French* Wines. *Spaniſh* Wines pay 4 Pound; *Portugal* Wines, 3 Pound; *Muſcadines*, *Malmſeys*, and other *Greek* Wines, pay the ſame as *Spaniſh* Wines. Vinegar, Cyder, and Perry, are exempt from this *Duty*. See SUBSIDY.

Duty of Exciſe, is not laid on Wines, but only on Malt-Liquors, *&c.* See EXCISE.

Duty of Coinage was impoſed in the 18th Year of King *Charles* II. to detray the Expence of Coining of the Money. It has been continued by divers Acts to the Year 1715, and even ſince that Time.

Wines of all Kinds pay equally 10 Shilling Sterl. *per* Tun on this *Duty*. See COINAGE.

Duty of old Impoſition of Tunnage was eſtabliſh'd in the Year 1685, and continued by divers Acts; that of 1711 made it perpetual.

By this *Duty*, *French* Wines pay 8 Pound Sterl. *per* Tun in all the Ports of *England*; *Spaniſh*, *Portugal*, *Muſcadine*, and other *Greek* Wines, 12 Pound: Vinegars 8 Pound.

Duty of Additional Impoſition was eſtabliſh'd in 1690, continued by divers Acts to 1720, and in 1712 made perpetual. This *Duty* none but the *French* pay, the other Nations being exempt from it.

Each Tun of *French* Wine pays for this *Duty* 8 Pound Sterl. in any Port of *England*: Vinegar, Cyder, and Perry pay 25 *per Cent.* of their Value.

Orphans-Duty is only charg'd on Wines brought into the Port of *London*. Its Name expreſſes the pious Office it is intended for.

It had its Riſe in the 6th Year of King *William* III. It is fix'd at 4 Shillings *per* Tun on all Wines indifferently. See ORPHANS.

Additional Duty on French Wines, is one of the *Duties* to which *French* Wines alone are ſubject. It was eſtabliſh'd in the Year 1695, for 20 Years, and ſince continued.

It is rated at 25 Pound Sterl. *per* Tun: And Vinegars at 15 Pound.

New Subſidy was granted to King *William* III. in 1695, for his Life, and ſince continued to Queen *Anne* for her Life.

This is properly a Duplicate of the *Duty* of Tunnage, to which *French*, and other Wines are equally ſubject, whether brought in *Engliſh*, or foreign Veſſels; tho' there are ſome Differences, as to Vinegars, Cyders, and Perry.

Duty on Hungary Wines, is very late, only eſtabliſh'd in the firſt Year of Queen *Anne*. It is the ſame with that pay'd by *Rheniſh* Wines.

Duty, call'd *Third Subſidy*, is a Third of the old Subſidy, firſt eſtabliſh'd in 1703, and ſince continued by divers Acts, to expire in 1805.

Duty, call'd *Two Third Subſidy*, is likewiſe a new *Duty*, firſt eſtabliſh'd in 1704, to laſt only for a certain Time, tho' ſince made perpetual.

It conſiſts in two other Thirds of the old Subſidy, ſo that theſe two *Duties* of 1703, and 1704, are equal to the whole Subſidy.

Beſides theſe *Duties* impoſed on all Wines imported, both by Natives, and Foreigners; there are likewiſe the *Duty of Butlerage*, another *Duty* call'd *Foreign*, another of *Briſtol*, and another of *Southampton*, amounting together to about 40 Shillings *per* Tun; but as theſe *Duties* are only levied on Wines imported in foreign Veſſels, 'tis but rarely they are paid; moſt of the Wine-Trade being manag'd by *Engliſh* Veſſels.

From this State of the *Duties* paid by Wines and other Liquors brought into *England*, it appears that *French* Wines imported by *Engliſhmen* into the Port of *England*, pay 55 Pound, 16 Shill. 8 Pence Sterl. *per* Tun. Thoſe imported by the ſame into the other Ports, 51 Pound, 13 Shillings, and 6 Pence: Thoſe brought by Foreigners into the Port of *London*, 61 Pound, 15 Shillings, and 10 Pence; and into the other Ports, 57 Pound, 12 Shilling, and 8 Pence.

Spaniſh, *Italian*, *Muſcadine*, *Malmſey*, and other *Greek* Wines, imported by the *Engliſh* into the Port of *London*, pay 27 Pound, 7 Shilling, and 10 Pence Sterling; and brought by the ſame into the other Ports, 23 Pound, 4 Shillings, and 9 Pence. The ſame Wines brought to *London* by Foreigners, pay 33 Pound, 7 Shillings, 3 Fourths.

Portugal, *Rheniſh*, and *Hungary* Wines brought to *London* by *Engliſh* Veſſels, pay 26 Pounds, 10 Shillings, and 3 Pence; into the other Ports, 22 Pound, 7 Shillings, and 2 Pence: The ſame Wines imported to *London* by Foreigners, pay 32 Pound, 9 Shilling, and 5 Pence; and into the other, 28 Pound, 6 Shilling, 3 Pence.

French Vinegars imported to *London* by the *Engliſh*, pay 27 Pound, 10 Shillings, 11 Pence; and into the other Ports, 26 Pound, 4 Shilling, 6 Pence: Imported by Foreigners into *London*, they pay 28 Pound, 17 Shillings, 3 Pence; and in the other Ports, 27 Pound, 10 Shillings, 11 Pence.

Spaniſh and *Portugal* Vinegars, imported to *London* by *Engliſh* Veſſels, pay 12 Pound, 10 Shillings, 11 Pence; in the other Ports, 11 Pound, 4 Shillings, 6 Pence: The ſame Vinegars imported to *London* by foreign Veſſels, pay 13 Pound, 17 Shillings, 3 Pence; and in the other Ports, 12 Pound, 10 Shillings, 1 Penny. As to Cyders, and Perries, the Importation is not conſiderable.

French Brandies imported by any Veſſel into any Port, pay 78 Pound, 4 Shillings Sterl. *per* Tun; and Brandies from any other Countries, except *France*, only 48 Pound, 4 Shillings: All other foreign Brandies being exempted from *Duties* of 30 Pound Sterling, charged on *French* Brandies by Acts of Parliament, under the Reign of King *William* III.

The *Engliſh* Merchants, it is to be obſerved, are not oblig'd to pay theſe ſeveral *Duties* before 12 Months; nor Foreigners before 9: giving Security for the ſame. Or, if they pay ready Money, there is a Deduction made 'em of 5 *per Cent.* on the *old New Third*, and *two Third Subſidy*, and on the other *Duties* 6, and one Fourth *per Cent.* Add, that if theſe Merchandizes be again exported into other Countries, after they have been enter'd in *England*, the *Duties* are return'd; tho' this only within the Compaſs of a Year to Natives, and of 9 Months to Foreigners.

In *Spain*, the *Duties* of Export, and Import, are call'd, *Duties of Alcavala*, and amount to about 5 *per Cent.* of the Value of the Goods: For Inſtance, the Piece of Velvet of 40 *Spaniſh* Varres, or Yards, pays 20 Reals: Hats of *Vigone*, 5 Reals a Piece: Linnens, 224 Reals *per* 100 Varres: Gold and Silver Laces, 2 Reals 3 Quarters, the Mark Weight. The *Duties* of Exportation are nearly on the ſame footing.

In *Portugal*, the *Duties* of Importation were anciently the ſame on all Kinds of Goods; *viz.* 18 *per Cent.* of the Value. But ſince the Year 1667, Silks have been excepted out of the general Tarif, and reduced to 13 *per Cent.* For Exportation the *Duties* are only 6 *per Cent.*

In *Holland*, the *Duties of Exportation*, and *Importation*, are nearly alike; both of 'em being about the Rate of 5 *per Cent.* of the Value of the Goods. At *Hambourg*, and *Bremen*, the *Duties* are but 1 *per Cent.* At *Lubeck*, three 4ths *per Cent.* In *Muſcovy*, 5 *per Cent.* At *Venice*, 6 and three 4ths *per Cent.* for what the Natives import; and 10 and a half to Strangers: The *Duties of Exportation* are 9 *per Cent.* At *Leghorn*, the *Duties of Exportation*, and *Importation* are very inconſiderable; but with the Addition of a Number of petty Dues, become as great as at *Venice*. In the Ports of the *Levant*, *Conſtantinople*, *Smirna*, *Aleppo*, &c. the *Duties of Exportation*, and *Importation* are nearly on an equal footing, *viz.* 3 *per Cent.* except to the *Venetians*, and *Jews*, who pay 5 *per Cent.*

The Conſuls *Duties* are likewiſe to be added for *Smirna*, &c. which are about 2 *per Cent.* At *Cairo*, *Alexandria*, and ſome other Cities of *Egypt*, the *Duties* are of two Kinds: One for Goods brought in Ships from *Europe*; the other, for thoſe brought by the Caravans from *Aſia*. The firſt are fix'd at 20 *per Cent.* The ſecond are arbitrary, but always very high. Beſide the ordinary *Duty*, they here pay the *Golden Duty*, which is the tenth Part of what is paid for the firſt *Duty*. As to *Duties of Exportation*, they may be ſaid to pay none, the 1 and a half *per Cent.* being rather the Cuſtom-houſe Fee, than any *Duty* of the Soveraign.

DUUMVIR, a general Name among the ancient *Romans*, for ſeveral Magiſtrates, Commiſſioners, and Officers, where *two* were joyn'd together in the ſame Function. So that they had almoſt as many *Duumvirs*, as they had Officers joyn'd two by two in Commiſſion.

There were *Duumvirs* to direct the Building, Repairing, and Conſecrating of Temples, and Altars; *Capital Duumvirs*, who took Cognizance of Crimes, and condemn'd to Death. *Duumvirs* of the Marine, or Navy, *&c.* But the moſt conſiderable *Duumvirs*, and thoſe uſually thus call'd by Way of Eminence, were the

DUUMVIRI *Sacrorum*, which were created by *Tarquin*, for the Performance of Sacrifice, and Keeping of the Sybils Books.

Books. They were chose out of the Nobility, or *Patricii*; and held their Office for Life. They were exempted from serving in War, and from the Offices imposed on the other Citizens: Without them the Oracles of the Sybils could not be consulted.

The Commission held till the Year of *Rome* 388; when, at the Request of *C. Licinius*, and *L. Sexius*, Tribunes of the People, they were chang'd into *Decemviri*; that is, in lieu of *two* Persons, the Trust was committed to *ten*, half Patricians, half Plebeians. See DECEMVIRI.

Sylla added five to their Number, upon which they became denominated *Quindecemvirs*. Their Body was afterwards much increased, and at length amounted to sixty; yet still retain'd the Denomination of *Quindecemviri*. See QUINDECEMVIR.

They were entirely abolish'd under the Emperor *Theodosius*, along with the rest of the Heathen Superstitions. See SYBILS.

The *Capital* DUUMVIRS, *Duumviri Perduellionis*, were not ordinary Magistrates; but created on certain Occurrances. The first *Duumvirs* of this Kind were those appointed to judge the surviving *Horatius*, for killing his Sister, after vanquishing the *Curiatii*.

The Word is composed of *duo*, two, and *Vir*, Man.

There were also *Duumvirs* in the *Roman* Colonies; who held the same Rank and Authority in their respective Colonies, that the Consuls held at *Rome*. They were chose out of the Body of *Decuriones*, and wore the *Prætexta*, or Robe border'd with Purple.

There were also *Municipal Duumvirs*, whom *Vigenere* compares to our Sheriffs, or rather Mayors of Towns.

DUUMVIRATE, *Duumviratus*, the Magistrature, Office, or Dignity of the *Duumvirs*. See DUUMVIR.

The *Duumvirate* lasted till the Year of *Rome* 388; when it was chang'd into a *Decemvirate*. See DECEMVIRATE.

DWAL, in Heraldry, the Herb *Night-shade*; used by such as blazon with Flowers and Herbs, instead of Colours and Metals, for Sable, or Black. See SABLE, *&c.*

DWARF. See GYANT, PIGMY, and STATURE.

DWARF-*Trees*, are Fruit-Trees, thus call'd from the Lowness of their Stature; frequently planted in the Borders of Gardens. See FRUIT-*Tree*.

They seldom grow above 4 or 5 Foot high; and have usually a Hoop tied within the Middle of the Branches, to make 'em spread a-round.

Dwarf-Trees are of especial Advantage for Table-Fruit, whether Pears, Apples, Plums, or Cherries; The Fruit they yield is usually of the finest, and best; and as such they make a considerable Article in the Gardeners Province.

There are divers *Ways of Producing Dwarfs*.

Dwarf-Pears are usually produced by Inoculating on Quince-Stocks, which grow the *Dwarf's* Height.

As for *Dwarf-Apples*, the Stocks they chuse to graft on are those raised of the Cuttings of the Apple.

In order to provide Stocks of each Kind, they chuse such Stems, and Branches, as grow straighteſt; in the Month of *October*; from Trees whose Cuttings will grow, or which in the Places they are to be grafted in are at least an Inch thick: Cut 'em off an Hand's Breadth below the Knots, or Burs, which are the Places where they usually put forth their Roots; and cut off the Top, that they may not be above a Yard long. If they cannot be got so long of Quinces, shorter must do. Cut off all Side-Branches close to the Body, except one small Twig near the Top for the Sap to vent it self at. Set them in Beds, as Seed-plants are: and keep 'em a Foot above Ground.

It being somewhat difficult, to get enough of such Branches as have Burs and Knots on 'em; a particular Method has been invented to bring those Knots, and Burs, artificially, call'd *Circumposition*. It is perform'd by tying some Earth in a Piece of old Hat, a Foot long, about the Place where you intend to cut, in the Month of *February*; and in *October* it will have shot Roots therein.

Such Trees alone, as are apt to put forth Roots, are proper for *Dwarf* Stocks; as the *Kentish* Codlin, Gennet Moil, some Sorts of sweet Apple, Bitter Sweets, Quince-tree, Mulberry-tree, and the Paradise Apple Tree.

Stocks for *Dwarf Apple-Trees* are likewise rais'd by cutting down an old Tree, which is apt to cast forth good Suckers from the old Roots; which at two Years Age may be transplanted, or else inoculated where they stand.

As for *Dwarf Pear-Trees*, Stocks may be rais'd for them from the Suckers of old Pear-trees. Else, cut off the Top of some old ill Pear-tree, and the Roots will cast forth Suckers.

For *Dwarf Cherries* and *Plums*, Suckers of the common red Cherry, and ordinary Plum-tree, are the best.

As to the *Grafting*, or *Inoculating of Dwarf-Stocks*, it must be done as low as may be, with two Cyons, and those longer than in Grafting for long Standards; that they may spread from the Ground. See ENGRAFTING.

As to the *Planting of Dwarf-Trees*, 'tis best in a light, hot Earth, from the Middle of *October*, to the End of *November*. In cold, wet Soil, 'tis best in *March* and *April*. The Stem of the Tree to be cut off seven or eight Inches above the Graft; and remember to cut off half the Length of the Roots, and hairy Fibres; To turn the Cut of the three towards the North; to let the Graft always be two or three Inches above the Ground, lest it take Root; To plant 'em shallow, as being apt of themselves, in light Ground, to sink a Foot deep, which is sufficient; and to cover the Ground, when they are planted, with Horse-Litter.

DYE, in Architecture, is the Middle of the Pedestal; or that Part which lies between the Base and the Cornice: being so nam'd, because it is frequently made in the Form of a Cube, or *Dye*. It is also call'd *Dado*, by the *Italians*; and by *Vitruvius*, *Truncus*. See PEDESTAL.

DYE, is also us'd for a Cube of Stone, placed under the Feet of a Statue, and over its Pedestal; to raise it, and shew it the more.

DYNASTY, a Term in History, signifying a Race, or Succession of Kings of the same Line, or Family. See RACE.

We find frequent Mention in ancient History of *Dynasties* of *Persians*, *Assyrians*, *Medes*, &c.

Manetho has left an Historical Chronology of *Egypt*, divided into 30 *Dynasties*.

The Word is form'd from the *Greek* Δυναστεία, of Δυνασθαι, *to be powerful, to be King*.

DYPTYCHA, or rather DIPTYCHA, in Antiquity, a public Register, wherein were wrote the Names of the Consuls, and other Magistrates, among the Heathens; and of Bishops, and defunct, as well as surviving Brethren among the Christians.

Justinian, offended at Pope *Vigil*, for refusing to subscribe the Condemnation of the three Chapters, gave Orders for his Name to be erased out of the *Diptycha*. *Du Pin*. The Emperor commanded the Name of the new Patriarch to be enter'd in the *Diptycha Sacra*.

'Tis certain, there were prophane *Diptycha's* in the *Greek* Empire, as well as sacred Ones in the *Greek* Church. The former were the *Matricula*, or Register, wherein the Names of the Magistrates were enter'd: In which Sense *Diptycha* is a Term in the *Greek* Chancery.

Sacred DIPTYCHA. The Word is plural; *Diptycha* being a double Catalogue, in one whereof was wrote the Names of the Living, and in the other those of the Dead, which were to be rehears'd during the Office. We meet with something not unlike the *Sacred Diptychs* of the *Greeks*, in the Canon of the Mass, according to the *Latin* Usage; where the People are enjoyn'd to pray once for the Living, and once for the Dead; several Saints are invoked in different Times, *&c.*

Gentian Hervet explains the Word *Diptychs*, Δίπτυχα, by *Altar-Cloths*: *Meursius*, by that of *Libelli Ecclesiastici*, Church-Books; But neither of those Authors, tho' in other respects of great Abilities, and well versed in the *Greek* Antiquity, has given the genuine Signification of the Word. The *Diptycha* were neither Altar-Cloths, nor Church-Books, but a Sort of Tables, or Tablets, alike in Figure to the two Tables of Stone given to *Moses*; On one of these Tables was wrote the Names of the Deceas'd, and on the other those of the Living, for whom Prayers were to be offer'd; which the Deacon read over, while the Mass was celebrated.

In these *Diptycha* were enter'd the Names of Bishops, who had govern'd their Flocks a-right; and were never expung'd out of the same, unless they were convicted of Heresy, or some other gross Crime. In the *Diptycha* were likewise enter'd the Names of such as had done any signal Service to the Church, whether they were living, or dead, and mention was made of 'em in the Celebration of the Liturgy.

The Jesuite *Rosweyd* affirms, that few Names were enter'd in the *Sacred Diptychs*, but those of Bishops and Patriarchs; and doubts very much, whether the Sacred *Delta*, mention'd by the pretended St. *Dionysius*, *Eccles. Hierarch. C.* II. wherein were enter'd the Names of the new baptized, with their God-fathers and God-mothers, were the same with the *Diptycha*. He allows, however, that the Names of the Emperors, and other great Persons, distinguish'd by their Faith, and their Merits, or Benefactions, were us'd to be enter'd.

Meursius, in his *Glossarium Græco-Barbarum*, imagines 'em to have wrote the Term *Diptycha*, by reason there were *two* Books, in one of which were wrote the Living, and in the other the Dead. But *Fa. Rosweyd* shews, he is mistaken: For in effect, there was but one, the Living being enter'd on one Side thereof, and the Dead on the other. And if the Living, and Dead, were each wrote in a several Book, each of 'em was call'd *Diptycha*, and not both together.

Casaubon, in his Observations on *Athenæus*, *L.* VI. *C.* 14. supposes the Christians to have borrowed the Custom of writing Names in a Book, and rehearsing 'em at Mass, from the Heathens, who enter'd the Names of Persons they would do any signal Honour to, in the Verses of the *Salii*; as was done to *Germanicus*, and *Verus*, Sons of the Emperor *Mar-*

cus *Aurelius*, and long Time before, during the Age of the Republic, to *Mamurcus Veturius*, and *Lucia Volumnia*, as we are told by *Tacitus*, *L.* II. *Spartian*, *Ovid*, *Feſtus*, *Plutarch*, &c.

But *Fa. Roſweyd* does not approve this Notion of *Caſaubon*. The pretended St. *Dionyſius*, a very ancient Author, ſays the contrary, and aſſerts the firſt Eſtabliſhment of this Uſage to have been founded on Scripture. 2 *Tim.* II. 19. *Pſal.* CXV. 15. *Roſweyd* adds *Eccl.* XLIV. 1. and takes theſe to have been the Paſſages the ancient Church had a View to, rather than the *Salian* Verſes.

The *Prophane Diptycha* were frequently ſent as Preſents to Princes, &c. On which Occaſion they were finely gilt, and embelliſh'd; as appears from *Symmachus*, *L.* II. *Ep.* 81. Thoſe preſented were uſually of Ivory. The firſt Law, *de Expenſ. Ludor. C. Theod.* forbids all Magiſtrates below Conſuls, to make Preſents of *Diptycha* of Ivory, in the public Ceremonies.

Fa. Roſweyd owns himſelf at a Loſs for the Origin of this Cuſtom of making Preſents of *Diptycha's*. *Lud. Carrion*, *L.* II. *Emendat. C. 6.* ſuppoſes it to have aroſe hence, that ſuch Preſents were at firſt made to the Perſons who had been nominated *Queſtores*, to whom they were to be of Uſe. Many imagine the *Diptycha* to have originally been a Kind of Table-Books us'd by Lovers. Thus *Papias* defines 'em, *Tabellæ in quibus Amores ſcribebantur*.

The Word *Diptycha* is form'd from the *Greek* Δίπτυχον and Δίπτυχα, and that from Δίπτυξ, a Maſculine Noun derived from πτύσσω, *I fold*, or *plait*. From its Future πτύξω is form'd πτυξ, *a Fold*, or *Plait*, to which adding δὶς, *twice*, we have Δίπτυξ, in the Genitive Δίπτυχος, whence the Nominative Neuter Δίπτυχον, q.d. *a Book folded in two Leaves*: Tho' there were ſome in 3, and others in 4, or 5 Leaves.

An ingenious Author imagines this Name to have been firſt given 'em to diſtinguiſh 'em from the Books that were roll'd, call'd *Volumina*. See VOLUMES.

DYSCRASY, from δὺς, *malus*, bad, and κρασὶς, or κρᾶσια, *Temperamentum*, Conſtitution, is an ill Habit of Body; as in a Jaundice, or the like.

DYSENTERY, or DYSSENTERY, in Medicine, a bloody *Diarrhœa*; or a Flux of Blood by Stool; attended with Pains and Griping. See FLUX.

The Word *Dyſentery* is form'd from the *Greek* δὺς, *difficultly*, and ἔντερον, *Inteſtine*; and properly ſignifies that Kind of Flux of the Belly, characterized by the Frequency of Stools, or Dejections, mix'd with Blood, and accompanied with Gripes: The Fever, Ulcer, &c. which attend it, are not eſſential to the Diſeaſe; tho' many, both of the Ancients and Moderns, think the Ulcer is.

The *Dyſentery*, *Sydenham* obſerves, begins with a Chilneſs, and Shivering; which is followed by a Heat; then Gripings of the Belly enſue, with mucous, or ſanious Stools, which in Progreſs of Time are found interſpers'd with Streaks of Blood, with vehement Pain.

The Stools are ſometimes void of Blood; and yet, if they be frequent, and attended with Gripes, and a mucous *Colluvies*, the ſame Author ſays, it is a proper *Dyſentery*.

Along with the Excrements, beſide a whitiſh Mucoſity, frequently come Scrapings of the Guts, in Form of little Skins. If pure Blood be evacuated, the Patient's Life is in great Danger.

Etmuller makes three Kinds of *Dyſenteries*: 1. When a laudable Blood is evacuated, from a mere *Plethora*, or Plenitude, without any Diſorder of the Inteſtines; as in the *Hemorrhoidal Flux*. See HEMORRHOIDS.

2. When a thin, watery Blood is evacuated, call'd the *Hepatic Flux*, tho' really ariſing from the Hemorrhoidal Veſſels.

The third Kind, which is that we properly call *Dyſentery*, is, when Blood is caſt out mix'd with a purulent Matter in the Excrements.

This is either *benign*, i. e. without a Fever, and not contageous; Or *malignant*, which is attended with a peſtilential Fever; and frequently ravages whole Cities, and Provinces: Happening moſt commonly in Armies. In the laſt Stage, a Sort of Caruncles are frequently ejected along with the purulent Matter, which are difficult to be accounted for, unleſs from an Excoriation, and Ulceration of the Inteſtines. Sometimes the Inteſtines are even gangreen'd.

The next Cauſe of the *Dyſentery*, as aſſign'd by ſome Phyſicians, is a ſerous, or other morbid Humour, mix'd with the Maſs of Blood; the Conſequence of which is a too great Fermentation in the Blood, and a Diſſolution of its Parts, which are thus render'd too liquid. The ſecond Cauſe is a Vellication, and Irritation of the nervous Fibres of the Inteſtines, occaſion'd by ſharp, acid Humours ſeparated from the Blood; which occaſion the Spiral Fibres, that produce the Periſtaltic Motion of the Guts, to move too faſt, and thus to expel the Matters too haſtily out of the Inteſtines. The Mediate Cauſe, in the Phyſicians Language, is ſome foreign Body adhering ſtrongly to the Inteſtines, and by its ſharp Points, vellicating the nervous Fibres of the Inteſtines, and at length ulcerating 'em. The Remote Cauſes are any Thing that corrupts the Maſs of Blood, as viſcid, and crude, ſharp Juices; ill Foods; Autumnal Fruits; Grapes; new Wine drunk in Exceſs; Poiſons; violent Medicines; Waters convey'd through leaden Pipes; Rainy Weather in the Spring, with a dry Winter, and a hot Summer, and Autumn.

The Seat of the Diſeaſe is in the Inteſtines, either the big, or the ſmall, or both: When the Diſeaſe is in the ſmall Ones, the Gripes begin long before the Stools, and are felt about the Navel; and the Blood, and Excrements, are more blended; as being longer together. When the larger Inteſtines are ſeiz'd, the Pain is leſs vehement, and is felt lower, &c.

Purgatives have rarely any good Effect in *Dyſenteries*; as increaſing the Fermentation of the Blood, and irritating the Fibres of the Inteſtines more and more. Nor are Emeticks much better; as tending to draw the peccant Humours into the Stomach, or at leaſt into the higher Inteſtines, and cauſe more frequent Stools.

Ipecacuanha, however, is excellent on this Occaſion: Not ſo much as a Vomitory, Dr. *Friend* obſerves, as a Sudorific; having this Faculty, beyond all other Emeticks, that it corrects the *Dyſenteric* Ferment, in Proportion as it evacuates it. In the *Philoſophical Tranſactions* we have an expreſs Diſcourſe on the Subject; where it is aſſerted to be infallible in all *Dyſenteries*, and Looſeneſſes, how dangerous and inveterate ſoever; except in Pulmonic and Hydropic Patients, whoſe Fluxes are Indications of approaching Death.

Sydenham commends Phlebotomy: But *Willis* ſays, no Evacuation is good: and preſcribes hot Cardiacks, as Spirit of Wine a little burnt, &c.

Balſamic, and Styptic Medicines are alſo to be uſed, according to the divers Cauſes, and Symptoms of the Diſeaſe.

Borre, in a Letter to *Bartholin*, affirms, there is no better Medicament in *Dyſenteries* than Roſe-Water wherein Gold has been extinguiſh'd.

Dotæus relates, that he cured above an hundred Perſons with Oil of ſweet Almonds, mix'd with Orange Juice.

DYSPEPSY, in Medicine, a Difficulty, or Weakneſs of Digeſtion. See DIGESTION.

The *Dyſpepſy* may ariſe from the Softneſs of the Ferment of the Stomach, or its being ſparing in Quantity; from a Relaxation of the Fibres of the Stomach; the Want of a proper Heat in the Stomach, &c.

Bitters, and Sub-aſtringents, are its proper Remedy.

The Word is form'd from the *Greek* δὺς, *difficultly*, and πέπτειν, *coquere*, to concoct.

DYSPNOEA, in Medicine, a Difficulty of breathing. See RESPIRATION.

The *Diſpnœa* admits of three Degrees: A *Short-Breath*; an *Aſthma*; and an *Orthophnæa*.

The *Short-Breath*, is the firſt, and lighteſt Degree.

The *Aſthma* is more violent, accompanied with a wheezing. See ASTHMA.

The *Orthophnæa* is the higheſt of all; the Patient affected therewith not being able to lye down, but oblig'd to keep erect, without which he could not reſpire.

The moſt uſual Cauſes of *Dyſpnœa's* are Phlegms contain'd in the *Bronchia*; or the too ſtrong Conſtitution of the *Bronchia* themſelves, which prevent the eaſy Ingreſs of the Air into the Lungs.

The Word is form'd from the *Greek* δὺς, *difficultly*, and πνέω, *I breath*.

DYSURIA, in Medicine, a Difficulty of making Urine, accompanied with Pain, and a Senſe of Heat.

It is alſo call'd *Ardor Urinæ*, by reaſon the Urine ſeems to burn the *Urethra*, as it iſſues forth. See URINE.

The *Dyſuria* differs chiefly from the *Strangury* in this, that in the Strangury, the Urine only oozes out, as it were, Drop by Drop; whereas in the *Dyſuria* it ſtreams out without Interruption, and frequently in the proper Quantity. See STRANGURY.

The ordinary Cauſes of the *Dyſuria*, are the Acrimony, or Sharpneſs of the Urine; and the Excoriation, or Exulceration of the Neck of the Bladder, or the Urinary Paſſage.

The Word is form'd from the *Greek* δὺς, *difficultly*, and οὖρεῖν, *to make Urine*.

E, The 5th Letter of the Alphabet, and the 2d Vowel. See LETTER and VOWEL.

E, is a Letter that admits of ſome Variety in the Pronunciation, in moſt Languages; whence *Grammarians* uſually conſtitute ſo many different E's, or Kinds of E. The *Greeks*, e. gr. have their *long* and *ſhort* e, *viz.* ε, and η, *Epſilon* and *Eta*.

The *Latins* have an opener e, called *vaſtius*; ſuch was the laſt in the Word *Here* Maſter; and another cloſer, as that in the Adverb *Here* Yeſterday. This latter e and i, were frequently uſed for each other: Thus for *here*, they wrote *heri*: And in divers Places we meet with *ſibe*, *quaſe*, &c. for *ſibi*, *quaſi*, &c.

The *Roman* e, was likewiſe ſometimes wrote æ: For which Reaſon, there are ſome Antiquaries, who take that Medal of *Gallian*, GALLIANÆ AUGUSTÆ, not to be any Satyrical Medal, as the reſt have imagined; nor to be a *Dative* Feminine, but a *Vocative* Maſculine, *Galliane Auguſte*, wrote with an æ.

In *Engliſh* we eaſily diſtinguiſh three E's, or Sounds of E: The Firſt, Mute, and not heard at all; as in *Amſterdam*, *Senſe*, *Blue*, &c. The Second, cloſe or ſhort, pronounced with the Lips near ſhut; as in *Equity*, *Nettle*, &c. The Third, open or long; as in *Fear*, *Eaſe*, &c.

The *French* have, at leaſt, ſix Kinds of E; the Firſt, pronounced like A; as in *emporter*, *Orient*, &c. The Second, a final Mute, in the laſt Syllable of divers Words not pronounced at all; as in *bonne*, *donne*, &c. The Third, an imperfect Mute, pronounced much like the Diphthong *ea*, &c. as in *Je*, *de*, *te*. The Fourth, e *ferme*, or e maſculine, marked at the Ends of Words with an Accent é. The Fifth, is e *ouvert*, or long e, having the ſame Sound with *ai*, as in *mer*, *feſte*, &c. In the middle of Words it is ſometimes mark'd with a Circumflex, and in the End, with an Accent è. The Sixth, is an Intermediate e, between the *ouvert* and *ferme*; as in *Cabaret*, *Lettre*, &c. Some add a Seventh Kind of e, not reducible to any of the former, as that in *Grammarien*, *Hiſtorien*, &c. And others admit of only three Kinds, *viz.* the Mute, open, and ſhut; but they make Variation therein; which amounts to the ſame thing.

As to the Form of the Letter E, we borrow it from the *Latins*, who had it from the *Greeks*, and they from the *Phœnicians*, by *Cadmus*, who firſt brought it them. Now the *Phœnicians* had the ſame Characters with the *Hebrews*. Accordingly, the Form of the Antient Hebrew *He*, was the ſame with that of our E, as may be ſeen in the *Hebrew* Medals, and the Jeſuite *Souciet*'s Diſſertation thereon, *p.* 143. All the Difference between them conſiſts in this, that the *Hebrews* reading from Right to Left, turn their Letters that Way; whereas the Moderns, reading from Left to Right, write their Letters accordingly.

The little *e*, was form'd of the great one, in writing it faſt, and making the croſs Strokes at Top and Bottom without taking Pen off Paper, and then adding the Stroke in the Middle E.

The *Greek* η, H, *Eta*, was no original Letter; but added to the Alphabet in after Times. Of this we have Proofs ſtill extant in the ancient Monuments; particularly, the *Farneſe* Columns, brought to *Rome* from the *Via Appia*, where the *Epſilon* E, is uſed in lieu of the H. *e. gr.* DEMETPOΣ KOPEΣ, for DHMETPOΣ KORHΣ. 'Tis ſaid to have been added by *Simonides*. *Bibliand. de Ration. Commun. Linguar. p.* 40.

The Pronunciation of the η, ſeems to have been varied: *Terentianus* informs us, that it was pronounced like the *Latin* e; but the *Greeks* themſelves, for ſeveral Ages, pronounced it like an *ι*. 'Tis diſputed how the *Latins* render it in their Language. The common Opinion is, that they render it by an e: As in ΔημήτειΘ, βητα, Ημερα, Θησευς, ΘησαυρΘ, &c. which they rendred *Demetrius*, *Beta*, *Hemera*, *Theſeus*, *Theſaurus*, &c. Tho' there are Perſons, exceedingly well verſed in Antiquity, who hold that they pronounced it like an i.

Lud. de Dieu, one of the moſt Learned *Grammarians* of his Age, obſerves as much in his Animadverſions on *Geneſis* VI. 24. Adding, that 'tis for this Reaſon, that the *Hebrews*, e. gr. the Paraphraſt *Jonathan*, expreſs it by a *Hhirik*; as, μήσως, מסטור.

J. Rod. Wetſten proves the ſame in his Learned Orations on the true Pronunciation of the *Greek* Tongue, from an Infinity of Inſtances. Citing to this Purpoſe a M. S. Pſalter of the VIIIth Century, where all the *H's* are expreſſed by *i's*. In Effect, *Wetſten* proves, not only that the *Latins* pronounced and wrote it as an *i*, which might happen from its being ſo eaſily confounded with an *ι*; but alſo that they rendred it by an æ and *ia*; that it was often uſed for Υ and EI; and that in the Time of *Plato*, this Letter had a Kind of intermediate Sound between the ε and *ι*. See that Author. See alſo *Voſſus de Idolol. L.* II. *C.* 16.

E on the Keys of an Organ, or Harpſichord, denotes the Tones *E*, *mi*, *la*.

On the Compaſs, in Sea-Charts, &c. it marks the Eaſt Point, or Wind. E. Eaſt. E S E. Eaſt South Eaſt. N E. North Eaſt, &c. See WINDS and COMPASS.

In Calendars, E is the 5th of the Dominical Letters. See DOMINICAL-*Letters*.

Among Authors, *E. gr.* ſtands for *Exempla gratia*; for Inſtance. See CHARACTER.

In ſeveral Dictionaries, we find it noted, that the Letter E, among the Antients, was a Numeral Letter, ſignifying 250, according to the Verſe

E *quoque Ducentos & Quinquaginta tenebit.*

But it has already been obſerved, that this Uſe of Numeral Letters was unknown among the Antients. *Iſidore Hiſpallenſis*, an Author of the VIIth Century, ſays as much in expreſs Terms, in the firſt Book of his *Origines*, *Cap.* III. In Effect, it was firſt introduced in the Times of Barbariſm and Ignorance.

EAGLE, *Aquila*, Αετὸς, in Natural Hiſtory, the largeſt, ſtrongeſt, and ſwifteſt of all the Birds that live by Prey. See BIRD.

It has a long, hooked Beak; yellow, ſcaly Legs; thick, crooked Talons; and a ſhort Tail. Its Plumage is cheſſnut, brown, ruddy and white. Its Beak, black at the Tip; and in the middle, blue, tho' in ſome yellow.

Its *Airy*, or Neſt, is uſually on the higheſt Rocks, ſometimes on the Tops of old Trees. It feeds its young till ſuch Time as they are able to fly, and then drives them out of the Neſts. Its Food is Birds, Hares, Lambs, Kids and Fawns; nay, Sir *Robert Sibbald* aſſures us, Children too, when it can catch them, of which he gives an Inſtance in the *Orcades* Iſlands. *Prod.* Nat. Hiſt. *Scot.* L. III. *p.* 2, & 14.

Ray mentions an *Eagle*'s Neſt, found near the River *Derwent*, in 1668. It conſiſted of large ſtrong Sticks, one End whereof was laid on the Crag of a Rock, and the other on two Beech-Trees: It was two Yards Square: In it were found one *Eaglet*, with the Carcaſſes of one Lamb, one Hare, and three Grygalli. *Synops. Method. Av. p.* 6. The *Eagle* frequently watches the fiſhing Hawk, and aſſoon as it perceives it to have ſtruck a Fiſh, takes Wing, purſues the Bird till it lets fall its Prey, and often catches it ere it reaches the Earth or Water. *Philoſ. Tranſact.* No. 201.

It lives very long, and as Naturaliſts aſſure us, rarely dies but of Hunger; the upper Part of its crooked Beak growing ſo long, with Age, that it cloſes up the lower, and ſo diſables it from opening and taking in Food.

Its Sight is quick, ſtrong and piercing to a Proverb. The Reaſon why the *Eagle*, the Fibres of whoſe Optic Nerves are not ſtronger than thoſe of other Animals, is able to face the Sun, and endure its brighteſt Rays, the Jeſuite *Angelus*, in his *Opticks*, aſſures us, is, that it has two Sets of Eyelids, the one thick and cloſe, and the other thinner and finer, which laſt it draws over the Eye, when it looks at any luminous Body, and thus breaks the Force of its Rays.

The Falconers have train'd up *Eagles* to the Game; but they only ſucceed in Mountainous Countries. On Plains they can't keep any time on the Wing, and when they ſtoop, or light, are weak, ſo that the Saker beats them. See FALCON.

Ariſtotle, and *Pliny*, reckon up Six Kinds of *Eagles*, to which they give Names correſponding to the Difference of their Plumage: As the *Eagle-Royal*, called by *Ariſtotle*, γνήσιΘ and αγνείας, from the ruddy, golden Colour of its Feathers, which are likewiſe ſpotted as it were with Stars. The *Black-Eagle*, *Valeria*, the ſmalleſt and moſt vigorous of all. The *White-tail'd Eagle*, or *Pygargus*. The *middle ſized Eagle*, with a large Tail, living in *Moraſſes*; *Morphnus*: The *Sea-Eagle*, *Haliæetus*: And the *bearded Eagle*, *Offifraga*.

EAGLE, in *Heraldry*, is the Symbol of Royalty, as being, according to *Philoſtratus*, the King of Birds; and for that Reaſon dedicated, by the Antients, to *Jupiter*.

The *Eagle*, is the Arms of the Emperor, and the King of *Poland*. It is accounted one of the moſt Noble bearings in *Heraldry*, and, according to the Learned in that Art, ought never to be given, but in Conſideration of ſingular Bravery, Generoſity, &c. On which Occaſions, either a whole *Eagle*, or an *Eagle Naiſſant*, or only the Head, or other Parts, agreeable to the Exploit, may be granted.

The *Eagle* is ſometimes repreſented with one Head, and ſometimes with two, tho' never more than one Body, two Legs, and two Wings open'd, or ſtretch'd out, in which Poſture, it is ſaid to be *ſpread* or *diſplay'd*: Such is that of the Empire, which is blazon'd a *ſpread Eagle*, *Sable*, *diadem'd*, *langued*, *beak'd and membred*, *Gules*.

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The Reaſon why *Eagles* are generally given in *Heraldry* diſplay'd, is partly, becauſe in that Poſture they fill up the Eſcutcheon better, and partly, becauſe 'tis imagined a Poſture natural to the *Eagle*, when it plumes its Feathers, or faces the Sun. However, there are *Eagles* born in other Poſtures: Some monſtrous ones, with Human or Wolves Heads, *&c.*

The late Authors only ſay *diſplay'd*, to expreſs the two Heads; and ſay an *Eagle*, without any Addition, when it has but one. The Kingdom of *Poland* bears *Gules*, an *Eagle argent, crown'd and member'd Or.*

The *Eagle* has been bore, by Way of Enſign, or Standard, by ſeveral Nations. The firſt who ſeem to have bore the *Eagle*, are the *Perſians*; according to the Teſtimony of *Xenophon*. Afterwards, it was aſſumed by the *Romans*; who, after a great Variety of Standards, at length fix'd on the *Eagle*, in the 2d Year of the Conſulate of *C. Marius*: Till that Time, they uſed indifferently Wolves, Leopards, and *Eagles*, according to the Humour of the Commander.

Several among the Learned maintain, that the *Romans* borrowed this Cuſtom from *Jupiter*, who had appropriated the *Eagle* as his own Badge, in Commemoration of its ſupplying him with Nectar, while he lay conceal'd in *Crete*, for Fear of being devour'd by his Father *Saturn*. Others hold that they borrow'd it from the *Tuſcans*, and others from the *Epirots*.

The *Roman Eagles*, it muſt be obſerved, were not painted on a Cloth, or Flag; but were Figures in *Relievo*, of Silver or Gold, bore on the Top of Pikes; the Wings being diſplay'd, and frequently a Thunder-bolt in their Talons. Under the *Eagle* were filed on the Pike, Bucklers, and ſometimes Crowns. Thus much we learn from the Medals. See *Feſchius* in his *Diſſert. de Inſignibus*. And *Lipſius*, *de Militia Romana*, *L.* IV. *Dict.* 5.

Conſtantine is ſaid to have firſt introduced the *Eagle* with two Heads, to intimate, that tho' the Empire ſeem'd divided, it was yet only one Body. Others ſay, that it was *Charlemaign*, who reſuming the *Eagle*, as the *Roman* Enſign, added to it a ſecond Head: But that Opinion is deſtroy'd, by an Eagle with two Heads, noted by *Lipſius*, on the *Anthonine* Column; as alſo by the *Eagle's* only having one Head on the Seal of the *Golden-Bull*, of the Emperor *Charles* IV. The Conjecture, therefore, of *F. Meneſtrier*, appears more probable, who maintains, that as the Emperors of the *Eaſt*, when there were two on the Throne at the ſame Time, ſtruck their Coins with the Impreſſion of a Croſs, with a double Traverſe, which each of them held in one Hand, as being the Symbol of the Chriſtians; the like they did with the *Eagle* in their Enſigns; and inſtead of doubling their *Eagles*, joyn'd them together, and repreſented them with two Heads. In which they were followed by the Emperors of the *Weſt*.

Fa. Papebroch, wiſhes that this Conjecture of *Meneſtrier* were confirm'd by ancient Coins; without which, he rather inclines to think the Uſe of the *Eagle* with two Heads, to be merely arbitrary: Tho' he grants it probable, that it was firſt introduced on Occaſion of two Emperors in the ſame Throne.

EAGLE, *Aquila*, in Aſtronomy, is a Conſtellation of the *Northern* Hemiſphere, having its right Wing contiguous to the Equinoctial. See CONSTELLATION.

For the Stars in this Conſtellation, their Number, Longitude, Latitude, *&c.* See AQUILA.

There are alſo three ſeveral Stars, particularly denominated among the *Arab* Aſtronomers, *Eagles*. The 1ſt, *Naſr Sohail*, the *Eagle* of *Canopus*, called alſo *Sitareh Jemen*, the Star of *Arabia fœlix*, over which it is ſuppoſed to preſide: The 2d, call'd *Naſr Althair*, the flying *Eagle*; and the 3d, *Naſr Alvake*, the reſting *Eagle*,

White-EAGLE, is a *Poliſh* Order of Knighthood, inſtituted in 1325, by *Uladiſlaus* V. on Marrying his Son *Caſimir*, with a Daughter of the Great Duke of *Lithuania*.

The Cavaliers of this Order were diſtinguiſhed by a Gold Chain, which they wore on the Stomach, whereon hung a Silver *Eagle* crown'd.

Black-EAGLE, was a like Order, inſtituted in 1701. by the Elector of *Brandenburgh*, on his being crown'd King of *Pruſſia*.

EAGLE, in Architecture, a Figure of that Bird antiently uſed, as an Attribute, or Cognizance of *Jupiter*, in the Capitals and Friezes of the Columns of Temples, conſecrated to that God.

EAGLES-*Stone*, in Natural Hiſtory, a Stone, by the *Greeks*, call'd *Ætites*, and the *Italians*, *pietra de Aquila*; as being ſometimes found in the *Eagle's* Neſt; of famous traditionary Virtue, either for the forwarding, or preventing the Delivery of Women in Labour, according as it is applied above, or below the Womb.

Matthiolus obſerves that the Birds of Prey, could never hatch their Young without it, and that they go in Search for it as far as the *Eaſt-Indies*. *Bauſch.* has an expreſs *Latin* Treatiſe on the Subject. See ÆTITES.

The *Eagle* on Medals, is, according to M. *Spanheim*, a Symbol of Divinity and Providence, and according to all other Antiquaries, of Empire. The Princes on whoſe Medals 'tis moſt uſually found, are the *Ptolomies* and the *Seleucides* of *Syria*. An *Eagle* with the Word CONSECRATIO, expreſſes the Apotheoſis of an Emperor.

EAGLET, or EAGLON, diminutives of *Eagle*, properly ſignifying young *Eagle*. The *Eagle* is ſaid to prove his *Eaglets* in the Brightneſs of the Sun; if they ſhut their Eye-lids, he diſowns them.

In Heraldry, when there are ſeveral *Eagles* on the ſame Eſcutcheon, they are called *Eaglets*.

EALDERMAN, or EALDORMAN, among the *Saxons*, was of like Import with an Earl among the *Danes*. *Camb. Britan.* p. 107. Alſo an Elder, Senator, or States-man.

Hence, at this Day, we call thoſe *Aldermen*, who are Aſſociates to the chief Officer in the Common-Council of a City, or Corporate Town. See ALDERMAN.

EAR, the Organ of Hearing; or the Part whereby Animals receive the Impreſſion of Sounds. See HEARING and SOUND.

The Ear is generally divided into *Internal*, and *External*.

The External, or outer Ear, in moſt Animals, conſiſts of two grand Parts, *viz.* that which appears prominent from the Head, called the *Auricle*; and an inner Part, which enters the Scull by a narrow Paſſage, called the *Meatus Auditorius*, and leads to the *Auris*, or *Ear*, properly ſo call'd.

The *Auricle*, or outer Part of the External Ear, is ſemicircular, and contains divers Sinuoſities. Its upper Part, which is the broadeſt, is called the *Pinna*, and ſometimes the *Ala*; and the lower, which is narrower, ſofter and pendant, the *Lobe*, or *Fibra*, being that to which Ladies hang their Rings, *&c.* The outer *Area*, or Extent of the *Auricle*, is called the *Helix*; and the inner, oppoſite thereto, the *Anthelix*: The little Protuberance of the Side next the Face, is called the *Tragus*, or *Hircus*; and the Ridge juſt above, and oppoſite to it, *Antitragus*: And the Cavity, leading to the Beginning of the *Meatus*, the *Concha*. See each Part deſcribed under its proper Article; HELIX, TRAGUS, CONCHA, *&c.*

The *Auricle* ſtands out from the Head, and is furrowed with divers winding Canals, which receive and collect the wandring circumambient Impreſſions, and Undulations of Sound, and modify and forward them to the inner Ear. It is form'd of a thin *Cartilage*, cover'd with a Skin. It has two Muſcles, which in Men are very ſmall, whence ſome Anatomiſts deny there are any at all, tho' others increaſe their Number to three, one *Attollent*, and two *Retrahent*; and others to four. But in Brutes, which move and prick the Ears, as Horſes, Aſſes, *&c.* they are very large and conſiderable. Thoſe who have loſt their *Auricles*, M. *Dionis* obſerves, have but a confuſed Way of Hearing; and are obliged either to form a Cavity round the Ear with their Hands; or to make uſe of a Horn, applying the End of it to the *Meatus Auditorius*. See AURICLE.

The inner Part of the External Ear, is poſſeſs'd by the *Meatus Auditorius*, or Auditory Paſſage, which commences from the Bottom of the *Concha*, called the *Alvearium*, and is continued in a winding Direction, turning ſometimes this Way, and ſometimes that, to the *Membrana Tympani*. The *Meatus* is dug out of the *Os Temporis*, and lined with a Skin, or *Membrane*, which is furniſh'd with divers little Glands, that ſeparate a thick, yellow, glutinous Humor, call'd *Cerumen*, or Ear-wax, ſerving to defend the Ear from the Ingreſs of Vermine, and other extraneous Bodies. This *Meatus* is all the External Ear in divers Animals, as Reptiles, Birds, Moles, divers Fiſhes, *&c.* The further End thereof is cloſed by a thin, dry, round, tranſparent Membrane, called the *Membrana Tympani*; and improperly, *Tympanum*, or Drum, which ſeparates the External Ear from the Internal. See MEATUS *Auditorius*, and TYMPANUM.

Behind the *Membrana Tympani*, is a Cavity call'd, by different Authors, the *Tympanum*, *Cavitas Tympani*, *Concha Interna*, and *Meatus Auditorius Internus*. In this Cavity are five conſiderable Parts, *viz.* four little Bones, two Apertures, called *Foramina*, or *Feneſtræ*, as many *Meatus's* or Paſſages; four *Muſcles*, and a Branch of a *Nerve*.

The 1ſt of the Bones, or Oſſelets, is the *Malleolus*, or Hammer, thus call'd from the Figure, which is bigger at one End, call'd the *Head*, than at the other, called the *Helve*, or Handle: The 2d, is called the *Incus*, or Anvil: The 3d, the *Stapes*, or Stirrop: And the 4th, the *Orbiculare*. Theſe Bones are nearly of the ſame Bigneſs at the Birth of the Child, as when it is arrived at Maturity; ſo that all that Age does is to harden them.

To give Motion to theſe Bones, is the Office of the four Muſcles of this Cavity; three of them belonging to the *Malleus*, viz. the *Externus*, *Obliquus*, and *Internus*; and the 4th to the *Stapes*, called the *Muſculus Stapedis*.

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The two *Meatus's* are ſituate at the Sides of the Cavity; the one opening into the Palate, called *Aquæductus*, not only on Account of its Form, but becauſe it may ſerve for the Diſcharge of any heterogeneous Matters: By other Authors it is call'd from its Diſcoverer, *Tuba Euſtachiana*. 'Tis by Means hereof, that Perſons, thick of hearing, aſſiſt the Senſe, by opening their Mouths. The other is ſhorter and bigger, opening into the *Sinus* in the Mamillary Proceſs.

The two Apertures, or *Feneſtræ*, of the *Tympanum*, are in the Surface of the *Os petroſum*, which is oppoſite to the Membrane of the *Tympanum*. The firſt, called *Feneſtra Ovalis*, by Reaſon of its Figure, is ſituate a little higher than the other, and receives the Baſis of the *Stapes*. The other call'd *Rotunda*, notwithſtanding its Figure, is oval like the former, and cloſed by a thin, dry, tranſparent Membrane, reſembling that of the *Tympanum*.

The laſt Thing to be conſider'd in the Cavity of the *Tympanum*, is a fine Chord which runs over the inner Surface of the Membrane; called *Chorda Tympani*. Anatomiſts have long diſputed, whether it was an Artery, a Vein, a Nerve, or the *Tendon* of one of the Muſcles of the *Malleus*: But 'tis now diſcover'd to be a Branch of the fifth Pair of Nerves, which meets the *Portio dura* of the Auditory Nerve.

The two *Feneſtræ* abovemention'd, open into a Cavity dug out of the *Os petroſum*, called the *Labyrinth*, as being perplex'd with divers *detours* and *Meanders*. In this Cavity is ſuppoſed to be contain'd the innate Air. It is divided into three Parts; the firſt called the *Veſtible*, by Reaſon it leads into the other two: In it are obſerv'd nine Apertures, or *Foramina*. The ſecond, comprehends three round Canals, diſpoſed in a ſemicircular Form, and thence call'd *Canales Semicirculares*. The third is the *Cochlea*, which conſiſts of two Parts, *viz.* a ſpiral Semi-oval Canal; and a *Lamina*, form'd into a ſpiral Flight. The Canal makes two Turns and an half round a *Newel*, or Axis, ſtill growing leſs as it aſcends. The ſpiral *Lamina* divides this Cavity into two, being faſten'd by its Baſe to this *Newel*, and by its other Extremity, to the Surface of the Canal, oppoſite to the *Newel*, by Means of a very fine Membrane. The Cavity of the *Cochlea* thus divided, forms, as it were, two winding Stair Caſes, both built on the ſame *Newel*, one over t'other, but without any Communication between them.

Laſtly, There is the Auditory Nerve, which conſiſts of two Branches, or Parts, the one ſoft, call'd *Portio mollis*; and the other harder, *Portio dura*: The ſoft Part is ſpent on the Organ of Hearing, being divided into five Branches, which form a delicate Web, that lines the *Veſtibulum*, *Cochlea*, &c. The hard Part, paſſing out of the *Cranium*, is diſtributed among the Parts of the External *Ear*, &c.

The other Veſſels of the Internal *Ear*, are Arteries and Veins from the Carotieds and Jugulars.

Particular Deſcriptions of each Part of the Ear *above recited, ſee under the proper Articles*; TYMPANUM, FENESTRA, MALLEOLUS, STAPES, INCUS, ORBICULARIS, LABYRINTH, VESTIBLE, COCHLEA, *Canalis* SEMICIRCULARIS, AUDITORY NERVE, *&c.*

The immediate Organ of Hearing, has been generally ſuppoſed to be the Membrane of the *Tympanum*: But later Anatomiſts ſhew this to be a Miſtake, from divers Inſtances wherein that Membrane has been abſolutely deſtroy'd, and broke, without the leaſt Diminution of the Sence of Hearing.

The Parts that bid the faireſt for the Prerogative are thoſe which compoſe the *Labyrinth*, viz. the *Cochlea*, *Lamina Spiralis*, *Veſtible*, and *Semicircular Canals*: The *Portio mollis* of the Auditory Nerve, ramified and diffuſed through theſe Parts, receives the Impreſſion of Sounds, and propagates it to the Brain. See HEARING.

Behind, and under, the External *Ear*, are a Number of large Glands, called *Parotides*, wherein is ſeparated a great deal of *Saliva*, which is convey'd by the excretory Ducts into the Mouth. See PAROTIDES.

The comparative Anatomy of the *Ear* furniſhes abundant Inſtances of the Creator's Wiſdom.

In *Birds*, the outer *Ear* is of a Form proper for Flight; not protuberant, as that would obſtruct their Progreſs, but cloſe and cover'd. See BIRD.

In *Quadrupeds*, its Form is agreeable to the Poſture and Motion of the Body, but admirably varied, according to their various Occaſions: In ſome, as the Hare, 'tis large, open and erect; by which Means, that timorous, defenceleſs Creature, is warn'd of the leaſt Approach of Danger: In others, 'tis cover'd, to keep out noxious Bodies. In the ſubterraneous *Quadrupeds*, who are forced to mine and dig for their Food and Habitation, as a protuberant *Ear* would obſtruct 'em, and be liable to Injuries, their *Ears* are very ſhort, lodged deep and backwards in the Head.

Thus Moles have no *Auricle* at all, but only a round Hole, between the Neck and Shoulder. Some Authors obſerve, that the *Meatus*, or Paſſage, is cloſed with a little Skin, which opens and ſhuts like an Eye-lid. The Sea-Calf, and the ſeveral Species of Lizards and Serpents, are likewiſe without any External *Ear*. And the Tortoiſe, Cameleon, and Generality of Fiſhes, have the Paſſage of the *Ear* quite ſtop'd, or cover'd over. There is a Sort of Whale, which has the Aperture of the *Ear* under the Shoulders.

Among all the Varieties in the Structure of this Organ, none, Dr. *Grew* obſerves, are more remarkable than thoſe in the Paſſage into the *Os petroſum*. For in an Owl, which perches on a Tree, or Beam, and hearkens after the Prey beneath her, it is produced further out above, than below, for the better Reception of the leaſt Sound: In a Fox, which ſcouts underneath the Prey at Rooſt, it is for the ſame Reaſon produced further out below: In a Pole-Cat, which hearkens ſtrait forwards, it is produced behind, for the taking of a forward Sound: Whereas in a Hare, which is very quick of Hearing, and thinks of nothing but being purſued, it is ſupplied with a bony Tube, directed backwards, ſo as to receive the ſmalleſt, and moſt diſtant Sound that comes behind her.

Schelhammer denies the Exiſtence of the innate Air, ſo much talk'd of, in the *Labyrinth*; and with good Reaſon, as there is a Paſſage out of the *Labyrinth* into the Throat, thro' which the innate Air might eſcape. This is paſt doubt: Since by ſtopping the Breath, and ſtraining, we can force the External Air into the *Ear*, and even hear it ruſhing in. When the Paſſage is any Way ſtopp'd, as by a Cold, *&c.* the Hearing thereby becomes dull and obtuſe: And when by ſtrong Swallowing, or other Motion of the Throat, the Paſſage is open'd, we perceive it by a ſudden Crack, and immediately hear very clearly; the Load of feculent Air being then diſcharged from the inner *Ear*. See SOUND, DEAFNESS, WHISPERING-*Place*, SPEAKING-*Trumpet*, BELLOWING-*Cave*.

Several Naturaliſts and Phyſicians have held, that cutting off the *Ears* render'd Perſons barren, and unprolific; which Notion was what firſt occaſion'd the Legiſlators to order the Ears of Thieves, *&c.* to be cut off, leſt they ſhould produce their like.

The *Ear* has its Beauties, which a good Painter ought by no Means to diſregard: Where it is well form'd, it wou'd be an Injury to the Head to be hidden. *Suetonius* inſiſts particularly on the Beauties of *Auguſtus*'s Ears; and *Ælian*, deſcribing the Beauties of *Aſpaſia*, obſerves ſhe had ſhort Ears. *Martial* ranks large Ears among the Number of Deformities. *Felibien*.

Among the *Athenians*, it was a Mark of Nobility to have the Ears bored or perforated. Among the *Hebrews* and *Romans*, it was a Mark of Servitude.

EAR, in Muſic, a kind of internal Senſe, whereby we perceive and judge of Harmony, and muſical Sounds.

In Muſic, we ſeem univerſally to acknowledge ſomething like a diſtinct Senſe from the external one of hearing; and call it a *good Ear*. And the like Diſtinction we ſhould probably acknowledge in other Affairs, had we got diſtinct Names to denote thoſe Powers of Perception by. See SENSE.

Thus, a greater Capacity of perceiving the Beauties of Painting, Architecture, *&c.* is called to a *fine Taſt*. See TAST.

EAR-*Wax*, EAR-*Ring*, See CERUMEN. PENDANT.

EAR, is alſo applied to a long Cluſter of Flowers, or Seeds, produced by certain Plants; uſually called by Botaniſts, *Spica*. See SPICA.

The Flowers and Seeds of Wheat, Rye, Barley, *&c.* grow in *Ears*. The ſame holds of the Flowers of Lavender, *&c.* We ſay the Stem of the *Ear*, i. e. its Tube or Straw: The Knot of the *Ear*: the Lobes, or Cells, wherein the Grains are encloſed: The Beard of the *Ear*, *&c.* we have known 80 *Ears* of Wheat from the ſame Root.

EARL, an *Engliſh* Title of Honour, or Degree of Nobility, next below a *Marquis*, and above a *Viſcount*. See NOBILITY, MARQUIS, VISCOUNT, *&c.*

Earls, were anciently Attendants, or Aſſociates, of the King in his Councils, and Martial Expeditions; much as *Comites*, Counts, were of the Magiſtrates of *Rome*, in Quality of Deputies, to execute their Offices for them. See COUNT.

Hence alſo *Earls* are called in *Latin*, *Comites*; in *French*, *Comtes*, Counts, &c. The *Germans* call them *Graves*, as Langrave, Margrave, Palſgrave, *&c.* The *Saxons*, *Eoldormen*; the *Danes*, *Eorlas*; and the *Engliſh*, *Earls*.

At firſt the Title *Earl* always died with the Man: *William* the *Conqueror* firſt made it Hereditary; giving it in Fee to his Nobles; and annexing it to this or that Shire or County: For the Support of the State thereof, he allotted the third Peny out of the Sheriffs Court, iſſuing out of all Pleas of the Shire from which the *Earl* took his Title. But of later Days the Matter is much alter'd.

Earls are now created by Charter, without any Authority over, or particular Relation to, their Counties; and without any Profit arising thence, except ſome annual Stipend out of the Exchequer for Honours Sake. The Number of *Earls* being of late much increaſed, and no more Counties being left for them; ſeveral of them have made Choice of ſome eminent Part of a County, as *Lindſey*, *Holland*, *Craven*, &c. Others, of ſome Towns; as *Marborough*, *Exeter*, *Briſtol*, &c. And others of ſome Village, or their own Seat, Park, &c. as *Godolphin*, *Bolton*, *Danby*, *Wharton*, &c.

Two Earls we have which are not local, *i. e.* not dignified from any Places, but from Noble Families; *viz.* Earl *Rivers*, and Earl *Poulet*. A third is denominated from his Office, *viz.* the *Earl-Marſhal*. See MARSHAL.

Earls are created by Cincture of Sword, Mantle, a Cap and a Coronet on his Head, and a Charter in his Hand. They are ſtyled by the King, *Conſanguinei noſtri*, our Couſins. Their Title is, *Moſt potent and Noble Lord*. Their Coronet has the Pearls rais'd on Points, with Leaves between. See CORONET.

Earl was a mighty Title among the *Saxons:* It is obſerved to be the moſt ancient of any of the Peerage; and that there is no other Title of Honour in Uſe among the preſent Nobility, which was likewiſe uſed among the *Saxons*, beſide it.

The Original Titles of Honour among the *Saxons*, were ſeðeling, ealðerman, and ðeyen or ðane. The firſt was appropriated to thoſe of the Royal Family. The other two to the reſt of the Nobility. Only the *Thani* were afterwards diſtinguiſhed into *Majores* and *Minores*. See THANE.

EARL-*Marſhal*, is a great Officer, who had antiently ſeveral Courts under his Juriſdiction, as the *Court of Chivalry*, now almoſt forgotten; and the *Court of Honour*, now quite laid aſide: But he hath ſtill ſome Preheminence in the *Court of Marſhalſea*; where he may ſit in Judgment againſt Criminals offending within the Verge of the Court; whence the chief Officer under him is called *Knight-Marſhal*. See MARSHAL, and MARSHALSEA.

Under him is alſo the Herald's Office, or College of Arms. See HERALD, and COLLEGE *of Arms*.

The Office of *Earl-Marſhal* is Hereditary in the moſt Noble Family of *Howard*; and enjoy'd by the Duke of *Norfolk*, the principal Branch thereof; tho' now, for Reaſons of State, it is diſcharged by Deputation: But yet it is to be obſerved, it is not given out of the Name and Family of *Howard*.

EARNEST, called alſo *Arrhes*, Money advanced to compleat, or aſſure, a verbal Bargain, and bind the Parties to the Performance thereof.

By the Civil Law, he who recedes from his Bargain, loſes his *Earneſt:* Or, if the Perſon, who receiv'd the *Earneſt*, give back, he is to return the *Earneſt* double. But, with us, the Effect of *Earneſt* is more. The Perſon who gave it, is in Strictneſs obliged thereby to abide by his Bargain; and in Caſe he decline it, is not diſcharged upon forfeiting his *Earneſt*; but may be ſued for the whole Money ſtipulated.

EARTH, *Terra*, in Natural Philoſophy, one of the four Vulgar, or Peripatetical Elements; defined, a ſimple, dry and cold Subſtance; and as ſuch, an Ingredient in the Compoſition of all Natural Bodies. See ELEMENT.

It ſhould be well obſerved, that the Element *Earth* is a very different Matter from the *Earth* whereon we tread: *Ariſtotle* having laid down *cold* and *dry* as his firſt Element; to give it a ſuitable Name, look'd among the divers Bodies, for that which ſhould come the neareſt thereto; which being *Earth*, he gave his firſt Element that Denomination: Tho', thus borrowing a Word, that had been uſed for a different Thing, occaſioned a great Part of his Followers to run into an extravagant Error, and to ſuppoſe, that this habitable foſſil *Earth*, was an Element. See PRINCIPLE.

EARTH, in Chymiſtry, is the fourth of the Chymical Elements, or Principles, into which all Bodies are reſolvible by Fire. See PRINCIPLE.

After drawing off the Spirit, Sulphur and Phlegm, *e. gr.* of Wine, what remains in the Retort, is a taſteleſs, ſmelleſs, duſty Matter, not capable either of being rais'd by Diſtillation, or diſſolved by Solution, and called *Earth*, or *Terra damnata*, or *Caput Mortuum*. See CAPUT *Mortuum* and TERRA *damnata*.

This *Earth* is ſuppoſed to be the Baſis, or Subſtratum of all Bodies; and that, wherein the other Principles reſide. 'Tis all that is ſolid, *e. gr.* in an Animal or Vegetable Body, *i. e.* all the Vaſcular Part; the reſt being Juices. See SOLID, VESSEL, VEGETABLE, &c.

EARTH, in Natural Hiſtory, is a foſſil, or terreſtrial Matter, whereof our Globe principally conſiſts; whoſe Character is to be neither diſſoluble by Fire, Water, nor Air; not tranſparent, more fuſible than Stone, and generally containing ſome Degree of Fatneſs. See FOSSIL.

Of ſuch *Earth*, ſome is Simple, and Immutable; other, Compound and Fatty. Of the firſt Kind is *Chalk*, *Pumice*, and *Rotten-ſtone*; of the Second, or Compound *Earths*, are *Boles* of all Kinds, red, white and brown; *Fullers Earth*, the divers Kinds of *Medicinal Earth*, as the *Cretica*, *Hungarica*, *Turcica*, *Suecica*, *Lemnian Earth*, *Malta Earth*, *Terra Sigillata*, &c. To this Claſs are likewiſe referred *Argillæ*, or *Clay Earth*, form'd into Potters Ware.

Theſe *Earths* are all reſolvible into an Oil, a little acid Salt, &c. and a *Calx*, which is the Baſis, or the *Earth* properly ſo call'd. *See the divers Kinds of Earths deſcribed under their proper Articles:* CHALK, PUMICE, BOLE, SIGILLATA-*Terra*, &c.

Naturaliſts generally rank *Sand* as a Species of *Earth*; tho' with no great Propriety. Sands being, in Strictneſs, a Sort of Cryſtals, or little tranſparent Pebbles, calcinable, and by the Addition of a fix'd alcaline Salt, fuſible, and convertible into Glaſs: And therefore properly reducible to the Claſs of Stones. See STONE.

By Means of Sand it is, that the fatty *Earth* is render'd fertile, and fit to feed Vegetables, &c. For pure Earth is liable to coaleſce into a hard coherent Maſs, as in Clay; and Earth thus imbodied, and as it were glued together, would be very unfit to nouriſh Plants. But if with ſuch Earth, Sand, *i. e.* hard Cryſtals which are indiſſoluble in Water, and ſtill retain their Figure, be intermix'd, they will keep the Pores of the Earth open, and the Earth it ſelf looſe and incompact, and by that Means give room for the Juices to move, aſcend, &c. and for Plants to be nouriſhed thereby. Thus a Vegetable, planted either in the Sand alone, or in the fat Glebe and *Earth* alone, receives no Growth or Increaſe; but is either ſtarved or ſuffocated: But mix the two, and the Maſs becomes fertile. In Effect, by Means of Sand, the Earth is render'd in ſome Meaſure Organical; by preſerving a Sort of Pores, and Interſtices therein, ſomewhat analagous to Veſſels is effected; by which the Juices of the *Earth* may be convey'd, prepared, digeſted, circulated, and at length excreted and thrown off into the Roots of Plants. See WATER and VEGETATION.

EARTH, in Geography, this terraquerous Globe, or Ball, whereon we inhabit, conſiſting of Land and Sea. See TERRAQUEOUS *Globe*; See alſo OCEAN.

The *Earth*, conſider'd in different Relations, or Habitudes, makes the Subject of Geography and Geometry. See GEOGRAPHY, &c.

The *Figure of the Earth* is demonſtrated to be nearly Spherical. Thus: the Moon is frequently ſeen eclipſed by the Shadow of the *Earth*; and in all Eclipſes, that Shadow appears circular, what Way ſoever it be projected, whether towards Eaſt, Weſt, North or South, howſoever its Diameter vary, according to the greater or leſs Diſtance from the Earth.

Hence it follows, that the Shadow of the *Earth*, in all Situations, is really Conical; and conſequently the Body that projects it, *i. e.* the *Earth*, is nearly Spherical. See SHADOW.

The Natural Cauſe of this Sphericity of the Globe is, according to Sir *Iſaac Newton*, the great Principle of Attraction, which the Creator has ſtamp'd on all the Matter of the Univerſe; whereby all Bodies, and all the Parts of Bodies, mutually attract one another. See ATTRACTION.

The ſame is the Cauſe of the Sphericity of the Drops of Rain, Quickſilver, &c. See DROP, SPHERICITY, &c.

We ſay 'tis *nearly* Spherical; for the Inequalities on its Surface prevent its being perfectly ſo. Beſides that, *Huygens* and Sir *Iſaac Newton* have ſhewn, that the *Earth* is higher and bigger under the Equator, than at the Poles: So that its Figure, nearly, is that of an oblate Spheroid, ſwelling out towards the Equatorial Parts, and flatted or contracted towards the Poles. The *Ratio* of the greater Diameter to the leſs, *Huygens* determines to be as 578 to 577. See MOUNTAIN, SPHEROID, PENDULUM, &c.

The Reaſon of this Inequality is deduced from the Diurnal Rotation of the *Earth* on its Axis; as is already ſhewn in that of the Sun. See SUN.

This Roundneſs of the *Earth* is further confirm'd by its having been frequently ſail'd round: The firſt Time was in the Year 1519, when *Ferd. Magellan* made the Tour of the whole Globe in 1124 Days. In the Year 1557, our Countryman *Drake* performed the ſame in 1056 Days: In the Year 1586, Sir *Thomas Cavendiſh* made the ſame Voyage in 777 Days; *Simon Cordes*, of *Rotterdam*, in the Year 1590; and in the Year 1598, *Oliver Noort*, a *Hollander*, in 1077 Days; *Will. Corn. Van Schouten*, in the Year 1615, in 749 Days; *Jam. Heremit* and *Joh. Huygens*, in the Year 1623, in 802 Days: All of whom ſailing continually from Eaſt to Weſt, at length arrived in *Europe*, whence they ſet forth; and in the Courſe of their Voyage obſerved all the

the *Phænomena*, both of the Heavens and Earth, to correſpond to and confeſs this ſpherical Figure.

What the *Earth* loſes of its Sphericity by Mountains and Vallies, is nothing conſiderable; the higheſt Eminence being ſcarce Equivalent to the minuteſt Protuberance on the Surface of a Lemon: What it loſes by the Swelling of the Equatorial Parts is more ſenſible. See MOUNTAIN.

Sir *Iſaac Newton* makes the greateſt Diameter 34 Miles bigger than the leſs, fixing the *Ratio*, as 692 to 688. If the *Earth* were in a fluid State, its Revolution round its Axis would neceſſarily make it put on ſuch a Figure, by Reaſon the Centrifugal Force being greateſt towards the Equator, the Fluid would there riſe, and ſwell moſt: and that it ſhould be ſo now, ſeems neceſſary to keep the Sea in the Equinoctial Regions from overflowing the *Earth* thereabouts.

Add, that Experiments made on Pendulums, which muſt be of different Lengths, to ſwing equal Times here and at the Equator, evince the ſame Thing. See PENDULUM.

Monſr. *de la Hire* and M. *Derham*, indeed, have ſhewn, in the *Memoirs of the* French *Academy*, and *Philoſoph. Tranſact.* that this Diverſity may ariſe either from the greater Heat, or the greater Rarity of the Air there than here; as having obſerved a like Variation between Pendulums when heated and cold, and when in *Vacuo* and open Air. But, beſide that Sir *Iſaac Newton* and Monſ. *Bernoulli*, have ſet aſide theſe Cauſes as inſufficient; Monſ. *Caſſini* has found, that the Degrees of a Meridian grow larger, the further we go towards the Line by one Eight hundredth Part of every Degree; which puts the Spheroidiſm of the *Earth* paſt Queſtion.

The Antients had various Opinions as to the Figure of the *Earth*: Some, as *Anaximander*, held it Cylindrical; and others, as *Leucippus*, in Form of a Drum. But the principal Opinion was, that it was flat; that the viſible Horizon was the Bounds of the Earth, and the Ocean the Bounds of the Horizon; that the Heavens and Earth above this Ocean was the whole viſible Univerſe; and that all beneath the Ocean was *Hades*. Of which Opinion were not only divers of the ancient Poets and Philoſophers, but alſo ſome of the Chriſtian Fathers, as *Lactantius*, St. *Auguſtine*, &c.

Fa. Tacquet draws ſome pretty Concluſions from the Spherical Figure of the *Earth*; as, 1. That if any Part of the Surface of the Earth were quite plain; a Man cou'd no more walk upright thereon, than on the Side of a Mountain: 2. That the Traveller's Head goes a greater Space than his Feet; and a Horſeman than a Footman, as moving equal Arches of greater Circles: 3. That a Veſſel full of Water being rais'd perpendicularly, ſome of the Water will be continually flowing out, yet the Veſſel ſtill remain full; and on the contrary, if a Veſſel full of Water be let perpendicularly down, tho' nothing flow out, yet it will ceaſe to be full: Conſequently there is more Water contain'd in the ſame Veſſel at the Foot of a Mountain, than on the Top; by Reaſon the Surface of the Water is compreſs'd into a Segment of a leſs Sphere below than above. *Tacq. Aſtronom. L.* I. *C.* 2.

The *Magnitude of the Earth*, and the Number of Miles its Diameter contains, has been variouſly determined by various Authors, ancient and modern. The Way to arrive at it, is, by finding the Quantity of a Degree of a great Circle of the Earth. But this Degree is found very different, according to the different Methods and Inſtruments made uſe of, as well as the different Obſervers. See DEGREE.

The Method obſerved by Mr. *Norwood*, and the *French* Aſtronomers *Picard*, *Caſſini*, &c. viz. by meaſuring the Diſtance between two remote Places on the ſame Meridian, is undoubtedly the beſt; and was performed with ſuch exceeding Accuracy, eſpecially by Monſ. *Caſſini*, that hardly any thing further or better can be expected. According to that Author, the Ambit or Circumference of the *Earth* is 123750720 *Paris* Feet; or, 134650777 *Engliſh* Feet; or, 25031½ of our Statute Miles: Whence, ſuppoſing the *Earth* ſpherical, its Diameter muſt be 7967 Statute Miles; and conſequently its Radius, or Semi-diameter, may be taken in a round Number for 200000000 Feet: Its Surface will be 199444206 Miles; which being multiplied into ⅓ of its Semidiameter, gives the ſolid Content of the Globe of the *Earth* 264856000000 Cubic Miles.

On the Surface of the *Earth* are conceiv'd the ſame Circles, as on the Surface of the *Mundane* Sphere already deſcribed; *viz.* an EQUATOR, ECLIPTIC, TROPICKS, POLAR-*Circles*, MERIDIANS, HORIZON, PARALLELS, *&c.* which See, as alſo SPHERE and GLOBE.

The *Terraqueous* Globe is now generally granted to have two Motions, the one *Diurnal*, around its own Axis, in the Space of 24 Hours, which conſtitutes the Natural Day, or *Nycthemeron*. See DIURNAL-*Motion*.

The other *Annual*, round the Sun, in an Elliptical Orbit, or Track, in 365 Days 6 Hours, conſtituting the Year. See ANNUAL-*Motion* and YEAR.

From the former we derive the Diverſities of *Night* and *Day*: See NIGHT and DAY. And from the latter, the Viciſſitudes of Seaſons, Spring, Summer, &c. See SEASON, SPRING, SUMMER, WATER, *&c.*

See the Motion of the Earth proved under the Article EARTH *in Aſtronomy.*

In the *Terraqueous* Globe we diſtinguiſh three Parts, or Regions, *viz.* 1. The *External* Part, or Cruſt, which is that from which Vegetables ariſe, and Animals are nouriſhed. 2. The *Middle*, or intermediate Part, which is poſſeſſed by Foſſils, extending further than human Labour ever yet penetrated. 3. The *Internal*, or *Central* Part, which is unknown to us, tho' by many Authors ſuppoſed of a magnetic Nature; by others, a Maſs, or Sphere of Fire; by others, an Abyſs, or Collection of Waters, ſurrounded by the Strata of *Earth*; and by others, a hollow, empty Space, inhabited by Animals, who have their Sun, Moon, Plants, and other Conveniencies within the ſame.

Others divide the Body of the Globe into two Parts, *viz.* the *External* Part, which they call the *Cortex*, including the whole Depth or Maſs of the Strata of the *Earth*: And the *Internal*, which they call the *Nucleus*, being of a different Nature from the former, and poſſeſs'd by Fire, Water, or the like. See CORTEX and NUCLEUS.

The External Part of the Globe either exhibits Inequalities, as *Mountains* and *Vallies*; or it is plain and level; or dug in Channels, Fiſſures, Beds, *&c.* for *Rivers*, *Lakes*, *Seas*, &c. See RIVER, LAKE, OCEAN, *&c.*

Theſe Inequalities in the Face of the *Earth*, are by moſt Naturaliſts ſuppoſed to have aroſe from a Rupture, or Subverſion of the Earth, by the Force either of the ſubterraneous Fires or Waters. The Earth in its Natural and Original State, *Des Cartes*, and after him *Burnet*, *Steno*, *Woodward*, *Whiſton*, and others, ſuppoſe to have been perfectly round, ſmooth, and equable; and accounts for its preſent rude and irregular Form, principally from the great Deluge. See DELUGE, EARTHQUAKE, *&c.*

In the External, or Cortical Part of the Earth, we meet with various *Strata*, which are ſuppoſed to be the Sediments of various Floods, the Waters whereof being replete with Matters of divers Kinds, as they dried up, or oozed through, depoſited theſe different Matters, which in Time harden'd into *Strata* of Stone, Sand, Coal, Clay, *&c.* See STRATA, COAL, *&c.*

Dr. *Woodward* has conſider'd the Buſineſs of *Strata* with great Attention, *viz.* their Order, Number, Situation with reſpect to the Horizon, Depth, Interſections, Fiſſures, Colour, Conſiſtence, *&c.* and aſcribes the Origin and Formation of them all, to the great Flood, or *Cataclyſmus*. At that terrible Revolution, he ſuppoſes all the terreſtrial Bodies of all Kinds to have been diſſolved and mix'd with the Waters, and ſuſtain'd therein, ſo as only to conſtitute one common Maſs therewith. This Maſs of terreſtrial Particles, intermix'd with Water, he ſuppoſes to have been at length precipitated to the Bottom, and that, according to the Laws of Gravity; the heavieſt ſinking firſt, and the lighter in their Order. By ſuch Means were the *Strata* form'd, whereof the *Earth* conſiſts, which attaining their Solidity and Hardneſs by Degrees, have continu'd ſo ever ſince. Theſe Sediments, he further concludes to have been at firſt all parallel and concentrical, and the Surface of the *Earth* form'd thereby, perfectly ſmooth and regular: But in Courſe of Time, divers Changes happening from *Earthquakes*, *Vulcano's*, &c. the Order and Regularity of the *Strata* was diſturbed and broke, and the Surface of the *Earth*, by ſuch Means, brought to the irregular Form in which it now appears. See further Particulars under FOSSIL, VOLCANO, SPRING, ATMOSPHERE, *&c.*

EARTH, in Aſtronomy, is one of the primary Planets, according to the Syſtem of *Copernicus*. Its Character is ♁. See PLANET, *&c.*

In the Hypotheſis of *Ptolomy*, the *Earth* is the Centre of the *Syſtem*. See SYSTEM.

Whether the *Earth* move, or remain at Reſt, *i. e.* Whether it be fixed in the Centre, with the Sun Heavens and Stars moving round the ſame from Eaſt to Weſt; or whether, the Heavens and Stars being at Reſt, the *Earth* move from Weſt to Eaſt, is the great Article that diſtinguiſhes the *Ptolemaic* from the *Copernican* Syſtem. See COPERNICAN, and PTOLEMAIC *Syſtem.*

Motion of the EARTH.

The happy Induſtry of the Aſtronomers of our Age, has put the Motion of the *Earth* beyond all reaſonable doubt: On which Account, the Names of *Copernicus*, *Gaſſendus*, *Kepler*, *Hook*, *Flamſtead*, &c. will ever be mentioned with the higheſt Honour.

Indeed, the ſame Motion had been held by many of the ancient Philoſophers. *Cicero*, in his *Tuſc. Queſt.* aſſures us, that *Nicetas* of *Syracuſe* firſt diſcover'd that the *Earth* had a diurnal Motion, by which it revolved round its Axis in the Space of 24 Hours: And *Plutarch*, *de Placit. Philoſoph.*

Philoſoph. tells us, that *Philolaus* diſcover'd its Annual Motion round the Sun. About 100 Years after *Philolaus*, *Ariſtarchus* the *Samian*, propoſed the Motion of the *Earth* in ſtronger and clearer Terms, as we are aſſured by *Archimedes*, in *Arenar.*

But the Religious Opinions of the *Heathen* World, prevented the Doctrine's becoming more cultivated. For *Ariſtarchus*, being accuſed of Sacrilege by *Cleanthes* for moving *Veſta*, and the tutelary Deities of the Univerſe out of their Place; the Philoſophers began to lay aſide ſo perilous a Poſition.

Many Ages afterwards, *Nic. Cuſanus* revived the ancient Syſtem, in his *Doct. de Ignorant.*; and aſſerted the Motion of the *Earth*: But the *Dogma* got but little Ground till the Time of *Copernicus*, who ſhew'd its great Uſe and Advantages in Aſtronomy; and who had, immediately, all the Philoſophers and Aſtronomers, that durſt think differently from the Croud, and were not afraid of Eccleſiaſtical Cenſures, on his Side. So that *Kepler*, his Contemporary, made no Scruple to cry: *Hoderno tempore præſtantiſſimi quique Philoſophorum & Aſtronomorum Copernico adſtipulantur: ſæcta eſt hæc Glacies; vincimus ſuffragiis melioribus: Cæteris pene ſola obſtat Superſtitio aut Metus a Cleanthibus.*

The Arguments alledg'd againſt the Motion of the *Earth*, are vain and frivolous. The Principal are,

1. That it is a heavy Body, and very unfit for Motion.

2. That if the *Earth* were to move round its Axis in 24 Hours, all our Houſes, Buildings, *&c.* would tumble down.

3. That Bodies wou'd not fall upon the Places perpendicularly under them: Nor a Bullet, *e. gr.* ſhot perpendicularly from the Ground, fall back again upon the ſame Spot.

4. That it is contrary to the Words of Scripture: And,

5. That it is repugnant to our Senſes, which repreſent the *Earth* at Reſt, and the Sun in Motion.

The Arguments for the Motion of the *Earth* are of another Kind, and carry other-guiſe Evidence with them; being deduced from actual Obſervation and Phænomena, and not from the fanciful Surmiſes of timorous Zealots. They are theſe:

1. The Sun will equally appear in Motion, and the *Earth*, as ſtanding ſtill, to a Spectator on the *Earth*; whether the Sun really move round the *Earth* at Reſt; or the *Earth* move round the Sun at Reſt.

For ſuppoſe the *Earth* in T, (*Tab. Aſtronom. Fig.* 14.) and the Sun in 1; the Sun will then appear in 0♈. And ſuppoſe the Sun to proceed in an Orbit, ſurrounding the *Earth*, from 1 to 2, he will then appear in 0♉; and if he proceed further to 3, he will be ſeen in 0♊; and thus will he appear to go on, according to the Order of the Signs in the Ecliptic.

Suppoſe again the *Earth* in 1; (*Fig.* 15.) the Sun, S, will be ſeen in ♈: Let the *Earth* go on from 1 to 2, the Sun will appear to the Inhabitants of the *Earth* to have proceeded from ♈ to ♉; and if the *Earth* proceed to 3, the Sun will appear to have advanced further from ♉ to ♊; and ſo on, according to the Succeſſions of the Sign of the Ecliptic.

Thus does the Sun appear alike to move, whether it really move, or ſtand ſtill; ſo that the Objection from Senſe is of no Force. See Vision. But again,

2. If one of the Planets be ſuppoſed to have moved a certain Space, from Weſt to Eaſt; the Sun, *Earth*, and other Planets, together with the fixed Stars, will all ſeem to an Inhabitant of that Planet, to have moved juſt ſo far round it the contrary Way.

For ſuppoſe a Star M, (*Fig.* 16.) in the *Zenith* of an Inhabitant of a Planet plac'd in T; and ſuppoſe the Planet to have revolved on its Axis from Weſt to Eaſt; in a certain Space of Time, the Sun S, will have arrived at the *Zenith* of T; then the Star I, then N, then the *Earth* L, and at length the Star M again. To the Inhabitant of the Planet therefore, the Sun S, with the *Earth* L, and the Stars I, N, M, *&c.* will appear to have moved round the Planet a contrary Way.

Thus, to the Inhabitants of the Planets, if any ſuch there be, the *Mundane* Sphere, with the Sun, Stars, and all the other Planets, will, as to us, appear to move round them from Eaſt to Weſt. And accordingly, the Inhabitants of our Planet the *Earth*, are only liable to the ſame deluſive Appearances with thoſe of the reſt.

3. The Orbits of all the Planets include the Sun, as the common Centre of them all: But 'tis only the Orbits of the ſuperiour Planets that include the *Earth*, which however is not in the Centre of any of them, as we have already ſhewn under the Articles, Sun and Planet.

4. The *Earth's* Orbit being proved to be between thoſe of *Venus* and *Mars*; it follows, that the *Earth* muſt turn round the Sun: for, as it lies within the Orbits of the ſuperiour Planets, their Motions would indeed appear unequal and irregular; but they would never either be ſtationary or retrograde. See Station and Retrogradation.

5. From the Orbits and Periods of the ſeveral Planets about the Sun; and of the Moon and the Satellites round the *Earth*, *Jupiter* and *Saturn*; it is evident, that the Law of Gravitation is the ſame towards the *Earth*, *Jupiter* and *Saturn*, as towards the Sun; and the periodical Times of the ſeveral Bodies moving around each, are in the ſame *Ratio* to their ſeveral Diſtances from them. See Period.

Now, it is certain, that on the Hypotheſis of the *Earth's* annual Motion, her periodical Time exactly ſuits this Law, bearing ſuch a Proportion between thoſe of *Mars* and *Venus*, as the ſeveral other Bodies directed by the ſame Law do bear, *i. e.* the Squares of the Periods are in all, as the Cubes of the Diſtances from the Centre of their Orbits. But ſuppoſing the *Earth* to be at Reſt, this Law is broke moſt exorbitantly.

For if the *Earth* don't move round the Sun, the Sun muſt move with the Moon round the *Earth*: Now the Diſtance of the Sun to that of the Moon, being as 10000 to 46; and the Moon's Period being leſs than 28 Days, the Sun's Period ſhould be found no leſs than 242 Years, whereas in Fact it is but one Year. Which ſingle Conſideration, Mr. *Whiſton* thinks of Weight enough to determine the Controverſy between the two Syſtems, and to eſtabliſh the Motion of the *Earth* for ever. See Revolution.

Whereas, ſuppoſing our *Earth* to have once revolved about the Sun in a circular Orbit, whoſe ſemi-diameter were equal to the *Earth's* original Diſtance from the Sun ſix Degrees paſt its Perihelion, the annual Period would be found exactly and ſurprizingly equal to the *Lunar* or the ancient *Solar* Year, which were exactly commenſurate; containing 12 Synodical, or 13 Periodical Months, *i. e.* 355 Days, 4 Hours, 19 Minutes. See Month.

6. The Diſtances of certain of the fix'd Stars from the *Zenith*, have been obſerved to be various at various Times of the Year. That, particularly, of the *Pole-ſtar* from the Pole, has been diſcover'd by Mr. *Flamſtead* from repeated Obſervations, for 7 Years ſucceſſively; to be greater about the Summer Solſtice, than about the Winter, by about 40 Seconds. Whence it appears, that the *Earth* changes its Situation; receding from the *Pole-Star*, and returning back to it again Annually. See Parallax *of the Earth's Orbit.*

Which Argument is further confirm'd from this, that the *Earth* is nearer the Sun at *Chriſtmas*, than at *Midſummer*; as appears both from its apparent Diameter being greater in *December* than in *June*; and from its Motion being ſwifter by one 25th Part in the former Seaſon, than the latter: Whence it is that there are about 8 Days more in the Summer half Year, *viz.* from *March* to *September*, than in the Winter, from *September* to *March*. See Solstice and Equinox.

7. Either the heavenly Bodies revolve round the *Earth* in 24 Hours, or the *Earth* revolves round its Axis in that Time. Now the Planets, revolving round the Sun, perform their Revolutions in greater or leſs Times, as their Orbits are greater or leſs, *i. e.* as they are more or leſs remote from the Sun. Of Conſequence, if the Stars and Planets revolved round the *Earth*, they would perform their Revolutions in unequal Times, according as their Orbits, or their Diſtances, were unequally big. At leaſt, the fix'd Stars, which are at ſuch prodigious Diſtances from the *Earth*, wou'd never move round it in 24 Hours, as the neareſt Planet is ſuppoſed to do. See Revolution.

This is an Inelegancy, which is avoided in the Syſtem where the *Earth* is ſuppoſed to move; and where every Planet is ſo much the longer in deſcribing its annual Orbit round the Sun, as the Orbit is greater. See Orbit.

8. In all the Works of Nature we are acquainted withal, the Creator appears to act by the ſhorteſt, eaſieſt, and ſimpleſt Means. Now, if the *Earth* be at Reſt, and the Stars move, the Velocity of theſe latter muſt be immenſe, and yet all the Purpoſes thereof, might have been anſwer'd by a moderate Motion of the *Earth* alone.

For the Moon's mean Diſtance from the *Earth*, is 57 Semi-diameters of the *Earth*; which, ſuppoſing a Semi-diameter of the *Earth* 3440 Geographical Miles, amounts to 196080 Miles. Hence, the Circumference of the Moon's diurnal Circle, being 1231380 ſuch Miles, the Moon's horary Motion muſt be 483308 Miles: Conſequently in each Second, a Space leſs than that of the Pulſe of an Artery, the Moon, tho' the ſloweſt of all the heavenly Bodies, muſt move 3 Miles and five 9ths. See Moon. Again, the Sun's mean Diſtance from the *Earth* is 22000 Semi-diameters of the *Earth*, or 75680000 Geographical Miles; conſequently the Sun's diurnal Progreſs, when in the Equator, muſt be 475270400 Miles: And therefore in the Space of one Second, *i. e.* in the twinkling of an Eye, he muſt move 5480 Miles.

Again, the Diſtance of the Sun from the *Earth*, is to that of *Mars* nearly as one and a half; to that of *Jupiter*, as one to five and a Quarter; and to that of *Saturn*, as one to nine: Wherefore as the diurnal Spaces, and all other Things deſcribed in the ſame Time, are in the ſame *Ratio*; *Mars*, in

one

one twinkling of an Eye, muſt fly 8222; *Jupiter* 28688; and *Saturn* 52060 Miles. Laſtly, the fix'd Stars being yet vaſtly more remote from the *Earth* than *Saturn*, their Motion in, or near the Equator, muſt be vaſtly ſwifter than that of *Saturn*.

9. If the *Earth* be at Reſt, and the Stars move by any common Motion, the ſeveral Planets muſt each Day deſcribe ſeveral Spirals running forth to a certain Term towards the North, and thence returning to the oppoſite Term towards the South; ſometimes narrower, and ſometimes broader.

For the Diſtances of the ſeveral Planets from the *Zenith* alter every Day; increaſing to a certain Point towards the North, and thence decreaſing again towards the South: Conſequently, the Altitude of the Pole, being always found the ſame, and the Planets not returning to the ſame Point of the Meridian; they do not deſcribe Circles but Spirals. Add, that as the ſeveral Planets do not retain the ſame Diſtance from the *Earth*, but are ſometimes nearer, and ſometimes recede further from it; at a greater Diſtance, a greater Spiral, and at a leſs, a leſs is deſcribed.

Further, as their Motion is ſlower, when the Planet is further from the *Earth*; the greater Spirals are deſcribed in leſſer Times than the leſſer. And as the greateſt and leaſt Diſtance of the Planets from the *Earth* is not affix'd to the ſame Point of the Heavens, the Planets have moved in different Tracts every Day from the Beginning.

10. Bodies let fall from any conſiderable Height, are found by Experiment not to fall upon the Spot perpendicularly under them, but to the South-Eaſt thereof. See DESCENT.

The Experiment was propoſed to Dr. *Hook*, in the Year 1679, by a Perſon, who ſuggeſted, that if the *Earth* had any diurnal Motion, the Body would fall to the Eaſt of the perpendicular. Dr. *Hook*, on that Occaſion, read a Diſcourſe before the Royal Society, wherein he endeavour'd, *a priori*, to aſſign what Curve a falling Body would deſcribe; aſſerting particularly, that the Fall of the Body would not be directly Eaſt, but South Eaſt: Which was confirm'd by divers actual Trials.

11. The Power of Gravity is found to decreaſe as you approach nearer to the Equator: Which is a Circumſtance that agrees to all Bodies, which have a Motion on their Axis; and them only, as being really the neceſſary Reſult of ſuch Motions. See GRAVITY.

For a Body, revolving on its Axis, the Parts, or Appendages thereof, are continually endeavouring to recede from the Centre. Conſequently, the Equator being a great Circle, and the Parallels all decreaſing towards the Poles, the Centrifugal Force is greateſt in the Equator, and decreaſes towards the Poles, in the *Ratio* of the Diameters of the Parallels to that of the Equator. Now the Power of Gravity determines the ſeveral Parts or Appendages towards the Centre of the whole: Conſequently the Centrifugal Force acting contrary to the Power of Gravity, retards the Deſcent of Bodies, and that moſt where it is greateſt.

Dr. *Keil* computes, that the Force of Gravity to the Centrifugal Force at the Equator is as 289 to 1; conſequently, a Body placed there, would loſe one 289th Part of the Weight it would have, were the *Earth* at Reſt. Conſequently, the Centrifugal Force, at the Poles, being infinitely ſmall, a Body will there weigh 289 Pounds, which at the Equator only weighs 288.

12. The following is an actual Demonſtration of the *Earth's* Motion, drawn from Phyſical Cauſes, for which we are indebted to the Diſcoveries of Sir *Iſaac Newton*; and which Dr. *Keil* takes for concluſive, and unanſwerable.

All the Planets, 'tis demonſtrated, gravitate towards the Sun: And Obſervations teſtify to us, either that the *Earth* turns round the Sun, or the Sun round the *Earth*, in ſuch Manner, as to deſcribe equal, Areas in equal Times. But 'tis demonſtrated further, that whenever Bodies turn round each other, and regulate their Motion by ſuch Law, the one muſt of Neceſſity gravitate to the other: Conſequently, if the Sun in its Motion do gravitate to the *Earth*; Action or Re-action being equal and contrary, the *Earth* muſt likewiſe gravitate towards the Sun. Again, the ſame Author has demonſtrated, that when two Bodies gravitate to one another, without directly approaching one another in right Lines; they muſt both of them turn round their common Centre of Gravity: The Sun and *Earth*, therefore, do both turn round their common Centre of Gravity; but the Sun is ſo great a Body in Reſpect of our *Earth*, which is, as it were, but a Point; that the common Centre of Gravity of the two Bodies, will lie within the Body of the Sun it ſelf, and not far from the Centre of the Sun. The *Earth*, therefore, turns round a Point, which is in the Body of the Sun; and therefore turns round the Sun. Q. E. D.

To ſay no more, to ſuppoſe the *Earth* at Reſt, confounds and deſtroys all the Order and Harmony of the Univerſe, annuls its Laws, and ſets every Part at Variance with other, robs the Creator of half the Praiſe of his Work, and Mankind of the Pleaſure of the Contemplation thereof. In Effect, it renders the Motions of the Planets inextricable and uſeleſs, which otherwiſe are plain and ſimple. So that ſuch of the later Aſtronomers, as have aſſerted it with the moſt Zeal, have been forced to ſet it aſide, when they came to compute the Motions of the Planets. None of them would ever attempt to compute theſe Motions in variable Spirals; but in all their Theories they tacitly ſuppoſe the *Earth* to move on its Axis, ſo as to turn the diurnal Spirals into Circles.

Thus, the Jeſuite *Ricciolus*, who, at the Pope's Command, oppoſed the Motion of the *Earth* with all his Might, as ſomething contrary to Holy Scripture; yet, to frame Aſtronomical Tables, which ſhould any thing tolerably agree to Obſervation, he was forced to have Recourſe to the Motion of the *Earth*, as his only Refuge.

This, *De Chales*, another of the ſame Fraternity, frankly confeſſes: '*P. Ricciolus* —— *nullas Tabulas aptare potuit* '*quæ vel mediocriter Obſervationibus reſponderent; Niſi* '*ſecundum Syſtema terræ motæ*; notwithſtanding, that he 'called in all the foreign and forced Aſſiſtances of move-'able Epicycles: So that in his *Aſtronomia reformata*, 'where he undertakes to give accurate Tables of the 'Cœleſtial Motions, he gives in to the Hypotheſis of the 'Motion of the *Earth*.' *De Chales Aſtron. Reformat. L.* X. *C.* 1.

The Syſtem, then, which ſuppoſes the *Earth* at Reſt, is, of it ſelf, of no Uſe, or Significancy in Aſtronomy; Nor does it avail more in Phyſicks: for the principal Phænomena are no Way deducible from it; but the Retainers thereto are either forced to fly to the immediate Agency of the Deity, (which in Phyſicks is the ſame as the *Reductio ad Abſurdum* in Geometry) or to Reaſons and Principles unknown.

Some oppoſe the Motion of the *Earth*, as contrary to Revelation; there being mention made, in Holy Scripture, of the Sun's riſing and ſetting; of his ſtanding ſtill in the Time of *Joſhua*; and his going back in that of *Hezekiah*.

Now, to take the genuine Senſe of theſe Paſſages, the Laws of Interpretation muſt be ſettled. 1. Then, we ſuppoſe, that the ſeveral Words of Scripture have their ſeveral Ideas correſponding to them; and that a Man takes their Senſe, in whom thoſe Ideas are excited by the reading. 2. That the Words of Scripture, attentively read, are ſufficient to excite thoſe Ideas in a Mind not prepoſſeſs'd. Hence, 3. It follows, that either God muſt have exhibited the Definitions of the Words that occur in Scripture; or, that he ſuppoſes prior Notions, and leaves us to take their Senſe the ordinary Way. Hence, 4. We argue, that no other Ideas are to be affix'd to the Words of Scripture, but ſuch as occur to a Perſon who looks or attends to the Things 'emſelves ſpoke of. See DEFINITION.

By the *Sun's Riſing*, therefore, is meant no more than his Re-appearance in the Horizon, after he had been hid below it: And by his *Setting*, an Occultation of the Sun, before viſible in the Horizon. When the Preacher therefore ſays, *Eccleſ.* I. 5. *The Sun riſes, and ſets, and returns to his Place*; he means, doubtleſs, no more than the Sun, which before was hid, is now ſeen in the Horizon; and after being there conſpicuous, is hid again, and at length re-appears in the Eaſt. For thus much only appears to a Perſon who views the Sun; and therefore thus much, and no more, is expreſs'd by the ſacred Writers.

In like Manner, when in *Joſh.* X. 12, 13. the Sun and Moon are ſaid to have *ſtood ſtill*; all meant by Station is, that they did not change their Place, with Reſpect to the *Earth*. For that General, by *Sun ſtand thou ſtill over Gibeon, and thou Moon, over the Valley of Ajalon*; required no more, than that the Sun, which then appeared over that City, ſhould not change its Situation. And from his bidding the Sun to keep his Situation, it would be unjuſt to infer, that it moves round the *Earth* at Reſt.

Gaſſendus, very pertinently to the preſent Purpoſe, diſtinguiſhes 'two ſacred Volumes, the one written, called 'the *Bible*; the other, Nature, or the *World*; God 'having manifeſted himſelf by two Lights: the one of 'Revelation, and the other of Demonſtration. Accordingly, 'the Interpreters of the former are Divines; of the latter, 'Mathematicians. As to Matters of Natural Knowledge, 'the Mathematicians are to be conſulted; and as to the 'Objects of Faith, the Prophets; the former, being no leſs 'Interpreters, or Apoſtles, from God to Men, than the latter. 'And as the Mathematician would be judg'd to wander out 'of his Province, if he ſhould pretend to controvert, or 'ſet aſide any Article of Faith from Principles of Geometry; 'ſo it muſt be granted, the Divines are no leſs out of 'their Limits, when they venture to pronounce on a Point 'of Natural Knowledge, beyond the Reach of any not 'verſed in Geometry and Opticks, merely from Holy Scrip-

ture, which does not pretend to teach any thing of the Matter.

'For Inſtances, we may quote *Lactantius*, and *Auguſtine*; the firſt of whom render'd himſelf ridiculous by diſputing, from Scripture, againſt the Roundneſs of the *Earth*; and the latter, againſt the *Antipodes*.' See ANTIPODES.

The *Earth*, thus proved to move, it is to be further obſerved, that the Altitude of the Pole being found at all Times of the Year, *i. e.* in all Points of its Annual Orbit, (the Ecliptic,) to be the ſame; it follows, that the *Earth* proceeds in ſuch Manner along its Orbit, as that its Axis is conſtantly parallel to the Axis of the World, and of Conſequence parallel to it ſelf. See AXIS.

This Motion, which *Copernicus* calls the *Motion of Libration*, may be well enough illuſtrated, by ſuppoſing a Globe, with its Axis parallel to that of the *Earth*, painted on the Flag, or Antient of a Maſt, moveable on its Axis, and continually driven by the Weſt Wind, while it makes the Tour of an Iſland: 'Tis evident, that in every Situation of the Ship, the Axis of the painted Globe will continue Parallel to the Axis of the World. See LIBRATION, and PARALLELISM.

According to Sir *Iſaac Newton*'s Principles, the *Earth*'s Axis does, in every annual Revolution, incline twice towards the Ecliptic, and twice return to its former Poſition. On which *Nutation* it is, that the Preceſſion of the Equinoctial Points is ſuppoſed to depend; and as Mr. *Famſtead* likewiſe imagines, the annual Parallax of the fix'd Stars likewiſe. See NUTATION, PRÆCESSION, PARALLAX, &c.

EARTH, in Agriculture and Gardening. See SOIL.

Untried Earth, i. e. the Soil, or *Earth* 6 or 7 Inches deep, where neither Spade nor Plow has reach'd, is greatly recommended by Mr. *Lawrence*, for Amendments and Improvements, both in the Fruit and Kitchen Garden. He aſſures us, from his own Experience, that no Kind of Compoſt, made with Art, exceeds it. And adds, that if the choiceſt Fruit-Trees be planted herein, they preſently diſcover an uncommon Healthfulneſs and Vigour: And that if any tender Sorts of Annuals be diſcreetly ſown in this *Earth*, made fine by ſifting, their Looks, Colour, &c. ſoon diſcover that they like the Soil. Melons and Cucumbers, need no other Compoſt but this *Untried Earth*: And Aſparagus it ſelf will proſper, at leaſt, as well in this *Untried Earth*, if laid a Foot and a half deep, as with all the uſual Expence of Dung. Tho' for the tenderer Flowers, and Exoticks, this *Earth* is not found to have any extraordinary Excellencies. For annual Plants, produced from Seed, a Coat of this *Untried Earth*, 2 Inches deep, may ſuffice: On other Occaſions, a greater Depth is required.

Fullers EARTH, *Soap* EARTH, *Seal'd* EARTH, *Lemnian* EARTH, &c. } See { FULLERS *Earth*. SOAP *Earth*. SIGILLATA *Terra*. LEMNIAN *Earth*, &c.

EARTH-*Bags*, in Fortification, the ſame with *Canvas Bags*; which ſee.

EARTH-*Flax*. See ALUMEN *Plumoſum*.

EARTHING, in Agriculture and Gardening, the Covering of Vines, Sellery, and other Trees and Plants with Earth.

EARTHQUAKE, in Natural Hiſtory, a vehement Shake, or Agitation of ſome conſiderable Place, or Part of the Earth; from Natural Cauſes; attended with a huge Noiſe like Thunder, and frequently with an Eruption of Water, or Fire, or Smoak, or Winds, &c.

Earthquakes are the greateſt, and moſt formidable Phænomena of Nature. *Ariſtotle*, and *Pliny*, diſtinguiſh two Kinds, with Reſpect to the Manner of the Shake, *viz.* a *Tremor* and a *Pulſe*; the firſt being horizontal, in alternate Vibrations, compared to the ſhaking of a Perſon in an Ague. The 2d, perpendicular, up and down: Which latter Kind are alſo called by *Ariſtotle* βεμασι, from the Reſemblance of their Motion to that of Boiling.

Agricola increaſes the Number, and makes four Kinds; which *Alb. Magnus*, again reduces to three, *viz. Inclination*, when the Earth librates alternately from right to left; by which Mountains have been ſometimes brought to meet, and claſh againſt each other: *Pulſation*, when it beats up and down like an Artery: And *Trembling*, when it ſhakes and totters every Way, like a Flame.

Phænomena of EARTHQUAKES.

The *Philoſoph. Tranſact.* furniſh us with Abundance of Hiſtories of *Earthquakes*; Particularly, one at *Oxford*, in 1665, by Dr. *Wallis* and Mr. *Boyle*. Another, at the ſame Place, in 1683, by Mr. *Pigot*. And another in *Sicily*, in 1692-3, by Mr. *Hartop*, *Fa. Alleſſandro Burgos*, and *Vin. Bonajutus*; which laſt, is one of the moſt terrible Ones in all Hiſtory.

It ſhook the whole Iſland; and not only that, but *Naples* and *Malta* ſhared in the Shock. It was of the ſecond Kind mention'd by *Ariſtotle* and *Pliny*, viz. a perpendicular Pulſation, or Succuſſion. It was impoſſible, ſays the Noble *Bonajutus*, for any Body, in this Country, to keep on their Legs, on the dancing *Earth*; nay, thoſe that lay on the Ground, were toſs'd from Side to Side, as on a rolling Billow: High Walls leapt from their Foundations ſeveral Paces, &c. *Phil. Tranſ.* N°. 207.

The Miſchief it did is amazing: almoſt all the Buildings in the Countries were thrown down. Fifty four Cities and Towns, beſide an incredible Number of Villages, were either deſtroyed or greatly damaged. We ſhall only inſtance the Fate of *Catanea*, one of the moſt famous, antient, and flouriſhing Cities in the Kingdom; the Reſidence of ſeveral Monarchs, and an Univerſity. This once famous, now unhappy *Catanea*, to uſe the Words of *Fa. Burgos*, had the greateſt Share in the Tragedy. *Fa. Anthon. Serrovita*, being on his Way thither, and at the Diſtance of a few Miles; obſerved a black Cloud, like Night, hovering over the City; and there aroſe from the Mouth of *Mongibello*, great Spires of Flame, which ſpread all around. The Sea all of a ſudden begun to roar, and riſe in Billows; and there was a Blow, as if all the Artillery in the World had been at once diſcharged. The Birds flew about aſtoniſh'd, the Cattle in the Fields ran crying, &c. His and his Companions Horſes ſtop'd ſhort, trembling; ſo that they were forced to alight. They were no ſooner off, but they were lifted from the Ground above two Palms; when caſting his Eyes towards *Catanea*, he with Amazement ſaw nothing but a thick Cloud of Duſt in the Air. This was the Scene of their Calamity: For of the magnificent *Catanea*, there is not the leaſt Footſtep to be ſeen. *S. Bonajutus* aſſures us, that of 18914 Inhabitants, 18000 periſh'd therein. The ſame Author, from a Computation of the Inhabitants, before and after the *Earthquake*, in the ſeveral Cities and Towns, finds that near 60000 periſh'd out of 254900. *Ibid.* N°. 202.

Jamaica is remarkable for *Earthquakes*. The Inhabitants, Dr. *Sloan* informs us, expect one every Year. That Author gives us the Hiſtory of one in 1687: Another horrible one in 1692, is deſcribed by ſeveral anonymous Authors. In two Minutes Time it ſhook down and drown'd nine 10ths of the Town of *Port-Royal*. The Houſes ſunk out-right, 30 or 40 Fathoms deep. *Phil. Tranſact.* No. 209. The Earth opening, ſwallowed up People; and they roſe in other Streets; ſome in the middle of the Harbour, and yet were ſaved; Tho', there were 2000 People loſt, and 1000 Acres of Land ſunk. All the Houſes were thrown down thtoughout the Iſland. One *Hopkins*, had his Plantation removed half a Mile from its Place. Of all Wells, from one Fathom to ſix or ſeven, the Water flew out at the Top with a vehement Motion. *Ibid.* While the Houſes, on one Side of the Street were ſwallow'd up, on the other they were thrown on Heaps; and the Sand in the Street roſe like Waves in the Sea, lifting up every Body that ſtood on it, and immediately dropping down into Pits; and at the ſame Inſtant, a Flood of Water breaking in, roll'd them over and over; ſome catching hold of Beams and Rafters, &c. Ships and Sloops in the Harbour were overſet and loſt; the *Swan* Frigate particularly, by the Motion of the Sea, and ſinking of the Wharf, was driven over the Tops of many Houſes, *Ibid.* It was attended with a hollow rumbling Noiſe like that of Thunder. In leſs than a Minute, three Quarters of the Houſes, and the Ground they ſtood on, with the Inhabitants, were all ſunk quite under Water; and the little Part, left behind, was no better than a Heap of Rubbiſh. The Shake was ſo violent, that it threw People down on their Knees, or their Faces, as they were running about for Shelter. The Ground heav'd and ſwell'd like a rolling Sea; and ſeveral Houſes, ſtill ſtanding, were ſhuffled and moved ſome Yards out of their Places. A whole Street is ſaid to be twice as broad now as before; and in many Places, the Earth would crack, and open, and ſhut, quick and faſt. Of which Openings, two or three Hundred might be ſeen at a Time; in ſome whereof, the People were ſwallow'd up; others, the cloſing Earth caught by the middle, and preſs'd to Death; in others, the Heads only appear'd. The larger Openings ſwallow'd up Houſes; and out of ſome would iſſue whole Rivers of Waters, ſpouted up a great Height into the Air, and threat'ning a Deluge to that Part the *Earthquake* ſpared. The whole was attended with Stenches and offenſive Smells, the Noiſe of falling Mountains at a Diſtance, &c. and the Sky, in a Minutes Time, was turned dull and reddiſh, like a glowing Oven. Yet, a great Sufferer as *Port-Royal* was, more Houſes were left ſtanding thereon, than on the whole Iſland beſide. Scarce a Planting Houſe, or Sugar Work was left ſtanding in all *Jamaica*. A great Part of them were ſwallow'd up, Houſes, People, Trees and all at one Gape: In Lieu of which afterwards, appear'd great Pools of Water, which when dried up, left nothing but Sand, without any

Mark

Mark that ever Tree, or Plant, had been thereon. Above 12 Miles from the Sea, the Earth gaped and ſpouted out, with a prodigious Force, vaſt Quantities of Water into the Air: Yet the greateſt Violences were among the Mountains and Rocks; and 'tis a general Opinion, that the nearer the Mountains, the greater the Shake; and that the Cauſe thereof lay there. Moſt of the Rivers were ſtop'd up for 24 Hours, by the falling of the Mountains; till ſwelling up, they found themſelves new Tracks and Channels; tearing up in their Paſſage Trees, *&c.* After the great Shake, thoſe People who eſcaped, got on board Ships in the Harbour, where many continued above two Months; the Shakes all that Time being ſo violent, and coming ſo thick, ſometimes two or three in an Hour, accompanied with frightful Noiſes like a ruffling Wind, or a hollow rumbling Thunder, with Brimſtone Blaſts, that they durſt not come a Shore. The Conſequences of the *Earthquake* was a general Sickneſs, from the noiſome Vapours belched forth, which ſwept away above 3000 Perſons. *Ibid.*

After the Detail of theſe horrible Convulſions, the Reader will have but little Curioſity left, for the leſt conſiderable Phænomena of the *Earthquake* at *Lima*, in 1687, deſcribed by *Fa. Alvarez de Toledo*, wherein above 5000 Perſons were deſtroy'd; this being of the *Vitratory* Kind, ſo that the Bells in the Church rung of themſelves: Or that at *Batavia* in 1699, by *Witzen:* That in the *North* of *England* in 1703, by Mr. *Thoresby*: Or, laſtly, thoſe in *New-England* in 1663 and 1670, by Dr. *Mather*. We will therefore relieve him with ſome Attempts towards a Theory of *Earthquakes.*

Cauſes of Earthquakes.

Naturaliſts are here divided. Some aſcribe *Earthquakes* to Water, others to Fire, and others to Air; and all of 'em with ſome Reaſon. To conceive which, it is to be obſerved, that the Earth every where abounds in huge ſubterraneous Caverns, Veins and Canals; particularly about the Roots of Mountains: That of theſe Cavities, Veins, *&c.* ſome are full of Water, whence are compoſed Gulphs, Abyſſes, Springs, Rivulets; and others full of Exhalations: And that ſome Parts of the Earth are replete with Nitre, Sulphur, Bitumen, Vitriol, *&c.* See Abyss, Stratum, *&c.*

This premiſed, 1. The Earth it ſelf may be the Cauſe of its own ſhaking; when the Roots, or Baſis, of ſome large Maſs being diſſolved, or wore away by a Fluid underneath, it ſinks into the ſame; and with its Weight, occaſions a Tremor of the adjacent Parts; produces a Noiſe; and frequently an Inundation of Water.

2. The ſubterraneous Waters may occaſion *Earthquakes*, by their overflowing, cutting out new Courſes, *&c.* Add, that the Water being heated, and rarified by the ſubterraneous Fires, may emit Fumes, Blaſts, *&c.* which by their Action, either on the Water, or immediately on the Earth it ſelf, may occaſion great Succuſſions.

3. The Air may be the Cauſe of *Earthquakes:* For Air, being a Collection of Fumes, and Vapours rais'd from the Earth and Water; if it be pent up in the too narrow Viſcera of the Earth, the ſubterraneous, or its own native Heat, rarifying and expanding it, the Force wherewith it endeavours to eſcape, may ſhake the Earth: Hence there ariſe divers Species of *Earthquakes*, according to the different Poſition, Quantity, *&c.* of the impriſon'd *Aura.*

Laſtly, Fire is a principal Cauſe of *Earthquakes*; both as it produces the aforeſaid ſubterraneous *Aura*, or Vapours; and as this *Aura*, or Spirit, from the different Matter and Compoſition whereof ariſe Sulphur, Bitumen, and other inflammable Matters, takes Fire either from ſome other Fire it meets withal, or from its Colliſion againſt hard Bodies, or its Intermixture with other Fluids; by which Means burſting out into a greater Compaſs, the Place becomes too narrow for it; ſo that preſſing againſt it on all Sides, the adjoyning Parts are ſhaken; till having made it ſelf a Paſſage, it ſpends it ſelf in a *Volcano*, or burning Mountain. See Volcano, Eruption, *&c.*

But to come nearer to the Point: Dr. *Liſter*, in *Philoſoph. Tranſact.* N. 157. is of Opinion, that the material Cauſe of Thunder, Lightning, and *Earthquakes*, is one and the ſame, *viz.* the inflammable Breath of the Pyrites, which is a ſubſtantial Sulphur, and takes Fire of it ſelf. See Pyrites, Thunder, *&c.*

The Difference between theſe three terrible Phænomena, he takes only to conſiſt in this; that this Sulphur, in the former, is fired in the Air; and in the latter, under Ground. Which is a Notion that *Pliny* had long before him: *Quid enim*, ſays he, *aliud eſt in Terra Tremor, quam in Nube Tonitru?*

This he thinks abundantly indicated by the ſame ſulphureous Smell being found in any Thing burnt with Lightning; and in the Waters, *&c.* caſt up in *Earthquakes*, and even in the Air before and after them.

Add, that they agree in the Manner of the Noiſe; which is carried on, as in a Train, fired; the one rowling and ratling through the Air, takes Fire as the Vapours chance to drive; as the other fired under Ground, in like Manner, moves with deſultory Noiſe.

Thunder, which is the Effect of the Trembling of the Air, cauſed by the ſame Vapours diſperſed through it, has Force enough to ſhake our Houſes; and why may not there be Thunder and Lightning under Ground, in ſome vaſt Repoſitories there, I ſee no Reaſon. Eſpecially if we reflect, that the Matter which compoſes the noiſy Vapour above us, is in much larger Quantities under Ground. *Philoſoph. Tranſact.* No. 202.

That the Earth abounds in Cavities, every Body allows; and that theſe ſubterraneous Cavities are, at certain Times, and in certain Seaſons, full of inflammable Vapours, the Damps in our Mines ſufficiently Witneſs, which fired, do every thing as in an *Earthquake*, ſave in a leſſer Degree.

Add, that the *Pyrites* alone, of all the known Minerals, yields this inflammable Vapour, is highly probable: For that no Mineral, or Ore whatſoever, is ſulphureous, but as it is wholly, or in Part, a *Pyrites*; and that there is but one Species of Brimſtone, at leaſt with us in *England*, which the *Pyrites* naturally, and only yields. The Sulphur *Vive*, of natural Brimſtone, which is found in and about the burning Mountains, is certainly the Effects of Sublimation; and thoſe great Quantities of it ſaid to be found about the Skirts of *Volcano's*, is only an Argument of the long Duration and Vehemence of thoſe Fires: Poſſibly, the *Pyrites* of the *Volcano's*, or burning Mountains, may be more ſulphureous than ours: And, indeed it is plain, that ſome of ours in *England* are very lean, and hold but little Sulphur; others again very much: Which may be one Reaſon, why *England* is ſo little troubled with *Earthquakes*; and *Italy*, and almoſt round the *Mediterranean* Sea, ſo very much: tho' another Reaſon is, the Paucity of *Pyrites* in *England.*

Comparing our *Earthquakes*, Thunder and Lightning, with theirs, it is obſerved, that there it lightens almoſt daily, eſpecially in Summer Time, here ſeldom; there Thunder and Lightning is of long Duration, here it is ſoon over; there the *Earthquakes* are frequent, long, and terrible, with many Paroxyſms in a Day, and that for many Days; here very ſhort, a few Minutes, and ſcarce perceptible. To this Purpoſe, the Subterraneous Cavities in *England* are ſmall, and few, compared to the vaſt Vaults in thoſe Parts of the World; which is evident, from the ſudden Diſappearance of whole Mountains and Iſlands.

Dr. *Woodward* gives us another Theory of *Earthquakes.* He endeavours to ſhew, that the ſubtereaneous Heat, or Fire, (which is continually elevating Water out of the Abyſs, to furniſh the Earth with Rain, Dew, Springs and Rivers) being ſtopped in any Part of the Earth, and ſo diverted from its ordinary Courſe, by ſome accidental Glut, or Obſtruction, in the Pores or Paſſages, through which it uſed to aſcend to the Surface; becomes, by ſuch Means, preternaturally aſſembled, in a greater Quantity than uſual, into one Place; and therefore cauſeth a great Rarefaction, and Intumeſcence of the Water of the Abyſs; putting it into great Commotions, and Diſorders, and at the ſame Time making the like Effort on the Earth; Which being expanded upon the Face of the Abyſs, occaſions that Agitation and Concuſſion we call an *Earthquake.*

This Effort, in ſome *Earthquakes*, he obſerves, is ſo vehement, that it ſplits and tears the Earth, making Cracks and Chaſms in it, ſome Miles in length, which open at the Inſtant of the Shock, and cloſe again in the Intervals betwixt them; nay, it is ſometimes ſo violent, that it forces the ſuper-incumbent *Strata*, breaks them all throughout, and thereby perfectly undermines, and ruins the Foundation of them; ſo that theſe failing, the whole Tract, as ſoon as the Shock is over, ſinks down into the Abyſs, and is ſwallow'd up by it; the Water thereof immediately riſing up, and forming a Lake in the Place, where the ſaid Tract before was. That this Effort being made in all Directions indifferently, the Fire dilating and expanding on all Hands, and endeavouring to get room, and make its Way through all Obſtacles, falls as foul on the Water of the Abyſs beneath, as on the Earth above, forcing it forth, which Way ſoever it can find Vent, or Paſſage, as well through its ordinary Exits, Wells, Springs, and the Outlets of Rivers, as through the Chaſms then newly open'd; through the *Camini*, or Spiracles of *Ætna*, or other neighbouring *Vulcano's*; and thoſe *Hiatus's* at the Bottom of the Sea, whereby the Abyſs below opens into it, and communicates with it. That as the Water, reſident in the Abyſs, is, in all Parts of it, ſtored with a conſiderable Quantity of Heat, and more eſpecially in thoſe, where theſe extraordinary Aggregations of this Fire happen; ſo likewiſe is the Water, which is thus forced out of it; inſomuch, that when thrown forth, and mixed with the

Waters

Waters of Wells, or Springs of Rivers, and the Sea, it renders them very ſenſibly hot.

He adds, that though the Abyſs be liable to theſe Commotions in all Parts; yet the Effects are no where very remarkable, except in thoſe Countries, which are Mountainous, and conſequently ſtony and cavernous underneath; and eſpecially where the Diſpoſition of the *Strata* is ſuch, that thoſe Caverns open into the Abyſs, and ſo freely admit, and entertain the Fire; which aſſembling therein, is the Cauſe of the Shock; it naturally ſteering its Courſe that Way, where it finds the readieſt Reception, which is towards thoſe Caverns. Beſides, that thoſe Parts of the Earth, which abound with *Strata* of Stone, or Marble, making the ſtrongeſt Oppoſition to this Effort, are the moſt furiouſly ſhatter'd; and ſuffer much more by it, than thoſe which conſiſt of Gravel, Sand, and the like laxer Matter, which more eaſily give Way, and make not ſo great Reſiſtance; but above all, thoſe Countries which yield great Store of Sulphur, and Nitre, are, by far, the moſt injured and incommoded by *Earthquakes*; thoſe Minerals conſtituting in the Earth a kind of natural Gunpowder, which taking Fire upon this Aſſemblage, and Approach of it, occaſions that murmuring Noiſe, that ſubterraneous Thunder, which is heard rumbling in the Bowels of the Earth during *Earthquakes*, and by the Aſſiſtance of its exploſive Power, renders the Shock much more greater; ſo as ſometimes to make miſerable Havock and Deſtruction.

And it is for this Reaſon, that *Italy*, *Sicily*, *Anatolia*, and ſome Parts of *Greece*, have been ſo long, and ſo often alarm'd and haraſs'd by *Earthquakes*; theſe Countries being all Mountainous and Cavernous, abounding with Stone, and Marble, and affording Sulphur and Nitre in great Plenty.

Further, that *Ætna*, *Veſuvius*, *Hæcla*, and the other *Vulcano's*, are only ſo many Spiracles, ſerving for the Diſcharge of this ſubterraneous Fire, when it is thus preternaturally aſſembled. That where there happens to be ſuch a Structure and Conformation of the interior Parts of the Earth, as that the Fire may paſs freely, and without Impediment from the Caverns, wherein it aſſembles unto thoſe Spiracles; it then readily and eaſily gets out, from Time to Time, without ſhaking, or diſturbing the Earth: But where ſuch Communication is wanting, or Paſſage not ſufficiently large and open, ſo that it cannot come at the Spiracles, it heaves up and ſhocks the Earth, with greater or leſſer Impetuoſity, according to the Quantity of Fire thus aſſembled, till it has made its Way to the Mouth of the *Vulcano*. That therefore there are ſcarce any Countries much annoyed with *Earthquakes*, but have one of theſe fiery Vents; which are conſtantly in Flames, when any *Earthquake* happens; as diſgorging that Fire, which, whilſt underneath, was the Cauſe of the Diſaſter. Laſtly, that were it not for theſe *Diverticula*, it would rage in the Bowels of the Earth much more furiouſly, and make greater Havock than it doth.

We have ſeen what Fire and Water may do; and that either of them, in good Hands, are ſufficient for all the Phænomena of *Earthquakes*: If they ſhould both fail, we have a third Agent, ſcarce inferior to either of them: The Reader muſt not be ſurprized when we tell him it is Air.

Monſ. *Amontons*, in the *Memoires de l'Acad. des Sciences*, *An.* 1703. has an expreſs Diſcourſe to prove, *That on the Foot of the new Experiments of the Weight and Spring of the Air, a moderate Degree of Heat may bring the Air into a Condition, capable of cauſing Earthquakes.* It is ſhewn, that at the Depth of 43528 Fathoms below the Surface of the Earth, Air is only one fourth leſs heavy than Mercury. Now, this Depth of 43528 Fathoms is only a 74th Part of the Semidiameter of the Earth. And the vaſt Sphere beyond this Depth, in Diameter 6451538 Fathoms, may probably be only filled with Air; which will be here greatly condenſed, and much heavier than the heavieſt Bodies we know of in Nature. But it is found by Experiment, that the more Air is compreſs'd, the more does the ſame Degree of Heat increaſe its Spring, and the more capable does it render it of a violent Effect: And that, for Inſtance, the Degree of Heat of boiling Water increaſes the Spring of the Air above what it has in its natural State, in our Climate, by a Quantity equal to a third of the Weight wherewith it is preſs'd. Whence we may conclude, that a Degree of Heat, which on the Surface of the Earth will only have a moderate Effect, may be capable of a very violent one below. And as we are aſſured, that there are in Nature, Degrees of Heat, much more conſiderable than that of boiling Water: 'Tis very poſſible there may be ſome, whoſe Violence, further aſſiſted by the exceeding Weight of the Air, may be more than ſufficient to break and overturn this ſolid Orb of 43528 Fathoms; whoſe Weight, compared to that of the included Air, would be but a Trifle.

Artificial EARTHQUAKES. Chymiſtry furniſhes us a Method of making *Artificial Earthquakes*, which ſhall have all the great Effects of natural ones: Which, as it may illuſtrate the Proceſs of Nature in the Production of theſe terrible Phænomena under Ground, we ſhall here add.

To twenty Pounds of Iron Filings, add as many of Sulphur: Mix, work, and temper the whole together with a little Water, ſo as to form a Maſs, half moiſt, and half dry. This being buried three or four Foot under Ground, in ſix or ſeven Hours Time, will have a prodigious Effect: The Earth will begin to tremble, crack and ſmoak, and Fire and Flame burſt through.

Such is the Effect even of two cold Bodies, in the cold Ground: There only wants a ſufficient Quantity of this Mixture to produce a true *Ætna*. See VOLCANO. If it were ſuppoſed to burſt out under the Sea, it would produce a Spout. See SPOUT. And if it were in the Clouds, the Effect would be Thunder and Lightning. See THUNDER, *&c.*

EASE, in the Sea-Language, is the ſame as let go ſlacker; thus they ſay, *Eaſe* the Bowling, *Eaſe* the Sheet, that is, let it go ſlacker.

EASEL-*Pieces*, among Painters, ſuch ſmall Pieces, either Portraits, or Landſkips, as are painted on the *Eaſel*, i. e. the Frame whereon the Canvas is ſtrain'd.

They are thus called, to diſtinguiſh them from larger Pictures drawn on Walls, Ceilings, *&c.*

EASEMENT, in Law, a Service, or Convenience, which one Neighbour has of another by Charter, or Preſcription, without Profit: As a way through his Ground, a Sink or the like. In the Civil Law, theſe are call'd *Servitus prædii*.

EAST, in Aſtronomy, Geography, *&c.* one of the Cardinal Points of the Horizon, being the Point wherein the prime Vertical interſects that Quarter of the Horizon the Sun riſes in. See ORIENT, CARDINAL-*Point*, HORIZON, *&c.*

To find the *Eaſt* and *Weſt* Line, Points, *&c.* See MERIDIAN *Line*.

EAST-*Wind*, is that which blows from the *Eaſt Point*. See WIND.

The Word *Eaſt* is *German*. In *Italy*, and throughout the *Mediterranean*, the *Eaſt Wind* is called the *Levante*. In *Greek*, ἀπηλιώτης, becauſe it comes from the Side of the Sun, ἀπ' ἠλίου. In *Latin*, *Eurus*.

EAST-*Dials*, EASTERN, } See { DIAL. ORIENTAL.

EAST-*Indies*. See INDIES.

EAST-*India Company*. See COMPANY.

EASTER, a Feaſt of the Church, held in Memory of our Saviour's Reſurrection. See FEAST, *&c.*

The *Latins*, &c. call it *Paſcha*, A *Hebrew* Word, ſignifying *Paſſage*; applied to the Feaſt of the *Paſſover*, which is held among the *Jews*, much about the ſame Time. See PASSOVER.

In *Engliſh* it is called *Eaſter*, from the *Saxon* Eastre, a Goddeſs, worſhip'd with peculiar Ceremony in the Month of *April*.

Eaſter is one of the moſt conſiderable Feſtivals in the Chriſtian Calendar; being that which regulates and determines the Time of all the other moveable Feaſts.

The Rule for the Celebration of *Eaſter*, fix'd by the Council of *Nice*, in the Year 325, is, that it be held on the Sunday after the Full Moon, next after the 21ſt of *March*, i. e. the Sunday following the firſt full Moon after the Vernal Equinox: So that if the full Moon next after the Vernal Equinox, happen on a Sunday; *Eaſter* Sunday is deferr'd eight Days longer, *viz.* to the Sunday following.

The Reaſon of which Decree was, that the Chriſtians might avoid the celebrating their *Eaſter*, at the ſame Time with the *Jewiſh Paſſover*, which, according to the Inſtitution of *Moſes*, was held the very Day of the full Moon. See EQUINOX,

To find *Eaſter*, agreeably to this Rule, the Method that obtain'd throughout all the Church, from the Time of *Dionyſius exiguus*, to that of the Reformation of the Calendar under Pope *Gregory*; and which ſtill obtains in *England*, *Sweden*, and among the *Greeks*, where the *Gregorian* Correction is not admitted; is, by Means of the Golden Numbers, duly diſtributed throughout the *Julian* Calendar. See CALENDAR.

The Vernal Equinox, at the Time of the *Nicene* Council, happening on the 21ſt of *March*, has been, upon *Dionyſius's* Authority, affix'd to the ſame Day of the *Julian* Year ever ſince; ſo that in the *Julian* Way of computing, no full Moon is *Paſchal*, but that immediately after the 21ſt of *March*. Therefore *Eaſter* can never happen earlier than the 22d of *March*, Now, by finding the full Moons, next after the 21ſt of *March*, for the ſeveral Golden

Golden Numbers, or Years of the Lunar Cycle, we ſhall have a Table for the finding of *Eaſter* for ever.

Such Table being of notable Uſe in the *Julian* Computation, we ſhall here ſubjoyn it.

Gold. Numb.	Full Moons next after Ver. Equin.		*Gold. Numb.*	Full Moons next after Ver. Equin.	
I	5 *April*,	D	XI	15 *April*,	G
II	25 *March*,	G	XII	4 *April*,	C
III	13 *April*,	E	XIII	24 *March*,	F
IV	2 *April*,	A	XIV	12 *April*,	D
V	22 *March*,	D	XV	1 *April*,	G
VI	10 *April*,	B	XVI	21 *March*,	C
VII	30 *March*,	E	XVII	9 *April*,	A
VIII	18 *April*,	C	XVIII	29 *March*,	D
IX	7 *April*,	F	XIX	17 *April*,	B
X	27 *March*,	B			

Now to find *Eaſter*, for any given Year, find the Dominical Letter, and the Golden Number of the given Year, as directed under DOMINICAL *Letter* and GOLDEN *Number*.

Then, in the Table, ſeeking the Dominical Letter, with the Day of the Paſchal full Moon, and the *Sunday* Letter annex'd thereto; Compare this Letter with the Dominical Letter of the given Year; that it may appear how many Days are to be added to the Day of the Paſchal full Moon, to give *Eaſter*-Day.

E. gr. In the Year 1715, the Dominical Letter is B, and the Golden Number VI; conſequently, the Paſchal full Moon, is fixed, by the Table, to the 10th of *April*; whoſe *Sunday* Letter being B, the Dominical Letter given, it ſelf is a *Sunday*: and, therefore, *Eaſter* will fall on the Eighth Day following, *viz.* the 17th of *April*.

But in this Computation, the Vernal Equinox is ſuppoſed affix'd to the 21ſt of *March*; and the Cycle of 19 Years, or Golden Numbers, is ſuppoſed to point out the Places of the new and full Moons exactly: Both which are Erroneous. Whence it follows, that the *Julian Eaſter* never happens at its due Time, unleſs by Accident.

For an Inſtanee of the Error, it may be obſerved, that in the Year 1715, the Vernal Equinox falls on the 10th of *March*; 11 Days e're the Rule ſuppoſes it: And the Paſchal full Moon on the 7th of *April*, 3 Days earlier than was ſuppoſed. *Eaſter*-Day, therefore, which is held on the 17th of *April*, ſhould be held on the 10th.

This Error was grown to ſuch a Pitch, in Courſe of Time, that Pope *Gregory* XIII. thought neceſſary to correct it. And accordingly, in the Year 1582, by the Advice of *Aloyſius Lilius*, he order'd 10 Days to be thrown out of *October*; ſo to bring back the Vernal Equinox to its old Place, *viz.* the 21ſt of *March*. And hence the *Gregorian Calendar*, *Gregorian Year*, &c. See GREGORIAN.

In the New, or *Gregorian* Computation, in lieu of Golden Numbers, the Time of *Eaſter* is found by Means of Epacts, contrived for that Purpoſe. See EPACT.

The following Table renders the finding of *Eaſter* in the *Gregorian* Year, from the Year 1700, to the Year 1900, very eaſy.

Epacts.	Paſchal full Moons.		*Epacts.*	Paſchal full Moons.	
X	13 *April*,	E	IX	4 *April*,	C
XI	2 *April*,	A	XX	24 *March*,	F
XXII	22 *March*,	D	I	12 *April*,	D
III	10 *April*,	B	XII	1 *April*,	G
XIV	30 *March*,	E	XXIII	21 *March*,	C
XXV	18 *April*,	C	IV	9 *April*,	A
VI	7 *April*,	F	XV	29 *March*,	D
XVII	27 *March*,	B	XXVI	17 *April*,	B
XXVIII	15 *April*,	G	VII	6 *April*,	E
			XXVIII	26 *March*,	A

Now, to find *Eaſter* for any given *Gregorian* Year. Seek the Dominical Letter, and the *Gregorian* Epact; as ſhewn under EPACT, *&c.* Find the Epact in the Table, and note the Paſchal full Moon, with the weekly Letter, correſponding to the ſame. The reſt is perform'd, as already taught for the *Julian Eaſter*.

E. gr. The Dominical Letter of the Year 1715, is F, and the Epact XXV; conſequently, the Paſchal Moon falls on the 18th of *April*, C: And therefore *Eaſter*-Day is the 21ſt of *April*.

Tho' the *Gregorian* Calendar be, doubtleſs, preferable to the *Julian*; yet it has its Defects. It cannot, for Inſtance, keep the Equinox fix'd to the 21ſt of *March*; but it will ſometimes fall on the 19th, and ſometimes on the 23d. Add, that the full Moon happening on the 20th of *March*, might ſometimes be Paſchal; yet is it not allowed as ſuch, in the *Gregorian* Computation: As, on the contrary, the full Moon of the 22d of *March*, may be allow'd for Paſchal, which yet it is not. *Scaliger* and *Calviſius* have proved other Inaccuracies on this *Calendar*. See CALENDAR.

EAVES, the Margin, or Edge, of the Roof of a Houſe; being the loweſt Tiles, Slate, or the like, which hang over the Walls, to throw off the Waters to a Diſtance from the Wall. See ROOF.

EAVES-*lath*, is a thick feather-edge Board, generally nail'd round the *Eaves* of a Houſe for the lowermoſt Tiles, Slate, or Shingles to reſt upon.

EBIONITES, antient Hereticks, who roſe in the Church, from the very Beginning thereof. See HERETICKS.

Origen takes them to have been ſo called from the *Hebrew* Word *Ebion*, which in that Language ſignifies *Poor*; becauſe, ſays he, they were Poor in Senſe, and wanted Underſtanding. *Euſebius*, with a View to the ſame Etymology, is of Opinion they were thus called, as having poor Thoughts of *Jeſus Chriſt*; taking him for no more than a mere Man. But all this, ſays Monſ. *Simon*, in his Critical Hiſtory, is no more than a ſorry Alluſion to the Name of theſe Sectaries, which in the *Hebrew* Tongue ſignifies *Poor*.

'Tis more probable, the *Jews* gave this Appellation to the *Chriſtians* in general, out of Contempt; becauſe in the firſt Times there were few but *poor* People, that embraced the *Chriſtian* Religion.

This Opinion *Origen* himſelf ſeems to give into, in his Book againſt *Celſus*; where he ſays, that they called *Ebionites*, ſuch among the *Jews*, as believed that *Jeſus* was truly the expected *Meſſiah*. It might even be urged, with ſome Probability, that the Primitive *Chriſtians* aſſumed the Name of themſelves, in Conformity to their Profeſſion. 'Tis certain, *Epiphanius* obſerves, they valued themſelves on being *Poor*, in Imitation of the *Apoſtles*.

The ſame *Epiphanius*, however, is of Opinion, that there had been a Man of the Name *Ebion*, the Chief, and Founder of the Sect of *Ebionites*; being contemporary with the *Nazarenes* and *Cerinthians*. He gives a long and exact Account of the Origin of the *Ebionites*, making 'em to have aroſe after the Deſtruction of *Jeruſalem*; when the firſt *Chriſtians*, called *Nazarites*, went out of the ſame to live at *Pella*. See NAZARITE.

The *Ebionites*, then, are little elſe than a Branch of *Nazarites*; only, that they alter'd and corrupted, in many Things, the Purity of the Faith, held among thoſe firſt Adherents to Chriſtianity. For this Reaſon, *Origen* diſtinguiſhes two Kinds of *Ebionites*, in his Anſwer to *Celſus*; the one believ'd that *Jeſus Chriſt* was born of a Virgin; and the others, that he was born after the Manner of other Men.

The firſt were Orthodox in every Thing, except that to the *Chriſtian* Doctrine, they joyn'd the Ceremonies of the *Jewiſh* Law, with the *Jews*, *Samaritans*, and *Nazarites*: They differed from the *Nazarites* however, in ſeveral Things, chiefly as to what regards the Authority of the ſacred Writings: For the *Nazarites* received all for Scripture, contain'd in the *Jewiſh* Canon; whereas the *Ebionites* rejected all the Prophets; and held the very Names of *David*, *Solomon*, *Iſaiah*, *Jeremiah* and *Ezekiel*, in Abhorrence. See PENTATEUCH.

They receiv'd nothing of the *Old Teſtament* but the *Pentateuch*; which ſhould intimate them to have deſcended rather from the *Samaritans* than the *Jews*. They agreed with the *Nazarites* in uſing the *Hebrew* Goſpel of St. *Matthew*, otherwiſe called the Goſpel of the twelve Apoſtles: But had corrupted their Copy in Abundance of Places. And, particularly, had left out the Genealogy of our Saviour, which was preſerv'd entire in that of the *Nazarites*, and even thoſe uſed by the *Cerinthians*. See GOSPEL.

Theſe laſt, whoſe Sentiments, as to the Birth of our Saviour, were the ſame with thoſe of the *Ebionites*, built their Error on this very Genealogy. See CERINTHIANS.

Beſide the *Hebrew* Goſpel of St. *Matthew*, the *Ebionites* had adopted ſeveral other Books under the Names of St. *James*, *John*, and the other Apoſtles. They alſo made uſe of the *Travels of St.* Peter, which are ſuppoſed to have been written by S. *Clement*; but had alter'd them ſo, that there was ſcarce any Thing of Truth left in them. They made that Saint tell a World of Falſhoods, the better to authorize their own Practices. See S. *Epiphanius*, who is very diffuſive on the antient Hereſy of the *Ebionites*, Hær. 30.

EBONY, in Natural Hiſtory, a Kind of *Wood*, brought from the *Indies*, exceedingly hard and heavy, and taking a very fine Poliſh; and on that Account, uſed in *Moſaic* and Inlaid Works, Toys, *&c.* See WOOD, MOSAIC, *&c.*

There are divers Kinds of *Ebony*; the moſt uſual among us are *black*, *red* and *green*; all of them the Product of the Iſland of *Madagaſcar*, where the Natives call them indifferently, *Hazon Mainthi*, q. d. *black Wood*. The Iſland

of St. *Maurice*, belonging to the *Dutch*, likewiſe furniſhes Part of the *Ebonies* uſed in *Europe*.

Authors, and Travellers, give very different Accounts of the Tree that yields the *black Ebony*: By ſome of their Deſcriptions it ſhould be a Sort of Palm Tree, by others a *Cytiſus*, &c. The moſt authentick of them, is that of Monſ. *Flacourt*, who reſided many Years in *Madagaſcar* as Governour thereof. He aſſures us that it grows very high, and big; its Bark black, and its Leaves reſembling thoſe of our Myrtle, of a deep, dusky, green Colour.

Tavernier aſſures us, that the Iſlanders take Care to bury their Trees, when cut down, to make them the blacker. *F. Plumier* mentions another *black Ebony* Tree, diſcovered by him at St. *Domingo*, which he calls *Spartium portulacæ foliis aculeatum Ebeni materiæ*. *Candia* alſo bears a little Shrub, known to the Botaniſts, under the Name of *Ebenus Cretica*.

Pliny and *Diaſcorides* ſay, the beſt *Ebony* comes from *Ethiopia*, and the worſt from *India*; but *Theophraſtus* prefers that of *India*. *Black Ebony* is much preferr'd to the other Colours. The beſt is a jet black, free of Veins and Rind, very maſſive, aſtringent, and of a ſharp pungent Taſte.

Its Rind infuſed in Water, is ſaid to purge pituita, and cure Venereal Diſorders; whence *Matthiolus* took *Guaiacum* for a Sort of *Ebony*. It yields an agreeable Perfume, when laid on the Coals: When green, it readily takes Fire, from the Abundance of its Fat. If rubbed againſt a Stone, it becomes brown. The *Indians* make Statues of their Gods, and Scepters for their Princes, of this Wood. It was firſt brought to *Rome* by *Pompey*, after his ſubduing *Mithridates*. 'Tis now much leſs uſed among us, than antiently; ſince the Diſcovery of ſo many Ways of giving other hard Woods a black Colour. See MARQUETRY.

As to *green Ebony*, beſides *Madagaſcar*, and St. *Maurice*, it likewiſe grows in the *Antilles*, and eſpecially in the Iſle of *Tobago*. The Tree that yields it is very buſhy, its Leaves ſmooth, and of a fine green Colour. Beneath its Bark is a white Rind about two Inches thick; all beneath which, to the very Heart, is a deep green, approaching towards a black; tho', ſometimes, ſtreak'd with yellow Veins. Its Uſe is not confined to Moſaic Work: 'Tis likewiſe good in dying, as yielding a fine green Tincture.

As to *red Ebony*, called alſo *Grenadilla*, we know little of it more than the Name.

The Cabinet-Makers, Inlayers, *&c.* make *Pear Tree*, and other Woods, paſs for *Ebony*, by *Ebomiſing*, or giving it the black Colour thereof. This, ſome do, by a few Waſhes of a hot Decoction of Galls, and when dry, adding Writing Ink thereon, and poliſhing it with a ſtiff Bruſh, and a little hot Wax.

Others heat, or burn their Wood black.

EBRBUHARITES, a Sect, or Order of Religious among the *Mahometans*; thus call'd from their Founder *Ebrbuhard*, a Diſciple of *Nacſchi bendi*.

The *Ebrbuharites*, notwithſtanding the extraordinary Sanctity they make Profeſſion of, with an abſolute Dereliction of all worldly Things, are regarded by the *Muſſelmans*, as no better than Hereticks; by Reaſon they don't eſteem themſelves obliged to go in Pilgrimage to *Mecca*. To excuſe themſelves herefrom, they urge that the Pureneſs of their Souls, their ſublime Contemplations, Extaſies, *&c.* ſhew them *Mecca* and *Mahomet*'s Tomb, without ſtirring out of their Cells.

EBULLITION, in Phyſicks, the Act of *Boiling*; or, a vehement Agitation of the Parts of a Fluid, produced by Fire. See BOILING.

Philoſophers are diſagreed about the Cauſe and Manner of *Ebullition*. Some account for it from an Attenuation of the Particles of the Fluid, at the Bottom of the Veſſel; which, by being attenuated, become lighter, and heave upwards againſt the ſuper-incumbent Load: Others, from the Particles of Fire mixing with, and dilating the Particles of the Fluid, and ſo rendering them ſpecifically lighter: And others, not from any Attenuation, nor even Rarefaction of the Particles of the Fluid by the Action of Heat; but from a Rarefaction of the Air pent up, and intermix'd with the Fluid; which coming to expand, tends upwards againſt the Preſſure of the leſs heated, leſs rarified Part of the Fluid. See HEAT, AIR, *&c.*

A more preciſe Account of the Proceſs under the foreſaid Article BOILING.

EBULLITION, in Chymiſtry, *&c.* is alſo uſed for a violent inteſtine Motion, or Colluctation of Parts, occaſion'd by the Mixture of Salts of different Natures.

Dr. *Harris* will have it properly, and immediately, to ſignifie that particular Struggle, or Effervescence, ariſing upon the mingling together of an acid and alcaliſate Liquor. See ACID and ALCALI.

Mr. *Boyle* has an Experiment to ſhew, that a conſiderable *Ebullition* may be produced by ſuch a Mixture, without the Bodies acquiring any Heat; nay, that a Degree of Cold may be produced greater than was in either of the Bodies ſingly; tho' accompanied with a great Struggle, Tumult, Noiſe and Froth. For having ſhook one Part of Oil of Vitriol, into 12 Parts of common Water, the Mixture was at firſt ſenſibly warm: Then, the Ball of a Thermometer was placed in it, till the included Spirit had gain'd the Temperament of the Mixture; but then a convenient Quantity of Volatile Salt of *Sal Armoniac*, being gradually put in to ſatiate the acid Spirits of the Mixture, the Spirit in the Thermometer deſcended above an Inch. See EFFERVESCENCE.

ECARTELE, in Heraldry. See QUARTERLY.

ECCANTHIS, or ECKANTIS, in Medicine, is a Diſeaſe of the Eyes.

The *Eccanthis*, or *Eckantis*, is properly a fleſhy Excreſcence, in the *Canthus*, or Angle of the Eye; thus call'd from the *Greek*, ἐγκανθὶς, which ſignifies the ſame Thing.

ECCE-*Homo*, among Painters, a Name given a Painting, wherein our Saviour is repreſented in a Purple Robe, with a Crown on his Head, and a Reed in his Hand; ſuch as he was preſented before *Pilate* by the *Jews*.

The Phraſe is *Latin*, borrow'd from the Words of the *Jews* themſelves, *q. d. This is the Man.*

He has a fine *Ecce homo*.

ECCENTRIC, or EXCENTRICK, in Geometry, is applied where two Circles, or Spheres, tho' contain'd, in ſome Meaſure, within each other, yet have not the ſame Centre; and conſequently are not parallel: In Oppoſition to *Concentric*; where they are parallel, have one and the ſame common Centre. See CONCENTRIC.

The Sun's Orbit is *Eccentric*, with regard to the Globe of our Earth; *Mars* is very *Eccentric*, with regard to the Sun, that is, his Motion is about a very different Centre. See EARTH, *&c.*

ECCENTRIC, in the New Aſtronomy, or *Eccentric Circle*, is a Circle, as P D A E, (*Tab. Aſtronom. Fig.* 17.) deſcribed from the Centre of the Orbit of a Planet C, with half the Axis C E, as a Radius. See ECCENTRICITY.

ECCENTRIC, or *Eccentric Circle*, in the Antient *Ptolomaic* Aſtronomy, was the very Orbit of the Planet it ſelf, which it was ſuppoſed to deſcribe about the Earth; and which was conceiv'd *Eccentric* thereto; called alſo the *Deferent*. See DEFERENT.

In Lieu of *Eccentric Circles* round the Earth; the Moderns make the Planets deſcribe Elliptic Orbits round the Sun; which accounts for all the Irregularities of the Motions of the Planets, and their different Diſtances from the Earth, *&c.* more juſtly and naturally. See ORBIT.

Anomoly of the ECCENTRIC, is an Arch of the *Eccentric Circle* as A K, intercepted between the Aphelion A, and the right Line K L, which paſſing thro' the Centre of the Planet K, is drawn perpendicularly to the Line of the Apſides A P. See ANOMOLY.

ECCENTRIC *Equation*, in the Old Aſtromony, is an Angle made by a Line drawn from the Centre of the Earth, with another drawn from the Centre of the *Eccentric*, to the Body or Place of any Planet; the ſame with the *Proſtaphæreſis*; and is equal to the Difference, (accounted in an Arch of the *Ecliptic*) between the Sun's, or a Planet's, real, and apparent Place. See PROSTAPHÆRESIS.

ECCENTRIC *Place* of a Planet, in its Orbit, is the Place wherein the Planet is ſeen from the Sun. See PLACE.

ECCENTRIC *Place*, in the Ecliptic, is the Point of the Ecliptic, to which the Planet viewed from the Sun, is referr'd. This coincides with the *Heliocentric Place*. See HELIOCENTRIC.

ECCENTRICITY, the Diſtance between the Centres of two Circles, or Spheres, which have not the ſame Centre. See ECCENTRIC.

ECCENTRICITY, in the old Aſtronomy, is the Diſtance of the Centre of the Orbit of a Planet, from the Centre of the Earth. See PLANET.

That the five Planets have ſuch an *Eccentricity*, is allow'd on all Sides, and may be evinced from ſeveral Conſiderations; chiefly this, that *Saturn*, *Jupiter*, *Mars*, *Venus* and *Mercury*, at ſometimes appear greater, and at others leſs; which can only proceed from hence, that their Orbits being Eccentric to the Earth, in ſome Parts thereof they are nearer us, and in others more remote: But as to the *Eccentricities* of the Sun and Moon, ſome Diſpute has been made.

The Moderns many of them hold, that the Sun and Moon appear ſometimes larger, and ſometimes leſs; not that they are nearer us at one Time than another, but becauſe they are view'd through different Columns of Air, which producing a Difference in the Refraction of their Light, may occaſion thoſe different Appearances. Accordingly, we find very ſudden Alterations of the apparent Magnitude of the Moon; where nothing but a Change in the Air can take Place. See MOON and SUN.

Thus

Thus *Kepler*, on the 2d of *March*, in the Year 1588, found the Moon's apparent Diameter 31 Minutes, preſently after 32′ 2″, then 30′ 3″; and the preceding Day it had been 33. And again, on the 22d of *February*, 1591, he obſerved the Moon's Diameter twice 31′, ſix Times 32, ſeven Times 33, and ſix Times 34′. See DIAMETER.

They add, that when the Sun and Moon are in the Southern Signs, and conſequently lower, being then ſeen thro' a longer Column of denſe Air, they muſt appear bigger: Conſequently, in the Winter Time, when the Sun is in *Capricorn*, being ſeen thro' a greater Quantity of Air, he muſt appear larger than in Summer, when, being nearer our *Zenith*, the Quantity of Air he is ſeen thro' is leſſer. And the like may be ſaid of the Moon. See SUN, *&c.*

But others take the *Eccentricities* of the Sun and Moon to be ſufficiently proved, both from Eclipſes; from the Moons greater and leſs Parallax, at the ſame Diſtance from the *Zenith*; and from the Sun's being obſerved to continue longer in the Northern Hemiſphere, than in the Southern, *viz.* 186 or 187 Days in the firſt, and only 178 or 179 Days in the latter. See DISTANCE, HEMISPHERE, EARTH, *&c.*

ECCENTRICITY, in the new Aſtronomy, is the Diſtance of the Centre of the Orbit of a Planet, as C, from the Sun S, *i. e.* the Diſtance between the Centre of the Ellipſis and the Focus thereof: called alſo *ſimple*, or *ſingle Eccentricity*.

Double ECCENTRICITY, is the Diſtance between the two Foci in the Ellipſis; which is equal to twice the *ſingle Eccentricity*. See FOCUS, ELLIPSIS, *&c.*

To find the *Eccentricity* of a Planet, *e. gr.* the Earth: Since the Sun's greateſt apparent Diameter is to his leaſt, as 32′ 43″ to 31′ 38″, or as 1963″ to 1898″; the Sun's greateſt Diſtance from the Earth will be to his leaſt, as 1963 to 1898. Since then, PS + SA = PA = 3861; the Radius of the Eccentric CP, will be found 1930: And conſequently SC = PC − PS = 32. Wherefore, CP being 100000, CS will be found = 1658.

Hence, as the Earth's *Eccentricity* SC, is ſcarce the Sixteenth Part of the Radius of the Eccentric CP; the Earth's elliptic Orbit does not deviate much from a circular one. So that 'tis no Wonder a *Calculus*, made on the Foot of an Eccentric Circle, ſhould anſwer near enough to Obſervation. And ſince the *Eccentricity*, determin'd from the Difference of the apparent Diameters, (in obſerving which, an Error of ſome Minutes could not eaſily be avoided) does not ſeem exact enough; nothing hinders but that the *Eccentricity*, and the Place of the Apogee, may be determined on the Hypotheſis of the Excentric Circle.

ECCHO, or rather *Echo*. See ECHO.

ECCHYMOSIS, from ἐκχῶ, *effundo*, to pour out, and αἷμα, *Sanguis*, Blood, ſignifies thoſe livid Spots, or Blotches, in the Skin, which are made by extravaſated Blood: The ſame with *Ecchymoma*. See EXANTHEMATA.

ECCLESIA, a *Latin* Term ſignifying *Church*. See CHURCH.

In our antient Law-Books, *Fitz-Herbert* obſerves, *Eccleſia* properly ſignifies a *Parſonage*. Whence, if a Preſentation were made to a Chappel, as to a Church, by the Name of *Eccleſia*, it changed the Name thereof, and it preſently commenced a Church.

When the Queſtion was, Whether it were, *Eccleſia, aut Capella pertinens ad Eccleſiam*? The Iſſue was, Whether it had *Baptiſterium & Sepulturam*? For if it had the Adminiſtration of the Sacraments, and Sepulture, it was in Law judg'd a Church. See CHAPPEL.

ECCLESIANS, ECCESIANI, in Church Hiſtory. Upon any falling out, or Miſunderſtanding, between the Emperors and the Church Men, the Adherents to the Emperor called ſuch as ſtuck to the Intereſts of the Church, and Churchmen, *Eccleſiani*; a Term of Reproach, anſwering to our *High-Churchmen*.

ECCLESIASTES, one of the Books of the Old Teſtament; Thus call'd, by a *Greek* Word, ſignifying *Preacher*. By Reaſon the Author declares, or *preaches*, againſt the Vices and Vanities of the World.

This is *Mariana*'s Judgment; *Grotius* thinks otherwiſe: He takes it to derive its Appellation from its being a *Collection* of fine Sentences, and Reflexions on the Vanity of the Things of our Earth, *&c.* For the Word קהל ſignifies to *amaſs* or *collect* συναθροίζειν.

Some *Hebrew* Doctors take its Name to ariſe from *amaſſing* a deal of Wiſdom: Others, becauſe the Author's Aim is to *aſſemble*, and *call* together, all ſuch as are willing to conſult their Safety, and avoid the Dangers of the World; which is the Opinion of *Gejerus*: Laſtly, others, with *Calovius*, deduce it from his *aſſembling* them about him, as a Preacher aſſembles his Auditory.

There are different Sentiments as to the Author of this Book: The moſt common is, that it is *Solomon*'s, who is ſuppoſed to have wrote it towards the Cloſe of his Life, to give Tokens of his Penitence to Poſterity.

Grotius, indeed, takes the Work to be poſterior to *Solomon*; and to have been wrote after his Death by I know not what Authors, ſix in Number; who, to give their Book the greater Authority, put *Solomon*'s Name to it, and repreſented him as Repentant. What he founds ſo many poſitive Facts on, is, that we meet with Words in this Book, which are no where elſe ſeen, but in *Daniel*, *Eſdras*, and the *Chaldee* Paraphraſes.

But, 'tis certain, all, both *Hebrews*, *Greeks* and *Latins*, have always ſpoke of it as a Work of *Solomon*. Indeed, there are Authors, who have attributed all the Books of *Solomon* to *Iſaiah*; but theſe are only to be underſtood as if that Prophet had collected them. If it be true, that there are *Chaldee* Words in the *Eccleſiaſtes*, 'tis eaſier to ſuppoſe *Solomon* underſtood that Language, than to deny him the Author of the Book.

If the Book is not *Solomon*'s, becauſe *Grotius* has found four or five Dictions, which are only to be explain'd by the *Chaldee* and *Arabic*; we are not ſure of the Author of any Book in the Bible. *Moſes* muſt not be the Author of *Geneſis*; For even in the very firſt Verſe of that Book, we meet with two or three Words, that are only deducible from *Arabic* Roots. How many Authors attribute to *Solomon*, or to *Moſes*, the Book of *Job*; which is that of all the Books of the Old Teſtament, where there is the moſt *Arabic*, *Chaldee*, or *Syriac*.

In fine, *Calovius* aſſures us, that the true Reaſon why *Grotius* would not allow *Solomon* the Author of the Book of *Eccleſiaſtes*, is, that it ſpeaks too clearly, and preciſely for his Time, of the Univerſal Judgment, Eternal Life, and the Pains of Hell, which yet are Truths eſtabliſhed before *Solomon* in the *Pſalms*, the *Pentateuch*, and *Job*.

There appear no Reaſons, therefore, for denying this Book to *Solomon*; But ſeveral for aſcribing it to him. The 1. The Title of the Book, which aſſerts its Author to be the Son of *David*, and King of *Jeruſalem*. 2. Several Paſſages in the Book, which agree to no Body but that Prince, as *C.* I. v. 12. *C.* VII. v. 24. *C.* XII. v. 9, *&c.* 3. Conſtant Tradition of the antient *Jews* and *Chriſtians*.

The *Thalmudiſts*, and other Rabbins, however, note that the Book of *Eccleſiaſtes*, was ſome Time e're it was put in the Canon. See the *Gemara* on *Pirke Abhoth f.* 1. col. 1. *Maſſech Schabbath C.* II. *fol.* 30. col. 2. *Aben Ezra* on the *Eccleſiaſtes* VII. 4. *Maimonides*, *Moreh Nebochim*, *L.* III. *C.* 28. *Mercerus*, *Calovius*, and *Gejerus* on this Book.

ECCLESIASTIC, or ECCLESIASTICAL, ſomething belonging to, or ſet apart for the *Church*; in Contradiſtinction to *Civil*, or *Secular*, which regard the World. See CIVIL, *&c.*

There are *Eccleſiaſtical* Things and Perſons: *Eccleſiaſtical Law*, *Juriſdiction*, *Hiſtory*, *Ceremonies*, *Diſcipline*, *Preferments*, &c. See LAW, JURISDICTION, HISTORY, CEREMONY, *&c.*

Eccleſiaſtical Perſons, are either *Regular* or *Secular*. See REGULAR and SECULAR.

In the Empire there are three *Eccleſiaſtical* Electors, *viz.* the Archbiſhops of *Mentz*, *Treves*, and *Cologne*. See ELECTOR.

In *France*, they have *Eccleſiaſtical Peers*, &c. See PEER.

ECCLESIASTICAL *Courts*, are the *Convocation*, *Court of Delegates*, *Of Arches*, *Of Audience*, *Prerogative Court*, *Court of Peculiars*, *Biſhops Court*, and *Archdeacons Court*. See each under its proper Article, CONVOCATION, AUDIENCE, ARCHES, *&c.*

Eccleſiaſtical Cenſures and *Puniſhments*, are *Excommunication*, *Penance*, *Suſpenſion*, *Deprivation*, and *Depoſition*, or *Degradation*. See EXCOMMUNICATION, PENANCE, SUSPENSION, DEGRADATION, *&c.*

ECCLESIASTICUS, an Apochryphal Book, compoſed by *Jeſus* the Son of *Sirach*, and admitted, by the *Romiſh* Church, in the Canon of the Old Teſtament. See APOCHRYPHA.

It is frequently wrote by an Abbreviation, *Eccli.* to diſtinguiſh it from the *Eccleſiaſtes*, which is wrote *Eccle.*

Iſidore, *L.* VI. *Etym. C.* 2. and among the Moderns, *Grotius*, and *Druſius*, deny the Author of the *Eccleſiaſticus* to be *Jeſus* the Son of *Sirach*, Grandſon of the High Prieſt *Jeſus*, who return'd from *Babylon* with *Zorobabel*; but it appears pretty certain, they are deceiv'd. See the *Preface* of the Author, that XLth Chapter, v. 29. and the *Title* of the LIXth, with the whole Chapter.

Genebrard aſſerts, that *Jeſus* the Son of *Sirach* was of the Race of *Jeſus* Son of *Joſedech*. But this does not appear.

St. *Jerome* aſſures us, in his Preface to the Books of *Solomon*, that he had ſeen this Book in *Hebrew*; and that the *Hebrews* intitled it *Parables*: From which the Jeſuite *Mariana* concludes, that the High Prieſt *Jeſus* wrote this Book in *Hebrew*; as it appears likewiſe from the Prologue

to

to the Book it ſelf; and that his Grandſon tranſlated it into *Greek*, which likewiſe appears from the Prologue: that he made this Tranſlation in *Egypt*, where the Author lived in his 38th Year; that it was done under the Reign of *Ptolomy Evergetes*, Succeſſor of *Ptolomy Philadelphus*, who began to reign in the Year of *Rome* 512, 240 Years before Chriſt; that the Grandfather had intitled it *Parables*, which the Grandſon changed into *Eccleſiaſticus*, q. d. *Preacher*: Laſtly, that the Book, however, is attributed to the Tranſlator, by Reaſon he changed, and added many Things to the Original.

Fa. Calmet takes the Book of *Eccleſiaſticus* to have been compoſed under the Pontificate of *Onias* III. Son of *Simon*, and the Reign of *Antiochus Epiphanes*, King of *Syria*. He adds, that neither the Author of the *Latin* Tranſlation, nor the Time when it was made, is known; but being quoted regularly by all the Antient Fathers, there is no doubt of its being very Antient. He takes it to have been done by the Tranſlator of the Book of *Wiſdom*.

ECCOPE, *Amputation*, in Chirurgery, a dividing of a fleſhy Part, and cutting off that which is gangreen'd, cancer'd, or the like: As alſo an *Amputation* of an Excreſcence, *&c.* See AMPUTATION.

ECCOPE, is likewiſe uſed for a Kind of Fracture, or Solution of Continuity of the Skull, by a ſimple Inciſion. See FRACTURE.

The Word is form'd from the *Greek*, ἐκκοπὴν, *to cut*.

ECCOPROTICKS, in Medicine, *Laxative*, or *looſening* Remedies, which purge gently, by ſoftening the Humours and Excrements, and fitting them for Expulſion. See EVACUANTS, PURGATIVES, *&c.*

The Word is compoſed of the *Greek* Particle ἐκ, and κόπρος, *Excrement*.

ECHINATE *Seeds*, are ſuch as are prickly and rough like the Coat of a Cheſſnut; or, as ſome ſay, like the Skin of a Hedge-hog. See SEED.

ECHINUS, in Architecture, a Member, or Ornament, near the Bottom of the *Ionic*, *Corinthian*, and *Compoſite* Capitals; which, from its circular Form or Contour, is called by the *French*, *Quart de Rond*, and by the *Engliſh*, *Quarter round*, or *Boultin*; and from its being uſually carved, or cut with Figures of Eggs, *&c.* is called alſo by the *Latins*, *Ovum*, by the *Italians*, *Ovolo*, the *French*, *Ove*, and the *Engliſh*, *Eggs* and *Anchors*. See QUARTER-ROUND and OVOLO.

Laſtly, The Eggs being encompaſſed with a Cover, and thus bearing ſome Reſemblance to a Cheſſnut cut open; The *Greeks* have call'd it ἔχινος, *Echinus*, that is, *Cheſſnut*. See BOULTIN, *&c.*

ECHINUS, among Botaniſts, is uſed for the prickly Head, or Top of any Plant; thus called from its Likeneſs to an Hedge-hog or Cheſſnut.

ECHIQUITE, in Heraldry. See CHECKY.

ECHO, or ECCHO, a Sound reflected, or reverberated, from a ſolid, concave Body, and ſo repeated to the Ear. See SOUND and REFLECTION.

The *Peripateticks*, who took Sound for I know not what Species, or Image of the ſonorous Body, impreſſed on the adjoyning Air; account for *Echo* from a Reſilition of the Species, occaſion'd by its meeting ſome Obſtacle in the Way. But the Moderns, who know Sound to conſiſt in a certain Tremor, or Vibration, in the ſonorous Body, communicated to the contiguous Air, and by that Means to the Ear; give a more conſiſtent Account of *Echo*.

For a tremulous Body, ſtriking on another ſolid Body, 'tis evident, may be repelled without deſtroying or diminiſhing its Tremor; and conſequently a Sound may be redoubled by the Reſilition of the tremulous Body, or Air. See SOUND.

But a ſimple Reflexion of the ſonorous Air, is not enough to ſolve the *Echo*: For then every plain Surface of a ſolid hard Body, as being fit to reflect a Voice or Sound, would redouble it; which we find does not hold.

To produce an *Echo*, therefore, it ſhould ſeem that a Kind of Concameration, or Vaulting were neceſſary, in order to collect, and by collecting, to heighten and increaſe, and afterwards reflect the Sound; as we find is the Caſe in reflecting the Rays of Light, where a concave Mirror is required.

In Effect, as often as a Sound ſtrikes perpendicularly on a Wall, behind which is any Thing of a Vault, or Arch, or even another Parallel Wall; ſo oft will it be reverberated in the ſame Line, or other adjacent ones.

For an *Echo* to be heard, therefore, 'tis neceſſary the Ear be in the Line of Reflexion: For the Perſon who made the Sound to hear its *Echo*, 'tis neceſſary he be perpendicular to the Place which reflects it: And for a manifold or Tautological *Echo*, 'tis neceſſary there be a Number of Walls and Vaults, or Cavities, either placed behind each other, or fronting each other.

A ſingle Arch, or Concavity, *&c.* can ſcarce ever ſtop and reflect all the Sound; but if there be a convenient Diſpoſition behind it, Part of the Sound, propagated thither, being collected and reflected, as before, will preſent another *Echo*: Or if there be another Concavity, oppoſed at a due Diſtance to the former; the Sound reflected from the one upon the other will be toſs'd back again by this latter, *&c.*

Many of the Phænomena of *Echo's*, are well conſider'd by the Biſhop of *Leighs*, &c. Who remarks, that any Sound, falling either directly, or obliquely, on any denſe Body, of a ſmooth, whether plain or arched, Superficies, is reflected, or *Echoes* more or leſs. The Surface, ſays he, muſt be *ſmooth*, otherwiſe the Air, by Reverberation, will be put out of its Regular Motion; and the Sound thereby broke and extinguiſhed. He adds, that it *Eccho's more or leſs*, to ſhew, that when all Things are, as before deſcribed, there is ſtill an *Echoing*; tho' it be not always heard; either becauſe the direct Sound is too weak to be beat quite back again to him that made it, or that it does return to him, but ſo weak, that it cannot be diſcern'd; or that he ſtands in a wrong Place to receive the reflected Sound, which paſſes over his Head, under his Feet, or on one Side of him, and which therefore may be heard by a Man ſtanding in the Place where the reflected Sound will come, provided no interpoſed Body intercept it; but not by him that firſt made it.

Echo's may be produced with different Circumſtances: For,

1. A *Plane* Obſtacle reflects the Sound back in its due Tone and Loudneſs; Allowance being made for the proportionable Decreaſe of the Sound, according to its Diſtance. See PLANE.

2. A *Convex* Obſtacle reflects the Sound ſomewhat ſmaller, and ſomewhat quicker, tho' weaker, than it otherwiſe would be. See CONVEX.

3. A *Concave* Obſtacle, *echo's* back the Sound, bigger, ſlower, and alſo inverted; but never according to the Order of Words. See CONCAVE.

Nor does it ſeem poſſible to contrive any ſingle *Echo*, that ſhall invert the Sound, and repeat backwards: Becauſe, in ſuch Caſe, the Word laſt ſpoken, that is, which laſt occurs to the Obſtacle muſt be repell'd firſt, which cannot be. For where in the mean Time ſhould the firſt Words hang and be conceal'd; or how, after ſuch a Pauſe, be revived, and animated again into Motion.

From the determinate Concavity, or Archedneſs of the reflecting Bodies, it may happen that ſome of them ſhall only *echo* back one determinate Note, and only from one Place.

4. The *Echoing* Body being removed farther off, it reflects more of the Sound than when nearer; which is the Reaſon why ſome *Echo's* repeat but one Syllable, ſome one Word, and ſome many.

5. *Echoing* Bodies may be ſo contrived, and placed, as that reflecting the Sound from one to the other, either directly and mutually, or obliquely and by Succeſſion, out of one Sound, ſhall a *multiple Echo*, or many *Echo's* ariſe.

Add, that a *multiple Echo* may be made, by ſo placing the *Echoing* Bodies, at unequal Diſtances, as that they may reflect all one Way, and not one on the other; by which Means, a manifold ſucceſſive Sound will be heard; one Clap of the Hands like many; one Ha like a Laughter; one ſingle Word like many of the ſame Tone and Accent; and ſo one Viol, like many of the ſame Kind, imitating each other.

Laſtly, *Echoing* Bodies may be ſo order'd, that from any one Sound given, they ſhall produce many *Echo's*, different both as to Tone and Intenſion. By which Means a Muſical Room may be ſo contrived, that not only one Inſtrument playing therein, ſhall ſeem many of the ſame Sort and Size, but even a Conſort of different Ones; only by placing certain *Echoing* Bodies ſo, as that any Note play'd, ſhall be return'd by them in 3ds, 5ths, and 8ths.

ECHO, is alſo uſed for the Place where the Repetition of the Sound is produced, or heard.

The Word is form'd of the *Greek*, ἦχος, *Sonus*, of the Verb ἠχέω, *Sono*, *I ſound*,

Echo's are diſtinguiſhed into divers Kinds, *viz.*

1. *Single*, which return the Voice but once; whereof ſome are *Tonical*, which only return a Voice when modulated into ſome particular Muſical Tone. Others, *Polyſyllabical*, which return many Syllables, Words and Sentences.

2. *Multiple*, or *Tautological*, which return Syllables and Words the ſame oftentimes repeated.

In *Echo's*, the Place where the Speaker ſtands, is called the *Centrum Phonicum*; and the Object, or Place, that returns the Voice, the *Centrum Phonocampticum*. See CENTRUM.

At the Sepulchre of *Metella*, Wife of *Craſſus*, was an *Echo*, which repeated what a Man ſaid, five Times. Authors mention a Tower at *Cyzicus*, where the *Echo* repeated ſeven Times.

But

But the fineſt *Echo* we read of, is that mention'd by *Barthius*, in his Notes on *Statius*'s *Thebais*, *L.* VI. v. 30. which repeated the Words a Man utter'd ſeventeen Times: It was on the Banks of the *Nile*, between *Coblents* and *Bingen*. *Barthius* aſſures us, he had proved what he writes; and had told ſeventeen Repetitions. And whereas, in common *Echo's*, the Repetition is not heard till ſome Time after hearing the Words ſpoke, or the Notes ſung; in this, the Perſon who ſpeaks, or ſings, is ſcarce heard at all; but the Repetition moſt clearly, and always in ſurprizing Varieties; the *Echo* ſeeming, ſometimes to approach nearer, and ſometimes to be further off. Sometimes the Voice is heard very diſtinctly, and ſometimes ſcarce at all. One hears only one Voice, and another ſeveral: One hears the *Echo* on the right, and the other on the left, *&c.*

ECHO, in Architecture, is applied to certain Kinds of Vaults, and Arches, moſt commonly of Elliptical, or Parabolical Figures; uſed to redouble Sounds, and produce *Artificial Echo's*.

The Method of making an *Artificial Echo*, is taught by the Jeſuite *Blancani*, in his Echometry, at the End of his Book on *the Sphere*. *Vitruvius* tells us, that in divers Parts of *Greece*, and *Italy*, there were brazen Veſſels, artfully ranged under the Seats of the Theatres, to render the Sound of the Actors Voices more clear, and make a Kind of *Echo*; by which Means, of the prodigious Multitude of Perſons, who aſſiſted at the Spectacles, every Body might hear with Eaſe and Pleaſure.

ECHO, in Poetry, *&c.* a Kind of Compoſition, wherein the laſt Words, or Syllables, of each Verſe, contain ſome meaning, which being repeated a-part, anſwers to ſome Queſtion, or other Matter, contain'd in the Verſe.

Such is that famous *Echo* of *Eraſmus*, — *Decem annos conſumpſi in legendo Cicerone ... one*, i. e. ουη, *Aſine*.

The firſt *Echo*, in Verſe, according to *Paſquier*, is that in the *Sylvæ* of *Johannes Secundus*: But *Paſquier* is miſtaken; for the antient *Greek* and *Latin* Poets have wrote *Echo's*. This *Martial* intimates plainly enough, when laughing at ſuch Sorts of Baubles, he ſays, there is nothing like them among his Poems. *Nuſquam Græcula quod recantat Echo*: By which, on the one Side, he ſhews there were *Latin* Poets in his Time, who made *Echo's*; and on the other, that the Invention came from the *Greeks*.

Ariſtophanes, in his Comedy, intitled Θεσμοφοριαζουσαι, introduces *Euripedes* in the Perſon of *Echo*. And *Callimachus*, in the Epigram, Εχθαιρω το πινημα το κυκλικον, ſeems to have intended a Kind of *Echo*.

ECHOMETRE, in Muſic, a Kind of Scale, or Rule, with ſeveral Lines divided thereon, ſerving to meaſure the Duration, or Length, of Sounds, and to find their Intervals and Ratio's.

The Word is form'd of the *Greek*, ηχος, *Sound*, and μετρον, *Meaſure*.

ECHYMOSIS, or ECCHYMOSIS, in Medicine, *Suffuſio*, a Diſeaſe of the Eye; wherein the Blood, extravaſated by ſome Blow, or Contuſion, upon its Arrival between the Cutis, and the Fleſh or Muſcles, ſtops there, without any Appearance of a Wound.

The *Echymoſis* is either *ſimple*, or with *Abſceſs*.

The Word is form'd of the *Greek*, εκχυμωσις, *Effuſion of Humours*, των χυμων.

ECLECTIC, ECLECTICI, a Name given to ſome antient Philoſophers. See PHILOSOPHER.

Diogenes Laertius, *L.* I. and *Suidas* ſay, that the *Eclectici* were ſuch, as without attaching themſelves to any particular Sect, took what they judg'd good and ſolid from each. And hence their Denomination; which, in the Original *Greek*, ſignifies, that *may be choſen*, or that *chuſes*, of the Verb εκλεγω, *I chuſe*.

Laertius, in the ſame Place, notes, that they were alſo, for the ſame Reaſon, denominated *Analogetici*, but that they called themſelves *Philalethes*, i. e. Lovers of Truth.

The Chief, or Founder of the *Eclectici*, was one *Potamon*, of *Alexandria*, who lived under *Auguſtus*, and *Tiberius*; and who, weary of doubting of all Things with the *Scepticks* and *Pyrrhonians*, form'd the *Eclectic* Sect; which *Voſſius* calls the *Eclective*.

ECLEGMA, in Medicine, a Pectoral Remedy, of the Conſiſtence of a thick Syrup; called alſo *Lohoch*, *Linctus*, and *Lambative*. See LOHOCH, *&c.*

The Word is form'd of the *Greek* εν, and λειχειν, *to lick*; by Reaſon the Patient is to take it by *licking* it off the End of a Liquorice Stick dipt therein: To the End that being taken thus by little and little, it may remain the longer in the Paſſage, and moiſten the Breaſt the better.

There are *Eclegma's* of Poppy, others of Lentils, others of Squillæ, *&c.* The Intention is to heal, or eaſe the Lungs in Coughs, Peripneumonies, *&c.* and are uſually compoſed of Oils, incorporated with Syrups.

ECLIPSE, in Aſtronomy, a Privation of the Light of one of the Luminaries, by the Interpoſition of ſome opake Body, either between it and the Eye; or between it and the Sun. See SUN, MOON, and SATELLITE.

The Word is derived from the *Greek*, εκλειψις, of εκλειπω, *deficio*, *I fail*.

The Antients had frightful Ideas of *Eclipſes*, as Preſages of the moſt diſmal Events: *Plutarch* aſſures us, that at *Rome*, it was not allow'd to talk publickly of any natural Cauſes of *Eclipſes*. They made a huge Noiſe with Brazen Inſtruments, and rais'd loud Shouts, during *Eclipſes* of the Moon, as thinking thereby to eaſe her in her Labour: Whence *Juvenal*, ſpeaking of a talkative Woman, ſays; *Una Laboranti poterit ſuccurrere Lunæ*. Others attributed the *Eclipſe* of the Moon to the Arts of Magicians, who by their Inchantments, pluck'd her out of Heaven, and made her skim over the Graſs. The Natives of *Mexico* kept Faſt, during the *Eclipſe*; and, particularly, their Women, who beat and abuſed themſelves, drawing Blood from their Arms, *&c.* They imagined the Moon had been wounded by the Sun in ſome Quarrel between them.

The Duration of an Eclipſe, is the the Time between the *Immerſion* and *Emerſion*.

The *Immerſion*, or *Incidence* of an *Eclipſe*, is the Moment when Part of the Sun or Moon's Diſk firſt begins to be hid. See IMMERSION.

The *Emerſion*, or *Expurgation*, is the Time when the Eclipſed Luminary begins to re-appear, or emerge out of the Shadow. See EMERSION.

To determine the Duration of *Eclipſes*, they uſually divide the Diameter of the Luminary *Eclipſed*, into 12 equal Parts, called *Digits*, or *Digiti Ecliptici*. See DIGIT.

Eclipſes, are divided with Reſpect to the Luminary *Eclipſed*, into *Eclipſes of the Sun*, *of the Moon*, and *of the Satellites*: And with Reſpect to the Circumſtances, into *Total Eclipſes*, *partial*, *annual*, &c. *Eclipſes*.

ECLIPSE *of the Moon*, is a Deficiency of Light in the Moon, occaſion'd by a Diametrical Oppoſition of the Earth between the Sun and Moon. See MOON.

The Manner of this *Eclipſe* is exhibited in *Tab. Aſtronom. Fig.* 34. where A repreſents the Earth, and B or C the Moon.

When all the Light of the Moon is intercepted, *i. e.* when her whole Diſk is cover'd, the *Eclipſe* is ſaid to be *Total*; when only Part, *Partial*. When the *Total Eclipſe* laſts for ſome Time, it is ſaid to be *Totalis cum Mora*, Total with Continuance; when only Inſtantaneous, *Totalis ſine Mora*, Total without Continuance.

Eclipſes of the Moon, only happen in the Time of full Moon; by Reaſon 'tis only then the Earth is between the Sun and Moon. Nor do they happen every full Moon, by Reaſon of the Obliquity of the Moon's Way with Reſpect to the Sun's; but only in thoſe full Moons, which happen either in the Nodes, or very near them, where the Aggregate of the apparent Semi-diameters of the Moon and the Earth's Shadow, is greater than the Latitude of the Moon, or the Diſtance between their Centres. See NODE.

The moſt conſiderable Circumſtances in the Eclipſes of the Moon, are,

1. That as the Sum of the Semi-diameters of the Moon, and Earth's Shadow, is greater than the Aggregate of the Semi-diameters of the Sun and Moon, (that when leaſt, being $5\frac{1}{3}$, and this, when greateſt, ſcarce $3\frac{1}{3}$.) 'Tis evident, *Lunar Eclipſes* may happen in a greater Latitude of the Moon, and at a greater Diſtance from the Nodes, and conſequently are more often obſerv'd in any one Part of the Earth, than *Solar* ones; tho', with Reſpect to the whole Earth, the latter are as frequent as the former.

2. *Total Eclipſes*, and thoſe of the longeſt Duration, happen in the very Nodes of the Ecliptic; by Reaſon the Section of the Earth's Shadow, then falling on the Moon, is conſiderably greater then her Diſk. There may likewiſe be *Total Eclipſes*, within a little Diſtance off the Nodes; but the further, the leſs their Duration; further off ſtill, there are only Partial ones, and at length none at all: As the Latitude and the Semi-diameter of the Moon together, are either leſs, equal, or greater than the Semi-diameter of the Shadow.

3. All *Lunar Eclipſes* are univerſal, *i. e.* are viſible in all Parts of the Globe, which have the Moon above their Horizon; and are every where of the ſame Magnitude, and begin and end together.

4. In all *Lunar Eclipſes*, the Eaſtern Side is what firſt Immerges, and alſo Emerges; for that tho' at firſt ſhe be more Weſterly than the Earth's Shadow, yet her proper Motion being ſwifter than the ſame, ſhe overtakes and outgoes it.

5. The Moon, even in the Middle of an *Eclipſe*, has uſually a faint Appearance of Light; which *Gaſſendus*,

Ricciolus, *Kepler*, &c. attribute to the Light of the Earth's Atmoſphere tranſmitted thither. See ATMOSPHERE.

Laſtly, She grows ſenſibly paler and dimmer, before ever ſhe enters within the Earth's Shadow, which is attributed to the Earth's *Penumtra*. See PENUMTRA.

Aſtronomy of Lunar ECLIPSES, *or the Method of calculating their Times, Places, Magnitudes, and other Phænomena.*

Preliminary 1. *To find the Length of the Earth's ſhadowy Cone.* Find the Sun's Diſtance from the Earth for the given Time; See SUN and DISTANCE. Then, as the Sun's Diameter is known in Semi-diameters of the Earth, the Length of the Cone will be found from the Rules given under SHADOW.

Suppoſe, *e. gr.* the Sun's greateſt Diſtance from the Earth, 34996 Semi-diameters of the Earth; and the Sun's Semi-diameter to be to that of the Earth as 153 to 1. Then will the Length of the ſhadowy Cone be found $230\frac{4}{7}$.

Hence, as the Moon's leaſt Diſtance from the Earth, is ſcarce 64 Semi-diameters; the Moon, when in Oppoſition to the Sun, in or near the Nodes, will fall into the Earth's Shadow, tho' the Sun and Moon be in their Apogees. And much more, if they be in or near their Perigees, by Reaſon the Shadow is then longer; and the Moon nearer the Baſe of the Cone.

2. *To find the apparent Semi-diameter of the Earth's Shadow, in the Place of the Moon's Paſſage, for any given Time.* Find the Sun and Moon's Diſtance from the Earth; and thence, their Horizontal Parallaxes: Add the Parallaxes together, and from the Sum, ſubſtract the apparent Semi-diameter of the Sun. The Remainder is the apparent Semi-diameter of the Shadow.

Thus, ſuppoſe the Moon's Parallax 56′ 48″, the Sun's 6″: The Sum is 56′ 24″; from which the Sun's apparent Semi-diameter 16′ 5″ ſubſtracted, leaves 40′ 19″ for the Semi-diameter of the Shadow.

Note, M. *de la Hire* omits the Sun's Parallax, as of no Conſideration; but increaſes the apparent Semi-diameter of the Shadow by a whole Minute, for the Shadow of the Atmoſphere; which would give the Semi-diameter of the Shadow, in our Inſtance, 41′ 13″.

3. *The Moon's Latitude*, AL, *at the Time of her Oppoſition, together with the Angle at the Node* B, *being given; to find the Arch between the Centres* AI, *and the Arch* IL. (*Fig.* 35.) Since in the ſpherical Triangle AIL, Rectangular at A; the Side AL is given, as alſo the Angle ALI, as being the Complement of LAI, or B to a right Angle; the Arch between the Centres AI, is found by ſpherical Trigonometry: And ſince the Angle LAI, is equal to B, each of them, with IAB, making a right Angle: And the Moon's Latitude AL is given; the Arch LI will likewiſe be found by ſpherical Trigonometry. See SPHERICAL *Triangle*.

To determine the Bounds of an ECLIPSE *of the Moon.*

Since there is no *Eclipſe* poſſible, but when the Aggregate of the Semi-diameters of the Shadow, and the Moon is greater than the Moon's Latitude, (for without this, the Moon will not come in the Shadow) add the apparent Semi-diameters of the Moon in *Perigæo*, and of the Shadow, ſuppoſing the Sun in *Apogæo*; by which you will have the Side MO. Then, in the ſpherical Triangle MNO, (*Fig.* 36.) having given the Angle at the Node, whoſe Quantity is the Moon's greateſt Latitude in the Conjunctions; the right Angle E; and the Leg MO; find the Moon's Diſtance from the Node NO: Which is the utmoſt Bound, beyond which the *Eclipſe* cannot reach. After the ſame Manner, adding the apparent Semi-diameters of the Moon in *Apogæo*, and of the Shadow of the Sun in *Perigæo*, for the Sake of having the LH, in the Triangle NLH; the Diſtance of the Moon, from the aſcending Node HN, will be found by ſpherical Trigonometry; which is the Bound within which the Moon will neceſſarily be *Eclipſed*.

Thus, *e. gr.* the Semi-diameter of the Shadow, when the Sun is in *Apogæo*, and the Moon in *Perigæo*, according to *Kepler*, is 49′ 40″. And the apparent Semi-diameter of the Moon in *Perigæo* 16′ 22″. Conſequently MO 66′, or 1° 6′; and therefore there will be no *Eclipſe* at all, if the Moon's Latitude be greater than 1° 6′. Now, as the ſame Angle N is ſuppoſed by *Kepler* to be 5° 18′.

Log. Sin. N	89655337
Sin. MO	82832433
Whole Sine	100000000

Log. of Sine ON 93177096. The Number correſponding to which in the Tables is 11° 59′ 50″. If, therefore, the Moon's Diſtance from the aſcending Node be greater than 12°; no *Eclipſe* can happen. And, in like Manner, the Semi-diameter of the Shadow in the Sun's Perigee, and the Moon's Apogee is 43′ 50″, and the Moon's Semi-diameter in her Apogee 15′. Conſequently, LH is 58′ 50″. And, therefore, there will be an *Eclipſe*, if the Moon's Latitude don't exceed 58′ 50″. But here, as before, the Argument of the Latitude is found 10° 40′.

To determine the Quantity of an Eclipſe, or the Number of Digits Eclipſed.

Add the Moon's Semi-diameter IK, (*Fig.* 35.) to the Semi-diameter of the Shadow AM; then will AM + IK = IM + IK = AI + MK. From this Sum, therefore, ſubſtract the Arch between the Centres AI, the Remainder gives the Scruples, or Parts of the Diameter *Eclipſed* MK. Say, therefore, as the Diameter KH, is to the Scruples, or Parts thereof *Eclipſed* MK; ſo is 12, to the Digits *Eclipſed*.

Thus, ſuppoſing KH, 30′ 44″, and conſequently IK, 15′ 22″; AM, 41′ 13″; and AL, 43′ 14″: The Moon's Semi-diameter will be 15′ 22″, and that of the Shadow 41′ 13″; the Sum whereof, is 56′ 35″. From which the Arch between the Centres 43′ 14″, being ſubſtracted, leaves 13 21 Scruples, or 801 Seconds. Then as 1844 : 801 :: 12 : $5\frac{28}{461}$ Dig. or 5 Dig. 13′.

To find the Scruples of half Duration of an Eclipſe, or the Arch of the Lunar Orbit, which her Centre deſcribes from the Beginning of the Eclipſe to the middle thereof.

Add the Semi-diameters of the Shadow AP, and the Moon PN together; the Sum gives AN. From the Square of AN, ſubſtract the Square of AI; the Remainder is the Square of IN, the Square Root of this Reſidue is the Arch IN required.

To find the Scruples of half Duration of a Total Darkneſs, in a Total Eclipſe.

Subſtract the Moon's Semi-diameter SV, (*Fig.* 37.) from the Semi-diameter of the Shadow AV; the Remainder is AS: In the Triangle AIS, which is Rectangular at I, therefore, we have the Arch AS given by the laſt Method; and the Arch between the Centres AI: Whence the Arch IS is found, as in the laſt Problem.

To find the Beginning, Middle, and End of a Lunar Eclipſe.

Say, as the Moon's Horary Motion from the Sun, (See HORARY) is to 3600 Horary Seconds; ſo are the Seconds of the Arch LI, (*Fig.* 35.) to the Horary Seconds equivalent thereto. Subſtract theſe Scruples, or Seconds, in the firſt and third Quadrant of the Anomoly, from the Time of full Moon, and add it to the ſame in the ſecond and fourth; the Reſult is the Time of the middle of the *Eclipſe*. Then ſay, as the Moon's Horary Motion from the Sun is to 3600 Scruples, or Seconds, ſo are the Seconds of half Duration IN, to the Time of half Duration: The double of which gives the whole Duration. Laſtly, ſubſtract the Time of half the Duration, from the Time of the middle of the *Eclipſe*, the Remainder will be the Beginning of the *Eclipſe*. And add the ſame to the ſame, the Sum will be its End.

Suppoſe, *e. gr.* LI = 4′ 5″ = 245″, IN 2530″, Time of Full Moon 9ʰ 23′ 49″, Horary Motion of the Moon from the Sun, 30″ 12′, or 1812″, then will

Log. Hor. ☽ from ☉	32581581
Log. 3600	35563025
Log. LI	23891660
	59454685

Log. of Time required 26873104; The Number correſponding to which, in the Tables, is 486″, or 8′ 6′.

Time of Full Moon	9ʰ 23 49.
Time of mid. *Eclipſe*	9ʰ 15′ 43″.
Log. Hor. ☽ from ☉	32581581
Log. 3600	35563025
Log. IN.	33404934
	68967959

Log. of half Duration 36386378. The Number correſponding to which, in the Tables, is 4351″, or,

	1ʰ 12′ 31″
Duration of *Eclipſe*	2ʰ 25 2
Time of mid. *Eclipſe*	9ʰ 15 31
Half Durat. Subſtract.	1ʰ 12 31
Begin. of *Eclipſe*	8ʰ 3 12
Time of mid. *Eclipſe*	9ʰ 15 43
Half Durat. added	1ʰ 12 31
End of *Eclipſe*	10ʰ 28 14

To

To calculate an Eclipſe of the Moon.

1. For the given Time of the mean full Moon, compute the Moon's Diſtance from the Node; to find whether there be an *Eclipſe* or not: As taught in the firſt Problem.

2. Compute the Time of the true full Moon, with the Sun and Moon's true Place reduced to the Ecliptic.

3. For the Time of the true full Moon, compute the Moon's true Latitude, the Diſtance of each Luminary from the Earth, with the Horizontal Parallaxes, and apparent Semi-diameters.

4. For the ſame Time, find the Sun and Moon's true Horary Motion.

5. Find the apparent Semi-diameter of the Shadow.

And 6. The Arch between the Centres A I, with the Arch L I.

7. Compute the Scruples of half Duration I N.

And thence, 8. Determine the Beginning, Middle, and End of the *Eclipſe*.

Laſtly, Find the Scruples *Eclipſed*, and thence the Quantity of the *Eclipſe: as taught under the preceding Problems.*

E. gr. Anno. 1708, the mean full Moon fell on the 29th Day of *September*, at $3^h\ 45'\ 4''$ Afternoon: And then the Moon's Diſtance from the aſcending Node, was $5°\ 22'\ 36''$. Conſequently the Full Moon was *Eclipſed*. Now, for that Time, we find

True full Moon	9^h	$23'$	$49''$
True Place of the Sun	$6°$	$43'$	$47''$
Moon's Place in the Ecliptic	6	43	47
Moon's True Latit. North		43	25
Horizont. Parallax. of ☉			6
of ☽		56	18
Apparent Semi-diam. of ☉		16	5
of ☽		15	22
True Horar. Mot. of ☽ from ☉		30	12
Semi-diam. of Shadow		41	13
Arch between the Centres		43	14
Arch L I		4	5
Scruples of half Duration		36	30
Scruples *Eclipſed*		13	21
Duration of *Eclipſe*	2^h	25	2
Beginning	8^h	3	12
Middle	9	15	43
End	10	28	14
Quantity	5 Dig. 13′.		

To draw a Type, or Figure of a Lunar Eclipſe on a Plane.

1. Let C D, (*Fig.* 38.) repreſent the Ecliptic; and let the Centre of the Shadow be in A: Thro' which draw a right Line G A, perpendicular to D C: And ſuppoſe D the Eaſt, C the Weſt, A the South, and G the North.

2. From A, with the Interval of the Aggregate A N, of the Semi-diameter of the Shadow A P, and of the Moon P N, deſcribe a Circle D G C Q; and with the Interval of the Semi-diameter of the Shadow A P, draw another Concentric Circle E M F R, which will exhibit the Section of the Shadow in the Paſſage of the Moon.

3. Let A L be equal to the Latitude of the Moon at the Beginning of the *Eclipſe*; and in L erect a perpendicular L N, meeting the greater Circle in N, towards the Weſt. Then will the Centre of the Moon, at the Beginning of the *Eclipſe*, be in N.

4. After like Manner, make A S equal to the Latitude of the Moon at the End of the *Eclipſe*; and in S, erect a perpendicular O S, parallel to D C: Then will the Centre of the Moon be in O, at the End of the *Eclipſe*.

5. Connect the Points O and N by a right Line: O N will be the Arch of the Orbit, which the Centre of the Moon deſcribes during the *Eclipſe*.

6. From O and N, with the Interval of the Moon's Semi-diameter, deſcribe Circles P V and T X, which will exhibit the Moon at the Beginning and End of the *Eclipſe*.

7. Then, from A, letting fall a perpendicular A I to O N; the Centre of the Moon will be in I, in the Middle of the Darkneſs.

Wherefore, laſtly, from I, with the Interval of the Moon's Semi-diameter, deſcribe a Circle H K: This will repreſent the Moon in its greateſt Obſcurity, and at the ſame Time the Quantity of the *Eclipſe*: The Circle P N T, &c. terminating the Shade.

Eclipse *of the Sun*, is an Occultation of the Sun's Body, occaſion'd by a diametrical Interpoſition of the Moon between the Sun and the Earth. See Sun.

It is diſtinguiſhed, like that of the Moon, into *Total* and *Partial*, &c. to which muſt be added a third Species called *Annular*.

Eclipſes of the Sun, ſome Authors obſerve, ſhould in Propriety be called *Eclipſes of the Earth*. See Earth.

As the Moon is found to have a Parallax of Latitude; *Eclipſes* of the Sun only happen when the Latitude of the Moon, viewed from the Sun, is leſs than the Aggregate of the apparent Semi-diameter of the Sun and Moon. *Solar Eclipſes*, therefore, happen when the Moon is in Conjunction with the Sun, in, or near the Nodes, *i. e.* at the new Moons. Conſequently, the memorable *Eclipſe of the Sun*, at our Saviour's Paſſion, happening at the Time of full Moon, when the Sun and Moon are in Oppoſition, was preternatural. See Conjunction, Opposition, &c.

Tho' the New Moon cover the Sun from the Earth, yet is not there an *Eclipſe* every new Moon; by Reaſon the Moon's Way is not preciſely under the Ecliptic, but placed obliquely thereto; only interſecting it twice in every Period. So that *Eclipſes* can only be occaſion'd in ſuch new Moons, as happen in theſe Interſections or *Nodes*, or very near them.

In the *Nodes*, when the Moon has no viſible Latitude, the Occultation is *Total*: and with *ſome Continuance*, when the Diſk of the Moon, in *Perigæo*, appears greater than that of the Sun in *Apogæo*, and its Shadow is extended beyond the Surface of the Earth; and, *without Continuance*, at moderate Diſtances, when the Cuſp, or Point of the Moon's Shadow, barely touches the Earth. Laſtly, out of the Nodes, but near them, the *Eclipſes* are partial.

Further, when the Moon, being in her Apogee, appears much leſs than the Sun; as happens moſt ſenſibly, when he is in *Perigæo*: the Cuſp of the Lunar Shadow not reaching the Earth, ſhe becomes in a Central Conjunction with the Sun, yet not able to cover his Diſk; but lets his whole Limb appear like a lucid Ring or Bracelet: hence called an *Annular Eclipſe*.

The other Circumſtances of *Solar Eclipſes*, are,

1. That none of them are univerſal; that is, none of them are ſeen throughout the whole Hemiſphere, which the Sun is then above; the Moon's Diſk being much too little, and much too near the Earth, to hide the Sun from the Diſk of the Earth, which is fifteen Times bigger than it.

2. Nor does the *Eclipſe* appear the ſame in all Parts of the Earth, where it is ſeen; but when in one Place it is Total, in another it is Partial.

3. It does not happen at the ſame Time, in all Places where it is ſeen; but appears more early to the Weſtern Parts, and later to the Eaſtern.

4. Its Beginning is always on the Weſtern Side the Sun, and on the ſame Side it ends.

5. In moſt *Solar Eclipſes*, the Moon's darken'd Diſk is cover'd with a faint, dawning Light; which is commonly attributed to the Reflexion of the Light, from the illuminated Part of the Earth.

Laſtly, In Total *Eclipſes* of the Sun, the Moon's Limb is ſeen ſurrounded by a pale Circle of Light; which the late Aſtronomers take for a manifeſt Indication of a *Lunar* Atmoſphere. See Atmosphere.

The Aſtronomy of Eclipses *of the Sun.*

To determine the Bounds of a *Solar Eclipſe*.

If the Moon's Parallax were inſenſible, the Bounds of a *Solar Eclipſe* would be determined after the ſame Manner as thoſe of a *Lunar*: But by Reaſon here is a ſenſible Parallax, we muſt alter our Meaſures a little, *viz.*

1. Add the apparent Semi-diameters of the Luminaries both in *Apogæo* and *Perigæo* together.

2. Since the Parallax diminiſhes the Northern Latitude; to the former Sum, add the greateſt Parallax of Latitude poſſible: And ſince the Parallax augments the Southern Latitude, from the ſame Sum, ſubſtract the greateſt Parallax of Latitude. Thus, in each Caſe, will you have the true Latitude, beyond which there can be no *Eclipſe*.

This Latitude given, the Moon's Diſtance from the Nodes, beyond which *Eclipſes* cannot happen, is found, as already directed for *Lunar Eclipſes*.

As different Authors follow very different Hypotheſes, with Regard to the apparent Diameters of the Luminaries, and the greateſt Parallax of Latitude; they differ much in aſſigning the Bounds at which *Solar Eclipſes* happen. *Ptolomy*, makes the utmoſt Bound of *Eclipſes* at $19°\ 25'$, Diſtance from the Node; *Copernicus*, at $19°\ 12'$; *Tycho*, at $18°\ 25'$; *Kepler*, at $17°\ 16'$; *Ricciolus*, at $18°\ 49'$. Tho' *Ptolomy*, in other Places, judges $16°\ 42'$ Minutes diſtance from the Node, neceſſary; *Copernicus*, $16°\ 25'$; *Tycho*, $17°\ 9'$; *Kepler*, $15°\ 55'$; and *Ricciolus*, $15°\ 58'$.

To find the Digits Eclipſed.

Add the apparent Semi-diameters of the Luminaries into one Sum: From which ſubſtract the Moon's apparent Latitude, the Remainder is the Scruples, or Parts of the Diameter *Eclipſed*. Then ſay, as the Semi-diameter of the Sun is to the Scruples *Eclipſed*; ſo are 6 Digits reduced into Scruples, or 360 Scruples, to the Digits *Eclipſed*.

To find the Scruples of half Duration, or the Line of Immerſion.

The Method is the ſame as that deliver'd for *Lunar Eclipſes*.

To

To determine the Duration of a Solar Eclipſe.

Find the Horary Motion of the Moon from the Sun, for one Hour before the Conjunction, and another Hour after: Then ſay, as the former Horary Motion is to the Seconds in an Hour, ſo are the Scruples of half Duration to the Time of Immerſion: And as the latter Horary Motion is to the ſame Seconds, ſo are the ſame Scruples of half Duration to the Time of Emerſion. Laſtly, adding the Time of Immerſion to that of Emerſion; the Aggregate is Total Duration.

To determine the Beginning, Middle, and End of a Solar Eclipſe.

From the Moon's Latitude, for the Time of Conjunction; find the Arch I L, (*Fig.* 35.) or the Diſtance of the greateſt Obſcurity. Then ſay, as the Horary Motion of the Moon from the Sun, before the Conjunction, is to 3600 Seconds of an Hour; ſo is the Diſtance of the greateſt Darkneſs, to the Interval of Time between the greateſt Darkneſs and the Conjunction.

Subſtract this Interval, in the firſt and third Quarter of the Anomoly, from the Time of the Conjunction; and in the other Quarters, add it to the ſame; the Reſult is the Time of the greateſt Darkneſs. Laſtly, from the Time of the greateſt Darkneſs, ſubſtract the Time of Incidence, and add it to the Time of Emerſion; the Difference, in the firſt Caſe, will be the Beginning; and the Sum, in the latter Caſe, the End of the *Eclipſe*.

Indeed, as the Interval between the Conjunction, and the greateſt Obſcurity is very ſmall, and exceedingly precarious; 'tis ſcarce worth while to be ſo very preciſe; and, accordingly, many Authors uſe the Time of the apparent Conjunction for that of the greateſt Darkneſs.

E. gr. in our Caſe,			
Time of Conjunction	21^h	36′	59″
Time of Incidence	1	2	36
Beginning of *Eclipſe*	20	34	23
Or	8^h Morn.	34	23
Time of Conjunction	21	36	59
Time of Emergence	1	5	47
End of *Eclipſe*	22^h	42	46
Or	10 Morn.	42	46

Or, if you wou'd determine it with more Accuracy, ſubſtract about two Minutes for the Diſtance between the Conjunction ſeen, and the Time of the greateſt Obſcurity.

To find the Moon's apparent Latitude at the Beginning and End of an Eclipſe.

From the Argument of the Moon's Latitude, computed for the Time of the apparent Conjunction, Subſtract the Scruples of half Duration, together with the Motion of the Sun, anſwering to the Time of Incidence: The Remainder, is the Argument of Latitude, at the Beginning of the *Eclipſe*.

To the ſame Sum add the ſame Scruples, together with the Sun's Motion anſwering to the Time of Emergence: The Aggregate is the Argument of Latitude, at the End of the *Eclipſe*. The Argument of the Latitude given; the Moon's true Latitude is found after the common Manner. (See LATITUDE.) And from the true Latitude, the apparent one.

The apparent Latitude of the Moon, at the Beginning and End of a Solar Eclipſe, given; to draw a Type or Figure thereof.

This is perform'd, as already taught for *Eclipſes* of the Moon.

To calculate an ECLIPSE *of the Sun.*

1. Find the mean New Moon, and thence the true one; together with the Place of the Luminaries for the apparent Time of the true one.

2. For the apparent Time of the true new Moon, compute the apparent Time of the new Moon obſerved.

3. For the apparent Time of the new Moon ſeen, compute the Latitude ſeen.

4. Thence, determine the Digits *Eclipſed*.

5. Find the Time of the greateſt Darkneſs, Immerſion, and Emerſion.

6. Thence determine the Beginning, and Ending of the *Eclipſe*.

From the preceding Problems, it is evident, that all the Trouble, and Fatigue of the Calculus, ariſes from the Parallaxes of Longitude and Latitude; without which, the Calculation of *Solar Eclipſes* would be the ſame with that of *Lunar* ones.

ECLIPSES *of the Satellites.* See SATELLITES *of Jupiter.*

The chief Circumſtances here obſerved are,

1. That the Satellites of *Jupiter* undergo two or three Kinds of *Eclipſes*; whereof, the firſt are proper, being ſuch as happen when *Jupiter*'s Body is directly interpoſed between them and the Sun: Theſe happen almoſt every Day. Mr. *Flamſteed* and *Caſſini*, give us Tables, wherein their Immerſions into *Jupiter*'s Shadow, and Emerſions again, are computed to Hours and Minutes.

The 2d are Occultations, rather than Obſcurations; wherein the ſame Satellites, coming too near to *Jupiter*'s Body, are loſt in his Light: Which *Ricciolus* calls *occidere Zeuſiace*, ſetting Jovially. In which Caſe, *Jupiters* neareſt Satellite exhibits a third Kind of *Eclipſe*; being obſerved like a Macula, or dark round Spot, tranſiting *Jupiter*'s Diſk, with a Motion contrary to that of the Satellite: Juſt as the Moon's Shadow projected on the Earth, will appear to do, to the Lunar Inhabitants.

The *Eclipſes* of *Jupiter*'s Satellites furniſh the beſt Means of finding the Longitude at Sea. Thoſe, particularly, of the firſt Satellite, are much ſurer than the *Eclipſes* of the Moon; and withal happen much oftener: Beſide that, the Manner of applying them is very eaſie. See LONGITUDE.

ECLIPTIC, *Eclipticus*, ſomething belonging to *Eclipſes*. See ECLIPSE.

All new and full Moons are not *Ecliptic*, i. e. Eclipſes don't happen every new and full Moon, tho' there be then an Interpoſition, either of the Earth between the Sun and Moon, or of the Moon between the Sun and Earth. The Reaſon is, that the Interpoſition is only as to Longitude, and not as to Latitude. The Sun is always in the *Ecliptic*, but the Moon is not; ſhe deviates from it about five Degrees, ſometimes on the North Side, and ſometimes on the South. But every five Months, or thereabouts, ſhe cuts the *Ecliptic*; and 'tis only about thoſe Times, that there can be Eclipſes either of the Moon or Sun.

The Places, wherein ſhe cuts the *Ecliptic*, are called the *Nodes* of the Moon. See NODES.

ECLIPTIC *Bounds*, or *Terms*, *Termini Ecliptici*; is the Space of about 15 Degrees from the Nodes of the *Ecliptic*; within which, if the Moon be, at the Time of a Conjunction or Oppoſition with the Sun, there may be an *Eclipſe* of the Sun, or Moon, tho' ſhe be not preciſely in the Nodes. See ECLIPSE.

ECLIPTIC Digits, *Digiti Ecliptici*. See DIGITS.

ECLIPTIC, in Aſtronomy, is particularly uſed for a Line, or Circle, on the Surface of the Sphere of the World, under which the Centre of the Sun proceeds in its proper Motion: Or a Line, with the Sun's Centre, deſcribes in his annual Progreſs. See CIRCLE, SUN, *&c.*

It has its Name *Ecliptic*, by Reaſon all Eclipſes happen when the two Planets are in or near the Nodes, or Interſections of the *Ecliptic*. See ECLIPSE.

It is alſo called the *Sun's Orbit*, and *Sun's Way*, by Reaſon the Sun never deviates from it, in his annual Motion from Eaſt to Weſt. See ORBIT.

The North, or aſcending Node of the *Ecliptic*, is called the *Dragons-Head*, and the South, or deſcending Node, the *Dragons-Tail*. See DRAGON, *&c.*

The *Ecliptic* is placed obliquely with Reſpect to the Equator, and cuts it in two Points, *viz.* the Beginnings of *Aries* and *Libra*, or into two equal Parts; and, accordingly, we find the Sun twice every Year in the Equator: And all the reſt of the Year, either on the North or South Side thereof. See EQUINOCTIAL.

The *Ecliptic* is a great Circle of the Sphere, biſſected by the Horizon; conſequently, the Arch of the *Ecliptic*, intercepted between the Horizon and the Meridian, is a Quadrant. And again, the *Solſtitial Points* of the *Ecliptic*, i. e. thoſe moſt remote from the Equator, are a Quadrant diſtant from the Equinoctial ones. Laſtly, as the greateſt Declination of the *Ecliptic*, from the Equator, is an Arch of a great Circle diſtant by a Quadrant from the Equinoctial Points; it will be the Meaſure, or Quantity of the *Obliquity of the Ecliptic*, i. e. of the Angle form'd by the Interſection of the Equator with the *Ecliptic*. See SPHERE.

The Obliquity of the Ecliptic, or the Angle wherein it cuts the Equator, is uſually fix'd at 23° 30′; which, therefore, is the greateſt Declination of the *Ecliptic* from the Equator: The Points of which greateſt Declination on each Side, are called the *Solſtitial Points*; thro' which are drawn the two Tropicks. See SOLSTITIAL and TROPIC.

The Method of obſerving the greateſt Declination of the *Ecliptic* is thus: About the Time of one of the Solſtices obſerve the Sun's Meridian Altitude with the utmoſt Care, for ſeveral Days ſucceſſively: From the greateſt Altitude obſerv'd, ſubſtract the Height of the Equator. The Remainder is the greateſt Declination in the Solſtitial Point.

Ricciolus, e. gr. at *Boulogne*, in the Year 1646, obſerved the Sun's Meridian Altitude, on the 20th of *June*, to

be

be 68° 59′ 55″; on the 21ſt, 69° 0′ 10″; and on the 22d, 68° 59 55″. The greateſt then was, 69° 0′ 10″; from which the Height of the Equator 45° 29′ 50″, being ſubſtracted, left 23° 30′ 20″ for the greateſt Declination.

It has been Matter of great Diſpute among the late Aſtronomers, whether the *Obliquity of the Ecliptic* be fix'd or moveable.

'Tis certain, the Obſervations of the antient Aſtronomers repreſent it conſiderably greater, than thoſe of the Moderns: Whence *Purbachius*, *Reinholdus*, *Regiomontanus*, *Copernicus*, *Rheticus*, *Longomontanus*, *Tycho*, *Snellius*, *Lanſbergius*, *Bullialdus*, and others, have concluded it variable.

To determine the Point, the Obſervations of the Aſtronomers of all Ages, have been collected together; the chief of which are: That of *Pytheas*, in the Year before Chriſt 324, which makes it 23° 52′ 41″: That of *Eratoſthenes*, in 230, 23° 51′ 20″: And that of *Hipparchus*, in the Year before Chriſt 140, 23° 51′ 20″: That of *Ptolomy*, in the Year after Chriſt 140, 23° 51′ 20″: Of *Albategnius* in 880, 23° 25′: *Regiomontanus*, in 1460, 23° 30′: *Waltherus*, in 1476, 23° 30′: *Copernicus*, in 1525, 23° 28′ 24″: *Rothmannus* and *Byrgius*, in 1570, 23° 30′ 20″: *Tycho*, in 1587, 23° 30′ 22″: *Kepler*, in 1627, 23° 30′ 30″: *Gaſſendus*, in 1636, 23° 31′: *Ricciolus*, in 1646, 23° 30′ 20″: *Hevelius*, 23° 30′ 20″: *Mouton*, 23° 30′: And *De la Hire*, in 1702, 23° 29′.

Upon the whole, tho' the oldeſt Obſervations make the Obliquity the greateſt, yet it appears to be immutable: For it was by Miſtake that *Eratoſthenes* concluded, from his Obſervations, the greateſt Declination to be 23° 51′ 20″: From the ſame Obſervations he ſhould only have made it 23° 31′ 5″; as is ſhewn by *Ricciolus*. And the like overſight has been found by *Gaſſendus* and *Peireſcius* in the Obſervations of *Pythias*; which Miſtakes of *Eratoſthenes* and *Pythias* were retain'd by *Hipparchus* and *Ptolomy*: And gave Occaſion to the forementioned Authors to conclude that the Obliquity was continually decreaſing.

Yet Monſ. *le Chevalier de Louville*, who has conſider'd the Merits of the Cauſe with infinite Attention, is of another Sentiment: The Reſult of his Reſearches, he gives us in the Memoirs of the Royal Academy, for the Year 1717, *viz.* that the Obliquity of the *Ecliptic* diminiſhes at the Rate of a Minute in 100 Years. The Antients, we know, had no Regard to any Refractions in their Obſervations: And beſides, made the Sun's Horizontal Parallax 3′; whereas the modern Aſtronomers ſcarce make it 10″. Theſe two Inaccuracies have a very ill Effect on their Obſervations; which M. *de Louville* is obliged to free them of, e're he can build on them.

According to an antient Tradition of the *Egyptians*, mention'd by *Herodotus*, the *Ecliptic* had antiently been perpendicular to the Equator: This Notion they were led into, by obſerving, for a long Series of Years, that the Obliquity was continually diminiſhing; or which amounts to the ſame, that the *Ecliptic* was continually approaching to the Equator. For hence they took Occaſion to ſuſpect that thoſe two Circles, in the Beginning, had been as far off each other as poſſible. *Diod. Siculus* relates, that the *Chaldeans* reckon'd 403000 Years from their firſt Obſervations to the Time of *Alexander*'s entring *Babylon*. This enormous Account, may have ſome Foundation, ſuppoſing the *Chaldeans* to have built on the Diminution of the Obliquity of the *Ecliptic* of a Minute in 100 Years. M. *de Louville*, taking the Obliquity ſuch as it muſt have been at the Time of *Alexander*'s Entrance into *Babylon*, and going back to the Time when the *Ecliptic*, at that Rate, muſt have been perpendicular to the Equator, actually finds 402942 *Egyptian*, or *Chaldean* Years, which is only 58 Years ſhort of the former *Epocha*. In the general, there is no Way of accounting for the fabulous Antiquity of the *Egyptians*, *Chaldeans*, &c. ſo probable, as by long Periods of very ſlow Cœleſtial Motions, whereof they had obſerved a little Part, and thence calculated the Beginning of the Period; making the World and their own Nation to commence together. If M. *de Louvilles* Syſtem be true, in 140000 Years more, the *Ecliptic* and Equator muſt coincide and mix in one.

The *Ecliptic* is divided into twelve Parts, called *Signs*. See SIGN.

ECLIPTIC, in Geography, &c. is a great Circle of the Globe, cutting the Equator under an Angle of 23° 29′. See GLOBE.

The *Terreſtrial Ecliptic*, therefore, is in the Plane of the *Cœleſtial Ecliptic*; Like which it has its *Equinoctial* and *Solſtitial* Points, and is bounded by *Tropicks*. See EQUATOR, SOLSTITIAL, EQUINOCTIAL, TROPIC, &c.

ECLOGUE, in Poetry, a Kind of paſtoral Compoſition, wherein Shepherds are introduced converſing together. See PASTORAL.

The *Eclogue* is properly an Image of the Paſtoral Life: Nor do we ſee what Fineſſe it was that determined *Sannazarius* to put Fiſhermen in lieu of Shepherds, who had been Time out of Mind in Poſſeſſion of the *Eclogue*.

The Beauty of the *Eclogue*, Monſ. *Fontenelle* obſerves, is not attach'd to Rural Things, but rather to what is calm and eaſy in the Country Life. Shepherds being agreeable Perſonages, the Poets abuſe them; and provided they do but talk a little about Reeds, and Herbage, they conclude on Courſe 'tis an *Eclogue*.

There are *Eclogues* in *Theocritus* of a lofty Character; and *Virgil* has ſome in the ſublime Style. The *Eclogue*, therefore, occaſionally raiſes its Voice. Yet M. *Fontenelle* eſteems it a Fault in ſome modern Poets, to have put Matters of high Concern in their *Eclogues*; and to have made their Shepherds ſing the Praiſes of Kings and Heroes. *Ronſard*, in particular, has made himſelf ridiculous, by making the Eloge of *Budeus* and *Vatable* in his firſt *Eclogue*, by the Shepherd *Margot*. Such Folks ſhould have been above the Knowledge of ſimple *Margot*.

The Sentiments, whereof *Eclogues* conſiſt, the ſame Author obſerves, ſhould be finer and more delicate than thoſe of real Shepherds: Only, their Form ſhould be as ſimple, and Country-like as can be. But this Simplicity excludes none but glaring and exceſſive Ornaments.

Since the Eſtabliſhment of the Academy, or Aſſembly of *Arcadians* at *Rome*, about the Year 1690; the Taſt for *Eclogues* has been greatly improved among the *Italians*. Thoſe Gentlemen, who are the Flower of the Wits of *Italy*, take the Name of the Shepherds of *Arcadia*; and will not allow their Aſſembly to be treated as an Academy. They have each of them a poetical Name, which is always that of ſome Shepherd; and apply themſelves particularly to *Eclogues*, as Pieces moſt proper to their Profeſſion.

The learned *Sig. Creſcentini*, one of the Founders of the Aſſembly, who had long been Cuſtos, *i. e.* the Preſident thereof, and bore the Name of *Alpheſibæo Cario*, has wrote the Laws and Eſtabliſhment of the Society, with the Names of all who had been admitted thereof, at the End of his Book, entitled, *la Bellezza de la Volgar Poeſie*.

The Word *Eclogue*, is form'd from the *Greek* ἐκλογή, *Choice*. According to the Etymology of the Word, therefore, *Eclogue* ſhould be no more than a choice Piece; but Cuſtom has determined it to a farther Signification, *viz.* a little, elegant Compoſition in a ſimple, natural Style and Manner.

Idyll and *Eclogue*, in their primary Intention, are the ſame Thing: Thus, the *Idylls*, εἰδύλλια of *Theocritus*, are Pieces wrote perfectly in the ſame Vein with the *Eclogæ* of *Virgil*.

But Cuſtom has made a Difference between them, and affected the Name *Eclogue*, to Pieces wherein Shepherds are introduced ſpeaking; *Idyll*, to thoſe wrote like the *Eclogue*, in a ſimple, natural Style, but without any Shepherds in them. See IDYLL.

Some imagine the Name *Eclogue*, to have been originally attributed to ſuch Poems, as were wrote in Imitation of others; ſuch as the *Eclogues* of *Virgil*, which are only Imitations of *Theocritus*.

Others are of Opinion, the Word was firſt form'd from αἴξ αἰγός, *Goat*, and λογός, *Diſcourſe*, q. d. a Converſation or *Diſcourſe* of *Goats*, or *Goat-herds*. But *Fa. Ruæus*, in his Comments on *Virgil*, thinks, they would then have made it Αἰγολογία, *Ægology*, rather than *Eclogue*; or, at leaſt, the Word would have been wrote in *Greek* by αι, and in *Latin* by æ, not e.

Barthius advances another Opinion, *viz.* that the Name *Eclogue*, was given to all Poetical Compoſitions that were of a moderate Length, tho' too ſhort to give them the Name of *Books*; and hence it is, that *Statius*, in the Epiſtle at the Head of the IIId Book of his *Sylvæ*, and in the Preface to his fourth Book, calls his Poems *Eclogues*; tho' he had not call'd them ſo in the Title.

Auſonius, in the Preface to his *Cupid crucified*, calls alſo his *Idylls*, *Eclogues*. Add, that *Crucius*, in his Comment on *Horace*, declares to have ſeen very antient Manuſcripts, wherein the Satyrs of the Poet are called *Eclogues*; in which he is ſeconded by our learned Countryman Mr. *Baxter*.

ECLOGUE, is alſo applied to other Compoſitions beſide thoſe of Poetry.

Thus, we ſometimes read of the *Eclogues* of *Diodorus*, of *Polybius*, of *Cteſius*, *Theophraſtus*, *Strabo*, &c. In which Senſe it only ſignifies *Extract*, or *Collection*; whence the Name.

ECLOGARIUS, *Eclogary*, a learned Man, who has made Abundance of Extracts from Authors. *Juſtus Lipſius*, the Jeſuite *Petavius*, *Voſſius*, *Selden*, and *Grotius*, muſt have been great *Eclogaries*.

ECPHORA, *Projecture*, in Architecture, is uſually the Line, or Diſtance, between the Extremity of a Member, or Moulding, and the Naked of the Column, or other Part it projects from.

Some Authors, however, account the *Ecphora* from the Axis of the Column; and define it to be the right Line intercepted between the Axis, and the outermoſt Surface of a Member or Moulding. See PROJECTURE.

ECPHRACTICKS, in Medicine, ſuch Remedies as have a Faculty of opening, and unſtopping the Veſſels, through which the Humours are to paſs: Or which incide, and attenuate tough, viſcid Humours, and thereby promote their Diſcharge. The ſame with APPERIENTS and DEOBSTRUENTS.

The chief ſimple *Ecphracticks*, are the little *Centaureum*, *Wormwood*, *Agremony*, *Hyſſop*, *Chamædris*, Bark of *Tamariſk*, Roots of *Capers*, *Scolopendrium*, &c.

The Word is form'd from the *Greek* εκφραττειν, *to free from Obſtruction*; of εκ and φραττω, *obſtruo*, *ſepio*.

ECPIESMA, in Chirurgery, a Kind of Fracture of the Skull, &c. wherein there are ſeveral Splinters, that preſs and diſorder the inner Membranes. See FRACTURE.

The Word is pure *Greek*, εκπιεσμα.

ECTHESIS, in Church Hiſtory, a Name the Emperor *Heraclius* gave to a Confeſſion of Faith publiſh'd by him in 639. See FAITH.

The *Ectheſis* favour'd the Error of the *Monothelites*; and eſtabliſh'd only one Will in *Jeſus Chriſt*. *Heraclius* publiſh'd it at the Inſtigation of *Athanaſius*, Chief of the *Jacobites*, *Cyrus*, Patriarch of *Alexandria*, and *Sergius*, Patriarch of *Conſtantinople*: But finding that the *Roman* Church eſteem'd it Heretical, he diſown'd it, and declared by another Edict, which he ſpread throughout the Eaſt and Weſt, that *Sergius* was the Author of the *Ectheſis*.

The Word is *Greek*, εκθεσις, and ſignifies *Expoſition*.

ECTHLIPSIS, *Elliſion*, in Grammar, a Figure whereby an *m* is retrench'd, or cut off, at the End of a Word; for the Sake of the Meaſure of the Verſe. See FIGURE.

The Word is *Greek*, εκθλιψις, which ſignifies *Eliſion*.

Thus, in *multum ille*, &c. In ſcanning the Verſe, we drop the *m*, at the End of *multum*, and only make three Syllables in the two Words.

Some account the *Ecthlipſis*, a Poetical Licence in the *Latin* Verſification: But, in Reality, the *Elliſion* of an *m* final, when the following Word, in the ſame Verſe, begins with a Vowel, is of Neceſſity, not of Licence.

Antiently, the *s* was likewiſe retrenched before a Conſonant; as *facundu ſuoque*, for *facundus*, &c. In Effect, the *m* and *s*, were peculiarly rough and harſh in the *Latin* Pronunciation; as appears from *Quintilian*. And 'twas this led the Poets to retrench them at the Ends of their Words; as the like Cauſe did the *French*, to drop their *e* Feminine before a Word, beginning with a Vowel, and us to avoid a Hiatus, or Concourſe of Vowels.

ECTHYMOSIS, in Medicine, a vehement Agitation and Dilatation of the Blood; ſuch as happens in extraordinary Emotions of Joy.

The Word is form'd of ἐκ *ex*, and θύμος, *Animus*, *Mind*.

ECTROPIUM, in Medicine, a Diſeaſe of the Eyes, conſiſting in a Sort of Inverſion of the lower Eye-lid, which diſables it from covering its Part of the Eye. See PALPEBRÆ.

The Word is *Greek*, εκτροπιον.

ECTYLOTICKS, Remedies proper to conſume, and eat off Callus's, Warts, and other Excreſcences, form'd on the Fleſh. See CALLUS, &c.

The Word is form'd of ἐκ and τυλος, *Callus*.

ECTYPE, ECTYPUS, among Medalliſts, an Impreſſion of a Seal, Ring, or Medal; or a figured Copy of an Inſcription, or other ancient Monument.

In the Books of Travels, we find Abundance of *Ectypes* of antient Inſcriptions, of the *Trajan* Column, of *Chilminar*, &c.

The Word is *Greek* αρχετυπον, is the Original, or Model, εντυπον, the Copy, or Image, moulded or ſtruck in *Creux*: And ἔκτυπον, *Ectypon*, the Image *in relievo*, or emboſs'd. See TYPE.

ECU, the *French* Crown. See CROWN.

ECUSSON, in Heraldry, an Ineſcutcheon, or little Eſcutcheon. See ESCUTCHEON.

EDDISH, or EADISH, is the latter Paſture, or Graſs, that comes after mowing, or reaping; and is otherwiſe called *Eagraſs*, *Earſh*, and *Etch*.

EDDY, in Natural Hiſtory, is when the Water, at any Place, runs back, contrary to the Tide, or Stream, and ſo falls into the Current again.

The Sea-men call that *Eddy-Water* which falls back, as it were, on the Rudder of a Ship under Sail, the *Dead Water*. An *Eddy Wind*, is that which returns, or is beat back from any Sail, &c.

EDGINGS, in Gardening, Rows of Shrubs, or Plants, placed by Way of Borders, around Beds, Compartiments, &c.

For the *Edgings* of Compartiments, Box ſeems the moſt proper. But they are frequently made of Aromatic Plants, as Sage, Sweet Marjoram, Thyme, Lavender, Hyſſop, &c.

EDHILING, *Edhilingus*, an ancient Name of the Nobleſſe among the *Anglo-Saxons*.

The *Saxon* Nation, ſays *Nithard*, *Hiſt. L.* IV. is divided into three Orders, or Claſſes of People; the *Edilingi*, the *Frilingi*, and the *Lazzi*: Which ſignifie the Nobility, the Freemen, and the Vaſſals or Slaves.

Inſtead of *Edhiling*, we ſometimes meet with *Adeling*; which Appellation is likewiſe given to the King's Son, and the preſumptive Heir of the Crown.

EDICT, an Inſtrument ſign'd and ſeal'd by a Prince, to ſerve as a Law to his Subjects. See LAW.

Edicts have no Room in *England*, where the enacting of Laws is not lodg'd in the King, but in the Parliament.

In the *Roman* Law, we find frequent mention of the *Edict of the Prætor*, *quod Prætor edixit*, which was a Phraſe conſecrated to the Ordinances of the Prætor; tho' it was uſed on other Occaſions. See PRÆTOR.

In the *French* Law, Edicts, *Edits*, make a great Figure: They are of various Kinds; ſome importing a new Law, or Regulation, as the *Edict* of Duels, of ſecond Marriages, &c. Others the Erection of new Offices, Eſtabliſhments of Duties, Rents, &c. Sometimes Articles of Pacification, as the *Edict* of *Nantz*, &c.

Edicts are all ſeal'd with green Wax, to ſhew that they are perpetual and irrevocable.

Edicts with them, are much the ſame as Proclamations with us; but with this Difference, that the former hath ſolely the Authority of a Law in it ſelf, from the Power iſſuing it forth; whereas the latter is only the Declaration of a Law, to which it refers, and hath no Power in it ſelf.

EDIFICE, a *Building*. See BUILDING.

The Word is form'd of the *Latin*, *Ædes*.

EDILE, or ÆDILE, ÆDILIS, in Antiquity, a *Roman* Officer, whoſe Function came near to that of our Mayors.

The *Ædiles* had the Care and Superintendence of public and private Buildings, of Baths, Aquæducts, Roads, Bridges, Cauſeways, &c. The Weights, and Meaſures, were likewiſe under their Direction.

They fix'd the Rates of Proviſions, and took Care the People were not exacted on therein. The Inquiry and Cognizance of Debauches, and Diſorders in public Houſes, likewiſe belong'd to them: They were to reviſe Comedies; and it belong'd to them to treat the People with grand Games and Spectacles at their own Expence.

All theſe Functions, which render'd the *Edility* ſo conderable, belong'd at firſt to the *Ediles* of the People, *Ædiles Plebeii*, or *Minores*. Theſe were only two in Number; and were firſt created in the ſame Year as the Tribunes: For the Tribunes, finding themſelves oppreſs'd with the Multiplicity of Affairs, demanded of the Senate to have Officers, whereon they might diſcharge themſelves of Affairs of leſs Importance; and, accordingly, two *Ediles* were created. And hence it was, that the *Ediles* were elected every Year, at the ſame Aſſembly as the Tribunes. See TRIBUNE.

But theſe *Plebeian Ediles*, having refuſed, on a ſignal Occaſion, to treat the People with Shews; as pleading themſelves unable to ſupport the Expence thereof: The *Patricians* made an Offer to do it, provided they would admit them to the Honours of the *Edility*.

On this Occaſion, there were two new *Ediles* created, of the Number of the *Patricians*, in the Year of *Rome* 388. They were called *Ædiles Curules*, or *Majores*, as having a right to ſit on a *Curule* Chair, enrich'd with Ivory, when they gave Audience; whereas the *Plebeian Ediles*, only ſat on Benches. See CURULE.

Beſide that the *Curule Ediles* ſhared all the ordinary Functions with the *Plebeians*, their chief Employ was, to procure the Celebration of the grand *Roman* Games, and to exhibit Comedies, Shews of Gladiators, &c. to the People.

To eaſe theſe four firſt *Ediles*, *Cæſar* created a new Kind, called *Ediles Cereales*, as being deputed chiefly to take Care of Corns, which were called *Dona Cereris*; for the Heathens honour'd *Ceres* as the Goddeſs who preſided over Corn, and attributed to her the Invention of Agriculture. Theſe *Ædiles Cereales*, were alſo taken out of the Order of *Patricians*.

In the Municipal Cities there were *Ediles*, with the ſame Authority as at *Rome*.

The Word is form'd of *Ædes*, on Account of their having the Care of Temples, Houſes, &c.

EDITOR, in the Common-wealth of Learning, a Perſon who takes the Care of publiſhing the Work of another Author;

Author; uſually, of an antient Author: For *Editor* is neither properly applied to a working Printer, nor to an Author who prints his own Works.

Eraſmus, was a mighty *Editor* of antient Writings. The *Lovain* Doctors, *Scaliger*, *Petavius*, *Fa. Sirmond*, Biſhop *Walton*, Mr. *Hearn*, &c. are learned *Editors*.

EDUCATION, the Art of bringing up, forming, and inſtructing Children.

The Follies of a too delicate *Education*, are well expreſs'd in that Deviſe of an Ape, which by over careſſing and hugging its young ones, ſtrangles them; with the Motto, *Complectendo necat*.

Octavius Ferrarius, has a very good *Latin* Treatiſe on the Subject of *Education*, entitled *Chiron*; the Name of the Centaur who was *Achilles*'s Tutor.

Mr. *Lock*'s excellent Treatiſe of *Education*, is known to every Body. *Quintillian* employs the ſecond Chapter of his firſt Book, in enquiring whether a Domeſtic, or a College *Education*, be preferable, *i. e.* whether it be better to bring up ones Children at Home, or to ſend them to the Colleges, and public Schools. After urging all that can be ſaid on either Side, he concludes for a College, or School *Education*.

EDULCORATION, in Pharmacy, is the *dulcifying*, or *ſweetening* of any Remedy, by Means of Sugar, or Syrups. See DULCIFYING.

EDULCORATION, in Chymiſtry, is the *ſweetening*, or purging any Thing of its Salts, *&c.* by repeated Lotions, or Waſhings in cold Water: *E. gr.* the freeing of Precipitates of Mercury, Metals, *&c.* of the ſharp Salts by Means whereof they had been diſſolved; or which had been mingled with them, to effect a Diſſolution. See ABLUTION.

EFFARE, or EFFRAYE, in Heraldry, a Term applied to a Beaſt, when rearing on its hind Legs, as if it were affrighted.

EFFECT, the Reſult, or Conſequence, of the Application of a Cauſe, or Agent, on ſome Subject. See CAUSE.

'Tis one of the great Axioms of Philoſophy, that *Effectus pleni*, whole or adequate *Effects*, are always proportionable to the Powers of their Cauſes.

The Term is alſo of ſomewhat further Import in the Arts: As when we ſay, in Painting and Architecture, that ſuch a Contraſt, or ſuch a Drapery, or ſuch an Attitude, have a *fine*, or an *ill Effect*, i. e. are beautiful, or noble, *&c.* Too many Breaks, and little Enrichments in a Building, have a pitiful *Effect*, i. e. give it a mean Aſpect.

In the Manage, *Effect* is applied to the Motions of the Hand, which direct the Horſe.

They diſtinguiſh four *Effects* of the Hand, *viz.* in uſing the Bridle to put a Horſe forwards, draw him backwards, and ſhifting it out of the right Hand into the left, or *vice verſa*.

EFFECTS, in Commerce, *&c.* are the Goods poſſeſs'd by any Perſon, whether moveable or immoveable: particularly thoſe which Merchants and Dealers, acquire by Trade. The *Effects* of Merchants are uſually diſtinguiſhed into three Claſſes, good, bad and doubtful. By an Ordonnance of the *French* Court in 1673, every Merchant is obliged to take an Inventory, or Review, every Year, of all his *Effects* of all Kinds.

EFFECTIONS, in Geometry, the Geometrical Conſtructions of Propoſitions. See CONSTRUCTION.

The Term is alſo uſed in Reference to Problems and Practices; which when they are deducible from, or founded upon, ſome general Propoſitions, are called the *Geometrical Effections* thereto belonging.

EFFERVESCENCE, is popularly uſed for a light *Ebullition*, or a ſtrong inteſtine Motion, produced in a Liquor, by the firſt Action of Heat, without any notable Separation of its Parts. See EBULLITION.

Such a Liquor muſt be heated to a ſlight *Effervescence*.

EFFERVESCENCE, in Phyſicks, Chymiſtry, &c. is not applied to any Ebullitions, or Motions produced by Fire; but only to thoſe reſulting from the Mixture of Bodies of different Natures, which by their acting on one another, occaſion a Heat, or at leaſt an Agitation of Parts, reſembling the Ebullition, or boiling produced by Fire.

Acids mix'd with Alkalies, *e. gr.* Oil of Tartar, and Spirit of Vitriol, produce an *Effervescence*, &c.

Chawvin defines *Effervescence* more ſcientifically, to be a violent Expulſion of the Air, out of the Pores of the Particles of one Body, by the Intruſion of the Particles of another Body mix'd therewith, into thoſe Pores before poſſeſs'd by Air.

In Order for *Effervescence* to take Place, the Particles of the latter Body muſt be ſuppoſed conformable, both in Bulk and Figure, to the Pores of the other; ſo as they may enter, and fill the ſame, like Wedges: And beſide, a ſtrong Degree of Attraction between the Particles of the two Bodies, ſtronger than the Attraction, or Force of Coheſion, between the Particles of either of the Bodies alone. See ATTRACTION.

Hence it ſhould ſeem, that *Effervescence* only differs from Fermentation, in the Degree of Exploſion; which in *Effervescences*, by Reaſon of the greater Purity and Freedom of the Acid and Alkali, is greater than in Fermentations. See FERMENTATION.

Of *Effervescences*, ſome are *hot*, and others *cold*. Of the firſt Kind, are thoſe produced by the Mixture of Oil of Tartar *per deliquium*, with Spirit of Vitriol; Quicklime with cold Water; all acid Spirits, with alcaline, or earthy Bodies; *Aqua fortis*, Spirit of Vitriol, Spirit of Nitre, *Aqua Regia*, &c. with all Metallic Bodies, Marcaſites and Minerals; Coral, with Lemon, or Orange Juice; Marble with Spirit of Salt; Hartſhorn, Chalk, Boars Tooth, Crabs Eyes, Mother of Pearl, and all Shells with Acids. In all which, the *Effervescences* are attended with a pretty intenſe Heat. Oil of Vitriol, and Oil of Turpentine, particularly, mix'd together, produce ſuch a vehement Heat, that unleſs they be mix'd Drop by Drop, they are apt to burſt forth into Flame, and break the Vial.

On the contrary, Silver-filings being diſſolved in Spirit of Nitre, produce a cold *Effervescence*, which, inſtead of Heating, cools the Glaſs, ſo as to render it painful to the Senſe of feeling.

This different Effect is aſcribed to this, that in the former Caſe, the mix'd Bodies, one or both of them, abound with Sulphur; but not in the latter. Not but ſome attribute the Heat, uſual in *Effervescences*, to the vehement Friction, and Colliſion of the Particles againſt each other.

Powder'd Coral, mix'd with diſtill'd Vinegar, produces a cold *Effervescence*, which the ſame Philoſophers account for hence, that the Pores of the Coral being very great, it may be eaſily diſſolved in the acid Spirit, without any great Friction, or Colliſion of the Parts, ſuch as would be neceſſary to generate any conſiderate Heat.

An *Effervescence* may alſo be produced by the Mixture of two cold Liquors. See DISSOLUTION.

EFFICACIOUS, EFFECTUAL, in Theology. Within theſe 150 Years there have been very great Diſputes on the the Subject of *Efficacious Grace*. Grace is uſually divided into ſufficient and *Efficacious*; tho' the *Janſeniſts* hold, that there is no Grace ſufficient, but what is *Efficacious*, i. e. but what effectually determines the Will to act. See SUFFICIENT.

Efficacious Grace, is defined to be that which enlightens the Mind, and touches the Heart, in ſuch Manner, as always to produce its Effect, however it be oppoſed, or reſiſted by the Will. See GRACE.

Some Divines maintain that *Efficacious Grace* is *Efficacious* of it ſelf. *Efficacious Grace of it ſelf*, if there be any ſuch Thing, is that which produces its Effect merely of it ſelf, and not in Vertue of any Conſent of the Will. *Calvin*, is the firſt that ever uſed the Term *Gratia Efficax per ſe*, Grace *Efficacious* of it ſelf.

A late Divine holds the *Efficacy* of Grace in it ſelf to conſiſt in this, that *Efficacious* Grace is always joyn'd with a Moral Neceſſity of doing the Thing it inclines to; and ſufficient Grace, joyn'd with a moral Impotence of doing it. See SUFFICIENT.

The *Armenian* and *Popiſh* Way of conceiving the Neceſſity of *Efficacious* Grace, is to hold that this Grace is never wanting, at leaſt to the Righteous, except thro' their own Default; that they always ſtand in Need of other inner Graces, truly and properly ſufficient, in Order to draw down this *Efficacious* Grace; and that they do infallibly draw it down, when it is not rejected, tho' they often remain without Effect, thro' a Reſiſtance, inſtead of a Conſent thereto.

Fa. Malebranch maintains, that the mutual Commerce between Soul and Body, *i. e.* Life, has no other *Vinculum*, or Principle, but the *Efficacy* of God's Decrees: That ſecond Cauſes have no proper *Efficacy*, *&c.* See SECOND *Cauſe*.

EFFICIENT, in Philoſophy. An *Efficient Cauſe* is that which produces an *Effect*. See CAUSE and EFFECT.

Philoſophers uſually diſtinguiſh four Kinds of Cauſes in Nature: The *Efficient*, a *final*, a *formal*, and a *material*. See each under its proper Article.

The School Philoſophers are exceedingly divided as to the Nature and Eſſence of an *Efficient Cauſe*.

Ariſtotle defines an *Efficient* to be, *id unde, that from which*: Or, *the firſt Principle of Change and Reſt*, i. e. of Production and Conſervation: The *Efficient*, called *id unde*, that from which; as the End or final Cauſe, is that proper, *quod*, for which; the Exemplar, *ad quod*, that to which; the Matter, *ex quo*, that of which; and the Form, *per quod*, that by which. And it is call'd the firſt Principle, not in Reſpect of Priority of Time, for the End exerts its Cauſality before the *Efficient*, but of

Dig-

Dignity: The *Efficient* being the Physically active Principle; and the End only acting objectively.

Others of the Shoolmen define *Efficient* to be *Principium per se influens in aliud sine Mutatione sui* —. The *Ramists*, after *Plato* and *Cicero*, define an *Efficient* to be that, *a qua res est*, from which a Thing is: To which a great Author, objecting that a Thing may also be from its End; adds, that an *Efficient* is that, *a qua res vera causalitate proficiscitur*.

Others define *Efficient* to be, *quæ per Actionem causat*, that which causes by acting: For to effect, every Body knows, is to act; and hence, neither a Procatarctic, nor an Exemplary Cause, are properly *Efficients*, tho' usually rank'd among the same.

Lastly, others define an *Efficient* to be a Cause, *a qua aliud producatur*, from which something is produced; Consequently, what arises from such a Cause, is called an *Effect*: And thus God is the *Efficient* Cause of the World; and the World the *Effect* of God. To which Definition of an *Efficient*, all the former Definitions are reducible.

An *Efficient* Cause then, is either *Physical*, as Fire is the *Efficient* Cause of Heat; or *Moral*, as an Adviser is the Cause of a Murther: Or *Universal*, which in various Circumstances produce various Effects, as God and the Sun; or *particular*, as a Horse, which produces a Horse: Or *Univocal*, which produces an Effect like it self; as a Horse begets a Horse: Or *Equivocal*, as the Sun producing a Frog: Or *Natural*, which acts not only without Precept, in Opposition to Artificial, but also from within, and according to its own Inclination, in Opposition to violent, as Fire acts when it warms: Or *Spontaneous*, as a Dog eating: Or *Voluntary* and *free*. See LIBERTY.

Others consider *Efficient* Causes, either as *Principal*, or as *Instrumental*. Others, either as *next*, or *remote*; or *Mediate* or *Immediate*. Others, in fine, divide *Efficient* Causes, among all the Kinds of Beings, natural and supernatural; spiritual and corporeal; substantial and accidental; vital and not vital, *&c.*

But the most celebrated Division of *Efficients*, is that into *first* and *second*.

A *first Cause* is that, between which and the Effect there is some necessary Connection. Of which Kind there is none but God alone.

A *second Cause* is that from which an Effect follows in Consequence of the Will, or Constitution of the Creator; and which the *Cartesians* call an *Occasional Cause*. But these precarious, or Occasional Causes are, in Reality, no Causes at all, but only antecedent Effects.

This is easily shewn: For 1. All Action, at least all corporeal Action, is contain'd in Motion; but Motion can only result from the first Cause: It being an allow'd Principle, that Body of it self is inert and inactive. The true Cause of Motion, therefore, is a spiritual, not a corporeal Nature. But neither can a finite, spiritual Nature, be the chief Cause of Motion; for there is no necessary Connection between the Will, *e. gr.* of an Angel, and the Motion of a Body, nor between that of any other Being except God. Thus, when an Angel wills, a Stone moves; by Reason God has constituted such a Law between the Will of the Angel, and the Motion of the Stone: And thus, we move our Hands when we please. Not that the Soul is the principal Cause of such Motion, but only the *Occasional* Cause. See OCCASIONAL.

Others have a different Notion of first and second Causes. A *first Cause*, say they, is that which is independent of every other, as God alone. A *second Cause* is that depending on some other, as every Creature.

EFFICIENTS, in Arithmetic, the Numbers given for an Operation of Multiplication, called also *Factors*. See FACTOR.

The *Efficients* are the Multiplicand and Multiplyer. See MULTIPLICATION.

EFFIGY, EFFIGIES, a Portrait, Figure, or Representation of a Person to the Life. Kings are shewn in *Effigy* in their State Beds.

EFFIGY, is also used for the Print, or Impression of a Coin, representing the Prince's Head who struck it.

To *execute or degrade in Effigy*, is the Execution, or Degradation of a condemn'd, contumacious Criminal, who cannot be apprehended, or seiz'd. In *France* they hang a Picture on a Gallows, or Gibbet, wherein is represented the Criminal, with the Quality or Manner of the Punishment: At Bottom is wrote the Sentence, or Condemnation. 'Tis only Condemnations of Death, that are executed in *Effigy*.

EFFLORESCENCE, a breaking out of some Humours in the Skin; as in the Measles, and the like. See EXANTHEMA.

EFFLUVIUM, a Flux, or Exhalation of minute Particles from any Body: Or an Emanation of subtle Corpuscles, from a mix'd, sensible Body, by a Kind of Motion of *Transpiration*. See TRANSPIRATION.

That there are such *Effluvia*, continually emitted from all Bodies, is pretty certain: Thus, if a Body be immerged in Water, or any other humid Matter, there are little Bubbles continually transmitted therefrom to the Surface of the Water; which are supposed to be nothing else but little Particles, detach'd from the solid Body; and which, when they arrive at the Surface, emerge in Form of Bubbles. And thus a Body, placed in the Receiver of an Air-Pump, is seen, as it were, in a Kind of Effervescence, by Reason of the external Particles continually flowing from the same.

Odoriferous Bodies, every Body knows, are continually emitting substantial *Effluvia*; by Means whereof it is, that they excite in us the Sense of *Smelling*. These minute *Effluvia* are sometimes perceived by the Eye, in Fumes and Vapours. See SMELLING.

The School Philosophers hold these *Effluvia* to be intentional Qualities, as they call them, and nothing substantial; but the Moderns laugh at the Notion, as finding that these *Effluvia* refresh and nourish both the Animal and Vital Spirits.

Some Bodies are found to emit *Effluvia* for a great Number of Years, without any considerable Loss, either as to Bulk or Weight; as Magnets, Electrical Bodies, Ambers, divers odorous Bodies, *&c.* The Tenuity of whose emanant Corpuscles is incredible: Not but that the Loss they sustain by the continual Emission of *Effluvia*, may be made up to them by the Reception of other similar *Effluvia* of the same Kinds of Bodies, diffused thro' the Air.

'Tis added, that these *Effluvia* are emitted in Manner of *Radii*, Rays, *in Orbem*, and that the Circumference or Bound of the Activity of the Radiation, exhibits the same Figure as is that of the Radiant. This the Astronomers sufficiently prove, from the Ratio of the Refraction of the Atmosphere. For the Law of the Emission of these *Effluvia*. See QUALITY.

That *Effluvia* may considerably operate upon, and have great Effects on Bodies within the Sphere of their Activity, is proved by Mr. *Boyle*, in an express Treatise on the *Subtility of Effluvia*; where he shews, 1. That the Number of Corpuscles, emitted by Way of *Effluvia*, is immensely great. 2. That they are of a very penetrating Nature. 3. That they move with vast Celerity, and in all Manner of Directions. 4. That there is frequently a very wonderful Congruity, or Incongruity in the Bulk and Shape of these *Effluvia*, with the Pores of the Bodies they penetrate into and act upon. 5. That in animal and organical Bodies, particularly, these *Effluvia* may excite great Motions of one Part of the Frame upon another, and thereby produce very considerable Changes in the Oeconomy. Lastly, That they have sometimes a Power of procuring Assistance in their Operations by the more Catholic Agents of the Universe, such as Gravity, Light, Magnetism, the Pressure of the Atmosphere, *&c.*

That *Effluvia* are emitted to very great Distances, we have a notable Proof in this: That our Wines grow turbid in the Hogshead, precisely at the same Time when the Grapes are at their Maturity in other remote Countries, whence the Wine was imported. Beside that, Odoriferous *Effluvia* are, in many Cases, perceived at the Distance of many Leagues. Again, that the Generality of *Effluvia* retain the proper Colour, Smell, Taste, and other Properties, and Effects of the Bodies whence they proceeded, and this even after they have pass'd thro' the Pores of other solid Bodies, we have abundant Proof: Thus, magnetical *Effluvia* penetrate all, even the most solid Bodies, without any Change of their Nature, or Loss of Force. And the same we see confirm'd in *Sympathetic Inks*, and Powders, the Sagacity of *Blood-hounds*, &c. See DIVISIBILTY.

EFFUSION, the Pouring out of any liquid Thing with some Degree of Force.

In the antient Heathen Sacrifices, there were divers *Effusions* of Wine, and other Liquors; called *Libations*. See LIBATION.

When Princes conclude a Treaty of Peace, they usually pretend 'tis to prevent the *Effusion* of Christian Blood.

EFFUSION, or FUSION, *Aquarius*, in Astronomy, is that Part of the Sign *Aquarius*, represented on celestial Globes and Planispheres, by the Water issuing out of the Urn of the Water-Bearer. See AQUARIUS.

EGG, in Natural History, a Part form'd in the Females of certain Animals; which, under a Shell, or Cortex, includes an Embryo, or Fœtus, of the same Species; the Parts whereof are afterwards display'd, and dilated, either by Incubation, or by the Accession of a nutritious Juice.

The Species of Animals that produce *Eggs*, are particularly denominated *Oviparous*; and the Part wherein the *Egg* is form'd, the *Ovary*. See OVARY and OVIPAROUS.

Of

Of the various Kinds of *Eggs*, thoſe of Hens, or Pullets, being the moſt uſual, and which have been the moſt obſerved; we ſhall ſay ſomewhat of the Structure thereof, and the Generation of the Chick therein.

The Exterior Part, then, of a Hen's *Egg* is the *Shell*; a white, thin, friable Cortex, including all the other Parts, and defending them from Injuries. Immediately under the Shell lies the *Membrana communis*, which lines the whole Cavity of the Shell, adhering pretty cloſely to it, except at the bigger End, where a little Cavity is left between them, which with Age grows bigger. Under this Membrane are contain'd two *Albumina*, or Whites, each wrapp'd up in its own Membrane. In the middle of the inner White, is the *Vitellus*, or Yelk incloſed likewiſe, in its ſeparate *Involucrum*, or Cover. The outer Albumen is oblong or oval, accommodated to the Figure of the Shell: The inner is ſpherical, and of a more craſs, and viſcid Subſtance; and the Yelk is of the ſame Figure. See ALBUMEN and YELK.

At each End is a *Chalazza*, or Treddle, which are, as it were, the Poles of this *Microcoſm*: Theſe are white, denſe Bodies, conſiſting each of three little Globules like Hail connected together: In theſe not only the ſeveral Membranes are connected, or knit together; by which Means the ſeveral Liquors are kept in their proper Place and Poſition to each other; but they ſerve alſo to keep one and the ſame Part of the Yolk uppermoſt; let the *Egg* be turn'd which Way it will. See CHALAZZA.

About the Middle, between the *Chalazzæ*, on the Side of the Yelk, and in the Membrane thereof, is a little Veſica or Bladder, not unlike a Vetch, or Lentil, called the *Cicatricula*, and by ſome the Eye of the *Egg*. In this Veſicle is contain'd a Humour, in, and of which the Chick is generated. See CICATRICULA.

All theſe Parts of a Pullet's *Egg*, are found in all other *Eggs* to which the Definition of an *Egg* properly and ſtrictly agrees: Such *Egg* being that, of a Part whereof the Animal is form'd, the reſt ſerving for its Food. Accordingly, the firſt Seed, or Stamen of the Chick, is in the *Cicatricula*.

The *Albumen* is the Nutritious Juice, whereof it is diſtended and nouriſhed till it become big; and the Yolk ſerves it for Food after it is well grown, and partly alſo after it is hatch'd. For, a good Part of the Yolk remains after Excluſion; being receiv'd into the Chicken's Belly, as a Store-houſe, and convey'd thence by the *Appendicula*, or *Ductus Inteſtinalis*, as by a Funnel, into the Guts, ſerving inſtead of Milk. See INCUBATION, and PUNCTUM SALIENS.

An *Egg*, *improperly ſo call'd*, is that of the whole whereof the Animal is form'd; ſuch are the *Eggs* of Flies, Butterflies, *&c.* which *Ariſtotle* calls *Vermiculi*.

The Two have this further Difference, that whereas the former, after they are excluded from the Female, need no External Nutriment, nor any Thing but Warmth and Incubation, to bring the Fœtus to Perfection: The latter, after they are fallen out of the Ovary into the Uterus, require the Nutritious Juices of the Uterus to diſtend and enlarge them; whence they remain much longer in the Uterus than the other.

The principal Differences among *Eggs*, properly ſo call'd, are, that ſome are *perfect*, i. e. have all the Parts above deſcribed, while in the Ovary, or Uterus: And others, *Imperfect*, as not having all thoſe Parts till after they are excreted or laid; ſuch are the *Eggs* of Fiſhes, which after they are brought forth, aſſume an *Albumen* to themſelves from the Water.

Another Difference is, that ſome are fœcundated, and others not: The firſt are thoſe which contain a Sperm, injected by Coition of the Male, to diſpoſe them for Conception: The reſt, not impregnated with this Sperm, never breed young by any Incubation, but always putrify. An *Egg* fœcundified, contains the Rudiments of the Chick, e're ever the Hen have ſate upon it. By the Microſcope we ſee, in the middle of the *Cicatricula*, the plain *Carina* of the Chick, ſwimming in the *Liquamen* or Humour; it conſiſts of fine white *Zones*, or Threads, which the Warmth of future Incubation enlarges, by rarifying and liquifying the Matter firſt of the *Albumen*, and then of the *Vitellus*, and preſſing them into the Veſſels of the *Cicatricula*, for a further Preparation, Digeſtion, Aſſimulation, and Accretion; till the Chick, too big for its Covercle, breaks the Shell, and is deliver'd.

'Twas antiently thought that none but Birds and Fiſhes, with ſome other Animals, were produced, *ab Ovo*, from *Eggs*; but the Generality of the Moderns incline to think, that all Animals, even Man himſelf, are generated the ſame Way. *Harvey*, *Graaf*, *Kerchringius*, and ſeveral other great Anatomiſts, have ſo ſtrenuouſly aſſerted this Opinion, that it now generally obtains.

In the *Teſtes* of Women, are found little Veſicles, about the Size of green Peas, which are accounted as *Eggs*; for which Reaſon, theſe Parts, which the Antients call'd *Teſticles*, the Moderns call *Ovaries*. Theſe *Eggs*, fœcundified by the moſt volatile and ſpirituous Part of the Seed of the Male, are detach'd from the *Ovary*, and fall down the *Fallopian* Tubes into the *Uterus*, where they grow and increaſe. See CONCEPTION and GENERATION.

This Syſtem is countenanced and confirm'd by Abundance of Obſervations and Experiments. Monſ. *de S. Maurice*, upon opening a Woman at *Paris*, in 1682, found a Fœtus perfectly form'd in the Teſticle.

M. *Olivier*, a Phyſician at *Breſt*, atteſts, that in the Year 1684, a Woman, pregnant ſeven Months, was brought to Bed of a whole Plate full of *Eggs*, faſten'd together like a Bunch of Grapes, and of various Sizes, from that of a Lentil, to that of a Pigeon's *Egg*. *Wormius* aſſures us, that he had himſelf ſeen a Woman who had lain an *Egg*. And *Bartholin* confirms him, *Cent.* I. *Hiſt. Anatom.* IV. *p.* 11. The ſame Author tells us, he knew a Woman at *Copenhagen*, who, after twelve Weeks Conception, was deliver'd of an *Egg* wrapp'd up in a thin Shell. *Lauzonus*, *Dec.* II. *An.* ix. Obſ. 38. *p.* 73. of the *Curioſi Naturæ*, relates the ſame Thing of another Woman ſeven Weeks gone: The *Egg* ſhe brought forth was of a Size between that of a Hen and a Pigeon; and was cover'd with Membranes inſtead of a Shell. The outer Membrane, or *Chorion*, was thick and bloody; and the inner, or *Amnios*, thin and tranſparent, including a whitiſh Humour, wherein the Embryo ſwam faſten'd by Umbilical Veſſels, like Threads of Silk.

Bonetus, in a Letter to *Zuingerus*, publiſhed in the Ephemerides of the *Curioſi Naturæ*, *Dec.* II. *An.* 2. Obſ. 186. *p.* 417. relates, that a young Maid had caſt forth a great Number of little *Eggs*. *Con. Virdungius* obſerves, that in diſſecting a Woman who had a Rupture, or Deſcent, he found *Eggs* of divers Sizes in the Cornu of the Womb. Laſtly, we meet with divers Inſtances of the ſame Thing in *Rhodius*, *Cent.* III. Obſ. 57. and in ſeveral Places of the Memoirs of the *Curioſi Naturæ*. Inſomuch that *Berger*, in his Treatiſe *de Natura humana*, *L.* II. *C.* I. *p.* 461. makes no Scruple to ſettle it as his Opinion, that the only Difference between Animals, called *Oviparous*, and thoſe denominated *Viviporous*, conſiſts in this; that the former caſts their *Eggs* out of the Body, and lay them in Neſts; and that their *Eggs* contain all the Nouriſhment requiſite for the Fruit, or Fœtus: Whereas in the latter, the *Eggs* are only lay'd from the Ovary into the Uterus; that they have but little Juice; and that the Mother furniſhes the reſt.

There is not ſo much as a Plant, whoſe Generation, according to the Sentiment of *Empedocles*, and ſince him of *Malpighi*, *Rallius*, *Fabric. ab Aquapendente*, *Grew*, and others, is not effected by the Way of *Eggs*. See PLANT, *&c.*

On the other Hand, we have numerous Inſtances of *Oviparous* Animals, producing their young abſolutely alive, and without *Eggs*. Such Inſtances we have of a Crow, a Hen, Serpents, Fiſhes, Eels, *&c.* See *Iſibord. ab Amelanxen*, *Breviar. Memorabil. N.* 28. *in Append. M. Curios. Nat. Dec.* II. *An.* 4. *p.* 201. Lyſerus, *Obſ.* VI. Aldrovand. *Hiſt. Serp. & Dracon. p.* 309. Seb. Nuremberg, *De Mirac. Natur. in Europ. C.* 41. Franc. Paullin *de Anguilla*, *S.* I. *C.* 2. *&c.*

But this is not all: Natural Hiſtory abounds with Inſtances of Males, and even Men caſting out *Eggs* by the Fundament. The Thing will look ſo odd to an *Engliſh* Reader, that we might be cenſured, were we to relate the various Accounts of this Kind in Form. We ſhall, therefore, content our ſelves to refer the Reader, who has Curioſity enough that Way, to the Authors and Places where he may meet with them; *viz.* Chriſt. Paulin. *Cynograph. Curioſ. Sect.* I. *L.* 3. § 56. *M. Curioſ. Nat. Dec.* II. *A.* 8. *Obſ.* 117. *p.* 261. and *Dec.* I. *An.* 2. *Obſ.* 250. and *Dec.* II. *An.* 4. *Append. p.* 199. Scheuch. *Hiſt. Monſt. p.* 129, *&c.*

M. *Stolterforth* is of Opinion, that at leaſt, in ſome of theſe Caſes, what was taken for *Eggs* might be no more than certain Aliments ill digeſted, and coagulated; an Inſtance of which he himſelf had ſeen. As to thoſe of Women, *Wormius* and *Formanus*, L. III. *de Faſcinat*, P. VI. *C.* 20. § 9. *p.* 882. take it for the Effect of the Devil: But *Bartholin* and *Solterforth* treat the Notion, as it deſerves, with Deriſion.

Gouſſet, *de Cauſis Linguæ Hebraicæ*, explodes the modern Syſtem of Generation *ab Ovo*, as contrary to Scripture: And others imagine they have ſeen the Animal alive, and form'd in the Seed of the Male. See ANIMALCULI and SEED.

Malpighi, has made very curious Obſervations with the Miſcroſcope, of all the Changes that happen in the *Egg*, every half Hour of Incubation. *Voſſius*, and divers other Authors, are very ſollicitous about ſettling the Queſtion, which was form'd firſt, the *Egg* or the Pullet, *de Idolol.* L. III. *C.* 78.

In *Egypt*, they hatch their *Eggs* by the Heat of a Furnace, or Oven; and frequently have ſeven or eight Thouſand Chickens come forth at a Time. An Account of the Method hereof we have in the *Philoſoph. Tranſact.* See HATCHING.

At *Tunquin*, they are ſaid to keep *Eggs* entire for the Space of three Years, by covering them up in a Paſt made of Aſhes and Brine. The Tortoiſe is ſaid to lay no leſs than fifteen Hundred *Eggs*, which ſhe covers in the Sand, and leaves the Sun to hatch them; and the *Eggs* of the Oſtrich are hatch'd after the ſame Manner. *Willough. Ornithol. L.* II. *C.* 8. §. 1.

In the *Acta Erudit. Lipſ.* An. 1683. *p.* 221. mention is made of a Hen's *Egg*, in all Reſpects like the common Ones, in the middle whereof was found another, of the Size of a Pigeon's *Egg*. See SUPERFETATION.

Eggs with double Shells, are no unuſual Phænomenon. *Harvey* is very large on the Rationale of theſe Appearances, in his Treatiſe *de Generation. Animal.* Among the Antients, the *Egg* was the Symbol of the World; it being a Tradition among them, that the World was made of an *Egg*: Whence *Eggs* became of ſingular Veneration, in the Sacrifices of *Cybele*, the Mother of the Gods.

Some of their Deities were likewiſe form'd of *Eggs*. See OOLOGY

EGG, in Architecture, an Ornament in that Form, cut in the Echinus, or Quarter-round, of the *Ionic* and *Compoſite* Capitals. The Profile, or Contour of the Echinus, is enrich'd with *Eggs* and Anchors, alternately placed. See ECHINUS, OVOLO, *&c.*

COWS-EGG, is a Name ſome Authors give to a Kind of *Bezoard*, frequently found in the Stomach of that Beaſt. See BEZOARD.

EGIS, or ÆGIS, in the antient Mythology, the Shield, or Buckler of *Jupiter* and *Pallas*.

The Goat *Amalthea*, which had ſuckled *Jupiter*, being dead; that God cover'd his Buckler with the Skin thereof: Whence the Appellation *Ægis*, from αιξ, αιγὸς, *She-Goat*.

Jupiter, afterwards reſtoring the Beaſt to Life again, cover'd it with a new Skin, and placed it among the Stars.

As to his Buckler, he made a Preſent of it to *Minerva*; whence that Goddeſs's Buckler is alſo called *Ægis*, in *Virgil*, *Æneid L.* VIII. *v.* 354, and 435, and other Authors.

Minerva, having kill'd the Gorgon *Meduſa*, nailed her Head in the Middle of the *Ægis*, which henceforth had the Faculty of converting into Stone all thoſe who look'd thereon; as *Meduſa* her ſelf had done during her Life. See *Homer*, *Iliad. L.* V.

Others take the *Ægis* not to have been a Buckler, but a *Cuiraſs*, or rather a *Plaſtron*. And 'tis certain, the *Ægis* of *Pallas*, deſcribed by *Virgil*, *Æneid L.* VIII. *v.* 435, muſt have been a *Cuiraſs*; ſince the Poet ſays expreſly, that *Meduſa*'s Head was on the Breaſt of the Goddeſs. But the *Ægis* of *Jupiter*, mention'd a little higher, *v.* 354, ſeems to have been a Buckler. The Word

Cum ſæpe nigrantem
Egida concuteret dextra.

agreeing very well to a Buckler, but not at all to a *Cuiraſs*, or Breaſt-Plate.

Servius makes the ſame Diſtinction on the two Paſſages of *Virgil*; for in *v.* 354, he takes the *Ægis* for the Buckler of *Jupiter*, made as abovementioned of the Skin of the Goat *Amalthea*: And in Verſe 435, he deſcribes the *Ægis* as the Armour which covers the Breaſt; and which in ſpeaking of Men is called *Cuiraſs*, and *Ægis* in ſpeaking of the Gods. Abundance of Authors have overlooked theſe Diſtinctions for Want of going up to the Sources.

EGYPTIANS, in our Statutes, a counterfeit Kind of Rogues, who, being *Engliſh* or *Welſh* People, diſguiſe themſelves in uncouth Habits, ſmearing their Faces and Bodies; and framing to themſelves an unknown, canting Language, wander up and down; and under Pretence of telling Fortunes, curing Diſeaſes, *&c.* abuſe the common People, tricking them of their Money, and ſtealing all that is not too hot, or too heavy for them.

See ſeveral Statutes made againſt them; *An.* 1 *&* 2 *Phil. &* *Mar.* Ch. 11. 5 *Eliz.* &c.

The Origin of this Tribe of Vagabonds called *Egyptians*, and popularly *Gypſies*, is ſomewhat obſcure; at leaſt, the Reaſon of the Denomination is ſo. 'Tis certain, the antient *Egyptians* had the Character of great Cheats, and were famous for the Cleanlineſs of their Impoſtures; whence the Name might afterwards paſs proverbially into other Languages; as 'tis pretty certain it did into the *Greek* and *Latin*. Or elſe, the ancient *Egyptians*, being much verſed in Aſtronomy, which in thoſe Days was little elſe but Aſtrology, the Name was on that Score aſſumed by theſe *Diſeurs de bonne Avanture*, as the *French* call them, or good Fortune-tellers.

Be this as it will, there is ſcarce any Country of *Europe* but has its *Egyptians*, tho' not all of them under that Denomination.

The *Latins* call them *Egyptii*; the *Italians*, *Ciani* and *Cingari*; the *Germans*, *Zigenner*; the *French*, *Bohemiens*; others, *Saraſens*; and others, *Tartars*, &c.

Munſter, *Geogr. L.* III. C. 5. relates, that they made their firſt Appearance in *Germany*, in 1417, exceedingly tawny and ſun-burnt, and in pitiful Array; tho' they affected Quality, and travell'd with a Train of Hunting Dogs after them, like Nobles. He adds, that they had Paſſports from King *Sigiſmond* of *Bohemia*, and other Princes. Ten Years afterwards they came into *France*, and thence paſs'd into *England*.

Paſquier, in his *Recherch. L.* IV. C. 19. relates the Origin of the *Gypſies*, thus: On the 17th of *April* 1427, there came to *Paris* twelve Penitents, or Perſons, as they ſaid, adjudged to Penance, *viz.* one Duke, one Count, and ten Cavaliers, or Perſons on Horſeback: They took on themſelves the Character of *Chriſtians of the lower Egypt*, expell'd by the *Sarazens*, who having made Application to the Pope, and confeſs'd their Sins, receiv'd for Penance, that they ſhould travel thro' the World for ſeven Years, without ever lying in a Bed. Their Train conſiſted of 120 Perſons, Men, Women and Children, which were all that were left of 1200, who came together out of *Egypt*. They had Lodgings aſſign'd them in the Chappel, and People went in Crouds to ſee them. Their Ears were perforated, and Silver Buckles hung to them. Their Hair was exceedingly black and frizzled; their Women ugly, thieviſh, and Pretenders to telling of Fortunes. The Biſhop ſoon afterwards obliged them to retire; and excommunicated ſuch as had ſhewn them their Hands.

By an Ordonnance of the Eſtates of *Orleans*, in the Year 1560, it was enjoyned all theſe Impoſtors, under the Name of *Bohemians* and *Egyptians*, to quit the Kingdom on Penalty of the Galleys. Upon this they diſperſed into leſſer Companies, and ſpread themſelves over *Europe*. The firſt Time we hear of them in *England*, was three Years afterwards, *viz.* Anno 1563. *Raph. Volaterranus* making mention of them, affirms that they firſt proceeded or ſtroll'd from among the *Euxians*, a People of the Perſide in *Egypt*.

EGYPTIAN-*Year*. See YEAR.

EJACULATION, in Medicine, the Act of emitting Seed; from the Latin *ejaculari*, to caſt upwards. See EMISSION.

To evince a Man's Virility, in a Court of Juſtice, where he is accuſed of Impotency, 'tis required he give Evidence of Erection, Intromiſſion, and *Ejaculation*. See CONGRESS, *&c.*

EJACULATOR, in Anatomy, a Name applied to two Muſcles, from their Office in the Ejaculation of the Seed. See SEED.

The *Ejaculatores* ariſe from the Sphincter of the Anus, and advance along the Urethra, as far as the middle thereof; where they are inſerted laterally.

The ſame Denomination is likewiſe given two Muſcles of the *Clitoris*, which ariſing from the Sphincter *Ani*, advance laterally along the *Labia*, and are inſerted aſide of the *Clitoris*. See GENERATION.

EJACULATORY, in Anatomy, is a Term applied to two little Ducts, or Canals, ariſing from the *Veſiculæ ſeminales*.

The *Ejaculatory* Ducts are about an Inch in length: towards the *Veſiculæ*, they are pretty wide; but contract themſelves as they approach towards the *Urethra*, which they penetrate together.

Some Authors apply the ſame Name to the *Vaſa deferentia*; but *mal a propos*. See DEFERENTIA *Vaſa*.

EICETES, called alſo HEICETES, Hereticks of the VIIth Century, who made Profeſſion of the Monaſtic Life.

From that Paſſage in *Exodus*, where *Moſes* and the Children of *Iſrael* are ſaid to have ſung a Song in Praiſe of the Lord, after they had paſs'd the *Red Sea* wherein their Enemies had periſh'd; the *Eicetes* concluded, that they muſt ſing and dance, to praiſe God aright: And as *Mary* the Propheteſs, Siſter of *Moſes* and *Aaron*, took a Drum in her Hand, on the ſame Occaſion; and all the Women did the like, to teſtify their Joy, by playing, beating and dancing; the *Eicetes*, the better to imitate their Conduct herein, endeavour'd to draw Women to them to make Profeſſion of the Monaſtic Life, and aſſiſt in their Mirth.

EJECTION, the Act of throwing out, or diſcharging any Thing, at ſome of the Emunctories; as by Stool, Vomiting, *&c.* See EXCRETION, EVACUATION, EMISSION, *&c.*

EJECTIONE *firmæ*, a Writ which lies for the *Leſſee* for Years, who is ejected before the Expiration of his Term, either by the *Leſſor*, or a Stranger.

EIRE, in Law. See EYRE.

ELABO-

ELABORATION, the Act of finiſhing or perfecting any Thing with Labour and Time.

The Term is chiefly uſed in Medicine, where the Chyle, Blood and Semen, are ſaid to be *well Elaborated*, when they are well condition'd, have undergone all the Secretions, Mixions, Impregnations and Circulations neceſſary to bring them to Perfection. See CHYLE, BLOOD, and SEED.

If the Chyle went directly from its *Receptaculum* to the Breaſts, it would not be ſufficiently *Elaborated* to afford good Milk. See MILK.

ELABORATORY. See LABORATORY.

ELASTIC *Body* is that, which by being ſtruck, or ſtretch'd, has its Figure alter'd; but endeavours, by its own Force, to reſume the ſame. Or, it is a ſpringy Body, which when compreſs'd, condenſed, or the like, makes an Effort to ſet it ſelf at Liberty; and to repel the Body that conſtrain'd it. Such is a Sword-Blade, a Bow, &c. which are eaſily bent, but preſently return to their former Figure and Extenſion. See ELASTICITY.

Elaſtic Bodies are either *Natural*, or *Artificial*: Thoſe moſt eminent for their *Elaſtic* Power among *Artificial* Bodies, are Steel Bows; Braſs, Ivory, and Marble Balls; Leathers, Skins, Membranes; Braſs, Silver, Iron, and Steel Chords or Wiars; Nerves, Guts, Hemp and Flax Strings, &c.

Amongſt *Natural* Bodies, the principal are Air, Spunges, the Branches of green Trees, Wool, Cotton, Feathers, &c. 'Tis diſputed, whether or no Water have any *Elaſtic* Force: The moſt common Opinion is, that it has none of it ſelf; and that if it ſhew any, 'tis owing to the Air contain'd therein. See WATER.

The Word is form'd from the *Greek*, ελασης, of ελαυνειν, *to puſh, preſs*, &c. See SPRING.

The principal Phænomena obſerved to obtain in *Elaſtic Bodies*, are,

1. That an *Elaſtic Body*, (i. e. *a Body perfectly Elaſtic*, if any ſuch there be) endeavours to reſtore it ſelf with the ſame Force wherewith it is preſs'd or bent. Thus, whatever Force is applied to bend a Bow, with the ſame Force it ſtrives to unbend it ſelf, or return to its Natural State. For the Force, wherewith the String is drawn, is the ſame with that which reſiſts the Draught; the Bow being bent ſo long, till the Force applied, and that which reſiſts it, are in *Equilibrio*.

2. An *Elaſtic* Body exerts its Force equally towards all Sides; tho' the Effect is found chiefly on that Side where the Reſiſtance is weakeſt: As is evident in the Caſe of a Bow ſhooting out an Arrow; a Gun exploding a Ball, &c.

3. *Elaſtic Bodies*, in what Manner ſoever ſtruck, or impell'd, are inflected, and rebound after the ſame Manner. Thus a Bell yields the ſame Sound in what Manner, or on what Side ſoever ſtruck.

4. A Body perfectly Fluid, if any ſuch there be, cannot be *Elaſtic*; by Reaſon its Parts cannot be compreſs'd. See FLUID.

5. A Body perfectly Solid, if any ſuch there be, cannot be *Elaſtic*; in that having no Pores, it is incapable of being compreſs'd. See SOLID.

6. Hard, long, flexible Bodies, apt to acquire *Elaſticity*, do it chiefly in three Manners: Either by being extended, by being contracted, or by being bent.

7. Bodies, in dilating themſelves by their *Elaſtic* Power, exert a greater Force at the Beginning of their Dilatation, than towards the End thereof. By Reaſon the Bodies are more compreſs'd at firſt; and the Renitency is always equal to the Compreſſion.

8. The Motion, whereby compreſs'd Bodies reſtore themſelves, is uſually an accelerated Motion. See DILATATION.

For the Laws of Motion and Percuſſion in ELASTIC *Bodies, See* MOTION *and* PERCUSSION.

ELASTIC *Force*. See ELASTICITY.

ELASTICITY, or ELASTIC *Force*, in Phyſicks, a Property, or Power, in natural Bodies, which denominates them *Elaſtic*; and by which they are reſtored to the Figure, and Extenſion they had loſt from any External Cauſe. See ELASTIC *Bodies*.

The Cauſe, or Principle, of this important Property *Elaſticity*, or Springineſs, is variouſly aſſign'd: The *Carteſians* account for it from the *Materia ſubtilis* making an Effort to paſs thro' Pores that are too narrow for it. Thus, ſay they, in bending, or compreſſing, a hard, elaſtic Body, *e. gr.* a Bow, its Parts recede from each other on the *Convex* Side, and approach on the *Concave*: Conſequently the Pores are contracted or ſtreighten'd on the *Concave* Side; and if they were before round, are now, for Inſtance, Oval: So that the *Materia ſubtilis*, or Matter of the ſecond Element, endeavouring to paſs out at thoſe Pores, thus ſtreighten'd, muſt make an Effort, at the ſame Time, to reſtore the Body to the State it was in when the Pores were more patent and round, *i. e.* before the Bow was bent: And in this conſiſts its *Elaſticity*. See RESILITION.

Other later, and more wary Philoſophers, account for *Elaſticity* much after the ſame Manner as the *Carteſians*; with this only Difference, that in lieu of the ſubtile Matter of the *Carteſians*, theſe ſubſtitute *Ether*, or a fine Etherial Medium, that pervades all Bodies. See ÆTHER.

Others, ſetting aſide the precarious Notion of a *Materia ſubtilis*, account for *Elaſticity* from the great Law of Nature, *Attraction*, or the Cauſe of the Coheſion of the Parts of ſolid and firm Bodies. See COHESION.

Thus, ſay they, when a hard Body is ſtruck or bent, ſo as the component Parts are moved a little from each other, but not quite disjoyn'd, or broke off, or ſeparated ſo far as to be out of the Power of that attracting Force whereby they cohere; they muſt certainly, on the Ceſſation of the External Violence, *ſpring* back to their former natural State. See ATTRACTION.

Others reſolve *Elaſticity* into the Preſſure of the Atmoſphere: For a violent Tenſion, or Compreſſion, tho' not great enough to ſeparate the conſtituent Particles of Bodies far enough to let in any foreign Matter, muſt yet occaſion many little *Vacuola* between the ſeparated Surfaces; ſo that upon the Removal of the Force they will cloſe again, by the Preſſure of the Aerial Fluid upon the external Parts. See ATMOSPHERE.

Laſtly, Others attribute the *Elaſticity* of all hard Bodies to the Power of Reſilition in the Air included within 'em. And ſo make the *Elaſtic Force* of the Air, the Principle of *Elaſticity* in all other Bodies. See AIR.

Laws of ELASTICITY.

To enquire a little more expreſly into the Nature and Laws of *Elaſticity*, we ſhall conſider the Phænomena thereof. Let it be premiſed, then, that all the Bodies wherein this Power is obſerved do conſiſt, or may be conceived to conſiſt, of ſmall Threads, or Fibres, which, laid together, conſtitute ſuch Bodies. To examine *Elaſticity*, therefore, in its moſt ſimple Caſe, we had beſt conſider it in Muſical Strings, or Chords, and particularly thoſe of Metal; for thoſe of Cat-gut, having a ſpiral Twiſt, cannot be conſider'd as the Fibres whereof Bodies are form'd.

Now the *Eſtaſticity* of a Fibre, or Chord, conſiſts in this, that it may be ſtretch'd or extended; and that upon removing the Force whereby it was ſtretch'd, or lengthen'd, it returns to its former length. Fibres have no *Elaſticity*, unleſs they be extended with a certain Force; as appears in lax Chords, which may be moved a little out of their Poſition, without endeavouring to recover it. Tho' what the Degree of Tenſion is, neceſſary for *Elaſticity* to commence, is not yet determined by Experiment. Add, that when a Fibre is too far ſtretch'd, it loſes its *Elaſticity*; tho' here, too, the Degree of Tenſion that deſtroys *Elaſticity* is unknown. But 'tis certain, *Elaſticity* depends on Tenſion, and is confined within a certain Sphere, or Boundary thereof on either Side. See CHORD and FIBRE.

This, if it do not give us the proper adequate Cauſe of *Elaſticity*, yet ſhews us the Difference between *Elaſtic* and *Unelaſtic* Bodies; how it is a Body loſes its *Elaſticity*; and how a Body, deſtitute of any ſuch Force, comes to acquire it.

Thus, a Plate of Metal, by repeated Blows of a Hammer, becomes *Elaſtic*; and being heated, again loſes that Property.

Between the Limits of Tenſion, wherewith *Elaſticity* is terminated, there are different Forces required to give different Degrees of Tenſions, in order to ſtretch Chords to certain Lengths. What the Proportions of theſe Forces is, can only be determined by Experiment made with Chords of Metal. But as the Lengthenings of ſuch Chords is ſcarce ſenſible, the Proportions cannot be directly meaſured; but a particular Apparatus, and a Kind of Circuit are neceſſary to arrive thereat. Dr. *Graveſande* has taken a good deal of Pains, in order to fix theſe Laws; the Reſult of whoſe Experiments are as follow.

1. That the Weight, whereby a Fibre is increas'd a certain Length, by its Stretching, is in the different Degrees of Tenſion, as the Tenſion it ſelf: If, *e. gr.* there be three Fibres of the ſame Kind, Length and Thickneſs, whoſe Tenſions are as 1, 2, and 3; any Weights, in the ſame Proportion, will ſtretch them equally.

2. That the leaſt Lengthenings of the ſame Fibres are to one another, nearly as the Forces whereby the Fibres are lengthen'd. Which Property may likewiſe be applied to their Inflexion.

3. In Chords of the ſame Kind, Thickneſs, and which are equally ſtretch'd, but of different Lengths, the Lengthnings produced by ſuperadding equal Weights, are to one another as the Lengths of the Chords. Which is evident hence, that the Chord is lengthen'd in all its Parts: Conſequently the Lengthening of a whole Chord is double the Lenghthening of half of it, or a Chord of half the Length.

4. Fibres of the ſame Kind, but different Thickneſſes, may be compared together after the like Manner; only con-

conſidering them as conſiſting of a greater or leſs Number of fine Fibres of the ſame Thickneſs; the Number whereof muſt be taken in the Ratio of the Solidity of thoſe Fibres, *i. e.* as the Squares of the Diameters, or as the Weight of the Fibres, when their Lengths are equal. Such Fibres, of Conſequence, will be equally ſtretch'd by Forces that are in the ſame Ratio of the Squares of the Diameters; which ſame Ratio, is likewiſe required between the Forces whereby the Chords are inflected, that the *Sagittæ* may be equal in the given Fibres.

5. The Motion of a ſtretch'd Fibre agrees with the Motion of a Body vibrating in a Cycloid; and how unequal ſoever the Vibrations are, they are all perform'd in the ſame Time. See CYCLOID.

6. In two equal Chords, unequally ſtretch'd, unequal Forces are required to inflect them equally. Their Motions may be compared to thoſe of two Pendulums, deſcribing ſimilar Cycloids, by different Forces. Conſequently, the Squares of the Times of the Vibrations of the Fibres are to each other inverſely, as the Forces whereby they are equally inflected, which are as the Weights by which the Chords are ſtretch'd.

7. The Motions of ſimilar Chords, equally ſtretch'd, but of different Lengths, muſt be compared with that of Pendulums after another Manner; for as the Times of the Vibrations are to be conſider'd, the Celerities alſo, wherewith the Chords are moved, muſt be conſider'd. Now theſe Celerities are to one another directly as the Weights whereby the Chords are inflected, and inverſely as the Quantities of Matter in the Chords; that is, inverſely as their Lengths. The Celerities, therefore, are in an inverſe duplicate *Ratio* of thoſe Lengths; that is, inverſely as the Squares of the Lengths: And the Squares of the Times of the Vibrations, are likewiſe in the inverſe Ratio. Conſequently, the Lengths of the Chords will be as the Times of the Vibrations.

Elaſtic Laminæ, or Plates, may be conſider'd as Congeries's, or Bundles of *Elaſtic* Chords. When the Plate is inflected, ſome Fibres are lengthen'd; and there are unequal Lengthenings in ſeveral Points of the Plate.

The Curve form'd by the inflected Plate, is eaſily determined from what has been ſhewn concerning Chords. In Effect, in the Vibrations of ſuch Plate, or Spring, the Motion thereof is accelerated, after the ſame Manner as the Motion of a Chord, and of a Pendulum in a Cycloid, are accelerated. And the Vibrations of ſuch Springs are all perform'd in the ſame Time.

Elaſtic Balls, *Spheres*, &c. may be conſider'd as conſiſting of ſeveral *Elaſtic* Plates, or Springs; and the Introceſſions, or Yieldings inward of any Point thereof, are proportionable to the Forces wherewith the Body is compreſs'd.

The ELASTICITY *of Fluids* is accounted for, from their Particles being all endowed with a Centrifugal Force; whence Sir *Iſaac Newton*, Prop. 23. *Book* 2. demonſtrates, that Particles, which mutually avoid, or fly off from one another by ſuch Forces as are reciprocally proportional to the Diſtances of their Centre, will compoſe an *Elaſtic Fluid*, whoſe Denſity ſhall be proportional to its Compreſſion; and *vice verſa*, if any Fluid be compoſed of Particles, that fly off and avoid one another, and hath its Denſity proportional to its Compreſſion; then the Centrifugal Forces of thoſe Particles will be reciprocally, as the Diſtances of their Centres.

ELASTICITY *of the Air*, is the Force wherewith it dilates it ſelf, upon Removing the Force whereby it was compreſs'd. See AIR.

The *Elaſticity or Spring of the Air*, was firſt diſcover'd by the great *Galilæo*. Its Exiſtence is proved by this Experiment of that Philoſopher: That an extraordinary Quantity of Air, being intruded by Means of a Syringe into a Glaſs or Metal Ball, till ſuch Time as the Ball, with this Acceſſion of Air, weigh conſiderably more in the Balance than it did before; upon opening the Mouth thereof, the Air ruſhes out, till the Ball have ſunk to its former Weight.

For hence we argue, that there is juſt ſo much Air gone out, as compreſs'd Air had been crouded in. Air, therefore, returns to its former Degree of Expanſion, upon removing the Force that compreſs'd, or reſiſted its Expanſion; conſequently it is endued with an *Elaſtic Force*.

It muſt be added, that as the Air is found to ruſh out, in very Situation, or Direction of the Orifice; the *Elaſtic Force* of the Air acts every Way, or in every Direction.

The *Elaſticity of the Air* making a conſiderable Article in the new Pneumaticks; we ſhall here give the principal Laws thereof.

1. The *Elaſticity* of the lower Air, is equal to the Weight of all the upper incumbent Air. For the upper Air is eaſily proved to preſs on the lower. See PRESSURE.

And the *Elaſticity of the Air*, has already been ſhewn equal to the compreſſing Power: Whence it follows, that the *Elaſticity of the Air* is equal to the Weight of the whole incumbent Atmoſphere.

Hence, as the Weight of the upper Air, incumbent on the lower, is equal to the Weight of a Column of Water of the ſame Diameter with the Column of Air, and the Altitude of 31 Feet; or to a Column of Mercury 28 Inches high: The *Spring* of the lower Air is equal to the ſame Column of Water, or Mercury.

Hence, again, the *Spring* of the Air, included in a Veſſel, *&c.* is likewiſe equal to the Weight of the whole incumbent Atmoſphere. Conſequently the Air, included in a Veſſel, preſſes with the ſame Force, as the Weight of the Atmoſphere. And, therefore, the *Elaſticity* of the included Air, is able to ſuſtain Mercury to the Height of 28 Inches, and Water, to the Height of 31 Feet, in an empty Tube. See AIR-PUMP.

2. The *Elaſtic Force* of Air compreſs'd, is to that of the ſame Air dilated reciprocally, as the Bulk of the dilated Air to that of the compreſs'd Air.

For the *Elaſticity of Air* more compreſs'd, is to that of Air leſs compreſs'd; as the Weight incumbent on that, to the Weight incumbent on this. But the Bulks of more, and leſs compreſs'd Air, are in the ſame reciprocal Ratio of theſe Weights. Therefore the *Elaſtic Force*, &c.

Hence the *Elaſticity of Air* more compreſs'd, is ſtronger than that of Air leſs compreſs'd.

3. The *Elaſticity* of more compreſs'd Air, is to that of Air leſs compreſs'd, *Cæteris paribus*, as Maſs, or Quantity of more compreſs'd Air is to the Maſs of Air leſs compreſs'd, under the ſame Bulk.

4. The Ratio of the Space fill'd by Air preſs'd only by the Weight of the Atmoſphere, to the Space it is reduc'd into by further Compreſſion, being given; to determine the *Elaſtic Force* of the compreſs'd Air.

Since the Spring of the Air, preſs'd only by the Weight of the Atmoſphere, is equal to the Weight of a Column of Mercury of the ſame Baſe with the Column of Air, and of the Height of 28 Inches; to the Bulk of the compreſs'd Air, that of the Air not compreſs'd, and the Weight of the Column of Mercury; ſeek a fourth proportional: This will expreſs the Quantity of the *Elaſtic Force* in the compreſs'd Air.

Hence, ſubſtracting the Weight of the Column of Mercury from the Quantity of the *Elaſtic Force*, thus determined, the Remainder is the *Force of Elaſticity*, whereby it exceeds the Reſiſtance of the Weight of the Atmoſphere.

5. Heat increaſes the *Elaſticity of the Air*; and Cold diminiſhes it. See HEAT and COLD.

6. The *Elaſtic Force* of the Air, whereby it is expanded, in Rarefaction, is to the *Elaſticity of the Air* condenſed; as the Bulk of the rarified Air, to the Bulk of the condenſed Air.

ELATERIUM, in Pharmacy, a purgative Medicine, prepared from the wild Cucumber.

'Tis made of the Juice of the Plant, by ſtraining it thro' a Cloth, and evaporating the Moiſture thereof, till it come to the Conſiſtence of an Extract, or a Maſs for Pills.

Elaterium is a vigorous Purge, and is uſed in Lethargies, Palſies, and Hypochondriacal Melancholies.

The Word is form'd from the *Greek*, ἐλαύνω, *I repel.*

ELBOW, the outer Angle made by the Flexure, or Bend of the Arm: Or the Point to which the two Bones that form the Arm incline. See ARM.

That Eminence, whereon the Arm reſts, called by us *Elbow*, is by the *Latins* call'd *Cubitum*, and the *Greeks* ἀγκων, and by others ολεκρανες.

ELBOW, is alſo uſed by Architects, Maſons, *&c.* for an obtuſe Angle of a Wall, Building, Road, *&c.* which diverts it from its right Line. See CUBIT.

ELCESAITES, or ELCESAIANS, as *Theodoret* calls them, antient Hereticks thus call'd from the great Prophet *Elceſai*, or *Elxai*.

This *Elxai*, who lived in the Time of *Trajan*, gave into the Sentiments of the *Ebionites*, touching *Jeſus Chriſt*; tho' he alter'd and reform'd them in ſome Things, to denominate himſelf the Author of a Sect.

His Fundamental Doctrines were, that *Jeſus Chriſt*, who was born from the Beginning of the World, had appear'd from Time to Time under divers Bodies; that he was a celeſtial Power, or Virtue, call'd *the Chriſt*, whereof the Holy Spirit was Siſter; (Note, the *Hebrew* Word for Spirit, is *Feminine*) and that both of them had deſcended into *Jeſus* the Son of *Mary*.

The *Elceſaites*, according to St. *Epiphanius*, were alſo called *Samſeans*, from the *Hebrew* Word *Sames*, Sun.

Scaliger was notoriouſly miſtaken, in holding that *Elxai* was no more than *Eſſai*, or *Eſſean*; on which Suppoſition the *Elceſaites* were the ſame with the Sect of *Eſſeans*, which is contrary to all Antiquity.

Origen

Origen makes mention of the *Elceſaites*, in one of his Homilies, as a Hereſy newly riſen. The Retainers hereto, ſays he, don't admit all the Books of the Canon, but only ſome of them. They allow ſome Paſſages out of the Old Teſtament and the Evangeliſts, but reject all the Epiſtles of St. *Paul*. Add, that they have produced a Book, which they pretend to have deſcended to them from Heaven; and maintain, that whoever perform what is enjoyn'd therein, ſhall obtain Pardon of all their Sins. See *Euſebius*, Hiſt. *Lib.* VI. *C.* 38. who remarks, that this Hereſy became extinct almoſt aſſoon as it was found.

St. *Epiphanius* is very full on the Subject of this Sect, *Hær.* 19. where he obſerves, that *Elxai* was a *Jew* by Birth, and that not being able to live according to the Law of *Moſes*, he invented new Opinions, and got himſelf Followers. He was a profeſs'd Enemy of Virginity, and obliged all who profeſs'd his Doctrine, to marry. He tutor'd them to Hypocriſy in Times of Perſecution; pretending it was lawful to adore Idols, provided the Heart had no Share therein.

ELDERS, *Seniores*, *Primores*, in the *Jewiſh* Hiſtory, were the moſt conſiderable Perſons for Age, Experience, and Manners, among the antient People. Thus, *Moſes*, we read, aſſembled the *Elders* of the People together, and acquainted them with what the Lord had commanded.

Long afterwards, thoſe who held the firſt Rank in the Synagogues, were uſually call'd *Zekenum*, *Elders*, in Imitation of the 70 *Elders*, whom *Moſes* eſtabliſh'd for the Judges of the *Sanhedrim*. The Preſident, or Chief, had in a particular Manner the Appellation of *Elder*, being, as it were, *Decanus ſeniorum*, Dean of the *Elders*.

In the firſt Aſſemblies of the Primitive Chriſtians, thoſe who were of the firſt Place, or Rank, aſſumed the Denomination of *Presbyters*, *Prieſts*, or *Elders*.

The Word *Presbyteri*, which occurs ſo frequently in the Old Teſtament, and which includes alike both Biſhops and Prieſts, does likewiſe ſignifie *Elders*. See Monſ. *Simon's* Obſervations thereon, in his Supplement *aux Ceremonies des Juifs*.

The Preſident, or Biſhop, as being the chief of the *Elders*, did likewiſe aſſume the Denomination of *Elder*: Whence it is, that in the New Teſtament the Name Biſhop is frequently confounded with that of Prieſt. For the like Reaſon, the Council of the firſt Aſſemblies, or Churches, was called *Presbyterium*, or Council of the *Elders*, where the Biſhop preſided in Quality of firſt *Elder*, being ſeated in the middle of the other *Elders*. The Prieſts, or *Elders*, who ſate by him, had each his Judges Chair; for which Reaſon they are called by the Fathers, *Aſſeſſores Epiſcoporum*. Nothing of any Importance was done, till it had firſt been examined, and reſolved in this Aſſembly, where the Biſhop only made one Body with the other *Elders* or Prieſts; the Juriſdiction which we now call Epiſcopal, not being then Dependant on the Biſhop alone, but on all the *Elders*, over whom he was the Preſident. See BISHOP.

ELDERS, is alſo a Denomination ſtill retain'd in the Presbyterian Diſcipline.

The *Elders* are Officers, who, in Conjunction with the Paſtors, or Miniſters and Deacons, compoſe the Conſiſtories, or Kirk-Seſſions, meeting to conſider, inſpect and regulate Matters of Religion and Diſcipline. They are choſe from among the People, and receiv'd publickly with ſomewhat of Ceremony. In *Scotland*, there are an indefinite Number of *Elders* in each Pariſh, generally about Twelve.

Chamberlain makes mention of a *Ruling Elder* in each Pariſh, choſe by the Kirk-Seſſion; the Congregation afterwards approving the Choice, after a ſtrict Scrutiny into his Life and Manners. He adds, that the Miniſter ordains him; and that his Office is for Life: His Buſineſs being to aſſiſt the Miniſter in overſeeing and correcting the Manners of the People; to attend him in Viſiting, Catechiſing, Praying for the Sick, in private Admonitions, and at the Communion Table.

But this Account we apprehend to be a Miſtake; what that Author ſays of *Ruling Elders*, belonging properly to the *Simple Elders*. As to *Ruling Elders*, there are no ſuch Things, but in the General Aſſemblies, where they appear as Repreſentatives of the reſt. See *Kirk*-SESSIONS, SYNOD, GENERAL *Aſſembly*, PRESBYTERY, *&c.*

ELECT, *Choſen*. In Theology, particularly in the Scriptures, *Elect* is applied to the Saints, the Predeſtinated: In which Senſe, the *Elect* are thoſe Perſons God has choſe to beſtow the Glory of Heaven upon.

The Apoſtles alſo apply it to the Primitive Chriſtians: In which Senſe, the *Elect* are thoſe choſen to the Favour and Bleſſing of Chriſtianity. God, who has predeſtinated the *Elect* to Glory, has likewiſe predeſtinated them to Sanctification. See PREDESTINATION.

ELECT, is likewiſe applied to Archbiſhops, Biſhops, and other Officers, who are choſe, but are not yet conſecrated, or actually inveſted with their Office, or Juriſdiction.

Emperor Elect, before he is inaugarated and Crown'd: *Lord Mayor Elect*; before his Predeceſſor's Mayoralty is expired, or the Sword put in his Hands.

Philip of *Savoy* was five Years Archbiſhop of *Lyons*, without ever being ordain'd or conſecrated; after which he quitted his Archbiſhoprick to marry the Counteſs of *Burgundy*. All that Time he bore the Title and Quality of *Archbiſhop Elect of Lyons*, *Electus Lugdunenſis*.

ELECTION, a Choice made of any Thing, or Perſon, whereby it is prefer'd to ſome other. There is this Difference, however, between Choice and *Election*; that *Election* has uſually a Regard to a Company, or Community, that makes the Choice; whereas *Choice* is ſeldom uſed, but when a ſingle Perſon makes it.

The moſt ſolemn *Election* is that of a Pope; which is perform'd by the Cardinals, in four ſeveral Manners.

The firſt, as they call it, by the *Holy Spirit*; when the firſt Cardinal who ſpeaks, having given his Vote for any one, proceeds to the Adoration, and proclaims him Pope, as by a ſudden Inſpiration of the Holy Ghoſt. In which Caſe, he is deem'd duly *Elected*, if all, or at leaſt two Thirds of the Aſſembly be conſenting thereto.

The ſecond, by *Compromiſe*, when the whole College pitches on three Cardinals, to whom they give a Power of nominating the Pope; which Power expires upon the Burning out of a Candle lighted on that Occaſion.

The third, by Way of *Poll* or *Scrutiny*, which laſt is the moſt uſual; the Cardinals throwing ſeal'd Tickets, wherein their Votes are wrote, into a Chalice, or Cup, placed on the Altar. Two thirds of the Votes are required to determine an *Election* by Scrutiny. See CONCLAVE.

The fourth is by Way of *Acceſſion*; when, the Votes being too much divided to *Elect* any Body, ſome of the Cardinals deſiſt from their firſt Suffrage, and *Accedunt*; that is, give their Voices to him, who has already the Majority by Scrutiny.

The Way of Acceſſion, however, is always added to the Scrutiny; it being the conſtant Practice for all the Cardinals, to give their Voices, after the laſt Scrutiny, to him whom they find to have the Plurality already. So that all *Elections* of Popes are, with the unanimous Conſent of all the Cardinals. See CARDINAL.

Election of Biſhops, of Members of Parliament, &c. See BISHOP, PARLIAMENT, *&c.*

ELECTION, is alſo when a Perſon is left to his own free Will to take or do either one Thing, or another, which he pleaſes.

ELECTION, in Theology, the Choice which God, of his good Pleaſure, makes of Angels or Men, for the Deſigns of Mercy and Grace.

The *Election of the Jews*, was the Choice God made of that People to be more immediately attach'd to his Worſhip and Service, and for the Meſſiah to be born thereof.

Election alſo, ſometimes, ſignifies a Predeſtination to Grace and Glory; and ſometimes to Glory only. 'Tis an Article of Faith, that Predeſtination to Grace is gratuitous; merely and ſimply ſo: *Gratia quia gratis data*. But the Divines are divided as to the Point, whether *Election* to Glory be gratuitous, or whether it ſuppoſe Obedience and good Works, *i. e.* whether it be before, or after the Previſion of our Obedience.

Some hold that it is before, and after at the ſame Time: It is before the Previſion of our Obedience, as Glory is intended as antecedent to our Obedience: And it is after, as this Glory is intended us as a Reward, and of Conſequence, as a Sequel of our Obedience. See GRACE, PREDESTINATION, REPROBATION, *&c.*

ELECTION, is alſo a Part of Pharmacy; being that which teaches how to chuſe ſimple Medicaments, Drugs, *&c.* and to diſtinguiſh the Good from the Bad. See PHARMACY.

Some diſtinguiſh a general *Election*, which gives the Rules and Marks for all Medicines in general; and a particular one for each Medicine in particular.

ELECTIVE, what is done by Election. The Empire of *Germany* was Hereditary in the Time of *Charlemaign*; and did not become *Elective*, till after the Death of *Louis* the IIId. the laſt of the Race of *Charlemaign* in the Empire. Indeed, it was not entirely *Elective* till the Time of *Frederic* II, in 1210.

Some Benefices are *Elective*, others Collative. Municipal Offices in *England*, are generally *Elective*; in *Spain*, Venal; *Poland* is an *Elective* Kingdom. All Prelatures in *France* are *Elective*, ſince the *Concordat*.

ELECTOR, a Perſon who has a Right to *elect*, or chooſe another to an Office, Honour, *&c.*

The *Electors* of a Burgeſs, a Knight of the Shire, a Grand Maſter of an Order, *&c.*

The Word is form'd of the *Latin*, *Eligere*, to chooſe.

ELECTOR, is particularly, and by Way of Eminence, uſed for the Princes of *Germany*, in whom lyes the right of electing the Emperor; being all ſoveraign Princes, and the principal Members of the Empire. See COLLEGE *of Electors*.

The Origin of *Electors* is not well known: Some refer it to *Otho* III, in the Year 997; others to *Frederic* II, who died in 1250; and others, to *Raoul* of *Hapsburg*, Founder of the Family of *Auſtria*, in the Year 1280.

Their Number, however, was unſettled, at leaſt till the Time of *Frederic* II, in the 13th Century. The Golden Bull, publiſhed by *Charles* IV, in 1346, fix'd the Number of *Electors* to ſeven; three of them Eccleſiaſtics, *viz.* the Archbiſhops of *Mentz*, *Treves*, and *Cologne*; and four Seculars, *viz.* the King of *Bohemia*, the Count Palatine of the *Rhine*, the Duke of *Saxony*, and the Marqueſs of *Brandenburgh*. By the Treaty of *Munſter*, in 1648, this Order was changed: The Duke of *Bavaria* being put in the Place of the Count Palatine, and an eighth *Electorate* erected for the Count Palatine.

In the Year 1698, a ninth *Electorate* was created by the Emperor *Leopold*, in Favour of *Erneſt* Duke of *Hanover*, under the Title of *Elector* of *Brunſwick*. Some Oppoſition was made to this Erection; and the Princes of *Germany* ſtood out for ſome Time, and refuſed to acknowledge it. But they afterwards acquieſced in it, and it has been recogniſed by all the foreign Princes. The King of *France* did it at laſt by the Treaty of *Raſtad*.

The ſeveral Functions of the *Electors* are as follow: The *Elector* of *Mentz*, is Chancellor of *Germany*; convokes the States, and gives his Vote before any one of the reſt. The *Elector* of *Cologne*, is grand Chancellor of *Italy*, and conſecrates the Emperor. The *Elector* of *Treves*, is Grand Chancellor of the *Gauls*, and confers the Impoſition of Hands on the Emperor. The Count Palatine of the *Rhine* is Grand Maſter of the *Imperial* Palace, and preſents the Emperor with a Globe at his Coronation. The Marqueſs of *Brandenburgh* is grand Chamberlain, and puts the Ring on the Emperor's Finger. The Duke of *Saxony*, now King of *Poland*, is Grand Marſhal, and gives the Sword to the Emperor. The King of *Bohemia*, who was antiently only Duke, is Grand Butler, and puts *Charlemaign*'s Crown on the Emperor's Head. Laſtly, the Prince of *Hanover*, now King of *Great Britain*, is Arch-Treaſurer; tho' firſt erected under the Title of Standard-Bearer of the Empire.

ELECTORAL, ſomething relating, or belonging, to an *Elector*. See ELECTOR.

The *Electoral Prince* is the eldeſt Son of an *Elector*, and the preſumptive Heir of his Dignity.

Electors are addreſs'd under the Title of *Electoral Highneſſes*. See HIGHNESS.

The *Electoral* College, conſiſting of all the Electors of the Empire, is the moſt Illuſtrious and Auguſt Body in *Europe*. *Bellarmine* and *Baronius* attribute the Inſtitution of the *Electoral* College to Pope *Gregory* V. And the Emperor *Otho* III, in the Xth Century. Of which Opinion, are the Generality of Hiſtorians, and particularly the Canoniſts. But *Wicquefort* is of another Opinion; and endeavours to make it appear, from the Elections of the ſucceeding Princes, that the Number of Electors was not then fix'd; nor the *Electoral* Dignity annex'd to any particular Principalites, excluſive of the other Princes of *Germany*. He adds, that there was nothing ſettled with Regard hereto before *Charles* IV; and that the Publication of his Golden Bull, was only to prevent Schiſms, and ſecure the Repoſe of the Kingdom by a Regulation in Form.

'Twas the Golden Bull, therefore, publiſh'd in 1356, that conſtituted the *Electoral* College, and reduced the Number of Electors to ſeven. See COLLEGE.

ELECTORAL *Crown*, or *Coronet*, is a Scarlet Cap, turn'd up with Ermine, cloſed with a Semi-circle of Gold, all cover'd with Pearls. On the Top is a Globe with a Croſs thereon. See CROWN and CORONET.

ELECTORATE, the Dignity of an Elector, with the Territory, or Dominions, to which the Quality is annex'd. The *Electorate* of *Saxony*, of *Bavaria*, &c. The Emperor, of his own ſpecial Authority, in the Year 1692, erected a ninth *Electorate*, in Favour of the Houſe of *Lunenburgh*. The Princes, who diſputed the Validity of this Election, were called the *Oppoſers of the ninth Electorate*.

Tho' the Cuſtom ordinarily be, in *Germany*, for the Sons of Princes to ſhare their Father's Lands and Territories among them; thoſe whereto the *Electorate* is attach'd, are not uſed to be divided; but paſs entire to the eldeſt Son, who ſucceeds to the *Electorate*.

ELECTRICITY, or ELECTRIC *Force*, is that Power, or Property, whereby Amber, Jet, Sealing-Wax, Agat, Glaſs, and moſt Kinds of precious Stones, attract Straws, Paper, and other light Bodies to themſelves. See ATTRACTION.

Electricity differs from Magnetiſm in this, that the latter only attracts Iron, whereas the former indifferently attracts moſt Kinds of Bodies; tho' the Effect is only ſenſible in light ones. See MAGNETISM.

The *Peripateticks* hold this Power to conſiſt in I know not what Quality, or ſympathetick Power, ſubſiſting between the Amber, *e. gr.* and the Straw, and reſulting from the ſubſtantial Form of each. See QUALITY.

But the later Philoſophers generally agree to make it the Effect of a corporeal Effluvium, emitted from, and returning to, the Electrical Body. Tho' as to the Nature of theſe Effluvia, and the Manner of their acting, they are greatly divided. See EFFLUVIA.

Some, with *Cabæus*, ſuppoſe actual Steams to iſſue out of the *Electric* Body, when agitated by Attrition; and that theſe diſcuſs and repel the ambient Air, which, after it has been driven off a little Way, makes, as it were, a little Whirlwind, by the Reſiſtance it meets withal in the remoter Air, to which theſe *Electric* Steams did not reach: And that theſe Steams ſhrinking quickly back again to the attracting Body, do, in their Return, attract and bring along with them ſuch light and ſmall Bodies as they meet in their Way.

Others, with Dr. *Gilbert*, *Gaſſendus*, Sir *Kenelm Digby*, &c. hold, that on rubbing, or chafing, the *Electric* Body is made to emit Rays, or Fibres, of an unctuous Nature; which coming to be condenſed and cool'd by the ambient Air, do loſe their Agitation, and ſo ſhrink back again into the Body from which they ſallied; and by that Means carry along with them ſuch light and ſmall Bodies, as happen to be faſten'd, or ſticking to their further Ends. *Gaſſendus* adds, that theſe unctuous Effluvia being emitted all Manner of Ways, do frequently decuſſate, or croſs each other; and by that Means take the better hold of Straw, *&c.*

The *Carteſians*, not being able to imagine how ſo hard and brittle a Body as Glaſs, ſhould emit Effluvia; attribute *Electricity* to the Globules of the firſt Element; which breaking out thro' the Pores, or Chinks of the Body, like little Darts or Swords, and not meeting with proper Meatus's, or Paſſages in the Air, return whence they came, and carry the little Bodies, whoſe Pores they happen to enter, and be entangled in, along with them.

Mr. *Boyle*, Mr. *Hawksbee*, &c. have made a Number of Experiments, to aſcertain the Nature and Laws of *Electricity*; the Reſult whereof may be ſumm'd up under the following Articles.

1. That *Electrical* Bodies do not at all, or very rarely attract, except when warm'd, and thereby ſollicited to emit Effluvia more copiouſly.

Mr. *Hauksbee*, having heated a Glaſs Tube, of about an Inch Diameter, and 30 Inches long, by rubbing it vehemently on Paper; and then applying it to ſeveral Pieces of Leaf Braſs, found, that they were no ſooner within the Sphere of Activity of the Effluvia emitted by the Tube, than they began to be put into very briſk and ſurprizing Motions; would leap toward the Tube, even at the Diſtance of 12 or 14 Inches; would ſometimes adhere, and faſten to the Tube, ſettle on its Surface, and there remain quiet: and ſometimes be thrown off from it with a great Force. And thus would they be alternately attracted and repell'd, for ſeveral Times ſucceſſively. Sometimes, again, they would move ſlowly toward the Tube; ſometimes, would remain ſuſpended between the Tube and the Table they were firſt laid on; and ſometimes ſlide along in that Direction of the Side of the Tube, without touching it.

2. That Bodies, warm'd by Fire, don't attract ſo forcibly, as when heated by rubbing; tho' if they be firſt heated, and then rubb'd, they will attract the more ſtrongly.

Mr. *Hauksbee* aſſures us, that the hotter he made the Tube by rubbing, to the greater Diſtance did the attractive Force extend it ſelf: But that this would anſwer, in Proportion, to any Degree of Heat excited, he will not undertake. When the Tube was render'd the hotteſt by the ſtrongeſt Attrition, the Force of the Effluvia was render'd manifeſt to another Senſe, namely that of feeling, being plainly perceived on the Face, or any other tender Part, making Strokes or Impulſes on the Skin, much like thoſe made by puſhing a Number of limber Hairs againſt it.

3. That Terſion, or Wiping, is almoſt univerſally neceſſary, as well as Attrition, or rubbing, to produce *Electricity*; by Reaſon the Effluvia can more readily eſcape, when there is nothing to ſtop up, or choak the Pores.

4. That the Interpoſition of the fineſt Linnen, as Muſlin, Gauſe, or the like, will totally hinder the Operation of *Electrical* Bodies.

5. The Effect is leſs ſenſible in thick and cloudy Weather. For the Air being clogg'd with Vapours and Exhalations rais'd from below, the Reſiſtance the *Electric* Effluvia meet withal, muſt be greater than when the Air is free of any ſuch Impediments. Hence, alſo, in all Probability,

bability, ariſes the Neceſſity of Terſion; the watery Particles being apt to run together, and condenſe on the Surface of the Body, and ſo obſtruct the Paſſage of the Matter.

6. *Electrical* Bodies are more forcible, *Cæteris paribus*, in hot Weather than in cold; in Summer than in Winter; by Reaſon the more vigorous Action of the Solar Rays, does more effectually ſhake the Parts of Bodies, and unlock the Pores, and ſo make Room for a more plentiful Emiſſion of Effluvia. Beſide, that in warmer Weather, the Medium being rarer, makes leſs Oppoſition to the Paſſage of the Effluvia.

7. The Air being exhauſted out of the Tube, it loſes almoſt all its *Electricity*: So that tho' rubb'd, and heated more vehemently, and Leaf-Gold applied nearer than uſual, it ſcarce attracts at all. And what little Attraction remains, Mr. *Hauksbee* conjectures, may ariſe from the little Portion of Air remaining in the Tube: And ſo the Attraction may continue in Proportion to the Quantity of Air. When the Air is let into the Tube again, the attractive Power is immediately reſtor'd; and that before any new Attrition can be given the Tube, or e're it be removed from the Diſtance and Poſition it was in when exhauſted. Mr. *Boyle*, however, found that a Piece of Amber did ſenſibly attract when the Air was pump'd out of the Receiver.

8. *Electrical* Bodies attract all Things indifferently, whereas the Magnet draws only Iron and Steel.

9. A large Piece of very *Electrical* Amber being ſuſpended by a ſilken Thread, and one End of it rubb'd ſtrongly on a little Cuſhion; the Cuſhion being brought nearer, towards the Amber at reſt, will plainly make the Amber tend towards it, and follow it. Whence it appears that the *Electric* Body, is attracted by the other Bodies, as well as it attracts them. And that it is only by Accident that the ſmall attracted Bodies approach to the *Electric* ones.

10. After an *Electrical* Body has been well rubb'd, there is a certain Nick of Time in which the light Body, inſtead of being attracted, will be actually repell'd, or driven away from the *Electrical* one, by the Effluvia going briſkly out, and not returning again.

Mr. *Hauskbee* aſſures us, that the Pieces of Leaf Gold would be ſometimes thrown off from his Tube with a great Force, even to the Diſtance of ſix or ſeven Inches. And thus, not only when they adhered to the Surface of the Tube, would they be thus ſuddenly and precipitantly driven from it; but alſo in their Motion of Aſcent towards it.

11. A Glaſs Globe, being contrived to be whirled round, with its Axis parallel to the Horizon, and a Semi-circle of Wire fitted round the upper Hemiſphere thereof, at the Diſtance of 4 or 5 Inches, with ſeveral Pieces of Woollen Thread hung thereon, of ſuch Lengths, as that when extended in a Direction towards the Centre of the Glaſs, they would reach within an Inch of the Circumference thereof; but when left at Liberty, hang down in a parallel Poſition: Upon applying the Hand, and ſo adding an Attrition to the former Rotation, the Threads preſently began to change their Direction, and all harmoniouſly pointed to the Centre of the Globe; and to put it paſs Doubt, this Effect depended on the Attrition, the Experimentator, by ſhifting the Place of the Attrition hither and thither, cou'd draw the Threads towards this or that End of the Globe, tho' they all ſtill went uniformly converging towards ſome Centre, in the Axis thereof; and ſo form'd a Kind of Conical Surface.

The ſame Phænomena follow'd upon ſhifting the Wire, and putting it on the lower Hemiſphere. Add, that upon ſuſpending the Motion and Attrition, the Threads would continue in their ſtrait direct Poſture for the Space of four or five Minutes. And in the mean Time, if the Finger, or any other Body, were applied near the Extretremity, or Points of the Threads, they would avoid and fly from the ſame: But if applied about an Inch Diſtance from the End of ſuch Thread, the Thread would uſually be attracted towards it.

ELECTRUM, the ſame as *Amber*. See AMBER.

ELECTUARY, in Pharmacy, a Form of Medicine, compoſed of Powders and other Drugs, incorporated with Honey or Sugar; to be divided into Doſes, like Bolus's, when taken.

It is thus call'd, by Reaſon all the Parts, or Ingredients it conſiſts of, ſhould be well *choſen*; from the *Latin* Verb *Eligere*, to chuſe, whence *Electus*, choſen. Others derive it from *Lac*; and accordingly the *Greeks*, under the *Eaſtern* Empire, call'd it λακτυάριον. *Scaliger* derives it from λείχω, *to lick*; and calls it in *Latin*, *Elinctum*.

Voſſius obſerves, that all the Remedies preſcribed for the Sick, as well as the Confections taken by Way of Regale, were called by the *Greeks*, ἐκλείγματα and ἐλείκτα, of the Verb λείχω, *to lick*: Whence, ſays he, was form'd the Latin *Electarium*, and afterwards *Electuarium*. This Opinion he proves from the Laws of *Sicily*, where it is ordain'd, that *Electuaries*, Syrups, and other Remedies, be prepared lawfully. The *Bollandiſts*, who relate this Etymology, ſeem to confirm it. *Act. Sanct. Mart. F.* II. *p.* 131. See ECLEGMA.

Electuaries are either *ſoft*, or *ſolid*; and of each Kind, ſome are *Alterative*, others *Corroborative*, others *Purgative*, &c.

The ſoft are of the Conſiſtence of Honey, and conſiſt of 3 Ounces of Powders to a Pound of Honey or Sugar.

The ſolid are in Manner of *Tabellæ*, or Lozenges. The Purgative are uſually of the ſoft Kind: But the Corroborative only admit of an Ounce and half or two Ounces.

Among the ſoft *Electuaries* are reckon'd *Treacle*, *Mithridate*, the Confection of *Hamech*, that of *Alkermes*, the *Catholicon*, *Diaprunum*, *Diaphœnic*, Galens *Hiera picra*, &c. which ſee explain'd under their reſpective Articles.

Among the ſolid *Electuaries*, are reckon'd *Carthamum*, *Roſe Juice*, *Voilet Juice*, &c. Monſ. *Lemery* reckons up above 120 Sorts of *Electuaries*.

ELEEMOSINA *Carucarum*, or *pro Aratris*, or *Aratri*, in our antient Cuſtoms, a Penny which King *Ethelred* order'd to be paid for every Plough in *England*, towards the Support of the Poor.

Sometimes 'tis called *Eleemoſina Regis*, becauſe firſt appointed by the King.

Eleemoſinæ are alſo uſed for the Poſſeſſions belonging to Churches.

ELEEMOSINARIA. See AMBRY.

ELEGANCE, ELEGANCY, conſider'd in the general, is a Manner of doing or ſaying Things with Choice, Politeneſs and Agreeableneſs: With *Choice*, in going out of the common Ways: With *Politeneſs*, in giving the Thing a Turn which ſtrikes People of a delicate Taſte: And with *Agreeableneſs*, in diffuſing a Reliſh throughout which hits every Body.

Elegantiæ poeticæ, poetical *Elegancies*, are of Service to Scholars in making their Verſes. By being too regular in the Grammatical Conſtruction, we loſe certain Licences, wherein the *Elegance* of Language conſiſts. *Elegance*, tho' irregular, is better than Regularity without *Elegance*.

The *Elegance* of a Painting is not founded on the Correctneſs of the Deſign, as appears in *Raphael* and the *Antique*. It is moſt felt in Works otherwiſe careleſs and inaccurate; as in *Corregio*, where, maugre all the Defects as to Juſtneſs of Deſign, there is an *Elegance* even in the Manner of the Deſign it ſelf, as well as in the Turn of the Attitudes. *&c.*

The *Elegance* of a Deſign, is a Manner of Being, which Embeliſhes, and heightens Objects either as to their Form, or Colour, or both; without deſtroying or perverting the Truth.

ELEGIAC, in the *Latin* Poetry, ſomething that belongs to *Elegy*. See ELEGY.

Elegiac Verſes, *Elegi*, are alternately Hexameter and Pentameter. See VERSE.

Quintilian eſteems *Tibullus* the Top of the *Elegiac* Poets: But the younger *Pliny* gives the Preference to *Propertius*. They have each of them Reaſon on their Side; and one might make a third Choice, as true as either of them.

ELEGIT, in Law, a Writ judicial, which lies for him that has recover'd Debt, or Damages; or upon a Recognizance in any Court, againſt one not able in his Goods to ſatisfy; and directed to the Sheriff; commanding him to make Delivery of half the Party's Lands, and all his Goods, Oxen and Beaſts for the Plough, excepted.

The Creditor ſhall hold the Moiety of the ſaid Land ſo deliver'd to him, till his whole Debt and Damages are ſatisfied; and during that Time, he is Tenant by *Elegit*.

ELEGY, a Kind of Poem, or Poeſy, uſed on mournful, plaintive Occaſions. See POEM.

The firſt Inventor of the *Elegy* is not known: Some ſay 'twas one *Theocles* of *Naxi*, or, according to others, of *Etreria*; who, in the Heat of his Frenzy, firſt produced this Kind of Verſe. But, no Wonder we are in the Dark as to this Matter: *Horace* aſſures us, 'twas a Point not ſettled among the Grammarians even in his Time, who the Author was.

Quis tamen exiguos Elegos emiſerit Auctor
Grammatici certant & adhuc ſub Judice lis eſt.

The chief Writers of *Elegy* among the *Greeks*, are *Callimachus*, *Parthenius* and *Euphorion*: And among the *Latins*, *Ovid*, *Catullus*, *Tibullus*, and *Propertius*.

The *Flemiſh* have diſtinguiſh'd themſelves among the Moderns for this Kind of *Latin* Verſe: And the *Elegies* of *Biderman*, *Grotius*, and eſpecially *Sedronius* and *Vallius*, might become the pureſt Antiquity. The Counteſs

de la

de la Suze, has diſtinguiſh'd her ſelf for *Elegies* in the *French* Tongue.

In the *Engliſh*, we have nothing conſiderable of the *Elegiac* Kind, but what we have in *Milton*. The *Engliſh* and *French Elegies* are chiefly in *Alexandrine* Verſes.

In Proceſs of Time, *Elegy* degenerated from its Original Intention; and not only Matters of Grief, but alſo Joy, Wiſhes, and almoſt every Subject, became free of *Elegy*. Complaints, Expoſtulations, Prayers, Vows, Praiſes, Congratulations, Reproaches, *&c.*

The Office of the *Elegy* is well deliver'd by M. *Boileau*.

La plaintive Elegie en longs habits de Deuil,
Scait les Cheveux epars gemir ſur un Circueil:
Elle peint des Amans la Joye, & la Triſteſſe;
Flatte, Menace, Irrite, appaiſe une Maitreſſe.

In Mourning Weeds ſad *Elegy* appears,
Her Hair diſchevell'd, and her Eyes in Tears:
Her Theme, the Lover's Joys, but more his Pains;
By Turns ſhe ſings, ſooths, threatens and complains.

The Diction of *Elegy* is to be clean, eaſy, perſpicuous, expreſſive of the Manners, tender and pathetic; not debauch'd or oppreſs'd with Sentences, Points, *&c.* No Apoſtrophe's are allow'd; and the Senſe to be generally cloſed in every Diſtich or two Lines. At leaſt in the *Latin*.

ELEMENTARY, ſomething that relates to the *Elements*. See ELEMENT.

The Elements of a Body are alſo called the *Elementary Principles* thereof. See PRINCIPLE.

The whole Space, included within the Concave, or Orbit of the Moon, is called the *Elementary Region*, as being the Seat, or Sphere of the four Vulgar Elements, and the Bodies compounded thereof. See REGION.

The Author of the *Comte de Gabalis*, calls *Elementary People* a Kind of perfect Beings, which inhabit the Elements, and are only known by what they call the Philoſophers, or Sages. According to theſe Folks, who at beſt are great Fools, the *Element* of *Fire* is inhabited by Salamanders; *Water*, that is, the Sea and Rivers, by Nymphs, or Oridians; *Earth*, by Gnomes and Gnomides; and *Air*, by Sylphs and Sylphides.

ELEMENTS, in Phyſicks, the firſt Principles, or Ingredients of Things; whereof all Bodies are compounded; and into which they are all reſolvible. See BODY.

Elements are conceiv'd as the moſt ſimple, homogeneous Parts, or Corpuſcles; of an Aſſemblage, and Mixture whereof, all the Bodies we ſee, conſiſt. See CORPUSCLE, *&c.*

Authors generally talk very wildly and inconſiſtently of the *Elements*, and confound them with the *Principles* of Things: Yet is there a great deal of Difference. As we find, by Experience, that all Things cannot indifferently be made of all; that Stone, for Inſtance, and Marble, are not convertible into Fleſh, nor are fit to nouriſh or augment an animal Body: It ſeems to follow, that all the Variety of Bodies could never ariſe from the firſt ſimple Combination of the two Principles, Matter and Form; but only ſome infinitely ſimple Beings, or Corpuſcles, which being variouſly intermix'd, might conſtitute all other Bodies.

Now thoſe moſt ſimple of all Beings, thus form'd of the firſt Determination and Concretion of Principles, are what the Philoſophers properly call *Elements*: So that *Elements* and *Principles* have this Difference between them; that a *Principle*, as Matter, is a Kind of incompleat Nature; but an *Element*, a perfect or compleat one. See PRINCIPLE.

Hence it follows, that there muſt, of Neceſſity, be more *Elements* than one: Since otherwiſe all Things would be equally ſimple, and there would be no ſuch Thing as a Compound in Nature. Moſt of the Antients, not aware of this, confound *Element* with *Principle*: On this footing, the *Elements* are ſometimes held corruptible, and ſometimes incorruptible.

The Retainers to incorruptible *Elements*, mean preciſely by *Element* what we mean by the *firſt Matter*. In Effect, their *Elements* are their Atoms, or Corpuſcles, which are ſuppoſed indiviſible, incorruptible, *&c.* See ATOM and CORPUSCLE.

Democritus is held the firſt Author of this Tenet; which accordingly is adhered to by *Epicurus* and many of their Deſcendants, the *Epicurean* and *Corpuſcular* Philoſophers. See CORPUSCULAR, *&c.*

Among thoſe who hold them corruptible, ſome will only have one, and ſome ſeveral. Of the former, the Principal are *Heraclitus*, who held Fire; *Anaximenes*, Air; *Thales Mileſius*, Water; and *Heſiod*, Earth; as the only *Element*. *Heſiod* is follow'd by *Bernardin. Veleſius*; and *Thales*, by many of the Chymiſts. See WATER, *&c.*

Among thoſe who admit ſeveral corruptible *Elements*, the principal are the *Peripateticks*; who, after their Maſter *Ariſtotle*, contend for four *Elements*, viz. Fire, Air, Water, and Earth. *Ariſtotle* took the Notion from *Hippocrates*; *Hippocrates* from *Pythagoras*; and *Pythagoras* from *Ocellus Lucanus*, who ſeems to be the firſt Author of the *Dogma*.

But there is a ſtill further Variety of *Elements*: For the Philoſophers, not conſidering Matter in it ſelf, or in the general, but only ſome of the Senſations it excites in us; ſome of them refer all to the Senſe of Sight, and aſſert *lucid* and *obſcure*, or *pellucid* and *opake*, to be the *Elements* of all Things: And others, regarding only the Senſe of Touch, make *hard* and *liquid*, or *hot* and *cold*, the *Elements* of Things.

In this latter Claſs we are to reckon *Ariſtotle*; tho' his Way of Proceeding was ſomewhat different from the reſt. For, conſidering the four principal Qualities that fall under the Senſe of Touching, *Heat*, *Cold*, *Dryneſs* or *Hardneſs*, and *Humidity* or *Liquidity*: And obſerving that two of theſe Qualities might be one and the ſame Thing taken in two different Relations; and that they might be combined four Ways; he made four *Elements*; the firſt, *cold* and *dry*; the ſecond, *cold* and *moiſt*; the third, *hot* and *moiſt*; and the fourth, *hot* and *dry*.

Then, to give Names to theſe *Elements*, he enquired in what Things theſe ſeveral *Elements* ſeem'd chiefly to prevail. Accordingly, taking the Earth to be the coldeſt, and, at the ſame Time, drieſt of all Things, he call'd the firſt *Element*, *Earth*. See EARTH.

And *Water*, being the coldeſt and moiſteſt of all Things, he called his ſecond *Element*, *Water*. See WATER.

Again, judging *Air* the moiſteſt, and at the ſame Time hotteſt of all Things, his third *Element* he called *Air*. See AIR.

Laſtly, *Fire* being the hotteſt and drieſt of all Things, his fourth *Element* he denominated *Fire*. See FIRE.

Theſe Denominations gave Occaſion to ſome, impertinently enough, to miſtake his Meaning; and to take this habitable *Earth*, this potable *Water*, this *Air* we breath, and this *Fire* we burn on our Hearths, to be the four *Elements*; notwithſtanding that the Word *Element* denotes a moſt ſimple Thing; whereas the Bodies juſt mention'd, are all exceedingly compound. See PERIPATETICK.

The *Carteſians* only admit three *Elements*; which they pretend are all that could ariſe from the firſt Diviſion of Matter: To explain their Origin, they ſuppoſe the whole Maſs of Matter in the Univerſe, divided into an infinite Number of Particles of unequal Magnitudes, and of any Figure at Pleaſure. Theſe ſeveral Particles they ſuppoſe, further, to have been revolved, or whirled, in various Manners, each round its Centre; ſo as to become truly ſeparate and apart.

Thus much ſuppoſed, 'tis impoſſible but the Angular, Eminent, and Implicated Parts of the ſeveral Particles muſt be broke off; and thus, tho' little before, they muſt continue continually to grow leſs till they arrive at a perfect Rotundity. By this Means we get two Kinds of determinate Matter for the two firſt *Elements*: The firſt, a fine Duſt rubb'd, or broke off from the Angles of the Particles, till they are turn'd round; which is the Matter of the *firſt Element*, or the *Materia ſubtilis*. The other, the Parts themſelves thus turn'd round, and ſmooth, which makes the *ſecond Element*.

And, as 'tis probable ſome Particles of Matter may either ſeparately, or conjunctly, ſtill retain irregular, hooked, and intricate Forms; theſe conſtitute the *third Element*.

'Tis added, that the *Elements* are convertible into each other: For the *third Element*, by growing round, may become the *ſecond*; and the *ſecond*, by a continual Comminution and Subtilizing, the *firſt*. See CARTESIAN *Philoſophy*.

Our great Sir *Iſaac Newton*, conſiders the primary *Elements* of Bodies on the atomical Syſtem, thus: All Things conſider'd, it ſeems probable, that God in the Beginning form'd Matter in ſolid, maſſive, hard, impenetrable, moveable Particles of ſuch Sizes, and Figures, and with ſuch other Properties, and in ſuch Proportion to Space, as moſt conduced to the End for which he form'd them; and that theſe primitive Particles, being ſolids, are incomparably harder than any porous Bodies compounded of them; even ſo very hard as never to wear out: No ordinary Power being able to divide what God made one in the firſt Creation. While the Particles remain entire, they may compoſe Bodies of one and the ſame Nature and Texture in all Ages: But ſhould they wear away, or break in Pieces, the Nature of Things depending of them, would be changed. Water and Earth, compoſed of old worn Particles, and Fragments of Particles, would not be of the ſame Nature and Texture now, with Water and Earth compoſed of entire Particles in the Beginning. And, therefore, that Things

may

may be laſting, the Changes of corporeal Things are to be placed only in the various Separations, and new Aſſociations and Motions of thoſe permanent Particles: Compound Bodies being apt to break not in the midſt of ſolid Particles, but where thoſe Particles are laid together, and only touch in a few Points. It ſeems to me, likewiſe, that theſe Particles have not only a *Vis Inertiæ*, with the paſſive Laws of Motion reſulting therefrom, but are alſo moved by certain active Principles; ſuch as is Gravity, and that which cauſes Fermentation and the Coheſion of Bodies. See GRAVITY, FERMENTATION, and COHESION.

ELEMENTS, in Chymiſtry, are the Principles, or component Parts of Natural Bodies, into which they are reſolvible by Fire, *&c.*

The Effect of Chymiſtry is to analyze or reſolve Bodies into their *Elements*. See CHYMISTRY.

The Chymical *Elements* are divided into *Active* and *Paſſive*. See PRINCIPLE.

The Chymiſts are ſomewhat divided as to their *Elements*: The Generality of them to the Vulgar *Peripatetic Elements*; *Water*, which they call *Phlegm*; and *Earth*, which they call *Caput mortuum*; add three more, *viz. Salt*, *Sulphur*, and *Mercury*. *Salt*, they hold, the Principle of Taſte; and *Sulphur*, of Smell and Inflammation: As to *Mercury*, which they alſo call *Spirit*, ſome hold it the Principle of Colours, but others deny it; and, in Effect, they agree in nothing, but that 'tis the moſt ſubtle and ſpirituous Part. See SALT, SULPHUR, *&c.*

The *Elements* of Foſſils are, 1. *Mercury*, as the Baſe; 2. *Sulphur*, as the Coagulator, or Binder. 3. *Salt*. 4. *Earth*. The *Elements* of Metals, are *Sulphur* and *Mercury* alone; *Mercury* as the Baſe, or Matter, and *Sulphur* as the Binder, or Cement. The *Elements* of Foſſil Salts, are an inſipid acid Spirit and Earth. The *Elements* of Earths, are an Oil, a little acid Salt, and a Calx. The *Elements* of Sulphurs are an acid Spirit, an Oil, and an Earthy or Metallic Matter. *Boerhaave.*

But, after all, it muſt be added, that there is no aſſigning any preciſe Number of Chymical *Elements*; ſome Bodies yielding more, and others leſs. And even theſe very *Elements* themſelves are reducible, by a further Proceſs, into other *Elements*.

Thus, by repeated Diſtillations of Wine, we ſucceſſively get a Spirit of Wine, a vapid Water, a ſubacid Water, a more acid Water, Oil, bitter yellow Spirit, and a *Caput mortuum*, which is reſoluble into Earth, Oil, *&c.* Now, are theſe ſo many ſeveral *Elements*? Add, that what they account an *Element*, now that it is ſeparated, is very different from what it was when it exiſted in the mix'd; as appears hence, that upon remixing all the *Elements* a Body is reſolved into, the Mixture will bear no Reſemblance to the firſt Body.

In Effect, the *Elements* ſeem rather to be produced by the Fire, than ſeparated by it. Beſide, that they are convertible, or at leaſt reſolvible, into one another.

Thus, Spirit of Wine is found to yield an acid, an Oil, and a Water: And Salts yield either an Acid, or an Alcali, with Phlegm.

What makes the Notion of the Chymical *Elements* ſtill more precarious, is, that a Pot-Herb, and a poiſonous Herb, ſhall ſometimes yield *Elements* perfectly alike; more ſo, that the ſame Plant analyſed at two different Times. Monſ. *Homberg*, has conſider'd the Difficulties charged on *Elements*, with great Attention.

The Reſult of numerous Experiments made to aſcertain the Matter is: That the four Principles, Salt, Oil, Water, and Earth, are always found in all Plants, in what Manner ſoever analyſed: That theſe Principles are more or leſs Volatile, or fix'd according to the different Manners of Analyſing: That this Difference ariſes, not only from the different Force of Fire, but alſo from the Fermentation of the mixt, preceding the Analyſis: That a vehement Fire, rendering different *Elements* equally volatile, confounds them in the Analyſis: That the Fire evaporates, and abſolutely loſes ſeveral Parts: And that to have the *Elements* as pure as may be, only Fermentation and a gentle Fire muſt be uſed.

ELEMENTS, are alſo uſed figuratively, for the Principles and Foundations of Arts and Sciences.

Thus we ſay, Letters are the *Elements* of Speech: He does not know the firſt *Elements* of Grammar.

The *Elements of Mathematicks* have been deliver'd by ſeveral Authors in their Courſes, Syſtems, *&c.* The firſt Work of this Kind, is that of *Peter Herigon*, in *Latin* and *French*, publiſhed in 1664, in ten Tomes; wherein are contain'd the *Elements* of *Euclid*, *Euclids Data*, *Apollonius Pærgeus*, &c. with the *Elements* of Arithmetic, Algebra, Trigonometry, Architecture, Geography, Navigation, Opticks, Sphericks, Aſtronomy, Muſic, Perſpective, *&c.* The Work is remarkable for this, that throughout, a Kind of real and univerſal Characters are uſed; ſo that the Demonſtrations may be underſtood by ſuch as only remember the Characters, without any Language or Words at all. See CHARACTER.

Since *Herigon*, the *Elements* of the ſeveral Parts of Mathematicks have been laid down by others, particularly the Jeſuite *Schottus*, in his *Curſus Mathematicus*, in 1674; Sir *Jonas Moor*, in his *New Syſtem of Mathematicus*, in 1681; *De Chales*, in 1674; *Ozanam*, in his *Cours de Mathematique*, in 1699. And above all, *Chriſt. Wolfius*, in his *Elementa Matheſios Univerſæ*, in two Vols. Quarto. The firſt publiſhed in 1713, and the ſecond in 1715; a Work never enough to be commended.

The *Elements of Euclid*, are the firſt and beſt Syſtem of Geometry. We have Abundance of Editions, and Comments on the XV Books of *Euclid's Elements*. *Orontius Fineus*, firſt publiſhed the firſt VI Books in 1530; with Notes to explain *Euclid's* Senſe. The like did *Peletarius* in 1557. *Nic. Tartaglea*, made a Comment on all the XV Books about the ſame Time, with the Addition of ſome Things of his own: And the like did *Fran. Huſſates Candalla*, a noble *Frenchman*, in the Year 1578, with conſiderable Additions, as to the Compariſon, and Inſcriptions of ſolid Bodies; which Work was afterwards re-publiſh'd with a prolix Comment by *Clavius*, whoſe Edition has ſince been variouſly printed, at various Places and Times.

De Chales, *Herigon*, and *Commandinus*, have likewiſe done well upon *Euclid*; ſo has Dr. *Barrow*, who is remarkable for the Conciſeneſs and Strictneſs of his Demonſtrations. But as the whole XV Books do not ſeem neceſſary, eſpecially for young Mathematicians, ſome Authors have choſe only the firſt Six, with the Eleventh and Twelfth at moſt: It would be endleſs to relate the ſeveral Editions hereof: The two beſt are the *French* one of *Dechales*, and the *Latin* one of *And. Tacquet*: The beſt Edition of the former of which is that of *Paris* in 1709, by *Ozanam*; and of the latter, that of *Cambridge* in 1703, by Mr. *Whiſton*.

Herlinus, and *Daſypodius*, have thrown all *Euclid's* Demonſtrations into Syllogiſms; to ſhew how by a Concatenation of Syllogiſms, a compleat Demonſtration ariſes. *Pet. Ramus* diſliked *Euclid's* Order, as appears from his *Diſcourſe on the* XV *Books of Euclid*; and therefore he compiled 23 new Books of *Elements*, in the Order of the Schools, but unhappily: Tho' his Example was afterwards followed by others, particularly the Jeſuite *Gaſton Pardies*, in 1680; *Arnaud*, in 1667; and *Fa. Lamy*, in 1685: *Polynier*, a *French* Phyſician, in 1704, digeſted *Euclid* into a new Method: The like did *Angelus de Marchettis* of *Piſa*, in 1709, in his *Euclides Reformatus*.

ELEMENT *of an Area*, called alſo its *Differential*, is the Rectangle, P M R Q (*Tab. Analyſis Fig.* 11.) of the Semi-ordinate P M, into the Differential of the Aſciſs, P P. See DIFFERENTIAL.

ELEMI, or ELEMY, in Pharmacy, a pellucid Reſin, of a whitiſh Colour, intermix'd with yellowiſh Particles, which give it much of the Colour and Conſiſtence of Wax; of a pretty briſk, bitter, tho' not diſagreeable, Taſt; and a Smell like that of Fennel.

'Tis uſually called *Gum Elemi*, tho' very improperly, inaſmuch as it takes Fire readily enough, and diſſolves in oleaginous Liquors, which are the Characters of a Reſin. It flows from Inciſions made in the Trunk, and large Branches of a Kind of wild Olive Tree, growing in *Ethiopia*, and *Arabia fœlix*. It is alſo found in the *Pouille*, a Province of the Kingdom of *Naples*.

Pomet, in his Hiſtory, and *Lemery*, in his Treatiſe of *Drugs*, deſcribe *Elemi* as a white Reſin, bordering on green, odoriferous, and brought from *Ethiopia*, in Cakes of two or three Pounds a-piece, wrapp'd up in the Leaves of the *Indian* Cane.

It is excellent in Diſeaſes of the Head; and proper to digeſt, reſolve and ſuppurate. It is held a Kind of Natural Balſam; and ſoveraign in the Cure of all Kinds of Wounds.

The true *Gum Elemy* is that above deſcribed; but there are ſeveral ſpurious ones, ſome natural, and others factitious, frequently ſold for the ſame.

The factitious, or counterfeit, is made of Roſin waſh'd in Oil of Aſpic; tho' the ill Smell, and white Colour, might eaſily diſcover the Deceit. The natural Gums, obtruded for *Elemy*, are,

1. A Gum brought from the *American* Iſlands, in Barrels of divers Weight, cover'd up with the Leaves of a Plant unknown in *Europe*.

The 2d might be taken for Roſin, but for its Smell, which is ſomewhat ſweeter, and more aromatic.

The 3d is of an Aſh Colour, bordering on brown, brought over in large Pieces, very dry and friable.

Pomet does not take any of them for Natural; but rather ſuppoſes them to be originally *Elemy*, only impure

and coarſe, ſince melted down, and made up by the Fire.

ELENCHUS, in Logic, by the *Latins* call'd *Argumentum* and *Inquiſitio*, a vitious or fallacious Argument, which deceives under the Appearance of Truth; the ſame with *Sophiſm*. See SOPHISM.

ELEOSACHHARUM, from ἔλαιον, *Oleum*, and *Saccharum*, Sugar; a Mixture of Oil with Sugar, frequently added to diſtill'd Oils, to make them mix with aqueous Fluids for preſent Uſe.

ELEPHANT, gives the Denomination to a famous Military Order, conferr'd by the Kings of *Denmark*. See KNIGHT.

It is called the *Order of the Elephant*, from its Arms, which are an *Elephant*.

There are a deal of different Sentiments as to the Origin and Inſtitution of this Order: The firſt is that of *Mennenius* and *Hocpingius*, who attribute it to *Chriſtian* IV. who was elected King in 1584. The ſecond, that of *Selden* and *Imhof*, who derive it from *Frederic* II, elected in 1542. 3°. *Gregorio Leti* goes back as far as *Frederic* II, who reigned about the Year 1530. 4°. *Bernard Rebolledus*, will have King *John* to be the Author, who began to reign in 1478. 5°. *Anſhelmius*, *Roſærus*, and *Loeſcher*, hold it to have had its Riſe under *Chriſtian* I, Father of *Frederic* I. Laſtly, *Voightius*, *Bechman*, and *Bicherodius*, maintain *Canutus* VI. to have been the firſt Inſtitutor; and the Occaſion thereof to be the *Croiſades*. This Prince, according to the Chronology of *Swaning*, reign'd towards the Cloſe of the XIIth Century, from the Years 1168, to 1191.

This, at leaſt, we are certain of, that the Order was ſubſiſting in the Year 1494; there being a Painting ſtill extant, done that Year by Count *Reinden*, a Knight of this Order. And we have even authentic Evidences of the Marqueſs of *Mantua*'s being created Knight of the ſame Order by *Chriſtian* I, in 1474. There are Bulls of Pope *Pius* II, and *Sixtus* IV, confirming the Statutes of the Order, authorizing the holding of Aſſemblies, or Chapters, in the Chappel of *Boeſchil*, and ſettling the Privileges of the Knights.

The Order was at firſt called the *Order of St. Mary*, *Ordo S. Mariæ*: Tho' it ſeems to have had the Appellation of the *Elephant*, as early as *Chriſtian* I. Witneſs the Figure of an *Elephant*, ſo often ſtruck on his Coins, Medals, *&c.*

The Manner of its Inſtitution is thus related: King *Canutus* having ſent a Fleet againſt the *Sarazens*, in 1189, which took *Siluma* and *Ptolemais*; a Gentleman among the *Daniſh Croiſees*, kill'd an *Elephant*; in Memory of which extraordinary Accident, the Order was erected. This Account is render'd the more probable by this; that it is refer'd to an *Æra*, when nothing was more common than to take the Spoils of a vanquiſh'd Enemy for Armories, or Cognizances: And accordingly ſome of the principal Arms of the like Kind now on Foot, *e. gr.* the *Lions* of the *Low-Countries*, had their Riſe at the Time of the *Croiſades*; as is ſhewn by *Hoegerus* and *Hoepinguis*. Which Circumſtances greatly corroborate the Opinion of thoſe, who aſcribe the Order to King *Canutus*.

Beſſarion brought with him a very antient, and rare Coin from the *Eaſt* to *Rome*; whereon was ſeen the Image of the Holy Virgin, with an *Elephant*. *Caſſian* takes this to have been the Badge, or Symbol, of the *Danes*, engaged in the *Croiſades* againſt the *Sarazens*; and ſuppoſes it to relate to the Order of the *Elephant*. The Chancellour *Fruſius*, had another Coin of the like Kind, whereon was the Image of the Holy Virgin, an *Elephant*, and a *Creſcent*, which was antiently a Member in the Arms of this Order. *Boiſſeau* relates another antient Figure of the Arms of this Order, bearing the Image of the Holy Virgin with four *Elephants*, charged with Towers. And *Petra Sancta*, a fourth, wherein was the Virgin with three Keys, and four *Elephants*, and Spurs: Whence it appears, that the Order was under the Protection of the Virgin. Accordingly, the Order is ſtill called the *Order of St. Mary*. To the Collar of the Order hangs an *Elephant*, with a Silver Turret on its Back; and underneath the *Elephant*, an Image of the Holy Virgin, encircled with Rays. See the Abbot *Juſtiniani*, *Hiſt. de tutti gl. Ord. Milit. e Cavall.* T. II. *C.* 72.

The Chappel of *Roeſchild*, was founded by *Chriſtian* I. for the Aſſemblies, or Chapters, of the Order to be held in. It was at firſt called the Chappel of the three Kings, *Capella trium Regum*: Afterwards *Frederic* I. gave it the Name of the *Royal Chappel*.

The Order was retriev'd by *Frederic* II, who created Abundance of Knights at the Ceremony of his Coronation, which is the only Time when the *Daniſh* Kings make any of theſe Knights. *Chriſtian* V, augmented and enrich'd it very conſiderably. In the Year 1694, a grand Chapter of the Order was held at *Fredericsburg*, in the Chappel of the Knights, wherein ſix *German* Princes were admitted into the Order.

We have Abundance of Writings on the Subject of this Order; whereof that of *Janus Biſcherodius* may ſerve for all the reſt: 'Tis the lateſt, the moſt ample, and maſterly. It was publiſhed at *Copenhaguen*, in the Year 1705, under the Title of *Breviarium Equeſtre; ſeu de Illuſtriſſimo, & Inclitiſſimo Ordine Elephantino*, &c.

ELEPHANTIASIS, in Medicine, a Kind of *Leproſy*, called *Lepra Arabum*, in Contradiction to the *Lepra Græcorum*, which is another Diſeaſe. See LEPROSY.

The *Elephantiaſis* is thus call'd, by Reaſon thoſe ſeiz'd therewith, have their Arms, and Legs, big, ſwollen, and tuberous; the Skin bloated, yet rough to the Touch, all wrinkled and unequal like the Skin of an *Elephant*.

The *Elephantiaſis Græcorum*, or *Lepra Arabum*, is deſcribed by *Deodatus*, as a contagious Diſeaſe, infecting the Body with a Croud of Evils. The Skin of the Face, Knees, Elbows, Thighs, Hands and Feet is full of moveable, indolent Tubercles of a livid Colour, tending to Redneſs: In the Mouth, Palate, and Jaws, likewiſe, ariſe Tubercles, ſometimes yellow, and ſometimes livid: In the Intervals between the Toes, and on the Soles of the Feet, eſpecially the hard callous Parts thereof, as alſo in other Parts of the Limbs, break out Ulcers, which penetrate the Cutis, are very broad, and keep ſpreading with callous, and tumid Lips: Theſe, upon a little Violence yield Blood, and yet are indolent. Add, that Ulcers eat the Noſe, with Tumors about the Ears; the Lips thicken, and the Feet and Hands are wonderfully bloated.

Yet *Etmuller*, *Haly*, *Abbas*, and others, ſpeak of the *Elephantiaſis* as a ruddy, livid Swelling of the Feet and Legs, with Varices, and Ulcers; which make the Feet appear like *Elephants* Feet.

The *Elephantiaſis*, *Turner* obſerves, is a Diſeaſe unknown in our Parts of the World; at leaſt in theſe Days. Some Authors call it *Leontiaſis*, and others *Satyriaſis*. The *Greeks* call it ἐλεφαντίασις; and ſometimes ἐλέφας, *Elephant*, and ἐλεφαντιασμός.

ELEPHANTINE, ſomething that relates, or belongs to an *Elephant*.

The Term is chiefly applied to certain Books of the antient *Romans*, wherein were recorded the Actions of the Princes, and the Proceedings, Acts, *&c.* of the Senate. This we learn from *Pollio*, and *Vopiſcus*, in the Life of the Emperor *Tacitus*, where he obſerves that in the 6th Preſs of the *Ulpian* Library, was kept one of theſe *Libri Elephantini*; wherein, for a long Courſe of Time, were wrote down the Decrees, and Edicts of the Senate.

In ſome of theſe Books, were regiſtred all the Acts and Meaſures of the Senate, and the Magiſtrates of *Rome*; in others, the Proceedings and Events in Provinces, in War, *&c.*

There were above thirty five large Volumes of them, as many as there were Tribes: There being likewiſe contain'd in them the Births, and Degrees of the Citizens; the Enumerations and all Things belonging to the Cenſure. They were renew'd every five Years with the Cenſors; and were all antiently kept in the *Ærarium*, or public Treaſury, which was in the Temple of *Saturn*. *Vigenere on Tit. Livy*.

Vigenere, and ſeveral others, believe theſe Books to have been called *Elephantine*, by Reaſon of their enormous Bulk, *q. d.* as big as *Elephants*, or Bullocks. But *Loiſel* on the XVIIth Chapter of the XIth Book of *Aulus Gellius*, gives us a different Etymology; and aſſures us they were called *Elephantine*, becauſe made of Ivory Leaves, or Tablets, which every Body knows is a Production of the Elephant. And, accordingly, *Ulpian*, *L.* 52. *H. de Legat.* 3. makes mention of an Ivory Book. *Scaliger* and *Gerard Voſſius*, ſay they were made of the Inteſtines of an *Elephant*.

Voſſius does not deny, indeed, but that they might have been made of Ivory; but being there were ſeveral other Books, and Tablets, made of that Matter, as appears from *Martial*, L. XIV. *Epigr.* 3. and a hundred other antient Authors, and from what we have ſhewn under the Term DYPTIC: It does not appear, why the Name *Elephantine* ſhould be peculiarly appropriated to theſe.

Martial does not give the Name *Elephantinus*, but *Eboreus*, *of Ivory*, to the Tablets mention'd in the Place laſt quoted, *Eborei Pugillares*: *Alexander ab Alexandro Genial. Dier.* L. II. *C.* 2. makes mention of the *Libri Elephantini*: So does *Salmaſius*, on the Paſſage in *Vopiſcus*, juſt quoted; where he refutes *Scaliger*, maintains that theſe Books were of Ivory, and ſhews, that the Antients uſed the Word *Elephas*, for *Ivory*; witneſs *Virgil Æneid.* L. III. *v.* 464. and *Servius* on the ſame: And *Elephantinus*, for what was of Ivory; witneſs *Martianus Capella*,

Capella, and *Iſidore* in his Gloſſes. He ſhews further, that it was no impoſſible Thing to write on Ivory, as *Scaliger* had ſuggeſted; that they did not make uſe of a Gooſe Quill as we do, nor of Ink like ours: But Ruſhes, or Reeds, form'd after a different Manner from our Pens, and Ink fit to take upon Ivory. The Matter of Fact, in fine, he aſſerts, is clear from *Martial*, and *Plautus* in his *Moſtellaria*.

ELEVATION, *Altitude*, or *Height*, in Aſtronomy. The *Elevation of any Star*, or other Point, in the Sphere, is an Arch of the Verticle Circle, intercepted between his Star or other Point, and the Horizon.

And the ſame Definition ſerves for the *Depreſſion*, or Depth of any Point.

Hence, as the Meridian is a Vertical Circle; a Meridian Altitude, or *Elevation*, i. e. the *Elevation* of a Point in the Meridian, is an Arch of the Meridian, intercepted between the Point and the Horizon. See ALTITUDE.

ELEVATION *of the Pole*, is the Altitude of the Pole above the Horizon of any Place; or an Arch of the Meridian, intercepted between the Pole and the Horizon. See POLE.

Thus, in *Tab. Aſtronomy Fig.* 39. A Q being ſuppoſed the Equator, H R the Horizon, H Z P N the Meridian, and P the Pole; P R is the *Elevation of the Pole*.

The *Elevation of the Pole*, is always equal to the Latitude of the Place; that is, the Arch of the Meridian intercepted between the Pole, and the Horizon, is equal to the Arch of the ſame Meridian, intercepted between the Equator and the Zenith.

Thus the North Pole is elevated 51° 32′ above the Horizon of *London:* And there is the ſame Diſtance, or Number of Degrees between *London* and the Equator; ſo that *London* is likewiſe in 51° 32′ of Northern Latitude. See LATITUDE.

To obſerve the Elevation of the Pole of any Place. See POLE and LATITUDE.

ELEVATION *of the Equator* is an Arch of the Meridian, leſs than a Quadrant, intercepted between the Equator, and the Horizon of the Place. See EQUATOR.

Thus A Q, as before, repreſenting the Equator, H R the Horizon, P the Pole, and H Z P N the Meridian; H A is the *Elevation of the Equator*. See EQUATOR.

The *Elevations* of the Equator, and of the Pole, together, are always equal to a Quadrant: Conſequently, the greater the *Elevation* of the Pole, the leſs the *Elevation* of the Equator, and *vice verſa*.

Thus in the Figure juſt cited P A, is ſuppoſed by the Conſtruction a Quadrant; and H A + A P + P R a Semi-circle: Conſequently H A + P R is a Quadrant.

To obſerve the Elevation of the EQUATOR.

Find the *Elevation* of the Pole, after the Manner already directed under the Article POLE.

Subſtract the *Elevation* found, from a Quadrant, or 90°. what remains is the *Elevation of the Equator*. Thus, the *Elevation* of the Pole 51° 32′, being ſubſtracted from 90°, leaves the *Elevation* of the Equator 38° 28′.

ELEVATION, in Architecture, a Draught, or Deſcription, of the principal Face, or Side of a Building; called alſo an *Upright*, or *Orthography*. See ORTHOGRAPHY.

ELEVATION, we alſo find uſed in ſome Writers of Perſpective, for the *Scenography*, or perſpective Repreſentation of the whole Body or Building. See SCENOGRAPHY.

ELEVATION, in the *Romiſh* Religion, is applied to that Part of the Maſs, wherein the Prieſt hoiſts, or raiſes the Hoſt, with the Cup, above his Head; for the People to adore it: After having conſecrated, and adored it himſelf.

The Prieſt, who aſſiſts at Maſs, rings a Bell at the *Elevation*; to apprize the People to caſt their Eyes upon their new form'd Saviour, and adore him.

St. *Louis* decreed, that they ſhould fall on their Knees at the *Elevation*, in Imitation of certain Religious whom he does not name. The *Chartreux*, and the Religious *de la Trape*, ſtill obſerve this Ceremony of proſtrating themſelves at the *Elevation*.

Angle of ELEVATION, in Mechanicks, is the Angle A R B, (*Tab. Mechanicks Fig.* 37.) comprehended between the Line of Direction of a Projectile A R, and the Horizontal Line A B. See PROJECTILE.

ELEVATION *of a Mortar Piece*, or Gun, is the Angle, which the Chaſe of the Piece, or the Axis of the hollow Cylinder, makes with the Plane of the Horizon. See MORTAR, *&c.*

ELEVATOR, in Chirurgery, an Inſtrument uſed to raiſe up Bones, as thoſe in Fractures of the Skull, when beaten, or cruſh'd in, with Blows, or the like.

There are dented *Elevators: Elevators* with three Feet, call'd *Elevatores Triploides*.

The *Elevator* made Lever wiſe, is a new Invention: Its Uſe is in drawing Teeth. One Extremity of it is flat, to reſt on the Gum, at the Bottom of the Tooth, and the other hooked, like one of the Branches of a *Pelican* to faſten hold of the Tooth.

ELEVATOR, in Anatomy, a Name common to ſeveral Muſcles, which do the Office of raiſing or lifting up of the Parts they belong to; of equal Import with *Attollens* and *Levator*. Such are the

ELEVATOR *Alæ Naſi*, a Muſcle, or Pair of Muſcles of the Noſe, of a Pyramidal Figure, very narrow, tho' fleſhy at its Origination on the fourth Bone of the upper Jaw; and very broad and thin at its Termination on the Side of the *Alæ Naſi*: Its Action is to pull the *Alæ* upwards, and turn it outwards. See NOSE.

ELEVATOR *Ani*. See LEVATOR *Ani*.

ELEVATOR *Auris*, or *Attollens Auriculam*, is in Reality no more than a Part of the Muſcle of the Scalp, with ſome fleſhy Fibres in it, as it deſcends over the temporal Muſcles to the upper Part of the *Concha*. Its Action is ſcarce viſible; the Auricles being ſcarce perceiv'd in Men to have ordinarily any Motion at all. See AURICLE.

ELEVATOR *Oculi*, one of the *Muſculi Recti* of the Eye, ſerving to draw it upwards. See RECTI.

ELEVATOR *Labiorum Communis*, a Muſcle of the Lips, ariſing from the fourth Bone of the upper Jaw, and terminating at the Angle of the Lips, under the *Zygomaticus*. See LIPS.

ELEVATOR *Labii inferioris*, is a Muſcle, that ariſes from the ſecond Bone of the under Jaw, below the Inciſions. It deſcends, and paſſes under the *Zygomaticus*, and is inſerted into the under Lip.

This, aſſiſted by a ſmall, but ſtrong Pair of Muſcles, ariſing from the Gum of the *Dentes Inciſivi*, and deſcending directly, is inſerted into the lower Part of the Skin of the Chin; and ſerves to pull the Skin of the Chin upwards, and conſequently thruſt up the Lip.

ELEVATOR *Labii Superioris*, ariſeth from the upper Part of the ſecond Bone of the upper Jaw; and deſcending obliquely, is inſerted into the upper Lip, above the *Dentes Inciſivi*. It draws up the Lip.

ELEVATOR *Scapulæ*. See LEVATOR.

ELEVE, a Term purely *French*; tho' of late uſed in our Language. Literally it ſignifies a Pupil, or Scholar, bred up under any one; from the Verb *elever*, to raiſe.

It was firſt uſed by the *French* Writers in ſpeaking of Painters: Such a Painter was an *Eleve* of *da Vinci*, of *Raphael*, &c. From Painting, it came to be applied to ſuch as ſtudied, or learned any other Art under a Maſter. In the Royal Academy of Sciences, there were 20 *Eleves*: And in that of Inſcriptions, 10 *Eleves*. The *Eleves* were to act in Concert with the Penſionaries.

We are not afraid, ſays Monſ. *Fontenelle*, to compare a ſimple *Eleve*, ſuch as Monſ. *Amontons* was, to one of the greateſt Members the Academy ever had. [M. *Mariotte*] The Name *Eleve*, with us, implies no Difference as to Merit; it only ſignifies ſomewhat of Seniority, and Survivance.

The Denomination *Eleve*, however, has been ſince ſuppreſs'd, and that of *Adjoint* ſubſtituted in its Room; by Reaſon every Body did not know the Senſe affix'd to it by the Academy. And now the Penſionary Academiſts have not, as formerly, each of them an *Eleve:* But the *Eleves* are become *Adjoints*, or Aſſociates to the Academy.

The Word is form'd of the *Italian*, *Allievo*, a Diſciple or Novice.

ELEUSINIA, in Antiquity, the Myſteries of the Goddeſs *Ceres*; or the religious Ceremonies perform'd in her Honour: Thus call'd from *Eleuſis*, a maritime Town of the *Athenians*, wherein was a Temple of that Goddeſs, famous for the Celebration of theſe Myſteries.

The *Eleuſinia* were the moſt ſolemn and ſacred Ceremonies in Uſe among the *Greeks*; for which Reaſon they were called *Myſteries* by Way of Eminence. They are ſaid to have been inſtituted by *Ceres* her ſelf, at *Eleuſis*, in Memory of the Zeal and Affection wherewith the *Athenians* receiv'd her.

This is the Account *Iſocrates* gives in his Panegyric; but *Diodorus Siculus* aſſures us, *L.* VI, that the *Eleuſinia* were inſtituted by the *Athenians*, in Gratitude to *Ceres*, for having inſtructed them to lead a leſs barbarous and ruſtic Life. Yet the ſame Author, in the firſt Book of his *Bibliotheca*, relates the Thing in another Manner.

A great Drought, ſays he, having occaſion'd a miſerable Famine throughout all *Greece*; *Egypt*, which had that Year reap'd a moſt plentiful Harveſt, beſtow'd Part of the Fruits thereof upon the *Athenians*. 'Twas *Erictheus* that brought this extraordinary Supply of Corn: In Commemoration of which Benefaction, *Erictheus* was created King of *Athens*, who inſtructed the *Athenians* in theſe Myſteries, and the Manner of celebrating them.

This Account comes near to what we are told by *Herodotus* and

and *Pauſanius*, viz. that the *Greeks* learn'd their Gods, and their Religion from the *Egyptians*.

Theodoret, *L.* I. *Græcanicar. Affection.* writes that it was *Orpheus*, not *Erictheus*, who made this Eſtabliſhment; and who inſtituted for *Ceres*, what the *Egyptians* practiſed for *Iſis*: Which Sentiment is confirmed by the Scholiaſt on the *Alceſtis* of *Euripedes*.

Eleuſis, the City where theſe Myſteries were celebrated, was ſo jealous of the Glory thereof, that when reduced to the laſt Extremities by the *Athenians*, it would not ſurrender but on this Condition, that the *Eleuſinia* ſhould not be taken from them; tho' theſe were no Religious Ceremonies peculiar to the Town, but were held common to all *Greece*.

The Matter of theſe Myſteries, as related by *Arnobius* and *Lactantius*, was an Imitation, or Repreſentation, of what the Fables teach of *Ceres*. They laſted ſeveral Days; during which, the People run about with burning Torches in their Hands; ſacrificed Abundance of Victims, not only to *Ceres*, but alſo to *Jupiter*; made Libations, from two Veſſels, one of them to the Eaſt, and the other to the Weſt; march'd in Pomp and Proceſſion to *Eleuſis*, making Pauſes from Time to Time, wherein they ſung Hymns, and ſacrificed Victims: And this they perform'd, not only in going to *Eleuſis*, but in returning back to *Athens*.

For the reſt, they were obliged to keep it as an inviolable Secret; and the Law condemn'd to Death any one who ſhould dare to divulge their Myſteries. *Tertullian* in his Book againſt the *Valentinians*, relates that the Figure ſhewn in the *Eleuſinia*, and which was ſo expreſly prohibited to be made public, was that of a Man's privy Parts: *Theodoret*, *Arnobius*, and *Clemens Alexandrinus*, likewiſe make mention of it; but ſay it was the Figure of a Woman's Privities.

The Day after the Feaſt, the Senate aſſembled at *Eleuſis*, apparently to examine whether every Thing had been managed according to Order.

There were two Kinds of *Eleuſinia*, the *great* and the *leſs*: Thoſe we have been hitherto ſpeaking of were the greater.

The *leſſer* were inſtituted in Favour of *Hercules*: For that Hero deſiring to be initiated into the former; and the *Athenians* not being able to gratify him therein, by Reaſon the Law prohibited any Stranger being admitted; being loth however to give him an abſolute Denial, they inſtituted new *Eleuſinia* whereat he aſſiſted.

The greater were held in the Month *Boedronicon*, which anſwer'd to our *Auguſt*; and the leſſer in the Month *Antheſterion*, which happen'd in our *January*.

People were only brought to partake of theſe Ceremonies by Degrees: At firſt, they were to be purified; then admitted to the little *Eleuſinia*: And at laſt initiated in the greater. Thoſe who were yet only at the leſſer, were called *Myſtes*; and thoſe admitted to the greater, *Epoptes*, or *Ephori*, i. e. Inſpectors. They were uſually to undergo a Probation of five Years, e're they paſs'd from the leſſer to the greater. Sometimes, indeed, they were contented with a ſingle Year; immediately after which, they were admitted to the moſt ſecret religious Parts of the Ceremony. *Meurſius* has an expreſs Treatiſe on the *Eleuſinia*, where moſt of theſe Points are proved.

Some Writers call the City, where the *Eleuſinia* were celebrated, *Eleuſina*, not *Eleuſis*: *Harpocration* confirms this Orthography, in deriving its Name from *Eleuſinus*, a Son of *Mercury*: To which Sentiment, *Pauſanias* likewiſe adheres in his *Atticks*. Others, who write it Ἔλευσις, *Advent*, ſuppoſe it thus called, by Reaſon *Ceres*, after running over the World in Search of her Daughter, ſtop'd here, and put an End to her Purſuit. *Diodorus Siculus*, *L.* V. will have the Name *Eleuſis* to have been given this City, as a Monument to Poſterity, that Corn, and the Art of cultivating it, were brought from Abroad into *Attica*.

ELEUTHERIUS, in Antiquity, a *Greek* Word, ſignifying *Liberator*, *Deliverer*; given by the *Greeks*, as a Surname, or Epithet to *Jupiter*, on Occaſion of his having gain'd them the Victory over *Mardonius*, General of the *Perſians*, and killed 300 Thouſand Men of his Army, and by that Means deliver'd them from the Danger they were under of being brought under the *Perſian* Yoke.

There were alſo Feaſts ſolemnized, on this Occaſion, in Honour of *Jupiter Eleutherius*, and call'd *Eleutheria*. They were held every five Years, with Courſes of armed Chariots, *&c.*

The *Scholiaſt* on *Pindar*, *Olymp. Od.* 7. ſays, they were celebrated at *Platea*, the Place where the Victory was obtain'd.

The Word is form'd from ἐλεύθερος, *free*.

ELICIT, or ELICITE, in Ethicks, is applied to an Act of the Will, immediately produced by, and of the Will, and received within the ſame.

Such is Willing, Nilling, Loving, Hating, *&c.* Such Acts are denominated *Elicit*, by Reaſon being before in the Power of the Will, they are now brought forth into Act. But theſe Acts are ſo far intrinſic, that ſome Authors conſider them as the Will it ſelf; and deny they ſhould be diſtinguiſhed from it any more than that Light is to be diſtinguiſhed from the Sun.

ELIGIBILITY, in the *Romiſh* Canon Law. A *Bull of Eligibility*, is a Bull granted by the Pope, to certain Perſons, to qualify them to be *choſen*, or inveſted with an Office, or Dignity, whereof they were before incapable, by Reaſon of Want of Age, Birth, or the like.

In ſeveral Churches in *Germany*, a Perſon who is not of the Chapter, cannot be elected Biſhop, without a Bull of *Eligibility*.

The Word is form'd of the *Latin*, *eligere*, to chuſe; whence the Word *Eligibilitas*, &c.

ELISION, in Grammar, the cutting off, or ſuppreſſing a Letter, at the End of a Word.

Eliſions are but little known in *Engliſh*: In *Latin*, *French*, &c. they are frequent; and conſiſt moſtly in Suppreſſions of the *e* final.

In Writing, it is mark'd by an Apoſtrophe; as *egon' quem quæram*, for *egone*. *Émin' ego te?* for *Emine*. *Veniſtin'* for *Veniſtine*, &c. *Cett' Eſperance*, for *Cette*: *l' homme*, for *le homme*.

In the Pronunciation we make frequent *Eliſions*, but don't mark them in Writing; thus we write *riſque it*, but pronounce *riſq' it*. So the *French* pronounce *un' ame*, but write *une ame*. In Effect, they never mark any *Eliſions* but at the End of the Monoſyllables *je ne le te ce que* and *la*. They never *elide* the *o*, nor *u*, nor *i*, but in the Conjunction *ſi* before *il*; nor *a* but in *la*.

In Poetry, the Syllable where there is a Vowel *Elided*, is never reckon'd: And great Care is taken to avoid the Concourſe of Syllables, where there is no *Eliſion*; this making what they call a *Hiatus*, or Chaſm.

ELIXATION, in Pharmacy, *&c.* the ſeething or boiling of any Medicine in a proper Liquor, gently and for a conſiderable Time; amounting to what, in the dreſſing of Meats, we properly call *Stewing*.

The Liquor ordinarily uſed in *Elixations*, is Spring or River Water: Tho' on ſome Occaſions they uſe Milk, Whey, Beer or the like.

The ordinary Purpoſe of *Elixation*, is to extract the Virtue out of the Medicine, and impart it to the Liquor. Tho' it is ſometimes alſo uſed to free the Parts of Animals, Plants, *&c.* of their Crudities, as well as to ſoften, and make them tender; to take away from Foods, or Medicaments, any diſagreeable Taſte, or other ill Quality; to ſeparate the earthy or groſſer Parts, and for other Intentions. See EXTRACTION.

The Word is form'd from the *Latin*, *lixare* to boil, or boil in Water. *Decoction* is a Sort of *Elixation*. See DECOCTION.

ELIXIR, in Medicine, a compound Extract, Tincture, or Eſſence, drawn from a Mixture of ſeveral Ingredients, by infuſing them in a proper Menſtruum. See EXTRACT.

Or it is a ſtrong, ſpirituous Liquor, or Juice, to be taken inwardly; containing the pureſt, and moſt efficacious Parts of ſeveral mix'd Bodies, communicated to it by Infuſion and Maceration.

Dr. *Quincy* defines it a ſtrong Infuſion in ſome Menſtruum, whereby the Ingredients themſelves are almoſt diſſolved, and a Juice thus acquired of a thicker Conſiſtence than an ordinary Tincture. See TINCTURE, INFUSION, *&c.*

Boerhaave takes an *Elixir* to be a compound Magiſtery, *i. e.* a compound of various Bodies, changed after the ſame Manner as a ſingle Body is in a Magiſtery. See MAGISTERY.

Spirits drawn from Vegetables, *i. e.* the ſtrong, or ſpirituous Waters of Vegetables, are uſually the Baſe of *Elixirs* and the Menſtruum, or Diſſolvent, whereby the Eſſence of the other Ingredients is drawn or ſeparated. Spirit of Wine is the beſt and moſt commodious Menſtruum of all.

The *Charletans* abuſe the Term *Elixir*, and apply it to Abundance of ſimple Extracts, or Tinctures; only to put them off at the higher Price. Some Authors, for *Elixir*, uſe the Word *Quinteſſence*. See QUINTESSENCE.

Menage derives the Word from the *Arabic*, *Elixir*; properly ſignifying *Fraction*, by Reaſon *Elixirs* have the Force of breaking Diſeaſes: Others, more naturally derive it from *Alecſiro*, an Artificial Extraction of ſome Eſſence. Others from the *Greek* ἔλαιον, *Oil*, and σύρω, *I draw*, q. d. an Extract of the Oil, which is the eſſential Part of Mixts. Others from the *Greek* Verb, ἀλεξέω, *to help*, *aſſiſt*, by Reaſon of the great Succours we receive from *Elixirs*. Laſtly, others from ἕλκω, *to draw*.

ELIXIR *Proprietatis*, is a Remedy firſt invented by *Paracelſus*. It is compoſed of Aloes, Myrrh, and Saffron; the Tincture, or Eſſence whereof, is drawn by putting them to diſſolve, or digeſt with Spirit of Sulphur. Some add Spirit of Wine to the Spirit of Sulphur.

Crollius takes this *Elixir* to be the Balm, or Balſam of the Antients; adding, that it contains all the Virtues of the Natural Balm. It comforts and fortifies the Heart and Stomach, aſſiſts Digeſtion, purifies the Blood, and promotes Sweat.

ELIXIR, among the Alchymiſts, is uſed for the *Philoſopher's Stone*, or the *Powder of Projection*; and ſometimes for an *Univerſal Medicine*, which ſhall cure all Diſeaſes, called by Way of Excellence the *Grand Elixir*.

Theſe two Things, moſt Alchymiſts take to coincide; ſo that what will make Gold, will cure all Diſeaſes. See PHILOSOPHERS-*Stone*.

The Notion of a *Grand Elixir* is of a long ſtanding. *Kircher* aſſures us, that the antient *Egyptians* had a Method of drawing an *Elixir* from the hardeſt and moſt precious Subſtances; which, on Account of its Subtilty and Perfection, they call'd *Heaven*. And this he takes to be that admirable, and celeſtial Water, capable of removing all Diſeaſes; called alſo the *Stone*, and the *Philoſopher's Stone*, as being drawn from precious Stones; and ſometimes, by the Hermetical Denominations, *Aqua Vitæ*, *Vegetable Seed of Nature*, *Solar Soul*, &c. Oed. Ægypt. *Tom.* II. p. 430.

ELKS *Claws*, in Pharmacy, a Drug, ſuppoſed to be good againſt the *Epilepſy*; known in the Shops by the Name of *Ungula Alcis*. See EPILEPSY.

The Animal that yields it, call'd by the *Latins*, *Alce*; by the *Germans*, *French*, &c. *Ellend*; and by us, *Elk*; is a wild Beaſt, found in the Foreſts of *Muſcovy*, *Sweden*, and *Pruſſia*; but more abundantly in *Canada*, and moſt Parts of North *America*.

'Tis about the Size and Figure of a Mule; only its Snout bigger, its Tail ſhort, its Feet cloven; and that it bears a large Ramage, or Horn, like that of a Deer, weighing three, and ſometimes four Hundred Weight. That anatomized in the Royal Academy of Sciences, was five Foot ſeven Inches long. Its Hair is brown, and about the Length of that of a Goat: Its Ears nine Inches long, and four broad; and its Tail not above two Inches: Its Neck ſhort and thick: Its Skin ſtrong and hard, tho' thin; its Fleſh very delicate, eſpecially that of the Female: And the Ligaments of its Joints exceeding ſtrong; which has occaſion'd ſome Authors to ſay, that its Legs had no Joints at all; and that it was this made it ſo ready at ſliding on the Ice, to ſave it ſelf from the Wolves.

It neither runs, nor bounds; but its Trot is almoſt equal to the ſwifteſt Running of a Deer.

Pauſanias ſays, that the Male has Horns: And *Cæſar*, that the Female hath none: But we find that both have.

The Hunting of the *Elk*, is one of the principal and moſt agreeable Employments of the Savages of *Canada*, *Accadie*, &c. They chuſe a Time when the Snow is on the Ground; in which the Beaſt is apt to ſink and ſtick. When they have kill'd enough with their Fire Arms, to feaſt for ſeveral Days; they flea them, and ſend the Skins to the *French*, who dreſs it in Oil, like the Buffelo Skin. See CHAMOIS.

The Savages likewiſe take care to cut off the left hind Foot of each Beaſt; eſpecially if it be a Female; the Hoof whereof is that applauded Remedy for the *Falling Sickneſs*.

Antient Authors tell us, that to catch the *Elk*, the *Northern* People watch the Occaſion when he falls down of the Epilepſy; which it frequently does; and that they lay hold of it e're it can recover Strength enough to put its left Foot in its Ear; which cures it immediately.

And hence it is, that the Notion of its Virtue, in the Cure of that Diſeaſe, had its Riſe. The *Germans* call it *Ellend*, that is, Miſery, by Reaſon of the Miſery it is reduc'd to in falling ſo often into the Epilepſy; tho' it has its Remedy always about it; which has given People reaſon to ſuſpect, that the Virtue attributed to it is fabulous.

Accordingly, *Olaus Magnus* ſays, 'tis the outer Hoof of the right Foot that the *Elk* puts in its Ear to cure the Epilepſy; which being impoſſible, it ſhould ſeem as if *Olaus* only ſpoke of it by Way of ſneer.

He adds, that the Blows it deals are ſo ſtrong, that with its hind Feet it will break the Trees like Muſhrooms; and with its fore Feet pierce the Hunters thro' and thro'.

Pomet gives us the Marks to diſtinguiſh the genuine *Elks Claws*; but as their Virtue is very equivocal, not to ſay abſolutely falſe, there is no great Harm in being deceiv'd: The Opinion alone may ſerve for the Reality.

ELL, *Ulna*, a Meaſure, which obtains under different Denominations in moſt Countries. See MEASURE.

The *Ell* is the Standard, or Meaſure, whereby Cloths, Stuffs, Linnens, Silks, &c. are uſually meaſur'd, or eſtimated; anſwering, in good Meaſure, to the *Yard* of *England*, the *Canna* of *Italy*, the *Varre* of *Spain*, the *Palm* of *Sicily*, &c. See YARD.

Servius will have the *Ell* to be the Space contain'd between the two Hands when ſtretch'd forth: But *Suetonius* makes it no more than a *Cubit*. See CUBIT.

The *Ells* which occur moſt frequently in *England*, are *Engliſh* and *Flemiſh*: The *Ell Engliſh* contains three Foot nine Inches; or one Yard one Quarter *Engliſh* Meaſure: The *Ell Flemiſh*, 27 Inches, or three Quarters of a Yard; ſo that the *Ell Engliſh* is to the *Flemiſh Ell* as five to three.

M. *Ricard*, in his Treatiſe *of Commerce*, reduces the *Ells* thus: An hundred *Ells* of *Amſterdam*, are equal to ninety eight, three Quarters, of *Brabant*, *Antwerp* and *Bruſſels*; to fifty eight and an half of *England* and *France*: To an hundred and twenty of *Hambourg*, *Francfort*, *Leipſic* and *Cologne*: An Hundred twenty five of *Breſlaw*: An Hundred and ten of *Bergen* and *Drontheim*: And an Hundred and ſeventeen of *Stockholm*. See MEASURE.

ELLEBORE, a Medicinal Plant. See HELLEBORE.

ELLIPSIS, in Geometry, one of the Conic Sections, popularly call'd an *Oval*, or *Oblong*. See CONIC.

The *Ellipſis*, to define it from its Form, is a regular, continued curve Line, including a Space that is longer than broad; wherein are two Points equally diſtant from the two Extremes of the Length; from which, two right Lines being drawn to any Point, aſſumed at Pleaſure in the *Ellipſis*, their Sum is equal to the Length of the *Ellipſis*.

Thus, in the *Ellipſis* A E B M D, &c. (*Tab. Conicks Fig.* 21.) the Lines Fa and fa drawn from the two Points F and f, equally diſtant from the two Extremes A and B, are equal to A B.

Or, taking the *Ellipſis*, as Geometricians frequently do, for the Space contain'd, or included within this Curve Line; it is defined a Figure, contain'd under one ſingle oblong Line, and having two unequal Axes or Diameters A B and D E.

The greater Axis of the *Ellipſis*, or the right Line repreſenting the Length of the *Ellipſis* A B, or of the Space included by the *Ellipſis*, is call'd the *Tranſverſe Axis*, or Diameter: And the leſſer Axis, repreſenting the Breadth of the *Ellipſis* D E, the *Conjugate*, or *ſecond Axis*. The two Axes always biſſect each other at right Angles. See AXIS.

The two Axes are the two greateſt Diameters of the *Ellipſis*, but there are an Infinity of other different Diameters. See CONJUGATE, TRANSVERSE, &c.

The *Centre of an* ELLIPSIS, is the Point C, wherein the two Axes interſect.

The two Points F and f, on the greater Axis, equally diſtant from the Extremes thereof A and B, are call'd the *Foci*, or *Umbilici of the Ellipſis*; from which two Lines, drawn to the Circumference of the *Ellipſis*, as already obſerved, are equal to the greater Axis. See FOCUS.

The *Ellipſis*, conſidering it as a Conic Section, that is, as a Curve ariſing from a Section of the Cone, is beſt defined from its Geneſis, or the Manner of its Production, thus: An *Ellipſis* is a Curve Line, produced by cutting the Cone A B C, (*Fig.* 21.) by a Plane, in ſuch Manner, as that the Axis of the Section D E, meets with the Diameter of the Baſe A B, produced in F.

Or, defining it from one of its known Properties aſſumed; an *Ellipſis* is a Curve Line, wherein the Square of the Semi-ordinate P M, (*Fig.* 22.) is to the Rectangle of the Axis A P and P B; as the Parameter, to the Axis.

Thus, if A B = a, the Parameter = b; P M = y; A P = x: Then will b : a :: y^2 : $ax - x^2$. Conſequently $ay^2 = abx - bx^2$. See CONIC *Section*.

Hence, 1. $y^2 = bx - \frac{bx^2}{a}$. That is, the Square of the Semi-ordinate, is equal to the Rectangle of the Parameter into the Abſciſs; abating another Rectangle of the ſame Abſciſs into a fourth proportional to the Axis, Parameter and Abſciſs.

And hence the Word *Ellipſis*, which is form'd from the *Greek*, ἔλλειψις, *Deficiency*, a Denomination the antient *Greek* Geometricians gave this Figure, by Reaſon, among other Properties, this is one, that the Squares of the Ordinates are leſs than, or *defective* of the Rectangles under the Parameters and Abſciſſes.

To find the Axis, Parameter, and Semi-ordinate of an ELLIPSIS.

Hence, alſo 2°. The Parameter, Abſciſs, and Semi-ordinates, in an *Ellipſis* being given; the Axis is found by making 1. $b : y :: y : \frac{y^2}{b}$, 2. $\frac{x - y^2}{b} = \frac{(bx - y^2)}{b} : x = x : a$.

3°. The Axis A B, the Abſciſs A P, (*Fig.* 23.) and the Semi-ordinate P M being given, the Parameter A G is thus found: Make A I = P M; and from A, thro' M, draw the right Line A L. In I erect a Perpendicular L I: Then, ſince A P : P M :: A N : L I; $LI = y^2 : x$. Produce P M to O, till $PO = LI = y^2 : x$ and from B, thro' O, draw a right Line B G. In A erect a Perpendicular $GA = ay^2 : (ax - x^2)$: This will be the Parameter A G.

4°. The Axis A B, and the Parameter A G being given, we can aſſign every Abſciſs, as B P, its Semi-ordinate P N; by drawing the Line G B to the Parameter A G, which is perpendicular to the Axis A B: Then, erecting a Perpendicular P N, make P L = P H. Laſtly, on A L deſcribe a Semi-circle.

To find the Foci, conjugate Axis, Ratio of the Ordinates, &c. of an ELLIPSIS.

1°. From B to L, (*Fig.* 22.) ſet off half the Parameter; then will $CL = \frac{1}{2}a - \frac{1}{2}b$. In the Centre C erect a Perpendicular C K, meeting the Semi-circle deſcribed on A L. Thus will $CK = \sqrt{(\frac{1}{4}a^2 - \frac{1}{4}ab)}$ Therefore, making C F = C K; F will be the *Focus*. The latter Equation furniſhes us this Theorem.

If the Axis A B, be cut in the Focus F, the Rectangle under the Segments of the Axis A F, F B will be ſubquadruple of the Rectangle under the Parameter and the Axis. See FOCUS.

2°. The Parameter, and Axis A B given, the Conjugate Axis is eaſily found; as being a mean proportional, between the Axis and Parameter. Conſequently, the Parameter is a third proportional to the greater and leſſer Axis. Add, that the Square of half the Conjugate Axis, is equal to the Rectangle, under the Diſtance of the Focus from the Vertex, and its Complement to the Axis.

3°. In an *Ellipſis*, the Squares of the Semi-ordinates P M, and p m, *&c.* are to each other as the Rectangles under the Segments of the Axis. Hence $DC^2 : PM^2 = CB^2 : AP\ PB$. Conſequently $DC^2 : CB^2 = PM^2 : AP\ PB$. That is, the Square of the leſs Axis is to the Square of the greater; as the Square of the Semi-ordinate, to the Rectangle under the Segments of the Axis.

4°. The right Line F D, (*Fig.* 24.) drawn from the Focus F, to the Extremity of the Conjugate Semi-Axis; is equal to half the tranſverſe Axis A C.

Hence, the Conjugate Axes being given, the Foci are eaſily determined. For, biſſecting the greater Axis A B in C; from C erect a Perpendicular C D, equal to the Conjugate Semi-Axis. Then, from D, with the Interval C A, the Foci F and f are determined.

To deſcribe an ELLIPSIS.

5°. The Sum of two right Lines F M, and f m drawn from each Focus of an *Ellipſis*, F and f to the ſame Point of the Periphery M, being equal to the greater Axis A B: The Conjugate Axes of an *Ellipſis* being given, the *Ellipſis* is eaſily deſcribed. For, determining the Foci F and f, as already directed; and fixing two Nails therein, and about theſe Nails tying a Thread F M f, equal to the Length of the greater Axis A B: The Thread being ſtretch'd, and a Style, or Pin, applied at its Extent, the Duct or Sweep of the Style or Thread about the Nails will deſcribe an *Ellipſis*.

6°. The Rectangle under the Segments of the Conjugate Axis, is to the Square of its Semi-ordinate, as the Square of the Conjugate Axis, to the Square of the greater Axis. Hence, the Co-ordinates to the Conjugate Axis, have the ſame Relation, as there is between the Co-ordinates to the greater Axis. Conſequently, the Parameter of the Conjugate Axis, is a third proportional to the Conjugate Axis, and the greater Axis.

To determine the Subtangent P T, (*Fig.* 25.) *and Subnormal* P R *in an* ELLIPSIS.

7°. As the firſt Axis, is to the Parameter; ſo is the Diſtance of the Semi-ordinate from the Centre, to the Subnormal. See SUBNORMAL.

8°. The Rectangle under the Segments of the Axis, is equal to the Rectangle, under the Diſtance of the Semi-ordinate from the Centre, into the Subtangent. See SUBTANGENT.

9°. As the Diſtance of the Semi-ordinate from the Centre, is to half of the Axis; ſo is the Abſciſs to the Portion of the Subtangent intercepted between the Vertex of the *Ellipſis* and the Tangent.

10°. The Rectangle under the ſubtangent P T, into the Abſciſs A P, is equal to the Rectangle under the Segments of the Axis. Hence, the Square of the Semi-Axis A C, is equal to the Rectangle of C T, into P C.

11°. The Rectangle under the Subtangent, and the Diſtance of the Ordinate from the Centre, is equal to the Difference of this Diſtance, and the Square of the Tranſverſe Semi-Axis.

12°. In an *Ellipſis*, the Square of the Semi-ordinate is to the Square of the Conjugate Semi-diameter; as the Rectangle under the Segments of the Diameter, to the Square of the Semi-diameter. Conſequently, the Relation of the Semi-ordinates to the Diameters, is the ſame as to the Axes: And the Parameter of the Diameter, is a third proportional to the Diameters.

Infinite ELLIPSES, are thoſe defined by the Equation $ay^{m+n} = bx^m (a - x^n)$ which ſome call *Elliptoides*, if m be greater than 1, and n greater than 1. See ELLIPTOIDES.

In Reſpect of theſe Curves, the *Ellipſis* of the firſt Kind is called the *Apollonian Ellipſis*.

Quadrature of the ELLIPSIS. See QUADRATURE.

ELLIPSIS, in Grammar, and Rhetoric, a figurative Way of ſpeaking, wherein ſomething is ſuppreſs'd, or left out in a Diſcourſe, and ſuppoſed or underſtood. See FIGURE.

This chiefly happens, when, being under the Tranſport of a violent Paſſion, a Man is not at Leiſure to ſay every Thing out at Length; the Tongue being too ſlow to keep Pace with the rapid Motions of the Mind. So that on theſe Occaſions we only bring forth broken, interrupted Words and Expreſſions; which expreſs the Violence of a Paſſion, better than any conſiſtent Diſcourſe.

Fa. Boſſu conſiders the *Ellipſis*, as a Way of diſguiſing Sentences; by ſuppreſſing the Word which ſhould make the particular Application, and leaving the whole in a Kind of ingenious Ambiguity. See SENTENCE.

Thus, the *Trojans*, in *Virgil*, being reduced by *Turnus* to the laſt Extremity, and ready to be deſtroy'd, ſpy *Æneas* coming to aſſiſt them: Upon which the Poet ſays, *Spes addita ſuſcitat Iras*. Which Expreſſion ſignifies either, in particular, that the Hope they conceive retrieves and augments their Courage: Or in general, that the Hope of Aſſiſtance at Hand naturally raiſes Courage, and gives new Strength.

If the Poet had added a Word, and ſaid, *Ollis ſpes addita ſuſcitat Iras*, the Paſſage had been expreſsly affected to the firſt Senſe; and it had ceaſed to be a Sentence, and commenced the Application of a Sentence. The Suppreſſion of that Word makes a Sentence in Form. See SENTENCE.

This, that excellent Critick looks on as one of the Fineſſes of the *Latin* Tongue; wherein it had vaſtly the Advantage of the Modern Tongues. *Traite du Poeme Epique*. Page 466, *&c.*

ELLIPTIC, or ELLIPTICAL, ſomething that belongs to an *Ellipſis*. See ELLIPSIS.

Kepler firſt maintain'd, that the Orbits of the Planets are not Circular, but *Elliptical*; which Hypotheſis was afterwards adhered to by M. *Bouillaud*. Mr. *Flamſtead*, Sir *Iſaac Newton*, Monſ. *Caſſini*, and others, of the later Aſtronomers, have confirm'd the ſame: So that this, which was once by Way of Contempt call'd the *Elliptic Hypotheſis*, is now the prevailing Doctrine. See ORBIT.

Dr. *Iſaac Newton* demonſtrates, that if any Body revolve round another in an *Elliptic* Orbit, its centrifugal Forces, or Gravities, will be in a duplicate Ratio; or as the Squares of its Diſtances from the Umbilicus, or Focus. See CENTRIPETAL.

Serlio, *Hartman*, &c. demonſtrated that the beſt Form for Arches, or Vaults, is the *Elliptical*. See ARCH.

ELLIPTIC *Space*, is the Area, contain'd within the Circumference, or Curve of the *Ellipſis*.

'Tis demonſtrated, 1°. That the *Elliptic Space* is to a Circle deſcribed on the tranſverſe Axis; as the Conjugate Diameter is to the tranſverſe Axis.

2°. That the *Elliptic Space* is a mean proportional between two Circles deſcribed on the tranſverſe and conjugate Axes. See CIRCLE.

ELLIPTIC *Conoid*, is the ſame with the *Spheroid*. See SPHEROID.

ELLIPTIC *Specula*, or *Mirrors*. See MIRROR.

ELLIPTICAL *Compaſſes*, is an Inſtrument, made uſually in Braſs; for the drawing any Ellipſis, or Oval, at one Revolution of an Index. See COMPASSES.

ELLIPTICAL *Dial*, is an Inſtrument, uſually of Braſs, with a Joint to fold together, and the Gnomen to fall flat; for the Sake of the Pocket.

By it are found the Meridian, Hour of the Day, Riſing and Setting of the Sun, *&c.* See DIAL.

ELLIPTOIDES, an Infinite *Ellipſis*, i. e. an *Ellipſis* defined by the Equation $ay^{m+n} = bx^m (a - x)^n$, wherein $m > 1$ and $n > 1$.

Of this there are ſeveral Kinds or Degrees: As the *Cubical Elliptoid*, wherein $ay^3 = bx^2 (a - x)$. A *Biquadratic* or

Sur-

Surdesolidal Elliptoid, or that of the third Order, wherein $ay^4 = bx^2 (a-x)^2$

If any other Ordinate be called v, and the correspondent Abscis z; there will be $av^{m+n} = bz^m (a-x)^n$. Consequently, $ay^{m+n} : av^{m+n} = bx^m (a-x)^n : bz^m (a-z)^n$ that is, $y^{m+n} : v^{m+n} = x^m (a-x)^n : z^m (a-z)^n$

ELOCUTION, is defined by *Tully*, the chusing and adapting of Words, and Sentences, to the Things, or Sentiments, to be expres'd. To the *Elocution* properly belongs the *Delectus Verborum*, the Choice of Words. See RHETORIC.

The Virtues of the *Elocution* consist chiefly in the Use of Figures, and figurative Dictions, in the Periods, and the Style. See FIGURE, PERIOD, and STYLE.

ELOGE, a Praise, or Panegyric, bestow'd on any Person, or Thing; in Consideration of its Merit. See PANEGYRIC.

The Term is principally used by the *French*; and from them borrow'd by the *English*. It is form'd of the *Greek*, ευλογια, *Commendation*, &c.

That fine Discourse of *Isocrates*, entitled πανήγυρις, is a historical *Eloge*, of the City of *Athens*. Fa. *Labbe*, has composed an historical *Eloge* of the City of *Bourges*; Fa. *Menestrier*, of the City of *Lions*; and M. *Martignac*, of the Bishops and Archbishops of *Paris*, for about a Century.

The Secretary of the Royal Academy of Sciences at *Paris*, makes the *Eloges* of such Members as die; and delivers them in public at the next Meeting of the Company. Funeral Orations are only *Eloges* of eminent Persons deceas'd.

Some Authors have wrote *Eloges* on despicable, and even pernicious Things. See ENCOMIUM.

ELONGATION, in Astronomy, the Digression, or Receding of a Planet from the Sun, with Respect to an Eye placed on our Earth. See PLANET.

The greatest Distance of the Planet, *&c.* from the Sun, is called the greatest *Elongation:* Which varies on two Accounts, *viz.* in that both the Earth and the Planet revolve, not in Circles, but in Ellipses.

The *Elongation* is chiefly considered in *Venus* and *Mercury:* The greatest *Elongation* of *Venus* is 45 Degrees, and that of *Mercury* 30 Degrees: That is, the former never recedes from the Sun, or is seen distant from him, above 45°; nor the latter above 30°. Whence it is that *Mercury* is so rarely seen; as being usually lost in the Light of the Sun. See MERCURY and VENUS.

ELONGATION, is also used, by some Authors, for the Difference in Motion, between the swiftest and the slowest of two Planets; or the Quantity of Space, whereby the one has overgone the other: Called also *Superation.*

The swiftest Motion of the Moon, with Regard to the Sun, is called the *Elongation* of the Moon from the Sun. See MOON and SUN.

We also say Diurnal *Elongation*, Horary *Elongation*, &c.

Angle of ELONGATION, or *Angle at the Earth*, is the Difference between the Sun's true Place, and the Geocentric Place of a Planet. Such is the Angle E T R (*Tab. Astronom. Fig.* 40.) between the Place of the Sun E, and that of the Planet R.

ELONGATION, in Chirurgery, is an imperfect Luxation; when the Ligament of any Joint is so extended, or relaxed, as to lengthen the Limb, but yet not to let the Bone go quite out of its Place. See LUXATION.

ELOPEMENT, in Law, is when a married Woman, of her own Accord, departs from her Husband, and dwells with an Adulterer; for which, without voluntary Reconcilement to the Husband, she shall lose her Dowry; nor shall the Husband, in such Case, be compelled to allow her any Alimony. See ALIMONY.

Sponte Virum Mulier fugiens, & adultera facta,
Do te sua careat, nisi sponso sponte retracta.

The Word is derived from the *Saxon*, Geleopan, *i. e.* to depart from one Place to dwell in another.

ELOQUENCE, the Art of speaking, or Writing well; or of touching and perswading. See RHETORIC and ORATORY.

Demosthenes, and *Cicero*, are the Princes of antient *Eloquence*; the one among the *Greeks*, the other among the *Romans*. Their Manner, however, was exceedingly different; the first being close, strong, nervous, concise, severe, so that a Word cou'd not be spared: The latter copious, florid, and rich, so that a Word could not be added.

It was objected to *Cicero*, that his *Eloquence* was *Asiatic*, that is, redundant, or stuffed with needless Words and Thoughts. See STYLE.

Pericles was call'd a *Torrent of Eloquence*, a *Thunderbolt of Eloquence*. Pedants don't distinguish *Eloquence* from the heaping up of Figures, the Use of big Words, and the Roundness of Periods.

True *Eloquence* depends principally on the Vivacity of the Imagination. In Strictness, 'tis not that which gives Grace and Ornament, but Life and Motion, to Discourse. Its Mien is that of an *Amazon*, not that of a *Coquette.*

The Authors of the *Art of Thinking* remark, that the Rules of *Eloquence* are observed in the Conversations of People naturally *Eloquent*, tho' they never think of them, while they practise them. They practise those Rules because they are *Eloquent*; they don't use them to be *Eloquent.*

The *Eloquence* of the Chair, and Pulpit, is much more difficult than that of the Bar. Sir *George Mackenzie* has a Treatise of the *Eloquence* of the Bar. *Idea Eloquentiæ forensis*, &c.

ELUDING, the Act of evading, or rendering a Thing vain, and of no Effect; a dextrous getting clear, or escaping out of an Affair, a Difficulty, an Embarras.

The Design of Chicanery is to *elude* the Force of the Laws: This Doctor has not resolved the Difficulty, but *Eluded* it. To *Elude* a Proposition, *&c.*

Alexander, says the Historian, in cutting the *Gordian* Knot, either *Eluded* the Oracle, or fulfill'd it: *Ille nequicquam luctatus cum latentibus Nodis, nihil, inquit, interest, quomodo solvatur; Gladioque ruptis omnibus loris, Oraculi sortem vel* elusit *vel implevit.* Q. Curt. 13.

ELYSIUM, or ELYSEAN, or ELISIAN *Fields*, in the antient Theology, or rather Mythology; a Place in the *Inferi*, i. e. in the lower World, or as we sometimes render it, in Hell; furnish'd with Fields, Meads, agreeable Woods, Groves, Shades, Rivers, &c. whither the Souls of good People went after this Life.

Orpheus, *Hercules*, and *Æneas*, are held to have descended into them, in their Life-time, and return'd again. *Virgil*, Lib. VI. *v.* 638, *&c.* And *Tibullus*, Lib. I. *Eleg.* 3. give us fine Descriptions of the *Elysean Fields.*

Virgil, opposes *Elysium* to *Tartara*; which was the Place where the Wicked underwent their Punishment.

Heic Locus est, parteis ubi se via findit in ambas:
Dextera, quæ Ditis magni sub mœnia tendit:
Hac Iter Elysium *nobis: at læva Malorum*
Exercet Pœnas, & ad Impia tartara mittit.

Some Authors take the Fable to have been borrowed from the *Phœnicians*; as imagining the Name *Elysium* form'd from the *Phœnician* עלז *alaz*, or עלע *alats*, or עלס *alas*, to rejoyce, or be in Joy; the Letter *a* being only changed into *e*, as we find done in many other Names; as in *Enakim*, for *Anakim*, &c. On which Footing *Elysian Fields* should signifie the same Thing as a Place of Pleasure, or:

——— *Locos lætos & Amœna virecta*
Fortunatorum Nemorum, sedesque beatas. Virg.

Others, derive the Word from the *Greek*, λυω, *solvo, I deliver, I set loose, disengage*; by Reason here Men's Souls are freed, or disencumber'd from the Fetters of the Body. *Beroaldus* and *Hornius*, Hist. Philosoph. *L.* III. *C.* 2. take the Place to have derived its Name from *Eliza*, one of the first who came into *Greece* after the Deluge, and the Author and Father of the *Ætolians*. *Ol. Rudbecks* contends, that it was in *Sweden* the *Elysian Fields* were placed. See ACHERON.

On the Subject of the *Elysian Fields*, see the Treatise of J. Windet, *de Vitâ functorum Statu.*

ELYTHROIDES, in Anatomy, one of the proper Coats, or Tunicks of the Testicles. See TESTICLE.

The *Elythroides* is the second proper Coat of the Testes: It resembles a Sheath, or *Vagina*, whence some have also call'd it *Vaginalis.*

It is form'd of a Dilatation, of the Production of the *Peritonœum:* Its inner Surface is smooth and equable; and the outer rough and unequal; which makes it adhere the more strongly to the first of the proper Coats, called *Erithroides.*

The Word is form'd of the *Greek*, ελυθρον, *Vagina*, a Sheath, and ειδος, *Form.*

EMANATION, the Act of flowing, or proceeding, from some Source, or Origin.

As, the *Emanation* of Light from the Sun; of Effluvia from odorous, *&c.* Bodies; of Wisdom, from God, *&c.*

The Word is also used for the Thing that proceeds, as well as the Act of Proceeding: As, the Power given a Judge, is an *Emanation* from the Regal Power: The reasonable Soul is an *Emanation* from the Divinity: The Holy Spirit is an *Emanation* from the Father and the Son, *&c.*

The Word is form'd of the *Latin e*, out, and *manare*, to flow.

Among

Among the School-men, *Emanation* is alſo uſed for the Production of ſome leſſer Thing, in Order to the Production of a greater, by Virtue of ſome natural Connection, or Dependance between them.

For, as when ſeveral Moveables are joyn'd together, the ſame Power that moves the firſt moves all the reſt (as in pulling up the Trunk, you pull up the Roots, Branches, *&c.* or in drawing one Link of a Chain, you bring forward all the reſt). The ſame is to be underſtood in all conjunct, natural Effects; *viz.* that the ſame Power whereby the firſt is produced, does alſo produce all the reſt, naturally connected to it: In that by Means of the Connection, the Action of the Agent is convey'd from one to the other; ſo that the firſt determines the Agent to the Production of all the reſt.

In this Senſe, they ſay an *Emanation* of Properties from the Eſſence, wherewith they have a natural Connection.

And hence that is call'd an *Emanative Cauſe*, (in Contradiſtinction to an Efficient Cauſe) which produces an Effect by its mere Preſence, without the Intervention of any Action; as a Roſe doth a Smell, *&c.* Others, and with good Reaſon, deny that there is any ſuch Thing as an *Emanative Cauſe*, to produce an Effect without any Action. See CAUSE.

EMANCHE, in Heraldry. See MANCHE.

EMANCIPATION, in the *Roman* Law, the Act of ſetting a Son free from the Power, and Subjection to his Father. See FREEDOM, ENFRANCHISING, *&c.*

The Effect of *Emancipation* was, that the Goods, and moveable Effects, which the Son ſhould thenceforth acquire, ſhould be his ſole Property, and not the Property of his Father; as they were before *Emancipation*. Beſide that, *Emancipation* put the Son in a Capacity of managing his own Affairs, and of marrying without his Father's Conſent, tho' a Minor, or Pupil, and leſs than 25 Years of Age. See PUPIL, *&c.*

There were two Kinds of *Emancipation*: The one *tacit*, which was by the Son's being promoted to ſome Dignity, or by his becoming of Age, or by Marriage: In all which Caſes, the Son became his own Maſter of Courſe.

The other *expreſs*, where the Father declared before the Judge, that he *emancipated* his Son. This was not perform'd without ſome Formality: The Father was firſt to ſell his Son imaginarily, to another Man, whom the Lawyers call *Pater Fiduciarius*, Father in Truſt; of whom being bought back again by the natural Father, he manumitted, or ſet him free by a Declaration before the Judge. See MANUMISSION.

That imaginary Sale was call'd *Mancipatio*; and the Manumiſſion, conſequent thereon, *Emancipatio*.

Emancipation ſtill obtains in *France*, chiefly, with Regard to Minors, or Pupils, who are hereby ſet at Liberty to manage their Effects, without the Advice, or Direction, of their Fathers or Tutors. It muſt be obſerved, however, that the *Emancipation* only extends to the ſelling of Moveables, and letting of Leaſes, *&c.* of Immoveables; not to the Selling or Mortgaging of Immoveables: Which are only done with the Conſent of a *Curator*, ordinarily appointed a Perſon when *emancipated*.

Formerly, *Emancipation* was perform'd in the ordinary Courts of Juſtice, when deſired by the Child; but if he were a Minor, the King's Letter was required. Tho' there were other Ways of *Emancipation*, as Marriage; the Age of 20 Years: And in ſome Provinces, the Death of the Mother, by Reaſon the Children were there under the Power of the Father and Mother conjointly, ſo that the Death of either of them *emancipated* the Child.

Emancipation by Marriage, in *France*, gives a Power of marrying again, without the Father's Conſent, tho' under Age: But among the *Romans*, *Cujas* tells us, a Widow, under 25 Years of Age, tho' *emancipated* by her former Marriage, return'd into the Power of her Father, and might not marry a ſecond Time without his Conſent.

Du Cange obſerves, that the Word *Emancipation* was alſo uſed in the Monaſteries, in ſpeaking of Monks, promoted to any Dignity, or removed from under the Power of their Superiours: As alſo in ſpeaking of Monaſteries, Chappels, *&c.* themſelves, when exempted by the Pope, from the Juriſdiction of the Ordinary.

The Word is form'd of the *Latin*, *ex*, of, and *Mancipium*, a Slave.

EMASCULATION, the taking from a Male thoſe Parts which make the Character of the Sex. See CASTRATION.

EMAUX *de l'Eſcu*, in Heraldry, the Metal and Colours of a Shield, or Scutcheon. See METAL and COLOUR.

EMBALMING, the Opening a dead Body, taking out the Inteſtines, and filling their Place with odoriferous and deſſicative Drugs, and Spices, to prevent its putrifying.

The Word is form'd from *Balm*, which was a principal Ingredient in the *Embalmings* of the antient *Egyptians*. See BALM.

The Body of *Jacob* was 40 Days in *Embalming* in *Egypt*. See *Geneſis* 50. v. 3. *Mary Magdalen*, and *Mary* the Mother of *James*, bought Perfumes to *Embalm* Jeſus. See S. *Mathew*, &c. *John* King of *France*, dying at *London* in 1364, his Body was *Embalmed*, and ſent to *France*, and there interr'd at St. *Dennis*. *Du. Tillet*. For the Manner of *Embalming* among the *Egyptians*, See *Thevenot*'s Collection, *Tome* I.

The *Peruvians* had likewiſe a Method of preſerving the Bodies of their *Incas*, or Kings, *Embalm'd*. *Garcilaſſo de la Vega*, takes their main Secret to have been the burying of the Corps in the Snow, to dry them; and afterwards applying a certain Bitumen, mention'd by *Acoſta*, which kept them as entire, as if they had been ſtill alive.

Dr. *Grew*, in his *Muſæum Regalis Societatis*, is of Opinion, that the *Egyptians* boil'd their Bodies in a large Caldron, with a certain Kind of liquid Balm: His Reaſon is, that in the Mummies preſerved in the Collection of the Royal Society, the Balm has penetrated not only the fleſhy and ſoft Parts, but even the very Bones; ſo, that they are all as black as if they had been burnt. See MUMMY.

EMBARCADERE, in Commerce, a *Spaniſh* Term, much uſed along the Coaſts of *America*, particularly thoſe on the Side of the South Sea.

The Word ſignifies a Place that ſerves ſome other conſiderable City further within Land, for a Port, or Place of Shipping, *i. e.* of *embarking and diſembarking Commodities*. Thus *Colao*, e. gr. is the *Embarcadere* of *Lima*, the Capital of *Peru*: And *Arica* the *Embarcadere* of *Potoſi*. There are *Embarcaderes* 40, 50, and even 60 Leagues off the City which they ſerve in that Capacity.

EMBARGO, a Reſtraint, or Prohibition, impoſed by a Soveraign, on Merchant Veſſels; to prevent their going out of Port; ſometimes their coming in; and ſometimes both, for a limited Time. *Embargo's* are uſual in Time of War; in Apprehenſions of Invaſions, *&c.*

One great Occaſion of *Embargo*'s is, that the Government may make Uſe of the Merchant Veſſels, with their Equipage, *&c.* in Armaments, Expeditions, Tranſporting of Soldiers, *&c.* *Embargo's* are of the worſt Conſequence to Commerce imaginable.

EMBARRAS, a *French* Term, tho' now naturalized. It ſignifies a Difficulty, or Obſtacle, which perplexes or confounds a Perſon, *&c.*

The *Embarras* was very great in the Road, by Reaſon of the Army which defiled therein. A Man lives more in two Days of Leiſure, and feels more of Life therein, than in two Years of Hurry and *Embarras*. *Chev. de M.* It diſcovers a Decay of the Paſſion, when the Lovers are under an *Embarras* to find themſelves alone. *La. Bruyere*.

The Majeſty, the Dignity of Kings, is *Embarraſſing*, *Embaraſſant*; by Reaſon it obliges them to have a certain Air, and certain Manners ſuitable to their Rank; which are ſcarce had without a continual Attention, which muſt needs fatigue, and *Embaraſſe* a Man.

The Majeſty of *Louis* XIV. is ſaid not to have been any wiſe *Embarraſſing*: It was natural to him.

EMBASSADOR, a public Miniſter, ſent from one Soveraign Prince, as a Repreſentative of his Perſon, to another. See MINISTER.

In *Latin*, we uſually call him *Legatus*, or *Orator*; tho' 'tis certain, the Word *Embaſſador*, with us, has a much more extenſive Signification, than that of *Legatus* among the *Romans*: And, excepting that they are both under the Protection of the Law of Nations, there is ſcarce any Thing in common between them. See LEGATUS.

Embaſſadors are either *Ordinary* or *Extraordinary*.

An *Embaſſador in Ordinary*, is he who reſides ſtatedly in the Court of another Prince, to maintain a mutual good Underſtanding, look to the Intereſts of his Prince, and tranſact ſuch Affairs as may occur.

Embaſſadors in Ordinary, are but of modern Invention: 'Tis not above 200 Years ago ſince they were firſt heard of: Till then, all *Embaſſadors* were *Extraordinary*, and retired aſſoon as they had diſpatched the Affair they were ſent upon. See ORDINARY.

An *Embaſſodor Extraordinary*, is he who is ſent to a Prince's Court on ſome particular, and emergent Occaſion; as to conclude a Peace, or Marriage; make a Complement, or the like. Indeed, there is no eſſential Difference between *Ordinary* and *Extraordinary*; their Errand is all: And they equally enjoy all the Privileges and Prerogatives which the Laws of Nations decrees.

At *Athens*, the *Embaſſadors* from foreign Princes and States, mounted the Tribune, or Pulpit, of the public Orators,

Orators, and there open'd their Commiſſion, and acquainted the People with their Buſineſs and Errand: At *Rome*, they were introduced to the Senate, and deliver'd their Commiſſion to them: Among us, they make their Addreſs immediately and ſolely to the King.

Athens, and *Sparta*, ſays M. *Tourreil*, when in all their Glory, were never ſo much delighted, as to ſee, and hear a Number of *Embaſſadors* in their Aſſemblies, ſuing for the Protection, or Alliance of the one or the other State. It ſeem'd to them the nobleſt Homage that could be paid them; and that State, which received the moſt Embaſſies, was judg'd to have the Advantage over the other.

The Name of *Embaſſador*, *Cicero* obſerves, is ſacred and inviolable; *Non modo inter Sociorum Jura, ſed etiam inter Hoſtium Tela incolume verſatur.* In Verr. Orat. VI. *David*, we read, made War againſt the *Ammonites*, to revenge the Injury done his *Embaſſadors*. Kings *L.* II. *C.* 29. *Alexander* put the Inhabitants of *Tyre* to the Sword, for having inſulted his *Embaſſadors*; and the Youth of *Rome*, for affronting the *Embaſſadors* of *Vallona*, were deliver'd up into their Hands, to be puniſhed at Diſcretion.

The *Embaſſadors* of Kings ſhould never attend at any public Aſſemblies, Marriages, Interments, or other Solemnities, unleſs their Maſters have ſome Intereſts therein; nor muſt they go into Mourning, or the like, on any Occaſions of their own, by Reaſon they repreſent the Perſons of their Princes, and muſt conform and keep Pace with him. *Scaliger in Verb. Embaſſador.*

The Word is derived from the corrupt Latin *Ambaſciator*, form'd of *Ambactus*, an old Word borrow'd from the *Gauliſh*, ſignifying Servant, Client, Domeſtic, or Officer: Such is the Origin given by *Borel*, *Menage*, and *Chiflet*, after *Salmaſius* and *Spelman*. But the Jeſuites of *Antwerp* reject this Opinion, in the *Acta Sanct. Mart.* Tom. II. *pag.* 128. by Reaſon the Gauliſh *Ambact* had been diſcontinued long enough e're the Latin *Ambaſcia* was ever thought of: Which, however, is not ſtrictly true; the Word *Ambaſcia* occurring in the *Salic* Law, *Tit.* 19. and being form'd of *Ambactia*, by pronouncing the *t* as in *actio*; and *Ambactia* came from *Ambactus*.

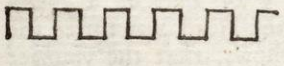
Lindenbrock derives the Word from the *German*, *Ambacht*, Work; as ſignifying a Perſon hired, to perform a Work, or Legation: And *Chorier*, meeting with the ſame Word in the Laws of the *Bourguignons*, gives into the Sentiment of *Lindenbrock*. *Alb. Acharisius* in his *Italian* Dictionary derives it from the Latin *Ambulare*, to walk, or travel.

And, laſtly, the Jeſuites of *Antwerp*, in the Place laſt cited, obſerving that the Word *Ambaſcia* occurs in the Laws of the *Bourguignons*, derive thence the Words *Ambaſſicatores*, and *Ambaſciatores*, as ſignifying Envoys, or Agents, from one Prince, or State, to another. Their Sentiment then is, that among the *Barbarians*, who overſpread *Europe*, *Ambaſcia* ſignified the Diſcourſe of a Perſon who ſtoops or humbles himſelf; being form'd from the ſame Root with *abaiſſer*, viz. of *an*, or *am*, and *bas*.

EMBASSY, *Legatio*, a Miſſion from one Soveraign Prince, or State, to another, of ſome able experienced Perſon, to negotiate ſome Affair, in Quality of *Embaſſador*.

Fa. Daniel obſerves, that under the antient *French* Kings, their *Embaſſies* conſiſted of a Body, or Number of Perſons, joyn'd together in Commiſſion, and who compoſed a Kind of Council: Something like which is ſtill retain'd at Treaties of Peace. Thus the *Embaſſy* of *Nimeguen*, for the Peace, conſiſted of three Plenipotentiaries; that of *Utrecht* of two, *&c.* See EMBASSADOR.

We likewiſe read of *Embaſſadreſſes:* Madam the Marechale *de Guebriant*, *Wicquefort* obſerves, was the firſt, and perhaps the only Woman, ſent by any Court in *Europe*, in Quality of *Embaſſadreſs*. *Matth. L.* IV. *Vie. d' Henry* IV. tells us, that the King of *Perſia* ſent a Lady of his Court on an *Embaſſy* to the Grand Signior, during the Troubles of the Empire.



EMBATTELED, a Term in Heraldry, when the Out-line of any Ordinary is of this Figure; which repreſents the Battlements of a Wall, or Caſtle.

EMBER- or EMBRE-*Weeks*, are thoſe wherein the *Ember-* or *Embring-Days* fall.

In the Laws of King *Alfred*, and thoſe of *Canute*, they are called *Ymbren*, that is, Circular Days, from whence they are corrupted into *Ember-Days:* By the Canoniſts they are called, *Quatuor Anni Tempora*, the four Cardinal Seaſons, on which the Circle of the Year turns.

They are the *Wedneſday*, *Friday*, and *Saturday*, after *Quadrageſima Sunday*, after *Whitſunday*, after *Holy-Rood* Day in *September*, and after St. *Lucies* Day in *December:* Which four Times anſwer well enough to the four Quarters of the Year, *Spring*, *Summer*, *Autumn*, and *Winter*.

Mr. *Somner* thinks they were Faſts, inſtituted to beg God's Bleſſings on the Fruits of the Earth.

Theſe *Ember-Weeks* are now chiefly taken Notice of, on Account of the Ordination of Prieſts and Deacons; becauſe the Canon now appoints the *Sundays*, next ſucceeding the *Ember Weeks*, for the ſolemn Times of Ordination. Though the Biſhops, if they pleaſe, may ordain on any *Sunday*, or Holiday. See ORDINATION.

EMBLEM, a Kind of painted Ænigma; which, repreſenting ſome obvious Hiſtory, with Reflections underneath, inſtructs us in ſome Moral Truth, or other Matter of Knowledge.

Such is that very ſignificant Image of *Scevola*, holding his Hand in the Fire: With the Words, *Agere & pati fortia Romanum eſt.* To do and ſuffer couragiouſly is *Roman.*

The *Emblem* is ſomewhat plainer, and more obvious than the *Ænigma*. See ÆNIGMA.

Gale defines it an ingenious Picture, repreſenting one Thing to the Eye, and another to the Underſtanding.

The *Emblems* of *Alciatus* have been in as much Reputation among the more learned, as thoſe of *Quarles* among the Vulgar.

The Word is pure *Greek*, ἔμβλημα, form'd of the Verb, ἐμβάλλειν, *to caſt in, to inſert. Suetonius* relates, that *Tiberius* made the Word be eraſed out of a Decree of the *Roman* Senate, becauſe borrow'd from another Language.

The *Greeks* gave the ſame Name ἐμβλήματα, *to inlaid*, or Moſaic Works, and even to all Kinds of Ornaments of Vaſes, Moveables, Garments, &c. And the *Latins* uſed *Emblema*, in the ſame Senſe: Accordingly, *Cicero* reproaching *Verres* with the Statues, and fine wrought Works he had plunder'd from the *Sicilians*, calls the Ornaments fix'd thereto (and which on Occaſion might be ſeparated from them) *Emblemata*. Add, that the *Latin* Authors frequently compare the Figures and Ornaments of Diſcourſe to theſe *Emblemata:* Thus, an antient *Latin* Poet, praiſing an Orator, ſays, that all his Words were ranged like the Pieces in Moſaic.

Quam lepidè λέξεις compoſitæ, ut teſſerulæ omnes,
Endo pavimento, atque Emblemate *Vermiculato.*

We don't uſe our *Engliſh* Word *Emblem* in this Senſe; tho' the antient *Juris conſulti*, always retain the Latin *Emblema* to expreſs ſuch Ornaments, by Reaſon the *Greek* ἔμβλημα, literally denotes any Thing applied, or added to a Body by Way of Enrichment.

With us, *Emblem* ordinarily ſignifies no more than a Painting, Baſſo Relievo, or other Repreſentation, intended to hold forth ſome Moral, Political, or Academical Inſtruction.

That which diſtinguiſhes an *Emblem* from a Deviſe, is, that the Words of an *Emblem* have a full compleat Senſe of themſelves; nay, all the Senſe and Signification which they have with the Figure.

But there is a yet further Difference between *Emblem* and Deviſe: For a Deviſe is a Symbol affected, or determined to ſome Perſon, or that expreſſes ſomething which concerns him particularly; whereas an *Emblem* is a Symbol that regards all the Word alike. Theſe Differences will be apparent, from comparing the *Emblem* juſt quoted, with the Deviſe of a Candle lighted; and the Words, *juvando conſumor*, I waſte my ſelf in doing good. See DEVISE.

EMBLEMENTS, a Term ſtrictly ſignifying the Profits of Lands ſown; tho' ſometimes uſed more largely for any Profits ariſing, and growing naturally from the Ground; as Graſs, Fruit, *&c.*

If a Tenant, for Life, ſow the Land, and die; his Executor ſhall have the *Emblements*, and not he in Reverſion. But if the Tenant, for Years, ſow the Land, and before Severance the Term expires, there the Leſſor, or he in Reverſion, ſhall have the *Emblements*, and not he the Leſſee.

EMBOLISM, in Chronology, *Intercalation.* As the *Greeks* made uſe of the Lunar Year, which is only 354 Days; in Order to bring it to the Solar, which is 365 Days; they had every two or three Years an *Emboliſm*, i. e. they added a thirteenth Lunar Month every two or three Years; which additional Month they called *Emboli-mæus*, becauſe inſerted or intercalated. See YEAR.

The Word *Emboliſm* comes from the *Greek*, ἐμβολεσμὸς, form'd of ἐμβαλλειν, *to inſert.* See EMBOLISMIC.

EMBOLISMIC, *Intercalary.* The Term is chiefly uſed for the additional Months, which the Chronologiſts inſert to form the Lunar Cycle of 19 Years. See INTERCALARY.

For the 19 Solar Years, conſiſting of 6939 Days, and 18 Hours; and the 19 Lunar Years, only making 6726

Days: It was found neceſſary, in order to render the 19 Lunar Years equal to the 19 Solar, which make the Lunar Cycle of 19 Years, to intercalate or inſert 7 Lunar Months, containing 209 Days; which, with the four Biſſextile Days, happening in that Interval, make 213 Days, and the whole, 6939 Days. See CYCLE.

By Means of theſe ſeven *Emboliſmic*, or additional Months, the whole 6939 Days and 18 Hours of the Solar Years, are employed in the Calendar. See MONTH.

In the Courſe of 19 Years, there are 228 common Moons, and ſeven *Emboliſmic* Moons. Their Diſtribution is thus: Every 3d, 6th, 9th, 11th, 14th, 17th, and 19th Year are *Emboliſmic*, and conſequently contain 384 Days a-piece. And this was the Method of computing Time among the *Greeks*; when they uſed the *Enneadecaeterides*, or Cycle of 19 Years. But they did not keep regularly to it, as the *Jews* ſeem to have done.

The *Emboliſmic* Months, like other Lunar Months, are ſometimes 30 Days, and ſometimes only 29. See YEAR.

The *Emboliſmic Epacts*, are thoſe between XIX and XXIX; which are thus called, by Reaſon with the Addition of Epact XI, they exceed the Number XXX: Or rather, becauſe the Years, which have theſe Epacts, are *Emboliſmic*; having thirteen Moons a-piece, whereof the 13th is the *Emboliſmic*. See EPACT.

EMBOLUS, the moveable Part of a Pump, or Syringe; called alſo the *Piſton*, and popularly the *Sucker*. See PISTON: See alſo PUMP and SYRINGE.

The Pipe, or Barrel of a Syringe, *&c.* being cloſe ſhut; the *Embolus* cannot be drawn up without a very conſiderable Force; which Force removed, the *Embolus* returns again with Violence. This Phænomenon the *Ariſtotelians* attribute to Nature's Abhorrence of a Vacuum. See VACUUM.

But the modern Philoſophers finding that in an exhauſted Receiver, the *Embolus* is eaſily drawn up, tho' the Orifice be ſtop'd; prove that 'tis the Preſſure of the Atmoſphere, on the external Parts of the *Embolus*, that makes the Difficulty of drawing it up. See AIR, ATMOSPHERE, SUCTION, *&c.*

EMBOSSING, or IMBOSSING, the Act of forming, or faſhioning Works in Relievo, whether they be caſt, or moulded, or cut with the Chiſſel, *&c.* See RELIEVO, STATUE, FOUNDERY, *&c.*

Emboſſing is one great Part of Sculpture; being that which has to do with Figures rais'd, or prominent from the Plane or Ground: The other Part, which makes Figures, *&c.* that are indented, or cut in below the Ground, is call'd *Engraving*. See SCULPTURE and ENGRAVING.

EMBRACEOR, he who, when a Matter is in Trial between Party and Party, comes to the Bar with one of the Parties, (having receiv'd ſome Reward ſo to do) and ſpeaks in the Caſe, or privately labours the Jury, or ſtands there to over-look, awe, or put them in Fear.

The Penalty hereof is 20 Pound, and Impriſonment at the Juſtices Diſcretion.

EMBRASURE, in Architecture, the Enlargement made of the Gap, or Aperture of a Door, or Window, on the inſide the Wall. See DOOR.

Its Uſe is to give the greater Play, for the opening of the Door, Wicket, Caſement, *&c.* or to take in the more Light.

The *Embraſure* coming ſloping inwards, makes the inner Angles obtuſe. When the Wall is very thick, they ſometimes makes *Embraſures* on the out-ſide.

EMBRASURES, in Fortification, are the Holes, or Apertures, thro' which the Canons are pointed; whether in Caſemattes, in Batteries not cover'd with Gabions, or in the Parapets of Walls.

The *Embraſures* are generally about 12 Foot a-part, from ſix to nine Foot wide without, and two or three within. Their Height from the Plat-form is uſually three Foot on the inſide, and a Foot and half on the outſide: That ſo the Muzzle, on Occaſion, may be ſunk, and the Piece brought to ſhoot low.

They are particularly called *Cannonieres*, when big enough to paſs the Mouth of a Canon through; and *Meurtrieres*, when only big enough for Muſkets.

When the Parapet is ſo low, that the Canon may ſhoot without *Embraſures*, it is ſaid to ſhoot *en barbe*.

EMBROCATION, in Pharmacy, is the applying of Remedies, as Oils, Spirits, Decoctions, and other Liquids, by ſprinkling, or even rubbing them on the Part affected; called alſo *Irrigation*.

Embrocations are only a Kind of Lotions. See LOTION.

Embrocations are now little uſed, except in Diſeaſes of the Head. If the Pain do not abate, make an *Embrocation* of Cows Milk, lukewarm, on the Head. *Degori.* Make an *Embrocation* on the Part with Unguent. Dialtheæ, or Oil of Lilly very hot. *Dionis.*

The Pumping uſed in Natural Baths is properly an *Embrocation*.

The Word is form'd from the *Greek* βρέχω, *Irrigo, madefacio*, I ſprinkle, wet, macerate.

EMBROIDERY, the Enriching of a Cloth, or Stuff, by Working divers Figures thereon, with Needle and Thread of Gold, or Silver. See BROCADE.

That done with Silk, Flax, or the like, is not now call'd *Embroidery*; tho' antiently, and properly, the Word denoted all Kinds of figuring, or flouriſhing.

The chief Uſe of *Embroidery* is in Church Veſtments, Cloaths, Houſings, Guidons, Standards, *&c.* The Invention of *Embroidery* is attributed to the *Phrygians*; whence the *Latins* call Embroiderers *Phrygiones*.

The Word *Embroidery* is derived from the French *Broiderie*, of *broider*, to *Embroider*; which ſome deduce, by Tranſpoſition from *Bordeur*, by Reaſon they formerly *Embroider'd* only the Edges of Stuffs; whence the *Latins* alſo call the Embroiderers *Limbularii*. *Du Cange* obſerves, that they antiently wrote *aurobruſtus*, for *Embroider'd* with Gold, or *Bruſtus brudatus*, and *Brodatus*; whence *Broderie*.

There are divers Kinds of *Embroidery*: Among the reſt, *Embroidery on both Sides*, that is, which appears on both Sides; only practicable on thin ſlight Stuffs, as Taffetas, Gawſe, Muſlins, *&c.* *Embroidery on the Stamp*, where the Figures are very high, and prominent, being ſupported on Wool, Cotton, Hair, *&c.* *Low Embroidery*, where the Figures are low, and without any Enrichment between them.

EMBRYO, in Medicine, *Fœtus*; the firſt Beginning, or Rudiments of the Body of an Animal, in its Mother's Womb, before it have received all the Diſpoſitions of Parts, neceſſary to become animated: Which is ſuppoſed to happen to a Man on the 42d Day; at which Time, the *Embryo* commences a perfect *Fœtus*. See FOETUS.

The Moderns have made Abundance of fine Diſcoveries on the Formation and Growth of the *Embryo*. See EGG, GENERATION, CONCEPTION, *&c.*

The Word is derived from the *Greek*, ἔμβρυον, which ſignifies the ſame Thing; form'd of the Prepoſition ἐν and βρύω, *ſcaturio, pullulo*, I ſpring out: From the Manner of the firſt Growth of the *Embryo*, which reſembles that of the firſt Shoots of a Plant, as being a Kind of *Zoophyte*, and having only a Vegetative Life. See ZOOPHYTE.

Monſ. *Dodart* having an *Embryo* of 21 Days Age put in his Hands, made a nice Examen thereof; to find the Order Nature obſerves in the Formation of the Parts, and the firſt Riſe of the Parts themſelves.

The *Placenta*, he found more than half of the whole; and thence concludes, that the nearer the *Embryo* is to the Moment of its Conception, the greater is the *Placenta* with Reſpect to the Secundines, and the *Fœtus*. Which Circumſtance furniſhes a Reaſon why Miſcarriages are more dangerous than regular Deliveries; notwithſtanding the *Fœtus* in the former Caſe is much leſs than in the latter. For tho' the *Embryo* have made a Way ſufficient for it ſelf, it may not for ſo great a *Placenta* as is to follow it. See ABORTION, PLACENTA, *&c.*

The *Embryo* it ſelf was only ſeven Lines long, from the Top of the Head to the Bottom of the *Spina dorſi*, where it terminated. The Thighs were not yet unfolded: They only appeared like two little Warts at the Bottom of the Trunk: The Arms made juſt the ſame Appearance on the Shoulders. The Head was $\frac{1}{3}$ of the Length of the whole ſeven Lines: On this were ſeen two little black Points, which would one Day have been Eyes. The Mouth was very big; which M. *Dodart* takes for an Indication that the *Fœtus* was fed by the Mouth. There was no Eminence for the Noſe; but two little, almoſt imperceptible, Pits for the Noſtrils.

The Painters uſually make the Head $\frac{1}{8}$ of the Height of a well proportion'd Man; and $\frac{1}{4}$ of that of a young Child: In the *Embryo* before us, the Head was thrice the Height of the Head; whence it follows, that the younger the *Embryo*, the bigger the Head in Proportion to the Body. The Parts nearer the Head are alſo bigger in Proportion to the reſt; and the Legs and Feet the ſmalleſt.

The *Embryo* was a little crooked forwards, and bore ſome Reſemblance to the Maggot of a Silk-Worm: It weighed leſs than ſeven Grains, which is an extraordinary Lightneſs for a Body ſeven Lines long. It was ſo ſoft, that no Part of it could be touch'd without making a Change in its Form.

Upon opening it, M. *Dodart* diſcover'd the Heart, and the right Auricle: All the other Parts in the *Thorax*, and lower *Venter*, were only ſimple Lineaments, or Contours, and all *Veſicular*, excepting a Part on the left Side, which may be ſuppoſed to be the Spleen. There was

no

no Appearance of any Thing on the right Side for a Liver. *Mem. de l'Acad.*

EMBRYO, is alſo uſed by Naturaliſts, to expreſs the Grain, or Seed of a Plant; or rather the Germ, or firſt Sprout appearing out of the Seed: By Reaſon the whole future Plant is ſuppoſed to be contain'd therein. Juſt as the whole Chick, is ſuppoſed contained in the Cicatricula, or Treddle of an Egg. See SEED, GRAIN, PLANT, PLUMULE, RADICLE, &c.

EMBRYOTHLASTES, from ἔμβρυον, *Fœtus*, and θλάω, *contundo*, I bruiſe or break; an Inſtrument to cruſh the Bones of an *Embryo*, or dead Child; ſo as to make it eaſier of Extraction, and prepare it for the *Embryulcus*, to draw it out of the Womb. See DELIVERY.

EMBRYOTOMY, in Chirurgery, the Operation of cutting off the *Funiculus Umbilicalis*, or Navel String, of a Child juſt born; and tying it up. See UMBILICUS.

The Word is form'd of the *Greek*, ἔμβρυον, and τέμνω, *I cut*.

EMBRYULKIA, or EMBRYOLKIA, in Chirurgery, the Operation of extracting the Child out of the Mother's Womb.

What the *Greeks* call *Embryolkia*, the *Latins* call *Cæſarean Section*. See CÆSAREUS.

This latter Name, M. *Dionis* obſerves, has taken Place, and prevail'd over the former; as being more eaſy of Pronunciation.

The Word is form'd of the *Greek*, ἔμβρυον, *Child*, and ἕλκειν, *to draw*.

EMENDALS, an old Term ſtill uſed in the Accounts of the inner Temple: Where, ſo much *in Emendals* at the Foot of an Account, ſignifies ſo much in the Bank, or Stock of the Houſe, for Reparation of Loſſes, and other Occaſions.

EMENDATIO *Panis & Cereviſiæ*, the Aſſize of Bread and Beer; or the Power of ſuperviſing and correcting the Weights and Meaſures belonging to them. See ASSIZE.

EMERALD, a pretious Stone, very green and tranſparent; and as to Hardneſs, the next after the Ruby. See PRETIOUS *Stone*.

Pliny reckons up twelve Kinds of *Emeralds*; and denominates each from the Provinces, or Kingdoms, where he ſuppoſed them to be found; as *Scythian*, *Bactrian*, *Egyptian*, *Perſian*, &c.

But the modern Naturaliſts, and Jewellers, only know of two Kinds, *viz. Oriental* and *Peruvian*. And if we may credit *Tavernier*, in his Treatiſe of *Colour'd Stones found in the Indies*, inſerted in the ſecond Volume of his Voyages, theſe two ſhould yet be reduced to one, *viz.* the *Peruvian*.

In Effect, he maintains that there is not, nor ever was, any Mine of *Emeralds* in the *Eaſt-Indies*; and that all that are there found, were brought from *Peru* by the Way of the *South Sea*; which was a Method of Commerce, carried on by the *Peruvians* before the Diſcovery of *America* by the *Spaniards*. But as the Point of ſuch Commerce is not ſufficiently proved, we muſt keep to the antient Diviſion.

The *Oriental Emerald* is harder, more brilliant, and tranſparent than the *Peruvian*; which has generally Clouds found in it, and ſparkles leſs. Beſide that, there are ſuch Quantities brought from *Peru*, by the Way of *Carthagena*, that they are much ſunk in Value and Reputation. They talk likewiſe of *Emeralds* found in *Cyprus*, and even in our own Iſland; but they are very inconſiderable; if, indeed, there be any true ones at all.

Some Authors hold *Emeralds* to be taken out of Iron Mines: And *Pomet* aſſures us, he had one to which the Iron Ore was ſtill ſticking. To which, all we have to ſay, is, that it could not be a *Peruvian*, by Reaſon there is no Iron Mine in the Country.

The *Emerald* is ſuppoſed to grow more and more perfect in the Mine like the Ruby; and to arrive at its Greenneſs by ſlow Degrees, as the Fruit comes to Maturity by Degrees. 'Tis a common Opinion, that the *Emerald* grows in the Jaſper; and 'tis certain there are ſome Jaſpers ſo perfectly green, that many have taken them for *Emeralds*. See JASPER.

But the proper Matrix, or Marcaſite of this Stone is the *Preme*, which is held among the coarſer pretious Stones; being hard, tranſparent, half opake, and uſually intermix'd with yellow, green, white, blue, &c.

The Antients made Amulets of *Emeralds* againſt all Kinds of Sorcery; and ſuppoſed them effectual againſt a thouſand different Diſeaſes. At preſent; that we have more Experience, or leſs Credulity, they are valued for their Beauty, not their Virtue; tho' there are ſtill ſome who ſuppoſe, that when reduced into an impalpable Powder, and mix'd with Roſe Water, they may be of ſome Uſe in Medicine.

We read in Authors of ſeveral *Emeralds* of incredible Magnitude: *Roderigo de Toleda* tells us, that when the *Sarazens* took that Town, King *Tarik* had for his Share of the Plunder, a Table 365 Foot long, and all of a-piece, which he maintains to be an *Emerald*. After this, the Reader will not wonder at that ſeen by *Theophraſtus*, in a Temple in *Egypt*, four Cubits long, and three broad; nor even at an Obelisk of *Emerald* 40 Foot high.

The Word is form'd from the French *Eſmeraude*, and that from the Latin *Smaragdus*, which ſignifies the ſame Thing. Others derive it from the Italian *Smeraldo*, or the Arabic *Zomorrad*.

In the *Dictionnaire de Commerce*, we have a very curious and accurate Eſtimate of the Values of the different Kinds of *Peruvian Emeralds*; which the Reader will not be diſpleaſed to find tranſcribed hither.

Rough EMERALDS.

Thoſe of the firſt, and coarſeſt, Sort, called *Plaſmes*, for grinding, are worth 27 Shillings Sterling the Marc, or 8 Ounces. The *Demi-Morillons*, 8 Lib. Sterl. per Marc. Good *Morillons*, which are only little Pieces, but of fine Colour, from 13 *L.* to 15 *L.* per Marc. *Emeralds* larger than *Morillons*, and call'd *of the third Colour*, *or Sort*, are valued at from 50 *L.* to 60 *L.* the Marc. *Emeralds*, call'd *of the ſecond Sort*, which are in larger and finer Pieces than the preceding, are worth from 65 *L.* to 75 *L.* per Marc. Laſtly, thoſe of the *firſt Colour*, otherwiſe call'd *Negres Cartes*, are worth from 110 *Lib.* to 115 *Lib.*

EMERALDS *ready cut, or poliſhed, and not cut, being of good Stone, and a fine Colour, are worth,*

	Lib.	*Sh.*
Thoſe weighing One Carat, or 4 Grains	0	10
Thoſe of Two Carats	1	7
Thoſe of Three Carats	2	5
Thoſe of Four Carats	3	10
Thoſe of Five Carats	4	10
Thoſe of Six Carats	7	10
Thoſe of Seven Carats	15	0
Thoſe of Eight Carats	19	0
Thoſe of Nine Carats	23	0
Thoſe of Ten Carats	33	0

EMERALD, or EMERAUD, in Heraldry, is uſed in Lieu of *Vert*, or Green, in Blazoning the Arms of Dukes, Earls, &c. See BLAZONING.

EMERGE. See EMERSION and EMERGENT.

EMERGENT *Year*, in Chronology, is the *Epocha*, or Date, whence we begin to account our Time. See EPOCHA.

Thus, our *Emergent Year* is ſometimes the Year of the Creation: That of the *Jews*, is from the Deluge, or the *Exodus*, &c. The *Emergent Year* of the *Greeks*, was the Eſtabliſhment, or at leaſt the Reſtoration of the *Olympic* Games by *Iphitus*. The *Romans* accounted their Years from the Building of the City AB U. C. That is, AB URBE CONDITA.

EMERSION, in Phyſicks, the riſing of any Solid above the Surface of a Fluid ſpecifically lighter than it ſelf, into which it had been violently immerged or thruſt.

'Tis one of the known Laws of Hydroſtaticks, that a lighter Solid being forced down into a heavier Fluid, immediately endeavours to *emerge*; and that with a Force, or Moment, equal to the Exceſs of Weight of a Quantity of the Fluid, above that of an equal Bulk of the Solid.

Thus, if a Solid be immerged in a Fluid of double its ſpecific Gravity; it will *emerge* again, till half its Bulk, or Body, be above the Surface of the Fluid. See FLUID.

EMERSION, in Aſtronomy, is when the Sun, Moon, or other Planet, begins to re-appear, after having been eclipſed, or hid by the Interpoſition of the Moon, Earth, or other Body. See ECLIPSE.

The Difference of Longitudes is found by obſerving the Immerſions and *Emerſions* of the firſt of *Jupiter's Satellites*. See SATELLITES.

The Immerſions are obſerved from the Time of *Jupiter's* being in Conjunction with the Sun, to his Oppoſition; and the *Emerſions*, from the Oppoſition to the Conjunction. Which two Intervals are uſually ſix Months a-piece; and divide the Year between them.

But when *Jupiter* is in Conjunction with the Sun, and fifteen Days before and afterwards; there is nothing to be obſerved: That Planet, with his Satellites, being then loſt in the Light of the Sun. See JUPITER.

EMERSION, is alſo uſed when a Star, before hid by the Sun, as being too near him, begins to re-appear, and to get out of his Rays. See MERCURY.

Scruples, or *Minutes of* EMERSION, are an Arch of the Moon's Orbit, as TQ (*Tab. Aſtronom. Fig.* 46.) which the Moon's Centre paſſes over, from the Time ſhe begins to *Emerge* out of the Shadow of the Earth to the End of the Eclipſe.

EMERY,

EMERY, a Sort of Metallic Stone, found in moſt, or all Mines of Metals; but chiefly thoſe of Iron, Copper, and Gold. See STONE and MINE.

We uſually diſtinguiſh three Kinds of *Emery*; the *Spaniſh*, *Red*, and *Common Emery*.

The firſt is found in the Gold Mines of *Peru*, and other Provinces of the *Spaniſh America*: 'Tis judged a Kind of Marcaſſite of that rich Metal; being ſtreak'd with little Veins, and Specks of Gold. 'Tis for this Reaſon the King of *Spain* prohibits it being exported: Which renders it exceeding rare among us; to the great Regret of the Seekers of the Philoſopher's Stone, who build great Hopes in the Tranſmutation of this precious Mineral. The *Red Emery* is found in Copper Mines; the little we have of it comes from *Sweden* and *Denmark*.

The *Common Emery* is taken out of Iron Mines; and is almoſt the only Sort uſed among us. The Conſumption hereof is very conſiderable among the Armorers, Cutlers, Lockſmiths, Glaziers, Lapidaries, Maſons, *&c.* Some of whom uſe it to poliſh and burniſh Iron, and Steel Works; others, to cut and ſcollop Glaſs, Marble, and pretious Stones.

This *Emery* is of a browniſh Colour, bordering a little on *Red*; exceedingly hard, and of Conſequence difficult to pulverize. The *Engliſh* are the only People that have got the Art of making it into Powder; which they do chiefly by Means of certain Mills contrived for that Purpoſe: And thus ſend it in Powder to their Neighbours.

Pounding it in Mortars were in vain; it being ſo hard that it would pierce, or break the Mortar e're it would give Way.

Of the Powder, the moſt ſubtle and impalpable is the beſt: As to the Stone, it ſhould be choſe of a high Colour, and as free of the Rock as poſſible.

Emery fuſed with Lead, and Iron, hardens them. It increaſes and heightens the Weight and Colour of Gold. 'Tis uſual to mix a little of it with the Gold from *Madagaſcar*, which is naturally pale and ſoft. See GOLD.

Putty of EMERY, is a Kind of dirty Matter, found on the Lapidaries Wheels; containing Part of the Powder of *Emery*.

The Word *Emery* appears to be derived from the Latin *Smyris*, and that from the *Greek* σμύεις, which ſignifie the ſame Thing; and which Monſ. *Lemery* derives from the Verb σμάω, *I clean, ſcour*.

EMETIC, in Medicine, a Remedy that excites Vomiting; or that evacuates by Vomiting. See VOMITING and EVACUANTS.

Of theſe there are a great Variety; as *Ipecacuanha*, *Carduus Benedictus*, &c.

The Uſe of *Emeticks* is indicated by a Foulneſs of the Mouth in a Morning, rifting, loathing, gnawing of the Stomach, gradual Loſs of Appetite, ſpontaneous Vomiting, *&c.*

Vomiting is rais'd by irritating the Spirits with the Preſence of ſomething loath'd; by an unuſual Agitation, as Sailing, *&c.* by tickling the Fibres of the Jaws, and Pharynx with a Feather dipp'd in Oil; by drinking Quantities of warm Water, *&c.* by any Thing ſharp and viſcous; as the Flowers and Seeds of *Dill*, Leaves of *Cæſarum*, &c. Crocus and Glaſs of *Antimony*; the Flowers and Regulus thereof; *Mercurius Vitæ*, *Mineral Turbith*, and *Mercury* ſharpen'd with Acids.

The *Emetic* Wine, *Vinum Emeticum*, is only white Wine, wherein is infuſed ſome *Crocus Metallorum*, or Glaſs of Antimony.

The *Emetic Powder*, called alſo Powder of *Algareth*, from the Name of its Author, is a Precipitate of Antimony, or Butter of Antimony, ſweeten'd and ſoftned by repeated Lotions. See ANTIMONY.

Emetic Tartar, is Cream, or Cryſtal of Tartar, powder'd and mix'd with one fourth of *Crocus Metallorum*.

The Word is form'd from the *Greek*, ἐμέω, *I vomit*.

The Operation of *Emetic* Medicines is thus accounted for by Dr. *Quincy*: The Particles of the *Emetic* wedging themſelves into the Orifices of the Emiſſaries of the Glands, placed adjacent to the Surface of the Stomach, do dilate the ſame; (which by ſome extrinſic Cauſe had been contracted) and after the ſame Manner, do diſſolve (at leaſt in ſome Degree) the Coheſion of the ſtagnant morbifick Matter; rendering it more fluid, and conſequently making its Reſiſtance leſs.

Now the natural and conſtant Actions of the Glands being Secretion; and the Impediment (by the Dilatation of the Orifice, and the Attenuation of the Fluid) being taken away, or at leaſt made leſs than the natural Momentum of the Glands; the Matter muſt naturally flow into the Cavity of the Stomach, till it be heaped up in ſuch a Quantity, (which not being to be done in an Inſtant, muſt require ſome Time) as is ſufficient by its Stimulus to vellicate, and force the Fibres of the Stomach, Abdomen, and Diaphragm, by Communication of the firſt with the two laſt, into a violent Contraction; and thereby throw all out by the Oeſophagus: And this makes all quiet for a Time, till a new and ſufficient Quantity be excerned from theſe Glands to produce the aforeſaid Contraction.

Thus there happens Fits of Vomiting and Quiet alternately, till either all the morbific Matter be thrown out, or the Force of the *Emetic* be ſo diluted, that it is no longer able to draw out the morbific Matter from the Glands.

And the ſtrong Contraction in ſo many Muſcles, and muſcular Canals, as are at Work in the Action of Vomiting, and the violent Concuſſion which is produced all over the whole Body by a Power, which, by juſt Computation, is not inferior to 26000 *l.* Weight, may, and often does, take away the Obſtruction in many other Canals, beſides thoſe which are adjacent to the Stomach and Gullet; as we plainly ſee, by thoſe vaſt Sweats, which plentiful Fits of Vomiting occaſion.

Emetic and Purgative Medicines differ only in this, that the Particles of the latter do not immediately vellicate the Fibres of the Stomach, dilate the Orifices, and attenuate the Matter contain'd in the Glands of the Stomach; but act gently, and aſſiſt the natural Motion of Digeſtion, and ſo are carried down into the Guts: And how they operate there. See PURGATIVE.

EMINENCE, in Geography, a little Hillock, or Aſcent, above the Level of the Champagne. See MOUNT.

This Seat is built on an *Eminence*. The Enemies have taken Poſſeſſion of ſuch an *Eminence*, ſuch a Height, from which they can canonade our Rear.

EMINENCE, in Anatomy, is a Part of the Brain, call'd the *Annular Eminence*. See BRAIN.

The fifth Pair of Nerves ariſes from the Sides of the *Annular Eminence* of the Brain. See NERVE.

EMINENCE, is alſo a Title of Honour given to a Cardinal. See CARDINAL.

'Tis his *Eminence* the Cardinal *de* ——. The Decree of the Pope, whereby it was appointed, that the Cardinals ſhould be addreſs'd under the Quality of *Eminence*, bears Date the 10th of *January*, 1630. They then laid aſide the Titles of *Illuſtriſſimi*, and *Reverendiſſimi*, which they had bore before.

The Grand Maſter of *Malta*, is likewiſe addreſs'd under the Quality of *Eminence*. See MALTA.

The Popes *John* VIII, and *Gregory* VII, gave the ſame Title to the Kings of *France*. The Emperors have likewiſe bore it.

Eminentiſſimus, the ſuperlative of *Eminent*, has of late been attributed to the Cardinals. *L' Eminentiſſime Cardinal de* Richelieu.

EMINENTER, EMINENTLY, in the Schools, is uſed in Contradiſtinction to *Formaliter*; and in the ſame Senſe with *Virtualiter*: viz. when a Thing poſſeſſes, or contains any other Thing in a more perfect or higher Manner than is required to a formal Poſſeſſion thereof.

Thus an Angel is ſaid to have Prudence *Eminenter*; as he has it in a higher and more perfect Degree than it is in Man, in whom it is *Formaliter*. See FORMALITER and VIRTUALITER.

For one Thing to contain another *Eminenter*, there are uſually required two Things, 1. That the containing be of a more excellent Nature than the contain'd. 2. That the leſs Excellent be ſome Way contain'd in the more excellent, *viz.* either as in its productive Cauſe: Or by ſome Similitude: Or as to the Manner, and Order of Acting, *&c.*

EMINENTIAL *Equation*, is uſed by ſome Algebraiſts in the Inveſtigation of the Areas of Curvilinear Figures; for a Sort of Artificial Equation, containing another Equation *Eminently*. Hayes's *Fluxions*, p. 97.

EMIR, a Title of Dignity, or Quality, among the *Turks* and *Sarazens*; attributed to ſuch as are Relations, or Deſcendants of their great Prophet *Mahomet*.

The *Emirs* are held in high Veneration; and have alone the Privilege of wearing a *Green Turban*. See TURBAN.

On the Borders of the Holy Land were ſeveral *Emirs*, Soveraign Princes; as the *Emir* of *Gaza*, and the *Emir Terabea*, over whom the Grand Seignior had but little Authority.

The *Emir Haga*, or Prince Conductor of the Pilgrims to *Mecha*, is Baſhaw of *Jeruſalem*, &c.

This Title, at firſt, was only given to the Caliphs: In *Perſia* they were alſo call'd *Emir Zadeh*, q. d. Princes Son: Whence, by Abbreviation of *Emir*, they form'd Mir, and of *Emir Zadeh*, Mirza. See CALIPH.

In after Times, when the Caliphs had aſſumed the Title of Sultans; that of *Emir* remain'd to their Children, as that of *Cæſar* among the *Romans*. In Succeſſion of Time, the ſame Title of *Emir* came to be attributed to all, who were

were judg'd to deſcend from *Mahomet* by his Daughter *Fathimah*, and who wear the *Green Turban*. See TURBAN.

EMIR, is alſo a Title, which being joyn'd to ſome other Word, frequently denotes an Office, or Employ.

As the *Emir al Omera*, Commander of Commanders; who, in the Time of the Caliphs, was Chief of the Councils and Armies.

The Name *Emir* is alſo applied, by the *Turks*, to all Viziers, and Baſhaws or Governours of Provinces. See BASHAW, *&c.*

Add, that *Emir Akhor*, vulgarly *Imrahor*, is Maſter, or Chief of the Equeries to the Grand Seignior: *Emir Alem*, vulgarly *Miralem*, Standard-Bearer, and Director of all the Standards of the Empire, with the Muſic, &c. *Emir Bazar*, the Prevot, or Superintendant of the Markets, who regulates the Prices of Proviſions. *Emir al Moſlemin*, or *Emir al Monmenin*, i. e. Commander of the Faithful, or the Believers, was a Title aſſumed by the *Almoravides* and *Almohades*, who reign'd in *Africa* and *Spain*.

The Word *Emir* is *Arabic*, where it literally ſignifies *Prince*. It is form'd of the Verb אמר *Amar*, which is originally *Hebrew*, and in both theſe Languages ſignifies to *ſay*, and to *command*.

EMISSARY, a truſty, dextrous, able Perſon ſent, underhand, to ſound the Sentiments, and Views of another; to make him ſome Propoſal, or Overture: Or to ſpread Reports, watch the Actions, Motions, and Countenance of a contrary Party, or Perſon, in Order to make Advantages of them all.

The Leaders of Parties have Abundance of *Emiſſaries* employed in their Service, who inform them of what paſſes every where, that they may take their Meaſures accordingly. The Pope and the Chevalier have their *Emiſſaries* in *England*.

The Word is form'd of the *Latin e*, and *mitto*, I ſend out.

EMISSARY *of a Gland*, or its *excretory Duct*, is the common Conduit, Canal, or Pelvis, in which all the little ſecretory Canals of a Gland do terminate. See GLAND.

EMISSION, the Act of throwing or driving a Thing, particularly a Fluid, from within, outwards.

The Term is chiefly applied among us to the Expulſion, or Ejaculation of the Seed; See EJACULATION. Tho', we alſo ſay, the Antients took Viſion to be perform'd by the *Emiſſion* of Viſual Rays from the Eye. See VISION.

It is alſo uſed Morally: Thus, the Civil Death of a Religious is reckon'd from the Day of the ſolemn *Emiſſion* of Vows. See Vow.

EMMENAGOGUES, in Medicine, ſuch Remedies as promote the *Menſes*; thus call'd from εν, *in*, μην, *Month*, and αγω, *duco*, I lead; by Reaſon their natural Periods of flowing are once a Month. See MENSES.

Emmenagogues either act by giving a greater Force to the Blood in its Circulation, whereby its Momentum againſt the Veſſels is increas'd; or by making it thinner, whereby it will more eaſily paſs through any Outlets.

The former Intention is helped by Chalybeates, which give a greater Weight and Momentum to a languid, heavy Blood, and all other Subſtances of the like Gravity and Elaſticity. And ſuch is the Caſe of a Leuco-phlegmatic Habit, or as it is commonly called, the Green-Sickneſs, and its Cure.

But, in the latter Caſe, where the Blood is florid and too high; attenuating Alteratives and Detergents are the only Remedies, becauſe fitteſt to render the Blood more thin, and give it ſuch a Property, as will better carry it thro' thoſe little Apertures, deſtined for its Diſcharge into the *Uterus*.

EMOLLIENTS, in Medicine, and Pharmacy, Remedies uſed to ſoften, and looſen, Hardneſſes, or Conſtructions of the Belly; or thoſe of Tumors and Swellings.

Such are *Mallows*, *Mercurialis*, *Lilly Roots*, *Althæa*, *Lin-ſeed*, *Butter*, *Wax*, *Gum Ammoniac*, &c. See MALACTICKS.

The Term *Emollient* is not only applied to internal Remedies, but alſo to other Things: A Laxative, Anodyne, and *Emollient* Clyſter: An *Emollient* Emplaſter, made of reſolutive Unguents: An *Emollient Cataplaſm*: Freſh Cherries are an *Emollient* Food; tho', when dry, they rather conſtringe than relax; as wanting a great Part of the Phlegm, which render'd them *Emollient*. Ripe Grapes, of Aſtringent, which they were before, become Laxative and *Emollient*. Hog's Greaſe, applied externally, is reſolutive and *Emollient*.

Dr. *Quincy* defines *Emollients*, more ſcientifically, to be ſuch Things as ſheath and ſoften the Aſperites of the Humours, and relax and ſupple the Solids at the ſame Time.

For it is eaſy to conceive how theſe ſhould be both effected by the ſame Medicine; thus: By what Means ſoever, (whether in the Stomach, or any other Parts) the Juices have obtained a Sharpneſs, or Aſperity, ſo as to vellicate and render uneaſy the Fibres, and nervous Parts; which often happens; thoſe Things which are ſmooth, ſoft, and yielding, cannot but wrap up their Points, and render them imperceptible; whereby they may gradually, by the proper Courſe of Circulation, be brought to ſome convenient Emunctory, without doing any Injury by the Way.

Such Sharpneſs of Parts, likewiſe, draws the Fibres into Spaſms, keeps them too tenſe, and frequently thereby occaſions Obſtructions of the worſt Kind.

In all ſuch Caſes, therefore, *Emollients* lubricate, and moiſten the Fibres, ſo as to relax them into their proper Dimenſions, whereupon ſuch Diſorders ceaſe.

EMOLUMENT, is properly applied to the Profits ariſing daily from an Office, or Employ.

The Patent, or other Inſtrument, whereby a Perſon is preferr'd to an Office, gives him a right to enjoy all the Dues, Honours, Wages and *Emoluments* belonging thereto.

In our Law Books, &c. *Emolument* is uſed in a ſomewhat greater Latitude.

The Word is form'd of the Latin *Emolumentum*, which primarily ſignifies the Profits redounding to the Miller from his Mill, of *molo*, *molere*, to grind.

EMPALEMENT, or IMPALEMENT, a cruel kind of Puniſhment, wherein a ſharp *Pale*, or Stake, is run up the Fundament and thro' the Body.

We find mention of *Impaling* in *Juvenal*: It was frequently practiſed in the Time of *Nero*; and continues to be ſo in *Turkey*.

The Word comes from the French *Empaler*, or the Italian *Impalare*; or rather they come all alike, from the Latin *Palus*, a Stake, and the Prepoſition *in*, in, into.

EMPALEMENT, in Botany, the outmoſt Part of the Flower of a Plant, encompaſſing the Foliation of the Attire. See FLOWER.

It is compounded of the three general Parts of all Plants, the Skin, the Cortical, and the ligneous Bodies, each *Empaler* being (whether conſiſting of one or more Pieces) as another Leaf, and deſigned to be a Guard, and a Band to the Flower, where it is weak and tender; and therefore ſuch Plants as have Flowers, with a firm and ſtrong Baſis, as Tulips, *&c.* have no *Empalement*, nor need any. See CALYX.

EMPANELLING, in Law, ſignifies the Writing, and entring the Names of a Jury into a Parchment, Schedule, or Roll of Paper by the Sheriff, which he hath ſummoned to appear for the Performance of ſuch public Service, as Juries are employed in. See PANEL and JURY.

EMPARLANCE, in Law, a Deſire, or Petition in Court, of a Day to pauſe, or conſider what is beſt to be done.

The Civilians call it *Petitio Judiciarum*. *Kitchin* mentions Imparlance *general* and *ſpecial*: The firſt ſeems to be only that made in one Word, or in general Terms: *Emparlance Special*, is where the Party requires a Day to deliberate; adding theſe Words, *Salvis omnibus Advantagiis tam ad Juriſdictionem Curiæ, quam ad breve & Narrationem.*

Briton uſes it for the Conference of a Jury upon a Cauſe committed to them. See IMPARLANCE.

EMPASMA, in Pharmacy, a Powder thrown, or ſprinkled, over the Body, to correct ſome ill Smell thereof, or to prevent unneceſſary Sweats.

The Word is form'd from the *Greek*, εμπάσειν, *to ſprinkle.*

EMPASTING, a Term uſed in Painting, for the laying on of Colours, thick and bold; or applying ſeveral Lays of Colours, ſo as they may appear thick. See COLOURING.

A Painting is ſaid to be well *Empaſted* with Colours, when the Colours are beſtow'd plentifully, or it is well fed and ſaturated with Colours.

The Term is alſo uſed, when the Colours are laid diſtinct and aſunder; and not ſoften'd, or loſt in each other. This Head is not painted: It is only *Empaſted*.

It is form'd of the French *Empaſter*, which has the ſame Signification, of *Paſte*, or *Pâte*, Paſte.

EMPEROR, *Imperator*, a Title which, among the antient *Romans*, only ſignified a General of an Army: But, afterwards, it came to denote an abſolute Monarch, or a ſupreme Commander of an *Empire*; A *Roman Emperor*, &c.

In Strictneſs, the Title *Emperor* does not, cannot, add any Thing to the Rights of Soveraignty: Its Effect is, only to give Precedence, and Preheminence above other Soveraigns; and as ſuch, it raiſes thoſe inveſted with it, to the Top of all Human Greatneſs.

The *Emperors*, however, pretend, that the *Imperial* Dignity is more eminent than the Regal; but the Foundation of ſuch Prerogative does not appear: 'Tis certain the greateſt, moſt antient, and abſolute Monarchs, as thoſe of *Babylon*, *Perſia*, *Aſſyria*, *Egypt*, *Macedonia*, &c. were called by the Name of Kings in all Languages, both Antient and Modern. See KING.

'Tis diſputed whether or no *Emperors* have the Power of diſpoſing of the Regal Title: 'Tis true, they have ſometimes taken upon them to erect Kingdoms; and thus it is, that *Bohemia* and *Poland* are ſaid to have been rais'd to the Dignity: Thus, alſo, the Emperor *Charles the Bald*, in the Year 877, gave Provence to *Boſon*, putting the Diadem on his Head, and decreeing him to be called King; *Ut more priſcorum* Imperatorum *Regibus videretur Dominari.*

Add, that the late Emperor *Leopold*, erected the Ducal *Pruſſia* into a Kingdom, in Favour of the Elector of *Brandenburgh*; but ſeveral of the Kings of *Europe* refuſed, for ſome Time, to acknowledge him in that Capacity: Tho' by the Treaty of *Utrecht*, in 1712, they all came in.

In the *Eaſt*, the Title, and Quality of *Emperor* are more frequent than among us: Thus the Soveraign Princes of *China*, *Japon*, *Mogol*, *Perſia*, &c. are all *Emperors* of *China*, *Japon*, &c.

In the *Weſt*, the Title has been a long Time reſtrain'd to the Empire of *Germany*. The firſt who bore it was *Charlemagne*, who had the Title *Emperor* conferr'd on him by Pope *Leo* III, tho' he had all the Power before.

In the Year 1723, the Czar of *Muſcovy* aſſumed the Title of *Emperor of all Ruſſia*; and procured himſelf to be recognized as ſuch by moſt of the Princes and States of *Europe*.

The Authority of the *Emperor* of *Germany*, over the States of the Empire, conſiſts, 1°. In preſiding at the *Imperial* Dyets, and in having a negative Voice therein: So that his Vote alone can prevent all the Reſolutions of the Dyet. 2°. In that all the Princes, and States of *Germany*, are obliged to do him Homage, and ſwear Fidelity to him, 3°. That he, or his Generals, have a Right to command the Forces of all the Princes of the Empire, when united together. 4°. That he receives a Kind of Tribute from all the Princes and States of the Empire, call'd the *Roman Month*. For the reſt, there is not a Foot of Land, or Territory, affected to his Title.

The Kings of *France* were alſo call'd *Emperors* at the Time when they reign'd with their Sons, whom they aſſociated to the Crown: Thus, *Hugh Capet*, having aſſociated his Son *Robert*, took the Title of *Emperor*; and *Robert*, that of King. Under which Titles they are mention'd in the Hiſtory of the Council of *Rheims*, by *Gebert*, &c. King *Robert* is alſo called *Emperor* of the *French* by *Helgau* of *Fleury*. *Louis le Gros*, upon aſſociating his Son, did the ſame. In the firſt Regiſter of the King's Charters, *Fol.* 166. are found Letters of *Louis le Gros*, dated in 1116, in Favour of *Raymond* Biſhop of *Maguelonne*, wherein he ſtyles himſelf, *Ludovicus Dei Ordinante Providentia Francorum* Imperator *Auguſtus*.

The Kings of *England* had likewiſe, antiently, the Title of *Emperors*; as appears from a Charter of King *Edgar*: *Ego* Edgarus *Anglorum Baſileus Omniumque Regum Inſularum Oceani quæ* Britanniam *circumjacent*, &c. Imperator & *Dominus*.

Add, that we ſay, the King of *England*, *Omnem habet Poteſtatem in Regno ſuo quam* Imperator *vendicat in Imperio*: Whence the Crown of *England* has been long ago declared in Parliament to be an *Imperial* Crown.

EMPERESS, *Imperatrix*, the Feminine of *Emperor*; applied either to an *Emperor's* Wife, or to a Woman who rules ſingly over an Empire, with all the Authority of an *Emperor*: As at this Time the *Empereſs* of *Ruſſia*.

EMPERESS, is alſo uſed, in the antient *French* Poetry, for a particular Kind of Rhime, thus denominated by Way of Excellence. See RHIME.

The *Rime Emperiere* was a Sort of Crown'd Rime, wherein the Syllable that made the Rime, was immediately preceded by two other like Syllables, of the ſame Termination; which made a Kind of Echo, called the triple Crown; and which, to the Shame of the Nation, (as ſome of their late Authors expreſs it) their beſt antient Poets took for a wonderful Beauty and Excellence.

Fa. Mourgues, in his Treatiſe of *French* Poetry, gives us an Inſtance very proper to give us a Contempt of the miſerable Taſt of that Antiquity, which knew no Way of Expreſſing, that the World is impure, and ſubject to change, ſo admirable, as by ſaying,

Qu' es tu qu'un Immonde, Monde, onde.

EMPHASIS, in Rhetoric, &c. a Force, Streſs, or Energy, in Expreſſion, Action, Geſture, &c.

This Orator ſpeaks with a World of *Emphaſis*; all his Words have an *Emphaſis*. What greater Puniſhment, ſays *de la Bruyere*, than to hear indifferent Verſes rehears'd with all the *Emphaſis* of an ill Poet?

The Word is *Greek*, ἔμφασις.

EMPHATICAL, in Rhetoric. See EMPHASIS.

EMPHATICAL is alſo uſed by the antient Philoſophers, to expreſs thoſe apparent Colours, (as they call them) which are often ſeen in Clouds before the Riſing, or after the Setting of the Sun, or thoſe in the Rainbow, &c. See COLOUR.

Theſe, becauſe they are not permanent and laſting, they will not allow to be true Colours. But, ſince theſe *Emphatical* Colours are Light, modified chiefly by Refraction, and with a Concurrence of Reflections, and ſome other accidental Variations; and being the proper Objects of Sight, and capable as truly to affect it, as other permanent Colours are: There is no Reaſon for excluding them from the Number of true and genuine Colours; ſince all other Colours are only Modifications of Light as theſe are. See LIGHT.

EMPHRACTIC, in Pharmacy, the ſame with *Emplaſtic*. See EMPLASTIC.

The Word is form'd from the *Greek*, ἐμφράττω, *I ſtop*.

EMPHYSEMA, in Medicine, a windy ſwelling, or bloating of the whole outer Habit of the Body; like that in the Parts of divers Animals, when blown up, after they are kill'd. See TUMOR.

The Wind, or Air, which is the Matter of the *Emphyſema*, is lodged under the Cutis, and principally in the *Cellulæ Adipoſæ*.

Hence the Seat of the *Emphyſema*, or the Place wherein the Wind is chiefly lodg'd, is in the Adipoſe Cells, under the Skin, covering the Thorax: The ordinary Occaſion is ſome Wound in the Thorax.

Monſ. *Littre* accounts for it thus: When a Perſon is wounded in the Breaſt, there enters Air in at the Wound; now, it may happen, either from the Narrowneſs of the Wound, or the Fleſh's cloſing again readily, or ſome other Cauſe, that the Air thus admitted, cannot readily get out again, at leaſt not all of it: And thus Air comes to be incloſed in the Capacity of the Breaſt.

Now, at every Inſpiration, the Lungs are to fill this Capacity, by their ſwelling with the Air naturally received. But here they cannot ſwell without preſſing upon the other extraneous Air: The Conſequence of which is, that it obliges it to ſlip between the Interſtices of the fleſhy Fibres, and perhaps to enter the little Oſcula of the minuteſt Veins or Lymphaticks.

Immediately, another Force comes to take Place, contrary to that of Inſpiration; *viz.* Expiration: In this, the Breaſt contracting it ſelf, preſſes the extraneous Air ſtill more than the Lungs had done in their Dilatation: And the two oppoſite Moments or Actions conſpire to the ſame Effect.

The Air, thus continually impell'd, will be propagated along the Paſſages it firſt open'd it ſelf, till at Length it meets and becomes collected in ſome Place. Now this Place will be the *Cellules* of the fat, rather than any where elſe, by Reaſon of the Thinneſs, and Flexibility of their Membranes; and as the Air came from within the Cavity of the Breaſt, it will be in the Fat that covers the Breaſt, under the Skin, rather than elſewhere, that the windy Tumor, or *Emphyſema* will lie.

Now, ſuch Tumor cannot be very conſiderable, as only form'd by the Air receiv'd in at a Wound: But if we ſuppoſe the Wound to have pierced the Subſtance of the Lungs, then beſide the Air taken in by the Wound, there will be Part of that taken by Inſpiration; ſo much as was contain'd in the *Bronchiæ*, or *Veſiculæ*, thus perforated, or open'd, eſcaping into the Cavity of the Breaſt, and driven along with the former, into the Fleſh. And as a freſh Quantity of this is ſupplied every Moment, there will be a continual Acceſſion, ſo long as the Wound of the Lungs remains open.

Hence, an *Emphyſema* from a Wound in the Lungs, ſometimes poſſeſſes the whole Habit; the Air being carried to the ſeveral Parts of the Body by Circulation.

The Word is *Greek*, ἐμφύσημα, which ſignifies the ſame Thing.

EMPHYTEOSIS, or EMPHYTEUSIS, in the Civil and Canon Law, the letting out of poor barren Lands for ever, or at leaſt for a long Term of Years, on Condition of cultivating, meliorating, or mending them; and paying a certain yearly Conſideration.

Emphyteoſes are a Kind of Alienations, differing from Sales, in that they only transfer the *Dominum utile*, the Benefits of the Ground; not the Property, or Fee ſimple.

Among the *Romans* they were at firſt temporary; afterwards perpetual.

The

The Word is form'd of the *Greek*, ἐμφύτευσις, which ſignifies a *Graft*, and by Metaphor, a *Melioration*, Amendment: For as we only graft Trees to mend them; ſo a Man only alienates his Land by *Emphyteoſis*, on Condition of amending it.

The 20th Canon of the Council of *Carthage*, prohibits the Biſhops ſeizing the Church's *Emphyteoſes*, out of the Hands of private Perſons, unleſs they have been three Years without paying Rent.

EMPIRE, the Territory, or Extent of Land under the Command, and Juriſdiction of an *Emperor*. See EMPEROR.

The *Roman Empire*; the *Empire* of the *Eaſt*; the *Empire* of the *Weſt*, or the *Weſtern Empire*; the *Empire* of the Great Mogul, *&c.*

Tacitus obſerves of *Galba*, that all the World would have thought him worthy the *Empire*, had he never been Emperor.

Antiquaries diſtinguiſh between the Medals of the *upper* and *lower Empire*. The curious only value thoſe of the upper *Empire*, which commences with *Cæſar*, or *Auguſtus*; and ends in the Year of Chriſt 260.

The *lower Empire* comprehends near 1200 Years, reckoning as low as the Deſtruction of *Conſtantinople*, in 1453. They uſually diſtinguiſh two Ages, or Periods, of the lower *Empire*: The firſt beginning where the upper ends, *viz.* with *Aurelian*, and ending with *Anaſtaſius*, including 200 Years: The ſecond beginning with *Anaſtaſius*, and ending with the *Paleologi*, which is 1000 Years.

EMPIRE, uſed abſolutely, and without any Addition, or *The Empire*, ſignifies the *Empire* of *Germany*, call'd alſo, in Juridical Acts and Laws, the *Holy Roman Empire*; *S R I*, q. d. *Sacrum Imperium Romanum*; which is what we otherwiſe call the *Germanic* Body.

The *Empire* had its Beginning with the IXth Century; *Charlemaigne* being created firſt Emperor by Pope *Leo* III. who put the Crown on his Head in St. *Peters* on *Chriſtmas-Day* in the Year 800.

Authors are at a Loſs under what Form of Government to range the *Empire*: Some will have it a Monarchic State, by Reaſon all the Members thereof are obliged to aſk the Inveſtiture of their States of the Emperor, and to take an Oath of Fidelity to him.

Others, will have it a Republic, or Ariſtocratic State, by Reaſon the Emperor cannot reſolve, or determine any Thing, without the concurring Suffrages of the Princes: Adding, that if they require Inveſtiture from, and ſwear Fealty to, him, 'tis only as Head of the Republic, and in the Name of the Republic, and not in his own: Juſt, as at *Venice*, every Thing is tranſacted in the Name of the Doge. See DOGE.

Laſtly, others will have the *Empire* to be a Monarcho-Ariſtocratic State, *i. e.* a Mixture of Monarchy and Ariſtocracy; for that tho' the Emperor, in many Caſes, ſeems to act ſoveraignly; yet his Decrees and Reſolves have no Force, in Caſe the States refuſe to confirm them.

In fine, we ſhould rather chuſe to call it an Ariſto-Democratic State; by Reaſon the Dyet, wherein the Soveraignty is lodged, is compoſed of Princes, and the Deputies of Cities; and is divided into three Orders, or Bodies, call'd *Colleges*, viz. the College of Electors, the College of Princes, and the College of Cities. See COLLEGE.

We ſay *Diet* of the *Empire*, *Circles* of the *Empire*, *Fiefs* of the *Empire*, *Princes* of the *Empire*, *Eſtates* of the *Empire*, *Members* of the *Empire*, *Capitulations* of the *Empire*, *Receſſus* of the *Empire*, &c. See DIET, CIRCLE, FIEF, BAN, PRINCE, CAPITULATION, RECESSUS, *&c.*

The States of the *Empire* are of two Kinds, *Mediate* and *Immediate*.

The Immediate States are theſe who hold immediately of the *Empire*; whereof, again, there are two Kinds: The firſt, ſuch as have Seats, and Voices in the Imperial Diet; the ſecond, ſuch as have none.

The Mediate States are thoſe who hold of the Immediate.

The States which now compoſe the *Empire*, are the Princes of the *Empire*, the Counts of the *Empire*, the Free Barons of the *Empire*, the Prelates of the *Empire*, the Princeſſes, or Abbeſſes of the *Empire*, the Nobles of the *Empire*, and the *Imperial* Cities.

EMPIRIC, or EMPIRICK, a Name attributed, of all Antiquity, to ſuch Phyſicians as form'd themſelves Rules, and Methods, on their own Practice and Experience; and not on any Knowledge of Natural Cauſes, or the Study of good Authors; and who preſcribed, without enquiring into the Nature of the Diſeaſe, or the Properties and Virtues of their Medicines: depending wholly on the Authority of ſome general experienced Remedies. See PHYSICIAN.

Medicine was almoſt altogether in the Hands of *Empiricks*, till the Time of *Hippocrates*; who firſt introduced Reaſon and the Uſe of Theory therein: And hence aroſe a new Sect, call'd *Theoretici*. See THEORIST.

The Word is form'd of the *Greek*, ἐμπειρικὸς, and that of ἔμπειρ@, *knowing*, *able*; but, particularly, knowing and learned by Experience. The Root being πεῖρα, *Eſſay*, *Trial*.

Pliny, and *Celſus*, make mention of the *Empiricks*, and their Profeſſion, which the *Greeks*, and the *Latins* after them, call *Empirice*; as attributing all to Experience, and nothing to the Authority of the Maſters of the Art, or the Deductions of Reaſon. See MEDICINE.

Pliny relates, that the Sect of *Empiricks* had its Riſe in *Sicily*: The firſt who profeſs'd it, he ſays, were *Apollonius* and *Glaucias*; others ſay, *Acron Argentinus*. They, and their Followers, made great Oppoſition to the diſſecting of human Bodies; particularly to that practiſed by *Herophilus*, and *Eraſiſtratus* on living Bodies, of Criminals condemn'd to Death. See DISSECTION.

But the Word *Empiric* is now more odious than ever; being confounded with that of *Charletan*, or Quack, and applied to Perſons who practiſe Phyſic at Random, without a proper Education, or underſtanding any Thing of the Principles of the Art. See CHARLETAN.

Indeed, 'tis poſſible, the Word may be abuſed even on this Side of the Queſtion; for thoſe of the Phyſicians attached to the Train and Method of the Schools, the Reaſonings of *Hippocrates* and *Galen*, and the Statutes of the Faculty, we all know, have been ever forward to treat thoſe who think more freely, and are leſs ſtiffly devoted to Antiquity, Cuſtom, and the reigning Practice, or Mode, as *Empiricks*, *Charletans*, and *Quacks*.

EMPLASTER, popularly call'd PLASTER, a Medicine, of a ſtiff, glutinous Conſiſtence, compoſed of divers ſimple Ingredients, ſpread on Leather, or Linnen, and applied externally.

Emplaſters are made up in a ſtrong ſolid Body, that by remaining a long Time on the Part, the Medicinal Ingredients, they are chiefly compoſed of, may have Time enough to produce their Effect.

The Drugs, uſed to give a Body and Conſiſtence to *Emplaſters*, are uſually Wax, Pitch, Gums, Fats, Litharge, and other Preparations of Lead.

There are *Emplaſters* of divers Kinds, and uſed with divers Intentions: *Stomachic Emplaſters*; *Cephalic*, *Stiptic*, *Hepatic*, *Diaphoretic*, *Reſolutive*, *Deterſive*, *Emollient*, *Incarnative*, *Aſtringent*, *Conglutinative*, &c. *Emplaſters*.

The moſt uſual *Emplaſters*, are thoſe of *Diapalma*, and *Diachylon*: The *Emplaſtrum Polychreſton*, the *Divinum*, the *Manus Dei*, the *Magnetic*, of *Angelus Sala*, That of *Charpi*, of *Safran*, *de Ranis*, &c.

The Word is form'd from the *Greek*, ἐμπλαττ@, or ἐμπλάσσω, *to put in a Maſs*, or *to do over*: By Reaſon the *Emplaſter* is made of divers Kinds of ſimple Drugs, work'd up into a thick tenacious Maſs; or becauſe it covers over the Piece of Leather, or Linnen, to be applied on the Part affected.

EMPLASTICKS, in Pharmacy, are Salves, or Medicines, which ſtop up, and conſtipate the Pores of the Parts they are applied on.

Such are Fat's, Mucilages, Wax, the Whites of Eggs, *&c.* They are alſo call'd *Emphracticks*. The Plaſter is cover'd over with a very *Emplaſtic* Unguent, that it may ſtick the ſtronger to the Skin. *Dionis*.

The Word is form'd from the *Greek*, ἐμπλάσσειν, *to ſtop up*.

EMPROSTHOTONOS, in Medicine, a Kind of *Tonic Convulſion*, wherein the Head is drawn forwards, till the Chin touch the Breaſt. See CONVULSION.

Sometimes, too, 'tis ſo general, that the whole Body is bent forward, and makes a Bow; and even, ſometimes, a Kind of Circle, the Knees meeting the Head.

The Cauſe of this Diſorder is a Contraction of the Anterior Muſcles, particularly thoſe of the Head, call'd *Maſtoides*. See MASTOIDES.

The Word is *Greek*, compoſed of ἐμπροσθεν, *before*, and τόν@, *Tenſion*, *Stiffneſs*, of the Verb τείνω, *to ſtretch*.

EMPYEMA, in Medicine, a Collection of Pus, or purulent Matter, in the Cavity of the Breaſt; diſcharged thither upon the burſting of ſome Abſceſs, or Ulcer, in the Lungs, or Membranes, that incloſe the Breaſt.

The *Empyema* ſometimes ſucceeds a *Squinancy*, ſometimes a *Peripneumony*, but more uſually a *Pleuriſy*; as being ordinarily the Effect of a *Peripneumonic* or *Pleuritic* Abſceſs. See PLEURISY, PERIPNEUMONY, *&c.*

It uſually comes 15 or 20 Days after thoſe Diſeaſes. Sometimes, alſo, 'tis generated of extravaſated Blood, iſſued out of a burſten, broken, or putrified Vein: 'Tis diſtinguiſh'd by a Difficulty of Breathing, a dry Cough, a Heavineſs about the Diaphragm, a Noiſe, and fluctuating of the Matter upon moving; ſlow Fever, ruddy Cheeks, hollow

hollow Eyes, the Tips of the Fingers hot, and a Swelling of the Abdomen.

The Cure is difficult, from the Difficulty of abſorbing, or evacuating ſuch extravaſated Matter: If Nature ſhews any Endeavour to throw it off by Vomiting, or Urine, or the like, ſhe muſt be ſeconded, and aſſiſted therein. Thus, if the Urine be purulent, adminiſter Diureticks; if the Stools, Laxatives; if the Spitting, Expectorants, or even Emeticks; otherwiſe, Recourſe muſt be had to a Paracenteſis, or Tapping. See PARACENTESIS.

In Order to this, an Aperture muſt be made in the Thorax, by a proper Inſtrument, on the Side affected, between the *4th* and *5th*, or the *5th* and *6th* Ribs, reckoning from the loweſt; and thro' this, the Pus muſt be ſlowly drawn. See CANNULA.

There is alſo a Kind of *Spurious*, or *Baſtard Empyema*, proceeding from a pituitous, or ſerous Humour, brought by ſome Duct, or Paſſage, into the Thorax; where corrupting, it degenerates into a Matter like Pus.

An *Empyema*, in Courſe of Time, breeds a *Phthiſis*. See PHTHISIS.

The Word is form'd of the *Greek*, ἐν, *in*, and πῦον, *Pus*: The Letter *ν*, being here changed into *μ*. Which is a Thing often obſerved in other Languages, when the *n* happens to come, in Compoſition, before the Labials *b* and *p*. Witneſs the Latin *Embamma*, *Emblema*, *Emporium*, &c.

EMPYREUM, among Divines, is the higheſt of the Heavens, wherein the Bleſſed enjoy the beatific Viſion; call'd alſo the *Empyrean Heaven*, and *Paradiſe*.

Some of the Fathers take the *Empyreum* to have been created before the Heaven we ſee: St. *Baſil*, and *Euſtathius* of *Antioch*, maintain it in expreſs Terms. Being the Abode of God, they ſuppoſe it muſt be luminous in the higheſt Degree; and are in Pain to account for the Darkneſs, which our Part of the World was in, before the Creation of the Sun, &c. As judging that the infinitely vivid Luſtre of the *Empyreum*, muſt diffuſe it ſelf to the greateſt Depths of this lower World.

They have, therefore, Recourſe to an Hypotheſis; our viſible Heavens, according to them, did the Office of a Skreen, or Curtain, and ſhelter'd the Earth and Waters from the Light of the *Empyreum*. See *Fa. Souciet*, *Diſſert.* p. 171, 172.

The Word is form'd of ἐν, and πῦρ, *Fire*, by Reaſon of its Splendour.

EMPYREUMA, in Chymiſtry, &c. *Smell or Taſte of Burning*; a Quality, or Change, in Bodies that have been burnt, or much ſcorch'd with Fire, ſenſible to the Taſt and Smell; or, perhaps, it may be the foreign Matter impreſs'd, or added by the Fire, and remaining on the burnt or ſcorch'd Part, that gives the new offenſive Smell and Flavour.

The Term is chiefly uſed when in boiling, or diſtilling any Thing, it ſticks and burns to the Bottom of the Veſſel, or Alembic, the offenſive Smell and Taſt whereof are expreſs'd by the Word *Empyreuma*.

It is alſo uſed for the Heat remaining upon the Declenſion of a Fever.

The Word is form'd of the *Greek*, ἐμπυρεύειν, *to inflame*, *kindle*.

EMRODS, or rather *Hemorrhoids*. See HEMORRHOIDS.

EMULATION, a Noble Jealouſy, between Perſons of Virtue, or Learning, contending for the Superiority therein.

Plato obſerves of *Emulation*, that it is the Daughter of Envy; if ſo, there is a deal of Difference between the Mother and the Offspring: The one is a Virtue, and the other a Vice. *Emulation* admires great Actions, and ſtrives to imitate them; Envy refuſes them the Praiſes that are their Due: *Emulation* is generous, and only thinks of ſurpaſſing a Rival; Envy is low, and only ſeeks to leſſen him.

The Word comes originally from the *Greek*, ἅμιλλα, *Diſpute*, *Debate*; whence the Latin *Æmulus*, and thence our *Emulation*.

EMULGENT, in Anatomy, an Epithet beſtow'd on thoſe Arteries, which bring the Blood to the Kidneys; and thoſe Veins, which carry back what is ſuperfluous thereof. See KIDNEY.

The *Emulgent* Arteries ſpring from the deſcending Trunk of the *Aorta*; and the *Emulgent* Veins terminate in the aſcending Trunk of the *Cava*. See CAVA and AORTA.

EMULSION, in Medicine, a liquid, gentle Remedy, of a Colour, and Conſiſtence, reſembling Milk.

It is compoſed of Oleaginous Seeds, Kernels, or Fruits, pounded in a Mortar, and diſſolved in diſtill'd Waters, or light Decoctions; afterwards, expreſs'd, or ſtrain'd and ſweeten'd with Sugar, or Syrup.

Emulſions ſerve to temper, dilute, and ſoften Acrimonies of the Breaſt; to moderate the Heat of the Kidneys; ſoften the Sharpneſs of the Urine; and give the Patient Reſt and Eaſe.

The Seed of the Melon is one of the four greater cold Seeds, much uſed in *Emulſions*: The Seed of the great Gourd is alſo uſed in *Emulſions*, Broths, and Decoctions.

The Word is form'd from the Latin, *emulgere*, to milk.

EMUNCTORY, in Medicine and Anatomy, a Part of the Body deſtined for the Separation of ſome Humour, judg'd uſeleſs, or even hurtful to the Animal; after its having circulated ſome Time with the Blood. See EXCREMENT.

The Word alſo implies a Cavity, adjoyning to the Part that ſeparates; wherein the excrementitious Humour is collected and preſerved in Readineſs for Evacuation.

The Kidneys, urinary Bladder, and milliary Glands of the Skin, are *Emunctories*: The Parotides are not properly *Emunctories*, becauſe deſtined to ſeparate the Saliva, which is no uſeleſs, or excrementitious Humour, but neceſſary for the Digeſtion of the Food.

Some, without much Propriety, confine *Emunctory* to the Receptacle into which the ſecreted Excrement is diſcharged; as the pituitous Humour of the Brain into the Noſtrils; the Cerumen into the Ears; the Excrements into the Inteſtines, &c. Tho' this laſt has not undergone any Circulation.

The Word is form'd from the *Latin* Verb, *Emungere*, to wipe.

ENALLAGE, in Rhetoric, a Figure whereby we change, and invert the Order of the Terms in a Diſcourſe; againſt the common Rules of Language. See FIGURE.

The Grammarians, too, have a Kind of *Enallage*, whereby there is a Change either of a Pronoun, as when a Poſſeſſive is put for a Relative, e. gr. *ſuus* for *ejus*; or of a Verb, as when one Mood, or Tenſe, is put for another.

The Word is derived from the *Greek*, ἐναλλαγὴ, form'd of ἐναλλάττειν, which ſignifies *to change*, as well as the ſimple Verb ἀλλάττειν.

ENALURON, in Heraldry, is uſed by *Guillim*, to expreſs a Bordure charged with Birds; as, with an *Enaluron of Martlets*, &c. But *Mackenzy* charges this as a Miſtake on the Author, ariſing from Ignorance of the *French* Tongue: *Enaluron* properly ſignifies in Manner of *Orle*, or Bordure, and is applicable to a bearing of any Thing in that Form.

ENAMEL, popularly AMEL, a Kind of coloured Glaſs, by the *Latins* call'd *Encauſtum*, and by the French *Eſmail*; uſed in *Enamelling*, and Painting in *Enamel*. See ENAMELLING, and *Painting in Enamel*.

The Baſis of *Enamel* is the fineſt Cryſtal Glaſs, made of the beſt Kali from *Alicant*, and Sand vitrified together. See GLASS.

To this Glaſs are added Tin and Lead in equal Quantities, calcined by a reverbatory Fire. Such is the fundamental Compoſition of *Enamel*; to which are added other metallic or mineral Matters, to give it the Colour required: As *Æs Uſtum* for Green, *Crocus Martis* for Yellow, &c.

We may diſtinguiſh three Kinds of *Enamel*: The firſt intended for the counterfeiting and imitating of pretious Stones: The ſecond, for *Painting in Enamel*: And the third uſed by the *Enamellers*, Jewellers, and Goldſmiths, on Gold, Silver, and other Metals; with which laſt Kind, particularly the White, it is that the Makers of the *Dutch* Ware, give the Luſtre and Poliſh to their Works.

The *Enamel* uſed in imitating pretious Stones, and that for Painting, is prepared by the Workmen themſelves, employ'd in thoſe Arts: The reſt is brought from *Venice* and *Holland*. The Compoſition is the ſame, in the main, in all the three Kinds: All the Difference conſiſts in giving it the Colour, or Tranſparency.

For that uſed in imitating pretious Stones. See PRETIOUS *Stones*.

ENAMELS *for Painting*.

The *white Enamel*, or Colour, uſed by the Painters in *Enamel*, is the ſame with the common *Enamel*, uſed by *Enamellers*: Only, 'tis to be prepared by grinding, and cleanſing it with *Aqua fortis*. After which, waſhing it well in fair Water, 'tis ground, or pounded a-freſh in a Flint or Agat Mortar. The *ruddy brown*, is made with Feces of Vitriol, and Salt-Petre, or with Iron Ruſt, well ground on an Agat, with Oil of Aſpic. *Black*, is made of *Perigueux* well calcined, and ground with Oil of Aſpic; to which is added an equal Quantity of the Goldſmiths, or *Enamellers* black. *Yellow*, is the ſame with the Goldſmiths Yellow, the Compoſition whereof will be given hereafter. *Blue* is made of the *Azure*, or *Lapis*, uſed by the Painters in Oil, well purified and prepared with Brandy, and expoſed in a Bottle five or ſix Days to the Rays of the Sun. *Vermillion Red*, is made with Vitriol calcined between two Crucibles, luted together; then waſh'd in *Aqua fortis*, and afterwards in fair Water: The Fire to be moderate, and to remain about half an Hour.

Lake

Lake Red, is compoſed of fine Gold, diſſolved in *Aqua Regia*, with *Sal Armoniac*, or common Salt. The Diſſolution being compleated, 'tis put in a Cucurbit with Spring Water, and Mercury, o'er hot Sand for 24 Hours. The Powder remaining at the Bottom of the Cucurbit, when the Water is pour'd off, is ground up with double its Weight of Flower of Sulphur, and put in a Crucible over a gentle Fire. And when the Sulphur, which takes Fire, is exhaled, the red Powder remaining, is ground up with *Rocaille*. Laſtly, White Copperas calcined, makes a Colour much like the amber Colour uſed by the Limners.

Theſe ſeven or eight Colours, or *Enamels*, ſerve for the Compoſition of all the reſt, by a diſcrete Mixture and Combination thereof. Thus, blue and yellow make green; blue and red, Violet; and ſo of the reſt. See COLOUR.

ENAMELS *uſed by the Jewellers, Goldſmiths, and Enamellers.*

Theſe Kinds of *Enamel*, we have obſerved, come chiefly from *Venice* and *Holland*: They are in little thin Cakes of different Sizes; uſually four Inches in Diameter, and $\frac{1}{2}$ an Inch thick. Every Cake has the Maker's Mark ſtruck on it with a Punchion. The moſt uſual Marks are the Name *Jeſus*, a Syren, Monkey, Sun, *&c.*

Thoſe bought from *Venice* are chiefly white, Slate-Colour, ſky Blue, Carnation, Yellow, Green, and a deep Blue, call'd a falſe *Lapis*. Theſe ſeven are the Principles of all the others, which ariſe out of the Mixture of theſe. And the white, in particular, is, as it were, the Baſis of all the other ſix principal Colours.

White is made, as already obſerved, of Cryſtal Glaſs, Tin, and Lead calcined by a reverberatory Fire. And this *Enamel* is uſed not only by the Jewellers and *Enamellers* on Metal, but alſo by the Painters in *Enamel*, the Makers of *Dutch* Ware, *&c.* By adding Azures thereto, it becomes a Slate Colour; by adding Copper, and *Cyprus* Vitriol, it makes a ſky Blue. By *Perigueux*, a fleſh Colour; and by Iron-Ruſt, a yellow. To make a green, they add Copper-filings, *&c.*

ENAMELLING, by the Antients call'd *Encauſtice*, the Art, or Act of applying *Enamels* of various Colours, on Metals, *&c.* either in the Way of Painting, or by the Lamp. See ENAMEL.

Painting in ENAMEL, is a Method of Painting with *Enamels*, or Metal Colours, ground, reduc'd to Powder, and uſed, like other Colours, with a Pencil; then fuſed, baked again, and vitrified by Force of Fire.

The Art of *Painting in Enamel* is very antient; and appears to have been firſt practiſed on Earthen, or Potters-Ware. As early as the Age of *Porſenna* King of *Tuſcany*, we hear of beautiful Vaſes made in his Territories, *Enamell'd* with various Figures; though far ſhort of thoſe afterwards made at *Faenza*, and *Caſtel Durante*, in the Dutchy of *Urbino*, in the Time of *Raphael*, and *Michael Angelo*. There are ſtill ſome of thoſe Vaſes extant in the Cabinets of Antiquaries; in all which the Deſign, or Drawing of the Figures, is much better than the Colouring. For they were, at that Time, only acquainted with two Colours, *viz.* black and white; either for Earthen, or Metal Works: Excepting a faint Kind of Carnation in the Faces and other Parts.

In the Time of *Francis* I. of *France*, the Art was retriev'd in that Country, particularly at *Limoges*; where there were produced Abundance of very valuable Pieces, in the Manner of the Antients, that is, well perform'd as to the Draught, and the Clairobſcure, chiefly in two Colours.

There are two Ways of *Painting in Enamel*; the one with clear and tranſparent, and the other with thick and opake Colours.

To uſe the firſt, they are only ground up with Water: The ſecond are ground with Oil of Aſpic.

The firſt are laid on the Metal flat, and border'd, or edg'd, with a Rim of the Metal, to keep the Colours aſunder. Tho', we have ſeen Pieces laid on contiguous, and without any Partition; which is very difficult to practiſe, by Reaſon the tranſparent Colours, in Melting, are apt to run in each other; eſpecially in the little Works.

The Invention of opake Colours, is much later, and greatly preferable to that of tranſparent ones.

All Metals, however, will not equally admit both Kinds. Copper, for Inſtance, which bears all the opake Colours, will not bear the tranſparent ones: But to employ theſe latter upon Copper, they are forced, firſt, to cover it with a Lay, or Couch, of black *Enamel*, over which they lay a ſilver Leaf, and on this apply the other ſuitable Colours, that is, the Colours or *Enamels* proper for Silver, which it ſelf does not allow of all Kinds.

Thoſe which ſuit it beſt, are Purple, Green, Azure and Ague marin. But Gold receives all the Kinds, and Colours, both opake and tranſparent, perfectly well. It muſt be added, however, that only the fineſt Gold muſt be uſed herein. For the tranſparent Colours being laid on a baſe Gold, grows dim and livid; there being a Kind of Smoak that ſettles on it not unlike black Lead.

Of tranſparent *Enamels*, the hardeſt are the beſt; tho' there is a Difference even among theſe; ſome loſing their Colour in the Fire, and others retaining it. As to the reds, they are only red by Accident, being only yellow when made and applied on the Gold; and becoming red in the Furnace. The beſt tranſparent Reds are thoſe made of calcin'd Copper, Iron Ruſt, Orpiment, and calcin'd Gold, melted with the due Proportions of Glaſs.

But 'tis the Method of Painting with opake, or thick *Enamel*, to which we owe all our fine modern Pieces of *Enamel*; particularly thoſe curious ones on Gold, repreſenting Portraits to as much Perfection as the beſt Painting in Oil; and even ſome Hiſtory Pieces: With this great Advantage, that their Beauty and Luſtre never decays.

This Art we are indebted for to the *French*: Nothing of the Kind having been attempted before the Year 1630; when *Jean Toutin*, a Goldſmith of *Chaſteaudun*, and a great Maſter in the common Way of Painting with tranſparent *Enamel*, firſt applied himſelf to find a Way to uſe thick Colours of different Teints, which ſhould melt with Fire, yet retain their Luſtre, Purity, *&c.*

Toutin ſucceeded in his Attempt, and having got the Secret, communicated it to his Fellow Artiſts; who, in their Turns, contributed to the bringing it to Perfection: The firſt who diſtinguiſh'd himſelf was *Dubie*, a Goldſmith, who wrought in the Galleries of the *Louvre*. After him came *Mortiere*, a Native of *Orleans*, who applied himſelf chiefly to the Painting on Rings and Watch Caſes. His Diſciple, *Robert Vauquer* of *Blois*, exceeded them all both in his Deſigns and his Colours. After him *Pierre Chartier* of *Blois*, took himſelf to the Painting of Flowers, wherein he ſucceeded to Admiration.

By this Time, the *Engliſh* were fallen into the Way; who, as is allowed by Foreigners themſelves, ſeem to have been the firſt that applied it with Succeſs to the Painting of Portraits, which was now become mightily in Vogue, in Lieu of thoſe in Miniature.

M. *Felibien* obſerves, that the firſt, and moſt finiſh'd Portraits, and thoſe in the fineſt Colours, were brought into *France* by *Petitot*, and *Bordier* from *England*: This occaſion'd *Louis Hance*, and *Louis du Guernier*, two good Painters in Miniature, to attempt the like; in which the latter ſucceeded beyond every Body. He likewiſe invented ſeveral new Teints for the Carnations; and had he lived, had probably merited the Glory of carrying the Art to its laſt Perfection.

This Kind of Painting, to be in Perfection, muſt be on Plates of Gold: For Copper, beſide that it emits a Fume which tarniſhes the Colours, is apt to ſcale and crackle; and Silver turns the Whites, Yellow.

Theſe Plates are made a little hollow on one Side, and rais'd on the other, either in a circular or oval Manner, to prevent the Gold's fretting by the Fire, and making the Colours crack and fly: Nor muſt they be made too thick. 'Tis ſufficient they can bear the Colours; tho' 'tis uſual to ſtrengthen them all around with a Circle ſomewhat thicker.

The Plate being hammer'd very evenly throughout, they apply a white *Enamel* on both Sides, tho' the Deſign be only to paint on one. The Intent of this is to prevent any ſwelling and warping by the Fire: For otherwiſe, in large Pieces, and eſpecially if the Colours be laid on any Thing unequally, they are apt to riſe up in Puffs or Bliſters. Now, this firſt Lay, which is white, remaining ſmooth and uniform, ſerves as a Ground for all the other Colours. The Compoſition of the white *Enamel*, with the other opake Colours, is already delivered under the Article ENAMEL.

The Gold Plate thus *Enamell'd* in *white*; the Draught, or Deſign, to be painted, muſt be chalked thereon; and, afterwards, the whole accurately drawn out in a ruddy brown. The Draught, or Out-line, thus finiſh'd, the Piece is ſet to the Fire, and then painted with the Colours above preſcribed.

The white Ground they paint on, ſerves all the Colours for white. The Method being to ſpare the Ground from firſt to laſt, in the Places where the Lights are to be, after the ſame Manner as in Miniature: Tho' they have another white, to lay over the other Colours, when there is Occaſion to raiſe them.

Add, that as the Painters in Oil re-touch their Paintings ſeveral Times, and let them dry; ſo in this Sort of Painting, they touch the Piece as often as they pleaſe, ſetting it each Time to a reverberatory Fire, and taking it away again, aſſoon as they perceive the *Enamel* has got its full poliſh.

The reverberatory Fire is made in a little Furnace, wherein there is Fire both a-top and all around; only a

void Place in the middle, where the Piece is to be put for the *Enamels* to melt. The Colours are laid on with the Tip or Point of the Pencil, as in Mignature; with this only Difference, that they uſe Oil of Aſpic to dilute them inſtead of Gum Water. See MIGNATURE.

Method of ENAMELLING *by the Lamp.*

The Works of this Kind are all perform'd by the Fire of a Lamp; wherein, in Lieu of Oil, is put Horſes Greaſe, call'd Caballin Oil.

The Lamp is of Copper, or Tin, and conſiſts of two Parts, the Box and the Lamp: In the latter of theſe, which is a Kind of flat Oval, is put the Oil, and out of this riſes the Wick. All the Uſe of the Box is to receive the Oil, which the Ebullition, occaſion'd by the intenſe Heat, might throw abroad.

This Lamp, or even where two or three Artiſts work together, two or three more Lamps, are placed on a Table of a proper Height, *&c.* under which, about the middle of its Height, is a double Bellows like thoſe of an Organ, which one of the Workmen raiſes and falls with his Foot, to increaſe and quicken the Flame of the Lamps, which is by ſuch Means rais'd to a Degree of Vivacity almoſt incredible.

The Wind of the Bellows is convey'd to the ſeveral Lamps, tho' never ſo many, by Means of Grooves cut along the Thickneſs of the Table, and cover'd with Parchment, extending from the Bellows, to a Tube or Pipe placed before each Lamp. Theſe Tubes are of Glaſs, and that the *Enamellers* may not be incommoded with the Heat of the Lamp, each Tube is cover'd at about ſix Inches Diſtance with a Piece of Tin, call'd a Fan, fixed in a Hole of the Table. In Works that don't take up much Time, they content themſelves with a Glaſs Blow-Pipe, to heighten the Flame of the Lamp.

Applying their Cake of *Enamel* to the Flame of this Lamp, they draw it out into Threads inconceivably fine. Thoſe made uſe of in artificial Plumes of Feathers are ſo very ſlender, that they may be wound on a Reel, like Silk or Thread.

The factitious Jeats of divers Colours, ſometimes uſed in Embroideries, are alſo made of *Enamel*; and that with ſo much Art, that each Piece has its Hole to paſs the Silk thro', wherewith it is ſew'd. Theſe Holes are made by blowing them in long Pieces, which are afterwards cut off with a proper Tool.

See the Proceſs of drawing out the Enamel, *illuſtrated under the Article* DUCTILITY.

'Tis rare that the *Dutch*, or *Venetian* Enamels, are uſed pure: The common Way is to melt them in an Iron Ladle, with an equal Quantity of Glaſs or Cryſtal. And when the two Matters are in perfect Fuſion, they draw it out into Threads of different Sizes, as Occaſion requires, by taking a Quantity between two Pipe-Stopples, held in the two Hands, and removing them aſunder as far as the Arms will reach. If the Thread is to be longer than the Workman can ſtretch, a ſecond Perſon takes one of the Ends, and continues to draw it out while the firſt continues to keep the *Enamel* to the Flame. All the Threads drawn after this Manner are round; ſo that if the Nature of the Work require them to be flat, they are afterwards drawn thro' a Pair of Pinchers while yet hot. They have another Iron Inſtrument, in Manner of Plyers, to draw out the *Enamel* by the Lamp, when it is to be work'd, or diſpoſed in Figures, or otherwiſe. Laſtly, they have glaſs Tubes, of various Sizes, ſerving to blow the *Enamel* into various Figures, and preſerve the neceſſary Vacancies therein, as alſo to ſpare the Stuff, and form the Contours.

When the *Enameller* goes to Work, he ſeats himſelf before his Lamp, with his Foot on the Treddle; and holding in his left Hand the Piece of Work he has to *Enamel*, or the Braſs or Iron Wiars his Figures are to be form'd with; with his right Hand, he draws out the Thread from the *Enamel* held to the Lamp: And this with a Dexterity and Patience equally ſurprizing.

There is nothing but may be thus repreſented in *Enamel*; and there are Figures ſo finely finiſh'd of this Kind, that one would take them to have come out of the Hands of the ableſt Sculptors.

ENARTHROSIS, a Kind of *Jointing*, or *Articulation*, wherein the Cavity that receives is deep, and the Bone receiv'd oblong. See DIARTHROSIS.

Such is that of the Huckle-Bone, *&c.* See ARTICULATION.

ENCÆNIA, a *Greek* Term, ſignifying *Reſtauration*, *Renovation.*

Encænia was the Name of a Feaſt, celebrated by the *Jews*, on the 25*th* of the Ninth Month, in Memory of the Dedication, or rather Purification, of the Temple, by *Judas Machabæus*, after its being polluted and plunder'd by *Antiochus Epiphanes.*

They had alſo two other *Encænia*; the Dedication of the Temple by *Solomon*; and that by *Zorobabel*, after the Return from the Captivity. See DEDICATION.

The Word is wrote in the *Greek*, ἐγκαίνια, being form'd of the Prepoſition ἐν and καινὸς, *new.*

In the Fathers, and Church Hiſtory, we likewiſe meet with *Encænia*, for the Dedication of Chriſtian Churches: St. *Auguſtine* aſſures us, that in his Time, the Uſe of the Word *Encænia* was even transferr'd to profane Matters; and that they call'd it *Encæniare*, when they put on a new Suit of Cloaths.

Our Tranſlators of the Bible don't retain the Word *Encænia*, in St. *John* X. 22. where mention is made thereof: In lieu of that, they call it, *Feaſt of the Dedication*; which is much leſs proper. In Effect, it was not the Feaſt of the Dedication, but of the Purification, or Reconſecration of the Temple profaned.

ENCANTHIS, in Medicine, a Tumor of the *Caruncula Lachrymalis*, in the great *Canthus* or Angle of the Eye. See CARUNCLE.

It is oppoſed to *Rhyas*, which is a Diminution, or Conſumption of the ſame Caruncle. See RHYAS.

The *Encanthis* is occaſion'd by a Defluxion on that Part, or an Ulcer therein not readily enough dried.

The Word is *Greek*, ἐγκανθὶς, form'd of the Prepoſition ἐν and κανθὸς, *Corner of the Eye.*

ENCAUSTICE, the Art of *Enamelling*. See ENAMELLING.

ENCEPHALI, in Medicine, an Epithet applied to Worms generated in the Head; where they occaſion violent Pains, inſomuch as ſometimes to produce Diſtraction. See WORMS.

There are four Kinds of *Encephali*; thoſe properly ſo call'd, which are found in the Brain: The *Narinarii*, in the Noſe; *Auriculares*, in the Ears; and the *Dentales*, in the Teeth.

The *Encephali*, properly thus call'd, are rare: But there are certain Diſeaſes wherein they ſwarm; and we are told of peſtilential Fevers that aroſe wholly from them.

In one of theſe Fevers, the Phyſicians having open'd the Body of a Perſon it had carried off, they found a little, ſhort, red Worm in the Head. Hereupon, they tried various Medicines to find what might deſtroy it: But all in vain, till *Malmſey* Wine, wherein Horſe Radiſh had been boil'd, was applied: This was no ſooner thrown on the Worm than it died. The ſame Remedy was afterwards tried on the Sick; and it recover'd 'em almoſt all. *The like* have alſo been taken out by Trepanning, and the Patient recover. See VERMES.

The Word is compounded of the Prepoſition ἐν, *in*, and κεφαλὴ, *Head.*

ENCEPPE, in Heraldry, denotes chain'd, or girt round the middle; as is uſual with Monkeys, *&c.*

ENCHANTMENT. See MAGIC, SORCERY, and WITCHCRAFT.

ENCHASING, INCHASING, or CHASING, the Art of *Enriching*, and beautifying Gold, Silver, and other Metal Works, by ſome Deſign, or Figures repreſented thereon, in low Relievo.

Chaſing is only practiſed on Hollow, thin Works; as Watch-Caſes, Cane-Heads, Tweezer-Caſes, or the like.

'Tis perform'd by punching or driving out the Metal to form the Figures, from with-inſide, ſo, as there to ſtand out prominent from the Plane, or Surface of the Metal.

In order to this, they have a Number of fine Steel Blocks, or Puncheons, of divers Sizes: And, the Deſign being drawn on the Surface of the Metal, they apply the inſide upon the Heads, or Tips, of theſe Blocks, directly under the Lines or Parts of the Figures. Then, with a fine Hammer, ſtriking on the Metal, ſuſtain'd by the Block; the Metal yields, and the Block makes an Indenture, or Cavity on the inſide; correſpondent to which, there is a Prominence on the outſide, which is to ſtand for Part of the Figure.

Thus, the Workman proceeds to *Chaſe*, and finiſh all the Parts, by ſucceſſive Applications of the Block, and Hammer, to the ſeveral Parts of the Deſign.

And 'tis ſurprizing, with what Beauty, and Juſtneſs, by this ſimple Piece of Mechaniſm, the Artiſts in this Kind will repreſent Foliages, Grotteſques, Animals, Hiſtories, *&c.*

ENCHEIRESIS, in Anatomy, the ſame with *Diſſection*. See DISSECTION.

ENCLAVE, in Heraldry, is where one Thing is let into another; particularly where the Jointure is Square.

ENCLITICA, in the *Greek* Grammar, certain Particles which ſtick ſo cloſely to the preceding Word, that, as if united with it, they only ſeem to form one Word together.

Whence it happens, that the Word which ſuſtains them, does generally likewiſe bear the Accent that governs them, and eſpecially when the *Enclitic* is a Monoſyllable.

ENCROACH-

ENCROACHMENT, or ACCROACHMENT, an unlawful gathering upon another Man: As, if two Men's Grounds lying together, the one preſs too far on the other: Or, a Tenant owe Two Shillings Rent Service, and the Lord exacts Three.

ENCRATITÆ, antient Hereticks, thus call'd from their making Profeſſion of Continence, and abſolutely rejecting Marriage.

The Word is form'd from the *Greek*, ἐγκρατεία, *Continent*.

The Founder of this Sect was *Tatian*, a Diſciple of *Juſtin*, and one of the moſt learned Perſons of all Antiquity. After the Death of that Martyr, he made a Separation from the Church; and ſoon had his Followers; who, beſide the Dogma juſt mention'd, borrow'd a great many Things from *Saturnius*, and *Marcian*, beſide ſeveral Errors which they adhered to in common with the *Gnoſticks* and *Valentinians*.

They abſtain'd from eating any Thing that had Life; and denied that *Adam* was ſaved. They look'd on ſuch as drink Wine to be very great Sinners; and for this Reaſon, only made Uſe of Water in celebrating the Euchariſt: As holding that Wine came from the Devil. To maintain this Sentiment, they produced Paſſages out of Scripture, where mention is made of what befel *Noah* and *Lot* when they were drunk.

They only admitted ſuch of the Books of the Old Teſtament as they thought good: But in Lieu thereof, they own'd ſeveral ſpurious and Apocryphal Writings for Canonical and Divine. Such were the Acts of St. *Andrew*, *John* and *Thomas*.

ENCYCLOPÆDIA, the Circle, or Chain, of all Sciences and Arts. See ART and SCIENCE.

The Word is compounded of the Preposition ἐν, *in*, κύκλος, *Circle*, and παιδεία, *Science*, *Doctrine*, *Diſcipline*, *Learning*; the Root being παῖς, *Child*, *Infant*.

'Tis miſtakenly that ſome derive the Word from πέδη, *a Chain*, or *Fetter*, that holds by the Feet; it being wrote in *Greek* by an αι, not an ε: Εγκυκλοπαιδεία.

The *Greeks* uſed the Term for the Knowledge of the ſeven liberal Arts, and the Poſſeſſion of all Sciences. *Orbis ille Doctrinæ quem Græci* ἐγκυκλοπαιδείαν *vocant*; ſays *Quintilian*. They alſo call'd it κυκλοπαιδεία. *Vitruvius* ſomewhere calls it *Encyclios Diſciplina*.

ENDECAGON, or HENDECAGON, in Geometry, a Figure of eleven Angles, and conſequently eleven Sides. See POLYGON.

The Word is *Greek*, ενδεκαγωνος, form'd of ἕνδεκα, *Eleven*, and γωνία, *Angle*.

ENDECASYLLABUS, or HENDECASYLLABUS, a Verſe conſiſting of Eleven Syllables. See VERSE.

Of this we have Abundance of Inſtances in the *Greek* and *Latin*, and ſtill more in the *Italian* Poetry.

The *Greek* and Latin *Endecaſyllabus*, is alſo call'd *Phaleucus*, from the Name of its Author: Tho', in *Catullus*, we have *Phaleuci*, that only contain two Syllables. See PHALEUCUS.

ENDEMICK, ENDIMIAL, or ENDEMIOUS Diſeaſe, (thus call'd from ἐν, *in*, and δῆμος, *Populus*, People) is any Diſeaſe which affects many People together, in the ſame Country; as proceeding from ſome Cauſe, peculiar to the Country where it reigns. See DISEASE.

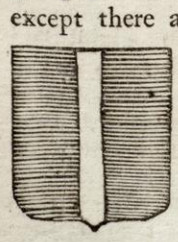
Such are the Scurvy to the *Northern* Climes, intermitting Fevers in marſhy Places, &c.

ENDENTED, ENDENCHE, DENTED, INDENTED, in Heraldry, is applied to a Feſs, a Pale, and other triangular Pieces, when divided alternately between two different Colours. *Coupe*, or *Endented*, with *Or* and *Azure*. See INDENTED.

ENDITEMENT, or INDICTMENT, in Common Law, is much the ſame as *Accuſatio* in the Civil Law; tho', in ſome Points, it differs.

It may be defined a Bill, or Declaration made, in Form of Law, (for the Benefit of the Common-Wealth) exhibited as an Accuſation of a Perſon, for ſome Offence, either Criminal, or Penal; unto the Jurors; and by their Verdict, found, and preſented to be true, before an Officer having Power to puniſh the ſaid Offence. See INDICTMENT.

It is always at the Suit of the King, and differs from an Accuſation in this, that the Preferer is no Way tied to the Proof thereof, upon any Penalty, if it be not proved; except there appear Conſpiracy. See JURY, &c.



ENDORSE, in Heraldry, an Ordinary, containing the eighth Part of a Pale. This, *Leigh* ſays, is never uſed but when a Pale is between two ſuch: Others hold, that an *Endorſe* may be bore between Birds, Fiſhes, Beaſts, &c. Sir *J. Ferne* adds, that it ſhews the ſame Coat has been ſometimes two Coats, and afterwards conjoyned within one Eſcutcheon, for ſome Myſtery of Arms. He bears *Azure* an *Endorſe Argent*.

ENDORSED, or ENDOSSE, in Heraldry, is where Things are bore back to back.

ENDORSING, or INDORSING, in Law, implies the Writing on the backſide of a Deed, Inſtrument, &c. ſomething relating to the Matters contain'd therein.

Endorſement is particularly uſed in Commerce for a Writing on the Back of a Bill of Exchange, by the Proprietor, or Bearer; either, thereby, to transfer it to ſome other, or to render it payable to the Order of ſome other; or to ſerve for an Aquittance or Receipt. The *Endorſement* is the ſimple Name of the Proprietor, or *Endorſer*.

Note, when the *Endorſement* of a Bill of Exchange is to render it payable to another, it is call'd an *Order*. See ORDER.

To an Order, 'tis neceſſary the *Endorſement* be dated; and contain the Name of him who paid the Value thereof: In which Caſe the Bill belongs to the Perſon with whoſe Name the Order is fill'd; without any other Transfer: Without theſe Conditions, the Bill is judg'd to belong to the Perſon who *Endorſed* it.

The Bearer of a Bill of Exchange proteſted, has a Remedy againſt the *Endorſers*, for the Payment of the Rechange of the Places where the Bill was negotiated by their Order. In Caſe a Bill or Note is refus'd to be paid, &c. the Bearer has a Remedy againſt any one of the *Endorſers*, where there are ſeveral. See BILL.

ENDOWMENT, the giving, or aſſigning, of a Dower to a Woman. See DOWER.

The Word is alſo uſed figuratively for the ſetting forth, or ſevering, of a ſufficient Portion for a Vicar, towards his perpetual Maintenance, when the Benefice is appropriated: Whence ſuch a Vicarage, is called a Vicarage *endowed*. See VICARAGE.

ENEMA, from ἐνίημι, *immitto*, I ſend in; is ſometimes uſed to expreſs a *Clyſter*. See CLYSTER.

ENÆMON, according to *Blanchard*, is a Medicine which ſtops or ſtanches the Blood: Or which, by binding, cooling, or drying, cloſes the Paſſages of the Veſſels before open; or diminiſhes the Fluidity and Motion of the Blood. See STYPTIC.

ENÆOREMA, from ἐναείρω, *I lift up, or float*; expreſſes ſuch Contents of the Urine, as float about in the middle, reſembling a Cloud; and thence alſo call'd *Nubecula Hypoſtaſis*. See NUBECULA and URINE.

ENERGUMENUS, a Term uſed by Divines, and Schoolmen, to ſignifie a Perſon *poſſeſs'd* with a Devil, or an Evil Spirit. See POSSESSION.

Tho' *Papias* ſays, the *Energumeni* were ſuch as counterfeited the Actions of the Devil, performing Things which ſeem'd ſupernatural. The Council of *Orange* debars, or deprives, the *Energumeni* of the Functions of the Prieſthood.

The Word is form'd from the *Greek*, ἐνεργεῖσθαι, *to be agitated, work'd*, of ἐν and ἔργον, *Opus*.

ENERGY, an uncommon Force, or Strength, in a Diſcourſe, a Sentence, or a Word. Thus, we ſay, the Words of Holy Scripture are full of *Energy*.

The Word is *Greek*, ἐνέργεια, form'd of the Preposition ἐν and ἔργον, *Work*, *Labour*.

We alſo ſay *Energic*, as *Energic* Style, *Energic* Terms, &c.

The ſame Appellation *Energici*, has been given to a religious Sect, of the Sixteenth Century, by Reaſon they held that the Euchariſt was the *Energy*, and Virtue of Jeſus Chriſt, not his Body, nor a Repreſentation thereof.

ENERVATE, to deſtroy the Force, Uſe, or Office of the Nerves; either by cutting them, by weakening them with Debauchery, or by ſome other Violence.

Exceſs of Wine, and other ſtrong, hot, ſpirituous Liquors, *enervate*, weaken the Nerves. When they would render a Horſe uſeleſs, they *Enervate* him, or cut his Nerve.

In the Manage, *Enervating* is particularly uſed for the cutting two Tendons in the Side of a Horſe's Head, under the Eyes, which meet on the Tip of the Noſe: They *Enervate* Horſes to make their Head ſmall and lean.

The Word is alſo uſed figuratively: 'Tis no ſmall Artifice in diſputing, to be able to *Enervate*, and extenuate the Allegations of one's Antagoniſt. This Author has a weak, *Enervate* Style. See NERVE.

ENERVATION, a Term in the antient Anatomy, applied to the Tendons of the Recti, or direct Muſcles, of the Abdomen.

The Fibres of the Recti of the Abdomen, do not go from one Extreme of the Muſcle to the other, but are interſected by ſeveral Nervous Places, called by the Antients *Enervations*; tho' they be real Tendons.

Their Number is not alike in all: Some having three, others four, &c. See RECTI.

ENFANS *Perdus*, a *French* Phraſe, literally implying *loſt Children*, and by a little Extenſion, *Perſons forlorn*; uſed

uſed in War, to ſignifie the Soldiers who march at the Head of a Body of Forces appointed to ſuſtain them; in Order to begin an Attack, make an Aſſault, or force a Poſt. At preſent 'tis the Grenadiers that uſually begin ſuch Attacks. See PERDUS.

ENFILADE, a *French* Term, ſometimes uſed in *Engliſh*. It ſignifies a Series, or Continuation, of ſeveral Things, diſpoſed, as it were, in the ſame *Thread* or Line.

As an *Enfilade* of Rooms, of Doors, of Buildings, &c.

It is alſo uſed figuratively; as a long *Enfilade* of Stories, Examples, Narrations, &c.

The Word is form'd of the *French* Verb *Enfiler*, to *ſtring* a Thing, which is compounded of *en*, in, and *fil*, or *filum*, Thread: *q. d.* a *Thread*, or *String*, of any Thing.

ENFILADE, in War, is applied to Trenches, and other Lines, which are *Enfiled*, i. e. in a Line, and ſo may be ſcour'd, or ſwept, by the Canon length-wiſe, or in the Direction of the Line, and render'd almoſt defenceleſs.

Care muſt be taken that the Lines be not *Enfiled*: On the contrary, the Covert Line muſt be *Enfiled*, that the Enemy may be driven out of it.

The laſt *Boyau*, or Gut of the Trenches, is ſubject to the *Enfilade*; that is, to be ſcour'd according to its Length.

A *Battery d'Enfilade*, is that where the Canon raſe a right Line. A *Poſt*, or *Command d'Enfilade*, is a Height from which one may ſweep a whole right Line at once. The Cannon play on the *Foſſe* by *Enfilade*. The Trenches are to be driven out of the *Enfilade*, i. e. are to be carried winding.

ENFRANCHISEMENT, the Incorporating any Man into a Society, or Body politic.

For Example: He that by Charter is made Denizen of *England*, is ſaid to be *Enfranchiſed*: The like underſtood of a Perſon made a Citizen of *London*, or other City, or corporate Town; by Reaſon he is thereby made Partaker of the Liberties appertaining to the Corporation whereof he is *Enfranchiſed*.

ENGASTRIMYTHUS, or ENGASTRIMANDER, a Perſon who ſpeaks from, or with, the Belly; without opening the Mouth; or, if open, without ſtirring the Lips.

Thus call'd by the *Greeks*, from ἐν, γαστρ, *Belly*, and μῦθος, *Speech*; and by the Latins *Ventriloquus*, *quaſi ex ventre Loquens*. See VENTRILOQUOUS.

The antient Philoſphers, &c. are divided on the Subject of the *Engaſtrimythi*: *Hippocrates* mentions it as a Diſeaſe. Others will have it a Kind of Divination, and aſcribe the Origin, and firſt Diſcipline thereof, to one *Euryclus*, whom no Body knows any Thing of.

Others attribute it to the Operation, or Poſſeſſion, of an Evil Spirit: And others to Art, and Mechaniſm.

The moſt eminent *Engaſtrimythi*, were the *Pythia's*, or Prieſteſſes of *Apollo*, who deliver'd Oracles from within, without any Action of the Mouth or Lips. See PYTHIA.

St. *Chryſoſtom* and *Oecumenius*, make expreſs Mention of a Sort of Divine Men, call'd by the Greeks *Engaſtrimandri*, whoſe prophetic Bellies pronounced famous Oracles. See ORACLE.

M. *Schottus*, Library-Keeper to the King of *Pruſſia*, in a Diſſertation on the Apotheoſis of *Homer*, maintains, that the *Engaſtrimythi* of the Antients, were only Poets, who, when the Prieſteſs could not ſpeak in Verſe, ſupplied the Defect, by explaining, or delivering, in Verſe, what *Apollo* dictated in the Cavity, or Belly, of the Baſon, that ſtood on the ſacred *Tripod*. See TRIPOD.

Leo Allatius has an expreſs Treatiſe of *Engaſtrimythi*, entitled, *de Engaſtrimytho, Syntagma*.

ENGENDRING, the Act of begetting, or producing the Kind, by Way of Generation. See GENERATION.

The Term is likewiſe applied to other Productions of Nature: Thus, *Meteors* are ſaid to be *Engender'd* in the middle Region of the Air. See METEOR.

Crude Fruits *Engender* Worms. See WORMS.

The Antients believ'd that Inſects were *Engender'd* of Putrefaction. See INSECT.

ENGINE, a compound Machine, or Inſtrument; conſiſting of ſeveral ſimple ones, as Wheels, Screws, Levers, or the like, combined together; in Order to lift, caſt, or ſuſtain a Weight, or produce ſome other conſiderable Effect, ſo as to ſave either Time, or Force. See MACHINE.

The Word is form'd of the French *Engin*, of the Latin *Ingenium*, Wit, Ingenuity; by Reaſon there is Ingenuity required in the Contrivance of *Engines*, to augment the Effect of moving Powers. See POWERS.

The Kinds of *Engines* are infinite: Some for War, as the *Baliſta*, *Catapulta*, *Scorpio*, *Aries*, &c. Others for the Arts of Peace, as *Mills*, *Cranes*, *Preſſes*, *Clocks*, *Watches*, *Engines* to raiſe Water, to extinguiſh Fire, &c. which ſee under their reſpective Articles MILL, CLOCK, WHEEL, PRESS, FIRE-*Engine*, &c. See alſo INSTRUMENT.

ENGINEER, in its general Senſe, is applied to a Contriver, or Maker, of any Kind of uſeful Engines, or Machines. But, in its proper Senſe, it denotes an Officer in an Army, or fortified Place, whoſe Office is to concert, and inſpect Attacks, Defences, Works, &c.

An *Engineer* ſhould be an able and expert Mathematician, particularly verſed in Military Architecture and Gunnery; being often ſent to view and examine the Places intended to be attack'd, to chuſe out and ſhew the General the weakeſt Place, to draw the Trenches, aſſign the Places of Arms, Galleries, Lodgments on the Counterſcarp, and half Moon; conduct the Works, Saps, Mines, &c. and appoint the Workmen their nightly Taſk: He alſo makes the Lines of Countervallation, with the Redoubts, &c. from Space to Space.

Under the new Eſtabliſhment of the Office of his Majeſty's Ordnance, are ſix *Engineers*, and four *Sub-Engineers*. See ORDNANCE.

ENGLECERIE, ENGLECHERIE, or ENGLESCHYRE, a Term of great Import to our Anceſtors; tho' now obſolete: It properly ſignified the Quality of an *Engliſhman*.

Thus, if a Man were privily ſlain, or murther'd, he was, antiently, accounted *Francigena*, (which comprehended every Alien, eſpecially *Danes*) till *Englecerie* was proved: *i. e.* till it was made appear that he was an *Engliſhman*. Bracton *Lib.* 3.

The Origin of the Cuſtom was thus: King *Canutus* having conquer'd *England*, at the Requeſt of the Nobles, he ſent back his Army into *Denmark*; only reſerving a Guard of *Danes* for his Perſon: And made a Law, that if any *Engliſhman* kill'd a *Dane*, he ſhould be tried for the Murther; or, if he eſcaped, the Village where the Man was ſlain ſhould be charged to pay 66 Marks into the Exchequer. After this Law, whenever a Murther was committed, it was neceſſary to prove the Party ſlain an *Engliſhman*, that the Penalty of 66 Marks might not be charged on the Village.

ENGLISH, or the ENGLISH *Tongue*, the Language ſpoke by the People of *England*; and, with ſome Variation, by thoſe of *Scotland*. See LANGUAGE.

The *Engliſh* is of *Gothic*, or *Teutonic* Extraction: This was the Root, or Stock, upon which ſeveral other Dialects have been ſince grafted; particularly the *Latin*, and *French*. See TEUTONIC, &c.

The Language antiently ſpoke in our Iſland was the *Britiſh*, or *Welch*, which was common to the *Britains* and *Gauls*; and which ſtill ſubſiſts, in more or leſs Purity, in the Principality of *Wales*, the County of *Cornwal*, the Iſlands and Highlands of *Scotland*, *Ireland*, and ſome Provinces of *France*, particularly *Bretagne*. See WELCH.

As the *Roman* Empire, extending it ſelf towards the *Weſtern* Parts of *Europe*, came to take in *Gaul* and *Britain*; the *Roman* Tongue became propagated therewith; all the Edicts, &c. relating to the publick Affairs, being deſignedly wrote in that Language.

The *Latin*, however, 'tis certain, never got ſo much Ground, or prevail'd ſo far in *England*, as in *Lombardy*, *Spain*, and the *Gauls*; partly on Account of its great Diſtance from *Rome*, and the ſmall Reſort of *Romans* hither; and partly, for that the entire Reduction of the Kingdom was not effected, till ſo late as the Empire of *Claudius*, when the Empire was on the declining Hand; and the new Province was forced to be ſoon deſerted by its Conquerors, call'd to defend their Territories nearer Home. See LATIN.

Britain thus left naked, became an eaſy Prey to the *Angli*, or, *Anglo Saxons*, a ſtrolling Nation from *Jutland* and *Norway*, who took an eaſy Poſſeſſion thereof; much about the Time that the *Franks*, another *German* Nation, enter'd *Gaul*. The *Gauls* and *Franks*, it ſeems, at length, came to Terms; found Means to unite into one Nation: And thus the antient *Gauliſh*, with its Mixture of *Latin*, continued the prevailing Tongue, only further intermix'd with *Francia*, or *Lingua Franca*, of their new Inmates: But the *Britains* were more conſtant, and determined abſolutely to refuſe any ſuch Coalition; they had embraced Chriſtianity, and their Competitors were Heathens: Rather than admit of ſuch an Union, therefore, they choſe to be ſhut up, with their Language, in the mountainous Parts of *Cambria*, or *Wales*.

The *Engliſh Saxons* thus left abſolute Lords, changed every Thing; their own Language was now fully eſtabliſh'd, and the very Name of the Country was henceforth to be *Anglo Saxon*.

The new Language remain'd, in good meaſure, pure and unmix'd till the *Norman* Invaſion: The Attempts of the *Danes*, and the Neighbourhood of the *Britains*, indeed wrought ſome leſſer Innovations therein; but, in the main, it preſerv'd it ſelf; for, as to the *Danes*, their Language was not much different therefrom. *Edward*

the

the Confeſſor, however, who had lived long in *France*, might, poſſibly, bring in a little Mixture of the Dialect of that Country.

But *William* I, and his *Normans*, having got Poſſeſſion of *England*, an Alteration was ſoon attempted: The Conqueſt was not compleat, unleſs the Conqueror's Language, the *French*, or *Franco Gallic*, were introduced; and accordingly all his Acts, Diploma's, Edicts, Pleadings, and other Judicial Matters, were written, *&c.* in that Tongue. See FRENCH.

But his Attempts prov'd unſucceſsful; the Number of *Normans* he brought over, being very ſmall, in compariſon of the *Engliſh* with whom they were incorporated, they loſt or forgot their own Language, ſooner than they could make any Change in the *Engliſh*. This, however, did not hinder, but by the Endeavours of the Conqueror, Abundance of *French* Words, tho' many of them of *Latin* Original, crept into the *Engliſh*: And many *Engliſh* Words by degrees grew out of Uſe.

Hence, as to the Origin and Etymology of many of our Words, Dr. *Wallis* lays it down, that ſuch Words of *German* Original as we have in common with the *French*, are to be reckoned on as our own, rather than borrowed from them; and that the old *Gauliſh* Words, common to the *French* and the *Welch*, which are found in our Language, have been likewiſe taken from the *Welch* rather the *French*. See ETYMOLOGY.

Hence, alſo, the ſame Author accounts, why the Names of the divers Sorts of Cattle are *Saxon*, as Ox, Cow, Calf, Sheep, Hog, Boar, Deer, *&c.* And yet that their Fleſh, when prepared for Food, is *French*; as Beef, Veal, Mutton, Pork, Brawn, Veniſon, *&c.* The *Norman* Soldiers, forſooth, not concerning themſelves with Paſtures, Parks, and the like Places, where ſuch Creatures are fed and kept; ſo much as with Markets, Kitchins, Feaſts, and Entertainments, where the Food was either prepared, ſold, or eaten.

Under *Henry* II. Dr. *Swift* obſerves, the *French* made a ſtill greater Progreſs; by reaſon of the large Territories he poſſeſſed on that Continent, both from his Father and his Wife, which occaſioned frequent Journies thither, with numerous Retinues, *&c.* And for ſome Centuries after, there was a conſtant Intercourſe between *France* and *England*, by the Dominions we poſſeſs'd there, and the Conqueſts we made; ſo that the Language, two or three hundred Years ago, ſeems to have had more *French* than at preſent.

Beſides this Alteration from the Conquerors, the Language, in Proceſs of Time, underwent divers others; and came to have numerous Words and Phraſes of foreign Dialects, ingrafted into it; in lieu whereof the antient *Saxon* ones gave Way: particularly by means of Negotiations, and Commerce with other Nations; by the Marriages of Royal Families; by the Affectation of many Writers in moſt Ages, who are fond of coining new Words and altering the uſual Forms of Speech, for the greater Delicacy; and by the Neceſſity of framing or borrowing new Words, according as new Things and Inventions turn up. And by ſuch Means was the old *Anglo Saxon* converted into the preſent *Engliſh* Tongue.

Having traced the Riſe and Progreſs of our Language hiſtorically; we think it may be no uncurious Amuſement o repreſent, by actual Examples, the ſeveral ſucceſſive Changes and Stages it has paſs'd thro', to arrive at its preſent Perfection: In order to which we ſhall make Uſe of the Collections of the ingenious Mr. *Greenwood*.

From the *Saxon* Invaſion in 440, we have no Memorial extant of the Language for 250 Years: The oldeſt *Saxon* Writing extant, is a Gloſs on the Evangeliſts, written in the Year 700, by *Eadfride* Biſhop of *Holy Iſland*: In which the three firſt Articles of the Lord's Prayer run thus.

‘ Uren Fader thic arth in Heofnas, ſic gehalgud
Our Father who art in Heaven, be hallowed
‘ thin Noma, ſo cymeth thin Ric. Sic thin Willa
thy Name, come thy Kingdom, be thy Will
‘ ſue is Heofnas, and in Eortho, *&c.*
ſo as in Heaven, and in Earth.

200 Years after, in the Year 900, the ſame was render'd thus:

‘ Thu ure Fader the Eart on Heofenum, ſi thin Nama
‘ gehalgod Cume, thin Rice, ſi thin Willa on Eorthen
‘ ſwa, ſwa on Heofenum.

In the following Age it was turn'd thus in the *Saxon* Homilies, ſaid to be tranſlated by King *Alfred*.

‘ Fæder ure thu the Earth on Heofenum, ſi thin
‘ nama Gehalgod to be come thin Rice, Gewurthe
‘ thin willa on Eorthan ſwa ſwa on Heofnum, *&c.*

About the Year 1160, under *Henry* II. it was thus render'd by Pope *Adrian*, an *Engliſhman*, in Rhime.

‘ Ure fadyr in Heaven rich,
‘ Thy Name be halyed every lich,
‘ Thou bring us thy michell bliſſe:
‘ Als hit in Heaven y-doe
‘ Evar in Yearth be it alſo, *&c.*

About 100 Years after, in the Time of *Henry* III. it was turn'd thus:

‘ Fadir that art in Heaven bliſſe,
‘ Thin Helge nam it wurth the bliſs,
‘ Cumen & mot thy Kingdom,
‘ Thin Holy Will be it all don
‘ In Heaven and in Erdh alſo, *&c.*

200 Years after, under *Henry* VI. it was render'd thus:

‘ Our Fadir that art in Hevenes, halewid be thi
‘ Name, thi Kingdom come to thee, be thi Will done
‘ in Eerthe, as in Hevene ----

An extraordinary Specimen of the *Engliſh*, as ſpoke in the Year 1385, Dr. *Hicks* furniſhes us withal, in his *Theſaur. Liter. Septen.* which we ſhall the rather entertain the Reader withal, as it is on this very Subject the *Engliſh* Tongue, and contains not only the Hiſtory, but the Reaſons, of the Changes and Differences therein.

‘ As it is knowe how meny maner people beeth in this ‘ Lond; there beeth alſo ſo many dyvers Longages and ‘ Tonges. Notheles *Walſche* Men and *Scots* that beeth ‘ nought medled with other Nations, holdeth wel nyh hir ‘ firſte Longage and Speche; but yif the *Scottes* that ‘ were ſometime confederat and woned with the *Pictes* ‘ drawe ſomewhat after hir Speche; but the *Flemynges* ‘ that woneth in the *Weſte* Side of *Wales*, haveth left her ‘ ſtrange Spech, and ſpeketh Sexonliche now. Alſo *Engliſhe* Men, they had from the bygynnynge thre maner ‘ Speche: Northerne, Sowtherne, and middel Speche in ‘ the middel of the Londe, as they come of three maner ‘ of Peple of *Germania*: Notheles by Commyxtion and ‘ mellynge firſt with *Danes*, and afterwards with *Normans*, in meny the contrary Longage is apayred [corrupted]. This appayrynge of the burthe of the Tunge ‘ is becauſe of tweie Thynges, oon is for Children in ‘ Scole agenſt the Uſage and Maner of all other Nations, ‘ beeth compelled for to leve hire own Longage, and for ‘ to conſtrue hir Leſſons and here Things in *French*, and ‘ ſo they haveth ſethe *Normans* come firſt into *Engelond*. ‘ Alſo Gentlemen Children beeth taught to ſpeke *Frenſche* ‘ from the Tyme that they beeth rokked in here Cradel, ‘ and kunneth ſpeke and play with a Childes Broche; ‘ and uplondiſsche Men will likne himſelf to Gentilmen, ‘ and fondeth with great Beſyneſſe for to ſpeake *Frenſche* ‘ to be told of. ----- Hit ſeemeth a greet Wonder how ‘ *Engliſche* Men and her own Longage and Tonge, is ſo ‘ dyverſe of Sown in this oon Ilond; and the Langage ‘ of *Normandie* is comlynge of another Land, and hath ‘ oon manner ſoun amonge alle Men that ſpeketh hit ‘ arigt in *Engelond*. ---- Alſo of the foreſaid *Saxon* Tonge ‘ that is deled [divided] a three, and is abide ſcarceliche ‘ with fewe uplondiſsche Men is greet Wonder. For Men ‘ of the *Eſt*, with Men of the *Weſt*, is, as it were, under ‘ the ſame Partie of Hevene acordeth more in ſownynge ‘ of Speche, than Men of the *North*, with Men of the ‘ *South*. Therefore it is that *Mercii*, that beeth Men of ‘ myddel *Engelond*, as it were Parteners of the Endes, ‘ underſtondeth bettre the Side Longages *Northerne* and ‘ *Southerne*, than *Northerne* or *Southerne* underſtondeth ‘ either other. ---- All the Longage of the *Northumbers*, ‘ and ſpecialliche at *York*, is ſo ſcharp, ſlitting and ‘ frotynge, and unſchape, that we *Southerne* Men may that ‘ Langage unnethe underſtonde. I trow that that is by ‘ cauſe that they beeth nyh to ſtrange Men and Nations, ‘ that ſpeketh ſtrongliche, and alſo bycauſe that the ‘ Kinges of *Engelond* wonneth alwey fer from that Cuntry, *&c.*

How the *Engliſh* ſtood about the Year 1400, may be ſeen in *Chaucer*, who refined and improved it very conſiderably; tho' he is charged with the Affectation of mixing too many *French*, and *Latin* Words with his *Engliſh*, and by that Means altering and corrupting the primitive Language.

In the Year 1537, the Lord's Prayer was printed according to the following Verſion:

‘ O Oure Father which arte in Heven, halowed be thy
‘ Name: Let thy Kingdome come, thy Will be fulfiled
‘ as well in Erth as it is in Heven, *&c.*

Where the Reader will obſerve the Diction almoſt brought to the preſent Standard; the Variations being principally in the Orthography.

Spencer, who lived in the ſame Age, contributed not a little to the Improvement and refining of the Tongue: He threw aſide Abundance of the outlandiſh Ornaments, and wrote a purer *Engliſh*, yet with more Elegance and Variety, than had been known before. He was ſucceeded in order, by *Shakeſpear*, *Ben. Johnſon*, Lord *Bacon*, *Milton*, *Cowley*, *Waller*, *Tillotſon*, and *Dryden*, whoſe Works are in every body's Hands; by whom the Language has been tranſmitted to us under all its preſent Advantages.

The Perfections aſcribed to the *Engliſh*, and that in a degree ſuperior to any of the other Modern Tongues, are,

1°. That it is Strong and *ſignificant:* to which our finely compounded Words, form'd on the Model of the *Greeks*, do not a little contribute.

2°. *Copious:* of which Mr. *Greenwood* gives us Inſtances in the Word *Striking:* which we have above 30 different, ſynonomous Expreſſions for; as, to ſmite, bang, beat, baſt, buffet, cuff, hit, thump, thwack, ſlap, rap, tap, kick, ſpurn, box, yerke, pummel, punch, *&c.* And the Word *Anger*, for which he enumerates above 40.

So we ſay, *to ſeeth* or *boil* Fleſh, *ſtew* Prunes, *poche* Eggs, *coddle* Apples, *bake* Bread; for which Expreſſions to ſeeth, ſtew, poche, coddle, and bake, the *Latins*, with all the boaſted *Copia* of the Tongue, have only one Word, *coquere*; and the *French*, as much as they abound with Terms of Cookery, not many more; the Word *Cuire*, ſerving indifferently for ſeething, boiling, baking, ſtewing and codling.

3°. Muſical and *harmonious*; in which Reſpect Mr. *Dennis* makes no Scruple to aſſert it ſuperior even to the *French*. This, which ſome may think ſtrange, he proves hence, that we have blank Verſe which is harmonious by mere Force of Numbers, and Quantity; whereas the *French* have long ago deſiſted from all Pretenſions to poetical Numbers, without the Aſſiſtance of Rhime. See QUANTITY, NUMBERS, *&c.*

It may be added on this laſt Head, from Mr. *Welſtead*, that the *Engliſh* has many Meaſures, the *Jambic* and *Trochee* for Inſtance, in common with the *Greek* and *Latin*; an Advantage ariſing from the Variation of the Accent. And that Rhime is peculiarly natural to it, varying it ſelf to the Ear with exceſſive Sweatneſs; not to mention the Cæſuras, Pauſes, Tranſpoſitions, and numberleſs other Graces, which the *Engliſh* Verſification is capable of, beyond any other living Language. See RHIME, *&c.*

Some object to the *Engliſh*, its conſiſting too much of Monoſyllables; which others make a Piece of Merit, as it argues the greater *Antiquity*, if what *Salmaſius* ſays be true: *Certum quippe eſt, linguas omnes quæ monoſyllabis conſtant cæteris eſſe antiquiores*; adding, that the *antient* Greek *abounded herein, as appears from the antient Poets, and ſuch as affected Antiquity. De Re Helleniſt.* But we have a further Advantage from our Monoſyllables; *viz. Conciſeneſs*, we being hereby enabled to expreſs more Matter in the ſame Compaſs of Letters, than any other Modern Tongue. The only Thing we ſuffer by it, is, ſomething in Point of Softneſs and Numbers; and yet we have Verſes compoſed wholly of Monoſyllables, that do not want Harmony; as that of *Creech* "Nor could the World have born ſo fierce a Flame." See MONOSYLLABLE.

Some of our later, and politer Writers, however, find wherewithal to find Fault in our Language: It ſeems it does not come up to the Softneſs, the Delicacy of the more *Southern* Languages, *France*, *Spain*, and *Italy*. It retains ſomewhat of the *Gothic* Roughneſs, of the People who framed, and introduced it; the Soil and the Climate it was planted in, not tending much to mellow and refine it.

To this Purpoſe does Dr. *Swift* talk, who accounts for the Thing hence, that the *Latin* Tongue was never in its Purity in our Iſland; and beſide, ſuch as it was, was call'd away ere it could have Time to incorporate with the Language of the Country, and ſubdue, and ſoften it: as it did in the other Provinces of *France* and *Spain*, &c. But it is to be obſerved, that, upon the whole, this, ſuppoſing it true, does not fall as an Objection againſt the Language, but the People: Our Manners are alſo leſs poliſh'd, than ſome of our Neighbours; we are not yet arrived, and may we never hereafter arrive, at that Pitch of Molleſſe, of Delicateſſe, of Soupleſſe, which we cenſure in them; and 'tis but juſt our Language correſpond with the reſt of our Character. We have ſomewhat more of the rough Virtues of human Nature unſubdued, unpoliſh'd away by Art; and when theſe are gone, we may talk as ſoftly, and as prettily, as the Diſſolute, Enervate, [Effeminate, I would have ſaid, but for the *Catachreſis*] Nations on the other Side the *Alps*, where you ſee Politeneſs in its Perfection.

But the Revd. Doctor ventures further: 'Our Language, "he affirms," is extremely imperfect; its Improvements in 'no proportion to its Corruptions; and in many Inſtances 'it offends againſt every Part of Grammar." What this ingenious Author means by offending againſt Grammar, we don't apprehend: Is it, that the *Engliſh* Tongue offends againſt the Grammar of the ſame Tongue? That were abſurd: A Language is not to be judg'd of and regulated, by any pre-conceiv'd Forms or Rules of Grammar, but the Grammar to be taken from the Language: 'Tis the Language directs the Grammar, not *vice verſa*; So that if there be any Diſagreement between them, the Fault muſt be charged on the Grammar, which is ſo far deficient. Does he mean, that it offends againſt the Grammar of the *Latin*, or *Greek*? That may well be, without any Fault; for the Grammars of all Languages widely differ.

Mr. *Welſtead* is fully of Opinion, that the *Engliſh* Language is not capable of a much greater Perfection, than it has already attain'd: We have trafficked, he obſerves, with every Country for the enriching it: The Ancients and Moderns have both contributed to the giving it Splendor and Magnificence; the faireſt Scyons that could be had from the Gardens of *France* and *Italy*, have been grafted on our old Stocks, to refine the Savageneſs of the Breed; we have laid aſide moſt of our harſh, antique Words, and retain'd few but thoſe of good Sound and Energy: The moſt beautiful Poliſh is at length given our Tongue that it will bear, without deſtroying, and altering the very Baſis and Ground-work of it: Its *Teutonick* Ruſt is worn away; and little or nothing is wanting, either of Copiouſneſs, or Harmony. He goes on to argue the Maturity and Perfection of the *Engliſh*, from another very extrinſic Principle; *viz.* By comparing the Time, and Circumſtances of the Improvements, made ſince the firſt Refiners of it; with thoſe of the *Greek*, *Latin*, *French*, and other Tongues, that confeſſedly have riſen to their Height.

Every civilized Nation, that applauded Author thinks, has its Claſſical Age; and he ſuggeſts, that the *Engliſh* are not far from it. So that what remains to be done for the *Engliſh* Tongue, ſhould not be to advance, but to fix it where it is, and prevent its Declining. There is in Effect, a Point of Perfection, which when a Language has once arrived at, it cannot exceed, tho' it may degenerate from it; and thus it happen'd to the two fineſt Languages the World has known.

It may ſeem odd to talk, with Dr. *Swift*, of fixing ſo unſtable a Thing as Language: The *Greek* Liturgies of St. *Baſil*, and St. *Chryſoſtom*, ſtill uſed in that Church, the one for Solemn, the other for Common Days, have been a long Time unintelligible to the People: So much is the vulgar *Greek* degenerated from its original Purity. *Polybius* teſtifies, that the Articles of Truce between the *Romans* and *Carthaginians*, cou'd ſcarce be underſtood by the moſt learned *Roman* Antiquaries, 350 Years after the Time of their Making. In Effect, from the Days of *Romulus*, to thoſe of *Julius Cæſar*, the *Latin* was perpetually changing; and what was wrote three hundred Years before *Tully*, was as unintelligible in his Time, as the *Engliſh* and *French* of the ſame Period are now: And theſe two have changed as much ſince *William the Conqueror*, in about 700 Years, as the *Latin* appears to have done in the like Term.

Whether our Language will decline as faſt as the *Roman* did, may admit of ſome Debate; there being many Circumſtances in the Affairs of the Nation, which contributed to that Corruption, that may not, in all Probability, find Place among us. The *French*, for theſe 50 Years paſt, has been poliſhing as much as it will bear; and appears to be now declining, by the natural Inconſtancy of that People, and the Affectation of ſome late Authors, to introduce Cant Words, which is the moſt ruinous Corruption in any Language. But without ſome ſuch Conſideration, there does not ſeem any abſolute Neceſſity, why a Language ſhou'd be perpetually changing.

We find Examples to the contrary: From *Homer* to *Plutarch*, are above a thouſand Years; and ſo long, at leaſt, Dr. *Swift* thinks, we may allow the Purity of the *Greek:* The *Grecians* ſpread their Colonies round all the Coaſts and Iſlands of *Aſia minor*, and the *Egean* Sea, where the Language was preſerv'd entire for many Ages after they themſelves became Colonies to *Rome*, and were over-run by the barbarous Nations. The *Chineſe* have Books in their Language above 2000 Years old; neither have the frequent Conqueſts of the *Tartars* been able to alter it. And the *German*, *Spaniſh*, and *Italian*, have admitted few or no Changes for ſome Ages paſt.

On

On ſuch Conſiderations, that Author, with the conſpiring Wiſhes of Numbers of others, moved the then prime Miniſter, the Earl of *Oxford*, to eſtabliſh a Society, or Academy, for the ſettling, and aſcertaining, the Purity of our Tongue; to ſet a Mark on the Improprieties which Cuſtom has made familiar, to throw out vitious Phraſes and Words, to correct others, and perhaps retrieve ſome others now grown obſolete, and to adjuſt the Orthography, Pointing, *&c.* See ACADEMY.

Without ſome ſuch Means, he complains, that the Fame any Writer can expect will be ſo ſhort and ſcanty, as by no Means to be a ſufficient Motive to call forth, and engage a Man to exert his Genius. Our Language is chiefly confined to theſe two Iſlands; and it is hard our Authors Fame ſhould be limited in Time as well as Place. Were it not for the Bible and Common-Prayer, we ſhould hardly have been able to underſtand any Thing written a hundred Years ago.

'Tis a melancholy Reflection, that *Petrarch* ſtill ſpeaks good *Italian*; whereas *Chaucer*, who lived an hundred Year later, is not to be underſtood without a *Saxon* and *French* Gloſſary. And what Security has *Dryden* himſelf, while Things continue on their preſent Footing, that he ſhall not in a like Space of Time become as obſolete as *Chaucer* is?

Grammars, and Dictionaries, with whatever Care and Judgment they are compoſed, will prove but a feeble Stay to a fleeting Language, unleſs they have ſome extraordinary Sanction, and Authority. And what is to be lamented, ſuch Writings have contributed to the Corruption almoſt as much as the Perfection of our Tongue. See GRAMMAR and DICTIONARY.

Dr. *Gill*, *Ben Johnſon*, and *Hexham*, 'tis certain, by forcing the *Engliſh* Tongue to the *Latin* Method, have clog'd, and perplex'd it with Abundance of uſeleſs Precepts concerning Caſes, Genders, and Declenſions of Nouns, Tenſes, Moods and Conjugations of Verbs, and other Things which our Language has nothing to do withal. Nor have even Dr. *Wallis*, *Greenwood*, &c. tho' ſenſible of the Fault in thoſe others, been able wholly to keep clear of it themſelves. See CASE, GENDER, NUMBER, *&c.*

ENGLISH { *Names*, / *Mony*, &c. } See { NAME. / MONY, *&c.*

ENGONASIS, in Aſtronomy, *Hercules*; one of the Northern Conſtellations. See HERCULES.

ENGRAFTING, GRAFTING, or GRAFFING, in Agriculture and Gardening, the Art, or Act, of inſerting, or fixing, a Cyon, Shoot, or Bud, of one Tree, in the Stock of another; in order to correct and improve its Fruit. See FRUIT-*Tree*.

Or it is the Art of applying a *Graft*, or Shoot, of one Plant, to the Stock of another; in ſuch Manner, as that the Sap paſſing freely thro' both, the Tree *grafted* on may produce the ſame Kind of Fruit with that whence the *Graft* is taken. See GRAFT.

Engrafting only differs from *Inoculation*, in that the latter is perform'd when the Sap is at the higheſt, in Summer; and the former e're it riſes, at leaſt, in any Quantity. See INOCULATION.

Engrafting is one of the principal Operations in Gardening, and that whereon the Goodneſs of the Fruit greatly depends. See GARDEN.

'Tis very extraordinary that the Seeds, or Kirnels, or Stones of a Fruit, as an Apple, Pear, Peach, Plumb, Cherry, *&c.* being ſown, degenerate in the Ground; ſo, that the Tree ariſing from it is of another Kind, a Sort of wilding, harſher, ſourer and coarſer than that of the Parent Tree. To correct this, Trees thus rear'd, muſt be *grafted* from other better Kinds. See SEMINARY, ORCHARD, NURSERY, *&c.*

Apples are commonly rais'd by *Engrafting* the intended Kinds on Crab Stocks, procured by ſowing the Kirnels: So are *Pears*, procured by *grafting* on the wild Pear Stock: Tho' for Dwarf, or Wall Trees, they generally chuſe to *Engraft* on the Quince Stock. See DWARF, *&c.*

They will alſo do if *grafted* on the white Thorn. *Peaches* are produced by *graffing* on an Almond or Plum-Stock. Indeed, in this Fruit, it ſometimes happens that the Stone ſown, produces better Fruit than that from which it was taken: But this is not common; beſide that the Tree in ſuch Caſe, is long e're it comes to bear. *Plums* are rais'd by *Engrafting* on a Damſon, or wild Plum-Stock: And *Cherries*, on the Black-Cherry, or Merry Stock, rais'd from Stones.

Our beſt Gardeners, likewiſe, *Engraft* their leſs kindly Trees ſtom other better of the ſame Sort, to mend them; as, alſo, the ſmaller and ſingle Flowers, as Gilliflowers, *&c.* from the larger and finer. *To produce Stocks for Engrafting on.* See STOCK.

The Curious furniſh us with other extraordinary and anomolous Inſtances of *Engrafting*: As of Apples on Plane, Elder, Thorn, Cabbage-Stalk, *&c.* and the like of Pears, *&c.* Pears on Apple Trees, on Elms, *&c.* Cherries on the Lawrel; Coral Berries on the Plum: Beech on the Cheſſnut, Oak on the Elm, Gooſeberry on the Currant, the Vine on the Cherry Tree, *&c.*

Inſeritur Lauro Ceraſus, *partuque Coacto*
Tingit adoptivus virginis Ora pudor. Auſonius.

Even *Daphne*'s Coyneſs thou doſt mock,
And *weds* the *Cherry* to her Stock. *Cowley* to Mr. *Evelyn.*

——— *Mutatamque* inſita mala
Ferre Pyrum, *&* Prunis *lapidoſa rubeſcere* Corna.
Virgil Geor. Lib. II.

——— *Steriles* Platani, Malos *geſſere Valenteis*;
Caſtaneæ, fagos; Ormuſque *incanuit albo*
Flore Pyri; Glandemque *Sues fregere ſub ulmis.* Id. ibid.

The Origin, and Invention of *Engrafting*, is differently related by Naturaliſts: *Theophraſtus* tells us, that a Bird having ſwallow'd a Fruit whole, caſt it forth into a Cleft, or Cavity, of a rotten Tree; where mixing with ſome of the putrified Parts of the Wood, and being waſh'd with the Rains, it budded, and produced within this Tree, another Tree of a different Kind. This lead the Husbandman to certain Reflections, from which, ſoon afterwards, aroſe the Art of *Engrafting*.

Pliny ſets the Thing in a different Light: A Countryman having a Mind to make a Paliſſade in his Grounds; that it might endure the longer, he bethought himſelf to fill up, and ſtrengthen the Bottom of the Paliſſade by running, or wattling it with the Trunks of Ivy. The Effect of this was, that the Stakes of the Paliſſades taking Root, became *Engrafted* into the Trunks, and produced large Trees; which ſuggeſted to the Husbandman the Art of *Engrafting*.

The Reaſon, or Philoſophy, of *Engrafting*, is ſomewhat obſcure; and had not Hazard given the firſt Hint, all our Knowledge of Nature would never have led us to it. The Effect is ordinarily attributed to the Diverſity of the Pores, or Ducts, of the *Graft*, from thoſe of the Stock, which change the Figure of the Particles of the Juices in paſſing thro' them to the reſt of the Tree.

Mr. *Bradley*, on Occaſion of ſome Obſervations of *Agricola*, ſuggeſts ſomething new on this Head: The Stock *grafted* on, he thinks, is only to be conſider'd as a Fund of vegetable Matter, which is to be filter'd thro' the Cyon, and digeſted, and brought to Maturity, as the Time of Growth in the Veſſels of the Cyon directs. A Cyon, therefore, of one Kind, *grafted* on a Tree of another, may be rather ſaid to take Root in the Tree 'tis *grafted* in, than to unite it ſelf with it: For it is viſible that the Cyon preſerves its natural Purity and Intent, tho' it be fed and nouriſh'd with a mere Crab; which is, without doubt, occaſion'd by the Difference of the Veſſels in the Cyon from thoſe of the Stock: So that *Grafting* may be juſtly compared to Planting.

In Proſecution of this View of that ingenious Author, we add, that the natural Juices of the Earth, by their Secretion and Comminution, in paſſing thro' the Roots, *&c.* e're they arrive at the Cyon, muſt doubtleſs arrive there half elaborated and concocted; and ſo diſpoſed for a more eaſy, plentiful, and perfect Aſſimulation and Nutrition; whence the Cyon muſt neceſſarily grow and thrive better and faſter than if it were put immediately in the Ground, there to live on coarſe Diet and harder of Digeſtion: And the Fruit produced, by this further Preparation in the Cyon, muſt be finer and further exalted, than if fed immediately from the more imperfectly prepared and alter'd Juices of the Stock.

The Cyon, to ſay no more, is ſomewhat in the Condition of the *Fœtus in Utero*, fed from the Mother's Blood: At leaſt, 'tis in that of the Infant after Excluſion, fed with the Mother's Milk.

The Methods, or Kinds of *Engrafting* are various; as *Grafting in the Cleft*, *Grafting in the Rind*, *Whip-Grafting*, *Grafting* by Approach, *Scutcheon Grafting*, *Root Grafting*, *Re-iterated Grafting*, *Grafting on Branches*, &c.

The Apparatus, or Inſtruments uſed herein, are Saws to cut off the Head of Stocks; Knives to make Clefts; a Chiſſel to pare away the Wood; Clay, mix'd with Horſe-Dung, to prevent freezing, and with Tanners Hair to prevent cracking; Baſs Strings, or Woollen Yarn, to tie the *Grafts* with, and *Grafting* Wax. See WAX.

GRAFTING, *in the Cleft*, or *Stock*, call'd alſo *Slit*-GRAFTING, is the moſt antient, and ordinary Way. We have a very beautiful Deſcription of it in *Virgil*, II. *Georg. v.* 78. it is chiefly uſed for middle ſized Stocks, from one to two Inches Diameter. Its Seaſon is the Months of *January*, *Febru-*

February, and *March*. The Method, as now practiſed, is thus:

The Head of the Stock being ſawn, or cut off, ſmooth and clean; a perpendicular Cleft is made therein, nearly two Inches deep, with a ſtrong Knife, or Chiſſel, as near the Pith as may be to miſs it. In this Cleft, the *grafting* Chiſſel, or Wedge, is put to keep it open. The *Graft*, or Cyon, is prepared by cutting it a-ſlope, in Form of a Wedge, to ſuit the Cleft, only leaving a ſmall Shoulder on each Side: And, when cut, is to be placed exactly in the Cleft, ſo, as that the inner Bark of the Cyon may aptly, and cloſely, joyn to the inner Part of the Bark, or Rind of the Stock; in the dexterous Performance of which, the chief Secret conſiſts. If the Cleft pinch too tight, a ſmall Wedge may be left in it to bear the Streſs. And, laſtly, the Cleft is cover'd over with Clay: Or rather, as M. *Gentil* adviſes, with Moſs, or the freſh Bark of a Tree bound on with *Oſier*.

The Reader, who would have this in more elegant Terms, may be furniſh'd from *Virgil*.

Aut rurſum Enodes Trunci reſecantur, & alte
Finditur in ſolidum Cuneis via: deinde feraces
Plantæ Immittuntur: nec longum Tempus, & Ingens
Exiit ad Cœlum ramis felicibus Arbos,
Miraturque novas frondeis, & non ſua poma.

GRAFTING *in the Rind*, or *Shoulder*-GRAFTING, called alſo *Slicing* and *Packing*; is practiſed in the latter End of *April*, or Beginning of *May*. The Method is as follows:

The Top of the Stock is cut off in a ſmooth, ſtraight Place: Then the Cyon, or *Graft*, is prepared by cutting it on one Side from the Joynt, or Seam down ſlopewiſe, making the Slope about an Inch long; and obſerving its Bent, that ſo, when the Cyon is fixed to the Stock, it may ſtand nearly upright. At the Top of the Slope, they make a *Shoulder*, whereby it is to reſt on the Stop of the Stock. The whole Slope to be plain and ſmooth, that it may lie even to the Side of the Stock. As to the Length of the Cyon, for a Standard Tree, it may lie about four Inches from the Shoulder; but for a Dwarf, or Wall Tree, ſix Inches. The Cyon prepared; the outſide is applied to the Weſt, or South Weſt Side of the Stock, and its Length and Breadth meaſured thereon; which done, the Bark of the Stock is cut away to thoſe Dimenſions, that the cut Part of the Cyon may fit it. Wherein, Regard is to be had to the Bigneſs of the Stock, and the Thickneſs of the Bark, to proportion the length and breadth of the Chip thereto; otherwiſe the Paſſages of the Juice in the Stock and Cyon will not meet. Laſtly, laying the Cut-Part of the Cyon on that of the Stock, they bind them together with Woollen Yarn, and cover the whole with Clay an Inch above, and as far below the Stocks Head: Working it round the Cyon, till it become ſharp at Top, that the Rain may run down it.

This Method has ſeveral Advantages beyond the former: As that the Wound heals up ſooner; and that, in the mean Time, it is in leſs Danger from the Weather; that it does leſs Injury to the Stocks and *Grafts*, as avoiding thoſe ſevere Splittings and Pinchings: That the Bark is more eaſily placed in the Paſſage of the Sap here, than in the Cleft: That the *Graft* thrives and ſhoots with greater Vigour, and bears ſooner in this Way than in that: And that it is practicable on ſmaller Stocks than the other, which muſt have a good Body, and Conſiſtence, e're they can bear Cleaving.

GRAFTING *in the Bark*, is perform'd thus:

Prepare the Stock, and Cyon, as in *Grafting in the Rind*; but, inſtead of cutting the *Bark* of the Stock, ſlit the ſame on the South Weſt Side, from the Top, almoſt as long as the ſloap'd Part of the Cyon; and at the Top of the Slit looſen the *Bark*, with the Top of your Knife. Thruſt your Inſtrument, made of Ivory, Silver, or the like, and form'd at the End like the ſlope End of the Cyon but much leſs, down, between the *Bark* and Wood, to make Room for the Cyon; which being put in the *Bark*, is to be ſo managed, as that it may fall cloſe to the Stock, and Edges of the Cyon.

GRAFTING *by Approach*, call'd alſo *Inarching*, and *Ablactation*. See the Method thereof under the Article ABLACTATION.

Whip-GRAFTING, or *Tongue*-GRAFTING, is a Sort of *Grafting* in the Rind, proper for ſmall Stocks, from an Inch Diameter to a Quarter of an Inch. Mr. *London* ſpeaks of it as the moſt effectual Way of any, and that moſt in Uſe.

In this, the Stock and Cyon are to be of the ſame Bigneſs. The Cyon to be ſlop'd off a full Inch, or more; and the like to be done to the Stock; and ſo the one to be tied to the other. Otherwiſe, the Top of the Stock being cut off, a Shoulder is to be made in the *Graft*: And the reſt to be performed as already ſhewn under *Grafting in the Rind*.

This Method is alſo improved by what they call *tipping*, or *tonguing*; which is, the making a Slit with a Knife in the bare Part of the Stock, downwards; and the like in the ſloped Face of the Cyon, upwards: And then, joyning them, by thruſting one Slice into the other, till the bare Place of the Cyon cover that of the Stock.

Side-GRAFTING. In this, the Cyon is prepared as in *Whip-Grafting*, but the Head of the Stock is not cut off. Only, from a ſmooth Part on the Weſt Side, ſo much of the Bark is pared off as the Cyon will cover; then ſlitting both Cyon and Stock, as in the laſt Article, they bind the two together, and cloſe them up with Clay. At the Year's End, the Top of the Stock is cut off at the *grafted* Place, ſlopewiſe, and the Place cover'd with Clay.

Scutcheon-GRAFTING, is another Method of *Grafting in the Rind*, practiſed in *June*, *July* and *Auguſt*; when the Bark will not part from the Stock. 'Tis perform'd, by ſlitting the Bark of the Stock in Form of the Capital Letter T, looſening it with the Point of a Knife, and clapping in a Cyon, prepared as above. See SCUTCHEON.

Crown-GRAFTING, is when four or more *Grafts*, are placed round the Stock, between the Bark and the Rind, ſomewhat in the Manner of a *Crown*. This is only practiſed in the larger Trees, which are capable of receiving a Number of *Grafts*, and are too big to be cloven. The Method is in all Reſpects the ſame as that already deliver'd for *Grafting in the Rind*.

Root-GRAFTING, is a modern Invention, treated on at large by *Agricola*: Its Intention is ſomewhat different from the former, being for the Propagation, or Multiplication of Plants.

To perform this, take a *Graft*, or Sprig of a young Tree, which you intend to propagate; and a ſmall Piece of the Root of another Tree of the ſame Kind, or very like it; or elſe Pieces of Roots cut off of other Trees, in tranſplanting; and *Whip-Graft* them together: Obſerving, that the two But-Ends of the *Graft* and Root be united, and that the Rind of the Root joyn that of the *Graft*. Theſe may, afterwards, be planted out at Pleaſure, and the Piece of Root will draw the Sap, and feed the *Graft*, as the Stock does the other Way.

This Way of Propagation is very eaſy and expeditious; Roots being more plentiful than Stocks: By this Method the Pieces of Roots of one Crab-ſtock, or Apple-ſtock, will ſerve for 20 or 30 Apple *Graffs*, and the like of other Trees. The ſame is an excellent Way for raiſing of tender Trees, that will hardly bear being *grafted* in the Stock. Add, that Trees thus *grafted*, bear ſooner, and are more eaſily dwarfed, than thoſe done any other Way. See DWARF.

Re-iterated GRAFTING, or *Grafting by a double*, or *triple Inciſion*, is another Method mention'd by *Agricola*. To perform this, firſt *graft* a good Cyon on a Stock, and cut it away to one half, or a third Part; then fix another *Graft* to it, of a better Kind; and a third to that: For ſtill, the oftener a Tree is *engrafted*, the finer Fruit it produces.

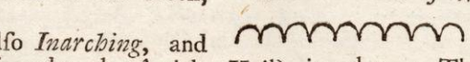
By this Method, that Author aſſures us, he produced Muſcat Pears, that were admirable; making, at firſt, uſe of a Stock *grafted* with a Pound Pear, on which he *grafted* a Summer *Bon Chretien*; and when the Branch of this latter had ſhot, he *grafted* on it a Cyon of *Bergamot*; which he alſo cut, and *grafted* on it a Cyon of a *Muſcat* Pear.

ENGRAFTING *of Branches*, *Agricola* mentions as a very certain and profitable Operation, beſt practiſed on large, full grown, and even old Trees.

To do this, half or more of the Branches muſt be lopp'd off, and *Grafts* of three or four Years old be applied to them; taking Care to have Stakes, or other Things, to ſupport them againſt the Wind, *&c.*

He adds, that by this Method, you will have, perhaps, the ſame Year, at leaſt, the ſecond or third, ſuch a Quantity of Fruit, as the youngeſt and ſoundeſt Tree would hardly produce.

ENGRAFTING *of the Small-Pox*. See INOCULATION.



ENGRAIL'D, or INGRAIL'D, in Heraldry, (from the French *Greſle*, Hail) is when a Thing is repreſented with its Edges ragged, or with half rounds ſtruck thereon, as if broke by ſomething falling on it; as in the adjoyning Figure.

It differs from *Indented*, in that the Breaches there are all in ſtrait Lines; but here Semi-circular: And from *Invected*, in that the Points of the little Arches are turn'd inwards towards the middle of the Field; which in *Invected*, are turn'd outwards. See INDENTED and INVECTED.

Spelman calls it in Latin *Imbricatus*, others *Ingrediatus*, and others *Striatus*.

EN-

ENGRAVING, or GRAVING, the Art, or Act of cutting Metals and precious Stones, and repreſenting Figures, Letters, and other Matters thereon.

The Word is a Compound of the Prepoſition *in*, and the *Greek* γεάφω, *I write*. Tho' *Menage*, after *Salmaſius*, derives it from *cavare*, to hollow; others from the *Latin*, *graphiare*; and others from the *German*, *graben*, q. d. *Effodere*, to dig out. In *Latin* it is called *Sculptura* and *Cœlatura*.

Engraving is properly a Branch of Sculpture; tho', with us, it generally ſtands contra-diſtinguiſhed from Sculpture; As the latter, popularly call'd *Carving*, expreſſes the forming of Figures, *&c.* Emboſs'd, or in Relievo; and the latter, thoſe indented, or *in Creux*. See RELIEVO and CREUX.

Among the *French*, the Term *Engraving*, *Graveure*, is of more Extent. It includes all Sculpture, both that perform'd with the Chiſſel and Knife, on Marbles and Woods, in Relievo; and that in Metals, Stones, *&c.* with the Graver, indented. See SCULPTURE.

Engraving is divided into ſeveral Branches, according to the Matters it is practiſed on, and the Manner of performing it. The Original Way of *Engraving* on Wood is now diſtinguiſhed by the Name of *Cutting in Wood*; that on Metals with *Aqua Fortis*, is called *Etching*; that by the Knife, Burniſher, Punch, and Scraper, *Mezzotinto*; that on Stones, for Tombs, *&c. Carving* or *Stone cutting*; and laſtly, that perform'd with the Graver on Metals, as Copper, Braſs, Steel, Silver, *&c.* as alſo on precious Stones, Cryſtals, *&c.* retain alone the primitive Denomination of *Engraving*. See CUTTING *in Wood*, ETCHING, CARVING, and MEZZO TINTO.

Engraving is an Art, for the greateſt Part, of Modern Invention; having its Riſe no earlier than the *16th* Century. The Antients, 'tis true, practiſed *Engraving* on pretious Stones and Cryſtals, with very good Succeſs; and there are ſtill ſome of their Works remaining, equal to any Production of the later Ages. But the Art of *Engraving* on Plates, or Blocks of Wood, to afford Prints, or Impreſſions, was not known till after the Invention of painting in Oil.

The Diſcovery is aſcribed to *Maſo Finiguerra*, a Goldſmith of *Florence*; who having uſed to take Impreſſions of every thing he cut, in Clay; and to caſt melted Sulphur in this Mould; at length hit on a Way of taking the Impreſſions thereof on Paper, by ſmearing this Figure of Sulphur with Oil and Lamp-black.

The Secret ſoon got Abroad, and coming to the Hands of *Albert Durer* and *Lucas*, they greatly improved it, and began to *Engrave* on Wood and Copper, in which they ſucceeded to Admiration. See PRINT.

ENGRAVING *in Copper*, is employ'd in repreſenting divers Subjects, as Portraits, Hiſtories, Landskips, Foliages, Figures, Buildings, *&c.* either after Paintings, or Deſigns made for the Purpoſe.

It is perform'd either with the *Graver*, or with *Aqua Fortis*.

For the firſt, there needs but little *Apparatus*, and few Inſtruments. The Plate you work on being well poliſh'd, is cover'd over with a thin Skin of Virgins Wax, and on this, the Draught, or Deſign, done in black Lead, red Chalk, or other ungum'd Matter is laid; and rubb'd down for the Wax to take off. The Deſign thus transferr'd upon the Wax, is traced thro' on the Copper, with a Point or Needle: Then heating the Plate, and taking off the Wax, the Strokes remain; to be follow'd, heighten'd, *&c.* according to the Tenor of the Deſign, with the *Graver*, which is to be very ſharp, and well temper'd.

In the Conduct of the *Graver*, conſiſts all the Art; for which there are no Rules to be given; all depending on the Habitude, Diſpoſition, and Genius of the Artiſt.

The other Inſtruments are, a *Cuſhion*, or Sand-Bag, to lay the Plate on, to give it the neceſſary Turns and Motions: A *Burniſher*, round at one End, and uſually flattiſh at the other, to rub out Slips and Failures, ſoften the Stroaks, *&c.* A *Scraper*, to pare off the Surface, on Occaſion: And a *Rubber* of black Cloth, or Hat, to fill up the Strokes, that it may appear how the Work proceeds.

ENGRAVING *in Copper with* Aqua Fortis. See ETCHING.

ENGRAVING *on precious Stones*, conſiſts in repreſenting Figures or Devices, either in Relievo, or Indented, on divers Kinds of hard, poliſh'd Stones. See PRECIOUS *Stones*.

The Art of *Engraving* on precious Stones, is one of thoſe wherein the Ancients excell'd; there being divers antique Agats, Cornelians, and Onyx's, which ſurpaſs any Thing of that Kind the Moderns have produced. *Pyrgoteles* among the *Greeks*, and *Dioſcorides* under the firſt Emperors of *Rome*, are the moſt eminent Engravers we read of: The former was ſo eſteem'd by *Alexander*, that he forbad any body elſe to *Engrave* his Head: And *Auguſtus*'s Head, *Engraven* by the latter, was found ſo beautiful, that the ſucceeding Emperors choſe it for their Seal.

All the polite Arts having been buried under the Ruins of the *Roman* Empire, the Art of *Engraving* on Stones met the ſame Fate. It was retriev'd in *Italy*, at the Beginning of the *15th* Century; when one *John* of *Florence*, and after him *Dominic* of *Milan*, perform'd Works of this Kind no Way to be deſpiſed.

From that Time, ſuch Sculptures became common enough in *Europe*, and particularly in *Germany*, whence great Numbers were ſent into other Countries; but they came ſhort of the Beauty of thoſe of the Ancients; eſpecially thoſe on precious Stones; for as to thoſe on Cryſtal, the *Germans*, and after their Example, the *French*, &c. have ſucceeded well enough.

In this Branch of *Engraving*, they make Uſe either of the Diamond, or Emery. The Diamond, which is the hardeſt, and moſt perfect of all precious Stones, is only cut by it ſelf, or with its own Matter. See DIAMOND, *&c.*

The firſt Thing, is to cement two rough Diamonds to the Ends of two Sticks, big enough to hold them ſteady by, in the Hands; and to rub or grind 'em againſt each other, till they be brought to the Figure deſired. The Duſt, or Powder, rub'd off, ſerves afterwards to poliſh 'em; which is perform'd with a Kind of Mill, that turns a Wheel of ſoft Iron. See LAPIDARY.

The Diamond is fix'd in a Braſs Diſh, and thus apply'd to the Wheel, which is cover'd with Diamond Duſt, mix'd up with Oil of Olives: And when the Diamond is to be cut facet-wiſe, they apply firſt one Face, than another, to the Wheel.

Rubies, Saphirs, and Topazes, are cut and form'd the ſame Way, on a Copper Wheel; and poliſh'd with *Tripoli*, diluted in Water. See EMERY.

As to Rubies, Emeralds, Hyacinths, Amethiſts, Grenats, Agats, and other of the ſofter Stones, they are cut on a Leaden Wheel, moiſten'd with Emery and Water, and poliſh'd with *Tripoli*, on a Pewter-Wheel. *Lapis*, Opal, *&c.* are poliſh'd on a Wooden Wheel. See WHEEL.

To faſhion and *Engrave* Vaſes of Agat, Cryſtal, *Lapis*, or the like, they have a Kind of Lathe, like that of the Pewterers; excepting, that whereas the latter is to hold the Veſſels, which are to be wrought with proper Tools; the former generally holds the Tools, which are turn'd by a Wheel, and the Veſſels held to 'em to be cut and *Engraved*, either in Relievo, or otherwiſe: Remembring from Time to Time, to moiſten the Tools with Diamond Duſt and Oil; or, at leaſt, Emery and Water.

To *Engrave* the ſmaller Works of any of theſe Stones, when poliſh'd; ſuch as Medals, or Seals, *&c.* they uſe a little Iron Wheel, the two Ends of whoſe Axes are receiv'd within two Pieces of Iron placed upright, as in the Turners Lathe; to be brought cloſer, or ſet further apart, at Pleaſure. At one End of one of the Axes, are fitted the proper Tools, being kept tight by a Skrew. Laſtly, the Wheel is turn'd by the Foot; and the Stone applied by the Hand to the Tool; and thus ſhifted and conducted as Occaſion re u ires.

The Tools are generally of Iron, ſometimes of Braſs. As to their Form, it is various, but generally bears ſome Reſemblance to Chiſſels, Gouges, *&c.* Some have ſmall round Heads like Buttons; others, like Ferrels, to take the Pieces out; others, flat, *&c.* Theſe Tools are not applied directly againſt the Stone; but, as it were, ſidewiſe; thus wearing, and, as it were, grinding off the Subſtance. And ſtill, whether it be Figures, or Letters, or Characters, the Manner of Application is the ſame. The Tools, as above obſerved, are to be frequently moiſten'd with Diamond Duſt, and Oil of Olives. When the Stone is *Engraven*, they poliſh it on Wheels of Bruſhes, made of Hogs Briſtles and *Tripoli*. For the larger, and leſs delicate Works, they have Copper, or Pewter Tools, on purpoſe to poliſh the Ground, or plain Parts, with *Tripoli*, &c. which they apply after the ſame Manner, as thoſe wherewith the *Graving* is perform'd.

ENGRAVING *on Steel*, is chiefly employ'd in cutting Punches, Matrices, and Dies, proper to ſtrike Coins, Medals, and Counters. See COINAGE.

The Method of *Engraving*, with the Inſtruments, *&c.* are the ſame for Coins, as for Medals and Counters: All the Difference conſiſts in their greater, or leſs Relievo; the Relievo of Coins being much leſs conſiderable than that of Medals; and that of Counters ſtill leſs than that of Coins. See MEDAL.

The *Engraver* in Steel uſually begins with Punches, which are in Relievo, and ſerve for making the Creux, or Cavities of the Matrices, and Dies. Tho', ſometimes, he begins immediately with the Creux; but 'tis only when the intended Work is to be cut very ſhallow. The firſt

Thing is to design his Figures; then he moulds 'em in white Wax, of the Size and Depth required: And from this Wax he graves his Punch.

This Punch, is a Piece of Steel, or at least of Iron and Steel mix'd; on which, ere they temper, or harden it, the intended Figure, whether a Head, or a Reverse, is cut, or chissel'd in Relievo. The Instruments used in this *Graving* in Relievo, which are much the same as those wherewith the finishing of the Work, in Creux, is effected, are of Steel. The Principal are *Gravers* of divers Kinds, Chissels, Flatters, *&c.* When the Punch is finish'd, they give it a very high Temper; that it may the better bear the Blows of the Hammer, wherewith it is struck, to give the Impression to the Matrice. See PUNCHION.

What they call *Matrice*, or *Matrix*, is a Piece of good Steel of a Cubic Form, call'd also *Dye*; whereon, the Relievo of the Punch is struck in Creux. It is call'd Matrix, because in the Cavities or Indentures thereof, the Coins, or Medals, seem form'd, or generated, as Animals are in the Matrix of their Mother. To soften this Steel, that it may more easily take the Impression of the Punch, they make it red-hot; and after striking the Punch thereon in this State, they proceed to touch up, or finish the Strokes and Lines, where, by Reason of their Fineness, or the too great Relievo, they are any Thing defective; with some of the Tools abovementioned. See MATRIX.

The Figure thus finished, they proceed to *Engrave* the rest of the Medals, as the Mouldings of the Border, the engrail'd Ring, Letters, *&c.* All which, particularly the Letters and Engrailment, are perform'd with little Steel Punches, well temper'd, and very sharp. Add, that as they sometimes make Use of Punchions, to *Engrave* the Creux of the Matrix; so, on some Occasions, they make Use of the Creux of the Matrix, to *Engrave* the Relievo of the Punch.

To see, and judge of the *Engraving* in Creux; divers Means have been devised to take the Impressions therefrom, as the Work proceeds. Sometimes they make Use of a Composition of common Wax, Turpentine, and Lamp-black; which always retaining its Softness, easily takes the Impression of the Part of the *Graving* it is applied to. But this only serving to shew the Work piece-meal, they have had Recourse to other Ways, to shew the whole Figure. The first, by pouring melted Lead on a Piece of Paper, and clapping the Matrice thereon: The second, with melted Sulphur, managed the same Way: And the third, proper only where the *Graving* is shallow, by laying a Piece of soft Paper on the *Graving*, and over the Paper a Leaf of Lead; when, giving two or three Blows with a Hammer on the Lead, the Paper takes the Impression of the Work.

When the Matrix is quite finish'd, they temper it, rub it well with Pumice-stone, and clean out the Stone again with a Hair-Brush; and lastly, polish it with Oil and Emery. In this Condition it is fit for the Mill, to be used to strike Coins, Medals, *&c.* See COINING.

After the like Manner, are the Matrices for casting of Printing Letters, *Engraven.* See *Letter* FOUNDERY.

ENGRAVING *of Seals, Stamps, Punchions, Marking Irons, Gilding Irons*, and other Matters, for Goldsmiths, Pewterers, Book-binders, *&c.* either in Relievo, or Indenture, is perform'd after the Manner last described. See SEAL, *&c.*

ENGRAVING *in Wood.* See CUTTING *in Wood.*

ENGROSSING, the Writing a Deed over fair, and in proper Characters.

In the Way of Trade, *Engrossing* signifies the Buying up any Commodity in the Gross; Forestalling the Market. See FORESTAL and MONOPOLY.

ENGUICHE, in Heraldry; is applied to the great Mouth of a hunting Horn, when it has a Rim of a different Colour from the Horn it self.

ENGYSCOPE, a Machine, better known under the Name of *Microscope.* See MICROSCOPE.

ENHARMONIC, the last of the three *Genera*, or Kinds of Music. See GENERA.

The *Enharmonic* Genus, is said to have been thus called by Reason of its superior Excellence; Tho' wherein that consists, says Mr. *Malcolm*, we don't see. It was by all acknowledged so difficult, that few could practise it.

The several *Genera* are divided into Diastems, upon which the Differences depend: Those of the *Enharmonic* are the *Diesis* and *Ditonum*: Those of the *Chromatic*, the *Hemitonium* and *Triemitonium*; and in the *Diatonic*, the *Hemitonium*, or *Limma*, and the *Tonus*.

But under these general Names, which distinguish the *Genera*, there are several different Intervals, or Ratio's, which constitute the *Chroai*, or *Colores Generum*, or Species of *Enharmonic*, *Chromatic*, and *Diatonic.* See DIATONIC, and CHROMATIC.

ENHERITANCE. See INHERITANCE.

ENIGMA, or ÆNIGMA, *Riddle*, a Proposition put in obscure, ambiguous, and generally contradictory Terms, to puzzle, or exercise the Wit, in finding out its meaning. Or, an obscure Discourse, covering some common, and well known Thing, under remote and uncommon Terms.

The Word is *Greek*, Αινιγμα, literally importing *dark, knotty Discourse*, form'd of αινιτεσθαι, *obscure innuere*, to hint a Thing darkly. The *Latins* call it *Scirpus:* The *Hebrews*, חידה.

Fran. Junius defines an *Ænigma* to be an obscure Parable, or Allegory; and makes two Kinds: The one *greater*, rendering the Sentence more intricate and knotty, by a Multitude of Words; the other *lesser*, consisting of only one or two remote Words, or Allusions; as in *Isaiah*, C. XI. 1. where *Jesus Christ* is call'd נצר, *surculus*, Rod, Branch. See PARABLE.

Fa. Bouhours, in the Memoirs of *Trevoux*, defines an *Enigma*, a Discourse, or Painting, including some hidden meaning, which is proposed to be guess'd. *Painted Enigma's*, are Representations of the Works of Nature, or Art, conceal'd under human Figures, drawn from History, or Fable. Thus *Jesus Christ*, in the middle of the Doctors, represents the Bible, *&c.* A *Verbal Enigma* is a witty, artful and abstruse Description of any Thing. *Bouhours.*

Fa. Menestrier, has given us a learned Treatise of *Enigma's* and *Enigmatical* Figures.

The Use of *Enigma's* was very great among the *Egyptians.* That People, *Gale* observes, cover'd their Doctrines, both of divine, human, and natural Things, under such Disguises: Thus some of the Stars, *Clemens Alexand. Strom.* 5. notes were, on Account of their oblique Motions, liken'd to Serpents, the Sun to a Crocodile, a Ship, *&c.*

Gale thinks they might borrow the Customs from the *Hebrews*, among whom, 'tis certain, the *Enigmatic* Way was not less in Use. Witness *Samson*'s Riddle, *Judg.* XIV. 12, 13. *I will now put forth a Riddle to you*, &c. חידה *i. e.* according to *Vatable*, an *Enigmatical* Problem. The LXX render it, προβλημα. *Out of the Eater came forth Meat, and out of the Strong came forth Sweetness.* Whereby *Eater* and *Strong*, is meant a Lion; and by *Meat*, Honey. *Solomon* is said to have been particularly skilful in the Solution of *Ænigma's.* Joseph. *Antiq. Lib.* V. *C.* 2. *Clemens* assures us, that the *Egyptians* placed Sphynges before their Temples; to intimate that the Doctrines of God and Religion were *Ænigmatical* and Obscure. See PARABLE, HIEORGLYPHIC, EMBLEM, SYMBOL, FABLE, *&c.*

ENIXUM *Sal*, among the Chymists, a Kind of Neutral Salt, being neither Acid nor Alcalious, but participating of both.

Such is common Salt, Nitre, Allum, Vitriol, *&c.* See SAL.

ENMANCHE, in Heraldry, is when a Chief has two Lines drawn from the middle of the upper Edge, to the Sides, the Depth of half the Chief; The two Lines including an obtuse Angle, the Point whereof, is the Centre of the Top of the Chief.

The Heralds conceive this, as bearing some Resemblance to *Sleeves*; whence the Etymology of the Word, from the French *Manche*, Sleeve. It differs from *Chappe*, where the Lines come from the Top to the Bottom of the Chief.

ENNEADECAETERIS, in Chronology, a Cycle, or Period of Nineteen Solar Years. See CYCLE.

Such is the Lunar Cycle invented by *Meton*, at the End whereof the Moon returns to the same Point, from which it departed. Whence the *Jews*, *Athenians*, and other Nations, who were minded to accommodate the Lunar Months to the Solar Year, made Use of the *Enneadecaeteris*; allowing to seven of the Years 13 Months a piece, and to the rest 12.

The *Jewish* ENNEADECAETERIS is properly a Cycle of 19 Lunar Years, beginning from *Molad Tohu*, and returning again and again; whereof, every 3^{d}, 6th, 8th, 11th, 14th, 17th, and 19th, are Embolismic, or of 383 Days, 21 Hours a-piece; the rest common, or of 354 Days, 8 Hours a-piece. See YEAR.

Consequently, the *Jewish Enneadecaeteris* is 6939 Days. See EMBOLISMIC.

The Word is *Greek*, ἐννεαδεκαετηρις, form'd of ἐννέα *nine*, δέκα *ten*, and ἔτος *Year.*

ENNEAGON, in Geometry, a Figure of Nine Angles, and Nine Sides. See POLYGON.

The Word is form'd of ἐννέα *Nine*, and γωνία *Angle.*

In Fortification, *Enneagon* is a Place with Nine Bastions. See FORTIFIED *Place.*

ENNEATICAL *Days*, are every Ninth Day of a Sickness; which some imagine naturally occasions a great Alteration, either for better or worse. See CRITICAL *Days.*

ENNEATICAL *Years*, are every Ninth Year of a Man's Life. See CLIMACTERIC.

ENORMOUS, ſomething exceſſively, or immenſely, big. Thus we ſay, the *Coloſſus* of *Rhodes* was of an *Enormous* Stature.

The Word is form'd of the Privative *e* and *norma*; Rule q. d. void of, or contrary to Rule, or Meaſure, *contra normam*. In the corrupt Ages of Latinity, they uſed *innormis* and *inormis*.

In the Civil *Juriſprudence*, *Leſio Enormis*, *Enormous* Damage, is that whichexceeds half the Value of the Thing ſold. And this gave Room for the Reſciſſion of the Contract. See RESCISSION.

ENQUEST, or INQUEST, is taken for an Inquiſition of a Jury, by hearing of Witneſſes. See INQUEST.

This is the moſt uſual Trial, in all Cauſes, both Civil and Criminal, within this Realm. In Civil Cauſes, after Proof is made on either Side, of ſo much as each Party thinks good for himſelf; if the Doubt be in the Fact, it is referr'd to the Diſcretion of Twelve indifferent Men, impanelled by the Sheriff for that Purpoſe; and as they bring in their Verdict, ſo Judgment paſſeth; for the Judge ſaith, *The Jury findeth the Fact thus.*

For the *Enqueſt* in Criminal Cauſes. See JURY.

ENS, *Being*, in Metaphyſicks, is applied, in its moſt general Senſe, to every Thing that the Mind any Way apprehends, and whereof it affirms, denies, proves, or diſproves any Thing.

This, other Philoſophers call *Cogitabile*, and *Intelligibile*; and the Logicians, *Thema*.

ENS, in a leſs general Senſe, ſignifies ſomething that is, or exiſts, ſome Way further than in being conceiv'd, or being capable of being conceiv'd in the Mind.

This is particularly call'd, *Ens poſitivum*, or *reale*, poſitive, or real Being. In Oppoſition to which ſtands *Non Ens*.

ENS, in its proper, or reſtrain'd Senſe, is that to which there are real Attributes belonging; or that which has a Reality, not only out of the Intellect, but in it ſelf.

This is what is properly meant by *Res*, *Thing*; and what we otherwiſe call *Ens reale*, and alſo *Subſtance*. See SUBSTANCE.

ENS *rationis*, is that which depends on the Mind; or which exiſts only in the Imagination.

Of this they diſtinguiſh three Kinds: *Ens rationis effectivum*, which is done, or produced by the Mind; as Knowledge: *Ens rationis ſubjectivum*, which is received into the Mind; as Science: And *Ens rationis objectivum*, which is repreſented by the Mind; as a Golden Mountain.

Which laſt, if it have no other Manner of Being, *i. e.* if it be repreſented ſo as it does not, or cannot be, it is what we moſt properly call *Ens rationis*.

The Generality of School Philoſophers, and the Peripateticks among the reſt, aſſert, that there are of theſe *Entia rationis objectiva*. Others deny, there are, or can be any ſuch Thing.

ENS, or *ens primum*, among the Chymiſts, is the efficacious Part of any natural mixt Body, whether Animal, Vegetable, or Foſſile; wherein, all the Qualities or Virtues of the Ingredients of the mixt, are comprehended in a little Compaſs. See ESSENCE.

Paracelſus pretends to have been able to ſeparate the *Ens primum* from Bodies, and with it to effect prodigious Things towards the Renovation, and Reſtoration of Youth: But his Proceſſes are ſo obſcurely deliver'd, that Nobody has been induced to try 'em.

Mr. *Boyle* gives us a Proceſs from M. *le Fevre*, whereby the *Ens primum*, or Eſſence of Balm, is eaſily obtain'd: He adds, that the Effects of an *Ens* of Balm, thus drawn, are no Ways inferior to thoſe of *Paracelſus*; and inſtances in a ſpecial Friend of his, who, upon taking it only for a Fortnight, the Nails of his Hands and Feet fell off, and were ſucceeded by a Set of new ones; Which convinced him ſo far of its Efficacy, that he left off taking it himſelf: But giving ſome of it to an old Woman of 70 Years of Age, who ſerved in the Houſe, it produced the *Menſes* again; and that ſo copiouſly, as wonderfully to ſtartle the Woman.

Upon giving a little of it to an old Hen, her Feathers began to moult on the ſixth Day, and ſhe grew ſtark naked; but ere a Fortnight was over, ſhe had others in their Room, fairer, and better colour'd than the former.

The Relation is odd enough; yet conſidering the Hands we have it from, and how eaſily the Thing is tried, 'tis much no body has yet attempted to proſecute it. The Proceſs is thus:

Having gather'd, *e. gr.* ſome Balm, or other fitting Plant, at the proper Seaſon and Time; beat it into a Pulp in a Marble Mortar, and putting it into a Bolt-Head hermetically ſeal'd, digeſt it 40 Days in a Dunghill, or other analogous Heat. This done, take out the Matter which will now be more liquid than before, and ſeparating from it the Dregs, or groſſer Parts, digeſt it anew in a gentle Bath; that the remaining groſſer Parts may alſo ſubſide: Filtrate it, and add to it the fix'd Salt, drawn from the former Dregs, dried and calcined. To the Liquor thus prepared, add equal Parts of the Liquor of good Sea-Salt well purified, and melted, and then let it run *per deliquium*. Laſtly, ſeal up the Mixture in a Bolt-Head; and expoſe it to the Sun ſix Weeks longer. At the End of which Term, the *Ens primum* of the Plant will be found ſwimming on the Liquor, in a liquid, tranſparent Form, ſometimes of a green, and ſometimes a reddiſh Colour, according to the Plant uſed.

ENS *Veneris*, or *Flower of Venus*, a chymical Preparation from Vitriol, firſt publiſhed by Mr. *Boyle*. See VITRIOL.

It is held a Specific in the Rickets, and is much commended in nervous Caſes, obſtinate Cachexies, Loſs of Appetite, and Obſtructions of all Kinds.

It is had by ſubliming equal Parts of the Powder of *Cyprus* Vitriol, (calcined till it is of a dark Colour) and of Sal Ammoniac, into the Form of yellow Flower.

It has its Name from the Particles of Copper therein, carried away from the Vitriol.

ENSCONCED. See INSCONCED.

ENSEMBLE, a *French* Term, ſometimes uſed in our Language. The Word is an Adverb, and literally ſignifies *together*, or *one with another*; being form'd of *in* and *ſimul*.

Hence, in Architecture, we ſay *the Enſemble*, or, *tout Enſemble*, of a Building, to ſignifie the whole Work, or Compoſition, conſider'd together, and not in parts; and ſometimes alſo to ſignifie the relative Proportion of the Parts to the whole. All theſe Pieces of Building make a fine *Enſemble*.

In Sculpture, we ſay, To judge well of a Work, a Statue, *&c.* one muſt firſt examine, whether the *Enſemble* be good.

In Painting, we frequently uſe the Phraſe, *tout Enſemble*: The *tout Enſemble* of a Painting, is the Harmony reſulting from the Diſtribution of the ſeveral Objects or Figures, whereof it is compoſed. This Painting is very good, taking it ſeparately: But the *tout Enſemble* is naught.

ENSIFORMIS *Cartilago*. See CARTILAGO *Enſiformis*.

ENSIGN, in the Military Art, a *Banner*, or *Colours*, under which the Soldiers are ranged, according to the different Companies, or the different Parties they are of. See BANNER.

The *Chineſe Enſigns*, are Horſes Tails: Thoſe of the *Europeans*, are Pieces of Taffaty, with divers Figures, Colours, Arms, and Deviſes. *Xenophon* tells us, that the *Enſign*, bore by the *Perſians*, was a Golden Eagle on a white Flag: The *Corinthians* bore the winged Horſe, or *Pegaſus*, in theirs: The *Athenians* an Owl: The *Meſſenians*, the *Greek* Letter M: The *Lacedemonians* the A.

The *Romans* had a great Diverſity of *Enſigns*; the Wolf, Minotaur, Horſe, Boar, and at length the Eagle, where they ſtopp'd: This they firſt aſſumed under the ſecond Year of the Conſulate of *Marius*. See EAGLE.

A Military *Enſign*, on a Medal of a *Roman* Colony, denotes it a Colony peopled with old Soldiers.

ENSIGN, is alſo uſed for an Officer in the Infantry, who bears the *Enſign*, or Colours; by the *Latins* call'd *Signifer*, and *Vexillifer*.

He has the Charge of the *Enſign* in Combats; and if he be kill'd, the Captain is to take it in his Stead. The *Enſign* is under the Command of the Lieutenant, and in his Abſence ſupplies his Poſt.

ENTABLATURE, or ENTABLAMENT, in Architecture, by *Vitruvius* and *Vignola* call'd *Ornament*, is that Part of an Order of Column which is over the Capital; comprehending the *Architrave*, *Frize*, and *Corniche*. See ARCHITRAVE, FRIZE, and CORNICHE.

The *Entablature* is alſo called the *Trabeation*: It is different in the different Orders: Indeed it conſiſts of the three grand Parts, or Diviſions above-mentioned, in all; But thoſe Parts conſiſt of a greater, or leſs Number of particular Members, or Sub-diviſions, as the Orders are more or leſs rich. See ORDER.

Vignola makes the *Entablature* a Quarter of the Height of the whole Column, in all the Orders. See COLUMN.

In the *Tuſcan* and *Doric*, the *Architrave*, *Frize*, and *Corniche*, are all of the ſame Height. See TUSCAN and DORIC.

In the *Ionic*, *Corinthian*, and *Compoſite*, the whole *Entablature* being 15 Parts; 5 of them are allow'd for the *Architrave*, 4 for the *Frize*, and 6 for the *Corniche*. See IONIC, CORINTHIAN, *&c.*

ENTABLATURE, or ENTABLAMENT, is alſo uſed for the laſt Row of Stones on the Top of the Wall of a Building, whereon the Timber and the Covering reſt.

The

The Word is form'd of the Latin *Tabulatum*, or *Intabulamentum*.

As it is frequently made to project beyond the Naked of the Wall to carry off the Rain, ſome Authors call it in Latin *Stillicidium*, or Drip. Such an *Entablament* does not bear far enough out: It lets the Water fall on the Foot of the Wall.

ENTAIL, in Law, ſignifies Fee Tail, or Fee *Entail'd*, i. e. abridg'd, curtail'd, or limited to certain Conditions. See FEE and TAIL.

For the Docking of an Entail. See DOCKING and RECOVERY.

ENTE, in Heraldry. The Term literally implies *Engrafted*; and is uſed by the foreign Heralds to expreſs a Method of Marſhalling, little known among us.

Yet we have an Inſtance of it in the fourth grand Quarter of his Majeſty's Royal Enſign; whoſe Blazon is, *Brunſwic* and *Lunenburgh* impaled with antient *Saxony*, Ente *in pointe*.

ENTELECHIA, a *Greek* Term, by which *Ariſtotle* defines *the Soul*; and which not occurring in any other Author, has given the Criticks and Philoſophers infinite Perplexity to diſcover its meaning.

Hermolaus Barbarus, is even ſaid to have conſulted the Devil about it; after which, in his Paraphraſe on *Themiſtius*, whether from the Devil or himſelf we know not, he renders it by *Perfectihabia*, which is not a whit the clearer.

Cicero, whoſe Interpretation ſhould be preferable to that of any Modern, defines *Entelechia* (*Tuſcul. q. L.* I. *C.* 1.) to be *a certain, continued, and perpetual Motion*: Whence it ſhould appear that *Ariſtotle* took the Soul for a Mode of the Body; a *continuous Motion* being doubtleſs a Mode of Body. See BODY.

The common *Peripateticks* hold *Entelechia* to ſignify *Act*; and under it, ſuppoſe the Form of the Compound, or Animal, to be underſtood: Accordingly, they define it any Act, whether Subſtantial or Accidental, conſidered as capable of performing ſome Operation in the Body.

Others of them define it to be a ſubſtantial Act, whereby a Thing is, what it is, in Subſtance.

Laſtly, others of the *Peripateticks*, and thoſe the lateſt, agree that the *Act* of *Entelechia*, whereby *Ariſtotle* meant to explain the Nature of the Soul, either ſignifies ſome Mode of the Body, as Motion, or nothing at all. And thus the *Peripatetic* Notion comes round to that of *Cicero*.

ENTENDEMENT, in Law, the true Meaning, Intent, or Signification of a Word, Sentence, Law, *&c.* See INTENDMENT.

ENTERFERING, in the Menage. See CUTTING.

ENTERRMENT, or INTERRMENT, the Act of *Interring*, i. e. of Burying, or laying a deceas'd Perſon in the Ground. See BURIAL and FUNERAL.

The Kings of *England* are *Enterr'd* at *Weſtminſter*, thoſe of *France* at *Dennis*, &c.

The Excommunicated are not to be *Enterr'd* in Holy, *i. e.* in Conſecrated Ground. The Antients did not *Inter* their Dead: They burnt them, as the *Indians* do at this Day. See BURNING.

The Cuſtom of Burning the Dead, ceas'd among the *Romans* under the Empire of the *Anthonines*; long before the Chriſtians were allow'd to *Interr* in Churches, which was even prohibited Kings and Emperors. The *Abaſſinians*, in Lieu of *Interring* their Dead, ſhut them up in the Bodies of Trees, dug hollow for this Purpoſe.

The Gardeners *Interr*, or earth up Sellery, Endive, and Lettice, to blanch, or whiten, and make them the tenderer.

To *Interr* wild Stocks in Ditches, is what *Columella* calls *deponere*, *ſeminare Scrobibus*. There are ſome Trees, as Willows, Olives, *&c.* which grow very well, by *Interring* their Truncheons, *i. e.* by cutting a Truncheon, or Piece off at both Ends, and planting it in the Ground: Which is what the *Latins* call, *Inhumare taleas*, *taleis ſerere*.

ENTEROCELE, in Medicine, a Deſcent of the Inteſtines. See DESCENT.

The *Enterocele* is a Kind of *Hernia*, or Rupture, wherein the Inteſtines, particularly the *Ilion*, fall into the Groin, or the Scrotum. See HERNIA.

The next Cauſe of the *Enterocele*, is the Relaxation, or Extenſion, of the lower Part of the *Peritonæum*, wherein the Inteſtines are contain'd: The remote Cauſes are great Lifts, too violent Exerciſes, great Coughs, frequent Vomiting, much Crying, *&c.* Whence it is that Children are much ſubject thereto.

There are two Kinds of *Enterocele*; the *Perfect*, which happens when the Inteſtine falls into the Scrotum; and the *Imperfect*, when it only falls into the Groin.

The Remedy is chiefly by External Applications, as Truſſes and Boulſters.

The Word is form'd of the *Greek*, ἔντερον, *Inteſtine*; and κήλη, *Tumor*.

ENTERO-EPIPLOCELE, a Kind of Rupture; wherein the Inteſtines, and *Epiploon*, or Caul, fall together into the Scrotum; whence the Appellation *Entero-epiplocele*. See HERNIA.

The Cauſes are the ſame as thoſe of the *Enterocele*.

ENTERO-EPIPLOMPHALUS, a Kind of *Exomphalus*, wherein the Inteſtines, and *Epiploon*, or Caul, bunch out at the Navel. See EXOMPHALUS.

The Word is compoſed of ἔντερον, *Inteſtine*, ἐπίπλοον, *Caul*, and ὀμφαλὸς, *Umbilicus*, *Navel*.

ENTERO-HYDROMPHALUS, in Medicine, a Kind of *Exomphalus*, wherein, beſide a diſplacing and bunching out of the Inteſtine, there is a deal of watery Humours collected along with it.

The Word is form'd of the *Greek*, ἔντερον, *Inteſtine*, and ὀμφαλὸς, *Navel*.

ENTEROLOGY, from ἔντερον, *inteſtinum*, a Gut; and λογία, *Sermo*, a Diſcourſe; is properly a Treatiſe of the Bowels; tho' the Word is generally underſtood to include the Contents of the three Cavities, Head, Breaſt, and Belly.

ENTEROMPHALUS, in Medicine, a Kind of *Exomphalus*, conſiſting in the Inteſtines being put out of their Place, and occaſioning a Tumor. See EXOMPHALUS.

The Word is form'd of the *Greek* ἔντερον, *Inteſtine*, and ὀμφαλὸς, *Umbilicus*.

ENTERPLEDE, in Law, to diſcuſs, or try a Point incidently falling out, before the principal Cauſe can be determined.

E. gr. Two Perſons being found Heirs to Land, by two ſeveral Offices in one County; the King is brought in Doubt, to which of 'em Livery ought to be made. Before Livery, therefore, they muſt *Enterplede*, that is, formally try between themſelves which is the right Heir.

ENTHUSIASM, a prophetic, or poetic Rage, or Fury, which tranſports the Mind, enflames and raiſes the Imagination, and makes it think and expreſs Things extraordinary and ſurprizing.

M. *de Piles* defines *Enthuſiaſm* to be a Tranſport of the Mind, whereby it is led to think and imagine Things in a ſublime, ſurpriſing, and yet probable Manner.

The ſublime, he thinks a neceſſary Ingredient in the Definition; as being the proper Effect and Production of *Enthuſiaſm*. *Enthuſiaſm*, he adds, contains the ſublime; as the Trunk, the Branches. See SUBLIME.

The Word is derived from the *Greek* ἔνθεος, or, ἔνθης, a Man animated in an extraordinary Manner with the Spirit of God, in whom God is, whom God animates, ἐν ᾧ Θεὸς.

Whence, the Verb ἐνθουσιάζω, or ἐνθουσιάω, and the Noun ἐνθουσιασμὸς, *Enthuſiaſm*; and ἐνθουσιαστὴς, *Enthuſiaſt*, a Perſon ſubject to *Enthuſiaſm*.

This is the *Enthuſiaſm* felt in Poetry, Oratory, Muſic, Painting, Sculpture, *&c.* But this *Enthuſiaſm* which belongs to the Works of Art, is very different from that attributed to the Sybils and Prieſteſſes of the Oracles, and Heathen Gods; which was little elſe but Fanataciſm, and conſiſted principally in Grimace, and Contorſions of the Body.

There is a Degree of Aſſent, ſays Mr. *Lock*, which, with ſome Men, has the ſame Authority, as either Faith or Reaſon; and that is *Enthuſiaſm*; which laying by Reaſon, would ſet up Revelation without it; whereby, in Effect, it takes away both Reaſon and Revelation, and ſubſtitutes in the Room of it, the ungrounded Fancies of a Man's own Brain, and aſſumes them for a Foundation both of Opinion and Conduct.

Immediate Revelation being a much eaſier Way for Men to eſtabliſh their Opinions, and regulate their Conduct by, than the tedious Labour of ſtrict Reaſoning; it is no Wonder, that ſome have been very apt to pretend to it, eſpecially in ſuch of their Actions and Opinions, as they cannot account for by the ordinary Methods of Knowledge, and Principles of Reaſon.

Hence we ſee, that in all Ages, Men, in whom Melancholy has mixed with Devotion, or whoſe Conceit of themſelves, has raiſed them into an Opinion of a greater Familiarity with God, than is allowed others; have often flattered themſelves with the Perſwaſion of an immediate Intercourſe with the Deity, and frequent Communications from the Divine Spirit.

Their Minds being thus prepared, whatever groundleſs Opinion comes to ſettle it ſelf ſtrongly upon their Fancies, is an Illumination from the Spirit of God; and whatſoever odd Action they find in themſelves an Inclination to

do,

do, that Impulſe is concluded to be a Call, or Direction, from Heaven, and muſt be obeyed. See INSPIRATION.

This we take to be properly *Enthuſiaſm*, which, tho' riſing from the Conceit of a warm, or over-weaning Brain, works, where it once gets Footing, more powerfully on the Perſwaſions and Actions of Men, than either Reaſon, or Revelation, or both together; Men being moſt forwardly obedient to the Impulſes they receive from themſelves.

When Men are once got into this Way of immediate Revelation, of Illumination without Search, and Certainty without Proof, Reaſon is loſt upon 'em; They are above it: They ſee the Light infuſed into their Underſtandings, and they cannot be miſtaken; like the Light of bright Sun-ſhine, it ſhews it ſelf, and needs no other Proof but its own Evidence: They feel the Hand of God moving them within, and the Impulſes of the Spirit, and cannot be miſtaken in what they feel. But of this Seeing and Feeling, is it a Perception of an Inclination to do ſomething, or of the Spirit of God moving that Inclination? Theſe are two very different Perceptions, and ſhou'd be carefully diſtinguiſhed. See REVELATION.

If they know the Thing to be a Truth, they muſt do it, either by its own Self-Evidence, or by the rational Proofs that make it out to be ſo: If they know it to be a Truth, either of theſe two Ways, they in vain ſuppoſe it to be a Revelation: For thus all Truths, of what Kind ſoever, that Men uninſpired, are enlightned with, come into their Minds. If they ſay, they know it to be true, becauſe it is a Revelation from God, the Reaſon is good; but then it will be demanded, how they know it to be a Revelation from God? If they ſay, by the Light it brings with it; they ſhonld conſider, whether this be ſaying any more, than that it is a Revelation, becauſe they believe it to be true; for all the Light they ſpeak of, is but a ſtrong Perſwaſion of their own Minds, that it is a Truth; which is a very unſafe Ground to proceed on, either in our Tenets or Actions. True Light in the Mind, is nothing elſe but the Evidence of the Truth of any Propoſition: And, if it be not ſelf-evident, all the Light it can have, is from the Clearneſs of thoſe Proofs upon which it is received. See EVIDENCE.

God, when he makes the Prophet, doth not unmake the Man: He leaves his Faculties in their natural State, to enable him to judge of his Inſpirations, whether they be of divine Original, or no. If he would have us aſſent to the Truth of any Propoſition, he either evidences that Truth by the uſual Methods of natural Reaſon, or elſe makes it known to be a Truth which he would have us aſſent to by his Authority; and convinces us, that it is from him, by ſome Marks, which Reaſon cannot be miſtaken in.

The Holy Men of God, who had Revelations from God, had ſomething elſe beſides internal Light of Aſſurance in their own Minds, to teſtifie to them, that it was from God. They had outward Signs to convince them, of the Author of thoſe Revelations. And when they were to convince others, they had a Power given them to juſtifie the Truth of their Commiſſion from Heaven; and by viſible Signs to aſſert the divine Authority of the Meſſage they were ſent with. *Moſes* ſaw the Buſh burn without being conſumed, and heard a Voice out of it. God, by another Miracle, of his Rod turn'd into a Serpent, aſſured him likewiſe of a Power to teſtifie his Miſſion, by the ſame Miracle repeated before them to whom he was ſent. See MIRACLE.

ENTHUSIAST, literally ſignifies a Perſon addicted to *Enthuſiaſm*. But the Word is uſually underſtood in an ill Senſe.

It was applied by the Antients, to a Sect of Hereticks, call'd alſo *Maſſalians* and *Euchites*; who, as *Theodoret* expreſſes it, were denominated *Enthuſiaſts*, by reaſon that being poſſeſſed by the Devil, they believed themſelves divinely inſpired. See MASSALIANS.

Among us, *Enthuſiaſt* is of the like Import with *Fanatic*; and is applied to the Quakers, the antient Anabaptiſts, and modern Prophets, from their Pretences to extraordinary Lights, Revelations, Viſions, Impulſes, *&c.* from Heaven. See QUAKER, ANABAPTIST, *&c.*

ENTHYMEME, in Logic, an Argument conſiſting only of two Propoſitions, an Antecedent, and a Conſequent deduced from it. See ARGUMENT.

Ariſtotle calls it, the *Rhetorical*, or *probable Argument*; and the Schools, alſo, the *imperfect Syllogiſm*, in Contradiſtinction to the perfect, which conſiſts of three Propoſitions, and is call'd the *dialectical Argument*. See SYLLOGISM.

It muſt be obſerved, however, that the *Enthymeme* is really a perfect Syllogiſm in the Mind, and only imperfect in the Expreſſion, by reaſon one of the Premiſſes is ſuppreſs'd, as being too clear and obvious, and eaſily ſupplied by the Underſtanding of thoſe with whom we diſcourſe.

Thus, *In every right lined Triangle, the three Angles are equal to two right ones; and conſequently, 'tis ſo in an Iſoſceles:* Is an *Enthymeme*; the Propoſition that *an Iſoſceles is a right lined Triangle*, being omitted, as being ſufficiently known and granted.

The *Enthymeme* is the moſt ſimple and elegant of all Argumentations, being what a Man, in arguing cloſely, commonly makes, without attending at all to the Form thereof. Thus, that Verſe remaining of *Ovid*'s Tragedy, entitled, *Medea*, contains an *Enthymeme*: *Servare potui, perdere an poſſim rogas?* I was able to ſave you; conſequently, Cou'd have deſtroy'd you. All the Beauty wou'd have been loſt, had all the Propoſitions been expreſs'd; the Mind being diſpleas'd with a Rehearſal of what is no ways neceſſary.

Sometimes, alſo, the two Propoſitions of an *Enthymeme*, are both included in a ſingle Propoſition; which *Ariſtotle* calls, an *Enthymematical Sentence*; and gives this Inſtance thereof, *Mortal do not bear an Immortal Hatred.* The whole *Enthymeme* wou'd be, *Thou art Mortal, let not, therefore, thy Hatred be Immortal.*

The Word is derived from the *Greek*, ἐνθύμημα, of the Verb ἐνθυμεῖσθαι, *to think, conceive*, which is a Compound of ἐν and θυμὸς, *in the Mind.*

ENTIRE *Tenancy*, in Law, is contra-diſtinguiſhed to *ſeveral Tenancy*; and ſignifies a ſole Poſſeſſion in one Man; whereas the other denotes a joynt, or common one, in ſeveral. See TENANT.

ENTITATIVELY, *Entitativè*, implies an Abſtraction, or Retrenchment, of all the Circumſtances, from a Thing under Conſideration. Thus, a Thing is ſaid to be taken, or conſider'd, *Entitatively*, or *ſecundum Entitatem*, when conſider'd nakedly and preciſely, according to what it is in it ſelf, without any Thing extrinſic. See ABSTRACTION.

E. gr. Peter, Entitively taken, is *Peter*, as a Thing, a Subſtance, a Body, *&c.* without any Regard to his being a Lord, a Husband, Learned, *&c.*

ENTITY, in the School Philoſophy, a phyſical *Ens*, or Being, conſider'd according to what it is in its phyſical Capacity. See ENS.

Some Dealers in Diſtinction, give us ſeveral Kinds of *Entities*. In its proper Senſe, they apply it to a Multitude of diſſimilar Parts; ſuch is the *Entity* of a Houſe, of the World, *&c.* In a more limited Senſe, they apply it to a Multitude of ſimilar Parts, ſuch is the *Entity* of Water, Heat, *&c.* And, in its general Senſe, to any Reality, as the *Entity* of God, of Angels, *&c.*

But this is mere Subtlety; perhaps *Entity* were beſt defined the Actual Eſſence, or Exiſtence, of any thinking Thing. See ESSENCE.

ENTOYER, or ENTOIRE, in Heraldry, is uſed to expreſs a Bordure, charged entirely with Things without Life. See BORDURE.

ENTRAILS, the Inteſtines, or Guts, of an Animal. See INTESTINES.

Poiſon leaves its chief Marks in the Entrails. See POISON.

In Embalming they take out the Entrails. See EMBALMING.

Menage derives the Word from the Latin *Enteralia*, form'd of the *Greek*, ἔντερον, *Inteſtine.*

ENTRAILS, is alſo uſed, in a more general Senſe, for the *Viſcera*, or all the Parts contain'd in the Bodies of Animals. See VISCERA.

The *Aruſpicina* of the Antients, was employ'd in conſidering the *Entrails* of Victims, as the Heart, Lungs, Liver, *&c.*

ENTRY, or ENTRANCE, in its general Senſe, a Door, Gate, Paſſage, *&c.* thro' which to *Enter*, or arrive within a Place. See DOOR, GATE, *&c.*

ENTRY, in Book-keeping. See BOOK-KEEPING.

ENTRY, in Commerce, a Duty, or Impoſt, laid on Commodities imported into a State, either by Land or Sea.

The Duties of *Entry*, are paid according to a Tariff ſettled for that Purpoſe. Where the Duty of *Entry* of any Commodity, is not fix'd by the Tariff; it is paid by Eſtimation, *i. e.* in Proportion to what ſome other Commodity, of nearly the ſame Quality and Value, uſes to pay. See DUTY, IMPORTATION, EXPORTATION.

ENTRY, is alſo a ſolemn Reception, or Ceremony perform'd by Kings, Princes, Embaſſadors, Legates, *&c.* upon their firſt *Entering* a City, or upon their Return from ſome Triumph and Expedition.

ENTRY, in Law, ſignifies the taking Poſſeſſion of Lands, or Tenements. See POSSESSION.

Entry is alſo uſed for a Writ of Poſſeſſion. See INGRESSU.

The *Writs of Entry*, ſays *Briton*, favour much of the Right of Property. Some, *e. gr.* are to recover Cuſtoms, and Services; and in theſe are contain'd the two Words, *ſolet* and *debet*: Such are the Writs *Quo jure, Rationabilibus Diviſis, Rationabili Eſſoverio*, &c.

In the Plea of *Entry* there are three Degrees: First, where a Man demandeth Lands or Tenements, of his own Seiſin, after the Term is expired. The Second is, where one demandeth Lands or Tenements, let by another after the Term is expired. The Third, where one demandeth Lands or Tenements of that Tenant, who had Entry by one, to whom ſome Anceſtor of the Plaintiff did let for a Term now expired; according to which Degrees, the Writs for Remedy are varied

Beſide which, there is a fourth Form, without Degrees, and in Caſe of a more remote Seiſin, to which the other three Degrees do not extend. The Writ in the ſecond Degree, is call'd a *Writ of Entry in le per:* In the third, *In le per & cui:* And in the fourth, without Degrees, a *Writ of Entry in le poſt*; that is, after Diſſeiſin, made by ſuch a one to ſuch a one. And if a *Writ of Entry* be conceiv'd out of the right Cauſe, ſo that one Form is brought for another, it is abatable. In theſe four Degrees are comprehended all Manner of Writs of *Entry*, which are without Certainty and Number.

A *Writ of Entry* differeth from an Aſſize, becauſe it lieth for the moſt Part againſt him who enter'd lawfully, but holdeth againſt Law; whereas an Aſſize lieth againſt him, who unlawfully diſſeized: Yet, ſometimes, a *Writ of Entry* lieth upon an Entruſion. See Assize.

ENTRIES, amongſt Hunters, are thoſe Places, or Thickets, thro' which Deer are found lately to have paſſed; by which Means their Bigneſs or Size is gueſſed at, and then the Hounds, or Beagles, are put to them for the View.

ENTRUSION, or INTRUSION, in Law, a violent, or unlawful Entrance into Lands, or Tenements, void of a Poſſeſſor; by a Perſon who has no Right to them.

E. gr. When a Man ſteps into Lands, the Owner whereof lately died, e're the right Heir, either by himſelf, or any other, hath taken Poſſeſſion, it is Intruſion.

Intruſion and Abatement, are ſometimes taken for the ſame Thing: Tho' there is a Difference. See Abatement. See alſo Disseisin.

ENVELOPE, in Fortification, is a Mount of Earth, ſometimes raiſed in the Ditch of a Place, and ſometimes beyond it; being either in Form of a ſimple Parapet, or of a ſmall Rampart border'd with a Parapet.

Theſe *Envelopes* are made, where one would only cover the weak Places with ſingle Lines; without any Deſign of advancing towards the Field, which cannot be done but by Works which require a great deal of Breadth; ſuch as Horn-Works, Half-Moons, *&c.*

Theſe *Envelopes* are ſometimes called *Sillons, Contregards, Conſerves, Lunettes*, &c.

ENVIRONNE, in the *French* Heraldry, is when a Lion, or other Figure, is *Environ'd*, or encompaſs'd round with other Thing.

Environne with ſo many *Bezants*, &c. *in Orle.*

ENUMERATION, *Numbering*, a particular Account, or Detail of ſeveral Things. See Numeration.

God deſſies *Abraham*, in Scripture, to *Enumerate* the Stars: At the Time of our Saviour's Birth, *Auguſtus Cæſar* had commanded an *Enumeration* to be made of all the World, or rather of all the People under his Empire. Tho' ſeveral able Authors are of Opinion that the Cenſus, Tax, or *Enumeration*, mention'd by St. *Luke*, did not extend to the whole Empire, but only to the People of *Judea.* See *Perizonius de Cenſu Judaico:* And *Berger de Viis Militaribus.*

At *Rome*, it was an uſual Thing to have an *Enumeration* of all the Families: The firſt was under *Servius Tullius*, when the Men amounted to 80 Thouſand. *Pompey*, and *Craſſus*, made another when they reach'd to 400 Thouſand. That of *Cæſar* did not exceed 100 Thouſand: So that the Civil Wars muſt have deſtroy'd 300 Thouſand *Roman* Citizens. Under *Auguſtus*, in the Year 725, the *Roman* Citizens, throughout the Empire, were number'd at 4 Million 63 Thouſand. In the Year of *Rome* 746, the Citizens being number'd again, were found 4 Millions, 2 Hundred 33 Thouſand. In the Year 766, being the laſt Year of *Auguſtus*'s Reign, that Prince, together with *Tiberius*, made another *Enumeration* of the Citizens of *Rome*, when they were found 4 Millions 137 Thouſand Perſons. *Claudius* made a new Computation, in the Year of Chriſt 48, when, as *Tacitus* relates it, the *Roman* Citizens throughout the whole Empire, amounted to 6 Millions 964 Thouſand; tho' others repreſent the Number as conſiderably greater.

A very curious, rare, yet indiſputable Medal of *Claudius*, never yet made public, expreſſes the preciſe Number in this Liſt made by *Claudius*, which was call'd *Oſtenſio*, to be 7 Millions of People fit to bear Arms, beſide all the Soldiers on Foot in the Armies, which amounted to 50 Legions, 57 Cohorts, and 60 Soldiers.

After this *Enumeration* we find no more till that of *Veſpaſian*, which was the laſt.

Enumeration, in Rhetoric, a Part of the Peroration, wherein the Orator, collecting the ſcatter'd Heads of what has been delivered throughout the whole, makes a brief, and artful Rehearſal, or Recapitulation thereof. See Peroration.

Enumeration *of the Parts*, in Rhetoric, is what we more uſually call *Diſtribution.* See Distribution.

ENUNCIATION, a ſimple Expreſſion, or Declaration of a Thing, in Terms either of Affirmation, or Denial.

The Schoolmen uſually diſtinguiſh three Operations of the Underſtanding, Apprehenſion, *Enunciation*, and Reaſoning. See Mind, Operation, *&c.*

Enunciation, among the Logicians, is the ſame as a *Propoſition.* See Proposition.

ENVOICE. See Invoice.

ENVOY, a Perſon deputed, or ſent purpoſely to negotiate ſome particular Affair with a foreign Prince, or Republic. See Minister.

Thoſe ſent from the Courts of *England, France*, &c. to *Genoa*, the Princes of *Germany*, and other petty Princes and States, don't go in Quality of Embaſſadors, but of *Envoys.*

Add, that thoſe ſent from one great Prince, or State, to another; as from the King of *England* to the Emperor, *&c.* When the Affair they go upon is not very ſolemn and important, have frequently no other Character but that of *Envoys.* See Embassador.

Envoys are either *Ordinary*, or *Extraordinary.* See Extraordinary, *&c.*

Both Kinds enjoy the Protection of the Law of Nations, and all the Privileges of Embaſſadors; only differing from them in this, that the ſame Ceremonies are not perform'd to them.

The Quality of *Envoy* Extraordinary, *Wicquefort* obſerves, is very modern; more modern than that of Reſident: The Miniſters inveſted therewith, at firſt, took on them moſt of the Airs of Embaſſadors; but they have ſince been taught otherwiſe.

In the Year 1639, the Court of *France* made a Declaration, that the Ceremonies of conducting *Envoys* Extraordinary to their Audience in the Kings and Queen's Coaches, with divers others, ſhould no longer be practiſed to *Envoys.*

S. *Juſtiniani*, the firſt *Envoy* Extraordinary from *Venice*, after that Regulation offer'd to cover, in ſpeaking to the King; but it was refuſed him. And the King of *France* himſelf declared, that he did not expect his *Envoy* Extraordinary at the Court of *Vienna*, ſhould be regarded any otherwiſe than as an ordinary Reſident. Since which Time, thoſe two Kinds of Miniſters have been treated alike. *Wicquefort.*

ENURNY, is the Herald's Term, for a Bordure of a Coat of Arms being charged with any Kind of Beaſts.

ENVY. See Pleasure and Pain.

EOLIC, or, more properly, ÆOLIC, in Grammar, is a Dialect of the *Greek* Language. See Æolic and Dialect.

Eolic, in Muſic, one of the Modes of the antient Muſic. See Mode.

The *Æolic* Mode was found fitteſt for *Lyric* Verſes; as having a peculiar Sweetneſs and Gravity. It was the Sol of *G re Sol ut.*

The *Sub-Æolic*, or *Hypo-Æolic*, had the ſame Effects with the *Æolic.* It was the *re* of *de Sol re*; and began a Diateſſaron lower than its natural authentic Mode.

EOLIPILE, in Hydraulicks. See Æolipile.

EON, or ÆON, a *Greek* Term, ſignifying *Seculum*, Age; attributed by *Valentine*, a *Hereſiarch* of the IId Century, to his God, and all the Productions thereof. See Æon.

Valentine, refining on thoſe who had preceded him in this Way, produced a long Genealogy of a Number of *Æons*, or *Æones:* The firſt, and moſt perfect, he particularly denominates Προών, *Proon*, that is, *pre-exiſtent*; beſide other Names, the moſt uſual whereof was that of *Bythos*, Βύθος, *Depth.*

This *Bythos* continued long alone with Ἔννοια, *Ennœa*, Thought; whom *Valentinus* alſo call'd Χάεις, *Grace*, and Σιγή, *Silence.* At length, *Bythos* with *Sige*, produced *Nous*, Νοῦς, *Underſtanding*, and Ἀλήθεια, *Truth*, her Siſter. *Nous* begot two *Eons*; *Logos*, Λόγος, *Word*, and *Zoe*, Ζωή, *Life:* Which two begot two others, *Anthropos*, Ἄνθρωπος, *Man*, and Ἐκκλησία, *Church.* And theſe eight *Æons* were the Chief of all the reſt.

The *Word*, Λόγος, and *Life*, Ζωή, begot ten other *Æons: Man* and the *Church* begot twelve more; among whom were the *Paraclete*, *Faith*, *Hope*, *Charity*, the *Perfect*, Τέλετος, and *Wiſdom*, Σοφία. And thus were the 30 *Æons* made up, which all together made the *Pleroma*, Πλήρωμα, or ſpiritual and inviſible *Plenitude.*

Theſe

Theſe 30 *Eons*, the *Valentinians* hold to have been figured by the thirty Years of our Saviour's private Life. See VALENTINIAN.

EPACTS, in Chronology, the Exceſſes of the Solar Month above the Lunar Synodical Month; and of the Solar Year above the Lunar Year, or 12 Synodical Months: Or of ſeveral Solar Months, above as many Synodical Months; and ſeveral Solar Years above as many Dozens of Synodical Months.

Whence, the *Epacts* are either *Annual* or *Menſtrual*.

Menſtrual EPACTS, are the Exceſſes of the Civil, or Calendar Month, above the Lunar Month. See MONTH.

Suppoſe, *e. gr.* it were New Moon on the firſt Day of *January*: Since the Lunar Month is 29 Days $12^h\ 44'\ 3''$; and the Month of *January* contains 31 Days: The Menſtrual *Epact* is 1 Day $11^h\ 15'\ 57''$.

Annual EPACTS, are the Exceſſes of the Solar Year above the Lunar. See YEAR.

Hence, as the *Julian* Year is 365 Days 6 Hours, and the *Julian* Lunar Year 354 Days $8^h\ 48'\ 38''$; the annual *Epact* will be 10 Days $12^h\ 11'\ 22''$; that is, nearly, 11 Days. Conſequently, the *Epact* of 2 Years, is 22 Days; of 3 Years, 33 Days; or rather 3, ſince 30 Days make an *Emboliſmic*, or Intercalary Month. See EMBOLISMIC.

Thus, the *Epact* of 4 Years are 14 Days, and ſo of the reſt: And thus, every 19th Year, the *Epact* becomes 30 or 0; conſequently the 20th Year the *Epact* is 11 again: And ſo the Cycle of *Epacts*, expires with the Golden Number, or Lunar Cycle of 19 Years, and begins again with the ſame, as in the following Table.

Gold. Numb.	*Epacts.*	*Gold. Numb.*	*Epacts.*	*Gold. Numb.*	*Epacts.*
1	XI	7	XVII	13	XXIII
2	XXII	8	XXVIII	14	IV
3	III	9	IX	15	XV
4	XIV	10	XX	16	XXVI
5	XXV	11	I	17	VIII
6	VI	12	XII	18	XIX
				19	XXX

Again, as the New Moons are the ſame, that is, fall on the ſame Day every 19 Years, ſo the Difference between the Lunar and Solar Year, is the ſame every 19 Years. And becauſe the ſaid Difference is always to be added to the Lunar Year, in Order to adjuſt, or make it equal to the Solar Year; hence the ſaid Difference reſpectirely belonging to each Year of the Moon's Cycle, is called the *Epact of the ſaid Year*, that is, the Number to be added to the ſaid Year to make it equal to the Solar Year; The Word being form'd from the *Greek*, επαγω, *induco*, *intercalo*.

Upon this mutual Reſpect, between the Cycle of the Moon, and the Cycle of the *Epacts*, is founded this Rule for finding the *Epact* belonging to any Year of the Moon's Cycle. Multiply the Year given of the Moon's Cycle into 11; if the Product be leſs than 30, it is the *Epact* ſought; if the Product be greater than 30, divide it by 30, and the Remainder of the Dividend is the *Epact*: For Inſtance, I would know the *Epact* for the Year 1712, which is the third Year of the Moon's Cycle. Wherefore 3 is the *Epact* for 1712: For $11 \times 3 = 33$, and 33 being divided by 30, there is left 3 of the Dividend for the *Epact*. See CYCLE.

By Help of the *Epact* may be found what Day of any Month in any Year the New Moon falls on, thus: To the Number of the Month, from *March* incluſively, add the *Epact* of the Year given; if the Sum be leſs than 30, ſubſtract it out of 30; if greater, ſubſtract it out of 60; and the Remainder will be the Day, whereon the New Moon will fall.

If the New Moon be ſought for in the Month of *January* or *March*, then nothing is to be added to the *Epact*; if for *February* or *April*, then only 1 is to be added.

For Example: I would know what Day of *December* the New Moon was on *A. D.* 1711, the *Epact* whereof is 22. By the aforeſaid Rule, I find it will be *December* the 28th; for $22 + 10 = 32$, and $60 - 32 = 28$. See MOON.

The Day whereon the New Moon falls, being thus found, it is eaſy to infer from thence what the Age of the Moon is on any Day given.

However, there is a peculiar Rule commonly made uſe of to this Purpoſe, which is this: Add the *Epact* of the Year, the Number of the Month, from *March* incluſively, and the given Day of the Month all into one Sum, which if it be leſs than 30, ſhews the Age of the Moon; if it be greater than 30, divide it by 30, and the Remainder of the Dividend ſhews the Age of the Moon, or how many Days it is from the laſt New Moon: This Method will never err a whole Day.

For Inſtance: What was the Age of the Moon on *December* 31ſt, *A. D.* 1711? By this Rule, I find, that the Moon will then be three Days old; that is, it will then be three Days from the laſt new Moon. For, $22 + 10 + 31 = 63$, and 63 being divided by 30, there will remain of the Dividend, 3. And this exactly agrees to the other foregoing Rule, whereby it was found that the New Moon was on *December* 28. 1711.

It muſt be obſerved, that as the Cycle of 19 Years, anticipates the new Moons by one Day in 312 Years; the ſame Cycle of *Epacts* will not always hold: The Moon's Anticipation leſſening the ſeveral *Epacts* by one, every 312 Years.

To have the *Epacts*, therefore, point out the New Moons perpetually; that *Epact* given in the Calendar is not ſufficient; but all the 30 *Epacts* ſhould be beſtowed throughout the whole Year, that the Calendar may exhibit all the Cycles of *Epacts*. See CALENDAR.

And, again, that as in 300 *Gregorian* Years, there is one Biſſextile Year dropp'd; the New Moons are thus thrown on the following Day. Conſequently, by the Moon's poſt-poſition there is one added to every *Epact*. See GREGORIAN.

EPANORTHOSIS, in Rhetoric, a Figure, whereby the Orator revokes and corrects ſomething before alledg'd, as too weak; and adds ſomething ſtronger, and more conformable to the Paſſion he is agitated by. See CORRECTION.

Such, *e. gr*, is that of *Cicero* for *Cœlius*: *O Stultitia! Stultitiam ne dicam*, an *Impudentiam Singularem*. Oh Folly! Folly ſhall I call it, or rather intolerable Impudence? And in the firſt *Catalinarian*: *Quamquam quid loquor! Te ut ulla res frangat? Tu ut unquam te corrigas? Tu ut ullam fugam meditere? Tu ut ullum exilium cogites? Utinam tibi iſtam Mentem Dii Immortales donarent.*

Thus alſo *Terence*, in the *Heautontimorumenos*, introduces his old Man *Mendemus*, ſaying,

Filium Unicum Adoleſcentulum
Habeo. Ah! quid dixi habere me? Imo habui, Chreme,
Nunc habeam nec ne, incertum eſt.

The Word is *Greek*, επανόρθωσις, form'd of ὀρθός, *Right*, *Straight*, whence ὀρθόω, *I ſtraighten*, ανορθόω, επανορθόω, *I redreſs*, *ſtraighten*, *correct*, and ἐπανόρθωσις, *Correction*. The *Latins* call it *Correctio*, and *Emendatio*.

EPAULE, or ESPAULE, in Fortification, the *Shoulder* of the Baſtion; or the Angle made by the Face and Flank; whence that Angle is often called the *Angle of the Epaule*. See BASTION and SHOULDER.

The Word is pure *French*, and literally ſignifies *Shoulder*.

EPAULEMENT, in Fortification, a Side-Work haſtily thrown up, to cover the Canon, or the Men.

It is made either of Earth thrown up, of Bags of Earth, Gabions, or of Faſcines and Earth, of which latter make, the *Epaulements* of the Places of Arms, for the Cavalry, behind the Trenches are.

EPAULEMENT, is alſo uſed for a Demi-Baſtion, conſiſting of a Face and Flank, placed at the Point of a Horn- or Crown-Work. Alſo, for a little Flank, added to the Sides of Horn-Work, to defend them when too long. Alſo for the Redoubts made on a right Line, to fortifie it. And, laſtly, for a Square Orillon, which is a Maſs of Earth almoſt ſquare, faced and lined with a Wall, and deſigned to cover the Canon of a Caſement.

EPENTHESIS, in Grammar, the Addition, or Inſertion of a Letter, whether a Vowel, or Conſonant, in the Middle of a Word; as *Relligio* for *Religio*. See FIGURE.

The Word is *Greek*, επένθεσις, form'd of ἐπὶ, ἐν, and τίθημι, *q. d.* επεντίθημι, *infero*, *immitto*.

EPHA, a dry Meaſure in Uſe among the *Hebrews*. See MEASURE.

The *Epha* was the moſt ordinary Meaſure they uſed; and that whereby the reſt were regulated. 'Tis commonly ſuppoſed that the *Epha*, reduced to *Roman Modius*, contain'd four *Modii* and a half. Now the *Roman Modius* of Grains, or Flower, contain'd 20 *Libræ*, or Pounds; conſequently the *Epha* weigh'd 90 Pounds. Dr. *Arbuthnot* reduces the *Epha* to 3 Pecks, 3 Pints, *Engl.*

The Hoſpitality of *Gideon* is prais'd for baking an *Epha* of Flower for a ſingle Angel. Which might have ſerved 45 Men a whole Day; the uſual Portion allow'd the Workmen being two Pound of Bread *per Diem*.

EPHEMERA, in Medicine, an Epithet applied to ſomething that only laſts one Day; particularly to a *Fever*, which terminates in the Compaſs of a Day, *i. e.* to an Acceſs of a Fever which returns no more, called by *Galen*, ἐφήμερος πυρετὸς, *Febris Ephemera*, and alſo *Diaria*. See FEVER.

The

The Word, and the following one, *Ephemerides*, are form'd of the Prepoſition ἐπὶ, *de, ſuper, apud, ob, in, præter*, in *Engliſh*, of, on, at, for, in, by, near; and ἡμέρα, *Dies*, Day.

EPHEMERA, or EPHEMERON, in Natural Hiſtory, an Animal that only lives five Hours: Within the Term whereof it is born, grows, and extends its Members, appears young, breeds Eggs, caſts Seed, grows old, and dies.

Ariſtotle, who gives the firſt Account thereof, in his Book *de Animal.* gave it the Name ἐφήμερον, becauſe its Life was bounded within the Day. *Aldrovandus*, *Jonſton* and *Cluſius*, furniſh us Accounts of the *Ephemeron*; and above all, *Swammerdam*, in an expreſs Work *de Ephem. Vitæ*.

He calls it *Ephemera*, *Hemerobios*, and in Latin *Diaria*.

The *Ephemeron* is of the winged, or fly Kind; and appears uſually about St. *John*'s Tide. It is born about Six a Clock in the Evening, and dies about Eleven.

It muſt be obſerved, however, that e're it aſſumes this Figure, it has lived three Years under that of a Worm, in a clay Cell, or Caſe.

It never eats from the Time of its Change to its Death; nor is it furniſh'd with the Parts neceſſary for the Reception and Concoction of Food. Its Change ſeems intended merely for the Sake of Generating and Multiplying its Kind.

Its Life is ſumm'd up in a few Words. In the Beginning, it ſheds his clay Coat; which done, and the poor little Animal thereby render'd light and agile, it ſpends the reſt of its ſhort Life in friſking over the Waters. During which, the Female drops her Egg on the Waters, and the Male his Sperm on them, to impregnate them. Theſe Eggs, thus impregnated, deſcend to the Bottom of the Water by their own Gravity, and are hatch'd by the Warmth of the Sun into little Worms, which make themſelves Caſes in the Clay, and feed on the ſame without any Need of parental Care: Till the Time of their Change, or Metempſychoſis come.

EPHEMERA, is alſo applied among Botaniſts, to a Kind of Flowers, which open, and expand themſelves at Sun-Riſing, and wither and fade away again at his Setting. Such are the *Dent de lion*, vulgarly Dandelion, and divers others.

The Travellers into *Arabia* tell us of ſeveral *Ephemeron Trees*, which grow every Day, from Morn to Noon, and then diſappear; tho' 'tis not known, whether they wither away entirely, or ſink back into the Sands among which they grow.

EPHEMERIDES, or EPHEMERIS, in Aſtronomy, Tables calculated by Aſtronomers, ſhewing the preſent State of the Heavens for every Day, at Noon; that is, the Places wherein all the Planets are found, at that Time. See PLANET, PLACE, and TABLE.

'Tis from theſe Tables, that the Eclipſes, Conjunctions, and Aſpects of the Planets, are determined; Horoſcopes, or Celeſtial Schemes conſtructed, &c. See CALENDAR.

The *Ephemerides* of *Origan*, *Kepler*, *Argoli*, *Heckerus*, *Mezzaracchis*, *Wing*, *de la Hire*, *Parker*, &c.

Sig. *Caſſini* has made *Ephemerides* of the *Sidera Medicæa*, or *Satellites* of *Jupiter*, which are of good Uſe in determining the Longitude. See SATELLITE, ECLIPSE.

EPHETA, in Antiquity, a Magiſtrate among the *Athenians*.

The *Ephetæ* were inſtituted by King *Demophon*, to take Cognizance of Murthers committed by Accident: Their Number was 100, whereof 50 were *Athenians*, and 50 *Argians*. They were not admitted to the Poſt till upwards of 60 Years of Age.

Draco extended their Authority. *Ubo Emmius*, *de Rep. Athen.* ſays, he transferr'd Part of the Juriſdiction of the *Areopagites* upon 'em.

EPHIALTES, in Medicine, a Diſeaſe, by the *Engliſh* call'd the *Night-Mare*, and the Latins *Incubus*; chiefly affecting Perſons aſleep, when laid on their Back, and having the Stomach loaded with Food of difficult Digeſtion. See INCUBUS.

In this State they are oppreſs'd, as it were, with a huge Weight on the Breaſt, and imagine ſome Spectre, or Demon, ſtopping their Breath.

This Diſeaſe does not ariſe, as was antiently imagined, from groſs Vapours filling the Ventricles of the Brain: But rather from a too great Repletion of the Stomach, which hinders the Motion of the Diaphragm, and of Conſequence, the Dilatation of the Breaſt neceſſary for Inſpiration. See RESPIRATION.

Etmuller obſerves, that they are but rarely affected with this Diſorder who uſe a laudable Diet, and ſup ſparingly: lying on the Side, with the Head pretty high, generally prevents it.

The *Arabs* call it, the *Nocturnal Epilepſy*, becauſe, when habitual, it uſually degenerates into the Epilepſy, being the uſual Forerunner thereof, eſpecially in young People. In old, it frequently terminates in an Apoplexy. See EPILEPSY, &c.

Menjoitius accounts for its being moſt uſual in Boys, from their being too voracious, and eating more than they can digeſt. *Aurelianus* aſſures us, it has kill'd ſeveral; adding from *Silimachus*, that there was a contagious, or epidemic *Incubus* at *Rome*, which over-run Numbers like a Plague.

EPHIPPIUM, in Anatomy, a Part of the *Sphenoides*, call'd alſo *Sella Equina*, and *Sella Turcica*. See SELLA *Equina*.

EPHOD, a Sacerdotal Garment, in Uſe among the antient *Jews*.

The *Ephod* is ſuppoſed to have been a Kind of Linnen Alb, or Surplice, by the *Latins* call'd *Super-humerale*: But 'tis very hard to ſay preciſely what it was; And there is Room enough for the Interpreters to be divided about it.

The only Point they are agreed upon is, that it was an upper Garment wore over all the reſt, immediately under the Pectoral, or Breaſt-plate. Some hold it had Sleeves; others deny it. The Generality agree it was very ſhort, tho' ſome hold, that it hung down to the Feet behind.

There were two Kinds of *Ephods*; the one, common to all who aſſiſted in the Temple; being only made of common Linnen, mention'd in the I*ſt* Book of *Samuel*, ii. 18. The other, peculiar to the High-Prieſt, mention'd *Exod.* xxviii. 6, 15. to be made of Gold, of blue, and of Purple, of Scarlet, and fine twined Linnen, with cunning Work; Having two Shoulder Pieces, with a curious Girdle of the ſame Matter, whereon were two Onyx's, with the Names of the Children of *Iſrael* engraven thereon.

It is alſo expreſs'd, in the II*d* Book of *Samuel*, vi. 14. that upon the Removal of the Ark of the Covenant from the Houſe of *Obed Edom*, that Prince danced for Joy, girded with a Linnen *Ephod*; whence ſome Authors have concluded, that the *Ephod* was alſo a Regal Garment on ſolemn Occaſions.

The Word אפד *Ephod*, is derived from אפד *Aphad*, a *Hebrew* Word, ſignifying *to cloath*.

EPHORI, Magiſtrates eſtabliſhed in ancient *Sparta*, to balance, and check the Power and Authority of the Kings; as, at *Rome*, there were Tribunes created to controul the Power of the Conſuls. See TRIBUNE.

Lycurgus, being ſenſible that a perfect Underſtanding between the Prince and the People, was the Baſis and Foundation of both their Happineſs; To maintain that good Underſtanding, eſtabliſh'd *Ephori*, or Inſpectors, as a Kind of Mediators, who ſhould have an Eye to the Meaſures and Conduct of both Sides, and preſerve ſo equal a Ballance between 'em, that the Regal Power ſhou'd never decline into Severity and Tyranny; nor the Liberty of the People run into Licenſe and Rebellion.

The Authority of the *Ephori* was very great: On certain Occaſions, they expell'd, and even put to Death, the Kings; and aboliſhed, or ſuſpended the Power of the other Magiſtrates; calling 'em to Account at Pleaſure. *Ageſilaus*, in the Height of all his Conqueſts, which even ſtruck Terror on the great King of *Perſia*; ſtopp'd, and turn'd back, out of Deference to the *Ephori*, when they recall'd him. Some Authors deny, that the *Ephori* were eſtabliſh'd by *Lycurgus*.

The Word is form'd of the *Greek* ἐφορᾶν, *intueri*, form'd of the Prepoſition ἐπὶ, and the Verb ὁρᾶν, *to ſee*; whence ἔφορος, *Inſpector*.

EPIBATERIAN, a Compoſition of Poetry, in Uſe among the ancient *Greeks*.

When any Perſon of Condition and Quality, return'd Home after a long Abſence, or Journey, into another Country; he call'd together his Friends, and Fellow-Citizens, and made 'em a Speech, or rehears'd them a Copy of Verſes, wherein he return'd ſolemn Thanks to the Immortal Gods, for his happy Return, and ended with an Addreſs, by way of Compliment, to his Fellow-Citizens.

This Copy of Verſes, is what the *Greeks* call Ἐπιβατήριον, *Epibaterium*, of ἐπιβαίνω, *I return*. At going away, they had another, call'd *Apobaterium*. See APOBATERIUM.

EPIC *Poem*, call'd alſo EPOPEA; an heroick Poem; or a Poem relating ſome great and ſignal Tranſaction of a Hero. See HERO, &c.

Such is the Iliad and Odyſſee of *Homer*, the Æneid of *Virgil*, the *Gieruſalemme* of *Taſſo*, and the Paradiſe loſt of *Milton*; which are the principal Poems of the *Epic* Kind. See ILIAD, ÆNEID, &c.

The *Epic* Poem, is more accurately and ſcientifically defined, by that excellent Critic, Fath. *Boſſu* in an expreſs Treatiſe on that Subject, to be a Diſcourſe invented with Art,

Art, to form the Manners by Inſtructions, diſguiſed under the Allegory of an important Action, related in Verſe, in a probable, entertaining, and ſurprizing Manner. See POEM.

The *Epopea* is diſtinguiſhed from the Comedy, in that the Action of the latter is not *important*, nor is it *related* by the Poet, but acted by the Perſons introduced for that Purpoſe; which Circumſtance, likewiſe, diſtinguiſhes it from a Tragedy. See COMEDY and TRAGEDY.

Nor is it a philoſophical Poem, as that of *Lucretius*, on the Creation of Sir *R. Blackmore*; nor a Treatiſe of Agriculture, or the like, as the Georgicks of *Virgil*; thoſe Poems not being intended to form the Manners: beſide, that the Inſtructions they contain are naked, ſimple, and direct, without any Diſguiſe, or Allegory. Which ſecond Circumſtance likewiſe diſtinguiſhes it from a Treatiſe of Morality, wrote in Verſe: Or a ſimple Hiſtory in Verſe, as the *Pharſalia* of *Lucan*; the Punic War of *Silius*; or the Civil Wars of *Sam. Daniel*; add, that its being confined to *one important Action*, diſtinguiſhes it from a Poem which relates all the Actions of a Perſon's Life; as the *Theſeid* and *Achilleid* of *Statius*, which are what we properly call *Heroic Poems*. See HEROIC.

Mon. *de la Motte*, indeed, in his Controverſy with Madam *Dacier*, on the Subject of *Homer*, maintains, that the whole Life of a Hero, may juſtly be made the Subject of an *Epic* Poem; and even, that the *Lutrin* of Mon. *Boileau*, might paſs for an *Epic Poem:* But he ſeem'd, afterwards, to return to the common Sentiment. In effect, the Queſtion is not as to the Senſe, which may be affected to the Words *Epic Poem*, but the Senſe which Cuſtom has actually affected to 'em.

If we had only Regard to the Etymology of the Word *Epic*, (of ἔπος, *Verſe*; *Poetry*, from εἶπω, *dico*, *I ſpeak*, *relate*) all Poems wherein the Poet ſpeaks, or rehearſes Things himſelf, without making the Perſons of his Poem ſpeak, except at ſecond hand, as he relates what they ſpoke on this or that Occaſion, wou'd be *Epic* Poems; and ſo, there's not an Epigram, Sonnet, or Madrigal, but wou'd come under this Denomination. But this were wild.

In Effect, the Term *Epic* Poem, is only attributed to a Compoſition, whoſe Subject is great, inſtructive, and ſerious; that only comprehends one ſingle principal Event, to which all the reſt refer; which principal Action is to be terminated in a certain Space of Time, ordinarily about a Year. 'Tis true all this is arbitrary; but the Senſe of all Words is ſo too: And in Matters of Language we muſt always be guided by Cuſtom.

If M. *de la Motte* had only pretended, that one might make a fine, inſtructive Poem, on the whole Life of a Hero; or an agreeable, and diverting Poem, on ſome humorous Adventure; all the World would have been of his Side. But 'tis enough that Cuſtom has not thought good to apply the Term *Epic*, either to Subjects of too much Extent, and that are ſtuff'd with too many Incidents no wiſe connected together; nor to burleſque Poems, as the *Batrachomyamachia* of *Homer*; the *Secchia Rapita* of *Taſſoni*; the *Defaite de Dulot*; the *Lutrin* of *Boileau*; the *Hudibras* of *Butler*; the *Rape of the Lock* of Mr. *Pope*; or the *Diſpenſary* of Dr. *Garth*. See BURLESQUE.

The *Epic* Poem, then, as appears from what was above obſerved, bears a Relation, or Analogy, to four Things; Hiſtory, Morality, Fable, and Poetry: To Hiſtory, as both of 'em relate one or more Actions; but then, the Actions of Hiſtory are ſingular; ſo that the *Epopea* is no Hiſtory, nor Kind of Hiſtory. See HISTORY.

To Moral Philoſophy, as both of them conſiſt of Inſtructions for forming the Manners; but the Action and Allegories diſtinguiſh it herefrom. See MORALITY.

But it relates entirely to Poetry and Fable, as being ſtrictly a Poem, and a Fable. See POETRY and FABLE.

The Nature of the *Epic* Poem, is finely drawn by the great Critic abovementioned: The *Epic* Poets, ſays Fath. *Boſſu*, have done that with Regard to Morality, which the ancient Heathen Divines did with Regard to the Divinity. The too great Diverſity of divine Actions and Perfections, ſo very diſproportionate to our Comprehenſion, obliged the latter to divide a ſingle Idea of a ſimple Eſſence, God, into ſeveral Perſons; to whom they attributed ſeveral Names, *Jupiter*, *Juno*, *Neptune*, &c. See GOD.

And, on the contrary, the Nature of moral Philoſophy, which never preſcribes Rules for particular Things, lead the Poets to collect into one ſingle Idea, one and the ſame Perſon, and one apparently ſingular Action, whatever of that Kind was found in different Perſons, and different Actions.

Thus *Ariſtotle*, Ου σχαζεται ἡ Ποιησις ονομασι, &c. Poetry, ſays he, teaches moral Philoſophy, not by relating only, in manner of an Hiſtorian, what *Alcibiades*, for inſtance, did or ſuffer'd; but by propoſing what ſome Perſon, named as the Poet thinks fit, wou'd, probably, or neceſſarily have done on the like Occaſion. And thus it is that he ſhews either the unhappy Conſequences uſually attending imprudent Schemes, or ill Actions; or the Reward of good Actions, and the Satisfaction reſulting from a Deſign laid in Virtue, and conducted with Prudence. So that in the *Epic* Poem, according to *Ariſtotle*'s Sentiment, the Perſons and Actions, however named, are all feign'd, allegorical, and univerſal, not hiſtorical and ſingular.

But the Poets thus taking on 'em the Office of Moral Philoſophers, did not ceaſe to be Divines. On the contrary, their Morality it ſelf frequently obliges them to introduce the Deity into their Works; as the Knowledge, Fear, and Love of God, are the firſt and moſt ſolid Foundations of all Morality. The Preſence of the Divinity, and the Care ſo auguſt a Perſonage was ſuppoſed to have of the Action, obliged the Poet to make the Action great and important, and to have it tranſacted by Kings and Princes. The ſame likewiſe obliged 'em to think and ſpeak, in a manner elevated above the common Pitch of Men; and equal, in ſome meaſure, to the Dignity of the divine Perſons introduced. To which End ſerves the poetical and figurative Language, with the Majeſty of Heroic Verſe. Add, that as ſo much of the divine and miraculous might ruin the Probability, they were hereby obliged to have Recourſe to ſeveral Rules to maintain the ſame. See MACHINE.

Thus much the Poets were driven to by the Subſtance of the Things they had choſe for the Matter of their Poems and Inſtructions. The Manner of delivering 'em uſefully and methodically, obliged 'em to ſeveral other Rules. See UNITY, EPISODE, &c.

The *Epic* Poem is intended more for the Manners and Habitudes, than for the Paſſions. Theſe latter riſe all at once, and their Violence is but of ſhort Duration; but the Habitudes are more calm, and impreſs'd, or quitted more leiſurely. Conſequently, the *Epic* Action cou'd not be included in the Space of a Day, as that of the Theatrical. A longer Time was neceſſary than is required for Tragedy, which is altogether for the Paſſions.

This Diſtinction has introduced a World of Difference between Tragedy and *Epic* Poetry. The Tragic Violence requires a more lively and animated Repreſentation, than a mere Recital. Accordingly, it is wholly thrown into Action, and the Poet never ſpeaks at all, as he does in the *Epopea*, where there are no Actors.

See further of the Nature of the *Epic* Poem under FABLE.

For its Matter, ſee ACTION. For its Form, ſee NARRATION. See alſo MANNERS, CHARACTER, MACHINES, &c.

EPICARPIUM, in Medicine, a Kind of Remedy, uſually in Form of a Cataplaſm, or Plaiſter, conſiſting of ſharp, penetrating Ingredients, as Garlic, or Onion, Spiders-Web, Hellebore, Camphor, Treacle, &c. applied round the Wriſt, at the Beginning of the Acceſs of a Fever, to prevent the ſame.

The Word is form'd of the *Greek* ἐπὶ, *ſuper*, *on*, and καρπὸς, *Carpus*, *Wriſt*.

EPICEDION, in the *Greek* and *Latin* Poetry, a Poem, or poetical Compoſition, on the Death of a Perſon.

At the Obſequies of any Man, there were three Kinds of Diſcourſes uſually made: That rehears'd at his *Buſtum*, or Funeral Pile, was call'd *Nenia*; that engraven on his Tomb, *Epitaph*; and that ſpoke in the Ceremony of his Funeral, *Epicedion*. See NENIA and EPITAPH.

We have two beautiful *Epicedions* in *Virgil*; that of *Euryalus*, and that of *Pallas*.

The Word is *Greek*, form'd of ἐπὶ, *upon*, and κήδεσθαι, *to perform Funerals*, to do the laſt Office to any one, of κῆδος, *cura*, *care*.

EPICOENE, in Grammar, a Term applied to Nouns, which, under the ſame Gender and Termination, mark, indifferently, two Kinds, or Sexes. See GENDER.

Such, in *Latin*, is *Aquila*, *Veſpertilio*, &c. which ſignifie equally, a Male or Female Eagle, or Bat.

Grammarians diſtinguiſh between *Epicœne* and *Common:* A Noun is ſaid to be common of two Kinds, when it may be joyned either with a Maſculine, or a Feminine Article; and *Epicœne*, when it is always joyn'd to ſome one of the two Articles, and yet ſignifies both Genders.

EPICERASTICKS, in Medicine, are Remedies, which by their emplaſtic Virtue, or temperate Moiſture, ſoften the Acrimony of an Humour, and aſſwage the painful Senſation of the Part irritated or afflicted: Such are the Roots of Althæa, Mallows, Liquorice; Leaves of Lettice, Mallows, Nenuphar, Purſlain; the Seeds of Flax, Poppy, &c.

The Word is form'd of ἐπὶ and κεράννυμι, *tempero*, I moderate, correct.

EPICHEREMA, in Logic, an Argumentation, consisting of four, or more Propositions; some whereof are Proofs of others.

Thus, that Oration of *Cicero* for *Milo*, may be reduced to the *Epicherema*. Those who Way-lay a Man to kill him, 'tis lawful for him to kill; as is allowed by the Laws of Nature and Nations, and by the Practice of the best Men: But *Clodius* Way-laid *Milo* with that View; as appears from his forming an Ambuscade before his Country House, and from his Provision of Weapons, Soldiers, &c. Therefore it was lawful for *Milo* to kill *Clodius*. See Sorites.

EPICOLIC *Regions*, from ἐπὶ, *supra*, upon, and *Colon*, the Gut so called; a Name given by Dr. *Glisson*, to that Space, on both Sides, over the Colon. See Colon.

EPICUREANS, a Sect of antient Philosophers, who adhere to the Doctrines and Opinions of *Epicurus*. See Epicureanism.

The *Epicureans* have, in all Ages, been decried for their Morals, and their Attachment to the Pleasures of Sense: Several Authors, particularly, *Cicero* among the Antients, and *Gassendus* among the Moderns, have endeavoured to vindicate them from this Charge; by shewing that the Pleasure wherein their Master *Epicurus* places the *Summum bonum*, or supreme Happiness of this Life, was not any sensual, or brutal Pleasure, but a Contentment, and Tranquillity of Mind, exempt from all tumultuary Passions, &c.

This Opinion seems just, and well grounded; but, without entering into the Question, which *Gassendus*, *Du Rondel*, and others have exhausted; 'tis certain, that in the common Use of the Word, *Epicurean* constantly signifies a Debauchee, an indolent, soft, effeminate Person, who only consults his Pleasure, without concerning himself with any Thing serious.

In Effect, there were always two Kinds of *Epicureans*; the Rigid and Remiss: The Rigid *Epicureans*, were those strictly attach'd to the Sentiments of *Epicurus*, who placed all their Happiness in the pure Pleasures of the Mind, resulting from the Practice of Vertue. The Remiss *Epicureans*, taking the Words of that Philosopher in a gross Sense, placed all their Happiness in Pleasures of the Body, in Eating, Drinking, Loving, &c. The former Kind, who were the genuine *Epicureans*, call'd the other the Sophists of their Sect.

The *Epicureans* take their Name from the Chief of their Sect, *Epicurus*, whom some, however, deny to be the Author of the Philosophy he taught; charging him with Retailing for Physicks, the Doctrine of *Democritus*; and for Ethicks, that of *Aristippus*.

Be this as it will, he was an *Athenian*, and the Son of *Neocles*; born in the 109th Olympiad, and consequently 342 Years before Christ. He began to form his School at *Mitylene* and *Lampsachus*, about the 32d Year of his Life; tho' he afterwards remov'd to *Athens*, where he philosophized chiefly in his Garden: And died of the Stone at 72 Years of Age.

EPICUREANISM, or EPICUREAN *Philosophy*, the Doctrine, or System of Philosophy, maintain'd by *Epicurus*, and his Followers. See Epicureans.

The noble Poet *Lucretius*, who has given us a beautiful System of *Epicureanism* in fine *Latin* Verse, prefers its Father *Epicurus*, above all other Philosophers, whom, he makes no Scruple to say, he obscured, as much as the Sun does the other Stars. 'Tis said he first taught Grammar; till upon reading *Democritus*'s Books, he began to apply himself to Philosophy.

From *Democritus* he learnt the Doctrine of Atoms, or Corpuscles, which he afterwards made the Basis of his Physicks. *Clem. Alexand.* Strom. 6. advances, that *Epicurus* stole his chief Doctrines from *Democritus*. But, 'tis certain, he greatly improved and illustrated them. *Diog. Laertius* assures us, he composed an infinite Number of Volumes.

This Philosophy consisted of three Parts: *Canonical* κανονικὸν, *Physical* φυσικὸν, and ἠθικὸν, *Ethical*; which he explain'd briefly in three Epistles.

The first, as *Laertius* relates, was about the Canons, or Rules of Judging; wherein, rejecting the Use of Logic, he establish'd the Senses, Passions, and Anticipations, as the Criterions, or Judges of Truth. See Criterion, Sense, &c.

In the second, he laid down Atoms, Space and Gravity, as the first Principles of all Things. The Universe he taught, consisted of Atoms, or Corpuscles, of various Forms, Magnitudes and Weights, which having been dispersed at Random thro' the immense Inane, or Space, fortuitously concurred into innumerable Systems, or Worlds, which were thus form'd, and afterwards, from Time to Time, increas'd, changed, and dissolved again, without any certain Cause, or Design; without the Intervention of any Deity, or the Intendance of any Providence. See Atom and Corpuscle.

Not that he denied the Existence of a God: On the contrary, he asserted it; but thought it beneath the Majesty of the Deity to concern it self with human Affairs: *Laertius* assures us, he held him, τὸ μακάριον, καὶ ἀφθαρτον, ὅτε αὐτὸ πράγματα ἔχει ὅτε ἄλλῳ παρέχει, *A Blessed, Immortal Being, having no Affairs of his own to take Care of, and above taking Care of those of others.* See Corpuscular, Space, Gravity, Element, &c.

As to *Ethicks*; his first Principle, or the supreme Felicity of Man, he held, was Pleasure. Which some, as already observed, understand of Mental, and others of Carnal Pleasure. See Epicureans.

EPICYCLE, in the antient Astronomy. As the Astronomers have invented an Eccentric Circle, to solve the apparent Irregularity of the Planets, and their different Distances from the Earth; they have likewise invented a little Circle to solve the Stations, and Retrogradations of the Planets. This little Circle which they call *Epicycle*, has its Centre in the Circumference of another greater, which is the Eccentric of a Planet. See Eccentric.

In this Eccentric, the Centre of the *Epicycle* moves; carrying with it the Planet fix'd in its Circumference, the Centre of the Planet, all the Way, moving regularly along the Circumference of the *Epicycle*, when downwards, according to the Order of the Signs, and when upwards, contrary to it.

The highest Point of the *Epicycle* is call'd the *Apogee*, and the lowest the *Perigee*. See Apogee and Perigee.

The great Circle, in whose Circumference the Centre of the *Epicycle* is plac'd, is call'd the *Deferent of the Epicycle*, as carrying the *Epicycle* along with it. See Deferent.

Thus, the Moon is supposed to move in an *Epicycle*, whose Centre is in the Orbit of the Earth, according to the Hypothesis of *Copernicus*: But in that of *Ptolomy*, who supposed the Heavens solid, the *Epicycle* was a Sphere, which revolved with the Moon, of the Thickness allowed its Heaven or Orbit; and which, sometimes shew'd it higher, and sometimes lower. See *Ptolemaic* System.

'The Astronomers, who deny the Motion of the Earth; 'in Order to render the Phænomena of the Motions of the 'Planets more consistent with the Motion of the Sun, 'have affix'd the Orbit of the Earth, as an *Epicycle*, to 'the Orbit of the Planets: So that the Planet should 'proceed in an *Epicycle*, while it is carried through its 'Orbit round the Sun: But this is far from answering 'their Expectations.' *Wolf. Elem. Math.* T. II. p. 501.

'*Ricciolus*, tho' a zealous Enemy of the Motion of the 'Earth, cou'd not make any Astronomical Tables that 'should but tolerably agree with Observation, without 'supposing the Earth to move; not, tho' he called in all 'the foreign and forced Assistances of changeable *Epicycles*, 'liable to continual Increase and Decrease, and variously 'inclined to the Ecliptic.' *De Chales Astron. Reform.* Lib. X. *C.* 1. f. 353, &c.

The Word is form'd of the *Greek*, ἐπὶ, and κύκλος, *Circle*, q. d. a Circle on a Circle.

EPICYCLOID, in Geometry, a Curve generated by the Revolution of a Point of the Periphery of a Circle, along the Convex, or concave Part of another Circle. See Curve.

A Point of the Circumference of a Circle, proceeding along a Plane, in a right Line, and at the same Time revolving on its Centre, describes a *Cycloid*. See Cycloid.

And the generating Circle, if in lieu of moving on a right Line, it move along the Circumference of another Circle, whether equal or unequal; the Curve described by any Point in its Circumference is called an *Epicycloid*.

If the generating Circle proceed along the Convexity of the Periphery, it is called an *upper*, or *Exterior Epicycloid*: If along the Concavity, a *lower*, or *Interior Epicycloid*.

In an *Epicycloid*, the Part of the Circle, the generating Point moves along, is called the *Base of the Epicycloid*: Thus in *Tab. Geom. Fig.* 58. D B is the *Base* of the *Epicycloid*, V its *Vertex*; V B its *Axis*; D P V half of the *Exterior Epicycloid*, made by the Revolution of the *Semi-circle* V L B, (which is called the *Generant*) along the Convex Side of the Base, D B: As D P U is the *Interior Epicycloid*, formed by the Generant's revolving along the Concave Side of the Base.

The Length of any Part of the Curve, which any given Point in the revolving Circle has described, from the Time it touched the Circle whereon it revolved, is demonstrated to be double the versed Sine of half the Arch, which all that Time touched the quiescent Circle, as the Sum of the Diameters of the Circles, to the Semi-diameter of the quiescent Circle: Provided the revolving Circle moves upon the Convex Side of the quiescent Circle; but, if upon the Concave Side, as the Difference of the Diameters, to the Semi-diameter.

Dr. *Halley* gives us a general Proposition for measuring all *Cycloids* and *Epicycloids*; thus: The Area of a *Cycloid*, or *Epicycloid*, either primary, or contracted, or prolate, is to the Area of the generating Circle; and also the Area of the Parts, generated in those Curves, to the Areas of analagous Segments of the Circle: As the Sum of double the Velocity of the Centre, and Velocity of the

circular

circular Motion, to the Velocity of the circular Motion. The Demonſtration hereof, See in *Phil. Tranſact.* N° 218.

EPIDEMIA, or EPIDEMIC *Diſeaſe*, is ſometimes uſed for a catching, or contagious Diſeaſe; communicable from one to another: Such as the Plague, Pox, Scorbutus, *&c.*

Epidemic Diſeaſe, however, is more properly, and uſually, underſtood of a general or ſpreading Diſorder, as a Plague, ariſing from ſome Corruption, or Malignity in the Air, which ſeizes great Number of People in a little Time.

The Word is form'd of ἐπὶ and δῆμος, *Populus*, People; ſuch Diſeaſes running among all Kinds of People, of whatever Age, Sex, Quality, *&c.* as ariſing from a common or general Cauſe. Whence the *Latins* call them *Populares Morbi*, popular Diſeaſes; in Oppoſition to thoſe call'd *Sporadici*, which are only here and there, as ariſing from private, or particular Cauſes. See SPORADIC.

EPIDEMIA, in Antiquity, Feaſts of *Apollo* at *Delphos*, and *Miletus*; and of *Diana* at *Argos*. See FEAST.

Theſe Feaſts bore the Name *Epidemia*, by Reaſon thoſe Gods were imagin'd to be preſent on thoſe Days among the *People*. Accordingly, on the laſt Day of the *Epidemia*, they ſang Hymns, call'd ἀποπεμπτικὸς, to bid them adieu, and ſet them forwards on their Journey.

As thoſe Gods could not be every where, and yet were honour'd in Abundance of different Places; there were Times allow'd them to paſs from one Place to another to receive the Vows of their Adorers. See *Scaliger*, *Poet.* L. III. *C.* 114.

EPIDERMIS, in Anatomy, the *Cuticula*, or Scarf-ſkin. See CUTICLE.

Some hold the *Epidermis* to be form'd of the Excrements of the *Dermis*, or Skin: *Hippocrates* is of Opinion, it is engender'd by Cold; as, on Blood, Broth, or the like, when cold, we ſee a Pellicle form'd.

But 'tis now paſt doubt, that it is produced at the ſame Time, and after the ſame Manner with the other Parts; it being found in *Fœtus's* of all Ages, in the Womb: It has neither Veins, Arteries, nor Nerves; whence it is inſenſible.

The Word is form'd of the *Greek*, ἐπὶ, *on*, *over*, and δέρμα, *Skin*.

EPIDIDYMIS, in Anatomy, a little, round Body, on the Back of each Teſticle; call'd alſo *Paraſtata*. See PARASTATA.

The Word is form'd of the *Greek*, ἐπὶ, and διδύμος, *Twin*, *Teſticle*.

EPIGASTRIC *Region*, is a Name given to the upper Part of the Abdomen, or Belly; reaching from the *Cartilago Xyphoides*, almoſt to the Navel. See REGION.

It is divided into three Parts: The Sides, or lateral Parts, call'd *Hypochondria*; and the middle, the *Epigaſtrium*. See HYPOCHONDRIA, *&c.*

There are alſo two *Epigaſtric* Veins, and as many Arteries. The Arteries are Branches of the Iliac External Arteries: The Veins diſcharge themſelves into the Iliac External Veins.

EPIGASTRIUM, in Anatomy, the middle Part of the *Epigaſtric* Region; or, according to others, the interior Part of the lower Venter, or Abdomen. See EPIGASTRIC.

The Word is form'd of the *Greek*, ἐπὶ and γαστὴρ, *Belly*.

EPIGLOTTIS, in Anatomy, the Cover or Lid of the *Larynx*. See LARYNX.

The *Epiglottis* is a thin, moveable Cartilage, in Form of a Leaf of Ivy, or a little Tongue, and therefore likewiſe call'd *Lingula*; ſerving to cover the Cleft, or Rima of the *Larynx*, call'd *Glottis*. See GLOTTIS.

The Word is form'd of ἐπὶ and γλῶσσα, or γλῶττα, *Tongue*.

Galen takes the *Epiglottis* to be the principal Organ, or Inſtrument, of Voice; ſerving to vary, modulate, and render it harmonious. See VOICE.

Its Baſe, which is pretty broad, is in the upper Part of the *Cartilago Scutiformis*, and its Point, or Tip, turn'd towards the Palate. It is only ſhut by the Weight of the Piece in ſwallowing; but not ſo exactly, but that a Crum, or a Drop, ſometimes eſcapes thro' it into the *Trachea*. See TRACHEA, *&c.*

EPIGRAM, in Poetry, a ſhort *Poem*, or Compoſition in Verſe, treating of one only Thing, and ending with ſome Point, or lively, ingenious Thought. See POEM.

The Word is form'd of the *Greek*, ἐπίγραμμα, *Inſcription*, of ἐπιγράφειν, *to inſcribe*, or make an *Inſcription*.

Epigrams, in Effect, properly ſignify *Inſcriptions*, and derive their Origin from thoſe Inſcriptions placed by the Antients on their Tombs, Statues, Temples, triumphal Arches, *&c.* See INSCRIPTION.

Theſe, at firſt, were only ſimple Monograms; afterwards, increaſing their Length, they made them in Verſe, to be the more eaſily retain'd: *Herodotus*, and others, have preſerved us ſeveral of them.

Such little Poems retain'd the Name *Epigrams*; even after the Deſign of their firſt Inſtitution was varied, and People began to uſe them for the relating of little Facts, and Accidents, the Characterizing of Perſons, *&c.*

The *Greeks* confine their *Epigrams* to a very narrow Compaſs: For tho', in the Anthology, we here and there meet with a very long one; ordinarily, they don't exceed ſix, or, at moſt, eight Verſes. The *Latins* were not always ſo ſcrupulous, and the Moderns much leſs, as to theſe Bounds.

M. *le Brun*, in the Preface to his *Epigrams*, defines an *Epigram* a little Poem, ſuſceptible of all Kinds of Subjects, and ending with a lively, juſt, and unexpected Thought: Which are three Qualifications eſſential to the *Epigram*; particularly the firſt and laſt of them, *viz.* Brevity and the Point, or Cloſe of the *Epigram*.

To attain Brevity, only one Thing is to be aim'd at in the Poem, and that to be purſued in the conciſeſt Terms poſſible. Authors are much divided, as to the Length the *Epigram* is to be confined to: The ordinary Limits are from two to twenty Verſes; tho' we have Inſtances, both among the Antients and Moderns, where they extend to fifty. But ſtill it is allow'd that the ſhorter the better, and more perfect, as it partakes more of the Nature and Character of this kind of Poem.

The Point is a Quality much inſiſted on by the Criticks, who require the *Epigram* conſtantly to cloſe with ſomething poignant, and unexpected, to which all the reſt of the Compoſition is only preparatory. Others there are, who exclude the Point, and require the Thought to be equably diffuſed throughout the whole Poem, without laying the whole Streſs on the Cloſe: The former is uſually *Martial's* Practice, and the latter that of *Catullus*. Which is the moſt beautiful and perfect Manner, is diſputed by a third Claſs of Criticks.

The Greek *Epigrams* have ſcarce any Thing of the Point, or Briſkneſs, of the *Latin* ones: Thoſe collected in the Anthology, have moſt of them a certain Air of Eaſineſs and Simplicity, attended with ſomething juſt and witty: Such as we find in a ſenſible Peaſant, or a Child that has Wit. They have nothing that bites, but ſomething that tickles. Tho' they want the Salt of *Martial*, yet to a good Taſt they are not inſipid; except a few of them, which are quite flat and ſpiritleſs. However, the general Faintneſs, and Delicacy of the Pleaſantry in them, has given Occaſion for *a Greek Epigram*, or *Epigram a la Grecque*, to be the Denomination for an *Epigram* void of Salt or Sharpneſs.

'Tis principally the Point that characteriſes the *Epigram*, and diſtinguiſhes it from the *Madrigal*. See POINT.

In the modern Verſification, as obſerved by *Fa. Mourgues*, the *Epigram* and *Madrigal*, are diſtinguiſh'd by the Number of Verſes, and the Cloſe. 1°. By the Number of Verſes, which in the Modern *Epigram* does not go beyond eight, nor in the Modern *Madrigal*, comes ſhort of ſix: And, 2dly, In that the Cloſe, or Fall of the *Epigram*, has always ſomething more lively and ſtudied than that of the *Madrigal*. See MADRIGAL.

The *Epigram* is the loweſt, and leaſt conſiderable of all the Productions of Poetry; and 'tis rather an Effect of good Luck, than of Art, to ſucceed therein. The Fineſſe, and Subtlety of the *Epigram*, M. *Boileau* obſerves, ſhould turn on the Words, rather than the Thought; which ſeems very little to the Credit of this Kind of Compoſition, as it reduces it to the Nature of the Pun, or Equivoque. *Fa. Bouhours* confirms the Hint, in adding, that the Equivoque is what uſually ſhines the moſt in the *Epigram*.

One great Beauty of the *Epigram*, is to leave ſomething for the Reader to gueſs, or ſupply. Nothing pleaſes the Mind ſo much, as to find ſomething of it ſelf in the Objects preſented it; nor does any Thing diſguſt it more than to preclude it from ſhewing and exerciſing a Faculty it values it ſelf for. *Segrais*.

Monſ. *B. L. M.* the Author of a new Collection of French *Epigrams*, in the Year 1720, has a deal of good Obſervations on the Nature of *Epigram*. He defines it an ingenious Thought delivered in a few Verſes; and conceives it as a Generical Name, including under it divers Kinds of ſhort, lively Poeſies, as the *Sonnet*, *Rondelay*, *Madrigal*, and little *Tales* which only turn on ſome merry Thought. Epitaphs and Inſcriptions, he thinks, may be alſo uſed, reduced to the Head of *Epigrams*. See SONNET, RONDELAY, *&c.*

The *Epigram* admits of great Variety of Subjects: Some are made to Praiſe, and others to Satyrize, which laſt are much the eaſieſt; ill Nature ſerving inſtead of Point and Wit. *Boileau's Epigrams*, are all Satyrs on one or another. Thoſe of *des Reaux*, are all made in Honour of his Friends. And thoſe of Mad. *Scudery*, are ſo many Eloges. The *Epigram* being only a ſingle Thought, it would be ridiculous to expreſs it in a great Number of Verſes;

Verſes; it muſt have its Unity like the *Drama*. The Comedy has an Action for its Subject; and the *Epigram* a Thought. See UNITY.

EPIGRAPH, an Inſcription on a Building, to ſignifie its Uſe, Occaſion, the Time when, and the Perſons by whom, it was built.

The Word is *Greek*, and ſignifies *Superſcription*.

EPILEPSY, in Medicine, a Convulſion, either of the whole Body, or ſome of its Parts; attended with a Deprivation of the Senſes and Underſtanding; and returning from Time to Time in Fits, or Paroxyſms. See CONVULSION.

The Patient ſeized herewith, falls inſtantly and ſuddenly down; or, rather, throws and precipitates himſelf violently to the Ground. When down, he grinds his Teeth, foams at Mouth, and frequently ſhakes his Head; his Arms, Legs, Neck, Back, *&c.* either becoming rigid, or variouſly diſtorted. And as all the Parts are in a violent Contraction, there is frequently an involuntary Flux of Urine, Seed, and fecal Matter. After ſome Time he returns to himſelf; only retaining a Head Ache, Heavineſs, Wearineſs of their Limbs, *&c.*

Etmuller more accurately diſtinguiſhes the Diſeaſe into three Degrees: The firſt, or loweſt, is much the ſame with the higheſt Degree of a Vertigo. See VERTIGO.

In the ſecond, there ariſe various Agitations and Geſticulations; and the Senſes, both external and internal, either remaining, or being tranſported into a Delirium; they dance, ſing, laugh, weep, talk idly, ſhreek, and beat their Breaſts. Sometimes they remember all after the Fit is over, and ſometimes nothing at all.

In the third Degree, which alone is ordinarily call'd the *Epilepſy*, they loſe the Uſe both of Reaſon and Senſe; fall, or fling themſelves down, foam, grind their Teeth, and bite their Lips, with the other Circumſtances above related. Thoſe affected with the ſecond Degree, are uſually held for *poſſeſs'd by the Devil*.

The Cauſe of this Diſeaſe, *Boerhave* attributes to too much Action of the Brain, on the motory Nerves, and none on the ſenſitive ones. Some are pleas'd to account for it, from the Abundance of ſharp Humours mixing with the animal Spirits, and giving them extraordinary and irregular Motions, and Directions; Whence ariſes its Diſtinction from a Syncope, and Apoplexy, which take away all Motion as well as Senſe. See SYNCOPE and APOPLEXY.

The *Epilepſy* is either *Idiopathic*, or *Sympathetic*: It is Idiopathic, when it ariſes meerly from a Diſorder of the Brain, or Spirits: And ſympathetic, when it is preceded by ſome other Diſeaſe which brings it on.

The *Epilepſy* ſometimes hangs many Years to a Perſon, without much Danger: Tho' when its Paroxyſms return faſt, it renders the Patient more or leſs paralytic, delirious, or ſtupid. In young People there is Hopes of its going off about the Time of Puberty. *Hippocrates* obſerves, that when it ſeizes a Perſon after 25 Years of Age, it laſts for Life; but this does not always hold.

The Cure is very difficult: The principal *Anti-epileptick*s are, the Roots of Pæony, Leaves of the Lilly of the Valley, Seeds of Rue, Miſletoe of the Oak, or Hazle, Box-wood, Spirit of black Cherries, Spirit of human Blood, human Secundines, human Cranium, Tooth of the Sea-Horſe, Caſtoreum, Peacocks Dung, Camphor, Salt, and Oil of Amber.

To recover a Perſon in a Fit, Tobacco Smoak, or that of burnt Feathers, is recommended. *Barbette* above all Things directs the Flowers and Spirits of Sal Ammoniac againſt this Diſeaſe; *Crato*, native Cinnabar. Sir *John Colbatch* has an expreſs Treatiſe on the Miſleto of the Oak, to ſhew it a Specific in this Diſeaſe. Elks Claws have long had the Reputation of the ſame. See each Remedy, its Pretenſions, *&c.* under its proper Term in this Work, as MISLETO, ELKS *Claws*, *&c.*

M. *Poupart*, from a Diſſection of an *Epileptic* Perſon, wherein, immediately under the *Dura Mater*, was found a deal of white, thick, viſcid *pituita*, glued, and, as it were, incorporated with the Membrane; thinks, that this might be the Cauſe of the Diſeaſe; The exceſſive Quantity of ſuch thick Lympha, loading the Brain, and obſtructing its Motions. The firſt Cauſe, he judges, might be the Spongeouſneſs of the *Dura Mater*, which imbibed the Seroſities of the Brain.

He adds, that he knows an *Epileptic* Perſon, who, upon the firſt Approach of his Diſorder, rubs his Forehead with his Hand, and bends his Head as far backward as he can, reſting it againſt a Wall; and by that Means ſecures himſelf againſt the Convulſion. 'Tis probable, that by this he gives a Motion to the Lympha, and drives it from the Place which before it diſturb'd.

The Word *Epilepſy* is form'd of the *Greek*, ἐπιλαμβάνεσθαι, *to ſurprize, graſp hold of one*, by reaſon the Diſeaſe ſeizes and overcomes the Senſes, ſo that the Patient ſeems as if dead.

In *Engliſh* it is uſually call'd the *Falling Sickneſs*, by reaſon People fall down when attack'd therewith. The *Latins* call it *Comitialis Morbus*, by reaſon when any body was ſeiz'd therewith in a *Comitia*, or Aſſembly of the *Roman* People, they preſently broke up the Aſſembly, as deeming it an unhappy Preſage. See COMITIALIS.

Some call it the *Morbus Sacer*, as ſuppoſing it ſent by way of immediate Puniſhment from God. Others, the *Morbus Caducus*, others *Herculeus*, *Sonticus*, *Lues Deifica*, &c.

EPILOGUE, EPILOGUS, in Oratory, *&c.* The Peroration, or laſt Part of a Diſcourſe, or Treatiſe; wherein there is ordinarily made a Recapitulation of the principal Matters deliver'd therein. See PERORATION.

The Word is form'd of the *Greek* ἐπίλογος, of the Verb ἐπιλέγω, *I ſay after*, the Epilogue being the End, or Concluſion of a Diſcourſe.

EPILOGUE, in dramatic Poetry, a Speech addreſs'd to the Audience, when the Play is over, by one of the principal *Perſonæ*, or Actors therein; containing uſually ſome Reflections on certain Incidences in the Play, particularly thoſe of the Part of the Perſon who ſpeaks it.

In the modern Tragedy, the *Epilogue* has uſually ſomewhat of Pleaſantry; intended, we ſuppoſe, to compoſe the Paſſions rais'd in the Courſe of the Repreſentation, and ſend away the Audience in good Humour; tho' how far that Deſign is good and laudable, will bear ſome Diſpute. See TRAGEDY.

An ingenious Author in the *Spectator*, compares it to a merry Jig on the Organ, after a good Sermon, to wipe away any Impreſſions that might have been made thereby, and ſend the People away juſt as they came.

In Effect, tho' the *Epilogue*, in this Senſe, may ſeem an Abuſe; yet has it the Countenance of Antiquity: The *Romans* had ſomething of the ſame Nature, tho' under another Name. Their *Exodium* was a Kind of Farce, brought on the Stage when the Tragedy was over; *ut quidquid Lacrymarum ac triſtitiæ cepiſſent ex Tragicis affectibus, hujus ſpectaculi riſus detergeret*, ſays the Scholiaſt of *Juvenal*.

The *Epilogue* is but of modern Date, much later than the Prologue. See PROLOGUE.

Many, indeed, have taken the *Exodium* of the antient *Greek* Drama, for an *Epilogue*; by reaſon *Ariſtotle* defines it, to be a Part rehearſed after the Chorus had ſung for the laſt Time: But, in Reality, it was of a quite different Nature. The *Exodium* was the laſt of the four Parts of a Tragedy; containing the unravelling and Cataſtrophe of the Plot, and anſwering to our laſt, or fifth Act. See EXODIUM.

EPINICION, a Term in the *Greek* and *Latin* Poetry. It has two different Significations among the Ancients. 1°. A Feaſt, Ceremony, or Rejoycing, on Occaſion of a Victory obtain'd. 2°. A Poem, or Compoſition, on the ſame Subject.

Scaliger treats expreſly thereof in his Poeticks, *L.* I. *c.* 44.

The Word is form'd from the *Greek* νικη, *Victory*.

EPIPHANY, in Antiquity, the *Feaſt of Kings*. A double Feſtival, of the firſt Rank, ſolemnized on the *6th* of *January*, *New-Years-Day*, in Honour of the Appearance of *Jeſus Chriſt* to the Three Kings, or *Magi*, who came to adore and bring him Preſents. See FEAST.

The *Feaſt of Epiphany*, now held in Honour of the Adoration of the *Magi*, had, at its firſt Inſtitution among the *Greeks*, a different Object, *viz.* Our Saviour's Birth; and was call'd *Theophany*, and *Epiphany*, that is, Appearance, and Manifeſtation of God.

Pope *Julius*, who reign'd from the Year 337, to 352, was the firſt who taught the Church to diſtinguiſh the Feaſts of the Nativity, and *Epiphany*. *Papebroch. paral. ad Conat.* p. 23. *Act. SS. Maii. T.* VII. See NATIVITY.

The Word in the Original *Greek*, Ἐπιφάνεια, ſignifies *Appearance*, or *Apparition*; and was applied, as ſome Criticks will have it, to this Feaſt, on Account of the Star which appeared to the *Magi*. St. *Jerom*, and St. *Chryſoſtom*, take it for the Day of our Saviour's Baptiſm, when he was declared to Men by the Voice, *Hic eſt filius meus dilectus, in quo mihi complacui*. This is my beloved Son, in whom I am well pleaſed. And accordingly it is ſtill obſerved by the *Cophtæ* and *Ethiopians* in that View. See *Ludolph. Hiſt. Ethiop. Lib.* XXI. *c.* 2.

Others contend, that the Feaſt of *Chriſtmas*, or the Nativity of our Saviour, was held in divers Churches on this ſame Day; which had the Denomination *Epiphany*, or Appearance, by reaſon our Saviour firſt appear'd on Earth on that Day. And it muſt be allow'd, that the Word is uſed among the antient *Greek* Fathers, not for the Appearance of the Star to the *Magi*, but for that of our Saviour to the World. In which Senſe, St. *Paul* uſes the Word *Epiphania*, in his Second Epiſtle to *Timothy*, c. i. v. 10.

Add,

Add, that the *Armenians*, to this Day, celebrate the Feaſt of the Nativity, on the Day of *Epiphany*, according to the Practice of the ancient Church; which ſome *Romiſh* Miſſionaries have impertinently cenſured 'em for, not knowing that the *Epiphany*, originally, and properly, was the Nativity of our Saviour.

Ammianus Marcellinus makes mention of this Feaſt, *Lib.* XXI. *c.* 2. and obſerves that it was held in *January*. Upon which Paſſage, *Valeſius* in his Notes, endeavours to ſhew, that the Hiſtorian meant by *Epiphany*, the Feaſt of the Nativity.

The Heathen Writers uſed the Word *Epiphania* in the like Senſe, *viz.* to expreſs the Appearance of their Gods on Earth. And the Chriſtians, after their Example, applied it, in the general, to expreſs any Appearance, or Manifeſtation of the Deity.

EPIPHONEMA, in Rhetoric, a Figure of Speech. See FIGURE.

The *Epiphonema* is a ſententious Kind of Exclamation, frequently added after a Narrative, or Rehearſal, of any Thing remarkable; containing, uſually, a lively, cloſe Reflection, on the Subject there ſpoke of.

Such is that of St. *Paul*, when, after diſcourſing of the Rejection of the *Jews*, and the Vocation of the *Gentiles*, he cries out:

Oh the Depth of the Wiſdom and Knowledge of God!

Such alſo is that of *Lucretius*, after relating the Story of *Agamemnon*'s ſacrificing his Daughter *Iphigenia:*

Tantum Religio potuit ſuadere malorum ---

Such, laſtly, is that of *Virgil*, upon Occaſion of *Juno*'s perſecuting *Æneas:*

--- *Tantæne animis Cœleſtibus Iræ!*

Which M. *Boileau* has imitated in,

Tant de fiel entre il en l' Ame des Devots?

And Mr. *Pope* in,

And dwells ſuch Rage in ſofteſt Boſoms then?
And lodge ſuch daring Souls in little Men?

EPIPHORA, in Medicine, a Diſeaſe of the Eyes; conſiſting in a preternatural Defluxion of Rheum, or the Matter of Tears; accompanied, frequently, with Heat, Redneſs, and Twitching. *Pitcairn* calls it a Kind of Catarrh of the Glands of the Eye.

The internal Cauſes of the *Epiphora*, or *Rheum in the Eyes*, are a Relaxation of the Glands of the Eyes, and a too great Acrimony, or Sharpneſs of the ſerous Humour ſeparated thereby; which fretting and vellicating the Eye, draws an unuſual Quantity of Blood and Lympha thereto; by which, at length, the Cheek becomes excoriated, *&c.* Children are moſt liable to it, from the frequent Uſe, and ſtraining of the Glands of the Eye in Crying.

The external Cauſes of the *Epiphora*, are ſharp Duſts, Steams, *&c.* entring the Eye, and irritating the ſame. A too cold and ſharp Air has frequently the like Effect. Children are moſt liable to it.

An inveterate *Epiphora* frequently degenerates into a *Fiſtula Lacrymalis.*

The Cure of the *Epiphora*, is, 1°. By cauſing a Revulſion, or Derivation, of the peccant Humour, to ſome other Part, as by Venæſection, Cupping, Bliſtering, or Catharticks. 2°. By correcting its Acrimony by proper Remedies. And, 3°. By applying Aſtringents externally. *Lapis Calaminaris* is much commended.

The Word is *Greek*, form'd of ἐπιφέρομαι, *I am drawn.*

EPIPHYSIS, in Anatomy, is a leſſer Bone, adhering, or growing to another, by ſimple Contiguity. See BONE.

The Subſtance of the *Epiphyſes* is rare and lax; in young Children it is merely cartilaginous; but hardens as they grow in Age, and, at length, becomes quite bony.

'Tis commonly laid down, that there is no regular Articulation between the *Epiphyſis* and the Bone; tho' 'tis certain, that there is a reciprocal Admiſſion of the Heads, or Extremities of each, into the Cavities of the other. See ARTICULATION.

There are ſome Bones that have no *Epiphyſes* at all, as the lower Jaw: Others have no leſs than five, as the *Vertebræ*. The Deſign of adding *Epiphyſes* to Bones, was, to ſupply their Defects, and render them longer and bigger at the Extremes.

The Word is form'd of the *Greek*, ἐπι, *on*, *upon*, and φυειν, *to grow*, *adhere*. It is alſo called *Appendix*, *Additamentum*, *Adnaſcentia*, &c.

EPIPHYSES *Vermiformes*, are two Eminences of the *Cerebellum*, ſhaped like Worms, which keep open the Paſſage from the third to the fourth Ventricle.

In dilating the third Ventricle of the Brain, we perceive four Eminences, two upper, and two bigger, call'd orbicular Protuberances; and two lower, and leſs, call'd *Epiphyſes* of the orbicular Protuberance. *Dionis.*

EPIPLASMA, the ſame with *Cataplaſma*. See CATAPLASM.

EPIPLOCELE, in Medicine, a Kind of *Hernia*, or Tumor, occaſion'd by the Deſcent of the *Epiploon*, or Caul, into the *Scrotum*. See HERNIA. See alſo ENTERO-*Epiplocele*.

EPIPLOIC, or EPIPLOIDES, a Term applied to the Arteries and Veins, diſtributed through the Subſtance of the *Epiploon*, or Caul. See EPIPLOON.

EPIPLOIS *Dextra*, is a Branch of the Celiack Artery, which runs thro' the right Side of the inner, or hinder Leaf of the Caul. See CELIAC.

EPIPLOIS *Siniſtra*, is a Branch of the Celiack Artery, which is beſtowed on the lower and left Side of the Caul. See CELIAC.

EPIPLOIS *Poſtica*, is a Branch of the Celiack Artery, ſpringing out of the lower End of the *Splenica*, and running to the hinder Leaf of the Caul.

EPIPLOMPHALUS, in Medicine, a Species of *Exomphalus*, or Navel-Rupture; being a Tumor, or Swelling of the Part, occaſion'd by the *Epiploon*'s bearing too hard againſt it. See EXOMPHALUS.

The Word is compounded of the *Greek* ἐπίπλοον, and ομφαλὸς.

EPIPLOON, in Anatomy, a fatty Membrane, ſpread over the Inteſtines, and entering even into the Sinuoſities thereof; call'd alſo the *Omentum*, and popularly the *Caul*. See OMENTUM.

The Word is form'd of the *Greek*, ἐπιπλέειν, *to ſwim*, by reaſon it ſeems to float on the Inteſtines.

EPIPLOSARCOMPHALUS, in Medicine, a Sort of Tumor, of the *Exomphalous* Kind. It is form'd of the *Epiploon*, and the Fleſh. See EXOMPHALUS.

The Word is compounded of the three *Greek* Words, ἐπίπλοον, *Epiploon*, σὰρξ, *Fleſh*, and ομφαλὸς, *Umbilicus*, Navel.

EPISCOPACY, the Quality of *Epiſcopal* Government; or that Form of Church Diſcipline, wherein Diocеſan Biſhops are eſtabliſh'd, diſtinct from, and ſuperior to Prieſts or Presbyters. See BISHOP, HIERARCHY, *&c.*

Epiſcopacy and *Presbytery*, have been alternately eſtabliſhed and aboliſhed in *Scotland*. See PRESBYTERY.

EPISCOPACIDE, the Crime of murdering a Biſhop by one of his own Clergy.

By the Laws of *England*, the ſame Obedience is due from a Clergyman to his Biſhop, as from a Child to his Father: And therefore the Offences of *Epiſcopacide* and Parricide are made equal, *viz.* Petty-Treaſon. See TREASON.

EPISCOPAL, ſomething that belongs to a Biſhop. See BISHOP.

The *Epiſcopal Government*, is the Government of a Dioceſe, wherein one ſingle Perſon, legally conſecrated, preſides over a whole Clergy, or a whole Church, in Quality of Head, or Super-intendent thereof; conferring Orders, and exerciſing a Sort of Juriſdiction. See DIOCESE.

The *Presbyterians* reject the *Epiſcopal* Eſtabliſhment, and condemn the *Epiſcopal* Order as a human Inſtitution, the mere Reſult of Pride and Ambition. See PRESBYTERIANS.

Among the *Epiſcopal* Functions, the principal is that of making frequent Viſitations of the Dioceſe. See VISITATION.

The Word is form'd of the *Latin*, *Epiſcopus*, Biſhop; derived from the *Greek*, ἐπισκεπτεσθαι, *inſpicere*, to inſpect, whence ἐπισκοπος, *Inſpector*, Biſhop; who is to watch over the Flock committed to his Care.

EPISCOPALIA, is ſometimes uſed in the ſame Senſe with *Pontificalia*. See PONTIFICALIA.

It is alſo uſed to denote Synodals, or cuſtomary Payments, due to the Biſhops from the Clergy of his Dioceſe; call'd alſo *Onus Epiſcopale*.

EPISCOPALIANS, a Name given to thoſe who retain to the Church of *England*, and particularly to the Eccleſiaſtical Hierarchy, ſuch as it was in the *Romiſh* Church, before the Reformation; who affect the Diſcipline of Biſhops, Prieſts, Canons, the Office, or Liturgy, *&c.* and retain the greateſt Part of the Canon Law, with the Decretals of the Popes, more cloſely than the Catholicks themſelves of ſeveral Countries. Tho', as to Matters of Doctrine, or Faith, they agree in moſt Points with the Calviniſts, or Reformed.

In *Scotland*, the principal Diſſenters are the *Epiſcopalians*. Lay *Epiſcopalians* enjoy all the ſame Civil Privileges with thoſe of the Eſtabliſh'd Church. They are under no Reſtrictions; tied to no Teſts; but are imploy'd in all Places of Truſt, upon taking the Oaths to the Government. But the *Epiſcopal* Miniſters are liable to ſeveral penal Laws; the greateſt part of 'em being Nonjurors. *Chamberlain.*

EPISCOPUS *puerorum.* It was an ancient Cuſtom for ſome Layman, about the Feaſt of Epiphany, to plait his Hair, that he might ſeem to have the Tonſure, and to put on the *Epiſcopal* Garments; and then to exerciſe a Shew of Juriſdiction, and do ſeveral ludicrous Actions: For which Reaſon he was call'd the *Biſhop of the Boys.* This Cuſtom obtain'd among us, long after ſeveral Conſtitutions were made to aboliſh it.

EPISODE, is commonly conceiv'd to be a ſeparate Incident, Story, or Action, which an Hiſtorian, or Poet, inſerts and connects with his principal Action; to furniſh out the Work with a greater Diverſity of Events; tho', in Strictneſs, all the particular Incidents, whereof the Action or Narration is compoſed, are call'd *Epiſodes.*

From the *Greek*, ἐπί, and ᾠδή, *Carmen, Verſe.*

EPISODE, EPISODIUM, in dramatic Poetry, was the ſecond part of the ancient Tragedy. See TRAGEDY.

The Origin and Uſe of *Epiſodes*, is admirably deſcribed by M. *Hedelin*, and Fa. *Boſſu.* Tragedy, in its Original, being only a Hymn ſung in Honour of *Bacchus*, by ſeveral Perſons, who made a Kind of Chorus, or Conſort of Muſic, with Dancing, and the like; to diverſify the Repreſentation a little, and divert the Audience, they bethought themſelves at length to divide the Singing of the Chorus into ſeveral parts; and to have ſomething rehears'd in the Intervals.

At firſt, a ſingle Perſon, or Actor, was introduced, then two, then more; and what the Actors thus rehearſed, or entertain'd the Audience withal, being ſomething foreign, or additional to, or beſide, the Song of the Chorus, and no neceſſary part thereof, was call'd Επεισοδιον, *Epiſode.*

And hence Tragedy came to conſiſt of four parts, the *Prologue*, *Epiſode*, *Exode*, and *Chorus.*

The *Prologue* was all that preceded the firſt Entrance of the Chorus. See PROLOGUE.

The *Epiſode*, all that was interpoſed between the Singings of the Chorus.

The *Exode*, all that was rehearſed after the Chorus had done ſinging. See EXODIUM.

And the *Chorus*, was the Grex, or Company that ſung the Hymn. See CHORUS.

And as this Recitation of the Actors was in ſeveral parts, and inſerted in ſeveral places; it might either be conſider'd together, as a ſingle *Epiſode*, conſiſting of ſeveral parts; or each part might be call'd a diſtinct *Epiſode.*

Theſe ſeveral *Epiſodes* in the ſame Tragedy, might either be taken from ſo many different Subjects; or from the ſame, divided into a proper Number of Recitations, or Incidents.

To conſider only the firſt Occaſion, and Inſtitution, of theſe foreign, or additional pieces; it appears no ways neceſſary that they ſhou'd all be taken from one and the ſame Subject: Three or four Recitations of different Actions, no-wiſe related, or connected to each other, wou'd eaſe the Actors, and amuſe the People, in the Intervals of the Chorus as well as if they were all ſo many parts of the ſame Action. By degrees, what was at firſt only an Addition to the Tragedy, became the principal part thereof. Then, the ſeveral Pieces, or *Epiſodes*, began to be conſider'd as one ſingle Body, which were not to have parts, or Members of different Nature, and independent of each other.

The beſt Poets took the Thing in this Light, and drew all their *Epiſodes* from the ſame Action; which Practice was ſo fully eſtabliſh'd in *Ariſtotle*'s Time, that he lays it down as a Rule. Thoſe Tragedies wherein this Unity and Connection was not obſerved, he calls *Epiſodic Pieces.* See EPISODIC.

EPISODE in *Epic* Poetry. The Term *Epiſode*, by being tranſplanted from the Stage to the *Epopea*, did not change its Nature. All the Difference *Ariſtotle* makes between the Tragic and Epic *Epiſodes*, is, that the latter are more ample than the former. See EPIC.

Ariſtotle uſes the Word in three different Senſes: The firſt taken from the Enumeration already made, of the parts of the Tragedy, *viz. Prologue*, *Chorus*, *Epiſode*, and *Exode.* Whence it follows, that in Tragedy, every Thing is *Epiſode*, that is none of the other parts: So that as among us, there are Tragedies, without either *Prologue*, *Chorus*, or *Epilogue*, the *Tragic Epiſode* includes the whole Tragedy: Conſequently, the *Epic Epiſode* muſt be the whole Poem, in like manner. All there is to retrench from it being the Propoſition, and Invocation, which ſtand in lieu of the *Prologue.* In this Senſe, the *Epopea* and Tragedy, have each only one *Epiſode*; and if the Parts, or Incidents, be ill connected together, the Poem will be *Epiſodic* and defective.

But further, as all that was ſung in the Tragedy, was call'd the *Chorus*, in the ſingular Number; yet this Singularity did by no means prevent every Part or Diviſion of the ſame from being call'd a *Chorus*, without making ſeveral *Chorus's:* So 'twas with the *Epiſode:* Each Incident, and part of the Fable and Action, is not only a part of the *Epiſode*, but an *Epiſode* it ſelf.

The Term *Epiſode*, therefore, in this Senſe, ſignifies every part of the Action expreſs'd in the Plan, or firſt Draught of the Fable; as the Abſence and Wanderings of *Ulyſſes*, the Diſorders in his Family, and his Preſence which retriev'd every Thing.

Ariſtotle furniſhes us with a third Kind of *Epiſode*; in ſhewing, that what is contain'd and expreſs'd in the firſt Plan of the Fable is *proper*, and that all the reſt is *Epiſode.*

By proper, he means what is abſolutely neceſſary; and by *Epiſodes*, what in one Senſe are neceſſary, and in another not; ſo that the Poet is at Liberty to uſe, or let 'em alone.

Thus, *Homer*, having made the firſt Draught of the Fable of his Odyſſee, was not at Liberty to make *Ulyſſes* abſent from his Country, or not. His Abſence was eſſential; and therefore *Ariſtotle* ranks it among the Things he calls *proper.* But he does not beſtow that Appellation on the Adventures of *Antiphale*, *Circe*, the *Syrens*, *Scylla*, *Carybdis*, &c. The Poet was at Liberty to have left theſe alone, and choſen others in their Room; ſo that they are *Epiſodes*, diſtinct from the firſt Action, to which they are not immediately neceſſary. Indeed, in one Senſe, they may be ſaid to be neceſſary: For *Ulyſſes*'s Abſence being neceſſary, it follows, that not being in his own Country, he muſt be ſomewhere elſe. If therefore the Poet was at Liberty, not to have uſed thoſe particular Adventures above mention'd; yet he was not at Liberty not to have uſed any: But if he had omitted thoſe, he muſt neceſſarily have ſubſtituted others in their Room. Otherwiſe, he wou'd have omitted a part of the Matter contain'd in his Plan, and his Poem had been defective.

This third Senſe, therefore, of the Word *Epiſode*, comes to the ſecond: All the Difference between them, is, that what we call *Epiſode*, in the ſecond Senſe, is the Ground, or Plan of the *Epiſode* in the third: And that the third adds to the ſecond, certain Circumſtances which are only probable, and not neceſſary; as the Places, Princes, and People, among whom *Ulyſſes* was caſt by *Neptune.*

It muſt be added, that in an *Epiſode* in the third Senſe, the Incident, or *Epiſode* in the firſt Senſe, whereon it is grounded, is to be extended and amplified; otherwiſe, an eſſential part of the Action and Fable, does not become an *Epiſode.* Laſtly, 'tis in this third Senſe that we are to underſtand that Precept of *Ariſtotle*, not to make the *Epiſodes*, till after the Names of the Perſons have been cho'en. *Homer* wou'd not have ſpoke of the Fleet and Ships as he has done; if, in lieu of the Names of *Achilles*, *Agamemnon*, and *Iliad*, he had choſe thoſe of *Adraſtus*, *Capaneus*, and *Thebaid.* See FABLE.

Upon the whole, the Term *Epiſode*, in the Epic Poem, as uſed by the Father of the Criticks, *Ariſtotle*, does not ſignifie any foreign, or accidental Adventure; but the whole Narration of the Poet, or a neceſſary and eſſential part of the Action and Subject, amplified with probable Circumſtances.

Thus, *Ariſtotle* enjoins, that the *Epiſode* be not added to the Action, or fetch'd from elſewhere; but be a part of the Action; and never uſes the Word *adding*, in ſpeaking of *Epiſodes*, tho' it occurr'd ſo naturally to his Interpreters that they have generally uſed it in their Tranſlations and Comments. He does not ſay, that after laying the Plan, and chuſing the Names, the Poet is to *add the Epiſodes*; but uſes a Derivative of the Word *Epiſode*, επεισοδίῶ, as if in *Engliſh* we ſhou'd ſay, *Epiſodify* his Action.

Add, that to ſhew the different Extenſion of the Tragedy and *Epopea*, that is, how the one becomes longer than the other; he does not ſay, that there is but little *Epiſode* in Tragedy; but more accurately, that the *Epiſodes* of Tragedy are ſhort and conciſe; whereas the *Epopea* is lengthen'd out and extended by 'em. In one Word, the taking Vengeance of the wicked People in *Ulyſſes*'s Court, as expreſs'd in a few Words by *Ariſtotle*, in his Plan of the Odyſſee, is a ſimple proper Action, neceſſary to the Subject. It is no *Epiſode*, but the *baſis*, and, as it were, *ſtamen* of an *Epiſode.* And this ſame Puniſhment explain'd and open'd, with all the Circumſtances of Time, Place, and Perſons, is no ſimple and pro-

proper Action, but an Action *Epiſodified*, or a real *Epiſode*; which, tho' at the Diſcretion of the Poet, is yet neceſſary and proper to the Subject.

From what has been ſaid, we may venture to define *Epiſodes* to be neceſſary Parts of the Action, extended and fill'd up with probable Circumſtances. Now, an *Epiſode* is only a Part of an Action; and not a whole Action. And this Part of the Action, which is the Baſis, or Ground of the *Epiſode*, muſt not, when *Epiſodified*, retain any Thing of the Simplicity which it had when firſt expreſs'd in general, in the Plan of the Fable.

Ariſtotle rehearſing the Parts of the Plan of the *Odyſſe*, ſays expreſly, that they are proper; and by that, diſtinguiſhes them from *Epiſodes*. Thus, in the *Oedipus* of *Sophocles*, the ceaſing of the Plague at *Thebes* is no *Epiſode*. 'Tis only the Ground, and Matter of an *Epiſode*, which the Poet might have uſed, had he pleaſed. And *Ariſtotle*, obſerving that *Homer*, in the *Iliad*, had taken but few Things for his Subject, but that he had uſed *Abundance of his Epiſodes*, intimates, that the Subject contains in it ſelf Abundance of *Epiſodes*, which the Poet may uſe, or let alone, at Pleaſure. That is, it contains the Grounds, or Stamina thereof, which may either be left in their general and ſimple Brevity, as *Seneca* has done the ceaſing of the Plague; or may be extended and unfolded, as the ſame Author has done the Puniſhment of *Oedipus*.

The Subject of a Poem is lengthen'd two Ways: Either, by the Poets making uſe of a great many of his *Epiſodes*; or by amplifying, and giving a great Extent to every one. By this latter Method, chiefly, it is, that the *Epic* Poets lengthen their Poems much beyond the *Dramatic*. It muſt be added, that there are certain Parts of an Action, which, of themſelves, don't naturally preſent or afford more than one *Epiſode*; ſuch as the Death of *Hector*, of *Turnus*, or the like: Whereas, there are other Parts of the Fable more copious and fertile, and which oblige the Poet to make divers *Epiſodes* on each; tho' laid down in the firſt Plan, with as much Simplicity as the reſt: Such are the Battels of the *Trojans* and *Grecians*; the Abſence of *Ulyſſes*; the Wanderings of *Æneas*, &c. For *Ulyſſes*'s Abſence ſo many Years from his own Country, required his Preſence elſewhere; and the Deſign of the Fable was to throw him into ſeveral Dangers, and different Countries.

Now each Peril, and each new Country, furniſh'd an *Epiſode*, which the Poet might uſe if he pleas'd.

The Reſult of the whole is, that *Epiſodes* are not Actions, but Parts of Actions; that they are not added to the Action and Matter of the Poem, but that they make that Action and Matter themſelves, as the Members make the Body: That, of Courſe, they are not to be fetch'd from elſewhere, but rais'd from the Ground, or Fund of the Action: That they are not united, and connected with the Action, but with one another: That all the Parts of an Action are not ſo many *Epiſodes*, but only ſuch as are amplified, and extended with particular Circumſtances: And, laſtly, that their Union with each other, is neceſſary in the Ground of the *Epiſode*, and probable in the Circumſtances thereof. See ACTION.

EPISODIC, in Poetry. A Fable is ſaid to be *Epiſodic*, when it is ſwell'd with unneceſſary *Incidents*; and its Epiſodes are not neceſſarily, nor properly connected with each other. See EPISODE.

Ariſtotle lays it down, that thoſe Tragedies are moſt defective, whoſe *Epiſodes* have no Connection, or Dependance, on each other; which he calls *Epiſodic*, q. d. ſuperabundant in *Epiſodes*; by Reaſon ſo many little *Epiſodes* can never compoſe one whole one; but neceſſarily remain in a vicious Plurality. See FABLE.

The moſt ſimple Actions are moſt ſubject to this Irregularity; in that, having fewer Incidents and fewer Parts than others, they afford leſs Matter. An unwary Poet would ſometimes have conſumed his whole Stock in the firſt, or ſecond Time that his Actors appear'd between the Chorus's: and be driven to a Neceſſity of looking out for other Actions, to ſupply the remaining Intervals. *Ariſt. Poem.* C. 9.

The firſt *French* Poets did the like: To fill each Act, they took ſo many different Actions of a Hero; which had no other Connection between them, but that they were done by the ſame Perſon. *Boſſu* p. 106.

If an *Epiſode* be uſed, the Names and Circumſtances whereof are unneceſſary, and whoſe Ground and Subject is no Part of the Action, that is of the Matter of the Poem; ſuch an *Epiſode* renders the Fable *Epiſodic*. This Irregularity is diſcover'd, when one may take away a whole *Epiſode*, without ſubſtituting any Thing in its Room; and yet leave no Chaſm, or Defect in the Poem. The Hiſtory of *Hypſipile*, in *Statius*'s *Thebaid*, affords an Inſtance of theſe faulty *Epiſodes*. If the whole Story of that illuſtrious Nurſe were retrench'd, the Sequel of the principal Action would be the better for it. Nor would any Body imagine he had forgot any Thing, or that there was any Member of his Action wanting. *Boſſu.*

EPISPASTIC, in Medicine, a Remedy, which being externally applied, draws or attracts the Humour to the Part; call'd alſo an *Attractive*. See ATTRACTIVE.

Of *Epiſpaſticks* there are ſome which act very gently, and others with a deal of Violence. Thoſe of the latter Kind ſwell, and bloat the Skin, make it Red, and even raiſe Bliſters thereon. See VESICATORY.

The principal ſimple *Epiſpaſticks* are *Pellitory*, *Garlic*, *Muſtard*, *Onions*, *Yeaſt*, *Gooſe-dung*, and that of *Pidgeons*, *Cantharides*, &c.

The Word is *Greek*, form'd of ἐπὶ and σπάω, *traho*, *I draw*.

EPISTATES, in Antiquity, a Commander, or Perſon, who has the Direction and Government of a People.

The Term is of conſiderable Uſe, in ſpeaking of the antient Government of *Athens*; where the *Epiſtates* was the Senator in Command for that Day, or whoſe Turn it was to preſide that Day.

The Conſtitution was this: The ten Tribes of *Athens*, elected every Year by Lot, each of them fifty Senators; which made a Senate of five Hundred. Every Tribe had the Precedence in its Turn, and ſurrender'd it again, ſucceſſively, to another. The fifty Senators in Office were call'd *Prytanes*; the particular Place where they aſſembled *Prytoneum*; and the Term, or Duration, of their Office, *viz.* thirty five Days, *Prytania*. During theſe thirty five Days, ten, of the fifty *Prytanes*, preſided weekly, under the Name of *Proedres*. And of theſe *Proedres*, there was one to preſide each Day of the Week, under the Title of *Epiſtates*.

No Perſon was allow'd to hold this Office more than once in his whole Life; leſt he ſhould fall too much into the Taſt of Dominion. The Senators of all the other Tribes ſtill voted, according to the Order the Lot had given them; but the *Prytanes* alone convened the Aſſemblies; the *Proedres*, laid the Buſineſs before them; and the *Epiſtates*, took their Votes and Opinions.

It muſt be added, that of the ten *Proedres*, of each Week, there were but ſeven that could preſide, each his Day, in Quality of *Epiſtates*. The ten *Proedres* elected the ſeven *Prytanes*. See PRYTANES.

The Word is derived from the *Greek*, ὑπὲρ, *ſuper*, over, and ἵστημι, *ſto*, I ſtand.

EPISTEMONARCH, a Dignitary in the *Greek* Church.

The *Epiſtemonarch* was appointed to watch over the Doctrines of the Church; and to inſpect, or ſurvey every Thing relating to the Faith, in Quality of Cenſor thereof.

His Office anſwer'd pretty much to that of *Magiſter ſacri Palatii* at *Rome*.

The Word is derived from the *Greek*, ἐπίσταμαι, *ſcio*, I know, of ἐπιστήμη, *Science*, *Knowledge*, and ἀρχὴ, *Command*, *Precedence*.

EPISTLE, a Letter miſſive. See LETTER.

The Term *Epiſtle* is now ſcarce uſed, but for Letters wrote in Verſe; and Letters *Dedicatory*. See *Epiſtle* DEDICATORY.

In ſpeaking of Letters wrote by Moderns, or rather, in the modern Languages, we never uſe the Word *Epiſtle*. Thus, we ſay, the Letters, not *Epiſtles*, of the Cardinal *d' Oſſat*; of *Voiture*, of *Balzac*, of *Howel*, of *Farquhar*, &c. But thoſe wrote by the Antients, or rather in the Antient Languages, we call *Epiſtles*: As the *Epiſtles*, not Letters, of *Cicero*, *Pliny*, *Seneca*, *Busbequius*, *Launoy*, &c. Of St. *Auguſtin*, St. *Jerome*, &c. The *Epiſtles* of St. *Paul*, St. *Peter*, St. *John*, &c. to the *Romans*, *Corinthians*, &c.

The Word is form'd of the *Greek*, ἐπιστέλλω, *mitto*, I ſend.

EPISTOLARY, a Term chiefly uſed in the Phraſe *Epiſtolary Style*. See STYLE.

The Word is, ſometimes, alſo applied to Authors who have wrote *Epiſtles* or Letters: The principal *Epiſtolary* Authors, are *Sidonius Apollinaris*, *Tully*, the younger *Pliny*, *Seneca* the Philoſopher, *Petrarch*, *Politian*, *Busbequius*, *Eraſmus*, *Lipſius*, *Muret*, *Aſcham*, *Milton*, *Petau*, *Launoi*, *Sarau*, *Balzac*, and *Voiture*.

EPISTOMIUM, in Hydraulicks, a *Plug*, or Inſtrument by the Application whereof, an Aperture may be open'd, and ſhut again at Pleaſure.

EPISTROPHEUS, from ἐπιστρέφω, *converto*, I turn about; the ſame with *Cardo*. See CARDO.

EPISTYLE, in the antient Architecture, a Term uſed by the *Greeks*, for what we call *Architrave*, viz. a Maſſive of Stone, or Piece of Wood, laid immediately over the Capital of a Column. See ARCHITRAVE.

The

The *Epiſtyle* is the firſt, or loweſt Member of the *Entablature*. See ENTABLATURE.

The Word is derived from the *Greek*, ἐπὶ, *ſuper*, upon, and στυλὸς, *Column*.

EPITAPH, a Monumental Inſcription, in Honour, or Memory, of a Defunct; or an Inſcription engraven, or cut, on a Tomb, to mark the Time of a Perſon's Deceaſe, his Name, Family, and uſually ſome Eloge of his Vertues, or good Qualities. See MONUMENT, TOMB, *&c.*

The Style of *Epitaphs*, eſpecially thoſe compoſed in *Latin*, is ſingular. See LAPIDARY *Style*.

At *Sparta*, *Epitaphs* were only allowed to People who died in Battel. *Boxhornius* has made a Collection of *Epitaphs*, not very ample, but exceedingly well choſen. *Fa. Labbe*, has likewiſe given a Collection of the like Kind, in *French*; entitled, *Treſor des Epitaphes*. *Cambden* has done ſomething in the ſame Way in our Engliſh *Epitaphs*. An *Epitaph* is ſaid to be yet wanting to the Duke of *Marlborough*'s Monument; tho' a Premium of 500 Pounds was offer'd by his Dowager, to him that ſhould compoſe one worthy of the Hero deceas'd.

In *Epitaphs*, the dead Perſon is ſometimes introduced, by Way of *Proſopopœia*, ſpeaking to the Living; of which we have a fine Inſtance, worthy the *Auguſtan* Age, wherein the dead Wife thus beſpeaks her ſurviving Husband.

Immatura peri: ſed tu felicior, Annos
Vive tuos, Conjux optime, vive meos.

The Word comes from ἐπὶ, *upon*, and τάφος, *Sepulcher*. See SEPULCHER.

The *French* have a Proverb, *Menteur comme une Epitaph*: He lies like an *Epitaph*; in Alluſion to the Eloges ordinarily contain'd therein, which are not always over juſt.

EPITAPH, is alſo applied to certain Eloges, either in Proſe or Verſe, compoſed without any Intent to be engraven on Tombs.

In the Collection of Epigrams, we have Abundance of ſuch *Epitaphs*; ſome of them ludricrous and ſatyrical. See EPIGRAM.

For a Specimen, we ſhall here add a very beautiful *Epitaph*, compoſed by Mr. *Cowley*, on himſelf, to be put on a little Country Houſe, whither he retreated from the Court and Town, to ſpend his laſt Days.

Hic, O Viator, ſub Lare parvulo,
Couleius *hic eſt Conditus, hic jacet*
Defunctus humani laboris
Sorte, ſupervacuaq; Vita;

Non indecora pauperie *nitens,*
Et non inerti nobilis otio,
Vanoq; dilectis popello,
Divitiis, animoſus *hoſtis.*

Poſſis ut illum dicere mortuum,
En terra jam nunc quantula *ſufficit?*
Exempta ſit curis, Viator,
Terra ſit illa levis, precare.

Hic ſparge flores, *ſparge breves* Roſas;
Nam vita gaudet Mortua floribus;
Herbiſq; odoratis corona
Vatis adhuc cinerem Calentem.

EPITASIS, in the antient Poetry, the ſecond Part, or Diviſion of a Dramatic Poem; wherein, the Plot, or Action, propoſed, and enter'd upon, in the firſt Part, or *Protaſis*, was carried on, heighten'd, warm'd, and work'd up, till it arrived at its State, or Height, call'd the *Cataſtaſis*. See PROTASIS, and CATASTASIS.

This Diviſion is laid aſide in the Modern Drama; in Lieu whereof, our Plays are divided into *Acts*. See ACT.

The *Epitaſis* might, ordinarily, take up about our ſecond or third Act. See TRAGEDY.

The Word is pure *Greek*, ἐπιτάσις, of ἐπιτείνω, *Intendo*, I heighten.

EPITASIS, in Medicine, is ſometimes uſed for the Increaſe, or Growth, and heightening of a Diſeaſe; or a Paroxyſm of a Diſeaſe, particularly a Fever. See STATE.

EPITHALAMIUM, in Poetry, a *Nuptial Song*; or a Compoſition, uſually in Verſe, on Occaſion of a Marriage between two Perſons of Eminence.

The Topicks it chiefly inſiſts on, are the Praiſes of Matrimony, and of the Married Couple; with the Pomp and Order of the Marriage Solemnity. It concludes, with praying to the Gods for their Proſperity, their happy Offspring, *&c.* *Catullus* exceeded all Antiquity, in his *Epithalamiums*; and the Cavalier *Marino*, all the Moderns.

The Word is form'd of ἐπὶ and θαλαμος, *Bride-Chamber*.

EPITHEME, EPITHEMA, in Pharmacy, a Kind of *Fomentation*, or Remedy, of a liquid, ſpirituous Kind; applied externally upon the Regions of the Heart, or Liver; to ſtrengthen and comfort the ſame, or to correct ſome Intemperature. See FOMENTATION.

There are two Kinds of *Epithems*; the one *Liquid*, and the other *Solid*: The *Liquid Epithem* is a Fomentation of a more ſpirituous Nature than the reſt; the *Solid*, is a Mixture of Conſerves, Treacle, Confections, and Cordial Powders, generally ſpread on a Piece of Scarlet, or Leather.

The Word is form'd of the *Greek*, ἐπὶ, *upon*, and τίθημι, *pono*, I put.

EPITHET, a Noun Adjective, expreſſing ſome Quality of a Subſtantive to which it is joyn'd. See ADJECTIVE.

As, a *fruitful* Vine, a *ſtately* Pile, an *Echoing* Vault, *&c.*

Epithets, are Engines of mighty Uſe and Conveniency among the Poets and Orators; who ſupply in *Epithets*, what they want in Things. Card. *Perron* even blames *Homer* on the Head of *Epithets*; obſerving, that he frequently hooks in *Epithets*, without any Senſe, or Significancy at all, to help out his Meaſures; and that he equips every Hero with an *Epithet*, not according to the Exigence of the Caſe, but the Meaſure of the Verſe.

The Word is form'd of ἐπὶ, *upon*, and θησις, *poſitio*, putting.

EPITHET, is alſo uſed for a *Sur-name*, or ſecond Appellation. See SUR-NAME.

Epithets, were antiently beſtow'd very frankly, either on Account of any Defects of the Body, or Mind: The Kings themſelves, were not exempted from them. Hence, thoſe *Epithets* ſo frequent in Hiſtory; as Henry *Long-ſhanks*, Edward *Iron-ſides*, Richard *Crook-back*, John *Lack-land*, &c.

Nor have the *French* uſed their Kings any better: Witneſs their Charles *the ſimple*, Louis *the lazy*, *faineant*, Ludovicus *nihil faciens*; Pepin *the ſhort*; Louis *the Stammerer*, *le Begue*.

EPITHYME, a Medicinal Plant, of a very extraordinary Nature and Figure. Its Seed is very ſmall, from which ariſe long Threads like Hairs, which ſoon periſh, as well as the Root, unleſs they meet with ſome neighbouring Plant, both to ſuſtain and feed them.

The *Epithyme* grows indifferently on all Kinds of Herbs; and, of Conſequence, the Kinds thereof are infinite: To which Writers uſually attribute the particular Virtues of the Plants they grow on.

The moſt known of theſe Plants, and thoſe moſt uſed in Medicine, are ſuch as grow on Thyme; which are the proper *Epithymes*; and thoſe on Flax. There are two Kinds in the Shops; the one from *Venice*, the other from *Candia*: They have both an Aromatic Taſt, but that of *Venice* the ſtrongeſt.

Their Uſe is to ſtrengthen the Parts, and prevent Obſtructions of the Viſcera, *&c.*

EPITOME, an Abridgment, or Reduction, of the principal Matters of a larger Book, into a little Compaſs. See ABRIDGMENT.

The *Epitome* of *Baronius*'s Annals is done by *Sponde*: *Bernier* has made an *Epitome* of the Philoſophy of *Gaſſendus*.

'Tis a popular Objection againſt the *Epitomizing* of Authors, that it frequently occaſions the Loſs of the Originals. Thus the Loſs of the Hiſtorian *Trogus Pompeius*, is attributed to his Epitomizer *Juſtin*; and the Loſs of a great Part of *Livy* to *Lu. Florus*.

The Word is *Greek*, ἐπιτομὴ, form'd of ἐπιτέμνειν, *reſecare*, to retrench, abridge, or cut off.

EPITRITUS, a Foot of the antient *Latin* Verſe, conſiſting of four Syllables. See FOOT.

Grammarians reckon four Species of *Epitrites*: The firſt compounded of *an Jambus* and *Spondee*, as *Sălūtantēs*. The ſecond of a *Trochee* and *Spondee*, as *Concĭtati*. The third of a *Spondee* and *an Jambus*, as *Comunĭcans*. And the fourth of a *Spondee* and *Trochee*, as *Incăntarĕ*.

EPITROPE, in Rhetoric, a Figure of Speech, by the *Latins* call'd *Conceſſio*; whereby the Orator grants ſomething which he might deny; that, by this Shew of Impartiality, he may the more eaſily be granted what he requires, in his Turn. See FIGURE.

This Figure is frequently invidious: Let them extol his Probity; I acquieſce and am ready to be ſilent: But when they propoſe him for a Pattern of Wit, my Spleen is rais'd, *&c.*

EPITROPUS, a Kind of Judge, or rather Arbitrator, which the *Greek* Chriſtians, under the Dominion of the *Turks*, elect, in the ſeveral Cities, to terminate the Differences that ariſe among them; and avoid carrying them before the *Turkiſh* Magiſtrates.

There are ſeveral *Epitropi* in each City: Monſ. *Spon*, in his Travels, obſerves, that at *Athens* there are Eight, taken out of the ſeveral Pariſhes, and call'd *Vecchiardi*,

i. e.

i. e. old Men. But *Athens* is not the only Place where there are *Epitropi*. They are in all the Iſlands of the *Archipelago*.

Some *Latin* Authors of the V*th* Century, call *Epitropi*, thoſe who more anciently were call'd *Villici*, and ſince *Vidames*. See VIDAME.

In Times ſtill earlier, the *Greeks* applied the Term ἐπιτροπος, in the ſame Senſe as the *Latins* did *Procurator*, viz. for a Commiſſioner, or Intendant: Thus the Commiſſioners of Proviſions in the *Perſian* Army, are call'd by *Herodotus*, and *Xenophon*, *Epitropi*; and in the New Teſtament, Ἐπιτροπος, is the Intendant of a Houſe, render'd in the vulgate *Procurator*.

EPLOYE, in Heraldry. An Eagle *Eploye*, is what in *Engliſh* we more uſually call an *Eagle diſplay'd*, or *Spread Eagle*. See DISPLAY'D and EAGLE.

EPOCHA, or *Æra*, in Chronology, a Term, or fix'd Point of Time, whence the Years are number'd, or accounted. See YEAR.

The Word is form'd of the *Greek*, ἐποχη, *inhibitio*, *repreſſio*, of ἐπιχειν *to ſuſtain*, *ſtop*; by reaſon the *Epocha* defines, or limits a certain Space of Time. See TIME.

Very different *Epochs*, or *Epocha's*, obtain in different Nations; and no wonder: for there being no aſtronomical Conſideration to render one preferable to another, their Conſtitution is purely arbitrary.

That principally regarded among Chriſtians, is the *Epocha* of the Nativity, or Incarnation of JESUS CHRIST; that of the Mahometans, the *Hegira*; that of the Jews, &c. the *Creation of the World*; that of the ancient Greeks, the *Olympiads*; that of the *Romans*, the *Building of the City*; that of the ancient *Perſians* and *Aſſyrians*, the *Epocha* of *Nabonaſſar*, &c.

The Doctrine and Uſe of *Epocha's*, is of very great Extent in Chronology. See CHRONOLOGY.

To reduce the Years of one *Epocha* to thoſe of another, *i. e.* to find what Year of one, correſponds to a given Year of another; a Period of Years has been invented, which commencing before all the known *Epocha's*, is, as it were, a common Receptacle of them all, call'd the *Julian Period*. To this Period all the *Epocha's* are reduced, *i. e.* the Year of this Period, whereon each *Epocha* commences, is determined. All that remains, therefore, is to add the given Year of one *Epocha*, to the Year of the Period correſponding with its Riſe; and from the ſame to ſubtract the Year of the ſame Period correſponding to the other *Epocha*. The Remainder is the Year of that other *Epocha*. See JULIAN PERIOD.

The EPOCHA *of Chriſt*, or *our Lord*, is the *vulgar Epocha* throughout *Europe*; commencing from our Saviour's Nativity, *December* 25; or rather, according to the uſual Account, from his Circumciſion, the 1*ſt* of *January*; but particularly in *England*, from the Incarnation, or Annunciation of the Bleſſed Virgin, on the 25*th* of *March*; Nine Months prior to the Nativity. See NATIVITY, CIRCUMCISION, ANNUNCIATION, &c.

Now, the Year of the *Julian* Period whereon *Chriſt* was born, and circumciſed, is uſually computed to be the Year 4713; conſequently, the firſt Year of the Æra of *Chriſt*, correſponds to the Year 4714 of the *Julian* Period.

Hence, 1°. If to any given Year of *Chriſt*, you add 4713, the Sum will be the Year of the *Julian* Period correſponding thereto. *E. gr.* if to the preſent Year 1725, be added 4713, the Sum 6438, is the preſent Year of the *Julian* Period.

2°. On the contrary, ſubtracting 4713, from any given Year of the *Julian* Period, the Remainder is the current Year of *Chriſt*, *e. gr.* From the Year of the *Julian* Period 6438, ſubtracting 4713, the Remainder is the Year of *Chriſt* 1725.

In Effect, the *Epocha* of *our Lord*, ſerves not only for the Computation of the Years elapſed ſince the *Epocha* commenced; but even of thoſe before it.

Now, to find the Year of the *Julian* Period, correſponding to a given Year before *Chriſt*; ſubtract the given Year from 4714; the Remainder is the correſpondent Year required. Thus, *e. gr.* the Year before *Chriſt* 752, is the Year 3956 of the *Julian* Period. On the contrary, ſubtracting the Year of the *Julian* Period from 4714, the Remainder is the Year before *Chriſt*.

The Author of the vulgar *Epocha*, or Way of computing from *Chriſt*, is an Abbot of *Rome*, one *Dionyſius Exiguus*, by Nation a *Scythian*; who flouriſh'd under *Juſtinian*, about the Year 507: Tho' *Dionyſius* borrowed the Hint from *Panodorus* a *Greek* Monk. Till his Time, the Generality of Chriſtians computed their Years, either from the Building of *Rome*, or according to the Order of the Emperors and Conſuls, and the other Ways in Uſe with the People they lived among.

This Diverſity occaſioning a great Diſtraction between the Churches of the *Eaſt* and *Weſt*; *Dionyſius*, to compoſe the ſame, firſt propoſed a new Form of the Year, with a new general Æra, which in a few Years Time was generally admitted.

Dionyſius began his Account from the Conception, or Incarnation, popularly call'd Lady-Day, or the Annunciation: Which Method ſtill obtains in the Dominions of *Great Britain*, and there only; ſo that the *Dionyſian*, and *Engliſh Epocha*, is the ſame. In the other Countries of *Europe*, they reckon from the 1*ſt* of *January*; except in the Court of *Rome*, where the *Epocha* of the Incarnation ſtill obtains for the Date of their Bulls.

It muſt be added, that this *Epocha* of *Dionyſius* is charged with a Miſtake: The common Opinion is, that it places our Saviour's Nativity a Year too late; or, that he was born the Winter preceding the Time preſcribed by *Dionyſius* for his Conception.

But, the Truth is, the Fault lies on *Beda*, who miſinterpreted *Dionyſius*, and whoſe Interpretation we follow; as has been ſhewn by *Petavius*, from *Dionyſius's* own Epiſtles. For *Dionyſius* began his Cycle from the Year of the *Julian* Period 1712; but his *Epocha* from the Year 1713, wherein the vulgar Æra ſuppoſes *Chriſt* to have been incarnate.

The Year, therefore, which according to the vulgar *Epocha* is the 1*ſt* Year of *Chriſt*; according to *Dionyſius's* Æra, is the 2*d*. So that the preſent Year, which we call 1725, ſhou'd, in Juſtice, be 1726. Tho' ſome Chronologiſts, inſtead of one Year, will have the Error two.

To this vulgar Æra, as a ſure, fix'd Point, Chronologers uſe to reduce all the other *Epocha's*; tho' there is not one of 'em but what is controverted: So much Uncertainty there is in Time. We ſhall exhibit 'em as reduced to the *Julian* Period.

EPOCHA *of the Creation*, or *Orbis conditi*, according to the Computation of the *Jews*, call'd alſo the *Jewiſh Epocha*, is the Year of the *Julian* Period 953; anſwering to the Year before *Chriſt* 3761; and commences on the 7*th* Day of *October*.

Hence, ſubtracting 952 Years from any given Year of the *Julian* Period, the Remainder is the Year of the *Jewiſh Epocha*, correſponding thereto. Thus, *e. gr.* the preſent Year being the 6438*th* Year of the *Julian* Period; it is the 5486*th* Year of the *Jewiſh Epocha*, or ſince the Creation of the World.

This *Epocha* is ſtill in Uſe among the *Jews*.

The EPOCHA *of the Creation*, uſed by the *Greek* Hiſtorians, is the Year before the *Julian* Period 787; anſwering to the Year before *Chriſt* 5500.

Hence, to any given Year of the *Julian* Period, adding 787; the Sum gives the Year of this *Epocha*. *E. gr.* 6438 being the preſent Year of the *Julian* Period; 7390 is the preſent Year of this *Epocha*, or the Age of the World, according to this Computation.

The Author of this *Epocha*, is *Julius Africanus*, who collected it from the Hiſtorians. But when it came to be admitted into civil Uſe, 8 Years were added to it; that ſo, every Year thereof divided by 15, might exhibit the Indiction, which the *Eaſtern* Emperors uſed in their Charters and Diploma's.

The *Epocha of the Creation* uſed by the later *Greeks*, and *Ruſſians*, is the Year 795, before the *Julian* Period; or the Year 5509 before *Chriſt*; commencing from the 1*ſt* Day of *September*. Tho' the *Ruſſians*, having lately admitted the *Julian* Calendar, begin their Year from the 1*ſt* of *January*.

Hence, adding 795, to the Year of the *Julian* Period, the Sum gives the Year of this *Epocha*. Thus, *e. gr.* the *Julian* Period of the preſent Year being 6438; the preſent Year of this *Epocha*, i. e. the Years from the Creation, on this Footing, are 7233. Again, from the preſent Year 7233, ſubtracting 5508; the Remainder is the Year of the common Æra 1725.

This Æra was uſed by the Emperors of the *Eaſt*, in their Diplomata, &c. And thence alſo call'd the *Civil Æra of the Greeks*. In Reality, it is the ſame with the *Epocha* of the *Conſtantinopolitan* Period; whence ſome call it the *Epocha of the Period of Conſtantinople*. See PERIOD.

The *Alexandrian* EPOCHA *of the Creation*, is the Year 780, before the *Julian* Period; anſwering to the Year before *Chriſt* 5494; and commencing on the 29*th* Day of *Auguſt*.

Hence, adding 5493, to the preſent Year of *Chriſt* 1725; the Sum, 7218, gives the preſent Year of this *Epocha*; or Years elapſed ſince the Creation, according to this Computation.

This *Epocha* was firſt concerted by *Panodorus*, a Monk of *Egypt*, to facilitate the Computation of *Eaſter*; whence, ſome call it, *Greek Eccleſiaſtical Epocha*.

The *Euſebian* Epocha *of the Creation*, is the Year of the *Julian* Period 486; anſwering to the Year before *Chriſt* 4228; and commencing in Autumn.

Hence, ſubtracting 486, from the *Julian* Period of the preſent Year 6438; or adding 4428 to the preſent Year of *Chriſt*, the Reſult 5953, is the preſent Year of this *Epocha*.

This *Epocha* is uſed in *Euſebius*'s *Chronicon*, and the *Roman* Martyrology. See Creation.

Epocha *of Olympiads*, is the Year of the *Julian* Period 3938: anſwering to the Year 776, before *Chriſt*; and the Year 2985 from the Creation; commencing at the Full Moon next the Summer Solſtice. And each *Olympiad* containing four Years.

This *Epocha* is very famous in ancient Hiſtory: It was uſed principally by the *Greeks*, and had its Origin from the *Olympic* Games, which were celebrated at the Beginning of every fifth Year. See Olympiad.

Epocha *of the Building of* Rome, or *Urbis conditæ*, U. C. is the Year of the *Julian* Period 3961, according to *Varro*; or 3962, according to the *Faſti Capitolini*; anſwering to the Years before *Chriſt* 753, or 752, and beginning on the 21*ſt* of *April*.

Hence, if the Years of this *Epocha* be fewer than 754, ſubtracting 'em from 754, or 7535 you have the Year before *Chriſt*. And, on the contrary, if they be more than 745, adding 'em to the ſame, the Sum is the Number of Years ſince *Chriſt*. Laſtly, adding the Year before *Chriſt*, to 753, or 752; the Sum will give the Year of this *Epocha*, or the Time ſince the Building of *Rome*. Thus, *e. gr.* the preſent Year 1725, according to *Varro*, is the Year of *Rome* 2488.

Epocha *of Nabonaſſar*, is the Year of the *Julian* Period 3967; anſwering to the Year before *Chriſt* 747; commencing on the 26*th* Day of *February*.

This Æra takes its Denomination from its Inſtituter, *Nabonaſſar* King of *Babylon*; and is that uſed by *Ptolomy* in his Aſtronomical Obſervations, by *Cenſorinus* and others.

Dioclefian Epocha, or Epocha *of Martyrs*, is the Year of the *Julian* Period 4997, anſwering to the Year of *Chriſt* 283; call'd *Æra of Martyrs* from the great Number of Chriſtians, who ſuffer'd Martyrdom under the Reign of that Emperor.

The *Abyſſinians*, among whom 'tis ſtill uſed in all Eccleſiaſtical Computations, call it the *Years of Grace*. Tho' they don't reckon their Years in a continued Series from this *Epocha*. But when the *Dionyſian* Period of 534 Years is expired, they begin their Computation afreſh from 1, 2, &c.

Epocha *of the Hegira*, or *Mahometan* Epocha, is the Year of the *Julian* Period 5335, anſwering to the Year of *Chriſt* 622. It commences on the 16*th* of *July*, the Day of *Mahomet*'s Flight from *Mecca* to *Medina*.

This *Epocha* is uſed by the *Turks* and *Arabs*, and even all who profeſs the *Mahometan* Faith: It was firſt introduced by *Omar*, the third Emperor of the *Turks*. The Aſtronomers, *Alfraganus*, *Albategnius*, *Alphonſus*, and *Ulugh Beigh*, refer *Mahomet*'s Flight to the 15*th* of *July*; but all the People who uſe the *Epocha*, agree to fix it on the 16*th*. See Hegira.

Epocha *of the Seleucides*, uſed by the *Macedonians*, is the Year of the *Julian* Period 4402; anſwering to the Year before *Chriſt* 312. See Seleucides.

Yezdegerdic, or *Perſian* Epocha, is the Year of the *Julian* Period 5345; anſwering to the Year of *Chriſt* 632, and commencing on the 16*th* of *June*.

This *Epocha* is taken from the Death of *Yezdegerdis*, the laſt King of *Perſia*, ſlain in Battle by the *Sarazens*.

Julian Epocha, or *Epocha* of *Julian* Years, is the Year of the *Julian* Period 4668; anſwering to the Year before *Chriſt* 45.

This *Epocha* had its Origin from the Year of the Reformation of the Calendar under *Julius Cæſar*; call'd the *Year of Confuſion*. See Year.

Spaniſh Epocha, is the Year of the *Julian* Period 4676; anſwering to the Year before *Chriſt* 38.

Actiac, or *Actian* Epocha, is the Year of the *Julian* Period 4684, anſwering to the Year before *Chriſt* 30. Commencing on the 29*th* Day of *Auguſt*. See Actiac.

Other memorable *Epocha*'s are, that of the *Deluge*, in the Year of the Creation 1656: The Birth of *Abraham* in 2039: The *Iſraelites Exodus* or Departure out of *Egypt*, in 2544: The Building of the *Temple* of *Jeruſalem*, in 2023: And the *Deſtruction* of the ſame in the Year of *Chriſt* 70: The taking of *Conſtantinople* by the *Turks*, in 1453, &c.

EPODE, in Poetry. In the *Lyric* Poetry of the *Greeks*, the *Epode* is the third Part, or End of the Ode: Their Ode, or Song, being divided into Strophe, Antiſtrophe, and *Epode*. See Ode.

The *Epode* was ſung by the Prieſts, ſtanding ſtill before the Altar, after all the Turns and Returns of the Strophe and Antiſtrophe. See Strophe.

The *Epode* was not confined to any preciſe Number, or Kind of Verſes; as the Strophe and Antiſtrophe were. See Strophe, &c.

But when the Ode contain'd ſeveral *Epodes*, Strophes, &c. they were all alike.

As the Word *Epode*, then, properly ſignifies the End of the Song; and as in Odes, what they call'd the *Epode*, finiſh'd the Singing: It became cuſtomary, as M. *Dacier* ſhews, for a little Verſe, which being put after another, cloſed the Period, and finiſh'd the Senſe which had been ſuſpended in the firſt Verſe, to be call'd *Epode*, ἐπῳδὸς.

And hence it is, that the VI*th* Book of *Horace*'s Odes is entitled *Liber Epodωn*, Book of *Epodes*, by reaſon the Verſes thereof are all alternately long and ſhort; and that the ſhort one, generally, tho' not always, cloſes the Senſe of the long one.

But the Signification of the Word is extended ſtill further; *Epode* being become a general Name for all Kinds of little Verſes, that follow one or more great ones, of what Kind ſoever they be: And, in this Senſe, a Pentameter is an *Epode*, after an Hexameter, which in Reſpect thereof is a Pro-ode.

EPOMIS, in Anatomy, the upper Part of the Shoulder, reaching up to the Neck. See Shoulder.

Some Authors apply the Word *Epomis* to the upper Part of the *Os Humeri*: But the ancient *Greek* Phyſicians only uſe it for the muſcular, or fleſhy Part, placed as abovementioned.

The Word is *Greek*, Ἐπωμὶς, which ſignifies the ſame Thing.

EPOPEA, Epos, in Poetry, is ſtrictly the Hiſtory, Action, or Fable, that makes the Subject of an *Epic* Poem. See Action and Fable.

In the common Uſe of the Word, however, *Epopea* is the ſame with *Epic* Poem it ſelf: In which Senſe it is defined, a Diſcourſe invented with Art, or a Fable agreeably imitated from ſome important Action; and related in Verſe, in a probable and ſurprizing Manner; with a View to form the Manners, &c. See Epic *Poem*.

The Word is derived from the *Greek*, ἔπος, *Carmen*, *Verſe*; and ποιέω, *facio*, *I make*.

EPULO, in Antiquity, a Miniſter of Sacrifice among the *Romans*. See Sacrifice.

The Pontifices not being able to attend all the Sacrifices perform'd at *Rome*, to ſo many Gods as were adored by the People; appointed three Miniſters, whom they called *Epulones*, by reaſon they conferr'd on 'em the Care and Management of the *Epula*, Feaſts in the ſolemn Games and Feſtivals.

To them belong'd the ordering and ſerving the ſacred Banquet, offer'd on ſuch Occaſions to *Jupiter*. They wore a Gown border'd with Purple, like the Pontifices. Their Number was at length augmented from Three to Seven, and afterwards by *Cæſar* to Ten.

Their firſt Eſtabliſhment was in the Year of *Rome* 558, under the Conſulate of *L. Furius Purpureo*, and *M. Claudius Marcellus*.

EPULOTICKS, in Medicine, dry, aſtringent Remedies, proper to cicatrize, or incarnate Wounds and Ulcers. See Incarnative, Cicatricive.

Such are Emplaſters of Ceruſs, and Diapalma; the Unguent Pompholix, &c.

The Word is form'd of the *Greek*, ἐπὶ, *ſuper*, and ὠλὴ, *Cicatrix*, *Eſchar*. Whence the Verb ἐπουλόω, *cicatricem*, *infero*.

EPULUM, in Antiquity, *Banquet*, a holy Feaſt prepared for the Gods. See Feast.

The Statues of the Gods were commonly laid upon a Bed, and were ſerved as if they had been very hungry; to perform which, was the Function of the Miniſters of Sacrifice, hence called *Epulones*. See Epulo.

EQUABLE *Motion*, is that whereby the moveable Body proceeds with the ſame continued Velocity; neither accelerated nor retarded. See Motion.

EQUAL, a Term of Relation between two or more Things of the ſame Magnitude, Quantity, or Quality.

Wolfius defines *Equals* to be thoſe Things which may be ſubſtituted for each other, without any Alteration of Quantity. 'Tis an Axiom in Geometry, that two Things which are *Equal* to the ſame third, are *Equal* to each other. And again, if to, or from *Equals*, you add or ſubtract *Equals*, the Remainders will be *Equal*. See Equality.

Equal *Circles*, in Geometry, are thoſe whoſe Diameters are *Equal*. See Circle.

Equal *Angles*, are thoſe whoſe Sides are inclined alike to each other; or that are meaſured by ſimilar Parts of their Circles. See Angle.

EQUAL *Figures*, are those whose Area's are *Equal*; whether the Figures be similar or not. See FIGURE.

The Segments of a Sphere, or Circle, are of an *Equal Concavity*, or *Convexity*, when they have the same Ratio, or Proportion to the Diameters of the Spheres, or Circles whereof they are Parts. See SEGMENT.

EQUAL *Solids*, are those which comprehend, or contain each as much as other; or whose Solidities and Capacities are *Equal*. See SOLID.

EQUAL *Hyperbola's*, are those whose Ordinates to their indeterminate Axes, are *Equal* to each other; taken at *Equal* Distances from their Vertices. See HYPERBOLA.

EQUAL *Numbers*, EQUAL *Hours* } See { NUMBER. HOUR.

EQUAL *Geometrical Ratio's*, are those whose least Terms are similar *aliquot*, or *aliquant* Parts of greater. See RATIO.

Equal Arithmetical Ratio's, are those wherein the Difference of the two less Terms, is *Equal* to the Difference of the two greater. See RATIO.

In Opticks, we say, that Things seen under *Equal Angles*, are *Equal*. *Equal* Parts of the same Interval, or Magnitude, if unequally distant from the Eye, appear unequal. *Equal* Objects, and at *Equal* Distances, only the one placed directly, and the other obliquely, seem unequal; and that placed directly, the bigger. See VISION.

EQUALITY, in Astronomy. The *Circle of Equality*, or the *Equant*, is a Circle used in the *Ptolomaic* Astronomy, to account for the Eccentricity of the Planets, and reduce them more easily to a Calculus. See EQUANT.

In Geometry, the *Ratio*, or *Proportion of* EQUALITY, is that between two equal Numbers, or Quantities.

Proportion of EQUALITY *evenly ranged*, or *ex Æquo ordinata*, is that wherein two Terms in a Rank, or Series, are Proportional to as many Terms in another Series, compared to each other in the same Order, *i. e.* the first of one Rank to the first of another; the second to the second, *&c.*

Proportion of EQUALITY *evenly disturbed*, call'd also *ex Æquo Perturbata*, is that wherein more than two Terms of a Rank, are proportional to as many Terms of another Rank, compared to each other, in a different and interrupted Order; *viz.* The first of one Rank to the second of another; the second to the third, *&c.*

EQUALITY, in Algebra, is a Comparison of two Quantities, that are equal both really and representatively, *i. e.* both equal in Effect and Letters: And *Equation*, is a Comparison of two Magnitudes, equal in Effect, but unequal in Letters, to render them equal.

Equality, in Algebra, is usually denoted by two parallel Lines, as =: Thus, $2 + 2 = 4$, *i. e.* 2 *Plus* 2, are equal to 4.

This Character was first introduced by *Hariot*. *Des Cartes*, and some after him, in Lieu thereof use ∞: Thus, $2 + 2 \infty 4$, so $z - y = b + c$, signifies that z *minus* y, is equal to b *plus* c.

From an Equation, we arrive at an *Equality*, by changing one Letter into another, whereby the two Members of the Equation, *i. e.* the two Quantities compared together, and connected by the Sign of *Equality*, are render'd Equal.

Thus, in the Equation $a\,a\,x = b\,c\,d$; supposing $x = \frac{b\,c\,d}{a\,a}$, we change x into $\frac{b\,c\,d}{a\,a}$, and by this Substitution arrive at the *Equality* $b\,c\,d = b\,c\,d$.

In the Solution of a Numerical Problem, to be render'd rational; if there be only one Power to be equall'd to a Square, or other higher Power; it is call'd *simple Equality*.

When there are two Powers to be equall'd, each to a Square, it is call'd *double Equality*, &c.

Diophantus has given us a Method for double *Equalities*, and *Fa. Billy*, another for *triple Equalities*, in his *Diophantus* and *Redivivus*.

EQUANT, or ÆQUANT, in Astronomy, a Circle, imagined by Astronomers, in the Plane of the Deferent, or Eccentric; for the regulating and adjusting of certain Motions of the Planets. See DEFERENT.

EQUATION, or ÆQUATION, in Algebra, an Expression of the same Quantity, in two different, that is, dissimilar, but *Equal* Terms or Denominations. As when we say, 2. $3 = 4 + 2$; that is, twice three is equal to four and two. See QUANTITY.

Stifelius defines *Equation* to be the Ratio of Equality, between two Quantities differently denominated: As when we say 3 Shill. = 36 Pence. Or 50 Shill. = 2 Lib. 10 Shill. = 600 Pence, = 2400 Farth. Or, $b = d + e$. Or, $12 = \frac{a - P}{5}$, *&c.*

Hence, the Reduction of two heterogeneous, or dissimilar Quantities to the same Value, *i. e.* to an Equality, is called the *bringing them to an Equation*.

The Character, or Sign of an *Equation*, is = or ∞; See CHARACTER.

The Resolving of Problems, by Means of *Equations*, is the Business of Algebra. See ALGEBRA.

The *Terms of an Equation*, are the several Quantities, or Parts, of which an *Equation* is composed; connected together by the Signs + and −. Thus, in the *Equation* $b + c = d$; the Terms are b, c and d. And the Tenor of the *Equation* is, that some Quantity, represented by b, is equal to two others represented by c and d. See TERMS *of Equations*.

The *Root of an* EQUATION, is the Value of the unknown Quantity in the *Equation*. E. gr. if $a^2 + b^2 = x^2$; the Root will be $\surd (a^2 + b^2)$. See ROOTS *of Equations*.

Equations are divided with Regard to the Powers of the unknown Quantities, into *Simple*, *Quadratic*, *Cubic*, &c.

A *Simple* EQUATION, is that wherein the unknown Quantity is only of one Dimension, or the first Power. As, $x = (a + b) : 2$. See SIMPLE *Equation*.

A *Quadratic* EQUATION, is that wherein the unknown Quantity is of two Dimensions, or the second Power. As, $x^2 = a^2 + b^2$. See QUADRATIC *Equation*.

A *Cubic* EQUATION, is that wherein the unknown Quantity is of three Dimensions. As $x^3 = a^3 - b^3$, *&c.* See CUBIC *Equation*.

If the unknown Quantity be of four Dimensions, as $x^4 = a^4 - b^4$, the *Equation* is call'd a *Biquadratic*; if of 5, a *Surdesolid*, &c. See POWER.

Equations are consider'd two Ways: Either, as the ultimate Conclusions we arrive at in the Solution of Problems; or as Means, by the Help whereof, we arrive at those final Solutions. See SOLUTION and PROBLEM.

An *Equation* of the first Kind, consists only of one unknown Quantity, intermix'd with other known Quantities. Those of the latter Kind, consist of several unknown Quantities, which are to be compared, and connected together, till out of them all arise a new *Equation*, wherein the one unknown Quantity sought, is mix'd with the known. To get the Value of which unknown Quantity, the *Equation* is generally turn'd, and transform'd various Ways, till it be brought as low, and render'd as simple as possible.

The Doctrine and Practice of *Equations*; that is, the Solution of Questions by *Equations*, consists of several Steps, or Parts, *viz.* 1°. The denominating of the several Quantities, or expressing them in proper Signs, or Symbols. 2°. The bringing the Quantities thus denoted to an *Equation*. 3°. The reducing that *Equation* to its lowest and simplest Terms. To which 4°. may be added the constructing of the *Equation*, or representing it in Geometrical Lines: We proceed to each in its Order.

With Regard to the *first*; a Question, or Problem, being proposed; we conceive the Thing sought, or required, as already done: And accordingly note, or express it by one of of the Vowels, as *a*, or more usually, by one of the last Letters the Alphabet, *x* y or z; noting the other known Quantities, by the Consonants, or the beginning Letters of the Alphabet, *b*, *c*, *d*, &c. See QUANTITY, CHARACTER, SPECIES.

The Question being thus stated in Species; it is consider'd whether, or no, it be subject to any Restrictions, *i. e.* whether it be determinate, or no; which is found by these Rules.

1°. If the Quantities sought, or required, be more than the Number of *Equations* given, or contain'd in the Question; it is indeterminate, and capable of innumerable Solutions. The *Equations* are found, if they be not expressly contain'd in the Problem it self, by the Theorems of the Equality of Quantities.

2°. If the *Equations* given, or contain'd in the Problem, be just equal in Number with the unknown Quantities; the Question is determinate, or has one only Solution.

3°. If the unknown Quantities be fewer than the given *Equations*, the Question is yet more limited, and sometimes discovers it self impossible, by some Contradiction between the *Equations*. See DETERMINATE, *&c.*

To bring Questions to EQUATIONS.

Now, *to bring a Question to an Equation*, that is, to bring the several mediate *Equations*, to one final one; the principal Thing to be attended to, is to express all the Conditions thereof, by so many *Equations*. In order to which, it is to be consider'd, whether the Propositions, or Sentences, wherein it is expressed, be all of them fit to be noted in Algebraic Terms; as our Conceptions use to be in *Latin*, or *Greek* Characters. And if so, as is generally the Case in Questions about Numbers, or abstract Quantities; then let Names be given both to the known and unknown Qualities, as far as Occasion requires: And thus the Drift of the Question may be couch'd, as we

may

may call it, in the *Algebraical Language*. The Conditions, thus tranſlated to Algebraic Terms, will give as many *Equations* as are neceſſary to ſolve it. To illuſtrate this by an Inſtance: Suppoſe it required to find three Numbers, in continual Proportion, whoſe Sum is 20, and the Sum of the Squares 140; putting x, y, z, for the Names of the three Numbers ſought, the Queſtion will be tranſlated out of the Verbal to the Symbolical Expreſſion, thus:

The Queſtion in Words.	*In Symbols.*
Required three Numbers, on theſe Conditions.	x, y, z?
That they be continually proportional.	$x : y :: y : z$, or $xz = yy$
That the Sum be 20.	$x + y + z = 20.$
And the Sum of their Squares 140.	$xx + yy + zz = 140.$

Thus, is the Queſtion brought to theſe *Equations*, viz. $xz = yy$, $x + z + y = 20$, and $xx + yy + zz = 140$, by the Help whereof, x, y, and z, are to be found.

The Solutions of Queſtions are, for the moſt Part, ſo much the more expedite and artificial, by how much the unknown Quantities, you have at firſt, are the fewer. Thus, in the Queſtion propoſed, putting x for the firſt Number, and y for the ſecond, $\frac{yy}{x}$ will be the third Proportional; which being put for the third Number, bring the Queſtion into *Equations* as follows.

The Queſtion in Words.	*Symbolically.*
There are ſought three Numbers in continual Proportion. - - -	x, y, $\frac{yy}{x}$?
Whoſe Sum is 20. - - - - -	$x + y + \frac{yy}{x} = 20.$
And the Sum of their Squares 140. - - - - - - - - - -	$xx + yy + \frac{y^4}{xx} = 140.$

You have therefore the *Equations* $x + y + \frac{yy}{x} = 20$, and $xx + yy + \frac{y^4}{xx} = 140$, by the Reduction whereof, x and y are to be determined.

Take another Example: A Merchant increaſes his Eſtate annually by a third Part, abating 100 *L.* which he ſpends yearly in his Family; and after three Years he finds his Eſtate doubled. *Query*, What is he worth? To reſolve this, it muſt be obſerved, that there are (or lie hid) ſeveral Propoſitions, which are all thus found out and laid down.

In Engliſh.	*Algebraically.*
A Merchant has an Eſtate. —— ——	x
Out of which the firſt Year he expends 100 *l.*	$x - 100.$
And augments the reſt by one Third. ——	$x - 100 + \frac{x - 100}{3}$, or $\frac{4x - 400}{3}$
And the ſecond Year he expends 100 *l.* —	$\frac{4x - 400}{3} - 100$, or $\frac{4x - 700}{3}$
And augments the reſt by one Third. ——	$\frac{4x - 700}{3} + \frac{4x - 700}{9}$, or $\frac{16x - 2800}{9}$
And ſo the third Year he expends 100 *l.* —	$\frac{16x - 2800}{9} - 100$, or $\frac{16x - 3700}{9}$
And by the reſt gains likewiſe one Third.	$\frac{16x - 3700}{9} + \frac{16x - 3700}{27}$, or $\frac{64x - 14800}{27}$
And he becomes at length twice as rich as at firſt.	$\frac{64x - 14800}{27} = 2x.$

Therefore the Queſtion is brought to this *Equation*, $\frac{64x - 14800}{27} = 2x$, by the Reduction whereof you will find

$x = 14800$.

x. *Viz.* Multiply it into 27, and you have $64x - 14800 = 54x$; ſubtract $54x$, and there remains $10x - 14800 = 0$, or $10x = 14800$; and dividing by 10, you have $x = 1480$. So that the Value of his Eſtate at firſt was 1480 *Lib.*

It appears then, that to the Solution of Queſtions about Numbers, or the Relations of abſtract Quantities; there is ſcarce any Thing more required, but to tranſlate 'em out of the common, into Algebraic Language; *i. e.* into Characters, proper to expreſs our Idea's of the Relations of Quantities. Indeed, it may ſometimes happen, that the Language wherein the Queſtion is ſtated, may ſeem unfit to be rendred into the Algebraical; tho' by making a few Alterations therein, and attending to the Senſe, rather than the Sound of the Words, the Tranſlation becomes eaſy enough. The Difficulty here reſults merely from the Difference of Idioms, which is as obſervable between moſt Languages, as between the common and ſymbolical.

However, to render the Solution of ſuch Problems a little more eaſy and familiar, we ſhall add an Example or two thereof.

1°. *Given, the Sum of two Numbers* a, *and the Difference of their Squares* b; *to find the Numbers themſelves.* Suppoſe the leſſer, x; the other will be $a - x$; and their Squares xx and $aa - 2ax + xx$: Whoſe Difference, $aa - 2ax$ is call'd b. Conſequently, $aa - 2ax = b$. Whence, by Reduction, $aa - b = 2ax$. Or $\frac{aa - b}{2a}$ $(= \frac{1}{2}a - \frac{b}{2a}) = x$.

E. gr. Suppoſe the Sum of the Numbers, or a, to be 8, and the Difference of their Squares, or b, 16: Then will, $\frac{1}{2}a - \frac{b}{2a} (= 4 - 1) = 3 = x$. And $a - x = 5$. Therefore the Numbers are 3 and 5.

2°. *To find three Quantities* x, y, *and* z; *the Sum of each Pair whereof is given.* Suppoſe the Sum of the Pair x and y be a; that of x and z, b: and that of y and z, c. To determine the three Numbers required, x, y, and z; we have three *Equations* $x + y = a$; $x + z = b$; and $y + z = c$: Now, to exterminate two of the unknown Quantities, *e. gr.* y and x; take away x, both from the firſt and ſecond *Equations*; and we ſhall have $y = a - x$ and $z = b - x$. Which Values being ſubſtituted for y and z in the third *Equation*; there will ariſe $a - x + b - x = c$; and by Reduction $x = \frac{a + b - c}{2}$. Having found x the former *Equations*, $y = a - x$ and $z = b - x$ will give y and z.

Thus, *e. gr.* If the Sum of the Pair x and y be 9; of x and z, 10; and of y and z, 13: Then, in the Values x, y and z, write 9 for a, 10 for b, and 13 for c; and you will have $a + b - c = 6$; and conſequently x $(= \frac{a + b - c}{2})$ $= 3$, y $(= a - x) = 6$ and z $(= b - x) = 7$.

3°. *To divide a given Quantity into any Number of Parts, ſo as that the greater Parts ſhall exceed the leaſt by any given Differences.* Suppoſe A a Quantity to be divided into four ſuch Parts, the firſt and ſmalleſt whereof is x; the Exceſs of the ſecond Part above this, b, of the third, c, and the fourth, d: Then will $x + b$ be the ſecond Part, $x + c$ the third, and $x + d$ the fourth: The Aggregate of all which $4x + b + c + d$ is equal to the whole Line a. Now, taking away from each, $b + c + d$, and there remains $4x = a - b - c - d$ or $x = \frac{a - b - c - d}{4}$.

Suppoſe, *e. gr.* a Line of 20 Feet, to be divided into 4 Parts, in ſuch manner, as that the Exceſs of the ſecond above the firſt may be 2 Feet, of the third, 3 Feet, and of the fourth 7 Feet. Then the four Parts will be x $(= \frac{a - b - c - d}{4}$ Or $\frac{20 - 2 - 3 - 7}{4})$ $= 2$, $x + b = 4$, $x + c = 5$, and $x + d = 9$. And after the ſame Manner, may a Quantity be divided into a greater Number of Parts on the ſame Conditions.

4°. *A Perſon diſpoſed to diſtribute a little Money among ſome Beggars; wants Eight Pence, of Three Pence for each of 'em: He therefore gives 'em Two Pence a-piece, and has Three Pence left: The Number of Beggars is required.* Let the Number of Beggars be call'd x; and the Perſon want Eight Pence of giving 'em all $3x$. Conſequently he has $3x - 8$; out of which he gives $2x$ Pence; and the remaining Pence are 3. That is $x - 8 = 3$ or $x = 11$.

5°. *The Power or Strength of one Agent being given; to determine how many ſuch Agents will produce a given Effect* a, *in a given Time* b. Suppoſe the Power of the Agent ſuch, as that it may produce the Effect c, in the Time d; then, as the Time d, is to the Time b, ſo is the Effect c, which the Agent can produce in the Time d, to the Effect it can produce in the Time b, which accordingly will be $\frac{bc}{d}$ Then, as the Effect of one Agent $\frac{bc}{d}$ is to the joynt Effect of 'em all a; ſo is that one Agent, to all the Agents. Conſequently the Number of Agents will be $\frac{ad}{bc}$.

Thus, *e. gr.* If a Clerk, or Writer, in 8 Days Time, tranſcribe 15 Sheets; how many ſuch Clerks are required to tranſcribe 405 Sheets in 9 Days? *Anſ.* 24. For if 8 be ſubſtituted for d, 15 for c, 405 for a, and 9 for b, the Number $\frac{ad}{bc}$ will become $\frac{405 \times 8}{9 \times 15}$ That is $\frac{3240}{135}$ or 24.

5°. *The Powers of ſeveral Agents being given; to determine the Time* x, *wherein they will joyntly perform a given Effect d.* Suppoſe the Powers of the Agents, A, B, C, ſuch as that in the Times e, f, g, they would produce

duce Effects a, b, c, reſpectively: And theſe, in the Time x, would produce Effects $\frac{ax}{e}$, $\frac{bx}{f}$, $\frac{cx}{g}$. Conſequently $\frac{ax}{e} + \frac{bx}{f} + \frac{cx}{g} = d$, and by Reduction $x = \frac{d}{\frac{a}{e} + \frac{b}{f} + \frac{c}{g}}$.

Suppoſe, *e. gr.* three Workmen cou'd finiſh a certain Work, on ſuch and ſuch Times, *viz.* A once in three Weeks, B thrice in eight Weeks, and C five Times in twelve Weeks: And it is required, in what Time they will finiſh it together? Here, the Powers of the Agents A, B, C, are ſuch as in the Times 3, 8, and 12, reſpectively produce Effects 1, 3, 5; and it is enquired in what Time they will produce the Effect, 1. For a, b, c, d, e, f, g, write 1, 3, 5, 1, 3, 8, 12; and there will come out $x = \frac{1}{\frac{1}{3} + \frac{3}{8}} + \frac{5}{12}$ or $\frac{8}{9}$ of a Week, that is, 6 Days, $5\frac{1}{3}$ of an Hour; the Time they will finiſh it in together.

6°. *Given, the ſpecific Gravities of a Mixture, and of the ſeveral Ingredients thereof; to find the Proportion of the Ingredients therein.* Suppoſe e the ſpecific Gravity of the Mixture A + B; a that of A, and b that of B: Since the abſolute Gravity, or Weight, is compounded of the Bulk of the Body, and its ſpecific Gravity; a A will be the Weight of A; B b that of B; and e A + e B the Weight of the Aggregate A + B. Conſequently, a A + b B = e A + e B; and therefore a A − e A = e B − b B or e − b. a − e :: A. B.

Thus, *e. gr.* ſuppoſe the ſpecific Gravity of Gold to be as 19, that of Silver as $10\frac{1}{3}$, and that of K. *Hiero*'s Crown as 17; then will 10. 3 (:: e − b. a − e :: A. B) :: the Bulk of Gold in the Crown, to the Bulk of Silver: Or 190. 31 (:: 19 × 10. $10\frac{1}{3} \times 3$ :: a × e − b. b × a − e) :: The Weight of the Gold in the Crown, to the Weight of the Silver, and 221. 31 :: the Weight of the Crown to the Weight of Silver.

To bring Geometrical Problems to Equations.

Geometrical Queſtions, or thoſe relating to continued Quantities, are ſometimes brought to *Equations*, after the ſame manner as Arithmetical ones. So that the 1*ſt* Rule to be here preſcribed is, to obſerve every Thing directed for the Solution of Numerical Problems.

Suppoſe, *e. gr.* it were required, *to cut a right Line, as* A B, (*Tab. Algebra. Fig.* 6.) *in mean and extreme Propation in* C; that is, ſo as that B E, the Square of the greateſt Part, ſhall be *Equal* to the Rectangle B D, contain'd under the whole and the leaſt Part.

Here ſuppoſing A B = a and C B = x; then will AC = a − x; and xx = a into a − x. An *Equation*, which by Reduction gives $x = -\frac{1}{2}a + \sqrt{\frac{1}{4}aa}$.

But 'tis very rare, that Geometrical Problems are thus brought to *Equation*; as being generally found to depend on various complex Poſitions, and Relations of Lines; ſo that, here, ſome further Artifice, and certain ſpecial Rules, will be required, to bring 'em to Algebraic Terms. Indeed, 'tis very difficult to preſcribe any Thing preciſe in ſuch Caſes: Every Man's own Genius ſhould be the Rule of his Procedure.

Something, however, ſhall be ſaid in the general, for the Sake of ſuch as are nothing verſed in ſuch Operations; and that principally from Sir *I. Newton*.

Obſerve then, 2°. That Problems concerning Lines related to each other in any definite manner, may be variouſly ſtated, by ſuppoſing different Quantities, the *Quæſita*, or Things ſought, from different *Data*: Yet ſtill, with whatever Date and *Quæſita* the Queſtion is propoſed, its Solution will ariſe after the very ſame manner, without the leaſt Alteration of any Circumſtance, except in the imaginary Species of Lines, or the Names whereby the *Data* are diſtinguiſh'd from the *Quæſita*.

Suppoſe, *e. gr.* the Queſtion were about an *Iſoſceles* Triangle, B C D, (*Fig.* 7.) inſcribed in a Circle; whoſe Sides, BC, B D, and Baſe C D, were to be compared with the Diameter of the Circle A B. Here, the Queſtion may be either propoſed, of the inveſtigating the Diameter, from the given Sides and Baſe; or of inveſtigating the Baſe, from the Sides and Diameter given. Or, laſtly, of finding the Sides, from the Baſe and Diameter given: And propoſe it under which Form you will, it will be brought to an *Equation*, by the ſame Algebraic Series.

Thus, if the *Diameter* be ſought, I put A B = x, C D = a, and B C, or B D = b. Then, drawing A C, as the Triangles A B C and C B E are ſimilar; A B : B C :: B C : B E, Or xx : b :: b : B E. Wherefore B E = $\frac{bb}{x}$ and C E = $\frac{1}{2}$ C D or $\frac{1}{2}$ a. And, by reaſon the Angle C E B is a right Angle, C E q + B E q = B C q, that is, $\frac{1}{4}aa + \frac{b^4}{xx} = bb$. Which *Equation* being reduced, gives the Diameter required, x. Again,

If the Baſe be ſought, I put A B = c, C D = x, and B C, or B D = b. Then, drawing A C, as the Triangles ABC and CBE are ſimilar; AB : BC :: BC : BE, or c : b :: b : BE. Wherefore B E = $\frac{bb}{c}$. And C E = $\frac{1}{2}$ C D or $\frac{1}{2}x$. And ſince the Angle C E B is right, C E q + B E q = B C q; that is, $\frac{1}{4}xx + \frac{b^4}{cc} = bb$; an *Equation*, which reduced, gives the Baſis ſought, x.

Laſtly, If the Side B C, or B D, were ſought, I put A B = c; C D = a, and B C or B D = x. Then, drawing A C, the Triangles A B C, and C B E, being ſimilar; we have A B : B C :: B C : B E; or c : x :: x : B E. Wherefore, B E = $\frac{xx}{c}$. And C E = $\frac{1}{2}$ C D or $\frac{1}{2}$ a; And the Angle C E B being right C E q + B E q = B C q. That is $\frac{1}{4}aa + \frac{x^4}{cc} = xx$. An *Equation*, which by Reduction, gives x required.

Thus is the *Calculus* for arriving at the *Equation*, as well as the *Equation* it ſelf; the ſame in all the Caſes; except that the ſame Lines are deſign'd by different Letters, according as they are *Data*, or *Quæſita*. Indeed, as the *Data*, or *Quæſita* differ, there ariſes a Difference in the Reduction of the *Equation* found: But no Difference in the *Equation* it ſelf. So that we need make no Difference between given and ſought Quantities; but are at Liberty to ſtate the Queſtion with ſuch *Data* and *Quæſita*, as we think moſt favourable to the Solution of the Queſtion.

3°. A Problem, then, being propoſed, compare the Quantities it includes; and, without making any Difference between *Data* and *Quæſita*, conſider what Dependances they have of each other; that you may learn which of 'em will, by Compoſition, give the reſt. In the doing of which, it is not neceſſary you ſhou'd at firſt contrive, how ſome may be deduced out of others, by an Algebraic *Calculus*; It ſuffices you remark in the general, that they may be deduced by ſome direct Connection.

Thus, *e. gr.* If the Queſtion be about the Diameter of a Circle, A D (*Fig.* 8.) and three Lines A B, B C, and C D, inſcribed in a Semi-circle; whereof, the reſt being given, B C is required: It is evident at firſt Sight, that the Diameter A D, determines the Semi-circle; as alſo, that the Lines A B, and C D, by Inſcription, determine the Points B and C, and conſequently B C required, and that by a direct Connection. Yet does not it appear how B C is deduced from the ſame *Data*, by any analytical *Calculus*.

4°. Having conſider'd the ſeveral Manners, wherein the Terms of the Queſtion may be explain'd and decompounded; chuſe ſome of the ſynthetic Methods; aſſuming ſome Lines as given, from which there is the moſt eaſy Acceſs, or Progreſſion to the reſt, and to which the Regreſſion is the moſt difficult. For, tho' the *Calculus* may be carried on divers Ways, yet muſt it begin with theſe Lines. And the Queſtion is more readily ſolved, by ſuppoſing it to be of theſe *Data*, and ſome *Quæſitum* readily flowing from 'em; than by conſidering the Queſtion as 'tis actually propoſed.

Thus, in the Example already given, if from the reſt of the Quantities given, it were required to find A D; perceiving that this cannot be done ſynthetically; yet that if it were ſo done, I cou'd proceed in my Ratiocination on it in a direct Connection from one Thing to others; I aſſume A D as given, and begin to compute as if it was given indeed, and ſome of the other Quantities, *viz.* ſome of the given ones, as A B, B C, or C D, were ſought. And thus, by carrying on the Computation, from the Quantities aſſumed to the others, as the Relations of the Lines to one another direct, there will always be obtained an *Equation* between two Values of ſome one Quantity; whether one of thoſe Values be a Letter ſet down as a Repreſentation, or Name, at the Beginning of the Work for that Quantity; and the other, a Value of it found out by Computation: or whether both be found by Computation made different Ways.

5°. Having thus compar'd the Terms of the Queſtion in general, there is further Thought and Addreſs required, to find the particular Connections, or Relations of the Lines, fit for Computation. For, what to a Perſon who does not ſo throughly conſider them, may ſeem immediately, and by a very near Relation, connected together; when we come to expreſs that Relation Algebraically, are often found to require a longer Circuit; and ſhall even oblige you to begin your Schemes a-new, and carry on your Computation Step by Step; as may appear by finding B C, from A D, A B, and C D. For you are only to proceed by ſuch Propoſitions, or Enunciations, as can be fitly repreſented in Algebraic Terms, whereof there are

ſeveral ariſe from *Eucl.* Ax. 19. Prop. 4. Book 6. and Prop. 47. *Lib.* I. Elem.

To facilitate this Diſcovery, of the Relations of the Lines in the Figure, there are ſeveral Things that contribute; as firſt, the Addition and Subſtraction of Lines; ſince from the Values of the Parts, you may find the Values of the whole; or from the Value of the whole, and one of the Parts, you may obtain the Value of the other Part. Secondly, by the Proportionality of Lines; ſince, as above ſuppoſed, the Rectangle of the mean Terms, divided by either of the Extremes, gives the Value of the other; or, which is the ſame Thing, if the Values of all four of the Proportionals are firſt had, we make an Equality (or *Equation*) between the Rectangles of the Extremes and Means. But the Proportionality of Lines is beſt found out by the Similiarity of Triangles; which, as it is known by the Equality of their Angles, the Analyſt ought in particular to be converſant in. In Order to which, 'twill be neceſſary he be Maſter of *Euclid*, Prop. 5, 13, 15, 29, and 32, *Lib.* I. and of Prop. 4, 5, 6, 7, 8, *Lib.* VI. and of the 20, 21, 22, 27, and 31, *Lib.* III. To which may be added, the 3d Prop. *Lib.* VI. or the 36th and 37th Prop. *Lib.* III. Thirdly, the Calculus is promoted by the Addition, or Subſtraction of Squares, *viz.* in right angled Triangles, we add the Squares of the leſſer Sides, to obtain the Square of the greater; or from the Square of the greater Side, we ſubſtract the Square of one of the leſſer, to obtain the Square of the other. On which few Foundations, if we add to them Prop. 1. of the VIth *Elem.* when the Buſineſs relates to Superficies, and alſo ſome Propoſitions taken out of the 11th and 12th of *Euclid*, when Solids come in Queſtion; the whole analytic Art, as to right-lined Geometry, depends. Indeed, all the Difficulties of Problems may be reduced to the ſole Compoſition of Lines out of Parts, and the Similiarity of Triangles; ſo that there is no Occaſion to make Uſe of other Theorems; becauſe they may all be reſolved into theſe two, and conſequently into the Solutions that may be drawn from them.

6°. To accommodate theſe Theorems to the Solution of Problems, the Schemes are oft times to be farther conſtructed, by producing out ſome of the Lines, till they cut others, or become of an aſſigned Length; or by drawing Lines parallel, or perpendicular from ſome remarkable Point; or by conjoyning ſome remarkable Points; as alſo, ſometimes, by conſtructing them after other Methods, according as the State of the Problems, and the Theorems, which are made uſe of to ſolve it, ſhall require.

As for Example: If two Lines that do not meet each other, make given Angles, with a certain third Line; perhaps we produce them ſo, that when they concur, or meet, they ſhall form a Triangle, whoſe Angles, and conſequently the Ratio of their Sides, ſhall be given; or if any Angle is given, or be equal to any one, we often complete it into a Triangle given in Specie, or ſimilar to ſome other, and that by producing ſome of the Lines in the Scheme, or by drawing a Line ſubtending an Angle. If the Triangle be an oblique-angled one, we often reſolve it into two right-angled ones, by letting fall a Perpendicular. If the Buſineſs concern multilateral, or many ſided Figures, we reſolve them into Triangles, by drawing diagonal Lines, and ſo in others; always aiming at this End, *viz.* that the Scheme may be reſolved either into given, or ſimilar, or right angled Triangles.

Thus, in the Example propoſed, draw the Diagonal B D, that the Trapezium A B C D, may be reſolved into the two Triangles, A B D a right angled one, and B D C an oblique-angled one, (*Figure* 8.) Then reſolve the oblique-angled one into two right-angled Triangles, by letting fall a Perpendicular from any of its Angle B C or D, upon the oppoſite Side; as from B upon C D, produced to E, that B E may meet it perpendicularly. But ſince the Angles B A D, and B C D, make in the mean while two right ones, (by 22 Prop. 3 *Elem.*) as well as B C E and B C D, the Angles B A D, and B C E are perceived to be equal; conſequently the Triangles B C E, and D A B to be ſimilar. And ſo the Computation (by aſſuming A D, A B, and B C, as if C D were ſought) may be thus carried on, *viz.* A D and A B, (by Reaſon of the right-angled Triangle A B D) give you B D. A D, A B, B D and B C, (by Reaſon of the ſimilar Triangles A B D, and C E B) give B E, and C E. B D, and B E, (by Reaſon of the right-angled B E D) give E D: and E D — E C gives C D. Whence there will be obtain'd an *Equation* between the Value of C D ſo found out, and the ſmall Algebraic Letter that denotes it. We may alſo (and for the greateſt Part it is better ſo to do, than to follow the Work too far in one continued Series) begin the Computation from different Principles, or at leaſt promote it by divers Methods to one and the ſame Concluſion; that at length there may be obtained two Values of any the ſame Quantity; which may be made equal to one another. Thus, A D, A B, and B C, give B D, B E, and C E as before; then C D + C E, gives E D; and laſtly, D B and E D (by Reaſon of the right-angled Triangle B E D) give B E.

7°. Having concerted your Method of Procedure, and drawn up your Scheme; give Names to the Quantities that enter the Computation, (that is, from which aſſumed the Values of others are to be derived, till you come to an *Equation*) chuſing ſuch as involve all the Conditions of the Problem, and ſeem accommodated before others to the Buſineſs, and that ſhall render the Concluſion (as far as you can gueſs) more ſimple, but yet not more than what ſhall be ſufficient for your Purpoſe: Wherefore, don't give new Names to Quantities, which may be denominated from Names already given. Thus, of a whole Line given, and its Parts, of the three Sides of a right-angled Triangle, and of three or four Proportionals, ſome one of the leaſt conſiderable we leave without a Name; becauſe its Value may be deriv'd from the Names of the reſt. As in the Example already brought, if I make A D = x, and A B = a, I denote B D by no Letter, becauſe it is the third Side of a right-angled Triangle A B D, and conſequently its Value is $\sqrt{xx - aa}$. Then if I ſay, B C = b, ſince the Triangles D A B, and B C E are ſimilar, and thence the Lines A D, A B :: B C, C E proportional, to three whereof, *viz.* to A D, A B, and B C, there are already Names given; for that Reaſon I leave the fourth C E without a Name, and in its Room I make uſe of $\frac{ab}{x}$ diſcover'd from the foregoing Proportionality. And ſo if D C be called c, I give no name to D E, becauſe from its Parts D C, and C E, or c and $\frac{ab}{x}$, its Value $c + \frac{ab}{x}$ comes out.

8. By this Time, the Problem is almoſt reduced to an *Equation*. For after the aforeſaid Letters are ſet down for the Species of the principal Lines, there remains nothing elſe to be done, but that out of thoſe Species, the Values of other Lines be made out, according to a preconceived Method; till after ſome foreſeen Way they come to an *Equation*. And there is nothing wanting in this Caſe, except that by Means of the right-angled Triangles B C E and B D E, I can bring out a double Value of B E, *viz.* B C q — C E q $\left(\text{or } bb - \frac{aabb}{xx}\right)$ = B E q; as alſo B D q — D E q $\left(\text{or } xx - aa - cc - \frac{2abc}{x} - \frac{aabb}{xx}\right)$ = B E q. And hence (blotting out on both Sides $\frac{aabb}{xx}$) you ſhall have the *Equation* $bb = xx - aa - cc - \frac{2abc}{xx}$; which being reduced, becomes $x^3 = +aa + bbx + 2abc$. as before. $+cc$

9°. For the Geometry of Curve Lines: We uſe to denote them, either by deſcribing them by the local Motion of right Lines, or by uſing *Equations* indefinitely expreſſing the Relation of right Lines diſpoſed in Order, according to ſome certain Law, and ending at the Curve Lines. See CURVE.

The Antients did the ſame by the Sections of Solids, but leſs commodiouſly. The Computations, which regard Curves, deſcribed after the firſt Manner, are performed as above directed: Thus, ſuppoſe A K C (*Fig.* 9.) a Curve Line, deſcribed by K, the vertical Point of the Square A K φ, whereof one Leg A K, freely ſlides thro' the Point A given in Poſition, while the other K φ of a determinate Length is carried along the right Line A D, alſo given in Poſition; and it is required to find the Point C, in which any right Line C D, given alſo in Poſition, ſhall cut this Curve: Draw the right Lines A C, C F, which may repreſent the Square in the Poſition ſought, and the Relation of the Lines (without any Difference, or Regard, of what is given or ſought, or any Reſpect had to the Curve) being conſidered; you perceive the Dependency of the others upon C F, and any of theſe four, *viz.* B C, B F, A F, and A C, to be ſynthetical; two whereof you aſſume, as C F = a, and C B = x; and Beginning the Computation from thence, you preſently obtain B F = $\sqrt{aa - xx}$, and A B = $\frac{xx}{\sqrt{aa - xx}}$, by Reaſon of the right Angle C B F; and that the Lines B F, B C :: B C, A B are continual Proportionals. Moreover, from the given Poſition of C D, A D is given, which therefore call b; there is alſo given the Ratio of B C to B D, which ſuppoſe as d to e, and you have B D = $\frac{ex}{d}$, and A B = $b - \frac{ex}{d}$.

Therefore $b - \frac{ex}{d} = \frac{xx}{\sqrt{aa - xx}}$, an *Equation* which (by

ſquaring

ſquaring its Parts, and multiplying by $aa - xx$) will be reduced to this Form.

$$x^4 = \frac{2bdex^3 - bbdd + aaee\,xx - 2aabdex + aabbdd.}{dd + ee}$$

Whence, laſtly, from the given Quantities a, b, d, and e; x may be found by Rules given hereafter; and at that Interval, or Diſtance x or B C, a right Line drawn parallel to A D, will cut C D in the Point ſought C.

If, inſtead of Geometrical Deſcriptions, we uſe *Equations* to denote the Curve Lines by; the Computations will thereby become as much ſhorter and eaſier, as the gaining of thoſe *Equations* can make them. Thus, ſuppoſe the Interſection C, of the given Ellipſis A C E, *Fig.* 10. with the right Line C D given Poſition, ſought: To denote the Ellipſis, take ſome known *Equation* proper to it, as $rx - \frac{r}{q}xx = yy$, where x is indefinitely put for any Part of the Axis A b, or A B, and y for the Perpendicular b c, or B C, terminated at the Curve; and r and q are given from the given Species of the Ellipſis. Since therefore C D is given in Poſition, A D will be alſo given, which call a; and B D will be $a - x$; alſo the Angle A D C will be given, and thence the Ratio of B D to B C, which call 1 to e; and B C (y) will be $= ea - ex$, whoſe Square $eeaa - 2eeax + eexx$, will be equal to $rx - \frac{r}{q}xx$. And thence by Reduction there will ariſe $xx = \frac{2aaeex + rx - aaee}{ee + \frac{r}{q}}$, or $x = \frac{aee + \frac{1}{2}r \pm e\sqrt{ar + \frac{rr}{4ee} - \frac{aar}{q}}}{ee + \frac{r}{q}}$. Add, that tho' a Curve be denominated by a Geometrical Deſcription, or by a Section of a Solid, yet thence an *Equation* may be obtained, which ſhall define the Nature of the Curve, and conſequently all the Difficulties of Problems propoſed about it, may be reduced hither. Thus, in the former Example, if A B be called x, and B C, y, the third Proportional B F will be $\frac{yy}{x}$, whoſe Square, together with the Square of B C, is equal to C F q, that is, $\frac{y^4}{xx} + yy = aa$; or $y^4 + xxyy = aaxx$. And this is an *Equation*, by which every Point C, of the Curve A K C, agreeing or correſponding to any Length of the Baſe (and conſequently the Curve it ſelf) is defined; and from whence conſequently you may obtain the Solutions of Problems propoſed concerning this Curve.

After the ſame Manner almoſt, when a Curve is not given in Specie, but propoſed to be determined, you may feign an *Equation* at Pleaſure, that may contain its general Nature; and aſſume this to denote it, as if it was given, that from its Aſſumption you ſome Way arrive at *Equations*, by which the Aſſumptions may be determined.

What remains of the Doctrine and Practice of *Equations*, relates to their *Reduction* to the loweſt and ſimpleſt Terms, the better to come at the Value of the unknown Quantity in the *Equation*; and their Geometrical *Conſtruction*.

For the *Reduction of* EQUATIONS. See REDUCTION *of Equations*.

Extraction of the Roots of EQUATIONS. See EXTRACTION *of the Roots of Equation*.

Conſtruction of Equations. See CONSTRUCTION *of Equations*.

EQUATION *of Time*, in Aſtronomy, the Difference between mean and apparent Time; or the Reduction of the apparent unequal Time, or Motion of the Sun, or a Planet, to Equable and mean Time or Motion. See TIME and MOTION.

Time is only meaſured by Motion; and as Time, in it ſelf, flows ever equably; to meaſure it, ſuch a Motion muſt be uſed as is equable, or which always proceeds at the ſame Rate.

The Motion of the Sun, is what is commonly uſed for this Purpoſe; as the moſt eaſy to be obſerved: Yet it wants the great Qualification of a Chronometer. In Effect, the Aſtronomers find that the Sun's apparent Motion is no Ways equal: That he now and then ſlackens his Pace, and afterwards quickens it again. Conſequently equal Time cannot be meaſured thereby. See SUN.

Hence, the Time which the Sun's Motion ſhews, call'd the *apparent Time*, becomes different from the true and equable Time, wherein all the Celeſtial Motions are to be eſtimated, and accounted.

This Inequality of Time is thus accounted for: The Natural, or Solar Day is meaſured, not, properly, by one entire Revolution of the Equinoctial, or 24 Equinoctial Hours; but by the Time which paſſes while the Plane of a Meridian paſſing thro' the Centre of the Sun, does, by the Earth's Converſion round its Axis, return again to the Sun's Centre: Which is the Time between one Mid-day and the next. See DAY and MERIDIAN.

Now, had the Earth no other Motion but that round its Axis; all the Days would be preciſely equal to each other, and to the Time of the Revolution of the Equinoctial: But the Caſe is otherwiſe; for while the Earth is turning round its Axis, it is likewiſe proceeding forward in its Orbit. So that when a Meridian has compleated a whole Revolution from the Sun's Centre, its Plane has not yet arrived at the Sun's Centre again: As will appear from the Figure.

Let the Sun be S, (*Tab. Aſtronom. Fig.* 50.) and let A B be a Portion of the Ecliptic: Let the Line M D, repreſent any Meridian, whoſe Plane produced, paſſes thro' the Sun when the Earth is in A. Let the Earth proceed in its Orbit, and in making one Revolution round its Axis, let it arrive at B; then, will the Meridian M D be in the Poſition m d parallel to the former M D; and conſequently has not yet paſſed thro' the Sun, nor have the Inhabitants under that Meridian, yet had their Mid-day. But the Meridian d m, muſt ſtill proceed with its angular Motion, and deſcribe the Angle d B f e're its Plane can paſs thro' the Sun. See EARTH.

Hence it appears, that the Solar Days are all longer than the Time of one Revolution of the Earth round its Axis.

However, were the Planes of all the Meridians perpendicular to the Plane of the Earth's Orbit; and did the Earth proceed with an equal Motion in its Orbit; the Angle d B f would be equal to the Angle B S A, and the Arches A f and A B be ſimilar: Conſequently, the Times would be always equal; the Arch A B, and the Angle d B f, of the ſame Quantity; all the Solar Days equal to each other; and the apparent and real Time agree.

But, as it is, neither of thoſe is the Caſe: For the Earth does not proceed in its Orbit with an equable Motion, but in its Aphelion, deſcribes a leſs Arch, and in its Perihelion a greater, in the ſame Time; beſide, that the Planes of the Meridians, are not perpendicular to the Ecliptic, but to the Equator. Conſequently, the Time of the Angular Motion d B f, which is to be added to the entire Revolution in order to make a whole Day, is not always of the ſame Quantity.

The ſame will be found, if, ſetting aſide the Conſideration of the real Motion of the Earth, we conſider the apparent Motion of the Sun in lieu thereof; as being what we meaſure Time by.

On this Principle we obſerve, that the Day not only includes the Time of one Converſion of the Globe on its Axis, but is increas'd by ſo much as anſwers to that Part of the Sun's Motion, performed in that Time. For when that Part of the Equinoctial, which, with the Sun, was at the Meridian yeſterday at Noon, is come thither again to Day; it is not yet Noon; the Sun not being now at the Place where he yeſterday was, but gone forward near a Degree more or leſs. And this Additament above the 24 Equinoctial Hours is upon a double Account unequal.

1°. In that the Sun, by Reaſon of his Apogee and Perigee, does not at all Times of the Year diſpatch an equal Arch of the Ecliptic in one Day; but greater Arches near the Perigæum, which is about the middle of *December*; and leſſer nearer the Apogæum, which is about the middle of *June*.

2°. In that tho' the Sun ſhould always move equably in the Ecliptic, yet equal Arches of the Ecliptic do not in all Parts of the Zodiac, anſwer to equal Arches of the Equator, by which we are to eſtimate Time; by Reaſon ſome Parts thereof, as the two Solſtitial Points, lie nearer to a parallel Poſition to the Equinoctial than others, *e. gr.* thoſe about the Equinoctial Points, where the Ecliptic and Equinoctial interſect. Whereupon an Arch of the Ecliptic, near the Solſtitial Points, anſwers to a greater Arch of the Equinoctial, than an Arch equal thereto near the Equinoctial Points.

The apparent Motion of the Sun to the Eaſt, then, being unequal; the natural and apparent Days are no Ways proper to be applied to meaſure the Cœleſtial Motions, which have no Dependance on that of the Sun.

And hence Aſtronomers have been obliged to invent other Days for the Uſe of their Calculations: Thoſe others are equal; and a mean between the ſhorteſt and longeſt of the unequal ones.

Theſe are had by conſidering the Number of Hours in the whole Revolution of the Sun in the Ecliptic, and dividing the whole Time into as many Equal Parts as there are Hours, 24 of which conſtitute the Day: And this Reduction of the Days conſtitutes the *Equation of natural Days*.

Conſe-

Consequently, computing those Motions according to the equal Time, it is necessary to turn that Time back again into apparent Time, that they may correspond to Observation: On the contrary, any Phenomena being observed, the apparent Time thereof must be added to equal Time, to have it correspond with the Times mark'd in the Astronomical Tables.

As we don't know of any Body in Nature that moves equably; yet such a Motion is alone proper to measure equal Days and Hours: It has been thought fit to imagine some Body, *e. gr.* a Star, moving in the *Equator*, Eastward; and never quickening, or slackening its Pace, but going thro' the *Equator*, in precisely the same Time, as the Sun finishes his Period in the Ecliptic.

The Motion of such a Star will represent equal Times; and its diurnal Motion in the *Equator*, will be 59′ 8″; the same as the mean, or equated Motion of the Sun in the Ecliptic. Consequently, the mean or equable Day, is determined by the Arrival of this Star at the Meridian; and is equal to the Time wherein the whole Circumference of the *Equator*, or 360°, pass the Meridian, and 59′ 8″ more. Which Addition of 59′ 8″ remaining always the same, these *mean* or *equated Days* will be constantly equal.

Since then the Sun goes unequally Eastwards with respect to the *Equator*; it will sometimes arrive at the Meridian sooner than this imaginary Star, and sometimes later: The Difference is the Difference between true and apparent Time: Which Difference is known by having the Place of the imaginary Star in the *Equator*; and the Point of the *Equator* which comes to the Meridian with the Sun. For the Arch intercepted between 'em, being converted into Time, shews the Difference between equal and apparent Time; which, as before, is call'd the *Equation of Time*.

The *Equation* of Time then, may be defined the Time that flows while the Arch of the *Equator* intercepted between the Point determining the right Ascension of the Sun, and the Place of the imaginary Star, passes the Meridian: Or, as *Tycho*, and, after him, *Street*, state it, the Difference between the Sun's true Longitude, and his right Ascension.

To Equate *Solar Days*, that is, *to convert apparent into mean Time, and mean into apparent Time.*

1°. If the Sun's right Ascension be equal to his mean Motion, the imaginary and true Sun will pass the Meridian at the same Time: Consequently, the true coincides with the apparent Time.

2°. If the right Ascension be greater than the mean Motion, subtract the latter from the former; and turning the Difference into Solar Time, either subtract it from the apparent Time, to find the mean Time: or add it to the mean Time to find the apparent.

3°. Lastly, if the right Ascension be less than the mean Motion, subtract the former from the latter, and turning the Difference into Solar Time, either add it to the apparent Time, to find the mean Time; or subtract it from the mean to find the apparent.

This Method of *Equation* obtains, if the *Calculus* be progressive; if it be Retrograde, that is, if the Time be reckon'd backwards, the Operation must be just the Reverse.

This Doctrine of the Inequality and *Equation* of natural Days, is not only of Use in Astronomical Computations, but also in the adjusting and directing of Clocks, Watches, and other Time Keepers: Hence we see, why a Pendulum, or other Movement, which measures equal Time, does not keep Pace with the Sun, which measures apparent Time; but is sometimes before, and sometimes later than the same. Whence, such Automata and Sun-Dials, are found almost perpetually at Variance. See Clock and Dial.

The Variations of the two Kinds of Time, are exhibited in the following Table, for every Day throughout the Year. 'Tis borrowed from Mr. *Flamsteed*; one Part of whose Praise it is, that he was the first who fully demonstrated and clear'd this Inequality of Natural Days: Tho' others, and even *Ptolomy*, had a partial Notion of it.

The Use of the Table is obvious: A Clock, or Watch, that is to be kept to true or equal Time, must be so many Minutes and Seconds faster or slower than a Sun-Dial, as is assign'd in the Table, for the respective Day: Or, if you would have it go by the Sun-Dial, it goes well, if it gains or loses each Day the Number of Minutes and Seconds in the Table.

A Table of the Equation of Natural Days, with the Regulation of a Movement by the same.

DAYS.	January.		February.		March.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec.	
	W. too fast.		W. too fast.		W. too fast.		W. too fast.		W. too slow.		W. too slow.		W. too fast.		W. too fast.		W. too slow.		W. too slow.		W. too slow.		W. too slow.	
	Min.	Sec.	Min.	Sec.	Min.	Sec.	Min.	Sec.	Min.	Sec.	Min.	Sec.	Min.	Sec.	Min.	Sec.	Min.	Sec.	Min.	Sec.	Min.	Sec.	Min.	Sec.
1	8	59	14	48	10	08	0	48	4	07	1	03	4	43	4	30	3	48	13	14	15	23	5	2
2	9	21	14	47	9	51	0	32	4	09	0	51	4	51	4	20	4	08	13	28	15	15	5	13
3	9	43	14	45	9	34	0	16	4	11	0	39	4	58	4	10	4	28	13	42	15	06	4	44
4	10	04	14	42	9	17	0	* 01	4	12	0	27	5	05	3	59	4	49	13	55	14	56	4	15
5	10	24	14	38	8	59	0	* 14	4	12	0	15	5	11	3	48	5	10	14	08	14	45	3	46
6	11	44	14	33	8	41	0	29	4	11	0	* 02	5	17	3	36	5	31	14	20	14	33	3	17
7	11	03	14	28	8	23	0	44	4	10	0	*11	5	22	3	24	5	52	14	31	14	20	2	48
8	11	21	14	22	8	05	0	58	4	08	0	24	5	27	3	11	6	13	14	42	14	06	2	18
9	11	39	14	16	7	47	1	12	4	06	0	37	5	31	2	58	6	34	14	52	13	52	1	48
10	11	56	14	09	7	29	1	25	4	04	0	50	5	35	2	44	6	54	15	02	13	37	1	18
11	12	12	14	01	7	11	1	38	4	01	1	03	5	38	2	30	7	14	15	11	13	21	0	48
12	12	28	13	53	6	53	1	50	3	57	1	16	5	41	2	16	7	34	15	19	13	04	0	* 18
13	12	43	13	44	6	35	2	02	3	52	1	29	5	43	2	01	7	54	15	26	12	40	0	* 12
14	12	57	13	34	6	16	2	14	3	47	1	42	5	43	1	46	8	14	15	32	12	28	0	42
15	13	10	13	24	5	57	2	25	3	41	1	54	5	46	1	30	8	34	15	38	12	09	1	12
16	13	22	13	13	5	38	2	36	3	35	1	06	5	46	1	34	8	54	15	43	11	50	1	42
17	13	34	13	02	5	19	2	46	3	29	2	18	5	45	0	57	9	14	15	48	11	30	2	11
18	13	45	12	50	5	00	2	56	3	22	2	30	5	44	0	40	9	33	15	52	11	09	2	40
19	13	55	12	38	4	41	3	05	3	15	2	42	5	42	0	25	9	52	15	55	10	47	3	09
20	14	04	12	25	4	22	3	13	3	07	2	54	5	40	0	* 05	10	11	15	58	10	25	3	38
21	14	12	12	12	4	03	3	21	2	58	3	05	5	38	0	* 13	10	30	16	00	10	02	4	7
22	14	19	11	58	3	44	3	28	2	49	3	16	5	35	0	31	10	48	16	01	9	38	4	35
23	14	25	11	43	3	25	3	35	2	40	3	27	5	31	0	50	11	06	16	01	9	14	5	3
24	14	31	11	28	3	07	3	41	2	30	3	38	5	27	1	09	11	24	16	00	8	49	5	30
25	14	36	11	13	2	49	3	46	2	20	3	49	5	22	1	28	11	41	15	58	8	24	5	37
26	14	40	10	57	2	31	3	51	2	10	3	59	5	16	1	48	11	58	15	56	7	58	6	24
27	14	43	10	41	2	13	3	55	2	00	4	09	5	10	2	08	12	14	15	53	7	52	6	50
28	14	46	10	25	1	55	3	59	1	49	4	18	5	03	2	28	12	30	15	49	7	05	7	16
29	14	48			1	38	4	02	1	38	4	27	4	56	2	48	12	45	15	44	6	38	7	41
30	14	49			1	21	4	05	1	27	4	35	4	48	3	08	13	00	15	38	6	10	8	5
31	14	49			1	04			1	15			4	39	3	28			15	31			8	29

Watch too Fast so far as the two Stars

Watch too Slow so far as the two Stars

Watch too Fast as far as the two Stars

Watch too Slow as far as the two Stars

Equation *of the Centre*, call'd also *Prostaphæresis*, and *total Prostaphæresis*; is the Difference between the true and mean Place or Motion of a Planet; or the Angle made by the Lines of the true and mean Place or Motion; or, which amounts to the same, between the mean and equated Anomaly. See Prostaphæresis.

The Motions of the Sun and Moon, are affected with various Inequalities; whence arises a Necessity of so many *Equations*. See Moon, &c.

From these Inequalities, the Moon's Place became exceeding difficult to be determined; to remove which Difficulty, is the great Design of Sir *Isaac Newton*'s new Theory

Theory of the Moon; wherein we are furniſh'd with *Equations* for all the Inequalities of the mean Motion. The principal are,

Annual EQUATIONS *of the mean Motion of the Sun and Moon, and of the Apogee and Nodes of the Moon.* The Annual *Equation* of the mean Motion of the Sun, depends on the Eccentricity of the Earth's Orbit round the Sun, which is 16 $\frac{11}{12}$ of ſuch Parts, whereof the Earth's mean Diſtance from the Sun is 1000: Whence its Denomination of *Equation of the Centre*. This, when greateſt, is 1 Deg. 56′ 20″. The greateſt *Annual Equation of the Moon's mean Motion* is 11′ 49″: That of *her Apogee* 20′: And of *her Node* 9′ 30″.

Which four Annual *Equations* are always mutually proportional one to another: Wherefore, when any of them is at the greateſt, the other three will alſo be greateſt; and when any one leſſens, the other three will alſo be diminiſhed in the ſame Ratio.

The Annual *Equation* of the Sun's Centre being given, the three other correſponding Annual *Equations* will be alſo given; and therefore a Table of that will ſerve for all. For if the Annual *Equation* of the Sun's Centre be taken from thence, for any Time, and be called P, and let $\frac{1}{10}$ P (*Tab. Aſtronomy Fig.* 51.) = Q, Q + $\frac{1}{60}$ Q = R, $\frac{1}{6}$ P = D, D + $\frac{1}{30}$ D = E, and D − $\frac{1}{60}$ D = 2 F; then ſhall the Annual *Equation* of the Moon's mean Motion for that Time be R, that of the Apogee of the Moon will be E, and that of the Node F.

Only obſerve, that if the *Equation* of the Sun's Centre be required to be added; then the *Equation* of the Moon's mean Motion muſt be ſubſtracted, that of her Apogee muſt be added, and that of the Node ſubducted. And on the contrary, if the *Equation* of the Sun's Centre were to be ſubducted, the Moon's *Equation* muſt be added, the *Equation* of her Apogee ſubducted, and that of her Node added.

There is alſo an *Equation of the Moon's mean Motion*, depending on the Situation of her Apogee in Reſpect of the Sun; which is greateſt, when the Moon's Apogee is in an Octant with the Sun; and is nothing at all, when it is in the Quadratures, or Syzygies. This *Equation*, when greateſt, and the Sun in *Perigæo*, is 3 Min. 56 Seconds. But if the Sun be in *Apogæo*, it will never be above 3 Min. 34 Seconds. At other Diſtances of the Sun from the Earth, this *Equation*, when greateſt, is reciprocally as the Cube of ſuch Diſtance. But when the Moon's Apogee is any where but in the Octants, this *Equation* grows leſs, and is moſtly at the ſame Diſtance between the Earth and Sun, as the Sine of the double Diſtance of the Moon's Apogee, from the next Quadrature or Syzygy, to the Radius. This is to be added to the Moon's Motion, while her Apogee paſſes from a Quadrature with the Sun to a Syzygy; but is to be ſubſtracted from it, while the Apogee moves from the Syzygy to the Quadrature.

There is, moreover, another *Equation of the Moon's Motion*, which depends on the Aſpect of the Nodes of the Moon's Orbit with the Sun: And this is greateſt, when her Nodes are in Octants to the Sun, and vaniſhes quite, when they come to their Quadratures or Syzygies. This *Equation* is proportional to the Sine of the double Diſtance of the Node from the next Syzygy, or Quadrature; and at greateſt, is but 47 Seconds. This muſt be added to the Moon's mean Motion, while the Nodes are paſſing from their Syzygies with the Sun, to their Quadratures with him; but ſubſtracted while they paſs from the Quadratures to the Syzygies.

From the Sun's true Place take the *equated* mean Motion of the Lunar Apogee, as was above ſhewed; the Remainder will be the Annual Argument of the ſaid Apogee. From whence the *Eccentricity of the Moon*, and the *ſecond Equation* of her Apogee may be compared.

EQUATOR, or ÆQUATOR, in Aſtronomy, and Geography, a great moveable Circle of the Sphere, equally diſtant from the two Poles of the World, or having the ſame Poles with thoſe of the World. See CIRCLE.

Such is the Circle D A, (*Tab. Aſtronom. Fig.* 52.) its Poles being P and Q.

It is call'd the *Equator*, by Reaſon when the Sun is therein, the Days and Nights are *Equal*; whence alſo it is call'd the *Equinoctial*; and when drawn on Maps, and Planiſpheres, the *Equinoctial Line*, or ſimply the *Line*. See EQUINOCTIAL.

Every Point of the *Equator* is a Quadrant's Diſtance from the Poles of the World; whence it follows, that the *Equator* divides the Sphere into two Hemiſpheres, in one of which is the Northern, and in the other Southern Pole. See HEMISPHERE.

By the Paſſages, or Tranſits of Arches of the *Equator* over the Meridian, its equal or mean Time is eſtimated: Hence we have frequent Occaſion for the Converſion of Degrees of the *Equator* into Time; and, again, for the Re-converſion of Parts of Time into Parts of the *Equator*.

For Performance whereof, we ſubjoyn the following Table; wherein are exhited the Arches of the *Equator*, which paſs the Meridian in the ſeveral Hours, Minutes, *&c.* of *Equated*, or mean Time. See EQUATION *of Time*.

Converſion of Parts of the *Equator* into Time, and *vice verſa*.

Deg. of *Equat.*	Hours.	I	Hours.	Deg. of *Equat.*	Hour. Min.	Deg. of *Equat.*	I
Min.		II			Sec.		II
Sec.	II	III			Third.		III
Third.	III	IV			Fourth		IV
1	0	4	1	15	1	0	15
2	0	8	2	30	2	0	30
3	0	12	3	45	3	0	45
4	0	16	4	60	4	1	0
5	0	20	5	75	5	1	15
10	0	40	6	90	6	1	30
15	1	0	9	135	10	2	30
30	2	0	12	180	20	5	0
60	4	0	15	225	30	7	30
90	6	0	18	270	40	10	0
180	12	0	21	315	50	12	30
360	24	0	24	360	60	15	0

The Uſe of the Table is obvious; ſuppoſe, *e. gr.* it were required to turn 19° 13′ 7″ of the *Equator* into Time: Againſt 15 Deg. in the firſt Column, we have 1ʰ 0′ 00″: Againſt 4 Deg. we have 16′ 0″: Againſt 10 Minutes, 40″; againſt 3 Minutes, 12″ 0‴: Againſt 5 Seconds, we have 0″ 20‴; and againſt 2 Seconds, 8‴: Which added together, give 1ʰ 16′ 52″ 28‴.

Again, ſuppoſe it were required to find how many Degrees, Minutes, *&c.* of the *Equator*, anſwer to 23 Hours 25 Min. 17 Sec. and 9 thirds. Againſt 21ʰ in the fourth Column of the Table you have 315°: Againſt 2 Hours, 30°: Againſt 20′, 5°: Againſt 10 Sec, 2′ 30″: Againſt 5 Sec. 1′ 15″ 0‴: Againſt 2 Sec. 30″ 0‴; againſt 6 Thirds, 0″ 45‴: Which added together give 351° 19′ 17″ 15‴.

The Elevation, or Altitude of the EQUATOR, is an Arch of a Vertical Circle, intercepted between the *Equator* and the Horizon. The *Elevation of the Equator*, with that of the Pole, is always equal to a Quadrant. See ELEVATION.

EQUERY, or ECURY, a grand Stable, or Lodge for Horſes, furniſh'd with all the Conveniencies thereof; as Stalls, Manger, Rack, *&c.*

Some hold that Stable, in Propriety, relates only to Bullocks, Cows, Sheep, Hogs, *&c.* And *Equery* to Horſes, Mules, *&c.*

A *ſimple Equery*, is that provided for one Row of Horſes: A *double Equery* is that provided for two, with a Paſſage in the middle, or two Paſſages; the Horſes being placed Head to Head: As in the little *Equery* at *Verſailles*.

Under *Equery* is ſometimes alſo comprehended the Lodgings, and Apartments, of the *Equeries*, Grooms, Pages, *&c.*

The Word is form'd from the French *Eſcurie*, which ſignifies the ſame Thing. Some, again, derive *Eſcurie* from the Latin *Scuria*, which is not only a Place for Beaſts to be put up in, but alſo a Grange, or Barn. But a more probable Derivation is from *Equile*, a Stable for Horſes, of *Equus*, Horſe.

EQUERY, *Eſcuyer*, is alſo an Officer, who has the Care and Management of the Horſes of a King, or Prince.

Of theſe *Equeries*, there are a great Number in the King of *France*'s Service: As the *Grand Ecuyer*, call'd abſolutely *Monſieur le Grand*; one of the principal Offices of the Crown, and a Branch of that of Conſtable; anſwering to the Maſter of Horſe among us. He has the chief Intendance and Direction of the great and little *Ecurie*, and diſpoſes of all the vacant Poſts therein: the *firſt great Ecuyer of the great Ecurie*, who has the Command thereof in the Abſence of the *Grand Ecuyer*: The *firſt Ecuyer of the little Equeries* call'd abſolutely *Monſieur le Premier*: *Ecuyer Cavalcadeur*, who commands the *Equery* of Horſes for a Prince's own Riding: *Ecuyer de Main*, who not only directs the *Ecurie*, but alſo attends his Maſter in walking, *&c.* call'd alſo Gentlemen-Uſhers, and *Chevaliers d' Honneurs*: *Ecuyer Trenchant*, the King's Carver and Server: *Ecuyer Bouche*, who ranges the Diſhes and Plates on the Table: *Ecuyer de Caiſine*, &c.

EQUERIES are particularly uſed among us, for Officers of the King's Stables; who when his Majeſty goes Abroad, ride in the leading Coach; are in Waiting one at a Time monthly, and have a Table with the Gentlemen Uſhers during the Time.

They uſed to ride on Horſe-back by the Coach-Side, when the King travelled; but that being more expenſive to them, than neceſſary to the Sovereign, it has been diſcontinued. There are Six of them, and their Salary is 300*l. per Annum* each.

The *Equeries* of the Crown Stable have that diſtinct Appellation, as being imployed in managing and breaking the Saddle Horſes, and preparing them for the King's Riding.

One of them is, or always ſhould be, in cloſe Waiting at Court; and when his Majeſty rides, holds the Stirrup, whilſt the Maſter of the Horſe, or one of the *Equeries*, in his Abſence, aſſiſts in mounting him; or when his Majeſty rides, they uſually attend him. They are two, and their Salary is 256*l. per Annum* each.

EQUES *Auratus*, is uſed to ſignifie a Knight Batchelor; call'd *Auratus*, becauſe anciently none but Knights might gild or beautify their Armour, or other Habiliments of War, with Gold. See KNIGHT.

However, in Law, this Term is not uſed; but inſtead of it *Miles*; and ſometimes *Chevalier*. See MILES, CHEVALIER, *&c.*

EQUESTRIS, EQUESTRIAN, a Term rarely uſed, but in the Phraſe *Equeſtrian Statue*, which ſignifies a Statue repreſenting a Perſon mounted on Horſeback. See STATUE.

The *Fortuna Equeſtris*, in ancient *Rome*, was a Statue of that Goddeſs on Horſeback.

We ſometime alſo ſay, *Equeſtrian Column*. See COLUMN.

And *Equeſtrian Order*, which ſignified, among the *Romans*, the Order of Knights, or *Equites*. See KNIGHT,

The Word is form'd of the Latin, *Eques*, Knight, Horſeman; of *Equus*, Horſe.

EQUIANGULAR, or ÆQUIANGULAR, in Geometry, is applied to Figures whoſe Angles are all equal. See ANGLE.

A *Square* is an *Equiangular* Figure. See SQUARE.

All equilateral Triangles are alſo *Equiangular*. See EQUILATERAL.

When the three Angles of one Triangle, are ſeverally equal to the three Angles of another Triangle; the Triangles are alſo ſaid to be *Equiangular*. See TRIANGLE.

EQUICULUS, *Equuleus*, or *Equus minor*, a Conſtellation of the Northern Hemiſphere. See EQUULEUS.

EQUICRURAL, or EQUICRURAL *Triangle*, is what we more uſually call an *Iſoſceles*. See ISOSCELES.

EQUIDIFFERENT, or ÆQUIDIFFERENT, in Arithmetic. If in a Series of three Quantities, there be the ſame Difference between the firſt and ſecond, as between the ſecond and third, they are ſaid to be *continually Equidifferent:* But if in a Series of four Quantities, there be the ſame Difference between the firſt and ſecond, as between the third and fourth, they are ſaid to be *diſcretely Equidifferent*. Thus, 3, 6, 7, and 10, are diſcretely *Equidifferent*; and 3, 6, and 9, continually *Equidifferent*.

EQUIDISTANT, or ÆQUIDISTANT, in Geometry, a Term of Relation between two Things, which are every where at an equal, or the ſame, Diſtance from each other. See DISTANCE.

Thus parallel Lines are ſaid to be *Equidiſtant*, as they neither approach nor recede.

Parallel Walls are *Equidiſtant* from each other. See PARALLEL.

EQUILATERAL, or ÆQUILATERAL, is applied to any Thing whoſe Sides are all equal. Thus, an *Equilateral Triangle*, is that whoſe Sides are all of equal Length. In an *Equilateral* Triangle, all the Angles are likewiſe equal. See TRIANGLE.

All regular Polygons, and regular Bodies, are *Equilateral*. See POLYGON.

An EQUILATERAL *Hyperbola*, is that wherein the conjugate Axes, as A B, and D E, are equal. (*Tab. Conick's Fig.* 20.)

Hence, as the Parameter is a 3*d* Proportional to the conjugate Axes, it is alſo equal thereto. Conſequently, in the Equation $y^2 = bx + \frac{b}{a}x^2$, make $b = a$; And the Equation $y^2 = ax + x^2$, defines the Nature of an *Equilateral Hyperbola*. See HYPERBOLA.

EQUILIBRIUM, or ÆQUILIBRIUM, in Mechanicks, a Term implying an exact Equality of Weight between two Bodies, compared with each other. See WEIGHT.

Thus, we ſay a Balance is in *Equilibrio*; when the two Ends are ſo exactly pois'd, that neither of 'em aſcends or deſcends, but both retain their parallel Poſition to the Horizon. From which Circumſtance the Word is originally taken; as being a Compound of *æquus*, equal, and *libra*, Balance.

Whence we frequently uſe the Word *Balance* in lieu thereof. See BALANCE.

The *Equilibrium* of Fluids makes a conſiderable Part of the Doctrine of Hydroſtaticks. See FLUID.

The Term *Equilibrium*, is alſo uſed figuratively on other Occaſions. A Painter muſt take Care to obſerve the *Equilibrium* of his Figures, *i. e.* to diſpoſe 'em well on their Center of Gravity, that they mayn't ſeem ill ſupported, or ready to tumble.

Thus, *e. gr.* if one Arm be moving forward, the other muſt be proportionably backward to poiſe the Figure.

In a Picture, there ſhould be an *Equilibrium* between one Part and another: That is, the Objects are to be diſtributed ſo, as to balance, and contraſt each other; and not too many, *e. gr.* be crowded on one Side, and the other left bare. — Peace is never well ſecured, unleſs the Neighbouring States are in *Equilibrio*.

EQUIMULTIPLE, in Arithmetic and Geometry, is applied to ſimple Magnitudes, when multiplied equally, *i. e.* by equal Quantities, or Multiplyers. See MULTIPLICATION.

Thus, taking A as many Times as B; or multiplying 'em equally, there will ſtill remain the ſame *Ratio* between the Magnitudes thus multiplied, as between the primitive Magnitudes before Multiplication.

Now, thoſe Magnitudes, thus equally multiplied, are call'd *Equimultiples* of the original ones A and B: Whence we ſay, that *Equimultiples* have the ſame *Ratio* as the ſimple Quantities. See RATIO.

In Arithmetic, we generally uſe the Term *Equimultiples* for Numbers which contain equally, or an equal Number of Times, their *Submultiples*.

Thus 12 and 6 are *Equimultiples* of their *Submultiples* 4 and 2; inaſmuch as each of them contains its *Submultiple* three Times. See SUBMULTIPLE.

EQUINOCTIAL, or ÆQUINOCTIAL, in Aſtronomy, a great and immoveable Circle of the Sphere, under which the *Equator* moves in its diurnal Motion. See SPHERE.

The *Equinoctial*, or *Equinoctial Line*, is ordinarily confounded with the *Equator*; but there is a Difference: the *Equator* being moveable, and the *Equinoctial* immoveable; and the *Equator* drawn about the Convex Surface of the Sphere, but the *Equinoctial* on the Concave Surface of the *magnus Orbis*. See EQUATOR.

The *Equinoctial* is conceiv'd, by ſuppoſing a Semi-diameter of the Sphere, produced thro' a Point of the *Equator*, and there, by the Rotation of the Sphere about its Axis, deſcribing a Circle on the immoveable Surface of the *primum Mobile*.

Whenever the Sun, in his Progreſs thro' the Ecliptic, comes to this Circle, it makes equal Days and Nights all around the Globe; as then ariſing due Eaſt, and ſetting due Weſt, which he never does at any other Time of the Year. See DAY.

And hence the Denomination, from *æquus*, and *nox*, Night; *quia equat diem nocti*. See DAY and NIGHT.

The *Equinoctial*, then, is the Circle which the Sun deſcribes, or appears to deſcribe, at the Time of the *Equinoxes*; that is, when the Length of the Day is every where equal to that of the Night; which happens twice *per Annum*. See EQUINOX.

EQUINOCTIAL, in Geography. See EQUATOR.

People who live under this Circle, by Geographers and Navigators call'd the *Line*, have their Days and Nights conſtantly equal. And at Noon, the Sun is in their *Zenith*, and caſts no Shadow. See ASCII.

From this Circle, is the Declination, or Latitude of Places, accounted in Degrees of the Meridian. See LATITUDE, *&c.*

EQUINOCTIAL *Points*, are the two Points wherein the Equator and Ecliptic interſect each other. The one, being in the firſt Point of *Aries*, call'd the *Vernal*; and the other in the firſt Point of *Libra*, call'd the *Autumnal Point*. See POINT.

EQUINOCTIAL *Colure*, is that paſſing thro' the *Equinoctial* Points. See COLURE.

EQUINOCTIAL *Dial*, is that whoſe Plane lies parallel to the *Equinoctial*. See DIAL.

EQUINOX, or ÆQUINOX, in Aſtronomy, the Time when the Sun enters one of the *Equinoctial* Points.

That when he enters the *Vernal* Point is particularly denominated the *Vernal*; and that in the *Autumnal* Point, the *Autumnal Equinox*. See EQUINOCTIAL *Points*.

The *Equinoxes* happen when the Sun is in the *Equinoctial* Circle; when, of Conſequence, the Days are equal to the Nights throughout the World, which is the Caſe twice

twice a Year; *viz.* About the 10*th* of *March*, and the 12*th* of *September*; the first of which is the *Vernal*, and the second the *Autumnal Equinox*.

As the Sun's Motion is unequal, that is, sometimes swifter, and sometimes slower; (from the Causes already explain'd under the Article EQUATION) it comes to pass, that there are about Eight Days more from the *Vernal*, to the *Autumnal Equinox*, than from the *Autumnal* to the *Vernal:* The Sun spending more Time in travelling thro' the Northern, than the Southern Signs.

According to the Observations of M. *Cassini*, the Sun is 186 d. 14 h. 53′. in the Northern Signs; and only 178 d. 14 h. 56′. in the Southern. The Difference of which is 7 d. 23 h. 57′.

The Sun being continually advancing forwards in the Ecliptic, and gaining a Degree every Day; he makes no Stay in the *Equinoctial* Points, but the Moment he arrives in 'em, leaves 'em.

Of Course, therefore, tho' the Day the Sun enters the *Equinoctial* Point, is call'd the *Equinox*, as being reputed equal to the Night; yet is not it precisely so, unless the Sun enter the *Equator* at Mid-day. For if the rising Sun should enter the *Vernal Equinox*, at setting, he will have departed from it, and have got Northwards about 12′: Consequently, that Day will be somewhat longer than 12 Hours, and the Night proportionably shorter.

The Time of the *Equinoxes*, i. e. the Moment in which the Sun enters the *Equator*, is found by Observation; the Latitude of the Place of the Observer being given.

Thus, in the *Equinoctial* Day, or near it, take the just Meridian Altitude of the Sun; if this be equal to the Altitude of the *Equator*, or the Complement of the Latitude, the Sun is that very Moment in the *Equator*. If it be not equal, the Difference is the Sun's Declination. The next Day observe the Meridian Altitude as before, and find his Declination: If the Declination be of different Kinds, *viz.* the one North, and the other South, the *Equinox* has happen'd in the Interval of Time between 'em. Otherwise, the Sun has either not enter'd the *Equinoctial*, or had pass'd it at first. From these two Observations, a Trigonometrical *Calculus* gives the Time of the *Equinox*.

It is found by Observation, that the *Equinoctial* Points, and all the other Points of the Ecliptic, are continually moving backward, or *in Antecedentia*, that is, Westward. This retrogade Motion of the *Equinoctial* Points, is that famous and difficult Phenomenon, call'd the *Precession of the Equinoxes*. See PRECESSION *of the Equinox*.

EQUIPAGE, a Ship's Crew; or the Officers, Soldiers, Sailors, and other Persons, that man and manage the same; with the Arms, Provisions, Merchandizes, *&c.* wherewith it is loaded. See SHIP, *&c.*

The Sailors that are to work and manage a Ship, are regulated by the Number of Lasts it may carry; each Last making two Tun.

The *Equipage* of a *Dutch* Ship, from 40 to 50 Lasts, is 7 Sailors and a Swabber; from 50 to 60 Lasts, the *Equipage* consists of 8 Men and a Swabber; and thus increases at the Rate of one Man for every 10 Lasts; so that a Ship of 100 Lasts has 12 Men, *&c.*

English and *French* Crews, are usually stronger than *Dutch*; but always about the same Proportion.

EQUIPPE, in Heraldry, expresses a Knight equipp'd, *i. e.* arm'd at all Points.

EQUIPOLLENCE, in Logic, is when there is an Equivalence between two or more Terms, or Propositions; *i. e.* when they signify one and the same Thing, tho' they express it differently. Such Propositions, *&c.* are said to be *Equipollent*. See EQUIVALENT.

EQUITY, is Justice, or Right, mitigated and temper'd by the Consideration of particular Circumstances; or a Correction, or Moderation of the Severity of some Law; or a Temperament, which, without being unjust, abates the Rigour of some just Law. See LAW.

This is what the *Greeks* call ἐπιείκεια. The utmost Severity of a good Law, is frequently contrary to Justice; it should always have *Equity* for its Rule and Guide. *Summum jus, sæpe summa injuria.*

The Foundation of *Equity*, is not that there is any Mistake in the Law; but that the Law was laid down universally; when as all Circumstances cou'd not be consider'd, or taken in under one Law.

Equity, therefore, is not so much a Correction of a Law, as an Amendment; nor yet so properly an Amendment of the Law it self, as of the Opinion arising from its being ill understood, or ill applied.

In this it is distinguished from a *Dispensation*, which takes away the Obligation of the Law in some particular Case; whereas a Correction does not take away any Thing of the Obligation, but only shews in what Sense it is to be taken, lest there should be imagin'd any Obligation, where there is none.

For an Instance, suppose it an express Law, that *the City being now beset with an Enemy, the Gates be all shut*; and suppose it fall out, that the Enemy is then in pursuit after some of the Citizens by whom it is defended; so that it would be highly prejudicial thereto, not to open 'em the Gates: *Equity* here decrees the Gates to be open'd, contrary to the express Word of the Law.

Thom. Aquin. proposes another Instance: Suppose it Law, that whoever refuses to restore what had been committed in Trust to him, shall pay a grievous Mulct; and suppose some Person refuse to restore a Sword left with him, to a Mad-man. This Case is comprehended in the Sense and Intendment of the Law, tho' not in the Words thereof. And the Legislator himself, if he were present, would except it. *Equity*, therefore, must here step in, to correct or supply the Defects of the Judge, and acquit the Man of the Mulct.

In this View, *Equity* is of two Kinds, and those of contrary Effects: The one abridges, and takes from the Letter of the Law; and the other enlarges, and adds thereto.

The first is defined, the Correction of a Law, made generally in that Part wherein it fails: As, suppose an Act made, That whosoever does such a Thing, shall be a Felon, or suffer Death; yet if a Madman, or an Infant, who hath no Discretion, do the same, he shall neither be a Felon, nor suffer Death.

The other is defined an Extension of the Words of the Law, to Cases unexpress'd, which yet have the same Reason; so that, when one Thing is enacted, all other Things, which are of the like Degree, are so too.

Thus in the Statute which ordains, That in Action of Debt against Executors, he that doth appear by Distress shall answer; doth extend, by *Equity*, to Administrators; for such of them as shall appear first by Distress, shall answer by the *Equity* of the said Act: *Quia sunt in equali genere.*

EQUITY is also used for the Virtue of Justice. See JUSTICE.

EQUITY, in our Laws, *&c.* is frequently used for the Court of Chancery, where Controversies are supposed to be determined, according to the exact Rules of *Equity* and Conscience, by mitigating the Rigour of the Common Law. See CHANCERY.

Æquitas sequitur Legem, is an old Maxim in Law, but from the great Increase of Suits in Chancery, some have thought fit to give it this Construction, That in all Causes after a Man has been at Law, he must go into *Equity*.

EQUIVALENT, is understood of something that is equal in Value, Force, or Effect to another. See EQUALITY.

Equivalence is of various Kinds, in *Propositions*, in *Terms*, and in *Things*.

Equivalent Terms are, where several Words that differ in Sound, have yet but one and the same Signification; as *Every Body was there*, and no Body was absent; *Nihil non* and *omne*.

Equivalence in Things, is either moral, physical, or statical. *Moral*, as when we say, that the commanding or advising a Murther, is a Guilt *Equivalent* to that of the Murtherer: *Physical*, as when a Man, who has the Strength of two Men, is said to be *Equivalent* to two: And *Statical*, whereby a less Weight becomes of equal Force with a greater, by having its Distance, or the like, increas'd.

EQUIVOCAL, EQUIVOQUE, is applied to an Expression that is dubious and ambiguous; or that may have several Senses, one true, and another false. See EQUIVOCATION.

EQUIVOCAL, ÆQUIVOCUM, EQUIVOQUE, in Logic, by the *Greeks* call'd *Homonymum*, is any Word which under one Sense exhibits several Idea's, or is adapted to different Conceptions.

As the Word *Emperor*, which is both the Name of a Dignity, the proper Name of a Person, and the Name of a Plant. So also the Latin *Gallus*, which stands indifferently for a Cock, and a *Frenchman*.

In which Cases one Word denotes divers Conceptions, one Word divers Things. Whence that common Definition of *Equivocal* in the School, *quorum nomen est commune, Ratio vero Essentiæ secundum illud Nomen diversa.*

The Philosophers have distinguished *Equivocals*, into *Active* and *Passive*; or into *Equivoca*, *Equivocantia*, and *Equivocata*.

Equivoca Equivocantia, or those that denominate and signify Things, are Words common to several Things in a very different Signification, *i. e.* to several Things which have a similar Essence, correspondent to the similar Denomination.

tion. *E. gr.* The Word *Taurus*, which ſtands for a Sign, a Mountain, and an Animal; and in one ſignifies a lowing Animal; in another, a Heap of Stones and Earth; and in the third, a Conſtellation, or Syſtem of Stars.

Equivoca Equivocata, or thoſe that are called, or denominated; are the Things ſignified by ambiguous Names, *e. gr.* a Sign, a Mountain, and an Animal. Which laſt Species of *Equivocals* alone, *Ariſtotle* ſeems to have had in View in his Definition, which agrees to theſe, and theſe only.

EQUIVOCATION, the uſing a Term, or Expreſſion, that has a double Signification. See EQUIVOCAL.

Equivocations are Expedients to ſave telling the Truth, and yet without telling a Lye for the Matter. The Fathers are great Patrons of *Equivocations*, and mental Reſervations; holding, that the Uſe of ſuch Shifts, and Ambiguities, is in many Caſes allowable.

St. *Auguſtin*, particularly, is reproach'd with endeavouring to vindicate *Iſaac* for ſaving his Wife from a Crime, by an *Equivocation: Tacuit aliquid veri, & non dixit aliquid falſi.* To advance a dubious Propoſition, knowing it will be underſtood in a Senſe different from that you give it in your Mind, is an *Equivocation*, in Breach of good Faith and Sincerity. See TRUTH, FALSHOOD, *&c.*

EQUIVOCATION, or EQUIVOCAL, in Moral Theology, is ſtrictly underſtood of a Term, or Phraſe, with two different Significations; the one common, and obvious; the other more unuſual, and remote; the latter of which being underſtood by the Speaker, but the former by the Hearers, they conceive ſomething different from one another.

Of this we have an Inſtance in St. *John*, Chap. II. where our Saviour is repreſented as ſaying, *Lazarus ſleepeth:* For the Diſciples taking the Word *Sleeping* in the uſual Signification, concluded that *Lazarus*, whom they had been told was ſick, began to take Reſt, and would ſoon recover; but *Jeſus*, taking the Words in a leſs, direct, and uſual Signification, meant that *Lazarus* was dead.

When the *Equivoque* conſiſts of ſeveral Words, 'tis properly call'd an *Amphibology:* Of which we have an Inſtance in St. *John*, Chap. 2. *Deſtroy this Temple*, ſays Jeſus Chriſt, ſpeaking to the Jews, *and I will raiſe it again in three Days.*

The Uſe of *Equivoques* has been greatly diſputed among the modern Caſuiſts: Many grave Authors deny that it is allowable to uſe them on any Occaſion whatever. Their Reaſon is, that an *Equivoque* is to all Intents and Purpoſes the ſame with a Lye. See FALSHOOD.

Others, on the contrary, particularly *Cabuſſot*, a Divine famous among the Prieſts of the Oratory, hold a World of Difference between an *Equivocation* and a Lye; maintaining that it is ever criminal to uſe a Lye; but that there are ſome Occaſions where an *Equivocation* may be uſed innocently: And ſuch, in Effect, is the Sentiment of St. *Thomas*, St. *Anthonin*, St. *Raymond*, and eſpecially St. *Auguſtin*, as *Fa. Cabuſſot* ſeems to have demonſtrated. *Lib.* IV. *Theor. de Prax. Jur. Can. Edit. Lugd.* 1685. Cap. 4.

EQUIVOCAL *Generation*, is a Method of producing Animals and Plants, not by the uſual Way of Coition between Male and Female, but I know not what plaſtic Power, or Virtue in the Sun, *&c.* See GENERATION.

Thus Inſects, Maggots, Flies, Spiders, Frogs, *&c.* have uſually been ſuppoſed to be produced by *Equivocal Generation*, i. e. by the Heat of the Sun warming, agitating and impregnating the Duſt, Earth, Mud, and putrified Parts of Animals.

This Method of Generation, which we alſo call *ſpontaneous*, was commonly aſſerted and believed among the antient Philoſophers: But the Moderns, from more and better Obſervations, unanimouſly reject it, and hold that all Animals, nay and Vegetables too, are *Univocally* produced, that is, by Parent Animals, and Vegetables of the ſame Species and Denomination. See UNIVOCAL *Generation.*

'Twere a Thing one would imagine ſufficient to diſcredit the *Ariſtotelian*, or rather the *Egyptian Doctrine of Equivocal Generation*, to ſee Flies, Frogs, Lice, *&c.* to be Male and Female; and accordingly to engender, lay Eggs, *&c.*

To imagine that any of thoſe Creatures could be ſpontaneouſly produced, eſpecially in ſo romantic a Manner, as in the Clouds, as they particularly thought the Frogs were, and that they dropp'd down in Showers of Rain, were, certainly, highly unphiloſophical.

Yet ſome, even to this Day, credit the raining of Frogs; and, among the reſt, the very curious and learned Dr. *Liſter*, ſeems inclined to the Opinion: Inſtancing in Frogs, found on the Leads of the Lord *Aſton*'s Gatehouſe at *Tixal* in *Staffordſhire*, which he imagines came there by ſome ſuch Means. But we may make a Judgment of this, and a hundred the like Reports to be met with in conſiderable Authors, from ſome other the like Relations that have been better inquired into. Such are ſeveral Reports of the raining of *Millet-ſeed*, *Wheat*, *Whitings*, &c. An Account of which, with the Grounds of the Deceit, ſee under RAIN and SHOWER.

The Doctrine of *Equivocal Generation* we call an *Egyptian* Doctrine, as having, in all Probability, had its Riſe in *Egypt*, to ſalve the Hypotheſis of the Original Production of Men, and other Animals, out of the Earth, by Help of the Sun's Heat. To prove which, the *Egyptians*, as *Diodorus Siculus* obſerves, produce this Obſervation; that about *Thebes*, when the Earth is moiſten'd by the *Nile*, and afterwards impregnated by the intenſe Heat of the Solar Rays, an innumerable Swarm of Mice do come forth: Whence he infers, that all Kinds of Animals might equally have aroſe out of the Earth at the Beginning of Things. And from theſe, Biſhop *Stillingfleet* takes the other Writers and Adherents, to the Doctrine of *Equivocal* Generation, *Mela*, *Pliny*, *Ovid*, &c. to have borrow'd the Hypotheſis, without enquiring into its Truth. *Derham*'s *Phyſ. Theol.* Lib. IV. *C.* 15.

EQUULEUS, among the Antients, was an Inſtrument of Torture, or Puniſhment; being a Kind of *Wooden-Horſe*, made with very ſharp Ridge, or Back, widening much in its Deſcent. See PUNISHMENT.

The Criminal being ſeated on the Ridge, Weights were hung to his Feet, to make his Seat more painful.

This Puniſhment is ſtill retain'd in Cittadels and Armies; where the Soldiers of the Garriſon, *&c.* are condemn'd to the *Wooden-Horſe*, for divers Offences.

Hieronymus Magius, when a Priſoner among the *Turks*, wrote an expreſs Treatiſe *de Equuleo*; and another of Bells; merely, as 'tis ſaid, from his Memory, without any Aſſiſtance of Book. *Sigonius* has another Treatiſe on the ſame Subject.

EQUULEUS, in Aſtronomy, a Conſtellation of the Northern Hemiſphere. See CONSTELLATION.

The Stars in the Conſtellation *Equuleus*, in *Ptolomy*'s Catalogue are 4; in *Tycho*'s 4; in Mr. *Flamſteed* Catalogue 10.

The Longitudes, Latitudes, Magnitudes, *&c.* whereof are as follows.

Stars in the Conſtellation EQUULEUS.

Names and Situations of the Stars.	Sign.	Longit. ° ′ ″	Latitude. North. ° ′ ″	Magnit.
	♒	14 12 57	20 32 56	5
		15 59 37	23 02 36	6
		16 02 30	21 16 01	6
		16 25 37	21 38 31	6
Preced. of two in the Mouth.		19 06 24	25 13 12	4
5				
		19 07 07	25 06 52	6
Subſeq. of the ſame.		20 07 30	24 46 57	4
Preced. of two in the Head.		18 47 48	20 09 09	4
		20 51 05	21 42 53	6
Subſeq. in the ſame.	♒	21 07 02	21 03 06	4

EQUULEUS, in the Arts and Manufactures. See HORSE.

ERADICATIVE, in Medicine. An *Eradicative Cure* is that which takes away the Cauſe, or Root of the Diſtemper; in which Senſe it ſtands oppoſed to *palliative*; which relieves for a Time, but not going to the Cauſe of the Diſorder, does not prevent its Return. See CURE.

The Word is a Compound of *e* out, and *radix* Root.

ERANARCHA, a publick Officer among the ancient *Greeks*, whoſe Buſineſs was to preſide over, and direct the Alms and Proviſions made for the Poor.

The *Eranarcha* was properly the Adminiſtrator, or Commiſſioner of the Poor: When any Perſon was reduced to Poverty, taken Captive, or had a Daughter to marry, which he could not effect for Want of Money, *&c.* this Officer call'd an Aſſembly of Friends and Neighbours, and taxed each according to his Means and Eſtate, to contribute towards his Relief. This is what we learn from *Corn. Nepos*, in his Life of *Epaminondas.*

The Word is form'd of the *Greek* ἔρανος, *Alms, Contribution*, and ἀρχὴ, *Command.*

ERASED, in Heraldry, expreſſes any Thing violently torn off from its proper Place.

It is uſed in Contra-diſtinction to *Couped*, which ſignifies a Thing clean cut off. The Family of *Card* bears *Ermine*, a *demy Lion rampant* eraſed, *Azure*, &c.

ERASTIANS, a religious Sect, or Faction, that aroſe in *England* during the Time of the Civil Wars.

They were thus call'd from their Leader *Tho. Eraſtus*; whoſe diſtinguiſhing Doctrine it was, that the Church had no Right to diſcipline, that is, no regular Power to excommunicate, exclude, cenſure, abſolve, decree, or the like.

ERECT,

ERECT *Flowers*, are such as grow upright, without hanging or reclining the Head. See FLOWER.

ERECT *Vision*. See VISION.

ERECT { *Direct* / *Declining*, &c. } *Dials*. See DIAL.

ERECTION, the Act of raising, or elevating a Thing, in a right Line. See ELEVATION.

The *Erecting* a Perpendicular on a Line given, is a popular Problem in Geometry. See PERPENDICULAR.

The Term is also used figuratively: As, the *Erection* of a Marquisate into a Dutchy; Bishopricks can only be *Erected* by the King. It was antiently the Practice to *erect* Statues to great Men. See STATUE.

Cato, the Censor, being ask'd why a Statue was not *Erected* him? I had rather, says he, hear the Question made, than hear it ask'd why a Statue was *Erected* me.

ERECTION, is particularly used in Medicine, for the State of the Penis, when swell'd, and distended by the Action of the Muscles, call'd *Erectors*, or *Erectores*. See PENIS and ERECTOR.

There is also an *Erection of the Clitoris*, perform'd by Muscles provided for that Purpose. See CLITORIS, &c.

An Alternation of *Erection*, and Flaccidity in the Penis, Dr. *Drake* observes, is of absolute Necessity: The first to the Performance of its Office; the second for the Security of the Part. Without an *Erection* it were impossible to emit and lodge the Seed where it ought to be; and with a constant one, almost as impossible to secure the Part from external Injuries. — To say nothing of the Loss of Instigation, which must be a necessary Consequence of constant *Erection*. See PRIASPISMUS.

The *Erection* of the Penis, consists in a Distention of its *Corpora Cavernosa*, by an extraordinary Quantity of Blood pent up therein. See CAVERNOSA.

That the Blood is the Matter which distends the Penis in *Erection*, is evident from Abundance of Experiments; tho' the most convincing is that of firmly tying the Penis of an Animal (as has been frequently done to a Dog) in *Coitu*; wherein, nothing has been found but Blood to distend it. Hence, in the Bodies of Criminals, that hang long after Death, the Penis becomes erected; the Blood, in that Position, falling to the inferior Parts, and stopping there.

By blowing into the Blood Vessels after Death, the Penis becomes *Erected*. This was first discover'd by Mr. *Cowper*, upon viewing its Veins, after he had distended 'em with Wind; whence it plainly appear'd, that the external Trunks pass'd, some under its Skin only, and some over the *Ossa pubis*: Beside, that a vast Number of other Veins on the *Dorsum penis*, unite and empty themselves into one Trunk, call'd *Vena penis*, which passes immediately under a transverse Ligament of the *Ossa pubis*, which is compress'd by the Approximation of the *Dorsum penis*, to the Ligament of the *Pubis*. This Application of the *Dorsum penis* is effected by its *Musculi Directores*, pulling down the *Crura* of the *Corpora Cavernosa Penis*, which are tied up at their Juncture in the Body of the *Penis*, to the *Os pubis*, by the *Ligamentum Suspensorium*. Now, this cannot happen to the cavernous Body of the *Urethra*, by Reason there is no Bone, whose Position can give Rise to a Ligament, which can have that Effect on its Veins: Wherefore, the *Musculi Accelatores*, embracing the Veins of the Bulb do that Office, tho' not so effectually as in the *Penis* it self.

Accordingly, the Glans is not always perfectly distended with the *Penis*, and soonest becomes flaccid on an *Erection*. See GLANS.

The Blood, by such Means, being precluded from its Return, the *Corpora Cavernosa* must of Necessity become distended, if we consider their Structure above-mentioned, with Respect to the Veins. The Arteries, which before were flaccid, have now their Trunks also distended, and do more plentifully import Blood into the *Corpora Cavernosa*.

But since it is absolutely necessary some Part of the detain'd Blood should be still passing off, lest it become grumous, and unfit for a Reflux; the *Venæ preputii* communicate with those of the *Penis* it self; whereby Part of the Blood may be return'd from the *Penis* during its *Erection*, and give Way to a fresh Supply from the Arteries, and preserve the Circulation uninterrupted. See CIRCULATION.

ERECTOR *Clitoridis*, in Anatomy, a Pair of Muscles arising from the Protuberances of the *Ischium*, and inserted into the spongious Bodies of the *Clitoris*; which they serve to erect in Coition. See CLITORIS.

ERECTOR *Penis*, a Pair of Muscles arising fleshy from the Protuberances of the *Ischium*, below the Beginning of the cavernous Bodies of the Yard, into whose thick Membranes they are inserted.

Their Use is to pull the Yard towards the *Os pubis*, whereby its greatest Vein is compress'd, and the resluent Blood denied its Passage under those Bones; which makes it swell. See ERECTION.

EREMITE. See HERMIT.

ERICTHONIUS, in Astronomy, a Constellation, the same as *Auriga*. See AURIGA.

ERIDANUS, in Astronomy, a Constellation of the Southern Hemisphere. See CONSTELLATION.

The Stars in the Constellation *Eridanus*, in *Ptolomy*'s Catalogue are 30: In *Tycho*'s 19: In Mr. *Flamsteed*'s 68: The Longitudes, Latitudes, Magnitudes, &c. whereof are as follow.

Stars in the Constellation ERIDANUS.

	Names and Situations of the Stars.	Sign.	Longit. ° ′ ″	Latitude. South. ° ′ ″	Magnit.
	First from the Turn of the River to the Breast of Cetus.) A Second.	♈	27 43 50	32 46 03	4
			28 17 41	35 32 44	4
	First in the River before the Breast of Cetus.)	♉	4 24 50	24 33 38	3
		♈	28 40 53	38 43 48	6
		♉	7 23 04	18 42 23	6
5					
		♈	28 59 23	38 33 16	6 7
		♉	7 31 58	19 10 52	6
	Preced.		6 02 44	23 45 20	5 6
	Middle.		6 26 39	23 54 37	6
	Second before the Breast of *Cetus*.		6 52 09	23 57 16	5
10					
	Third of those following Turn of Riv.		0 25 00	39 00 01	3 4
	Inform. within the last Sinus.		0 11 14	44 45 01	3
	Third before the Breast of *Cetus*.		9 29 25	25 57 22	3
			9 35 13	26 19 46	6
			5 06 42	39 09 28	6
15					
	Fourth behind the Turn of the River.		5 45 03	38 32 17	4
			14 30 20	23 22 27	4 5
	Fourth before the Breast of *Cetus*.		13 35 20	27 46 30	3
	Fifth behind the Turn.		9 51 32	39 28 14	4
	Preced. of two Informes over the Riv.		17 39 24	18 26 20	5
20					
			12 08 57	35 40 15	5 6
			17 06 37	24 08 18	5
	Fifth before the Breast of *Cetus*.		16 30 56	28 46 16	3
			19 11 36	20 27 17	5
			19 30 50	19 38 34	6
25					
	Subseq. and more South.		16 37 28	31 09 15	4
	Sixth behind the Turn.		13 04 15	41 53 09	4
	More South. but contiguous to this.		13 00 52	42 34 32	6
			20 18 16	24 42 25	7
			20 16 20	25 00 38	5 6
30					
	Subseq. Inform. over the River.		21 17 38	22 45 43	4 5
	Eighth behind the Turn.		14 31 20	43 40 50	5
	In the second Bend of the River.	♈	19 31 34	33 13 35	3
			23 32 24	21 47 28	5
	Ninth beyond the Turn.		16 38 37	43 30 44	4
35					
			24 40 24	27 29 56	6
	North. of two beyond the first Bend.		25 05 51	27 30 00	3 4
	Next before the second Bend.		25 00 50	30 57 28	5
	South. beyond the first Bend.		26 07 45	28 13 03	4
	Preced. of two beyond the 2d Bend.		18 07 00	53 58 54	5
40					
	Preced. in the first Bend.		28 59 47	25 01 01	5
	Subseq. beyond the second Bend.		20 06 13	54 33 15	5
		♊	1 15 15	20 11 27	5 6
			1 53 24	21 43 53	5 6
			1 12 38	28 24 50	5
45					
			1 00 31	29 53 52	4
	Subseq. in the first Bend.		2 29 15	25 08 39	4
			3 35 35	20 54 06	5 6
	North. in the 2d Bend toward the *West*.	♉	25 08 20	50 56 43	4
	Small one contiguous to the Subseq.	♊	2 59 03	24 20 37	6
50	(in the 1st Bend.				
	South. in the second Bend.	♉	25 32 21	51 51 01	3
		♊	0 56 10	36 01 48	3 4
			0 23 41	41 25 03	3 4
			3 33 10	30 49 18	6
			3 45 58	30 28 21	6
55					
	Preced. before the first Bend.		5 00 53	25 24 13	4
			3 11 25	30 01 49	5 6
			3 36 38	38 27 13	6
			4 07 47	38 24 20	6
	Middle before the first Bend.		6 43 03	27 50 40	5
60					
	Small one contiguous to it.		7 43 46	27 30 49	6
			7 59 51	32 49 13	6
			7 41 00	35 04 52	6
	Subseq. before the first Bend.		8 53 02	29 48 30	5
	That next the Rise of the River.		10 41 18	27 16 56	6
65					
	North. in the Rise of the River towards *Orion*'s Leg.)		10 57 20	27 53 48	3
			11 15 23	27 17 50	6
	South in the Rise of the River.	♊	10 52 55	31 34 10	4

ERIGENS *Penis*. See ERECTOR *Penis*.



ERMINE, in Heraldry, a white Field, or Fur, powder'd, or interſperſed with black Spots. See FUR.

It is ſuppoſed to repreſent the Skin of an Animal, of the ſame Denomination; which ſome will have a *Water Rat*, others a *Muſtela*, or Sort of *Weazle*, and others an *Armenian* Mouſe. In Effect, there is no Animal whoſe Skin naturally correſponds to the Herald's *Ermine*.

The Animal is Milk white; and ſo far is it from Spots, that the Tradition has it, he will rather die, or be taken, than ſully its Whiteneſs. Whence its ſymbolical Uſe.

But white Skins having for many Ages been uſed for the Linings of the Robes of Magiſtrates, and great Men; the Furriers, at length, to add to their Beauty, uſed to ſew Bits of the black Tails of thoſe Creatures upon the white Skins; to render them the more conſpicuous. Which Alteration was introduced into Armoury.

The Sable Spots in *Ermine* are not of any determinate Number, but may be more or leſs, at the Pleaſure of the Painter or Furrier.



ERMINES, is uſed by ſome *Engliſh* Writers for the Reverſe of *Ermine*, i. e. for white Spots on a black Field; but on what Foundation no body can tell; for the *French*, from whom we have our Heraldry, have no ſuch Term; but call this black powder'd with white, *Contre Ermine*; as denoting the Counter, or Reverſe of *Ermine*; which is white powder'd with black.



ERMINEE. A *Croſs* ERMINEE, is a Croſs compoſed of four *Ermine* Spots, placed in that Figure. See CROSS.

It muſt be obſerv'd, that the Colours in ſuch Arms are not to be expreſs'd; by reaſon, neither the Croſs, nor the Arms, can be of any Colour but white and black.

Colombiere blazons it *quatre queues de'Hermine en Croix*. The Editor of *Guillin* deſcribes it thus; A Croſs of four *Ermines*; or, as I think more properly, of four *Ermine* Spots in Croſs. 'Tis the Coat of *Hurſton* in *Cheſhire*.

ERMINITES, ſhou'd ſeem a diminutive of *Ermines*, and naturally to ſignifie little *Ermines*; but 'tis otherwiſe. *Erminites* expreſſes a white Field pouder'd with black; only every Spot has a little red Hair therein.

Some Authors uſe the Word *Erminites*, for a yellow Field pouder'd with black; which the *French* expreſs much better by *or ſemée d'Ermines de Sable*.

EROSION, in Medicine, the Act of ſharp, acid Fluids, or Humors, gnawing and tearing off Parts from the Fleſh, and other Subſtances. Arſenic, and other Poiſons, make *Eroſions* in the Inteſtines. See CORROSION.

EROTIC, is applied to any Thing which has a Relation to the Paſſion of Love. See PASSION.

In Medicine, we particularly uſe the Phraſe *Delirium Eroticum*, for a Kind of Melancholy contracted thro' Exceſs of Love. See MELANCHOLY.

Tho', among the ſeveral Species of Pulſes, there be no amorous Pulſe, that is, no Pulſe peculiar to that Paſſion; yet we can certainly diſcover where the Diſorder is *Erotic*, by the beating of the Pulſe, which, in that Caſe, is changeable, unequal, turbulent and irregular. Speak to the Patient of the Perſon he loves, and his Pulſe inſtantly changes, becoming higher and quicker: And the Minute you change the Converſation, the Pulſe is loſt again, and is diſturb'd a-new. See PULSE.

The Word is derived from the *Greek*, ἔρως, *Love*; whence ἐρωτικὸς.

ERRANT, in Law, the ſame with *Itinerant*, attributed to Judges that go the Circuit: To Bayliffs at large, &c. See JUSTICE, BAILIFF, &c.

ERRATA, a Liſt at the Beginning or End of a Book, containing the Faults that have eſcaped in the Impreſſion, and, ſometimes, even in the Compoſition, of the Work. See PRINTING.

Lindenberg has an expreſs Diſſertation on Typographical *Errata*, *de Erroribus Typographicis*; wherein he obſerves, that there is no Book exempt from 'em, not even the Sacred Books. He ſets himſelf to enquire into all the Cauſes thereof; and propoſes Means to prevent 'em. But he advances nothing on that Article, but what is either common or impracticable. The Authors, Compoſitors, and Correctors of the Preſs, he ſays, muſt do their Duty; who diſputes it? Each Author muſt have his own Printing-Preſs at Home, as *Calixtus* and *Opitius* had; who can do it?

Fa. *Hardouin*'s Book on Medals, might be entitled the *Errata of the Antiquaries*; and the Critiques on Hiſtory by *Perizonius*, the *Errata of the ancient Hiſtorians*. In the ſame Senſe, M. *Bayle*'s Dictionary might be call'd the *Errata* of *Moreri*.

ERRATIC, in Aſtronomy, an Epithet applied to the Planets, which are call'd *Erratic*, or wandering Stars, in Contra-diſtinction to the fix'd Stars. See PLANET.

There is alſo a Kind of Fever call'd *Erratic*. See FEVER.

ERRHINA, ERRHINES, in Medicine, are Remedies taken by the Noſe, to enliven the Spirits, ſtop Bleeding, &c. but principally to purge the Humidities of the Head.

Of theſe, ſome are taken in *Powders*, as Betony, Tobacco, Marjoram, Iris, white Hellebore, *Euphorbium*, &c.

Others in a *liquid* Form, made of the Juice of Marjoram, Sage, Beet, Cyclamen, Iris, &c.

Others in Form of *Liniments*, incorporated with *Unguent. Roſat.*

Others, *ſolid*, form'd like Pyramids, to ſtop Bleeding at the Noſe; compoſed of Armenian Bole, *Terra ſigillata*, Maſtic, human or Hogs-Blood dried, &c.

Such *Errhina* as are dry, and made up in Powders, are properly call'd *Sternutatories*. The Moderns ſometimes call 'em *Caput purgia*. See STERNUTATORY.

The Word is derived from ἐν, *in*, and εἷς, *Noſe*.

ERROUR, or ERROR, a Miſtake of the Mind, in giving Aſſent to a Thing or Propoſition which is not true. See FALLACY.

Some Philoſophers define *Error* an Act of the Mind, whereby Things that ſhould be joyn'd, are ſeparated; or, Things that ſhould be ſeparated, are joyn'd: Or a wrong Judgment, diſagreeing with the Things whereon it is paſs'd. See JUDGMENT.

Error ſtands in Oppoſition to *Truth*, which conſiſts in an Agreement between the Propoſition, and the Thing whereof it is affirmed or derived. See TRUTH.

However, a bare Failure, or Non-attainment of Truth, does not conſtitute *Error*; that being common both to *Ignorance* and *Doubting*. See IGNORANCE and DOUBTING.

Error only ſtands diſtinguiſhed from *Falſehood*, in that the former is in the Mind, and the latter in the Propoſition. See FALSEHOOD.

The great Origin of all *Error*, i. e. of believing that to be true, which is falſe, is a *Liberty*, or Power in the human Mind, of giving its Aſſent to Idea's or Propoſitions, that are obſcure, as if they were perſpicuous and plain. See LIBERTY.

Particular Cauſes of Error are, 1°. An *Inadvertency*, or Negligence, in paſſing Judgment, without uſing or attending to the Means proper to aſſiſt the Judgment. As if a Perſon ſhould attempt to judge of the Height of the Pole, without proper Inſtruments, or Obſervations: Or determine about Nations without knowing their Hiſtory.

2°. Ignorance, in not having informed the Underſtanding by Study and Application; or furniſh'd it with the Idea's that have an immediate Relation to the Matter in hand.

3°. Impatience of the Labour and Fatigue, of going thro' a long Chain of Reaſons and Arguments; or of waiting for a neceſſary Number of Experiments: with a Fondneſs for the Opinion of being *knowing*; and a Prejudice for, or againſt, ſome particular Perſon, Sect, &c.

4°. The fallacious Rules of Probability, and Opinion. See PROBABILITY and OPINION.

5°. Intereſt, which makes us incline to believe thoſe Things true, from which we are like to derive Advantage.

6. Authority: Education: and vulgarly receiv'd Opinions, imbibed ere we were qualified for judging. See FAITH.

Againſt all which, there is this one general Rule or Caution laid down, by Fa. *Mallebranch* and others, *viz.* Never to give our full Aſſent to any Propoſition, unleſs the Evidence for it be ſo ſtrong, as that we can no longer with-hold it, without incurring the ſecret Reproaches of our own Reaſon.

Mr. *Lock* reduces the Cauſes of all our *Errors* to theſe four, *viz.* 1°. Want of Proofs. 2°. Want of Ability to uſe 'em. 3°. Want of Will to uſe 'em. And, 4°. Wrong Meaſures of Probability.

F. *Mallebranch* conſiders five Occaſional Cauſes of *Error*, or rather five different Kinds of *Errors*, accommodated to the different Manners we have of perceiving Things. 1°. *Errors* of *Senſe*. 2°. Of the *Imagination*. 3°. Of the *Underſtanding*. 4°. Of our *Inclinations*. And 5°. Of the *Paſſions*. See SENSE, IMAGINATION, UNDERSTANDING, INCLINATION, and PASSION.

ERROUR, in Law, is generally underſtood of a Fault, or Overſight, either in Pleading, or in Proceſs: Upon either of which is brought a Writ, by way of Remedy; call'd a *Writ of Error*; and in Latin, *de Errore Corrigendo*. See WRIT.

Fitzherbert defines a Writ of *Error* to be, that which lies to redreſs falſe Judgment given in any Court of Record,

cord, having Power by Charter, or Preſcription to hold Plea of Debt or Treſpaſs of above xx *Sh.*

There is alſo a *Writ of Error* for reverſing a Fine, *&c.*

ERUCTATION, *Belching*, the ſame as Ructation. See RUCTATION.

ERUDITION, Learning, or Knowledge; and chiefly that of Antiquity. See LEARNING.

The *Scaligers* were Men of deep *Erudition:* The Writings of Mon. *Launoy*, a Prieſt of the Oratory, are full of *Erudition.*

Mr. *Lock* ſays, 'tis of more Uſe to fill the Head with Reflections, than with Remarks of *Erudition.* If the Mind be not juſt and right, Ignorance is better than *Erudition*, which only produces Confuſion and Obſcurity: St. *Evremond.* M. *Balzac* calls a Heap of *Erudition* ill-choſen, the Luggage of Antiquity.

ERUGINOUS, or ÆRUGINOUS, ſome Thing partaking of, or like to the Ruſt of Braſs, or Copper. See RUST and ÆRUGO.

ERUPTION, a burſting forth, or Excluſion of ſomething before cover'd, or conceal'd.

The *Eruption of Puſtles* in the Small-Pox, ordinarily begins on the 4*th* Day. See *Small* Pox.

In the Inoculated Kind, the *Eruption* does not begin till the 9*th* Day. See INOCULATION.

The *Eruption* of Vulcano's, or Burning Mountains, is frequently the Effect, and Iſſue, of Earthquakes. See VULCANO and EARTHQUAKE.

The *Eruptions* of Mount *Etna*, and *Veſuvius*, are obſerved to be ſomewhat periodical: They are of two Kinds; the one leſs violent, happening once in 2 or 3 Months, and laſting uſually three or four Days, without much Damage to the adjacent Country.

The other more furious, and of longer Continuance, happening to Mount *Veſuvius* about once in 80 Years. The laſt, in 1632, was ſo violent, that, by the beſt of his [*S. Peccacio*'s] Obſervations, it caſt the Rocks three Miles into the Air. Mr. *Hartop* in Philoſoph. Tranſact. N°. 202.

M. *Oldenbourg* gives us an Hiſtorical Account of the ſeveral *Eruptions* of Mount *Etna*, recorded in Authors. The firſt whereof we have any credible Account, was at the Time of the Expedition of *Æneas*, deſcribed by *Virgil*, *Æneid. Lib.* III. The 2*d*, deſcribed by *Thucydides*, was 476 Years before *Chriſt:* In the Time of *Roman* Conſuls there were 4: Another in *Cæſar*'s Time, ſo fierce, that *Diodorus* aſſures us, the Ships near the Iſland of *Lipara* were burnt with the extreme Heat of the Water: Another under *Caligula:* Another at the Time of the Martyrdom of St. *Agatha*, ſaid to have been ſtopp'd at her Interceſſion: Another in the Year 812: Several between the Years 1160 and 1169: Others in 1284, 1329, 1408, 1444, 1536, 1633, 1650. *Phil. Tranſact.* N°. 48.

Another extraordinary *Eruption* happen'd in 1669, particularly deſcribed in the ſame Tranſactions, N°. 51. It was preceeded for the Space of 18 Days, with a dark thick Sky, Thunder, Lightning, and frequent Concuſſions of the Earth: The Place of the *Eruption* was 20 Miles from the old Mouth.

The Matter here yielded, was a Stream, or River of Metals and Minerals, render'd liquid by the Fierceneſs of the Fire, and boiling up, and guſhing forth, as Water does at the Head of ſome great River; till, having run in a full Body for a Stone's Caſt, or more, the Extremity thereof began to cruſt and curdle, and turn'd, when cold, into hard, porous Stones, call'd *Sciarri*, as reſembling huge Cakes of Sea-Coal, full of a fierce Fire. Theſe came rolling and tumbling over one another, and where they met a Bank, Wall, Building, *&c.* would fill up, and ſwell over; by their Weight bearing down any common Building, and burning up what was combuſtible. The Progreſs of this Inundation was at the Rate of a Furlong a Day; which it continued for 15 or 20 Days; running, at firſt, into the Sea, but afterwards into the City of *Catania*; in its Courſe, it overwhelm'd 14 Towns and Villages, containing three or four thouſand Inhabitants. The Noiſe of the *Eruption* at the Mouth was heard 60 Miles.

Dr. St. *Clair*, in the *Philoſop. Tranſact.* gives an Account of a conſtant *Eruption* of Fire, on one Side of one of the *Appenines*, between *Bologna* and *Florence:* A Spot of Ground 3 or 4 Miles in Diameter, he obſerves, inceſſantly ſends up a Flame, riſing very high, without Noiſe, Smoak, or Smell; tho' it gives a very great Heat. In great Rains it ſometimes intermits, but re-kindles with greater Vigour and Heat. Within 3 or 4 Yards of it, he adds, there grows Corn. The Flame he conjectures to ariſe from a Vein of Bitumen, or Naphtha. There are three other ſuch Fires on the ſame Hills.

ERYSIPELAS, in Medicine, call'd alſo *Sacer Ignis*, and St. *Anthony*'s *Fire*, a Diſeaſe of the Skin.

Its Seat is any Part of the Body, but principally the Face: It ſhews it ſelf in a ruddy Inflammation of the Part, with a little Swelling of the ſame; an intenſe Pain, and a Croud of little Puſtles, which, as the Inflammation increaſes, grow into *Veſiculæ*. See SKIN.

The Diſeaſe ſpreads it ſelf a-pace; ſhifting from one Place to another, with a Fever attending it. It attacks the Patient all at once, and chiefly when out in the Air; whence the Country People call it *blaſting*, *Sideratio.*

Dr. *Quincy* accounts for the *Eryſipelas*, from a too ſizy Blood, which obſtructing the Capillaries, occaſions Inflammations: Others, from a too ſharp and bilious Blood, which, on Account of its great Subtilty, occaſions no ſenſible Tumor; but ſpreads, or diffuſes it ſelf in Length and Breadth. Its Colour, tho' red, generally inclines towards a yellow, on Account of the Mixture of Bile; and always the more of the Bile, the more dangerous the Diſeaſe.

There is another Species of *Eryſipelas*, tho' leſs uſual than the former; moſt commonly ariſing from a too copious drinking of ſpirituous Liquors. It begins with a Fever, after which there is an univerſal Eruption of Puſtles, almoſt over the whole Body, much like thoſe after the ſtinging of Nettles, and ſometimes riſing into *Veſiculæ*. At going off, they leave an intolerable Itching, and as often as ſcratch'd return again.

Etmuller gives it as the diſtinguiſhing Character of an *Eryſipelas*, that when preſs'd very lightly by the Finger, there follows a white Spot, which preſently after becomes red again; which does not happen in an ordinary Inflammation, unleſs when violently preſs'd. Scorbutic People are moſt ſubject to this Diſeaſe.

'Tis diſputed, whether Purging be good in the *Eryſipelas: Sydenham* recommends it the next Day after Bleeding. *Etmuller* cautions us againſt 'em both; and recommends Diaphoreticks. Dr. *Friend* obſerves, that in the laſt Stage of an *Eryſipelas* of the Head, attended with a Coma, Delirium, *&c.* unleſs Catharticks will do good, the Caſe is deſperate. All unctuous, aſtringent, and cold Applications, externally, are dangerous, and ſometimes make the *Eryſipelas* degenerate into a Gangrene.

The Word is form'd of the *Greek*, ἐρυθειν, *trahere*, to draw; and πελας, *prope*, by reaſon it withdraws it ſelf towards the Skin: Whence *Galen* calls it the *Paſſio Cutis.*

The *Eryſipelas* is either ſimple, or attended with an Ulcer.

ERYTHROIDES, in Anatomy, the firſt of the proper Membranes that incloſe the Teſticles. See TESTICLE.

It is interſperſed with fleſhy Fibres, derived to it from the Cremaſter Muſcle, which make it appear reddiſh.

And whence its Name from the *Greek*, ἐρυθρὸς, *red*, and εἶδος, *form.*

ESCALADE, or SCALADE, a furious Attack upon a Wall, or a Rampart; carried on with Ladders, to mount by; without proceeding in Form, breaking Ground, or carrying on Works to ſecure the Men. See SCALADE.

ESCALOP-*Shells*, a frequent bearing in Coat Armour; proper, ſay our Heralds, for ſuch as have diſtinguiſh'd themſelves by Naval Exploits. Azure, three *Eſcalop*-Shells Or, by the Name of *Mallet.*

ESCAMBIO, was anciently a Licenſe granted any one for the making over a Bill of Exchange to another beyond Sea. See EXCHANGE.

For, by Stat. 5 *Rich.* II. no Perſon might exchange, or return Money beyond Sea, without the King's Licenſe.

ESCAPE, in Law, is either *voluntary*, or *negligent.*

Voluntary, is when one arreſts another for Felony, or other Crime, and afterwards lets him go; in which *Eſcape*, the Party that permits it, is by Law guilty of the Fault, committed by the Perſon who *Eſcapes*; be it Felony, Treaſon, or Treſpaſs.

Negligent *Eſcape* is, when one is arreſted, and afterwards *Eſcapes* againſt his Will that arreſted him; and is not purſued by freſh Suit, and taken again, before the Party purſued hath loſt Sight of him.

ESCARTELE', in Heraldry, *Quarter'd*, or *Quarterly.* See QUARTER'D, *&c.*

ESCHAR, in Chirurgery, a hard Cruſt, or Scab, form'd on the Fleſh, by means of a hot Iron, or a Cauſtic Medicine, or ſome ſharp, corroſive Humour within.

The Cauſtic Stone, or *Lapis Infernalis*, produces a round *Eſchar* in the Place where it has burnt. See ESCHAROTIC, CAUSTIC, and CAUTERY.

The Word is derived from the *Greek*, ἐσχάρα, *Cruſt*, or *Scab.* Some Authors derive it from ἐς and καίω, *I burn*; but this comes with ſome Difficulty, by reaſon καίω is wrote with a κ; and ἐσχάρα with a χ.

ESCHAROTICKS, Medicines, which being applied externally, produce *Eſchars*, or Scabs, by burning the Fleſh. See ESCHAR.

Such are the *Lapis Infernalis*, red precipitate, *&c.* theſe are alſo call'd *Cauſticks.* See CAUSTIC.

The Word is derived from the *Greek* ἐσχάρα. See ESCHAR.

ESCHEAT,

ESCHEAT, in Law, ſignifies any Lands, or other Profits, that fall to a Landlord within his Mannor, by way of Forfeiture, or the Death of his Tenant dying without Heir general or ſpecial, or leaving his Heir within Age, and unmarried.

The Civilians call ſuch Forfeitures *Bona Caduca*; and in the ſame Senſe as we ſay the *Fee* is *Eſcheated*, they ſay *feudum aperitur*.

The Word *Eſcheata* ſometimes alſo ſignifies a lawful Inheritance deſcending on the Heir. But then, it is uſually diſtinguiſhed by the Addition of *Recta*, as *Recta Eſcheata*.

ESCHEAT, is alſo uſed for the Place or Circuit within which the King, or other Lord, hath *Eſcheats* of his Tenants.

And ſometimes for a Writ, lying where the Tenant having Eſtate of Fee Simple, in any Lands or Tenements holden of a ſuperiour Lord, dies ſeiz'd, without Heir general, or ſpecial: In which Caſe, the Lord brings this Writ againſt him that poſſeſſes the Lands, after the Death of his Tenant; and thereby recovers the ſame in lieu of his Services.

ESCHEATOR, an Officer, who anciently took Care of the King's *Eſcheats* in the County, and certified them into the Exchequer, or Chancery. See ESCHEAT.

He was appointed by the Lord Treaſurer; held his Office only for one Year; nor cou'd any Perſon be *Eſcheator* above once in three Years. But this Office having its chief Dependance on the Court of Wards, is now out of Date.

ESCHEQUER. See EXCHEQUER.

ESCHEVIN, or ECHEVIN, in the *French* and *Dutch* Polity; a Magiſtrate, elected by the Inhabitants of a City, to take Care of their common Concerns, the good Order, Conveniency, and Decoration of the City.

At *Paris*, there is a *Prevot*, and four *Eſchevins*; in moſt other Cities, a *Maire*, or Mayor, and *Eſchevins*.

In *Languedoc*, *Province*, and *Dauphine*, they are call'd *Conſuls:* At *Toulouſe*, *Capitouls:* And *Jurats* at *Bourdeaux*.

Anciently, the *Eſchevins* were Aſſeſſors, and Counſellors, of the Comites, or Judges of Cities: On which Account they were call'd in ſome Places, *Pairs*, *Pares:* They even took Cogniſance of petty Cauſes themſelves.

Du Cange obſerves, that the Judges, and their Aſſeſſors, who were choſe by the Inhabitants, were call'd *Scabini*, *Echevins*, and their College, *Scabinagium*, or *Eſchevinage*. He adds, that ſome Authors call 'em *Paciurii*, by reaſon their Office and Juriſdiction extended to the ſecuring Peace in their City and *Banlieue*, call'd *Pax Villæ*.

The *Eſchevins* are alſo frequently what the *Ediles* were at *Rome*, the *Sheriffs* at *London*, and the Magiſtrate call'd *Poteſtas*, in the petty Cities of *Italy*. The *Greeks* call him ἀρχεγνώμων, &c.

In *Holland*, the *Eſchevins* judges of all Civil Affairs at firſt Hand. They alſo take Cognizance of criminal Affairs, and if the Criminal confeſs himſelf guilty, they can ſee their Sentence executed without Appeal. They can even give the Torture.

The Number is not the ſame in all Cities: At *Amſterdam* there are Nine, at *Rotterdam* Seven, &c.

ESCHRAKITES, or ESRAKITES, a Sect of Philoſophers among the *Mahometans*, who adhere to the Doctrines and Opinions of *Plato*.

The *Eſchrakites*, or *Mahometan Platoniſts*, place their higheſt Good and Happineſs in the Contemplation of the Divine Majeſty; deſpiſing the groſs Imaginations of the *Alcoran* touching Paradiſe.

They are very careful in avoiding Vice, preſerve an equal and eaſy Temper, love Muſic, and divert themſelves with compoſing little Poems, or ſpiritual Songs.

The *Scheies*, or Prieſts, and the chief among the Preachers of the *Imperial* Moſques, are *Eſchrakites*.

The Word is derived from the *Arabic* שרק *Scharaka*, which in the Fourth Conjugation אשרק *Aſchraka*, ſignifies *to ſhine, glitter like the Sun:* So that *Eſchrakite* ſeems to import *Illumined*.

ESCHYNOMENOUS *Plants*, are the ſenſitive Plants; that is, ſuch as upon approaching 'em ſhrink back, and contract their Leaves. See SENSITIVE *Plant*.

ESCLAIRCISSEMENT, a *French* Term, which we ſee retain'd in ſome late *Engliſh* Writers.

The Word properly ſignifies the Act, or Effect of *clearing a Thing*, or rendering it more *bright and tranſparent*; being form'd from the Verb *Eſclaircir*, to clear, &c.

But it is chiefly uſed in a figurative Senſe, for an Explication of an Obſcurity, or Difficulty. *Eſclairciſſement* of the Dialogues of the Gods: The *Eſclairciſſement* of difficult Paſſages in the Bible, is only had from ſimilar Paſſages, or Paſſages of the like Kind occurring in other Places.

ESCLATTE', in Heraldry, is applied to a Thing violently broke.

Thus a Bend, or other Partition, *Eſclatte*, is repreſented torn, or broke off like a Piece of a ruin'd Wall; or rather, a Shield broke and ſhatter'd with the Stroke of a Battle Ax, &c.

ESCORT, a *French* Term, ſometimes uſed in *Engliſh* Authors.

An *Eſcort* is a *Convoy*, or Company of armed Men, attending ſome Perſon or Thing, in a Journey or Voyage, to defend or ſecure it from Inſults. See CONVOY.

A Supply was ſent to the Camp before *Arras*, with an *Eſcort* of 1200 Men. In Times of War, Merchant Veſſels ſeldom ſtir much abroad without an *Eſcort* of Men of War. People that travel in *Turky*, generally take Janiſſaries to *Eſcort* them.

After the Victory, the General ſent the Priſoners under a ſtrong *Eſcort* into the neighbouring Towns. See CONVOY.

Some derive the Word from the Latin *Cohors*.

ESCOUADE, is uſually the third Part of a Company of Foot. See COMPANY.

It is divided ſo for mounting of Guards, and for the more convenient relieving one another: It is equivalent to a *Brigade* of a Troop of Horſe. See BRIGADE.

ESCRITOIRE. See SCRITOIRE.

ESCROL, or SCROLL, in Heraldry, a long Slip, as it were, of Parchment, or Paper, whereon a Motto is placed. See MOTTO.

Leigh obſerves, that no Perſon, under the Degree of a Knight, might, long after King *Henry* V, place his Creſt on a Wreath, as is now uſually done, but only on an *Eſcrol*.

ESCU, or ECU, the *French* Crown, of 60 *Sols*, or 3 *Livres*. See CROWN, LIVRE, &c. See alſo COIN.

The *Eſcu* was thus called by Reaſon the Eſcutcheon, or Arms of *France*, which they call *Eſcu*, was ſtruck thereon. See SHIELD, HELMET, ESCUTCHEON.

ESCUAGE, or SCUTAGE, an antient Kind of Knight's Service, call'd alſo *Service of the Shield*; the Tenant holding by which, was obliged to follow his Lord to the *Scottiſh*, or *Welſh* Wars, at his own Expence. See CAPITE.

He who held a whole Knight's Fee, was bound to ſerve with Horſe and Arms for 40 Days: And he who held half a Knight's Fee, 20 Days. See SERVICE.

The ſame Term *Eſcuage*, is alſo uſed for a Sum of Mony, paid by ſuch as held by this Tenure, when they neither attended the Wars, nor provided another in their Room.

ESCUAGE, was alſo a reaſonable Aid, demanded by the Lord of his Tenants, who held of him in Knight's Service.

Conceſſerunt Domino Regi ad Maritandam filiam ſuam de omnibus qui tenent de Domino Rege in Capite de ſinglis Scutis 20 *ſolidos ſolvendos*, Matth. Paris, *Anno* 1242.

ESCULENTS, are Plants for Food, as Artichokes, Carrots, Turnips, Parſnips, Cabbages, Colliflowers, &c. See PLANT, SALADE, &c.

ESCURIAL, by the *Spaniards* wrote ESCORIAL, a Term that occurs pretty frequently in our Gazettes, and Journals of News.

Eſcurial, is originally a little Village in *Spain*, ſituate in the Kingdom of *Toledo*, ſeven Leagues to the Weſt of *Madrid*, and nine to the Eaſt of *Avila*; on the Side of a Chain of Mountains, call'd by ſome the *Carpentain*, or *Carpentanian* Mountains, and by others the *Pyreneans*; as being a Branch of the *Pyranean* Ridge.

Here, King *Philip* II. built a ſtately Monaſtery of the Order of St. *Jerom*; held by the *Spaniards* for one of the Wonders of the World; and call'd *the Eſcurial*.

Fa. *Franciſco de los Padros*, in a Deſcription thereof, entituled, *Deſcription breve del Monaſteria de S.* Lorenzo *el real del* Eſcorial, &c. aſſures us it was built by that Prince in Memory of the Battle of S. *Quintin*, gain'd on the Day of S. *Lawrence*, *Lorenzo*, a famous *Spaniſh* Saint, and at his Interceſſion.

The King and Queen have their Appartments therein; the reſt being poſſeſs'd by the Monks. Whence, many of the great Tranſactions of that Court, are dated from the *Eſcurial*.

It has a very fine Church, to which *Philip* IV. built a beautiful Chappel, call'd the *Pantheon*, wherein the Kings and Queens of *Spain*, who leave any Poſterity, are Enterr'd. The reſt being laid in another Vault of the ſame Church, together with the Infanta's and other Princes. See PANTHEON.

ESCUTCHEON, or SCUTCHEON, in Heraldry, the Shield, Coat, or Field, whereon the Bearing, or Arms of any Perſon is repreſented. See SHIELD, COAT *of Arms*, &c.

The Word *Eſcutcheon* is form'd of the French *Eſcuſſon*, and that from the Latin *Scutum*, Shield; which was what Arms were originally bore on, e're ever they came

on

on Banners; and ſtill, wherever they are placed, 'tis on ſomething repreſenting the Form of a Shield.

The Latin *Scutum*, no doubt, came originally from the Greek *Scutos*, Leather, wherewith the Shields were uſually cover'd. See SHIELD.

On theſe Shields was always ſome particular Mark, Badge or Symbol painted: Which was the Original of Armoury. See ARMS.

The *Eſcutcheon* is of a Square Figure, excepting for the Bottom Part, which is uſually a little rounded, ending with a Point in the middle.

Till within a few Hundred Years, the *Eſcutcheons* of the *French* and *Engliſh* were triangular: Thoſe of the *Spaniards*, are ſtill quite round at Bottom without any Point: Thoſe of the *Italians*, are Oval: And thoſe of the *Germans*, in Form of Cartouches.

The antient *Eſcutcheons* were generally couch'd, or inclined; and they only began to place them upright, when Crowns, *&c.* were put over them by Way of Creſt.

In *France*, Eſcuſſon, *Eſcutcheon*, was formerly reſtrain'd to a Shield, or Coat, pointed at Bottom; by which it was diſtinguiſh'd from the *Eſcu*, which was quite Square, and was only allowed to be bore by the Counts and Viſcounts. Thoſe of inferior Quality were confined to the *Eſcuſſon*, or pointed *Eſcu*.



The ſeveral Parts, and Points of the *Eſcutcheon*, have their ſeveral Names: The Point D, for Inſtance, is the *Dexter chief Point*; C the *middle Chief*; and S the *ſiniſter Chief Point*: H is the *Honour Point*; F the *Feſſe Point*; N the *Nombril Point*; *d* the *Dexter* Baſe, B the *Middle*, and *s* the *Siniſter* Baſe Point.

The *Eſcutcheon* is diverſely denominated, according to its Diviſions. It is call'd *dexter'd*, when the perpendicular Line that divides it, is to the right of a third Part of the *Eſcutcheon*: *Siniſter'd*, when on the left: *Tierced in Pal*, when it is double, and divides the whole *Eſcutcheon* into three equal Parts: *Paled*, when increas'd to the Number of ſix, eight, or ten. A Horizontal Line makes the *Chief*, when at one third Part from the Top: The *Plein*, when at a third from the Bottom: And when double, in the middle, at an equal Diſtance from both Extremes, it makes the *Feſs*, and the *Tierced* in Feſs: When 'tis multiplied, it denominates it *feſſed*: When there are 8, or 10 equal Spaces, *Burrelle:* A Diagonal from the Dexter of the Chief to the Siniſter of the Point makes it *tranche*; the contrary, *double*. If it be doubled at equal Diſtances, the firſt makes *bande*, and the *tierce* in Bend; and the other *barre*, or *tierce* in Bar: Increaſing the Number of the firſt makes *bande* and *cottice*; and increaſing that of the ſecond, *barre* and *traverſe*.



ESCUTCHEON *of Pretence*, is an *Inescutcheon*, or little *Eſcutcheon*, which a Man, who hath married an Heireſs, and hath Iſſue by her, may bear over his own Coat of Arms; and in it the Arms of his Wife: and the ſurviving Iſſue will bear both Coats Quarterly. See PRETENSE.

ESCUTCHEON, and ESCUTCHEON-GRAFTING, in Gardening. See ENGRAFTING.

ESPALIER, in the *French* Gardening, a *Wall-Tree*; or a Fruit-Tree which is not left to grow at Liberty in full Air, but has its Branches nail'd or faſten'd to a Wall, near which it is planted; and thus growing, it is made to conform it ſelf to the flat, tho' unnatural, Figure thereof. See WALL *Tree*.

ESPALIERS, in our Gardening, are Rows of Trees, planted in a curious Order round the Outſide of a Garden, or Plantation, for the general Security thereof, from the Violence and Injury of the Winds; or elſe only round ſome Part of a Garden, for the particular Security of a Plantation of Orange Trees, Lemon Trees, Myrtles, and other tender Plants; or, laſtly, for the bounding of Borders, Walks, Avenues, *&c.* See GARDEN, *&c.*

Eſpaliers are now come into mighty Uſe, with Reſpect to the firſt of theſe Intentions: In Effect, 'tis found by Experience, that the beſt Brick, or Stone Walls, are not of themſelves ſufficient Security to Fruit-Trees, from the Ravages of blighting Winds. See WALL.

The Reaſon may be, that being built cloſe and compact, they repel the Winds, and by that Means damage the tender Plants, that lie within the Reach of the Repulſion. But theſe *Eſpaliers* ſerve to deaden the Violence of the Winds, ſo as the tender Greens, or Plants, encompaſſed by them, reſt ſerene and quiet.

Thus, if the *Eſpaliers*, for Inſtance, be of Spruce Holly or Yew, they give Way to the Force of tempeſtuous Winds, beating againſt them, without occaſioning any Reſilition thereof.

Meſſ. *London*, and *Wiſe*, direct them to be planted at ſome Diſtance, without the outmoſt Bounds, or Walls of Gardens, *&c.* Two, or three Rows of Trees, they think ſufficient, from 18 or 20 to 25 Foot a-part. And as to the Method, or Order, of diſpoſing the Trees, the moſt commodious is where the middle Row makes every where Equilateral Triangles with the extreme Rows, in the following Manner.

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The Trees recommended for making, or planting, theſe *Eſpalier* Fences, are the Elm, Lime, Beech, *Scotch* Fir, Oak, Pine and Sycamores; bnt particularly the two firſt. For the Method of Planting 'em. See PLANTING, TRANSPLANTING, *&c.*

As for *Eſpalier Hedges*, or Hedge Rows, for Defence of tender Greens, and Plants from deſtructive Winds in the Summer Seaſon: If there be Occaſion to uſe them the firſt or ſecond Year after they are planted; a ſubſtantial Frame of Wood muſt be made, ſeven or eight Foot high, with Poſts and Rails. And to this *Eſpalier* Frame, muſt the ſide Boughs of the young Trees be tied, to cauſe the *Eſpalier* to thicken the ſooner.

As to the Form of ſuch an *Eſpalier*, it muſt be oblong, running North and South.

Theſe *Eſpaliers* may be planted of Apples, Pears, Holly, Laurel, Lime, Maple, white-Thorn, Yew, *&c.*

To prevent the Diſorders that might befal *Eſpalier* Fruit Trees when in Bloſſom, Mr. *Bradley* mentions a nurſery Man at *Brentford*, who having moſt Sorts of Fruit in *Eſpaliers*, has portable Hedges made of Reeds in Frames, which he ſets both at the Back, and Front of his *Eſpaliers*, as he ſees Occaſion.

ESPAULE, ESPAULEMENT, *&c.* in Fortification. See EPAULE, EPAULEMENT, *&c.*

ESPLANADE, in Fortification, call'd alſo *Glacis*, a Part ſerving the Counterſcarp, or cover'd Way, for a Parapet; being a Declivity, or Slope of Earth, commencing from the Top of the Counterſcarp, and loſing it ſelf inſenſibly in the Level of the Campaign. See GLACIS.

ESPLANADE, alſo ſignifies the Ground which has been levell'd from the *Glacis* of the Counterſcarp, to the firſt Houſes; or the vacant Space between the Works and the Houſes of the Town.

The Term is alſo applied in the general for any Piece of Ground render'd flat or level, which before had ſome Eminence that incommoded the Place. See TALUT.

ESPOUSALS. See MARRIAGE.

ESQUADRILLE, } See { QUADRIL.
ESQUADRON, } See { SQUADRON.

ESQUINANCY, in Medicine, a Diſeaſe call'd alſo *Angina*, *Squinancy*, and popularly *Quinzy*. See ANGINA, SQUINANCY, *&c.*

ESQUIRE, a Title of Nobility, next below that of *Knight*, and above that of a ſimple *Gentleman*. See NOBILITY, KNIGHT, and GENTLEMAN.

The Origin, both of the Name and the Thing, *Eſquire*, is very dark and intricate: The *Engliſh* Denomination is confeſſedly borrowed from the French *Eſcuyer*; and that from the Latin *Scutum*, Shield, as ſome will have it; or as others, from *Scutarius*, or *Scutiger*, Shield-Bearer, or from *Scuria*, Stable, or *Equiſo*, Groom.

So many different Ideas of the Formation of the Word, have given riſe to as many about their Office; unleſs, perhaps, the latter have given Occaſion to the former.

Paſquier in his *Recherches*, L. II. *C.* 15. maintains the Title of *Eſquire*, Eſcuyer, Scutarius, to be very antient. From the Time of the Declenſion of the *Roman* Empire, he obſerves, there were two extraordinary Kinds of Soldiery, in the *Roman* Army; the one call'd *Gentiles*, and the other *Scutarii*.

Ammian. Marcellin L. XIV. *C.* 7. and *L.* XVI. C. 4. ſpeaks of theſe *Scutarii* as Men of redoubted Proweſs; and even deem'd invincible. 'Tis added, that *Julian* the Apoſtate ſet a mighty Value on thoſe Troops, when he was in the *Gauls:* And hence, probably, it was, that the *Gauls*, or perhaps, only the *Franks*, finding the braveſt among the *Roman* Forces were call'd *Gentiles*, and *Scutarii*, gave the like Names to the boldeſt and braveſt among themſelves; ſuch, according to that curious Antiquary, is the Origin of *Eſquires*.

ESQUIRE, however, afterwards came to be uſed in a ſomewhat different Senſe; *viz.* for a *Gentleman* who attended a Knight in the Wars, and on other military Occaſions; bearing the Shield, *Scutum*, before him: Whence *Scutarius*, *Scutiger*, or *Scutifer*; as alſo his Launce, and other Weapons: Whence his other *Latin* Appellation, uſual among us, *Armiger*, q. d. Armour-Bearer.

And hence it is, that in all our antient Romances, the Hero is conſtantly attended by a gentle, and truſty *Squire*.

After all, the moſt probable Derivation of *Eſcuyer*, is not from *Eſcu*, *Scutum*, as is the common Opinion, but from *Equus*; and theſe *Eſquires* were originally what the *Latins* call *Equiſones*, and had the Care and Intendance of the Equeries, or Stables only. See EQUERY.

Be this as it will, the Title *Eſquire*, Armiger, as now eſtabliſh'd among us, is the next below that of Knight, *Eques*. They who bear this Title, are all younger Sons of Noblemen, and the eldeſt Sons of ſuch younger Sons; the eldeſt Sons of Knights, and their eldeſt Sons ſucceſſively; the four *Eſquires* of the King's Body; and *Eſquires* created by the King, by putting about their Necks a Collar of S S's, and beſtowing on them a Pair of Silver Spurs. Laſtly, divers others in the ſuperior public Offices, are reputed *Eſquires*, or equal to *Eſquires*; as Sheriffs of Counties, Serjeants at Law, Juſtices of Peace, Mayors of Towns, Councellors at Law, Batchellors of Divinity, Law, Phyſic, *&c.* tho' none of them are really ſo: Laſtly, the Chiefs of ſome antient Families are likewiſe *Eſquires* by Preſcription.

ESQUISSE, in the *French* Painting, a Term ſignifying the firſt ſlight ſketch, or draught of a Picture; the firſt Thought of a Deſign drawn haſtily with a Crayon, or in Colours on Paper, Canvas, or the like; in Order to be finiſh'd, and painted or engraven afterwards. See DESIGN.

He had not the Trouble of making a finiſh'd, and correct Deſign; but went to work upon the *Eſquiſſe*.

The Word is form'd of the Italian *Schizzo*, a Splaſh; by Reaſon an *Eſquiſſe* of a Painting only repreſents, as it were, Splaſhes, or Dabs of Colours.

ESSART, or ASSART. See ASSART.

To *Eſſart*, is to grub up, or extirpate Buſhes, Trees, old Roots, Stumps, or the like; in Order to fit the Ground for Tillage.

Du Cange derives the Word from ſome of the barbarous *Latin* Words, *Exartus*, *Exartum*, *Exartes*, *Eſſartum*, *Aſſartum*, *Sartum*, and *Sartus*; which all ſignifie a Foreſt cut down or dug up: Tho' *Spelman* derives it from the Latin *Exertum*, torn up, or unrooted. Others, from *ſarrire*, to weed. And others, laſtly, from *exaro*, to plow, whence *exarare* and, by Contraction, *Exartum*.

In our antient Law Books, *Exartum facere in Sylva*, is to *Eſſart* a Place in a Foreſt.

ESSAY, a Trial, or Experiment, to prove whether a Thing be of the requiſite Quality, or Goodneſs. See SPECIMEN.

The Word is alſo uſed for an Attempt, or Tentative, to learn whether or no a Thing will ſucceed. *Eſſays* of Machines ſhould be made in large; 'tis not enough they ſucceed in little. See MACHINE.

In Monaſteries, *Eſſay* is particularly uſed for a Trial which a Perſon makes of the Monaſtic Life, in a ſecular Habit. This *Eſſay* is of one, two, and in ſome Monaſteries, of three Months. The *Eſſay* is not reckon'd in the Noviciate. See PROBATION.

Some Authors derive the Word from the Latin *Examen*.

ESSAY, or ASSAY, or ſimply SAY, in Coinage, *&c.* is a Proof, or Trial, made by the Cuppel, or Teſt, of the Fineneſs, or Purity of the Gold or Silver to be uſed in the Coining of Mony, *&c.* or that have been uſed therein. See COINING.

There are two Kinds of *Eſſaying*; the one before Metals are melted, in Order to bring them to their proper Fineneſs; the other after they are ſtruck, to ſee that the Species be Standard.

For the firſt *Eſſay*; the *Eſſayers* uſe to take fourteen or fifteen Grains of Gold, and half a Drachm for Silver; if it be for Mony: and eighteen Grains of the one, and a Drachm of the other, if for other Occaſions.

As to the ſecond *Eſſay*, 'tis made of one of the Pieces of Mony already coin'd, which they cut in four Parts.

Method of ESSAYING *Gold.*

The *Eſſayer* having weigh'd the Gold he intends to make the Trial in, very exactly, and noted down the Weight; adds twice as much fine Silver thereto; tho' this ſhould be in Proportion to the Fineneſs the Gold ſeems to be of; the baſeſt Gold requiring the leaſt Silver. The Gold and Silver thus weigh'd, and mix'd, are wrapp'd up in a Piece of Paper, to prevent their loſing any Thing of their Weight, which would diſturb the Accuracy of the *Eſſay*.

While the *Eſſayer* is weighing his Matters, a reverberatory Fire is lighted in a Furnace, furniſh'd with a Muffler, and a Cuppel, or Teſt, ſet therein to heat. This done, a little Bullet of Lead is put in the Cuppel, of a Weight proportionable to the Quantity and Quality of the Gold to be *Eſſay'd*. When the Lead is well melted, and appears very clear and bright; they put in the Gold and Silver, and let it fuſe and ſeeth till it appear of an Opal Colour, and have fix'd it ſelf, in a little Lump, to the Bottom of the Cuppel.

This done, the Cuppel is left to cool in the Furnace it ſelf; after which the Lump is ſeparated very exactly from the Place where it ſtuck to the Veſſel; and ſtretch'd, or hammer'd on the Anvil; heating it again and again, on the Coals, to promote the ſtretching.

When ſufficiently hammer'd, they roll it up in Form of a Cornet, or Coffin, and thus put it in a Glaſs Matraſs, capable of containing four Spoonfuls of Water; and having added to it a Quantity of *Aqua fortis*, well corrected, that is, mix'd with near one third of the Quantity of River Water, they boil it over a Wood Fire, till ſuch Time as the *Aqua fortis* yields no more red Fumes.

This firſt Water being pour'd off, and the Cornet left alone at the Bottom of the Matraſs, they fill the Matraſs again, but with pure *Aqua fortis*; which, after boiling, is pour'd off in its Turn, at ſuch Time as the Fumes are become white. This done, they fill up the Matraſs with River Water, to waſh the Cornet.

When waſh'd, they put it dry in a Crucible, with a Cover over it, and heat it till it become of a Cherry Colour.

This done, the *Eſſay* is finiſh'd; and there remains nothing but to weigh it againſt the ſame Weight of fine Gold, as was uſed at firſt, before the *Eſſay*. For by Comparing the firſt Weight of the Gold, e're it was put in the Fire, and the *Aqua fortis*, with what it retain'd after it had thus undergone the Teſt; they judge, from the greater, or leſs Loſs it has ſuſtain'd, of the Quantity of Alloy mix'd with it.

Method of ESSAYING *Silver.*

The Proceſs is much the ſame as in Gold; only leſs difficult, and ſhorter. The Silver is weigh'd, as before; and the ſame Furnace, and Muffler, the ſame Fire, the ſame Cuppel uſed. Add, that Lead is likewiſe put in the Cuppel, proportioned to the Quantity and Quality of the Silver to be *Eſſay'd*.

The Lead being well melted, and clear, the Silver is put in; and after it is brought to an Opal Colour, and fix'd in a Lump at the Bottom of the Cuppel, which happens in about half an Hour: They let it cool, and cleanſe it, and laſtly, weigh it again, as in Gold: And from its Diminution, eſtimate the Quantity of Alloy.

ESSAYING *of Lead.*

The *Eſſay* of Gold and Silver being perform'd by Means of Lead; 'tis of the utmoſt Importance, the Lead be free of any Mixture of either of the two Metals: Otherwiſe the *Eſſay* will be falſe; by reaſon the Gold and Silver mix'd with the Lead, will not evaporate like other Kinds of Alloy, but unite with the Metal under *Eſſay*.

To prevent this Diſorder, and aſſure the Operation, there is no way but to *Eſſay* the Lead it ſelf.

This *Eſſay* is performed in the ſame Furnace, and with the ſame Cuppels, as thoſe of Gold and Silver: But the Proceſs is incomparably more ſimple. All here required, when the Cuppel is heated, being, to put in the Piece of Lead to be *Eſſay'd*. If this Lead evaporate entirely, 'tis fit for the Purpoſe. On the contrary, if there remain any little Grain of Silver, *&c.* at the Bottom, it muſt be ſet aſide. See LEAD.

ESSAY, in Matters of Learning, is a peculiar Kind of Compoſition; whoſe Character is to be free, eaſy, and natural; not tied to ſtrict Order, or Method, nor work'd up and finiſh'd, like a formal Syſtem.

The Matter of an *Eſſay* is ſuppoſed to conſiſt principally of ſudden, occaſional Reflexions, which are to be wrote much at the Rate, and in the Manner a Man thinks; ſometimes leaving the Subject, and then returning again, as the Thoughts happen to ariſe in the Mind.

At leaſt, this has hitherto been the Practice; and *Montague*, who has got no ſmall Reputation by this Way of Writing, ſeldom keeps many Lines to the Subject he propoſes: Tho' it is our Opinion, that my Lord *Bacon* is a better Pattern in the *Eſſay* Kind.

Mr. *Lock*, however, and a few other Authors uſe *Eſſay* in a ſeverer Senſe: The *Eſſay of human Underſtanding*, every Body knows is a regular, artful, labour'd Work.

ESSAY-*Maſter*. See MINT.

ESSE, in the School Philoſophy, is uſed in the ſame Senſe with *Eſſence*; principally for that which is actual, or actually exiſting. See ESSENCE.

From *Eſſe* ariſes *Eſſatum*, a barbarous Term now almoſt obſolete, ſignifying that which is endued with *Eſſence*, or Nature; or effected with the Virtue or Efficacy of another. Some diſtinguiſh *Eſſe* into *real* and *intentional*; and again into *Eſſatum* and *Volitum*. See ESSENCE.

The Word is pure *Latin*, being the Infinitive of the Verb *Sum*, I am; whence *Eſſe*, to be.

ESSENCE,

ESSENCE, that which conſtitutes, or determines the Nature of a Thing; or which is abſolutely neceſſary for its being what it is. See NATURE.

In Philoſophy, the *Eſſence* of a Thing is defined to be that whereby a Thing is diſtinguiſhed from every other Thing.

The *Carteſians* hold the *Eſſence of Matter* to conſiſt in Extenſion; and on that Principle, deny that there is any ſuch Thing as Mere Space, or Vacuity: But the *Hypotheſis* is falſe, as is ſhewn under the Articles MATTER, SPACE, VACUITY, PLENUM, *&c.*

Gaſſendus, and moſt of the Corpuſcular Philoſophers, hold the *Eſſence* of Matter to conſiſt in Solidity, or Impenetrability, or Reſiſtance, or, more adequately, in a ſolid Impenetrability reſiſting the Touch; which, it muſt be allow'd, of all the Properties of Matter, ſeems to have the faireſt Title. See EXTENSION, BODY, SOLIDITY, IMPENETRABILITY, *&c.*

The School Philoſophers give us two Significations of the Word *Eſſence*; the firſt denotes the whole *Eſſential* Perfection of a Being, and conſequently its Entity, with all its intrinſic, or *Eſſential*, and neceſſary Attributes taken together. In which Senſe, *Eſſence* may be defined to be *all that whereby a Thing is, and is what it is.* In which Caſe, the *Eſſence* of a Thing, is to the Thing it ſelf, what Humanity, *e. gr.* is to Man.

The ſecond Signification of *Eſſence*, is that whereby it denotes the principal, and moſt intimate of all the Attributes of a Thing; or that which agrees to every ſuch Thing, and ſuch alone, and that always, and in ſuch manner, as that the Mind, with all its Attention, cannot perceive any Thing prior thereto. By which, *Eſſence* is diſtinguiſh'd from the *Eſſential Attributes*, i. e. from ſuch as flow from its *Eſſence*, or firſt Attribute. Thus, the *Eſſence* of the human Mind is commonly ſuppoſed to conſiſt in the Power of Thinking; by reaſon all its other Perfections ſeem to pre-ſuppoſe this; but this pre-ſuppoſes none. And thus, the Powers of underſtanding, doubting, aſſenting, willing, *&c.* do all flow from the Power of Thinking; and cannot exiſt without it, tho' this may without any of them.

It muſt be allow'd, however, that the *Eſſential* Properties of a Thing do ſo cloſely cohere, nay, and inhere in the *Eſſence* it ſelf, that 'tis ſcarce poſſible to diſtinguiſh the one from the other. Hence, what ſome urge, that ſetting aſide all the Attributes and Properties of a Thing, and what remains is its *Eſſence*; is a mere Chimera. For ſet aſide, *e. gr.* from the Mind, the Powers of underſtanding and willing, with the reſt of its Attributes: and what will there remain to call its *Eſſence*?

'Tis greatly diſputed in the Schools, whether the *Eſſences* of created Things be Eternal: Or, whether the *Eſſences*, as well as the Exiſtences, had their Origin in Time? The *Carteſians* hold, that the *Eſſences* of Things depend abſolutely on the free concurring Will of God.

ESSENCE, in Medicine and Chymiſtry, is the pureſt and moſt ſubtle Part of a Body, extracted from the ſame, by means of Fire. See EXTRACT.

Of theſe there are a great Variety, drawn from Flowers, Fruits, *&c.* uſed on Account of their agreeable Smells, Taſts, *&c.* by the Apothecaries, Perfumers, *&c.*

The principal are *Eſſence of Roſemary: Of Turpentine: Of Anis: Of Cloves: Of Cinnamon*; and *of Citron.*

The *Eſſences* commonly ſold by the Perfumers, are only the Oils of Ben, and of bitter Almonds; to which they give the Smell of certain Flowers, or Spices, as Violets, Jaſſemin, Cinnamon, *&c.*

The *Eſſences* to be drunk, or mix'd with Liquors, are of a more elaborate Compoſition: The moſt uſual and beſt, is prepared with the Spirit of Wine, Cloves, Cinnamon, Mace, Long Pepper, and Coriander: The whole being put up in a very cloſe Veſſel, is expoſed to the Sun for ſix Weeks, or two Months, during the Day-time, and in the Night ſet on the Fire.

In Winter they uſe the Fire alone: This *Eſſence* being exceedingly ſtrong; 'tis frequently uſed only to give a Strength to other weaker Liquors. After the ſame manner may the *Eſſences* of Amber, Muſc, *&c.* be drawn.

The *Eſſences* of odoriferous Flowers, to give a fine Smell to Liquors, are drawn by laying *Strata*, or Lays of the Flowers, and of Sugar, alternately, in a proper Veſſel, and leaving 'em to infuſe in a Cellar for 24 Hours; and after that as long by the Sun; and laſtly, ſtraining or percolating the whole thro' a Sieve, without ſqueezing the Flowers.

ESSENI, or ESSENES, or ESSÆANS, an ancient Sect among the *Jews*. See SECT.

Joſephus making mention of the ſeveral Sects among his Countrymen; diſtinguiſhes three; *viz.* the Phariſees, Sadducees, and *Eſſeni*: Which laſt he prefers to the two former, as to their manner of Life. He aſſures us, further, that they were *Jews* by Original; from which it ſhould appear, that S. *Epiphanius* was miſtaken, in ranking 'em among the *Samaritans.*

In Effect, the *Eſſeni* appear to have been true Pythagorian Philoſophers, in every Thing that related to their manner of Living. For they greatly affected Solitude and Retirement, and all Converſation with Women, to devote themſelves more entirely to the contemplative Life.

The *Eſſeni* ſeem to have been among the *Jews*, what the moſt retired and auſtere Monks are, or were, among the Chriſtians; which was what gave them their Denomination of Ιεδαικοὶ ασκηταὶ, *Aſcetic Jews.* See ASCETIC.

Many Catholic Writers have even deduced the Origin of Monks from 'em: Building, principally, on what *Philo* relates of 'em, who divides 'em into two Branches or Sects: The one who married, and the other who lived in Cœlibate. See MONK and CELIBATE.

Joſephus ſeems likewiſe to have had an Eye to theſe two Sorts of *Eſſeni*. *Serrarius*, who has wrote very amply on the Subject, follows *Philo*, in making two Claſſes of *Eſſeni:* The firſt, are thoſe whom he calls *Practici*, and who lived in Community: The ſecond, thoſe call'd *Theoretici*, who lived in Solitude, and led a Life of pure Contemplation. He adds, that *Joſephus* only makes mention of the firſt; paſſing, untouch'd, over the contemplative Kind, whom *Philo* calls *Therapeutes*, and who were principally found in *Egypt.* See THERAPEUTÆ.

Grotius will have the *Eſſeni* the ſame with the ancient חסידים *Haſidim*, or *Haſidæi*, thus call'd, according to *Philo*, from their ſingular Piety, Humility, and Devotion. Among theſe, *Gale* obſerves, it was, that the *Hebrew* Philoſophy chiefly flouriſh'd. *Porphyry, de Abſtinent.* is very prolix in his Praiſes of the *Eſſeni*; Εισὶ πόλλῳ οἱ Εσσαῖοι, Ἰεδαῖοι μὴν τὸ γένος, φιλαλληλοι, &c. He repreſents 'em as Deſpiſers of Pleaſure, Riches, Glory, and Delicacy, *&c.* and ſtrenuous Retainers to Continency, Auſterity, Study, *&c.* They decline Marriage; and adopt and educate other Peoples Children in Religion and Philoſophy. They are all on a Level, hold every Thing in common, neither buy nor ſell, *&c.* By long Habits, they arrived at ſuch a Degree of Patience, that *Porphyry* aſſures us, Flames and Tortures had not the leaſt Effect on 'em. They ſcorn'd to intreat their Tortorers; nor ever ſhed a Tear; but would ſmile under all their Agonies, *&c.* As to their Learning, *Philo Judæus*, in his Treatiſe, *That every good Man is free*, tells us, that they deſpiſed Logic, as uſeleſs to the acquiring of Virtue: Phyſics, they left to the Sophiſts and Diſputers, as judging it to tranſcend the human Faculties; and apply'd themſelves wholly to Morality. *Gale, Eſſenor. Char. ap. Philoſ. Gener.* p. 29.

Euſebius holds, that the *Eſſeni*, call'd *Therapeutæ*, were real Chriſtians, or *Jews* converted by St. *Mark*, who had embraced this Kind of Life. *Scaliger*, on the contrary, maintains, that theſe *Therapeutæ* were no Chriſtians, but real *Eſſeni*; who made Profeſſion of *Judaiſm.* However, he allows the two Kinds of *Eſſeni* abovementioned. But *Valeſius*, in his Notes on *Euſebius*, abſolutely rejects any ſuch Diſtinction: He denies, that the *Therapeutæ* were any real *Eſſeni*; and that, chiefly, on the Authority of *Philo* himſelf, who never calls 'em *Eſſeni*, and who places the *Eſſeni* in *Judæa* and *Paleſtine*; whereas the *Therapeutæ* were ſpread throughout *Greece*, *Egypt*, and other Countries.

ESSENTIAL, ſomething that is neceſſary to conſtitute a Thing, or that has ſuch a Connexion with the Nature and Reaſon of a Thing, that it is found, or ſuppoſed, wherever the Thing it ſelf is. See ESSENCE.

Thus, it is eſſential to God to be juſt. Mr. *Lock* has overturn'd that great Principle of the *Carteſians*, that *Thinking is eſſential to the Soul.* See THINKING.

The Heart, Brain, and Spinal Marrow, are Parts ordinarily ſuppoſed *Eſſential* to Life, or without which Life cannot be; yet we have Inſtances in Natural Hiſtory, of Childrens being found, and alive, without almoſt any of thoſe Parts. See BRAIN, *&c.*

ESSENTIAL *Properties*, are ſuch as neceſſarily depend on, and are connected with, the Nature and *Eſſence* of any Thing, ſo as to be inſeparable from it: in Diſtinction from accidental. See PROPERTY.

ESSENTIAL *Oils*, are ſuch as are really in a Plant, and drawn from it by Diſtillation, in an Alembic, with Water; in Contra-diſtinction to thoſe made by Inſolation. See OIL.

ESSENTIAL *Salts*, are ſuch as will cryſtallize in the Juice or Infuſion of a Plant; in Diſtinction from thoſe made by *Incineration.* See SALT.

ESSOIN, in Law, an Excuſe for him that is ſummon'd to appear and anſwer to an Action real, or to perform

Suit

Suit to a Court Baron. It is equivalent to *Excuſatio* among the Civilians.

The Cauſes that ſerve to *Eſſoin*, are divers; yet may be reduced to five Heads: The firſt is, *Eſſoin de ultra mare*, when the Party is beyond Sea: The ſecond, *De terra ſancta*, when on an Expedition in the Holy Land: The third, *de malo veniendi*, when he is infirm of Body, and cannot come; which is alſo call'd, the *Common Eſſoin*: The fourth, *Eſſoin de malo lecti*, when the Defendant is ſick a-bed: The fifth, *de ſervitio Regis*, when he is in the King's Service. *Horn* mentions ſeveral other *Eſſoins* touching the Service of the King Celeſtial.

The Word is form'd of the French, *Eſſoinie*, i. e. *Cauſarius miles*, he that has his Preſence forborn upon any juſt Cauſe, as Sickneſs, or other Impediment.

ESSOINS and PROFFERS. See PROFFER.

ESSORANT, in Heraldry, a Term uſed to expreſs a Bird ſtanding on the Ground with the Wings expanded, as if it had been wet, and were drying it ſelf.

ESTANDARD. See STANDARD.

ESTATE, in Law, the Title, or Intereſt a Man hath in Lands or Tenements.

Eſtate is either ſimple or conditional: *Eſtate ſimple*, call'd alſo *Fee ſimple*, is where a Man by Deed Indented, enfeoffs another in Fee, reſerving to him and his Heirs a Yearly Rent; with this Proviſo, that if the Rent be behind, *&c.* it ſhall be lawful for the Feoffer and his Heirs, to enter. See FEE.

Eſtate Conditional, or upon Condition at Law, is ſuch, as hath a Condition annexed to it, tho' it be not ſpecified in Writing. *e. gr.* If a Man grant to another, by his Deed, the Office of Park-Keeper for Life: this *Eſtate* is upon *Condition in Law*, viz. If the Park-Keeper ſhall ſo long well and truly keep the Park.

ESTATE, or ſimply STATE, the Empire, Kingdom, Provinces, or Extent of Lands under any one Government or Dominion.

The *Eſtates* of the Grand Seignior, of the King of *Spain*, &c. are very extenſive: Thoſe of the King of *France* are compact, and well peopled. *Italy* is canton'd out into a great Number of petty *Eſtates*.

Miniſters of Eſtate, Secretaries of Eſtate, &c. See MINISTER, SECRETARY, *&c.*

ESTATE is particularly applied to the ſeveral Ranks, or Claſſes, of a People aſſembled together, for the concerting of Meaſures, reforming Abuſes, or compoſing the Diſturbances of a State.

In *England*, the Three *Eſtates*, viz. King, Lords, and Commons, meet ordinarily in Parliament.

In *France*, the *Eſtates* conſiſt of the Churchmen, the Nobleſſe, and the Third *Eſtate*.

Some will have theſe Aſſemblies of *Eſtates* to be a very ancient Conſtitution: All we know is, that there were general Aſſemblies held in the *Gauls*, before *Cæſar*'s Conqueſt. But then the People, or third *Eſtate*, had no Share in 'em. Under the Iſt and IId Race of the *French* Kings, there were alſo ſolemn Convocations, call'd *Parliaments*; but it was only the great Lords of the Realm that were call'd to 'em. See PARLIAMENT.

ESTATES *General.*
ESTATES *of Holland.* } See { STATES *General*, &c.

ESTERLING, or EASTERLING. See STERLING.

ESTETE, in Heraldry, is uſed by the *French* to ſignify a Beaſt whoſe Head has been, as it were, torn off by Force; and conſequently the Neck left rough and rugged: In Contra-diſtinction to *deffait*, or *decapite*, where the Neck is left ſmooth; as if the Head had been cut off. See DEFFAIT.

ESTHER, a Canonical Book of the Old Teſtament.

The *Book of Eſther*, is denominated from a celebrated *Jewiſh* Captive of that Name, in *Perſia*, whoſe Beauty prefer'd her to the Bed of *Ahaſuerus*, and the Throne of *Perſia*; And who, in that Quality, ſaved her Compatriots the *Jews*, from the Death, to which *Ahaſuerus* had doom'd 'em, by the Councils of his Favourite *Haman*: The Hiſtory of which Tranſaction makes the Subject of the Book of *Eſther*.

The Criticks are divided about the Author of this Book: *S. Epiphanius*, *S. Auguſtin*, and *Iſidore*, attribute it to *Ezra*; But *Euſebius* will have it of a later Date. Some aſcribe it to *Joachim*, High-Prieſt of the *Jews*, and Grand-ſon of *Joſedek*. Others will have it compoſed by an Aſſembly, or Synagogue of the *Jews*, to whom *Mordecai* wrote Letters, informing 'em of what had happen'd, *Eſth.* IX. 29.

But the Generality of Interpreters, both *Hebrew*, *Greek*, *Latin*, &c. aſcribe the Book to *Mordecai* himſelf: *Elias Levita*, in his *Maſs. hamum.* Præf. 3. mentions this Sentiment as unqueſtionable.

'Tis chiefly founded on the Paſſage, Ch. IX. Ver. 20. where it is ſaid, *That Mordecai wrote theſe Things, and ſent Letters unto all the Jews, that were in all the Provinces*, &c. 'Tis alſo ſuppoſed, that Queen *Eſther* her ſelf, might have ſome Share therein; it being expreſs'd in the ſame Chapter, Ver. 29. that *Eſther* and *Mordecai* wrote a ſecond Letter with the King's Authority, to ordain the ſolemnizing a Yearly Feaſt, call'd *Purim*, that is, Days of Lots, in Commemoration of the *Jews* being deliver'd from the Lots, or Sortes, whereby they had been condemned.

Some will have this Book to be only Deuterocanonical. Others contend for its being Canonical, as far as Chap. X. Ver. 3. incluſive; and all the reſt Deuterocanonical. Of this Sentiment are S. *Jerom*, *De Lyra*, *Dionyſius* the *Carthuſian*, *Cajetan*, and others. The Council of *Trent* turn'd the Scale for its being Canonical throughout: ſo that the Matter is determined for the Catholic Countries.

But as to the Proteſtants, they retain to the old Opinion, and only admit it as far as the 3*d* Verſe of the X*th* Chapter. See DEUTEROCANONICAL.

ESTIVAL, or ÆSTIVAL *Solſtice*. See SOLSTICE.

ESTOILEE'. A *Croſs Eſtoilee*, is a Star with only four long Rays, in manner of a Croſs; and accordingly broad in the Centre, and terminating in ſharp Points. See CROSS.

ESTOPPEL, in Law, an Impediment, or Bar of Action growing from a Man's own Act, who hath, or otherwiſe might have had his Action. See BAR.

Goddard defines an *Eſtoppel* to be a Bar, or Hindrance, to one to plead the Truth; and extends it not to the Impediment given by his own Act only, but anothers alſo.

There are three Kinds of *Eſtoppel*, viz. by *Matter of Record*; by *Matter in Writing*; and by *Matter in pais*.

The Word is form'd of the French, *Eſtouper*, *oppilare*, *obſtipare*.

ESTOVERS, in Law, is uſed by *Bracton*, for that Suſtenance, which a Man committed for Felony, is to have out of his Lands, or Goods, for himſelf and his Family, during Impriſonment.

In Stat. 6. *Edu.* I. it is uſed for an Allowance in Meat or Clothes. In Stat. *Weſt.* it is alſo uſed for certain Allowances of Wood, to be taken out of another Man's Woods.

In this laſt Senſe *Eſtovers* comprehends *Houſe-bote*, *Hay-bote*, and *Plow-bote*: So that if a Man hath in his Grant theſe general Words, *de Rationabili Eſtoverio in Boſcis*, &c. he may thereby claim all three.

In ſome Mannors, the Tenants have Common of *Eſtovers*; that is, neceſſary Botes out of the Lord's Wood. See ALIMONY.

ESTRADE, a *French* Term, literally ſignifying a public Road, or High-way. Hence the Military Phraſe, *Battre l'Eſtrade*, to *Beat the Eſtrade*, that is, to ſend Scouts, or Horſemen, to get Intelligence, to learn the Diſpoſitions of the Enemy, and inform the General of every Thing like to fall in the Way. An Army never marches, without ſending *Batteurs d'Eſtrade* on every Side.

The Word is form'd of the Italian *Strada*, Street, or Road, which is derived from the Latin *Strata*, a paved Street. Some derive it from *Eſtradiots*, who were Cavaliers anciently employ'd in *beating the Eſtrade*.

ESTRADE is alſo us'd, for a little Elevation in the Floor of a Room, frequently encompaſs'd with an Alcove, or Rail, for the placing a Bed in; and ſometimes, as in *Turkey*, only cover'd with fine Carpets, to receive Viſitors of Diſtinction in. See ALCOVE.

ESTRANGEL, in the *Syriac* Grammar. The *Eſtrangel*, or *Eſtrangelus Character*, is a particular Species, or Form of *Syriac* Letters; ſerving as the Majuſcule Letters of the *Syriac* Language.

Abraham Ecchellenſis takes the *Eſtrangel* Character, for the true, ancient, *Chaldee* Character. And 'tis certain, the *Abyſſinians*, who call themſelves *Chaldeans*, ſtill occaſionally uſe the *Eſtrangel* Character; if we may credit *Hottinger* in his *Theſaur. Philol.* p. 286. Biſhop *Walton*, in his *Prolegomena*, gives us an *Eſtrangel Alphabet*.

ESTRAY, ſignifies any tame Beaſt found within any Lordſhip, and not owned by any Man; in which Caſe, being cried, according to Law, in the Market adjoyning, if it be not claimed by the Owner in a Year and a Day, it is then the Lord's of the Soil where found.

ESTREAT, in Law, is uſed for the true Copy, or Duplicate, of an original Writing: For Example, of Amerciaments, or Penalties, ſet down in the Rolls of a Court, to be levied by the Bailiff, or other Officer, of every Man for his Offence.

Clerk of the ESTREATS. See CLERK.

ESTREPEMENT, in Law, an impoveriſhing, or making of Land barren, by continual Plowing and Sowing; without due Manuring, Reſt, and other Husbandry.

The Word is alſo uſed, for any Spoil made by the Tenant for Life, upon any Lands, or Woods, to the Prejudice of him in Reverſion; as the cutting down of Trees,

or

or lopping them further than the Law allows, &c. Stat. *Edu.* VI.

The Word is derived from the French, *Eſtropier*, to maim; or the Latin, *extirpare*.

ESTREPEMENT, is alſo a Writ which lies in two Caſes; the one, when a Man having an Action depending, (wherein the Demandant is not to recover Damages as a Writ of Right, *dum fuit infra ætatem*, &c.) ſues, to inhibit the Tenant from making Waſt during the Suit.

The other is for the Demandant who is adjudged to recover Seiſin of the Land in Queſtion, and before Execution, for fear of Waſte to be made ere he can get Poſſeſſion, ſues out this Writ.

ESULA, a medicinal Root. The *Eſula*, is properly the Bark of a little reddiſh Root, which produces green, narrow, milky Leaves. It grows chiefly in *France*. 'Ere they uſe it, 'tis infuſed in Vinegar: After which, they draw Extracts from it, uſed in the Dropſy.

ESURINE *Salts*, are ſuch as are of a fretting, eating, or corroding Nature; which chiefly abound in Places near the Sea-ſide, and where great Quantity of Coal is burnt: As appears from the ſpeedy ruſting of Iron in ſuch Places. See SALT.

ETAPPE, in War, the Allowance of Proviſions and Forage made to the Soldiers, upon March thro' a Kingdom or Province, to or from Winter Quarters.

Hence, he that contracts with the Country, or Territory, for furniſhing the Troops in their March, is called ETAPPIER.

ETCHING, a Method of Engraving on Copper; wherein the Lines, or Strokes, inſtead of being cut with a Tool, or Graver, are eat with Aqua fortis. See ENGRAVING.

Etching was invented much about the ſame Time with *Engraving* on Copper, properly ſo call'd; by *Alb. Durer*, and *Lucas*. It has ſeveral Advantages over that Art; as, that it is done with more Eaſe and Expedition; that it requires fewer Inſtruments; and even, that it repreſents divers Kinds of Subjects better, and more agreeably to Nature, as Landſkips, Ruins, Grounds, and all ſmall, faint, looſe, remote Objects, Buildings, &c.

The Method of *Etching* is thus: The Plate being well poliſh'd, is heated over the Fire; and when hot, cover'd over with a peculiar *Ground*, or Varniſh. When cold again, the Ground is blacken'd with the Smoak of a Candle; and on this Ground, thus blacken'd, the Back of the Deſign, or Draught, is laid.

This done, the Deſign remains to be calk'd, or tranſfer'd upon the Plate; which is more eaſily effected, than in the common Graving; for the Back of the Deſign having been before rubb'd over with red Chalk, nothing remains but to trace over all the Lines and Strokes of the Draught with a Needle or Point; which preſſing the Paper cloſe down to the Ground, occaſions the Wax therein to lay hold of the Chalk, and ſo bring off the Marks of the ſeveral Lines: So as at length, to ſhew a Copy of the whole Deſign in all its Correctneſs.

The Draught thus calk'd, the Artiſt proceeds to draw the ſeveral Lines, and Contours with a Point, thro' the Ground, upon the Copper.

To finiſh his Work, he makes uſe of Points of divers Sizes, or Bigneſſes; and preſſes on them ſometimes more ſtrongly, and ſometimes more lightly, according as the ſeveral Parts of the Figures, &c. require more or leſs Strength or Boldneſs: Some of the Points being as fine as Needles, for the tender, Hair ſtroaks, and the remoter, fainter Objects; and others again, as big as Bodkins, made oval-wiſe, for the deeper Shadows, and the Figures in the Front of the Work.

Things thus prepared, a Rim, or Border of Wax, is rais'd round the Circumference of the Plate, and *Aqua fortis* pour'd on; which, by the ſaid Border, is kept from running off at the Edges.

The Ground being impenetrable to that corroſive Water, the Plate is defended from it every where but in Lines, or Hatches, cut thro' it with the Points; which, lying open, the Water paſſes thro' them to the Copper, and eats into the ſame, to the Depth required: Which done, it is pour'd off again.

Of *Etching* Grounds, it muſt be obſerved, there are two Kinds; the one *ſoft*, and the other *hard*. There are alſo two Kinds of *Aqua fortis*: The one *White*, which is only uſed with the ſoft Ground, and is applied as above directed: The other *Green*, made of Vinegar, Common Salt, *Sal Ammoniac* and Verdegreaſe. This is uſed indifferently with either Kind of Ground: Its Application is ſomewhat different from that of the *White*.

Without making any Border, they pour it on the Plate, which is placed for that Purpoſe a little inclined; and as the Water runs off, it is received in a Veſſel placed underneath. This they repeat, pouring it again and again, till it has eaten deep enough.

Add, that the *Aqua fortis*, of which Kind ſoever it be, muſt not continue equally long, or be pour'd equally often, on all the Parts of the Deſign. The remote Parts muſt be bitten more ſlightly, than thoſe nearer to the View.

To manage this, they have a Compoſition of Oil and Greaſe, wherewith they cover the Parts that are to be bitten no further. Or elſe they lay the Compoſition on as a defenſitive at firſt, and take it off again when they find proper. In Effect, they are every now and then covering and uncovering this or that Part of the Deſign, as Occaſion requires; the Conduct of the *Aqua fortis* being one of the principal Concerns in the whole Art, and that on which the Effect of the whole very much depends. The Operator is alſo to be very attentive to the Ground, that it don't fail, or give Way, in any Part, to the Water; and where it does, to ſtop up the Place with the Compoſition aforeſaid.

Laſtly, it is to be remember'd, that a freſh Dip of *Aqua fortis* be never given, without firſt waſhing out the Plate in fair Water, and drying it at the Fire.

The *Aqua fortis* having done its Part, the Ground is taken off, and the Plate waſh'd and dried; after which nothing remains but for the Artiſt to examine it with his Graver in his Hand, to touch it up, and heighten it, where the *Aqua fortis*, &c. has miſs'd.

ETERNITY, an Attribute of God, whereby the Duration of his Exiſtence is conceiv'd incommenſurable with Time, and excluſive of Beginning, Progreſs, Ending, &c. See GOD, TIME, &c.

Authors are terribly ſtraighten'd for a proper and juſt Definition of *Eternity*. That of *Boethius de Conſol. Philoſ. L.* V. Pr. 6. viz. *Interminabilis vitæ, tota ſimul & perfecta poſſeſſio*, i. e. *a perfect Poſſeſſion of a whole endleſs Exiſtence all together, or at once*, tho' retain'd by S. *Thomas*, and others, is Faulty in divers Reſpects.

Cenſorinus, de Die Natal. defines *Eternity*, by *Infinite Duration*; that is, Duration which has always been, and always will be. — Others, more fully deſcribe it by a Duration that exiſts all together, without any Flux, or Succeſſion of Parts, prior, or poſterior to each other: Where, the Word *Duration*, taken abſtractedly, imports no more than the Perſeverance of a Thing in Exiſtence; the *to durare*, being here oppoſed to the *to ceſſare*, in Exiſtendo.

But ſoften the Word *Duration* how you will, it is ſcarce conceiveable, but by conceiving a Quantity thereof; nor a Quantity, without conceiving a Succeſſion. — Others, therefore, define *Eternity* by a *perpetuum nunc*, a *perpetual now*; or a *nunc ſemper ſtans*, an *ever-ſtanding now*: But neither are theſe unexceptionable; the Words *perpetuum*, and *ſemper-ſtans*, importing an obſcure Sort of Duration. See DURATION.

ETESIAN *Winds*. See WINDS.

ETHER. See ÆTHER.

ETHERIAL *Oil*, a Name the Chymiſts give to high rectified Oils, which differ little from inflammable Spirits; ſuch are Oil of Turpentine, &c. See OIL, SPIRIT, &c.

ETHICKS, ETHICA, a Term originally *Greek*, ἠθικὴ, applied to the Doctrine of *Morality*, or *Moral Philoſophy*. See PHILOSOPHY.

Gale makes *Ethicks* only the firſt Part, or Branch of Moral Philoſophy, *viz.* that which regards private Perſons, or in a private Capacity. See MORAL.

The Word is form'd from ἦθος, ἔθη, *Mores*, Manners; by Reaſon the Scope, or Object thereof, is to form the *Manners*. See MANNERS.

Now, by *Manners*, is here meant a Way, or Manner of Living, confirm'd by Cuſtom, or Habit; or certain Habitudes of doing; or Actions which are often repeated: Which, if they be according to right Reaſon, the *Morals*, or *Manners*, are ſaid to be *Good*; otherwiſe *Evil* and vitious. See GOOD and EVIL.

Hence, the Object of *Ethicks*, is the Exerciſe of right Reaſon, in all our Affairs, Actions and Circumſtances; or it is Man himſelf conſider'd as dirigible, and to be conducted according to Reaſon: And the End of *Ethicks*, is to make him good and happy. For that if a Man conduct himſelf, according to right Reaſon, in all the Circumſtances of his Actions, Affairs and Relations, he will arrive at the higheſt Pitch of Moral Perfection and Beatitude.

Whence, *Ethicks* may be defined a right Manner of thinking, in order to attain human Felicity; or a Diſcipline whereby Man is directed to conduct his Will, and the Actions thereof, ſo as to live well and happily. See WILL.

The principal, nay, the only Topicks thereof, are Happineſs and Manners; whence ariſe two Parts, or Branches of *Ethicks*; the firſt on moral Happineſs, conſider'd as the End; and the ſecond on Moral Virtues, or good

Manners, as the Means to arrive thereat. See HAPPINESS, VIRTUE, &c.

ETHICOPROSCOPTES, in Antiquity, the Name of a Sect.

Damascenus, in his Treatise of *Heresies*, tells us, that the Denomination *Ethicoproscoptes* was given to such as err'd in Matters of Morality, and Things relating to Practice, that were to be done, or be avoided, &c. who blamed Things laudable, and good in themselves, or recommended or practised Things Evil. Which shews, that they were no particular Sect.

The Word is form'd of the *Greek*, ἦθος, *Manners*, and πρόσκοπτω, *offendo*, I offend.

ETHMOIDAL, ETHMOIDALIS, in Anatomy, one of the *Sutures* of the Human Cranium. See SUTURE.

The common Sutures are those which separate the Bone of the Cranium from those of the Cheeks; and are four: The Transversal, *Ethmoidal*, Sphenoidal, and Zygomatical. See CRANIUM.

The *Ethmoidal* takes its Denomination from its turning round the *Os Ethmoides*. See ETHMOIDES.

ETHMOIDES, in Anatomy, a Bone situate in the middle of the Basis of the Fore-head, or Os frontis, and at the Top of the Root of the Nose; filling almost the whole Cavity of the Nostrils. See NOSTRILS.

It has its Name from ἦθμος, *Cribrum*, Sieve, and εἶδος, *Form*; because all spongeous and cribrous.

By its cribrous Part it is joyn'd to the Head; by the spongeous Part, to the Cavity of the Nostrils; and by the plain and broad Part, to the Orbits of the Eyes.

In the cribrous Part is an Apophysis, which jets out, in a Point, into the Cavity of the Skull; call'd, from its Figure, *Crista Galli*, or Cock's Comb. From its under Side, there goes a thin Bone, which divides the Cavity of the Nostrils into two, call'd the *Vomer*. It is perforated by a Number of small Holes, thro' which the Fibres of the olfactory Nerves pass to the *Processus Mamillares*.

J. Philip Ingrassias, a *Sicilian*, who flourish'd about the Year 1546, was the first who gave a just Account of the Structure of the *Os Ethmoides* or *Cribrosum*. See NOSE.

ETHNARCHA, ETHNARCH, a Governour, or Commander of a Nation. See TETRARCH.

There are some Medals of *Herod* I. surnamed the *Great*, on one Side whereof is found ΗΡΩΔΟΥ, and on the other ΕΘΝΑΡΚΟΥ, q. d. *Herod the Ethnarch*: Now, after the Battel of *Philippi*, we read that *Anthony* passing over into *Syria*, constituted *Herod* and *Phasael* his Brother, Tetrarchs, and in that Quality committed to them the Administration of the Affairs of *Judea*. Jos. Ant. *L.* XIV. C. 23. *Herod* therefore had the Government of the Province before ever the *Parthians* enter'd *Syria*, or before *Antigonus*'s Invasion, which did not happen till six or seven Years after *Herod* was Commander in *Galilee*. Jos. *L.* XIV. C. 24, 25.

Consequently, *Herod* was then truly *Ethnarch*; for he can be no otherwise denominated: So that it must have been in that Space of Time that the Medals were struck which only give him this Title. Which Medals are a Confirmation of what we read in History of the Government that Prince was intrusted withal e're he was rais'd to the Royalty.

Josephus gives *Herod* the Appellation of Tetrarch, in lieu of that of *Ethnarch*; but the two Terms came so near to each other, that it was very easy to confound them together. See TETRARCH.

Tho' *Herod* the *Great* left by Will, to *Archelaus*, all *Judea*, *Samaria*, and *Idumea*; yet, *Josephus* tells us, he was then only call'd *Ethnarch*.

The Word is *Greek*, form'd of ἔθνος, *Nation*, and ἀρχή, *Command*.

ETHNOPHRONES, in Antiquity, the Name of a Sect. See SECT.

The *Ethnophrones*, or *Paganizers*, were Hereticks of the VIIth Century, who made a Profession of Christianity, but joyn'd thereto all the Ceremonies and Follies of Paganism, as Judiciary Astrology, Sortileges, Auguries; and other Divinations.

And hence their Denomination; from ἔθνος, *Nation*, and φρὴν, *Thought*, *Sentiment*, q. d. whose Thoughts, or Sentiments were still Heathen or Gentile.

They practised all the Expiations of the Gentiles, held all their Feasts, observed all their Days, Months, Times, and Seasons. See *Damascenus*, L. *Hæres.* N. 94.

ETHOPOEIA, or ETHOPEA, in Rhetoric, call'd also ETHOLOGY, and vulgarly *Picture*, or *Portrait*; is a Draught, or Description, expressing the Manners, Passions, Genius, Temper, Aims, &c. of another Person.

Such is that beautiful Passage in *Salust*, in his *Bellum Catilinarium*, wherein he gives us a Picture of *Catiline*: *Fuit magna vi & animi & Corporis sed Ingenio malo pravoque huic*, &c. 'He had an uncommon Strength both 'of Body and Mind; but an ill turn'd, and wicked Dis-'position. When a very Boy, his great Pleasure was in 'intestine Broils, Rapine, Slaughter, and civil Discord. 'His Body was form'd to undergo Fasting, Cold, and 'Watching, beyond all Belief. His Mind was daring, de-'ceitful and various; and could imitate, or accommodate 'it self to any Body: He was extremely covetous of 'other People's Goods, and profuse of his own withal. 'His Lusts and Desires were very high; his Stock of 'Eloquence considerable; but his Discretion scarce any.'

The *Ethopœia* is divided into *Prosographia*, and *Ethopœia*, properly so call'd; the former of which is a Picture of the Body, Countenance, Make, Dress, Gait, &c. and the latter of the Mind.

The Word is of *Greek* original, being form'd of ἦθος, *mos*, *consuetudo*, and ποιεω, *facio*, *fingo*, *describo*. *Quintilian*, L. IX. *C.* 2. calls this Figure *Imitatio morum alienorum*; and in *Greek*, μιμησις, *Imitation*.

ETYMOLOGY, that Part of Grammar, which considers, deduces, and explains the Origin and Derivation of Words; in order to arrive at their first and primary Signification. See GRAMMAR.

The Word is form'd of the *Greek*, ἔτυμος, *verus*, true, and λεγω, *dico*, I speak; whence λογια, *Discourse*, &c. and thence *Cicero* calls the Etymology, *Notatio*, and *Veriloquium*: Tho' *Quintilian* chuses rather to call it *Originatio*.

In all Ages there have been People curious in *Etymologies*: *Varro* has wrote on the *Etymology* of the *Latin* Words; and we have a Greek *Etymologicon*, under the Name of *Nicas*.

The *Etymologies* of our *English* Words have been deduced from the *Saxon*, *Welsh*, *Walloon*, *Danish*, *Latin*, *Greek*, &c. by *Somner*, *Cambden*, *Verstegan*, *Spelman*, *Casaubon*, *Henshaw*, *Skinner*, *Junius*, &c. See ENGLISH.

Those of the *French* and *Italian* Words, by *Menage*, in what he calls his *Origines*: *Henry Stephens*, *Tripot*, *Borel*, &c. have also laboured on the French *Etymologies*. *Guichard*, and Fa. *Thomassin*, have carried the *Etymologies* of Abundance of *French* Words as high as the *Hebrew*. *Postel* had the same Design before them.

We have a Latin *Etymologicon* of *Gerard Vossius*, another of *Martinius*, &c. *Octavio Ferrari*, has an *Etymology* of the *Italian* Tongue: And *Bernard d'Aldretta*, another of the *Spanish*.

Fa. Dom. Pezron, Abbot of *Charmoye*, and Priest of the *Sorbonne*, has traced up to the *Celtic* Language the *Etymologies* of Abundance of *Greek*, *Latin*, *German*, *French*, and other Words, used by *Plato*, *Servius*, *Donatus*, and other *Latin* Authors without knowing their true Origin, and *Etymology*, for Want of being acquainted with the Roots of the *Celtic* Tongue, from which Abundance of *Greek*, *Latin*, &c. Words are derived. But it must be added, that his *Etymologies* are frequently so far fetch'd, that one can scarce see any Resemblance, or Correspondence at all.

A strict, and sollicitous Enquiry into *Etymologies*, is no frivolous, and impertinent Design; but has considerable Uses. Nations, who value themselves on their Antiquity, have always look'd on the Antiquity of their Language as one of the best Titles they cou'd plead. For the *Etymologist*, by seeking the true, and original Reason of the Notions and Ideas attach'd to each Word, and Expression, may often furnish an Argument of Antiquity from the Vestigia, or traces remaining thereof; and from the Indices still subsisting in the present Use of the Words, compared with the antient Uses.

Add, that *Etymologies* are necessary for the thorough Understanding of a Language: For, to explain a Term precisely, there seems a Necessity of recurring to its first Imposition, in Order to speak justly and satisfactorily thereof. The Force and Extent of a Word is generally better conceiv'd, and enter'd into, when a Person knows its Origin and *Etymology*.

'Tis objected, however, that the Art is arbitrary, and built altogether on Conjectures and Appearances; and the *Etymologists* are charged with deriving their Words from where they please. But the Science is certainly real, and as regular as divers others; having its proper Principles, and Method.

It must be own'd, indeed, that it is no easy Matter to return into the antient *British*, and *Gaulish* Ages; to follow, as it were by the Track, the divers imperceptible Alterations a Language has undergone from Age to Age. A sober *Etymologist* has need of all the Lights he can come at, to conduct and bring down Words variously dis-

guis'd

guis'd in their Paſſage, and remark all the Changes that have befallen them. And as thoſe Alterations have ſometimes been owing to Caprice, or Hazard, 'tis eaſy to take a mere Imagination, or Conjecture, for a regular Analogy; ſo that 'tis nothing ſtrange the Public ſhould be prejudiced againſt a Science which ſeems to ſtand on ſo precarious a Footing.

EVACUANTS, in Medicine, Remedies proper to expel, or carry off any ill, peccant, or redundant Humor in the animal Body; by the proper Ways or Emunctories. See EVACUATION.

Of *Evacuants*, there are divers Kinds, diſtinguiſh'd according to their various Humours and Emunctories. See HUMOR and EMUNCTORY.

Some, *e. gr.* carry off their Matters by *Stool*, call'd *Purgatives*, or *Catharticks*. See PURGATIVES, *&c.* Others by *Urine*, call'd *Diureticks*. See DIURETICKS. Others by *Perſpiration*, call'd *Diaphoreticks*. See DIAPHORETICKS. Others by *Sweat*, call'd SUDORIFICKS. Others by the Mouth, call'd *Vomitories*, or EMETICKS. Others by the ſalival Glands, as SIALIGOGUES: And others, laſtly, by the *Menſes*, as MENAGOGUES and ARISTOLOCHICKS.

EVA UATION, in Medicine, a Diminution of the animal Fluids, in Order to a Diſcharge of ſome morbid, or redundant Matters therein; or, only, for the Sake of thinning, attenuating, and promoting the Motion and Circulation thereof. See EVACUANTS.

The Matter of a Diſeaſe, or what is preſcribed by Art to remove or eaſe it, is *Evacuated* two Ways.

1°. By the natural Emunctories, or Out-lets of the Skin; the Noſtrils, Mouth, Fauces, Oeſophagus, Ventricle, Inteſtines, Bladder, and Urethra.

And 2°. By artificial Outlets, made either in the Blood Veſſels; as by *Phlebotomy*, *Arteriotomy*, *Scarifications*, and *Leaches*. See PHLEBOTOMY and SCARIFICATION, *&c.* Or, in the Lymphatic Veſſels; as by CAUSTICKS and VESICATORIES. Or, laſtly, in both, as by *Iſſues*, *Setons*, *Ulcers*, *Fiſtula's*, &c. See ISSUE, SETON, FISTULA, *&c.*

Hence, the firſt Diſtinction of *Evacuants* is derived from the different *Emunctories*; and the 2d, from the Diverſity of Matter *evacuated* thro' them.

Moſt of the Chronical Diſeaſes, the Infirmities of old Age, and the ſhort Periods of the Lives of *Engliſhmen*, Dr. *Cheyne* obſerves, are owing to Repletion. This is evident from hence; that *Evacuation* of one Kind or another, is nine Parts in ten of their Remedy: For not only Cupping, Bleeding, Bliſtering, Iſſues, Purging, Vomiting and Sweating, are manifeſt *Evacuations*, or Drains, to draw out what has been ſuperfluouſly taken down; but even Abſtinence, Exerciſe, Alteratives, Cordials, Bitters, *&c.* are but ſeveral Means to diſpoſe the groſs Humours, to be more readily *evacuated* by inſenſible Perſpiration. *Eſſay on Health.*

For the Periodical *Evacuations* of Women. See MENSES.

For the *Evacuations* of Women after Delivery. See LOCHIA.

The Term is likewiſe uſed in the Art of War: To *Evacuate a Place*, is to make the Garriſon quit, or march out of it, in order for another Power to take Poſſeſſion of it, or to make Room for another Garriſon.

EVANGELISTS, the inſpired Authors of the Goſpels. See GOSPEL.

The Name *Evangeliſts* was likewiſe given, in the antient Church, to ſuch as preach'd the Goſpel here and there; without being attach'd to any particular Church. In which Senſe, ſome Interpreters think it is, that St. *Philip*, who was one of the ſeven Deacons, is call'd the *Evangeliſt*, in 21ſt Chapter of the *Acts of the Apoſtles*, Ver. 8.

Again, St. *Paul* writing to *Timothy*, Ep. 2. *C.* IV. *v.* 5. bids him do the Work of an *Evangeliſt*. The ſame Apoſtle, *Eph.* IV. 11. ranks the *Evangeliſts* after the Apoſtles and Prophets.

Hence, Monſ. *Tillemont* takes the Liberty to uſe the Word in the ſame Senſe. 'Moſt of thoſe who then em-'braced the Faith, being fill'd with the Love of a holy 'Philoſophy, began to diſtribute their Goods to the Poor, 'and after that went into divers Countries to do the Office 'of *Evangeliſts*, to preach Chriſt to ſuch as had not yet 'heard of him, and to furniſh them with the ſacred Wri-'tings of the Goſpel.'

The Word is derived from the *Greek*, ευαγγελιον, form'd of ευ, *bene*, well, and αγγελος, *Angel*, *Meſſenger*.

O ſuaves Epiſtolas tuas uno tempore mihi datas duas! quibus Evangelia *quæ reddam neſcio; deberi quidem plane fateor.* Cic. *ad* Attic.

EVANID. A Name ſome Authors give to thoſe Colours which are not of very long Duration; as thoſe in the Rain-bow, in Clouds before and after Sun-ſet, *&c.* See COLOUR, *&c.*

Evanid are the ſame with thoſe otherwiſe call'd *Fantaſtical*, and *Emphatical Colours*: See FANTASTICAL, *&c.*

EVANTES, in Antiquity, the Prieſteſſes of *Bacchus*; thus call'd, by Reaſon, in celebrating the *Orgia*, they ran about as if diſtracted, crying *Evan*, *Evan*, *Ohe Evan!* See BACCHANTES.

EVAPORATION, in Philoſophy, the Act of exhaling the Humidity of a Body; or of diſſipating it in Fumes or Vapour. See VAPOUR.

Common Salt is form'd, by evaporating all the Humidity in the Salt-Water, or Brine; which *Evaporation* is either perform'd by the Heat of the Sun, as in the Salt-Works by the Sea-Coaſt, *&c.* or by Means of Fire, as in the Salt Springs, *&c.* See SALT.

By the Obſervations of Monſ. *Sedileau* it appears, that what is rais'd in Vapour, exceeds that which falls in Rain. See RAIN.

Tho' the *Evaporation* of Liquids is generally look'd on as an Effect of the Heat, and the Motion of the Air; yet Monſ. *Gauteron*, in the *Memoirs de l'Academ des Scien.* An. 1705. ſhews, that a quite oppoſite Cauſe may have the ſame Effect; and that Liquids loſe a deal more of their Parts in the ſevereſt Froſt, than when the Air is moderately warm. In the great Froſt of the Year 1708, he found, that the greater the Cold, ſtill the more conſiderable the *Evaporation*; and that Ice it ſelf loſt full as much as the warmer Liquors that did not freeze. See FROST.

Dr. *Halley* furniſhes us with ſome Experiments of the Quantity, or Meaſure of the *Evaporation* of Water. --- The Reſult is contain'd in the following Articles:

1°. That Water ſalted to about the ſame Degree as Salt Water, and expoſed to a Heat equal to that of a Summer's Day, did, from a circular Surface of about Eight Inches Diameter, *Evaporate* at the Rate of 6 Ounces in 24 Hours. Whence, by a Calculus, he finds, that the Thickneſs of the Pellicle, or Skin of Water *Evaporated* in two Hours, was the 53*d* Part of an Inch: But, for a round Number, he ſuppoſes it only a 60*th* Part; and argues thence, that if Water as warm as the Air in Summer, evaporates the Thickneſs of one 60*th* Part of an Inch in two Hours, from its whole Surface; in twelve Hours it will exhale one tenth of an Inch. Which Quantity, he obſerves, will be found abundantly ſufficient to furniſh all the Rains, Springs, Dews, *&c.* See SPRING, *&c.*

In Effect, on this Principle, every 10 Square Inches of the Surface of the Water, yields in Vapour, *per diem*, a Cubic Inch of Water; and each Square Foot half a Wine Pint; every Space of 4 Foot Square, a Gallon; a Mile Square, 6914 Tons; and a Square Degree, ſuppoſe of 69 *Engliſh* Miles, will *Evaporate* 33 Millions of Tons. See RIVER, *&c.*

2°. A Surface of Eight Square Inches, *Evaporated*, purely by the natural Warmth of the Water without either Wind or Sun, in the Courſe of a whole Year, 16292 Grains of Water, or 64 Cubic Inches; conſequently, the Depth of Water thus *Evaporated* in one Year amounts to 8 Inches. But this being much too little to anſwer the Experiments of the *French*, who found, that it rain'd 19 Inches of Water in one Year at *Paris*; or thoſe of Mr. *Townley*, who found the Annual Quantity of Rain in *Lancaſhire*, above 40 Inches: He concludes, that the Sun and Wind contribute more to *Evaporation*, than any internal Heat, or Agitation of the Water. See RAIN.

3°. The Effect of the Wind is very conſiderable, on a double Account. For the ſame Obſervations ſhew a very odd Quality in the Vapours of Water, *viz.* that of adhering and hanging to the Surface that exhaled 'em, which they clothe, as it were, with a Fleece of vaporous Air; which once inveſting the Vapour, it thenceforwards riſes in much leſs Quantity. Whence, the Quantity of Water loſt in 24 Hours, when the Air was very ſtill from Winds, was very ſmall; in proportion to what went away when there was a ſtrong Gale of Wind Abroad to diſſipate the Fleece, and make Room for the Emiſſion of Vapour: And this, even tho' the Experiment was made in a Place as cloſe from the Wind as could be contrived.

Add, that this Fleece of Water hanging on the Surface of Waters in ſtill Weather, is the Occaſion of very ſtrange Appearances, by the Refraction of the Vapour's differing from, and exceeding that of common Air. Whence every Thing appears rais'd, as Houſes like Steeples, Ships as on Land above the Water, the Land rais'd, and as it were lifted from the Sea, *&c.*

4°. The ſame Experiments ſhew, that the *Evaporations* in *May*, *June*, *July*, and *Auguſt*, which are nearly equal, are about three Times as great as thoſe in the Months of *November*, *December*, *January*, and *February*.

EVAPORATION, in Pharmacy, an Operation by which the more aqueous and volatile Parts of Liquids are ſpent, or drove away in Steam; ſo as to leave the remaining Part ſtronger, or of a higher Conſiſtence than before.

Evapo-

Evaporation is properly the ſetting a Liquor over a gentle Heat, to carry off the moſt fluid and volatile Parts, without leſſening the Quantity of the other Matter the Liquor is impregnated withal.

Evaporation differs from Exhalation, in that the former is practiſed on moiſt Things, and the latter on dry. See EXHALATION.

To *Evaporate ad Cuticulam*, to a *Pellicle*. See CUTICULA and PELLICLE.

EVATES, a Branch, or Diviſion of our old Philoſophers the Druids. See DRUID.

Strabo diſtributes the Philoſophers among the *Britains* and *Gauls*, into three Sects. Βάρδοι, *Bards*, Οὐάτεις, *Evates*, and Δρυίδαι, *Druids*. He adds, that the *Bardi* were Poets and Muſicians; the *Evates*, Prieſts and Naturaliſts; and the *Druids*, Moraliſts as well as Naturaliſts.

But *Marcellinus*, Lib. 15. *Voſſius* Philoſ. Lect. l. 2. and *Hornius* Hiſt. Philoſoph. l. 2. c. 12. reduce 'em all to two Sects, *viz. Bardi* and *Druides*.

And, laſtly, *Cæſar*, lib. 6. comprehends 'em all under the Name of *Druids*.

The *Evates*, or *Vates*, of *Strabo*, might probably be what other Authors, and particularly *Ammian. Marcellin.* calls *Eubages*. But M. *Bouche*, in his *Hiſt. de Provence*, L. II. c. 2. diſtinguiſhes between 'em. The *Vates*, he ſays, were ſuch as took Care of the Sacrifices, and other Ceremonies of Religion; and the *Eubages*, thoſe who ſpent their Time in the Search and Contemplation of the great Myſteries of Nature. See EUBAGES.

EUBAGES, an Order of Prieſts, or Philoſophers, among the ancient *Celtæ* or *Gauls*.

Chorier takes the *Eubages* to be the ſame with the *Druids*, and *Saronidæ* of *Diodorus*: Others take the *Eubages* to be thoſe whom *Strabo* L. IV. p. 197. calls Οὐάτεις, *Evates*, or *Vates*: On which Principle there were Room to conjecture, that the Word ſhould be wrote Ουασεις; it being eaſy to miſtake a Γ for a T. See EVATES.

Be this as it will, the *Eubages* appear to have been different from the *Druids*. See what has been ſhewn under the Article DRUID.

EUCHARIST, *Euchariſtia*, the Sacrament of the Supper; or a Communication of the Body and Blood of *Chriſt*, under the Species, or Figures of Bread and Wine. See COMMUNION, SACRAMENT, SPECIES, TRANSUBSTANTIATION, CONSUBSTANTIATION, *&c.*

The Word in its Original *Greek*, Ευχαειστια, literally imports *Thankſgiving*; being form'd of ευ, *bene*, well, and χαεις, *gratia*, Thanks.

EUCHITES, or EUCHETES, a Sect of ancient Hereticks, thus call'd, by reaſon they pray'd without ceaſing; imagining that Prayer alone was ſufficient to ſave 'em. See PRAYER.

Their great Foundation, were thoſe Words of St. *Paul*, Epiſt. I. to the *Theſſalon.* C. 5. V. 17. *Pray without ceaſing.*

The Word is form'd of the *Greek*, Ευχὴ, *Prayer*; whence Ευχιται, the ſame with the Latin *Precatores*, Prayers. They were alſo call'd *Enthuſiaſts* and *Meſſalians*. See ENTHUSIAST.

St. *Cyril* of *Alexandria*, in one of his Letters, takes Occaſion to cenſure certain Monks in *Egypt*, who, under Pretence of reſigning 'emſelves wholly to Prayer, led a lazy, ſcandalous Life. The Orientals, however, lay a further Charge on the *Euchites*, or *Meſſalians*. See MESSALIANS.

EUCHOLOGUS, EUCHOLOGUE, a *Greek* Term, ſignifying, literally, a *Diſcourſe on Prayers*; being form'd of ευχὴ, *Prayers*, and λογος, *Diſcourſe*.

The *Euchologus* is properly the *Greek* Ritual, wherein is preſcribed the Order and Manner of every Thing relating to the Order and Adminiſtration of their Ceremonies, Sacraments, Ordinations, *&c.*

Fa. *Goar* has given us an Edition of the *Greek Euchologue* in *Greek* and *Latin*, with Notes, at *Paris*.

EUCHRASY, from ευ, *bene*, good, and χρασις, *Temperamentum*, Conſtitution, is an agreeable, well proportion'd Mixture of Qualities; whereby a Body is ſaid to be in good Order, that is, in a good State of Health. See TEMPERAMENT.

EUDOXIANS, a Party, or Sect of Hereticks, of the IV*th* Century; denominated from their Leader *Eudoxius*, Patriarch of *Alexandria* and *Conſtantinople*, a great Defender of the *Arian* Doctrine.

The *Eudoxians*, then, adhered to the Errors of the *Arians* and *Eunomians*; maintaining, that the Son was created out of Nothing; that he had a Will diſtinct and different from that of the Father, *&c.* See ARIANS and EUNOMIANS.

EVECTION, is uſed by ſome Aſtronomers for the *Libration* of the Moon. See LIBRATION.

EVEN *Number*, is that which may be divided into two equal Parts, or Moieties. See NUMBER.

EVENLY *even* Number, is which is exactly diviſible by an *Even* Number taken an *Even* Number of Times; ſuch is 32; ſince diviſible by eight, taken four Times.

EVENLY *odd*, is that which an *Even* Number meaſures by an *Odd* one; as 30, which is meaſured by 6, taken five Times.

EVERGETES, a *Greek* Term, ſignifying *Benefactor*; being form'd of ευ, *bene*, well, and ἔργον, *opus*, Work.

It is ſtill retain'd in our Language, by Way of Addition, or Epithet, given to ſeveral Princes, or Kings of *Syria* and *Egypt*, who ſucceeded *Alexander*. Thus we ſay, *Ptolomy Evergetes* King of *Egypt*; *Antiochus Evergetes* King of *Syria* aſcended the Throne 139 Years before *Chriſt*.

EVER-GREENS, or *Perennials*, ſuch Plants as continue their Verdure, Leaves, *&c.* all the Year. See PLANT, *&c.*

Of theſe, our Gardeners reckon twelve, fit for *Engliſh* Air, *viz.* the *Alaternus*, *Arbutus*, *Bay-Tree*, *Box-Tree*, *Holley*, *Juniper*, *Laurus tinus*, *Phylirea*, *Pyracantha*, or *Ever-green Thorn*, *Italian green Privet*, and the *Yew-Tree*.

EVIDENCE, a Quality in Things whereby they become viſible and apparent to the Eyes, either of the Body, or the Mind. See KNOWLEDGE.

The Schoolmen diſtinguiſh *Evidence*, into *formal* and *objective*.

Formal *Evidence*, is the Act of the Intellect, conſider'd as clear and diſtinct.

Objective *Evidence*, conſiſts in the Clearneſs and Perſpicuity of the Object; or it is the Object it ſelf, ſo conſtituted, as that it may be clearly and diſtinctly known.

Others divide *Evidence* into *Moral*, *Phyſical*, and *Metaphyſical*.

A Thing is ſaid to be *morally Evident*, ſo far as I have a diſtinct Notion, or Knowledge thereof, by unexceptionable Witneſſes. *Phyſically*, ſo far as natural Senſe and Reaſon pointing out any Thing, convinces one thereof. *Metaphyſically*, when I enter ſo fully and clearly into the Eſſence of any Thing, that nothing can be clearer.

Evidence, is the eſſential and infallible Character, or Criterion of Truth; and is that, in Effect, which with us conſtitutes Truth. See TRUTH.

If *Evidence* ſhould be found in Propoſitions that are falſe, we ſhou'd be compell'd into Error; ſince the Aſſent we give to *Evidence* is neceſſary. Whence wou'd follow this impious Poſition, that God who made us, is the Author of our Errors, as he has conſtituted us ſo, as to put us under a Neceſſity of falling into 'em. See ERROR.

It may be added, that as we neceſſarily love Truth, and hate Error, it ſeems inconſiſtent with the Nature of a beneficent Being, to form us with a Love of what we could not obtain, or not know whether we did obtain it or not: Beſide that, if we ſhould err in Things that are *Evident*, as well as in thoſe that are not ſo, we ſhould ſometimes find Contradictions in *Evident* Propoſitions, as we commonly do in Things that are obſcure.

Evidence therefore muſt be allow'd the Mark of Truth; and thoſe Things muſt be allow'd true, which carry with 'em ſuch a Degree of *Evidence*, as obliges us to aſſent to 'em. Whatever we ſee *Evidently* agreeable to the Things whereof we ſpeak, that we muſt acknowledge to be true. See FAITH, OPINION, VERISIMILITUDE, *&c.*

The *Epicureans* allow of no other *Evidence* but that of Senſe; or that ariſing from Senſe, (it being a fundamental with them, that Senſe is the firſt and primary Criterion of all Truth) See FALSHOOD and FALLACY.

By *Evidence* of Senſe, they mean that Species, or Image, exhibited by the Senſe, or Phantaſie; which, when all Impediments to a juſt judging, as Diſtance, Motion, Medium, *&c.* being removed, cannot be contradicted, or gain-ſay'd. Wherefore, the Queſtion being put, whether or no a Thing be ſuch as it appears; the Anſwer is not to be given, till it have been tried and examined all the Ways, and by all the Senſes that it can be an Object of. See SENSE, CRITERION, EPICUREANS, *&c.*

EVIDENCE, in Law, is any Proof, be it Teſtimony of Men, Records, or Writings: It is thus call'd, becauſe the Point in Iſſue is hereby made *Evident* to the Jury. See TESTIMONY, WITNESS, *&c.*

Sir *Tho. Smith* reſtrains *Evidence* to authentic Writings of Contracts, written, ſeal'd, and deliver'd. *De Rep. Angl.* Lib. II.

EVIL, *Malum*, in Ethicks, a Privation, or Abſence of ſome proper, or neceſſary Good; or ſome due Meaſure, or Degree thereof. See GOOD.

The Schoolmen deny, that any thing is every way *Evil*; and reſtrain all *Evil*, to be only ſo, *quoad hoc*;

as the Thing wants this, or that Degree of a certain Quality, neceſſary to conſtitute it, in that reſpect, good. There is nothing *Evil*, ſay they, without ſome Good in it wherein the *Evil* reſides as in its Subject; for, as it is a Being, and as every Being depends on the Supreme Being, it cannot but be good, as flowing from the Supreme Good.

Evil is either Natural or Moral; between which there is this Relation, that Moral *Evil* produces Natural.

Moral Evil, is defined a Deviation from right Reaſon, and conſequently from the Will and Intendment of the Great Legiſlator, who gave us that as a Rule: This the Philoſophers call *Inhoneſtum* and *turpe*, as ſtaining the Image of God, and ſullying our original Beauty; likewiſe *malum culpæ*.

Natural Evil, is a Want of ſomething neceſſary to the *bene eſſe*, or Perfection of a Thing, or to its anſwering all its Purpoſes. Such are Defects of the Body, Blindneſs, Lameneſs, Hunger, Diſeaſes, Death.

This Species of *Evil* is denominated *triſte*, *injucundum*, *noxium*; and *malum pœnæ*.

Again, *Evil* is either ſuch *in it ſelf*, as Envy, Impiety, *&c.* or, *to another*; as Meat, which in it ſelf is good, may be *Evil* to a Man on Account of ſome Diſeaſe; as Wine to a Feveriſh Perſon, *&c.*

Thus far the Schools have gone in the Nature and Reaſon of Moral and Natural *Evil:* A late excellent Author ſets the Thing in another Light, and furniſhes a much finer, more adequate Theory of Moral Good and *Evil. Inquir. into the Origin of our Idea's of Beauty and Virtue.*

Moral Evil, according to this Philoſopher, denotes our Idea of a Quality apprehended in Actions which excite Averſion and Diſlike towards the Actor, even from Perſons who receive no Diſadvantage thereby: As Moral Goodneſs denotes our Idea of a contrary Quality which procures Approbation and Love towards the Actor, even in Perſons unconcern'd in its natural Tendency.

This Notion ſuppoſes an univerſally acknowledged Difference of Moral Good and *Evil*, from Natural. Moral Good, we all know, procures Love towards thoſe we apprehend poſſeſs'd of it: Whereas Natural Good does not. How differently, for inſtance, are we affected towards thoſe we ſuppoſe poſſeſs'd of Honeſty, Faith, Generoſity, *&c.* when we expect no Benefit from thoſe Qualities: And thoſe poſſeſs'd of the natural Goods, as Houſes, Lands, Gardens, Health, Strength, *&c.* So, whatever Quality we apprehend morally *Evil*, raiſes our Hatred towards the Perſon in whom we obſerve it; as Treachery, Cruelty, Ingratitude, *&c.* Whereas we love and pity many expoſed to natural *Evils*, as Pain, Hunger, Sickneſs, *&c.*

The Origin of theſe different Idea's of Actions, has greatly puzzled the Moraliſts: The Generality make Self-Intereſt, or Self-Love, the Source of 'em all: We approve the Virtue of others, as it has ſome ſmall Tendency to our Happineſs, either from its own Nature, or from this general Conſideration, that a Conformity to Nature and Reaſon is in the general advantageous to the whole, and to us in particular: And, on the contrary, diſapprove the Vice of others, as tending at the long Run to our particular Detriment.

Others ſuppoſe an *immediate natural Evil*, in the Actions call'd *Vicious*; that is, that we are determined to perceive ſome Deformity or Diſpleaſure from ſuch Actions, without reflecting on any Diſadvantage that may any way redound to us from the Action; and that we have a ſecret Senſe of Pleaſure accompanying ſuch of our own Actions as are call'd virtuous, when we expect no further Advantage from 'em: But then they add, that we are excited to perform thoſe Actions, even as we purſue or purchaſe Pictures, Statues, Landskips, *&c.* from Self-Intereſt, to obtain the Pleaſure which accompanies the Action.

But the Author juſt mention'd has ſhewn the Miſtake: Some Actions, he proves, have to Men an immediate Goodneſs, and others an *immediate Evil*, i. e. We perceive Pleaſure in ſome, and Pain in others, and are determined to love, or hate the Doers, without any View of natural Advantage, without any View to future Rewards or Puniſhments, or even without any Intention to obtain the ſenſible Pleaſure of the Good; but from a very different Principle, *viz.* an internal moral Senſe, or a natural Determination of the Mind, to receive amiable, or diſagreeable Idea's of Actions, when they ſhall occur to our Obſervation, antecedently to any Opinions of Advantage or Loſs to redound to our ſelves from 'em; even as we are pleas'd with a regular Form, or an harmonious Compoſition, without any Knowledge of Mathematicks, or ſeeing any Advantage in that Form or Compoſition, different from the immediate Pleaſure. See Sense, Good, Virtue and Vice, Benevolence.

Evil, or *Kings*-Evil, in Medicine, a Diſeaſe by the Phyſicians call'd *Strumæ*, and *Scrophulæ*, conſiſting of ſcirrhous Tumours, ariſing moſt commonly about the Neck, but ſometimes alſo on the other glandulous Parts, as the Breaſts, Arm-pits, Groin, *&c.* See Strumæ and Scrophulæ.

The Kings of *England* and *France*, have, of a long Time, pretended to the Privilege of Curing the *Kings-Evil* by *Touching*. See Touching.

The Right, or Faculty, 'tis ſaid by ſome, was originally inherent in the *French* Kings; and thoſe of *England* only claim'd it, as an Appendage, or Appurtenant to that Crown, to which they laid a Claim. Tho' ſome of our own Monkiſh Writers ſet the Thing on a different Footing; and will have it to have been practiſed by our Kings, as early as *Edward the Confeſſor*; which Opinion the ingenious Mr. *Becket* has abundantly overthrown.

Raout de Pruelles, addreſſing his Tranſlation of St. *Auguſtin*, *de Civitate Dei*, to *Charles* V. of *France*, ſays expreſly, *Vos Devanciers, & vous avez telle Vertu & Puiſſance que vous eſt donnee & attribuee de Dieu que vous faites Miracles en votre Vie, telles, ſi grandes & ſi apertes que vous Gariſſes d'une tres horrible Maladie ques' appelle* les Eſcrouelles [*i. e.* the Kings-Evil] *de laquelle nul autre Prince terrien ne peut garir hors vous.*

Steven de Conti, a Religious of *Corbie*, who lived in the Year 1400, and wrote a Hiſtory of *France* ſtill preſerved in MS. in the Library of St. *Germains des prez*, deſcribes the Practice of Touching for the *Evil*. After the King had heard Maſs, a Veſſel of Water was brought him, and his Majeſty having put up his Prayers before the Altar, *touch'd* the diſeaſed Part with his right Hand, and waſh'd it with the Water.

Matthew Paris will have S. *Louis* the firſt who practiſed it: Others contend, that King *Robert* was the firſt who was gifted this Way. 'Tis certain, we find no mention of any ſuch Prerogative, before the Kings of the 11*th* Century, when that Prince reign'd. Fa. *Daniel*, Hiſt. *de France*, T. I. *p.* 1032.

Polydore Virgil ſtrains hard to prove the ſame Virtue in the Kings of *England*; but to little Purpoſe. *Favyn Hiſt. de Navarre*, 1062.

The Continuer of *Monſtrelet*, obſerves, that *Charles* VIII. touch'd ſeveral Sick Perſons at *Rome*, and cured 'em, *dont ceux des Italies*, ſays he, *voyant ce Myſtere ne furent onques ſi emerveillez.*

The ſame Virtue, we know not on what Grounds, is commonly attributed to a Seventh Son, born without any Daughter between: As alſo to the Chiefs of certain particular Families; particularly, the Eldeſt Perſon of the Houſe of *Aumont* in *Burgundy*.

EULOGY, Eulogia, in Church-Hiſtory. — When the *Greeks* have cut a Loaf, or Piece of Bread, to conſecrate it, they break the reſt into little Bits, and diſtribute it among the Perſons who have not yet communicated, or ſend it to Perſons that are abſent; and theſe Pieces of Bread are what they call *Eulogies*.

The *Latin* Church has had ſomething of the like Kind, of a great many Ages; and 'twas thence aroſe the Uſe of their Holy Bread.

The Name *Eulogy*, was likewiſe given to Loaves, or Cakes, brought to Church by the Faithful, to have them bleſs'd.

Laſtly, the Uſe of the Term, paſs'd hence to mere Preſents made a Perſon, without any Benediction. See the Jeſuit *Gretſer*, in his Treatiſe *de Benedictionibus & Maledictionibus*, L. II. C. 24, 25, *&c.* where he treats of *Eulogies* throughly.

From a Paſſage in *Bollandus*, on the Life of S. *Melaine*, C. 4. it appears, that *Eulogies* were not only of Bread, but any Kinds of Meats bleſs'd and hallowed for that Purpoſe. Add, that almoſt every body bleſs'd and diſtributed *Eulogies:* Not only Biſhops and Prieſts, but even Hermits, tho' Laymen, made a Practice of it. Women alſo would ſometimes ſend *Eulogies*, as appears from the Life of S. *Waulry*, C. III. n. 14. in the *Bollandiſts. Acta Sanct. Jan.* T. I. p. 20.

The Wine ſent as a Preſent, was alſo held an *Eulogy*. *Bollandus* remarks further, that the Euchariſt it ſelf was call'd *Eulogy. Act. Sanct. Jan.* T. II. p. 199.

The Word is *Greek*, Ευλογια, form'd of ευ, *bene*, well; and λέγω, *dico*, I ſay, ſpeak, q. d. *Benedictum*.

EUNOMIANS, a Sect of Hereticks, denominated from *Eunomius*, Biſhop of *Cyzicus*, who, in the IV*th* Century, maintain'd moſt of the Errors of *Arius*, and added others to 'em; as, particularly, that he knew God, as well as God knew himſelf. See Arians.

He re-baptized ſuch as had already been baptized in the Name of the Trinity: He had diſſembled his Errors for ſome Time, but having at length made a Diſcovery, he was expell'd his See.

The *Arians* endeavour'd to have put him into that of *Samosata*, but could not effect it: In lieu thereof, the Emperor *Valens* restored him to *Cyzicus*.

EUNOMIOEUPSYCHIANS, a Sect of Hereticks of the IV*th* Century. See HERESY.

The *Eunomioeupsychians*, mention'd by *Nicephorus*, L. XII. C. 30. are the same with those call'd *Eutychians* by *Sozomen*, L. VII. C. 17. The Author whereof, according to *Sozomen*, was an *Eunomian*, named *Eutychus*, and not *Eupsychius*, as *Nicephorus* has it: And yet this latter Writer only copies *Sozomen* in this Passage; so that it is past doubt, they both speak of the same Sect. But on whose Side the Error lies, is not easy to decide: *Valesius* durst not undertake to shew it; but contented himself to mark the Difference in his Notes on *Sozomen*, as Fa. *Fronton* has done on *Nicephorus*.

EUNUCH, EUNUCHUS, a Term applied, in the general, to all who have not the Faculty of Generating, either thro' Imbecility, or Frigidity; but particularly to such as have been *castrated*, or have lost the Parts necessary thereto. See CASTRATION.

In *England*, *France*, &c. *Eunuchs* are never made but on Occasion of some Diseases, which render such an Operation necessary; but in *Italy*, they make *Eunuchs*, for the Sake of preserving the Voice; and, in the *East*, they make *Eunuchs* to be Guards, or Attendants on their Women.

Great Numbers of Children, from one to three Years of Age, are yearly castrated in *Italy*, to supply the Opera's and Theaters, not only of *Italy*, but other Parts of *Europe*, with Singers: Tho' 'tis not one in three, that after having lost their Virility, have a good Voice for a Recompence.

Tavernier assures us, that in the Kingdom of *Boutan* in the *East-Indies*, there are every Year made Twenty Thousand *Eunuchs*, and sold thence into other Countries.

The Seraglio's of the *Eastern* Emperors, are chiefly serv'd, and guarded by *Eunuchs*. And yet we have very good Testimonies, that the rich *Eunuchs* in *Persia* and other Countries, keep Seraglio's for their own Use.

By an Arret of the grand Chamber of *Paris* in 1665, it is adjudged, that an *Eunuch* could not marry, not even with the Consent of the Woman and all the Parties on both Sides.

Claudian has a very severe Satyr against the *Eunuch Eutropius*, who had been Elected Consul of *Rome*. He represents him as an old Woman, dress'd up in the Honours of the Consulate.

The Story of *Origen* is notorious: That learned and pious Father, upon a too literal Interpretation of that Passage in St. *Matthew*, C. XIX. ver. 12. where mention is made of, *Eunuchs so born from their Mothers Womb*; ---- *Eunuchs who were made so of Men*; --- *And Eunuchs who made themselves Eunuchs for the Kingdom of Heaven:* Castrated himself.

In the Council of *Nice*, those were condemned, who, out of an indiscreet Zeal and to guard themselves from sensual Pleasures, should make 'emselves *Eunuchs:* Such as thus mutilated their Bodies, were excluded from Holy Orders; witness *Leontius* Bishop of *Antioch*, who was deposed for having practised this Cruelty on himself. And the Bishop of *Alexandria* excommunicated two Monks, who had follow'd his Example on Pretence of securing 'emselves from the impetuous Motions of Concupiscence. Several of the Emperors made very severe Prohibitions against the making of *Eunuchs*, or castrating one's self.

The Word is derived from the *Greek*, εὐνοῦχος, *Eunuch*; form'd of εὐνὴν ἔχει, *Lecti curam habet*, q. d. *Guardian*, or *Keeper of the Bed*.

In the III*d* Century, there was even a Sect of Hereticks form'd, call'd *Eunuchs*, *Eunuchi*; as having the Folly or Madness, to castrate not only those of their own Persuasion, but even all they could lay Hands on. They took their Rise from the Example of *Origen*, who, upon a Misunderstanding of our Saviour's Words in St. *Matthew*, made himself an *Eunuch*, by cutting off the Part, as some say; or, as others, particularly S. *Epiphanius*, Hæres. 58. by the Use of certain Medicines. These Hereticks were also call'd *Valesians*. See VALESIANS.

EVOLVENT, in Geometry, a Term some Writers use for the Curve resulting from the *Evolution* of a Curve; in Contra-distinction to the *Evolute*, which is the first Curve supposed to be open'd, or *Evolved*. See EVOLUTE.

The *Evolute* always both touches and cuts the *Evolvent* at the same Time: The Reason is, that it has two of its infinitely small Sides in common with the *Evolvent*, or rather exactly placed on two equal Sides thereof. One of 'em withinside that of the *Evolvent*, i. e. on the concave Side thereof; and the other, on the convex Side of its correspondent Side: So that the *Evolute* touches the *Evolvent* in two Points; whence, instead of being a Tangent, it is said to *Osculate* the *Evolvent*, and hence it is also call'd *Osculator*, and *Circulus Osculator*. See OSCULUM.

There is one, and but one *Osculator*, to each Point of the *Evolvent*; but to the same Point there are an Infinity of other Circles, which only touch, and don't Osculate. The *Osculator* and the *Evolute* make no Angle in the Place where they touch and cut: Nor can any Curve Line be drawn between; as there may betwixt a Tangent and a Curve. See *Angle of* CONTACT.

EVOLUTE, EVOLUTA, in the higher Geometry, a Curve, first proposed by Mr. *Huygens*; and since, much studied by the later Mathematicians. See CURVE.

The *Evolute* is a Curve, supposed to be *evolved*, or open'd; and which in opening, describes other Curves.

To conceive its Origin and Formation the better; suppose a flexible Thread, wound exactly over the Convexity of any Curve, as A B C G, (*Tab. Geometry Fig.* 20.) and suppose the Thread fix'd in G, and every where else at Liberty, to A. Now, beginning to unwind the Thread from the Point, and continuing it to G, and throughout keeping it tight on the Curve Surface A B C G; when the Thread is become quite straight, and is only a Tangent, F G, to the Curve in the Point G; 'tis evident the Extremity A, in its Progress to G, has described another Curve Line A D E F.

Here, the first Curve A B C G is call'd the *Evolute:* Each of its Tangents B D, C E, *&c.* comprehended between it, and the Curve A D E F, is call'd a *Radius of the Evolute*; or *Radius Osculi*, or *Radius Osculator* of the Curve A D E F, in each Point D, E, *&c.* And the Circles whereof the Osculators B D, C E, *&c.* are *Radii*, are call'd *Circuli Osculatores* of the Curve A D E F, in D, E, *&c.* And lastly, the new Curve, resulting from the *Evolution* of the first Curve, begun in A, is call'd the *Curve of Evolution*, or *Curve described by the Evolution.*

The Radius of the EVOLUTE, then, is the Part of the Thread comprized between any Point where it is a Tangent to the *Evolute*, and the correspondent Point, where it terminates on the new Curve. Which Appellation *Radius* is the more proper, as one may actually consider this Part of the Thread in every Step it takes, as if it described an Arch of an infinitely small Circle, making a Part of the new Curve, which thus consists of an infinite Number of such Arches, all described from different Centres and different *Radii*.

Every Curve, therefore, may be conceiv'd as form'd by the *Evolution* of another. And we are to find that whose Evolution that form'd it, which amounts to the finding of the Radius of the *Evoluta* in any Point. For, as it is always a Tangent to the generating Curve, it is properly no more than one of its infinitely small Parts, or Sides prolonged; and all its Sides, whose Position is determined of Course, is no more than the generating Curve it self.

The same Thread is also called *Radius Curvedinis*, or *Radius Osculi*, by Reason a Circle described hereby, from the Centre C, is said to *Osculate* or kiss it; as both touching and cutting at the same Time, *i. e.* touching both the inside and the out. See OSCULATION.

Hence, 1°. The *Evolute* B C F, (*Fig.* 21.) is the Place of all the Centres of the Circle that *Osculate* the Curve described by the Evolution A M I. 2°. When the Point B, falls on A, the Radius of the *Evolute* M C, is equal to the Arch B C; or to the Aggregate of A B, and the Arch B C. 3°. Since the Element of the Arch M m, in the Curve described by Evolution, is an Arch of a Circle described by the Radius C M; the Radius of the *Evolute* C M is perpendicular to the Curve A I. 4°. Since the Radius of the *Evolute* M C, is always a Tangent to the *Evolute* B C F; Curves of Evolution may be described thro' innumerable Points, if only Tangents be produced in the several Points of the *Evolute*, till they become equal to their correspondent Arches.

The finding of the *Radii of Evolutes*, is a Thing of great Importance in the higher Speculations of Geometry; and even, sometimes, is of Use in Practice, as the Inventor of the whole Theory, *Huygens*, has shewn in applying it to the Pendulum. *Horol. Oscill.* Part III. — The Doctrine of the *Oscula of Evolutes*, is owing to M. *Leibnitz*; who first shewed the Use of *Evolutes* in the measuring of Curves.

To find the Radius of the *Evolute* in the divers Kinds of Curves, with Equations to the *Evolutes*. See *Wolf. Elem. Math.* Tom. I. *p.* 524, &c. *sequent.* Or the *Infinim. Petites of Monf. le Marquis de l' Hôpital.*

Since, the Radius of an *Evolute* is equal to an Arch of an *Evolute*, or exceeds it by some given Quantity; all the Arches of *Evolutes* may be rectified geometrically, whose *Radii* may be exhibited by geometrical Constructions; whence we see why an Arch of a Cycloid is

double

double its Chord: The Radius of the *Evolute* being double the ſame; and the *Evolute* of a Cycloid, being it ſelf a Cycloid. See RECTIFICATION, CYCLOID, *&c.*

Monſ. *Varignon* has applied the Doctrine of the Radius of the *Evolute* to that of Central Forces; ſo that having the Radius of the *Evolute* of any Curve; one may have the Value of the Central Force of a Body which moving in that Curve, is found in the ſame Point where that Ray terminates: Or reciprocally, having the Central Force given, the Radius of the *Evolute* may be determined. *Hiſt. de l' Acad. Roy. des Sciences.* An. 1706.

Imperfect EVOLUTE. Monſ. *Reaumur* has given a new Kind of *Evolute* under this Denomination. Hitherto, the Mathematicians had only conſider'd the Perpendiculars let fall on the Points of the Convex Side of the Curve: If other Lines, not perpendicular, were drawn upon the ſame Points, provided they were all drawn under the ſame Angle, the Effect would be the ſame; that is, the oblique Lines would all interſect within the Curve, and by their Interſections, form the infinitely ſmall Sides of a new Curve, whereof they would be ſo many Tangents.

This Curve would be a Sort of *Epicycloid*, and would have its Radii; but, an *imperfect* one, ſince the Radii are not perpendicular to the firſt Curve. *Hiſt. de l'Acad.* &c. *An.* 1709.

EVOLUTION, in Geometry, the unfolding, or opening, of a Curve, and making it deſcribe an *Evolute*.

For the Nature of *Evolution*. See EVOLUTA.

The Equable *Evolution* of the Periphery of a Circle, or other Curve, is ſuch a gradual Approach of the Circumference to Rectitude, as that all its Parts do meet together, and equally evolve, or unbend; ſo that the ſame Line becomes ſucceſſively a leſs Arc, of a reciprocally greater Circle, till at laſt they change into a ſtraight Line. In *Philoſ. Tranſact.* N°. 260. a new Quadratrix to the the Circle, is found by this Means, being the Curve deſcribed by the equable *Evolution* of its Periphery.

EVOLUTION is alſo uſed for the Extraction of Roots out of Powers, in which Senſe it is directly contrary to *Involution*. See EXTRACTION.

EVOLUTION, in the Art of War, is a Term applied to the divers Figures, Turns, and Motions, made by a Body of Soldiers, in ranging them in Form of Battle, or in changing their Form; either in the Way of Exerciſe, or when in actual Engagement.

'Tis by the *Evolutions*, that the Form, and Poſture of a Batallion, Squadron, *&c.* are changed; either to make good the Ground they are upon, or to poſſeſs themſelves of another, that they may attack the Enemy, or receive an Onſet more advantageouſly.

The *Military Evolutions*, are *Converſions*, *Countermarches*, or *Wheelings*, *Doublings* of Rank or File, *&c.* See CONVERSION, *&c.*

Fa. *Hoſte*, a Jeſuite in 1697, printed a Treatiſe of *Naval Evolutions*, in Folio: —By *Naval Evolutions*, he means the Motions made by a Fleet, Squadron, or Naval Armament, in order to put themſelves into a proper Arrangement, or Situation, for attacking the Enemy, or defending themſelves with the moſt Advantage.

The Word is Latin, *Evolutio*, form'd of the Prepoſition *e*, out, and *volvo*, I roll or wind, *q. d.* an *unwinding*, or *unrolling*.

EUPHONY, EUPHONIA, in Grammar, an Eaſineſs, Smoothneſs, and Elegancy of Pronunciation. See PRONUNCIATION.

The Word is *Greek*, form'd of εὖ, *bene*, well; and φωνὴ, *Vox*, Voice.

Quintilian calls the *Euphonia*, *Vocalitas*; Scaliger, *facilis pronunciatio*.

The *Euphonia* is properly a Kind of Figure, whereby we ſuppreſs a too harſh Letter, or convert it into a ſmoother, contrary to the ordinary Rules. There are Examples enough in all Languages.

EUPHORBIUM, or EUPHORBIA, in Pharmacy, a Kind of Gum, brought from *Africa*, in little roundiſh Pieces, whitiſh when new, and yellowiſh when old, very ſharp to the Taſte, but void of Smell. See GUM.

The principal Uſe of *Euphorbium*, is external; being a great Ingredient in divers reſolutive Plaſters, as well as in Tincture, and Powder for ſtopping of Gangrenes, cleanſing of foul Ulcers, and exfoliating carious Bones.

Internally uſed, 'tis a Purgative, but ſo violent a one, that 'tis almoſt out of Doors, as tearing off the neceſſary Mucus or Covering of the Stomach and Bowels, and occaſioning Dyſenteries. Yet we are told the *Africans* uſe it very commonly; tho' they firſt quench its Fire in Purſlain Water.

Its Powder is a violent Sternutatory, and to be uſed very cautiouſly, and never alone, but mix'd with a ſmall Quantity of ſome other Powder, to guard againſt its intolerable Heat.

The Gum we call *Euphorbium*, is form'd of the Juice of a Tree, or rather Plant, of the ſame Name, pretty frequent in *Mauritania*; tho' the Species of the Tree, or Plant, has been greatly controverted. The Generality of our lateſt Botaniſts, make it a ferulaceous Plant; and Mr. Profeſſor *Hermannus* calls it the *Tithymalus Mauritanus Aphyſios Anguloſus & Spinoſus*. Hort. *Acad. Lug. Batav.* 598.

It has no Leaves; but in Lieu thereof puts forth along its Stem a Kind of long prickly Eyes, or Buds. Which Buds, it is, that yield that gummy Juice, call'd *Euphorbium Officinarum*.

Some Authors will have it, that the Gum is drawn from the Plant by Inciſion; others, on the contrary, ſay it oozes ſpontaneouſly: The Juice, we are told, is ſo very ſubtile, and penetrating, that the Perſon who taps the Tree, is forced to ſtand at a good Diſtance, and make the Inciſion with a long Pike; otherways it gets to the Brain, and occaſions dangerous Inflammations. It oozes out in great Abundance, and is gather'd in a Sheep's Skin, wrapp'd round the Tree.

Pliny tells us, that the firſt Diſcovery of *Euphorbium* is attributed to *Juba* King of *Lybia*, who denominated it from *Euphorbius* his Phyſician, Brother of *Muſa*, Phyſician to *Auguſtus*.

Etmuller aſſures us, that the Plant, which yielded the *Euphorbium* of the Antients, is now unknown to us; but if we go by *Pliny*'s Deſcription, the Plant call'd *Schadida Calli* in the *Hortus Malabaricus*, muſt be the antient *Euphorbium*. This Diſcovery is owing to *Commelinus*, Bourguemaiſter of *Amſterdam*, and Profeſſor of Botany.

EUPHORY, ſignifies the ſame as *Euchraſy*. See EUCHRASY.

EUPSYCHIANS. See EUNOMIOEUPSYCHIANS.

EURIPUS, in Hydrography: The Word, originally and properly, ſignifies a certain Streight of the Sea, between *Bœtia*, and the *Negropont*; where the Currents are ſo ſtrong, that the Sea is ſaid to Ebb and flow ſeven Times a Day; in which Place, as the Story commonly goes, *Ariſtotle* drown'd himſelf, out of Chagrin, for not being able to account for ſo unuſual a Motion.

But *Euripus* has ſince become a general Name for all Streights, where the Water is in great Motion and Agitation.

The antient Circus's had their *Euripi*, which were no other than Pits, or Ditches, on each Side the Courſe; into which it was very dangerous falling with their Horſes and Chariots, as they run their Races.

The Term was alſo applied by the *Romans*, in Particular, to three Canals, or Ditches, which encompaſſed the Circus on three Sides; and which were fill'd occaſionally, to repreſent *Naumachia*, or Sea Battles.

The ſame People call'd their ſmalleſt Fountains, or *Jets d' Eau*, Canals in their Gardens, *Euripus's*; and their largeſt, as Caſcades, *&c.* Niles.

The Word is derived from the *Greek*, εὖ, *facilé*, eaſily, and εἰπτεσθαι, *præcipitari*.

EURUS,
EURO-*Auſter*. } See WINDS.
EURO-*Notus*.

EURYTHMY, EURYTHMIA, in Architecture, Painting, and Sculpture; a certain Majeſty, Elegance, and Eaſineſs appearing in the Compoſition of divers Members, or Parts of a Body, Building, or Painting; and reſulting from the fine Proportions thereof. See PROPORTION.

The Word is *Greek*, and ſignifies literally a Conſonance, or fine Agreement, or as we may call it, a Harmony of all the Parts; being compounded of εὖ, *well*, and ῥυθμὸς, *Rythmus*, a Cadence, or Agreement of Numbers, Sounds, or the like Things. See RYTHMUS.

Vitruvius ranks the *Eurythmia* among the eſſential Parts of Architecture: He deſcribes it as conſiſting in the Beauty of the Conſtruction, or Aſſemblage of the ſeveral Parts of the Work, which render its Aſpect, or whole Appearance graceful: *E. gr.* when the Height correſponds to the Breadth, and the Breadth to the Length, *&c.*

'From theſe three Ideas, (or *Deſigns*, viz. *Orthography*, '*Scenography*, and *Profile*) it is, that the ſame *Eurythmy*, '*Majeſtica*, and *Venuſta Species Edificii*, does Reſult; 'which creates that agreeable Harmony between the ſe-'veral Dimenſions; ſo as nothing ſeems diſproportionate, 'too long for this, or too broad for that, but correſponds 'in a juſt and regular Symmetry, and Conſent of all the 'Parts with the whole.' *Evelyn*'s *Account of Archit.* &c. See SYMMETRY.

EUSEBIANS, a Denomination given to the Sect of *Arians*, on Account of the Favour and Countenance, which *Euſebius* Biſhop of *Cæſarea* ſhew'd, and procured for them at their firſt Riſe. See ARIANS.

EUSTA-

EUSTATHIANS, a Name given to the Catholicks of *Antioch*, in the IVth Century; on Occaſion of their Refuſal to acknowledge any other Biſhop beſide S. *Euſtathius*, depoſed by the *Arians*.

The Denomination was given them during the Regency of *Paulinus*, whom the *Arians* ſubſtituted to S. *Euſtathius*, about the Year 330, when they began to hold their Aſſemblies apart.

About the Year 350, *Leontius* of *Phrygia*, call'd the *Eunuch*, who was an *Arian*, and was put in the See of *Antioch*, deſired the *Euſtathians* to perform their Service in that Church; which they accepting, the Church of *Antioch* ſerv'd indifferently both the *Arians* and *Catholicks*.

This, we are told, gave Occaſion to two Inſtitutions, which have ſubſiſted in the Church ever ſince: The firſt was Pſalmody in two Choirs; but, M. *Baillet* thinks, that if they inſtituted an alternate Pſalmody between two Choirs, 'twas between two *Catholic* Choirs; and not by Way of Reſponſe to an *Arian* Choir. The ſecond was the Doxology, *Glory be to the Father, and the Son, and the Holy Ghoſt*. See DOXOLOGY.

This Conduct, which ſeem'd to imply a Kind of Communion with the *Arians*, gave great Offence to Abundance of Catholicks, who began to hold ſeparate Meetings; and thus form'd the Schiſm of *Antioch*. Upon this, the reſt, who continu'd to meet in the Church, ceas'd to be call'd *Euſtathians*, and that Appellation became reſtrain'd to the Diſſenting Party.

S. *Flavianus*, Biſhop of *Antioch* in 381, and one of his Succeſſors, *Alexander* in 482, brought to paſs a Coalition, or Re-union, between the *Euſtathians* and the Body of the Church of *Antioch*, deſcribed with much Solemnity by *Theodoret*, Eccl. *L.* III. *C.* 2.

EUSTATHIANS, was alſo a Sect of Hereticks, in the IVth Century; denominated from their Author *Euſtathius*, a Monk ſo fooliſhly fond of his own Profeſſion, that he condemn'd all other Conditions of Life.

He excluded married People from Salvation; prohibited his Followers from praying in their Houſes; and obliged them to quit all they had, as incompatible with the Hopes of Heaven.

He drew them out of the other Aſſemblies of the faithful, to hold ſecret ones with him; and made them wear a particular Habit: He appointed them to faſt on *Sundays*; and taught them that the ordinary Faſts of the Church were needleſs, after they had attained to a certain Degree of Purity, which he pretended to. He ſhew'd a World of Horror for Chappels built in Honour of Martyrs, and the Aſſemblies held therein.

Several Women, ſeduced by his Reaſons, forſook their Husbands, and Abundance of Slaves deſerted their Maſters Houſes. He was condemn'd in the Year 342, at the Council of *Gangres*, in *Paphlagonia*.

EUSTYLE, in Architecture, a Kind of Edifice, where the Pillars are placed at a moſt convenient Diſtance one from another; the Intercolumniations being all juſt two Diameters and a Quarter of the Column; except thoſe in the middle of the Face before and behind, which are three Diameters diſtant. See INTERCOLUMNIATION.

The *Euſtyle* is a Medium between the *Pycnoſtyle* and *Araeoſtyle*. See PYCNOSTYLE, *&c.*

The Word is *Greek*, being form'd of εὖ, *bene*, well, and στύλος, *Column*.

Vitruvius, L. III. *C.* 2. obſerves, that the *Euſtyle* is the moſt approved of all the Manners of Intercolumniation; and that it ſurpaſſes all the reſt, in Conveniency, Beauty, and Strength.

EUTYCHIANS, ancient Hereticks, denominated from *Eutyches* the Archimandrite, or Abbot of a Monaſtery at *Conſtantinople*. See HERETIC.

The Averſion *Eutyches* bore to the Hereſy of *Neſtorius*, threw him into another Extreme, not leſs dangerous than that he ſo warmly oppoſed; tho' ſome Paſſages in St. *Cyril*, which rais'd the Unity of the Perſon of *Jeſus Chriſt* very high, contributed, likewiſe, to his Deluſion.

At firſt he held, that the *Logos*, Word, brought his Body down with him from Heaven: which was a near Approach to the Hereſy of *Apollinarius*: And tho' he afterwards teſtified the contrary in a Synod at *Conſtantinople*, wherein he was condemned; yet he could not be brought to acknowledge, that the Body of *Jeſus Chriſt* was conſubſtantial with ours.

In Effect, he did not ſeem quite ſteady, and conſiſtent in his Sentiments; for he appear'd to allow of two Natures, even before the Union; which was apparently a Conſequence he drew from the Principles of the Platonic Philoſophy, which ſuppoſes a Pre-exiſtence of Souls; accordingly, he believed that the Soul of *Jeſus Chriſt* had been united to the Divinity before the Incarnation; but then he allow'd no Diſtinction of Nature in *Jeſus Chriſt*, ſince his Incarnation.

See the Diſſertation of Fa. *Hardouin*, *de Sacramento Altaris*, wherein that Jeſuit endeavours to unfold all the Sentiments of the *Eutychians*.

This Hereſy was at firſt condemned in a Synod held at *Conſtantinople*, by *Flavian* in 448: Was re-examined, and fulminated in the General Council of *Chalcedon* in 451. The Legates of Pope *Leo*, who aſſiſted thereat, maintain'd, that it was not enough to define that there were two Natures in *Jeſus Chriſt*, but inſiſted ſtrenuouſly, that to remove all Equivocation, they muſt add theſe Terms, without *being changed, or confounded, or divided*.

But this Decree of the Council of *Chalcedon*, at which aſſiſted upwards of 630 Prelates, did not ſtop the Progreſs of *Eutychianiſm*: Some Biſhops of *Egypt*, who had attended at the Council, upon their Return, proclaimed openly, that St. *Cyril* had been condemned, and *Neſtorius* acquitted therein: Which occaſioned great Diſorders; ſeveral Perſons, under Pretence of contending for the Sentiments of St. *Cyril*, making no Scruple of weakening the Authority of the Council of *Chalcedon*.

The Hereſy of the *Eutychians*, which made a very great Progreſs throughout the *Eaſt*, at length became divided into ſeveral Branches. *Nicephorus* makes mention of no fewer than twelve: Some call'd *Schematici*, or *Apparentes*, as only attributing to *Jeſus Chriſt*, a Phantom, or Appearance of Fleſh, and no real Fleſh: Others, *Theodoſians*, from *Theodoſius* Biſhop of *Alexandria*: Others, *Jacobites*, from one *James*, *Jacobus*, of *Syria*; which Branch eſtabliſh'd it ſelf principally in *Armenia*, where it ſtill ſubſiſts. See JACOBITES.

Others were call'd *Acephali*, q. d. without Head, and *Severians*, from a Monk call'd *Severus*, who ſeiz'd on the See of *Antioch* in 513. See ACEPHALI and SEVERIANS.

Theſe laſt were ſubdivided into Five Factions, *viz. Agnoetes*, who attributed ſome Ignorance to *Jeſus Chriſt*: Followers of *Paul*, Μελανίται, that is, *the Black*; *Angelites*, thus call'd from the Place where they aſſembled. *Adrites* and *Conovites*, with divers others.

EUTYCHIANS, were alſo a Sect half *Arian*, half *Eunomian*; which aroſe at *Conſtantinople*, in the IV*th* Century.

It being then a Matter of mighty Controverſy among the *Eunomians* at *Conſtantinople*, whether or no the Son of God knew the laſt Day and Hour of the World; particularly with Regard to the Paſſage in the Goſpel of St. *Matthew*, C. XXIV. Ver. 36. Or rather that in St. *Mark*, XIII. 31. where 'tis expreſs'd, that *the Son did not know it, but the Father only*: *Eutychius* made no Scruple to maintain, even in Writing, that the Son did know it: Which Sentiment diſpleaſing the Leaders of the *Eunomian* Party, he ſeparated from 'em, and made a Journey to *Eunomius*, who was then in Exile.

That Heretick acquieſced fully in *Eutychius*'s Doctrine, that the Son was not ignorant of any Thing the Father knew, and admitted him to his Communion: *Eunomius* dying ſoon after, the chief of the *Eunomians* at *Conſtantinople*, refuſed to admit *Eutychius*; who, upon this, form'd a particular Sect of ſuch as adhered to him, call'd *Eutychians*.

This ſame *Eutychius*, with one *Theophronius*, as was ſaid in *Sozomen*'s Time, were the Occaſions of all the Changes made by the *Eunomians* in the Adminiſtration of Baptiſm; which conſiſted, according to *Nicephorus*, in only making one Immerſion, and not doing it in the Name of the Trinity, but into the Death of *Jeſus Chriſt*.

Nicephorus calls the chief of this Sect, not *Eutychius*, but *Eupſychius*, and his Followers EUNOMIOEUPSYCHIANS.

EWRY, an Office in the King's Houſhold, where they take Care of the Linen for the King's own Table; lay the Cloth, and ſerve up Water in Silver *Ewers* after Dinner; whence the Office hath its Name.

EXACERBATION, the ſame as *Paroxyſm*. See PAROXYSM.

EXACTION, in Law, is a Wrong done by an Officer, or one pretending to have Authority, in taking a Reward or Fee, for that which the Law allows not.

The Difference between *Exaction* and Extortion conſiſts in this, that Extortion is where the Officer takes more than his Due: And *Exaction*, where he wreſts a Fee or Reward, when none is due. See EXTORTION.

EXAGGERATION, in Rhetoric, a Figure whereby we enlarge, or heighten Things; making them appear more than they really are, whether as to Goodneſs, Badneſs, or other Qualities.

The Word is form'd of the Latin, *Exaggero*, I exaggerate; which is a Compound of *ex*, and *agger*, a Mound, or Elevation of Earth.

EXAGGERATION, in Painting, is a Method of repreſenting Things, wherein they are charged too much, or marked too ſtrong; whether in reſpect of the Deſign, or the Colouring.

Exagge-

Exaggerating differs from *Caricatouring*, in that the latter preverts, or gives a Turn to the Features, *&c.* of a Face, which they had not; whereas the former only improves, or heightens upon what they had.

The latter is a Kind of Burleſque on the Objects, and is generally meant to ridicule. The former is generally an exalting, or enlivening of the Beauties of the Object. See CARICATOURING.

The Painter is obliged to have Recourſe to an *Exaggeration of Colours*, both on Account of the Surface of his Ground, the Diſtance of his Work; and of Time, and the Air which diminiſh and weakens the Force of the Colours. But this *Exaggeration* muſt be conducted in ſuch manner, as not to put the Objects out of their natural Characters. *De Piles.*

EXAGON, EXACHORD, EXAMILION, *&c.* See HEXAGON. HEXACHORD. HEXAMILION, *&c.*

EXALTATION, *Elevation*, is chiefly uſed in a figurative Senſe, for the raiſing, or advancing a Perſon to ſome Eccleſiaſtical Dignity; and particularly, the Papacy.

The Term *Exaltation*, is in ſome meaſure appropriated to the Pope, and expreſſes his Inauguration, Coronation, taking of Poſſeſſion, and the Beginning of his Pontificate. See POPE.

EXALTATION *of the Croſs*, EXALTATIO CRUCIS, is a Feaſt of the Church, held on the 14*th* of *September*, in Memory, as is generally ſuppoſed, of this, that the Emperor *Heraclius* brought back the true Croſs of *Jeſus Chriſt* on his Shoulders, to the Place on Mount *Calvary*, from which it had been carried away fourteen Years before, by *Coſroe* King of *Perſia*, at his taking of *Jeruſalem*, under the Reign of the Emperor *Phocas*. See CROSS.

The Croſs was deliver'd up, by a Treaty of Peace made with *Siroe*, *Coſroe*'s Son. --- The Inſtitution of this Feaſt is commonly ſaid to have been ſignalized by a Miracle; in that *Heraclius* could not ſtir out of *Jeruſalem* with the Croſs, while he had the Imperial Veſtments on, enrich'd with Gold and precious Stones; but bore it with Eaſe in a common Dreſs.

But long before the Empire of *Heraclius*, there had been a Feaſt of the ſame Denomination obſerved both in the *Greek* and *Latin* Churches, on Occaſion of what our Saviour ſaid in St. *John* XII. 32. *And I, if I be* exalted, or *lifted up, will draw all Men unto me.* And again, in Ch. VIII. ver. 28. *When they ſhall have* Exalted, or *lift up the Son of Man, then ſhall ye know that I am he.* Fa. *Du Soulier* aſſures us, that M. *Chaſtelain* was of Opinion, this Feaſt had been inſtituted, at leaſt at *Jeruſalem*, 240 Years before *Heraclius*.

The Feaſt of the Dedication of the Temple built by *Conſtantine*, was held, ſays *Nicephorus*, on the 14*th* of *September*, the Day the Temple had been conſecrated on, in the Year 335; and this Feaſt was call'd, *the Exaltation of the Croſs*, by reaſon it was a Ceremony therein, for the Biſhop of *Jeruſalem* to aſcend a high Place built by *Conſtantine* for that Purpoſe, in manner of a Pulpit, call'd by the *Greeks*, the *Sacred Myſteries of God*, or *the Holineſs of God*; and there hoiſt up the Croſs for all the People to ſee it.

EXALTATION, in Phyſicks, is the Act, or Operation of elevating, purifying, ſubtilizing, or perfecting any natural Body, its Principles and Parts; as alſo the Quality, or Diſpoſition, which Bodies acquire by this Operation. See MATURATION and PURIFICATION.

'Tis this *Exaltation* of the ſulphureous Part in the Straw-berries, that gives them their agreeable, vinous Taſt. *Lemery.* --- A gentle and temperate Heat of the Body, *Exalts* and diſengages the moſt volatile Parts of our Food, and diſpoſes 'em for Nutrition.

The Term *Exaltation*, is peculiarly affected by the Chymiſts and Alchymiſts, who imagining it to have ſome extraordinary Emphaſis, are uſing it at every Turn. Moſt ſulphureous Matters, much *Exalted*, are obſerved to be of a red Colour.

EXALTATION, in Aſtrology, is a Dignity which a Planet acquires in certain Signs, or Parts of the Zodiac; which Dignity is ſuppoſed to give 'em an extraordinary Virtue, Efficacy, and Influence.

The oppoſite Sign, or Part of the Zodiac, is call'd the *Dejection* of the Planet. See DEJECTION.

Thus, the fifteenth Degree of *Cancer*, is the *Exaltation* of *Jupiter*, according to *Albumazar*, by reaſon it was the Aſcendant of that Planet at the Time of the Creation: That of the Sun, is in the 19*th* Degree of *Aries*; and its Dejection in *Libra*: That of the Moon, is in *Taurus*, &c. *Ptolomy* gives the Reaſon hereof in his firſt Book *de Quadrup.*

EXAMEN, or EXAMINATION, an exact and careful Search, or Inquiry; in Order to diſcover the Truth, or Falſhood, of a Thing.

The Way of Authority is, without Compariſon, more eaſy, and better proportion'd to the Reach and Capacity of ſimple Man, than the Way of Diſcuſſion and *Examen. Nicole.*

Such a Perſon had his Houſe robb'd; and has made a ſevere *Examination* of all his Domeſticks, to find out the Criminal. A Student ſtands a rigorous *Examination* to be admitted to a Degree of Maſter, Batchelor, Doctor, *&c.* See DEGREE.

Self EXAMINATION, is a Point much inſiſted on by Divines, and particularly the antient Fathers, by Way of Preparation, or Introduction, to Repentance. S. *Ignatius* reduces it to five Points, *viz.* 1°. A returning of Thanks to God for his Benefits. 2°. A Begging of Grace and Light to know and diſtinguiſh our Sins. 3. A running over all our Actions, Occupations, Thoughts and Words, in Order to learn what has been offenſive to God. 4°. A Begging of Pardon, and conceiving a ſincere Sorrow for having diſpleaſed him. And 5°. A making a firm Reſolution not to offend him any more, and taking the neceſſary Precautions to preſerve us from it.

EXAMINERS, in Chancery, are two Officers, whoſe Buſineſs is to *examine*, on Oath, the Witneſſes produced on both Sides; upon ſuch Interrogatories as the Parties to the Suit do exhibit for the Purpoſe. See CHANCERY.

EXAMPLE, in Rhetoric, *&c.* is defined an imperfect Kind of Induction, or Argumentation; whereby it is proved that a Thing which has happen'd on ſome other Occaſion, will happen again on the preſent one; from the Similitude of the Caſes.

As, the Wars of the *Thebans*, againſt their Neighbours the *Phocians*, was ruinous; conſequently, that of the *Athenians* againſt their Neighbours, will likewiſe be ruinous.

EXANTHEMA, in Medicine, an *Eruption*, or *Efflorescence* on the Skin. See ERUPTION, *&c.*

Exanthemata are of two Kinds: The one only a diſcolouring of the Skin; ſuch are the Meaſles, the purple Spots in malignant Fevers, *&c.* --- The other are little Eminences, or *Papillæ*, ſtanding out from the Skin, not unlike Puſtles, only ſmaller. See MEASLES, *&c.*

The Word is form'd of the *Greek*, ἐξανθέω, *Effervesco*, *Efflorescо*, I flower, or work out.

EXARCH, EXARCHUS, in Antiquity, a Name given, by the Emperors of the *Eaſt*, to certain Officers ſent into *Italy*, in Quality of Vicars, or rather *Præfects*, to defend what Part of *Italy* was yet under their Obedience, particularly the City of *Ravenna*, againſt the *Lombards*, who had made themſelves Maſters of the greateſt Part of the reſt.

The Reſidence of the *Exarch* was at *Ravenna*; which City, with that of *Rome*, were all that was left the Emperors.

The firſt *Exarch* was the Patrician *Boethius*, famous for his Treatiſe, *de Conſolatione Philoſophiæ*; appointed in 568 by the younger *Juſtin*. The *Exarchs* ſubſiſted about 185 Years; and ended in *Eutychius*; under whoſe *Exarchate*, the City of *Ravenna* was taken by the *Lombard* King *Aſtulphus*, or *Aſtolphus*.

Fa. *Papebroch*, in his *Propylæum ad Acta Sanct. Maii*, has a Diſſertation on the Power and Office of the *Exarchus* of *Italy*, in the Election and Ordination of the Pope.

The Word is form'd from the *Greek*, ἔξαρχος, *Chief*, *Commander*, and particularly in the Factions of *Italy*.

Homer, *Philo*, and other antient Authors, give the Name *Exarch* to the *Choragus*, or Maſter of the Singers, in the antient Chorus's; or he who ſung firſt: The Word ἄρχω, or ἄρχομαι, ſignifying equally to *begin*, and to *command*. See CHORAGUS.

The Emperor *Frederic* created *Heraclius* Archbiſhop of *Lyons*, a Deſcendant of the illuſtrious Houſe of *Montboiſſier*; created him, we ſay, *Exarch* of the whole Kingdom of *Burgundy*: A Dignity, till that Time, unknown any where but in *Italy*, particularly in the City of *Ravenna*. Meneſtrier *Hiſt. de Lyons.*

EXARCH *of a Dioceſe* was, antiently, the ſame Thing with *Primate*. This Dignity was inferior to the Patriarchal, yet greater than the Metropolitan. See PRIMATE.

EXARCH, is alſo an Officer ſtill ſubſiſting in the *Greek* Church. See GREEK.

The Modern *Exarch* is a Kind of Deputy, or Legat *a latere* of the Patriarch; whoſe Office it is to viſit the Provinces allotted him, in order to inform himſelf of the Lives and Manners of the Clergy; take Cognizance of Eccleſiaſtical Cauſes, the Manner of celebrating Divine Service, the Adminiſtration of the Sacraments, particularly Confeſſion; the Obſervance of the Canons, Monaſtical, Diſcipline, Affairs of Marriages, Divorces, *&c.* But above all, to take Account of the ſeveral Revenues, which the Patriarch receives from ſeveral Churches; particularly, as to what regards the collecting the ſame.

The *Exarch*, after having greatly enrich'd himſelf in his Poſt, frequently riſes to the *Patriarchate* himſelf. See PATRIARCH.

EXARCH, is alſo uſed, in the *Eaſtern*-Church Antiquity, for a General, or Superior over ſeveral Monaſteries: The ſame that we otherwiſe call *Archimandrite*; being exempted, by the Patriarch of *Conſtantinople*, from the Juriſdiction of the Biſhops; as are now the Generals of the *Romiſh* Monaſtic Orders. See GENERAL, *&c.*

In 493, *Sebas* was eſtabliſh'd *Exarch*, or Chief of all the *Anchorites* within the Territory of *Jeruſalem*. *Du Bois.*

EXARCH was alſo a military Dignity. See *Du Cange.*

EXARTICULATION, a *Diſlocation* of ſome of the jointed Bones; or a Breach of Articulation. See DISLOCATION.

EXCALCEATION, the Act of putting off the Shoes. See SHOE.

Among the *Hebrews*, there was a particular Law, whereby a Widow, whom her Husband's Brother refuſed to marry, had a Right to ſummons him into a Court of Juſtice; and upon his Refuſal, might *diſcalceate* him, *i. e.* pull off one of his Shoes, and ſpit in his Face: Which were both Actions of great Ignominy among that People.

The Houſe of the Perſon who had undergone them, was thenceforward call'd the Houſe of the *Diſcalceated*.

EXCAVATION, the Act of hollowing, or digging a Cavity; particularly in the Ground.

The *Excavation* of the Foundations of a Building, by the *Italians* call'd *Cavaſione*, is ſettled by *Palladio* at a ſixth Part of the Height of the whole Building. Unleſs there be Cellars under Ground, in which Caſe he would have it ſomewhat more. See FOUNDATION.

The Word is Latin, *Excavatio*, form'd of *ex* and *cavus* hollow, or *Cavea*, a Pit, &c.

EXCELLENCY, a Quality, or Title of Honour, given to Ambaſſadors, and other Perſons, who are not qualified for that of *Highneſs*; as not being Princes; and yet are to be elevated above the other inferior Dignities. See QUALITY.

In *England* and *France*, the Title is now peculiar to Embaſſadors; but very common in *Germany* and *Italy*. Thoſe it was firſt affected to, were the Princes of the Blood, of the ſeveral Royal Houſes; but they quitted it for that of Highneſs, upon ſeveral great Lords aſſuming *Excellency*. See HIGHNESS.

The Embaſſadors have only bore it ſince the Year 1593, when *Henry* IV. of *France* ſent the Duke *de Nevers*, Embaſſador to the Pope; where he was firſt complemented with *Excellency*. After that, the ſame Appellation was given to all the other Embaſſadors reſiding at that Court: From whence the Practice ſpread thro' the other Courts. See EMBASSADOR.

The Embaſſadors of *Venice* have only had it ſince the Year 1636, when the Emperor and King of *Spain* conſented to allow it them.

The Embaſſadors of Crown'd Heads, diſpute the giving that Title to the Embaſſadors from the Princes of *Italy*; where the Practice is not eſtabliſh'd.

The Court of *Rome* never allow the Quality of *Excellency* to any Embaſſador who is a Churchman; as judging it a ſecular Title.

The common Rules and Meaſures of *Excellency* are a little varied with Reſpect to the Court of *Rome*. — The Embaſſadors of *France*, at *Rome*, antiently gave the Title *Excellency* to all the Relations of the Pope then reigning; to the Conſtable *Colonne*, to the Duke *de Bracciano*, and the eldeſt Sons of all thoſe Lords; as alſo the Dukes *Savelli*, *Ceſarini*, &c. But they are now more reſerved in this Reſpect; tho' they ſtill treat all the *Roman* Princeſſes with *Excellency*.

The Court of *Rome* in their Turn, and the *Roman* Princes, beſtow the ſame Title on the Chancellor, Miniſters, and Secretaries of State, and Preſident of the Soveraign Courts in *France*; the Preſidents of the Councils in *Spain*; the Chancellor of *Poland*; and thoſe in the firſt Dignities of other States, if they be not Eccleſiaſticks.

The Word *Excellency*, was antiently a Title of Kings and Emperors; accordingly, *Anaſtaſius* the Library-Keeper, calls *Charlemaign*, His *Excellency*. The ſame Title is ſtill given to the Senate of *Venice*; where, after ſaluting the Doge under the Title of *Sereniſſimo*, the Senators are addreſſed to under *Your Excellencies*. The *Liber Diurnus Pontif. Rom.* gives the Title *Excellency* to the Exarchs and Patricians. See TITLE.

The *Italians* and *French* have improved on ſimple *Excellency*; and made *Excellentiſſimus*, *Excellentiſſimo*, which has been beſtowed on certain Popes, Kings, *&c.*

EXCEPTION, a Reſerve; or ſomething ſet aſide, and not included in the Rule. See RULE.

'Tis become proverbial, that there is no Rule, but has its *Exceptions*; intimating, that it is impoſſible to comprehend all the particular Caſes under one and the ſame Maxim. 'Tis dangerous following the *Exception*, preferably to the Rule.

EXCEPTION, in Law, is a Stop, or Stay to an Action. See ACTION.

The Term is uſed indifferently both in the Civil, and Common Law; and in each, *Exceptions* are divided into *Dilatory* and *Peremptory*. See DILATORY and PEREMPTORY.

Exception, in a general Senſe, includes all the Kinds of Defence, or Vindication, which a Perſon, againſt whom a Proceſs is brought, makes uſe of to prevent, or retard its Effect. See PLEA, *&c.*

The Civilians reckon three Kinds of *Exception*; viz. *Declinatory*, whereby the Authority of the Judge, or Court, is diſallowed; *Dilatory*, intended to defer, or prevent the Thing from coming to an Iſſue; and *Peremptory*, which are proper and pertinent Allegations, founded on ſome Preſcription that ſtands for the Defendant; as Want of Age, or other Quality in the Party; or other Matter, that may be decided without entering into a full Diſcuſſion of the Merits of the Cauſe.

EXCEPTIVE *Propoſitions*, are thoſe wherein ſomething is affirm'd of a whole Subject, abating ſome one of the Parts thereof, which is *excepted* by a Particle, thence call'd an *Exceptive* Particle, or Particle of *Exception*. See PROPOSITION.

Thus, all the Sects of the antient Philoſophers, except the *Platoniſts*, held God to be Corporeal. Covetouſneſs is inexcuſable in Reſpect of every Thing, but Time.

EXCESS, is diſtinguiſh'd into *Natural* and *Moral*: The firſt, is a Part whereby one Quantity is greater than another. — Thus, we ſay, this Line is longer than that; but the *Exceſs* is inconſiderable.

The latter, is an Intemperance, or going beyond the juſt Bounds and Meaſures preſcribed to any Thing: Thus, we ſay, *Exceſs* in Wine, Women, *&c.* is prejudicial to the Health.

EXCHANGE, a *Permutation*, or an Agreement; whereby one Thing is truck'd or given for another. See PERMUTATION.

The firſt Commerce carried on among Men, was by *Exchange*; People furniſhing each other mutually with what Things they wanted: But ſuch *Exchanges* were clogg'd with two conſiderable Difficulties. 1°. On Account of the unequal Values of Commodities: And, 2°. In that every Body had not juſt what might accommodate him he would *Exchange* withal. See COMMERCE.

To remove theſe Inconveniencies, Money was invented for a common Medium, and inſtead of *Exchanging*, Buying and Selling, was introduced. See MONEY.

Yet there are Nations among whom the Primitive Way of *Exchange* ſtill obtains: And even among the moſt civilized People, there are frequent Occaſions, wheron they have Recourſe to this Method. — Such, for Inſtance, is the Trade of ſeveral Cities of the *North*, and *Baltic* Sea, where the French *exchange* their Wines and Brandies for Woods, Metals, Hemps and Furs.

The Commerce of Bills of *Exchange* is, it ſelf, a pure trading by *Exchange*; a Truck of Money for Money; of Money, for Inſtance, which I have here at *London*, for what a Merchant, or Banker, has at *Venice*, *Rome*, *Amſterdam*, or *Conſtantinople*. In this Senſe.

EXCHANGE properly denotes the Buſineſs, or Trade of Money, carried on between one Place and another, by Means of Bills of *Exchange*; i. e. by giving Money in one City, and receiving a Bill to entitle you to receive the Value in another City. See *Bill of* EXCHANGE.

EXCHANGE, is alſo uſed for the Profit, which a Merchant, Negotiant, or Broker, receives for a Sum of Money paid, and for which a Bill of *Exchange* is drawn payable in ſome other Place, and by ſome other Perſon; for the Intereſt of his Money, or the Salary and Reward of his Negociation.

This Profit is exceeding various; being ſometimes 2, ſometimes 3, 4, or even 10 and 15 *per Cent.* according as the Alloy of the Species differs, or as Money is more or leſs plentiful, or Bills of *Exchange* more or leſs ſcarce in the Places. This Kind of *Exchange* is ordinarily call'd *Real Exchange*, and ſometimes *Mercantile* and mixt *Exchange*. See PAR.

The Price of *Exchange* is regulated according to the Courſe of the Place where the Bill is drawn, or that of the Place where the Remittance is to be made: Some pretend that 'tis the City of *Lyons* gives the Law, or Rule, for the Price of *Exchange* to moſt of the other Cities of *Europe*.

The Word *Exchange*, according to ſome, is derived from that perpetual Alteration obſerv'd in the Price of this *Exchange*, which is ſometimes higher, and ſometimes lower; there being ſometimes ſomewhat to get, and ſometimes to loſe thereby; and ſometimes nothing to be either got or loſt: As is the Caſe when the *Exchange* is at Par.

From

From this Diverſity in the Price of *Exchange*, ariſes that common Proverb, *The Exchange and the Wind are often changing.*---But the more natural Way of deriving the Word *Exchange*, is from this, that a Man here *exchanges* his Money for a Bill; or that he *changes* preſent Money for abſent Money; or changes his Debtor.

Exchange is not to be look'd on as a *Loan*; from which it differs, in that in the one, the Riſque, or Danger, lies on the Perſon who borrows; and in the other, on him who lends. It likewiſe differs from *Intereſt*, in that *Exchange* is not paid in proportion to the Time, which Intereſt is. See INTEREST and LOAN.

EXCHANGE, is alſo uſed in divers Places for the Due, or Profit, allow'd for the changing of one Sort, or Species, of Money for another. ---- This is particularly call'd *Small Exchange*, *Natural Exchange*, *Pure Exchange*, &c.

EXCHANGE, is ſometimes alſo uſed for the *Agio*, or Profit, allowed for the Monies advanced in any one's Behalf. See AGIO.

EXCHANGE, is alſo a public Place, in moſt conſiderable Cities, wherein the Merchants, Negotiants, Agents, Bankers, Brokers, Interpreters, and other Perſons concern'd in Commerce, meet, on certain Days, and at certain Times thereof; to confer, and treat together of Matters relating to *Exchanges*, Remittances, Payments, Adventures, Aſſurances, Freightments, and other Mercantile Negotiations both by Land and Sea.

In *Flanders*, *Holland*, and ſeveral Cities of *France*, theſe Places are call'd *Bourſes*; at *Paris* and *Lyons*, *Places de Change*; and in the Hanſe Towns, *Colleges of Merchants*. See BURSE.

Theſe Aſſemblies are held with ſo much Exactneſs, and Merchants and Negotiants are ſo indiſpenſably required to attend at them; that a Perſon's Abſence alone, makes him be ſuſpected of a Failure or Bankrupcy. See BANKRUPT.

The moſt conſiderable *Exchanges* in *Europe*, are that of *Amſterdam*; and that of *London*, call'd the *Royal Exchange*. See ROYAL *Exchange*.

That of *Antwerp* was little inferior to either of them; till the Port of that City was render'd impracticable by the *Hollanders*, to bring the Commerce thereof to themſelves.

Even in the Time of the antient *Romans*, there were Places for the Merchants to meet, in moſt of the conſiderable Cities of the Empire. That built at *Rome*, in the Year of the City 259, 459 Years before our Saviour, under the Conſulate of *Appius Claudius*, and *Publius Servilius*, was call'd *Collegium Mercatorum*; whereof we have ſtill ſome Remains, call'd by the modern Romans *Loggia*, the Lodge; and now, uſually, the Place of St. *George*. See COLLEGE.

EXCHANGE, in Law, is the Compenſation which the Warrantor muſt make the *Warrantee*, Value for Value, if the Land warranted be recovered from the *Warrantee*, Bracton. *L.* II. See WARRANTY.

The King's EXCHANGE, is the Place appointed by the King for *Exchange* of Plate, or Bullion for the King's Coin. Theſe Places have formerly been divers; but now there is only one, *viz.* that of the Tower of *London*, joyn'd with the Mint. See MINT.

Bill of EXCHANGE, is a Writing given by a Merchant, or other Negotiant, to procure a Sum of Money to be paid the Bearer thereof, in ſome diſtant Place; in Conſideration of a like Sum paid the Writer, by the Perſon in whoſe Behalf the Bill is drawn. See BILL *of Exchange*.

What we call *Rechange*, is the Due, or Premium of a ſecond *Exchange*, when a Bill is proteſted. See RECHANGE.

EXCHANGE-*Brokers*, are Perſons who make it their Buſineſs to know the Alteration of the Courſe of *Exchange*, to inform Merchants how it goes, and to notify to thoſe who have Money to receive or pay beyond Sea, who are proper Perſons for the *Exchanging* and doing thereof. See BROKER.

When the Matter is accompliſhed, that is, the Money paid, they have for Brokage 2 Shillings *per* 100 Pound Sterling.

But of late, the Humour of gaining, and dealing in Stocks, hath ſo prodigiouſly increaſed the Number of Perſons who act as Brokers, that their Buſineſs, and their Pay, is very uncertain.

EXCHANGERS, are thoſe who return Money beyond Sea, by Bills of *Exchange*, &c. call'd antiently alſo *Excambiators*, and ſince Remitters. See EXCAMBIATOR.

EXCHEQUER, or ſimply, CHEQUER, a *Cheſs-Board*; or a Frame divided into 64 Squares, of two Colours, whereon to play at Draughts, Cheſs, &c.

The Word is form'd from the French *Eſchequier*, which ſignifies the ſame Thing. See CHESS.

Hence, Trees are ſaid to be planted *Ex-chequer*-wiſe, in *Quincuncem*, when diſpoſed ſo as to form divers Squares repreſenting a *Checquer*.

EXCHEQUER, is alſo a Chamber, or Apartment in *Weſtminſter-Hall*, conſiſting of two Parts; the *Court of Exchequer*, and the *lower Exchequer*.

The *Court of* EXCHEQUER, is a Court, wherein are tried all Cauſes relating to the King's Treaſury, or Revenue; as, touching Accounts, Diſburſements, Cuſtoms, Fines, &c. See TREASURY.

It conſiſts of Seven Judges, *viz.* the Lord Treaſurer, the *Chancellor of the Exchequer*, the Lord Chief *Baron*, and three other *Barons of the Exchequer*, with one Curſitor Baron. See CHANCELLOR, &c.

The Lord Chief Baron is the principal Judge of the Court. See BARONS *of the Exchequer*.

The Court of *Exchequer* is divided into two: The one *of Law*, the other *of Equity*.

All Judicial Proceedings according to Law, are ſtyled, *coram Baronibus* only: But the Court of Equity held in the *Exchequer Chamber*, is *coram Theſaurario, Cancellario, & Baronibus*; before the Treaſurer, Chancellour, and Barons.

For a long Time after the Conqueſt, there ſate in the *Exchequer*, both Spiritual and Temporal Barons of the Realm: But of later Times, there have ſat in their Places other Judges, who, tho' no Peers of the Realm, yet retain the original Denomination.

The common Opinion of our Hiſtorians is, that this Court was erected by *William the Conquerour*, ſoon after his having obtain'd the Kingdom; and that it took its Form from the *Echequier*, or *Scaccarium*, eſtabliſh'd in *Normandy* long before that Time. In Effect, the two *Exchequers* have this in common, that the *Norman* was the Supreme Court of that Dutchy, or a general Aſſize whereat all the great Lords attended, to judge finally of all Concerns of the greateſt Importance; and was ambulatory: And that the *Engliſh Exchequer* was a Court of the higheſt Juriſdiction; that the Acts thereof were not to be examined by any of the ordinary Courts; that it was the Repoſitory of the Records of all the other Courts; and that it was to be held in the King's Court, and before him; and that it was concerned in the Prerogative, as well as the Revenue of the Crown.

The immediate Profits of the Crown, as of Franchiſes, Lands, Tenements, Hereditaments, Debts, Duties, Accounts, Goods, Chattels, all Diſburſements, Seizures, and Fines, impoſed on the Subject, &c. are within the Juriſdiction of the *Exchequer*. And the King's Attorney may exhibit Bills, for any matter concerning the King in Inheritance or Profits; ſo alſo may any Perſon, who finds himſelf aggrieved in any Cauſe proſecuted againſt him on Behalf of the King, or any Patent by Grant of the King, exhibit his Bill againſt the King's Attorney, &c. to be relieved by Equity. See COURT, KING, &c.

To this Court belong two Offices, the King's Remembrancer's Office, and the Lord Treaſurer's Remembrancer. See REMEMBRANCER.

Authors are divided about the Origin of the Denomination of this Court, *Exchequer*. *Du Cange* is of Opinion, it came from a *Chequer*-wrought Carpet, covering the great Table in that Court; or from the Pavement of the Court, which was *Chequer*-wiſe: Others, from the Accomptants in this Office uſing *Chequers*, or Cheſs-Boards, in their Computations: *Nicod*, from the Court's being compoſed of different Qualities, as the Pieces or Partitions in a Cheſs-Board: Others, by reaſon People pleaded here, ranged, as it were, in Battle array, as they do at Cheſs. *Menage*, after *Pithou*, &c, derives the Word from the German, *Schichen*, *to ſend*; by reaſon this Court ſucceeded the Commiſſioners call'd in ancient Titles, *Miſſi Dominici*. *Spelman*, &c. derives it from *Schatz*, which ſignifies, Treaſure: Whence *Polydore Virgil* alſo writes it, *Scattarium*, inſtead of *Scaccharium*. Laſtly, *Somner* derives it from *Schaen*, to raviſh; which, according to him, is the Character of the Treaſury.

The *Lower* EXCHEQUER, call'd alſo the *Receipt of the Exchequer*, is the Place wherein the King's Revenue is receiv'd and diſburſed. See REVENUE and TREASURY.

The principal Officers whereof are, the *Lord Treaſurer*, a *Secretary of the Treaſury*, a *Chancellor of the Exchequer*, two *Chamberlains of the Exchequer*, an *Auditor of the Receipts of the Exchequer*, four *Tellers*, a Clerk of the *Pells*, an Uſher of the *Receipt*, a *Tally Cutter*, &c. See LORD TREASURER, CHANCELLOR *of the Exchequer*, SECRETARY, CHAMBERLAIN, TELLER, PELLS, TALLY, &c.

Black Book of the EXCHEQUER, is a Book under the keeping of the two Chamberlains of the *Exchequer*; ſaid to have been compoſed in 1175, by *Gervais* of *Tilbury*, Nephew of King *Henry* II. and divided into ſeveral Chapters.

Herein is contain'd a Deſcription of the Court of *England*, as it then ſtood, its Officers, their Ranks, Privileges,

leges, Wages, Perquisites, Power, and Jurisdiction; the Revenues of the Crown, both in Money, Grain, and Cattel.

Here we find, that for One Shilling, as much Bread might be bought, as would serve a hundred Men a whole Day; that the Price of a fat Bullock was only Twelve Shillings; and a Sheep, Four, &c. *Larrey*, P. 1. *p.* 394. See also DOOMSDAY-*Book*.

EXCISE, a Duty, or Imposition, charged on Beer, Ale, Cyder, and other Liquors made for Sale, within the Kingdom of *England*, *Wales*, and Town of *Berwick* upon *Tweed*. See DUTY.

The Duty of *Excise*, was first granted to King *Charles* II. by Act of Parliament, in the Year 1660; during the Life of that Prince: It has been since continued and augmented by divers Parliaments, under the several succeeding Princes, and extended to *Scotland*. --- This Duty, as it now stands, on strong Beer and Ale, is at the Rate of 4*s.* and 9*d.* *per* Barrel; and upon small Beer 1*s.* 6*d.*

Now, Brewers being allow'd for Leekage of Beer, 3 Barrels in 23; and of Ale, 2 in 22; the neat *Excise* of a Barrel of strong Beer amounts to 4*s.* 1*d.* and $\frac{3}{23}$; of a Barrel of Ale, 4*s.* 3*d.* 3*q*; and of a Barrel of small Beer, 1*s.* 1*d.* 1*q.* $\frac{14}{15}$.

The *Excise* is one of the most considerable Branches of the King's Revenue. ---- It was formerly farmed out: But is now managed for the King by Seven *Commissioners*, who sit in the *General Excise Office*, receive the whole Product of the *Excise* of Beer, Ale, and other Liquors, and Malt, collected all over *England*, and pay it into the Exchequer. See EXCHEQUER.

Their Salary is 800*l.* *per Annum* each, and they are obliged by Oath, to take no Fee, or Reward, but from the King only. From the Commissioners of *Excise* there lies an Appeal to Five others, call'd *Commissioners of Appeals*. See COMMISSIONER.

The Number of Officers imploy'd in this Branch of the Revenue, is very great. Beside the Commissioners abovementioned, and their subordinate Officers, as Registers, Messengers, &c. There is an *Auditor of the Excise*, with his Clerks, &c. A Comptroller with his Clerks: A *Register*; *Secretary*; *Sollicitor*, *Cashier*; *Teller*; *Clerk of Securities*; *House-Keeper*; *Door-Keeper*; an *Accomptant for the Impress Money*; *General Gauger*; *General Accomptants*, *with their Assistants*; *Messengers*; a *Clerk for Stationary Wares*; *Examiners*; *Clerks for Supervisors Diaries*; *Accomptants*, *Examiners*, &c. for the *London* Distillery, Vinegar, Cyder, &c. *Examiners* for Malt; General and other *Surveyors* of the *London Brewery*; with *Assistants*, and other Officers, to the Number of an hundred: *General* and other *Surveyors of the London Distillery*, with other Officers, to the Number of 40; a *Collector*, and *Surveyor*, of *imported Liquors*; with a Land Surveyor at the Custom-House, &c.

The Yearly Salaries of all the Officers in the *Excise* Office, as computed by Mr. *Chamberlayne*, amounts to 23650*l.*

Beside which, there are in the Country fifty *Collectors*; and one hundred and fifty *Supervisors*; with a great Number of inferiour Officers, call'd *Gaugers*, or *Excisemen*; which may make the Number of Persons imploy'd in this Revenue about 2000.

The *Excise* on Beer, Ale, and other exciseable Liquors, even during a Time of War, is computed to amount to 1100000*l.* *per Annum*, and is collected from above 30000 People.

The Duty on Malt, with the additional Duty on Cyder, &c. amount to betwixt 6 and 7 hundred thousand Pound *per Annum*; and are collected from more Hands than the former.

And yet the whole Charge of the managing all these Duties, does not amount to Twenty Pence *per* Pound; which, considering every Thing, is esteem'd an Exactness and Frugality, not to be parallel'd in any Revenue levied in any other Country.

The Rates, with the neat Produce of the several Impositions of *Excise*, are as follow:

	L.
1°. A Duty of 2*s.* 6*d.* *per* Barrel, whereof 15*d.* *per* Barrel during his Majesty's Life; and the other 15*d.* hereditary; appropriated to the Civil Government, after a Deduction of 3700*l.* *per* Week for Annuities. Neat Produce	269837
2°. A Duty of 9*d.* *per* Barrel, granted 4 *Will.* and *M.* for 99 Years, commencing *Jan.* 1692. charged with 124866*l.* *per Ann.* for Annuities, and 7567*l.* *per Ann.* on Survivorship. Neat Produce	150106
3°. Another 9*d.* *per* Barrel perpetual, 5 *W.* and *M.* for Payment of 100000*l.* *per Ann.* to the Bank, as also several Annuities on Lives. Neat Produce	150094
4°. Another 9*d.* *per* Barrel, for 16 Years, continued 4 *Ann.* from *May* 1713. for 95 Years, for paying 140000*l.* *per Ann.* on Million Lottery Tickets; with Annuities of 99 Years, &c. Neat Produce 159898; --- which, with some additional Duties granted in a later Act may amount to	184898
5°. A Duty on Low Wines, and Spirits of the first Extraction, continued to the 24*th* of *June* 1710. Neat Produce	25257
6°. The *Excise* on Ale and Beer in *Scotland*, is farm'd at	33500
Total	*L.* 1006102

EXCLAMATION, in Rhetoric, a Figure, wherein, by raising the Voice, and using an Interjection, either expressly or understood, we testify an uncommon Warmth and Passion of Mind; and express the Magnitude of the Thing.

Such is, O Heavens! O Earth! &c. such is that of *Cicero* against *Catiline*, O Times! O Manners! This, the Senate knows, the Consul sees: And yet he lives. Lives, said I? Nay, and comes into the Senate!---- Or that for *Cælius*, *Proh Dii Immortales! Cur interdum in hominum sceleribus maximis aut connivetis, aut præsentis fraudis pœnas in diem reservatis! Oh præclarum, custodem, ovum, ut aiunt, Lupum!*

In *English*, the Interjections O! or Oh! Alas! or, Good God! are generally adjoyn'd in an *Exclamation*. In *Latin* they use *O! Heu! Eheu! Ah! Vah! Pro Superi! Pro Superum atque Hominum fidem:* Sometimes, however, the Interjection is understood, as, Wo is me! *Miserum me! Hoccine sæculum.* See INTERJECTION.

EXCLUSION, is that whereby a Thing is *Excluded*, i. e. shut out, or set aside.

As, a Crown imports an *Exclusion* from the Papacy: He appointed a Stranger his Heir, in *Exclusion* of all his own Relations.

Great Efforts were made towards the Close of the Reign of K. *Charles* II. to pass a *Bill of Exclusion*, for setting aside the Duke of *York*, the King's Brother, on Account of his being a Papist.

EXCLUSIONS, in Mathematicks, the *Method of Exclusions*, is a Way of coming at the Solution of Problems (in numerical Cases), by previously ejecting, or *excluding* out of Consideration, such Numbers, as are of no Use in solving the Question; whereby, of consequence, the Process may be regularly and judiciously abbreviated. See SOLUTION.

EXCLUSIVE, is sometimes used adjectively, for the Force, or Power of *Excluding*: as a Patent carries with it an *Exclusive* Privilege. See PRIVILEGE.

Soveraign Princes have *Exclusive* Voices in the Election of Popes, &c.

Sometimes it is also used adverbially: as Marriage is allow'd to the first Day of Lent, *Exclusive*; i. e. *Ash-Wednesday* is not comprized in the Permission. ----- He sent him all the *Gazettes*, from N°. 195, to N°. 300, *Exclusive*; i. e. all between those two Numbers, which themselves were excepted.

EXCLUSIVE *Propositions*, are those wherein the predicate so agrees with its Subject, as to agree with no other. See PROPOSITION.

Thus; Virtue alone makes Nobility: Nothing else renders a Man truly noble.

EXCOMMUNICATION, an Anathema, or Ecclesiastical Censure, and Punishment; whereby a Heretic is cut off from the Society of the Faithful; or an obstinate Sinner from the Communion of the Church, and the Participation of the Sacraments. See CENSURE and ANATHEMA.

The Power of *Excommunication* properly belongs to the Bishop; but he may delegate it to any grave Priest, with the Chancellor. See BISHOP.

Every *Excommunication* should be preceded by three public Admonitions, two Days, at least, distant from each other: But this is to be understood of *Excommunications* imposed by the Ecclesiastical Judge; for those imported by the Law, are incurr'd to all Intents and Purposes the Moment the Action is committed.

These latter are call'd *Excommunications* by the Canon, or *latæ sententiæ:* And are so very numerous, that it would be difficult, even for the best Canonists, to give an exact List of 'em: There are 50 in the *Clementines*; 20 in the Bull *in cœna Domini*, &c.

Rebuffe on the Concordat, reckons up 60 Penalties accruing upon *Excommunication*.

Excommunication is founded on a natural Right which all Societies have, of excluding out of their Body, such as violate the Laws thereof.

Excommunication is either *major* or *minor*, i. e. *greater* or *less:* The first, which is that understood when we say, simply, *Excommunication*, separates, or cuts off the Delinquent from all Communion and Fellowship with other Chri-

Chriſtians; diſables him from defending his Rights, bringing an Action at Law, &c. The ſecond, or leſſer, only excludes from the Communion of the Lord's Supper.

The greater *Excommunication*, call'd alſo *ab homine*, is when a Prelate, or his Deputy, *Excommunicates* any Man perſonally, and interdicts him all Society with the Faithful, all Uſe of Sacraments, &c.

The leſſer *Excommunication* is incurr'd *pleno jure*, by having any Communication with a Perſon *Excommunicated* in the greater *Excommunication*. And this too imports a Privation of Communion, but not an Interdiction from entering the Church, nor having Commerce with the Faithful.

Anciently, the *Excommunicated* were obliged to procure Abſolution from their Biſhop, and make Satisfaction to the Church in forty Days Time; otherwiſe they were compell'd to it by the ſecular Judge, by a Seizure of their Effects, Impriſonment of their Perſons, &c. In *France* they were allow'd a whole Year.

By an Edict of S. *Louis*, in the Year 1228. Vaſſals, Tenants, &c. were diſpenſed, or freed from the Oath of Fidelity, Homage, &c. they had taken to their Lords, or Superiours, till they had made their Submiſſion.

In *Spain*, to this Day, a Perſon who is not abſolved from his *Excommunication* in a Year's Time, is deem'd a Heretic. See HERETIC.

There was a Time, when the People were fully convinced, that the Bodies of *Excommunicated* Perſons, unleſs they were firſt abſolved, could not rot, but remain'd entire for ſeveral Ages, a horrible Spectacle to Poſterity; as is atteſted by *Matthew Paris*, and other Writers. And the *Greeks* are ſtill of the Opinion; and affirm, they have infinite Proofs thereof; as is ſhewn by *Du Cange*, from the Teſtimony of a vaſt Number of Authors.

By the Laws, an *Excommunicated* Perſon was not to be buried, but the Body flung into a Pit, or cover'd with a Heap of Stones; which was call'd *imblocare corpus*.

In the ancient Church, there were divers Degrees of *Excommunication:* In Effect, *Excommunication* did not always import an Interdiction of the Sacraments; but frequently, a Separation, or Kind of Schiſm between the ſeveral Churches, or a Suſpenſion of ſpiritual Communication between the Biſhops.

But, afterwards, the Occaſions of *Excommunications* growing more frequent, they began to uſe it with leſs Circumſpection and Reſervedneſs.

In the IX*th* Century, the Eccleſiaſticks were continually making Uſe of theſe ſpiritual Weapons, to repel any Violences, or Affronts, offer'd them; and Time and Familiarity rendering them more and more obdurate, they proceeded, by degrees, to Rigours unknown to Antiquity; as the *Excommunicating* of whole Families, or Provinces; the prohibiting the Exerciſe of all Religion therein; and even accompanying the *Excommunications* with horrible Ceremonies, and direful Imprecations.

In the X*th* and XI*th* Centuries, the Severity againſt the *Excommunicated* was carried to its Pitch: No body might come near them, not even their own Wives, Children, or Servants: They forfeited all their natural and legal Rights and Privileges; and were excluded from all Kind of Offices. Thus was an *Excommunicated* King, reduced to the Condition of a private Man.

By thus ſtretching the Power of the Church to Extravagance, they render'd it contemptible. *Gregory* VII. temper'd it a little; exempting the Wives and Children of *Excommunicated* Perſons, from *Excommunication*; and allowing them to converſe with them.

To render the *Excommunicated* ſtill more odious, the Prieſt was obliged to ſtop, and break off divine Service, if an *Excommunicated* Perſon enter'd the Church. Nothing of which Averſion is any where diſcover'd in the Primitive Church.

At preſent we have but little of the Terror or Reſpect of our Fore-fathers, for *Excommunication*; and 'tis even judg'd, and proclaim'd an Abuſe, whenever impertinently employ'd.

Thus, the Official of *Thoulouſe* having *Excommunicated* the Officers of the *Senechauſſee* of *Tholouſe*, on Occaſion of their refuſing to deliver up a Priſoner; the Official was condemn'd to take off, and revoke the *Excommunication*. 'Tis judg'd an Abuſe to fulminate an *Excommunication* againſt a King, or Kingdom, or the Officers thereof, for any Thing relating to the Diſcharge of their Offices.

The Form of *Excommunication* in the *Romiſh* Church, as related by *Fevret*, is to take lighted Torches, throw them on the Ground with Curſes and Anathema's, and trample them out under Foot to the ringing of the Bells.

--- *Auctoritate Dei patris omnipotentis & filii, & Spiritus Sancti, & beatæ Dei Genetricis Mariæ, Omniumq; Sanctorum*, Excommunicamus, *Anathematizamus, & a limitibus Sanctæ Matris Eccleſiæ ſequeſtramus illos Malefactores, N. Conſentaneos quoq; & participes & niſi reſipuerint, & ad ſatisfactionem venerint ſic extinguetur lucerna eorum ante viventem in ſæcula ſæculorum. Fiat: Amen: Amen: Amen:* Ex Emendat. Leg. Will. Conqueſt.

We have now none of this Folly; the Sentence is gravely read, and the Perſon remains *Excommunicated* without further Ceremony.

Peter of *Blois* aſſures us, that in *England* it was anciently the Practice, only to *Excommunicate* ſuch as had kill'd an Eccleſiaſtick; whereas they were put to Death who had kill'd a Lay-man. --- But the Reaſon was, they held *Excommunication* a greater Puniſhment than Death.

We have Inſtances of Biſhops, who have pronounced formal *Excommunications* againſt Caterpillars, and other Inſects, after a formal, Juridical Proceſs againſt them, wherein thoſe Animals were allow'd an Advocate and Proctor, to defend their Cauſe. See EXORCISM.

Fevret relates divers Inſtances of ſuch *Excommunications*, both againſt Rats and Mice, for infecting a Country; and other Animals. See the Form of theſe *Excommunications* in that Author.

In the ancient Church there were two different Kinds of *Excommunication* in Uſe: The one call'd *Medicinal*, whereby Perſons convicted of a Crime by their own Confeſſion, were removed from Communion: The other call'd *Mortal*, was fulminated againſt Rebels, who perſiſted obſtinately in their Errors and Impieties.

The Power of *Excommunicating* was lodg'd in the whole Church in general: That is, the Biſhops and Prieſts had the Adminiſtration thereof, by and with the Conſent of the People; which was practiſed even in St. *Cyprian*'s Time. But afterwards, they ceaſed to conſult the People about the Matter: The Biſhop and Clergy arrogated the whole Power to themſelves. Recourſe, however, might be had to a Synod of the Province, to judge of the Validity of an *Excommunication*.

It frequently happen'd, that Churches *Excommunicated* each other, that is, broke off the Communication that was between them. In which Caſe, *Du Pin* obſerves, it might be dubious, which of the two Parties was *Excommunicated* and cut off from the Body of the Church.

EXCOMMUNICATION was alſo in Uſe among the *Jews*; who uſed to expel from their Synagogue, ſuch as had committed any grievous Crime. See the Goſpel according to St. *John*, IX. 22. XII. 42. XVI. 2. And *Joſeph. Antiq. Jud.* L. IX. C. 22. and L. XVI. C. 2.

The *Eſſeni*, when *Excommunicated*, durſt not ſo much as receive Food at any Perſon's Hand, for Fear of violating their Oath, but contented themſelves to live on Herbs; inſomuch that they frequently periſh'd, and dy'd for Want. See *Joſeph. de Bello*, L. II. C. 12.

Goodwin, in his *Moſes* and *Aaron*, diſtinguiſhes three Degrees, or Kinds of *Excommunication* among the *Jews*. The firſt, he finds intimated in St. *John*, IX. 22. The ſecond in St. *Paul*, Epiſt. 1. Cor. V. 5. And the third, in the 1*ſt* Ep. to *Corinth*. XVI. 22.

The Rule of the *Benedictins*, gives the Name *Excommunication*, to the being excluded from the Oratory, and the common Table of the Houſe, in our Inns of Court call'd *Diſcommoning*. This was the Puniſhment of ſuch Monks as came too late.

EXCOMMUNICATION, or a being ſecluded, or cut off from a Participation in the Myſteries of Religion, was alſo in Uſe under Paganiſm.

Such as were thus *Excommunicated*, were forbid to aſſiſt or attend at the Sacrifices, or to enter within the Temples; and were afterwards deliver'd over to the Demons and Furies of Hell, with certain Imprecations; which was call'd among the *Romans*, *Diris devovere*.

The *Druids* among the ancient *Britains* and *Gauls*, likewiſe, made Uſe of *Excommunication* againſt Rebels; and interdicted the Communion of their Myſteries, to ſuch as refuſed to acquieſce in their Judgments. See DRUID.

EXCOMMUNICATO *Capiendo*, a Writ directed to the Sheriff, for the Apprehenſion of one who ſtandeth obſtinately *Excommunicated* forty Days; for ſuch an one not ſeeking Abſolution, hath, or may have, his Contempt certified into the Chancery; whence this Writ iſſues for laying him up, without Bail, or Main-prize, until he conform himſelf. See WRIT.

EXCOMMUNICATO *Deliberando*, is a Writ to the Under-Sheriff, for the Delivery of an *Excommunicate* Perſon out of Priſon; upon Certificate of the Ordinary, of his Conformity to the Eccleſiaſtical Juriſdiction.

EXCOMMUNICATO *Recipiendo*, is a Writ whereby Perſons *Excommunicated*, being for their Obſtinacy committed to Priſon, and unlawfully deliver'd thence before they

have given Security to obey the Authority of the Church, are commanded to be ſought for, and laid up again.

EXCORIATION, the Act of raſing, or tearing off the Skin from any Part of the Body. --- He had a grievous *Excoriation* behind, with riding Poſt. --- We alſo ſay, an *Excoriation* in the Throat, *&c.* when the Membrane that covers, or lines it, is tore by the Acrimony of a Humour, a Medicine, or the like; which is ordinarily the Caſe in what we call a *ſore Throat.*

The Word is Latin, *Excoriatio*, form'd of *ex* and *corium*, Skin, Leather, *&c.*

EXCORTICATION, the ſtripping off the *Cortex*, or Bark, from any Thing; call'd alſo *Decortication.* See BARK and DECORTICATION.

EXCREMENT, what is evacuated, or *excreted*, out of the Body of an Animal, after Digeſtion; being what in other Reſpects is ſuperfluous and prejudicial thereto. See EXCRETION.

Chauvin defines *Excrement*, to be all that Matter taken in by way of Food, which cannot be aſſimilated; and which, of Conſequence, not growing or adhering to the Body, wanders about thro' the laxer, and more patent Parts thereof, till it be ejected.

The Urine and Fæces or fecal Matter, are the *great Excrements*, expell'd from the Bladder and the Inteſtines, by Stool, *&c.* See URINE, FECAL *Matter*, &c.

The Matter of inſenſible Perſpiration is alſo an *Excrement*, and a more conſiderable one than either of the others. See PERSPIRATION.

Among *Excrements*, are likewiſe ordinarily rank'd, divers Humours and Matters, ſeparated from the Blood by the ſeveral Strainers, or Emunctories of the Body, tho' far from being uſeleſs; and ſerving divers valuable Purpoſes of the OEconomy. Such are Cerumen, or Ear-wax; the Mucus of the Noſe; *Lachrymæ*, or Tears; Saliva, Bile, Lympha, Menſes, Lochia, *&c.* See CERUMEN, MUCUS, TEARS, SALIVA, BILE, MENSES, *&c.*

Some hold Ambergreaſe an *Excrement* of the Whale; others, an *Excrement* of the Sea. See AMBERGREASE.

All Foods have two Parts, the one Nutritious, the other *Excrementitious.* See FOOD.

EXCREMENT, is alſo attributed, by way of Analogy, to Plants.

Thus Gums, divers Juices, Balms, *&c.* iſſuing ſpontaneouſly from their reſpective Trees, are ſometimes call'd *Excrements.* See GUM, *&c.*

EXCRESCENCE, in Chirurgery, a ſuperfluous, or unneceſſary Piece of Fleſh, or other Matter, growing on certain Parts of the Bodies of Animals, contrary to, or beyond the ordinary Structure and Diſpoſition of Nature.

Such are Wens, Warts, *&c.* Such alſo are the Woman's Horns now ſhewn in *London*; a parallel Caſe to which, ſee in the Philoſoph. Tranſact. N°. 297.

Natural, or cuſtomary *Excreſcences*, as thoſe of Bones, *&c.* are call'd by Phyſicians *Apophyſes.* See APOPHYSIS.

The Word is form'd of the Latin, *ex*, and *creſco*, I grow; *q. d.* ſomething that grows from, or out of another.

EXCRETION, in Medicine, the Act whereby Nature expels, or ejects out of the Body, ſome Humour that is uſeleſs, or even hurtful thereto. See EXCREMENT.

Moſt Criſes are effected by *Excretion*; as Fluxes of Blood, and Urine, Sweats, Vomitings, Looſeneſſes, *&c.* See FLUX, *&c.*

The Word is form'd of the Latin, *excernere*, to excern, ſeparate.

EXCRETORY, in Anatomy, a Term applied to certain little Ducts, or Veſſels, making Part of the Structure, or Compoſition of Glands. See GLAND.

The *Excretory Ducts* are the Tubes thro' which the Humours ſeparated in the ſeveral Glands, are emitted, or diſcharged out of the Gland, into ſome convenient Receptacle, or Emunctory. See SECRETION and EMUNCTORY.

A capillary Artery, to which a capillary Vein is joyn'd; with an *Excretory* Duct, convolved, or wound together, make up the Body of the Glands, the Organs of Secretion. The *Excretory* Ducts ſpring from the Extremities of the Arteries and Veins, and carry off a Liquor ſeparated from the Blood. *Drake.*

The Lymphatick Glands, have either Lymphæducts, for their *Excretory Ducts*, or Lacteal Veſſels, as in the Meſentery. *Id.*

The Muſcles of thoſe two Bones being contracted, they compreſs the Bag, and ſqueeze out the Liquor thro' two *Excretory* Ducts, terminating in the two Gums of the great Teeth of the Viper. *Lemery.*

EXCURSION, in Aſtronomy. See ELONGATION.

Circles of EXCURSION, are Circles parallel to the Ecliptic, at ſuch Diſtance from it, as is capable of bounding, or comprehending the greateſt Digreſſions, or Excurſions, of the Planets from the ſame; which is commonly fix'd at 10 Degrees. See CIRCLE.

EXEAT, in Church Diſcipline, a pure *Latin* Term, uſed for a Permiſſion, which a Biſhop grants a Prieſt to go out of his Dioceſe; or an Abbot, to a Religious, to go out of his Monaſtery.

The Word is alſo uſed in ſeveral Great Schools, for Leave given a Scholar, or Student, to go out. His Maſter has given him an *Exeat.*

EXECUTION, the Act of *Executing*, i. e. of accompliſhing, finiſhing, or atchieving any Thing, to be done.

The *Execution* of a Teſtament; of a Law; of a Treaty; of a Building, *&c.*

The Term is particularly uſed in the *French* Muſic, for the Manner of Singing, or *Performance:* As to the Manner of Singing, call'd in *France*, *Execution*; no Nation may, with any Probability, diſpute it with the *French.* If the *French*, by their Commerce with the *Italians*, have gain'd a bolder Compoſition; the *Italians* have made their Advantage of the *French*, in learning of them a more polite, moving, and exquiſite *Execution.* St. *Evremond.*

EXECUTION, in common Law, ſignifies the laſt Performance of an Act: As of a *Fine*, of a *Judgment*, &c.

That of a Fine, is the obtaining of actual Poſſeſſion of Things contained in the ſame by virtue thereof; which is either by Entry into the Lands, or by Writ. See FINE and POSSESSION.

There are two Sorts of *Executions*, one final, another with a *Quouſque*, as only tending to an End.

An *Execution final*, is that which maketh Money of the Defendant's Goods, or extendeth his Lands, and delivers them to the Plaintiff; for this the Party accepteth in Satisfaction: and this is the End of the Suit, and all that the King's Writ commandeth to be done.

The other Sort, with a *Quouſque*, is that which only tends to an End; and is not final, as in the Caſe of a *Capias ut Satisfaciendum*, &c.

This is not final, but the Body of the Party is to be taken, to the Intent and Purpoſe to ſatisfie the Plaintiff; and his Impriſonment is not abſolute, but till he doth ſatisfie: ſo that the Body is but a Pledge for the Debt.

Military EXECUTION, is the Pillage, or plundering of a Country by the Enemies Army. --- The Towns and Villages of the Province were required to pay Contribution, on Penalty of Military *Execution.* See CONTRIBUTION.

EXECUTIONE *facienda*, a Writ commanding *Execution* of a Judgment. ----- *Executione facienda in Withernamium*, lies for taking his Cattle, who had formerly convey'd out of the County the Cattle of another.

EXECUTOR, a Perſon nominated by a Teſtator, to take Care to ſee his Will, or Teſtament, *Executed* or performed; and his Subſtance diſpoſed of according to the Tenor of the Will. See TESTAMENT.

An *Executor* is either *univerſal*, as having the Charge and Diſpoſal of the whole; or, only *particular*, entruſted with ſome particular Branch thereof.

An *Executor* ſhould be ſeiz'd of all the Moveables of the deceas'd during one Year; at the End whereof he is to account for them. To the Validity of a Teſtament, 'tis not neceſſary there be an *Executor* nominated therein. The Teſtaments made in *Latin* in the XIV*th* Century, call *Executors*, *Proviſores Teſtamentarii.*

EXECUTOR *de ſon tort*, or, of his own Wrong, is he who takes on him the Office of an *Executor* by Intruſion, not being conſtituted thereto by the Teſtator, or deceaſed, nor authorized by the Ordinary to adminiſter. How far he ſhall be accountable to the Creditor, ſee Stat. 43 *Eliz.*

EXECUTORY, that which has, or carries with it a ſufficient Authority for being *executed.* --- A Contract is only *Executory*, when it is in Form, and ſeal'd. The Great Seal of *England* is *Executory* throughout the whole Iſland. See SEAL.

EXEDRÆ, among the Ancients, were Places wherein the Philoſophers, Sophiſts, Rhetors, *&c.* uſed to hold their Conferences and Diſputes.

M. *Perrault* is of Opinion, they were a Sort of little Academies, where the Men of Learning met together.

Budeus rather thinks, that what the Ancients call'd *Exedræ*, might anſwer to what we call Chapters in the Cloiſters of Monks, or Collegiate Churches.

The Word is pure *Greek*, ἐξέδρα.

EXEGESIS, a Term ſometimes uſed by the Learned, to ſignifie *Explication.*

Several Interpreters of the Bible are of Opinion, that in three Paſſages of Scripture, where we meet with *Abba Pater*, two Words the firſt *Syriac*, and the ſecond *Greek* or *Latin*, but both ſignifying the ſame Thing; the ſecond is only an *Exegeſis* of the firſt.

The

The Word *Exegeſis* is alſo uſed for a whole Diſcourſe by way of Explication, Comment, or *Eſclairciſſement* on any Thing.

EXEGESIS *Numeroſa*, or *Linealis*, ſignifies the Numeral or Lineal Solution, or Extraction of Roots, out of adfected Equations; firſt invented by *Vieta*. *Ozanam* calls it *la Rhetique*. See EXTRACTION *of Roots*.

EXEGETES, among the *Athenians*, were Perſons learn'd in the Laws of the *Juris conſulti*; whom the Judges us'd to conſult in capital Cauſes.

The Word is *Greek*, Ἐξηγητὴς, form'd of ἐξηγέομαι, *I explain*.

EXEGETIC, a *Greek* Term, form'd of ἐξηγῶμαι, which, among other Things, ſignifies to *explain*, *interpret*, &c. Whence we ſay *Exegetic Notes*, an *Exegetic Comment*, &c.

Vieta, the Author of what we call the new Algebra, introduced ſeveral *Greek* Names into his Method; ſuch were *Thetic*, *Zetetic*, *Exegetic* or *Exegetica*, &c.

In this Senſe, *Exegetic* is either a Subſtantive Feminine; or an Adjective, under which is underſtood *part*, as the *Exegetic* Part of Algebra. See ALGEBRA.

The *Exegetica* in Algebra, is the Art of finding, either in Numbers, or Lines, the Roots of the Equation of a Problem, according as the Problem is either Numerical, or Geometrical. See ROOT and EQUATION.

EXEMPLAR, a Model, or Original, to be imitated, or copied. See MODEL, *&c.*

Exemplar is alſo the Idea, or Image, conceiv'd, or form'd in the Mind of the Artiſt, whereby he conducts his Work: Such is the Idea of *Cæſar*, which a Painter has in his Mind when he goes to make a Picture of *Cæſar*. The *Exemplar* is ordinarily number'd among the Cauſes. See CAUSE.

EXEMPLIFICATION *of Letters patent*, an *Exemplar*, or Copy of Letters Patent, made from the Inrolment thereof; and ſeal'd with the Great Seal of *England*. See PATENT.

Such *Exemplifications* are as effectual to be ſhew'd, or pleaded, as the Letters Patent themſelves: Nothing but Matter of Records are to be *Exemplified*. See RECORD.

EXEMPTION, a Privilege, or Diſpenſation, whereby a Perſon is excepted out of ſome general Rule. See PRIVILEGE, *&c.*

Exemption is particularly applied to Churches, Chappels, and Monaſteries which have a Privilege given them by the Popes, or Princes, whereby they are *Exempted* from the Juriſdiction of the Biſhop, or Ordinary. See CHAPPEL, ORDINARY, *&c.*

The Council of *Conſtans* revoked all *Exemptions*, to reſtore to the general Law, weaken'd and diminiſh'd by a Relaxation of ſeveral Ages, its ancient Force and Vigour; and make it every where obtain in all its Latitude.

The firſt *Exemptions* granted to Monks were only for the Liberty of Electing their Abbot, independently on the Biſhop; and not to ſcreen them from the regular Juriſdiction of the Biſhops. The Pretence for theſe *Exemptions* was, that the Biſhops abuſed their Authority, and exacted extravagant Dues on the Monaſteries in their Dependance. But the real Cauſe was, rather, that the Monaſteries, being fallen from the Severity of their Rules, did not care for Inſpectors ſo near at Hand, and therefore ſollicited *Exemptions* at *Rome*.

As this was to derogate from the common Laws, the Popes were a good while very reſerved in the Point; and ſeldom granted them, but with the Conſent of the Biſhops themſelves. But, by degrees, the Popes began to aſſume a Power of granting ſuch *Exemptions* at Pleaſure; and made their Account of the Indulgence of the Biſhops, who were not ſufficiently apprehenſive of all the Conſequences. Accordingly, they favour'd whole Orders with the Privilege of *Exemption*, as the *Ciſtercians*, *Dominicans*, *Carthuſians*, *Jeſuits*, &c.

Things, at length, were brought to ſuch a paſs, that there was a Neceſſity for putting a Check to *Exemptions*; accordingly, the Council of *Trent* prohibited, and declar'd them null for the future; confirming only ſuch as were well founded, on legal Conceſſions from the Holy See.

EXERCISE, a Repetition of any Operation, for the ſtrengthening or retaining of a Habit. See HABIT.

Thus, we uſe *Exerciſe* of the Body, for the acquiring, or maintaining of Health; as it contributes both to the Expulſion of the Excrements, and preſerving the Tone, and Spring of the Solids. See HEALTH.

People who live a ſedentary Life, and do not uſe *Exerciſe*, are liable to Defluxions, which bring on other Diſorders. Games of Hazard are to be diſcountenanced, and thoſe of *Exerciſe* to be promoted. See GAMES.

Exerciſe and Quiet make one of the Phyſicians Non Naturals. See NON-NATURALS.

Labour, or *Exerciſe*, Dr. *Cheyne* obſerves, is indiſpenſibly neceſſary to preſerve the Body any Time in due Plight. Let what Diet will be purſued, however adjuſted both in Quantity and Quality, let whatever Evacuations be uſed to leſſen the Malady, or any *Succedaneum* be propoſed to prevent the ill Effects; ſtill, our Bodies are ſo made, and the Animal Oeconomy now ſo contrived, that without due Labour and Exerciſe, the Juices will thicken, the Joints will ſtiffen, the Nerves will relax, and on theſe Diſorders, Chronical Diſeaſes, and a crazy old Age, muſt enſue. *Eſſay of Health*, p. 90. — Of all the *Exerciſes* that are or may be uſed for Health, as *Walking*, *Riding* a Horſeback, or in a Coach; *Fencing*, *Dancing*, *Bowling*, *Digging*, *Pumping*, *Ringing*, &c. Walking is the moſt Natural, and would be the moſt uſeful, if it did not ſpend too much of the Spirits of the weakly. But now *Riding* is certainly the moſt manly, the moſt healthy, and leſs laborious and expenſive of Spirits than any. *Id.* p. 94, *&c.* — Thoſe Organs of the Body that are moſt uſed, always become ſtrongeſt; ſo that we may ſtrengthen any weak Organ by *Exerciſe*: Thus the Legs, Thighs and Feet of Chairmen; the Arms and Hands of Watermen; the Backs and Shoulders of Porters, grow thick, ſtrong and brawny by Time and Uſe. 'Tis certain alſo, that ſpeaking ſtrong and loud, will ſtrengthen the Voice, and give Force to the Lungs. *Id.* p. 96. — To the Aſthmatic, therefore, and thoſe of weak Lungs, I would recommend talking much and loud; walking up eaſy Aſcents, *&c.* To thoſe of weak Nerves, and Digeſtion, Riding on Horſeback: To thoſe troubled with the Stone; riding over rough Cauſeways in a Coach: To thoſe troubled with Rheumatic Pains, playing at Billiards, Cricket, or Tennis: To thoſe of weak Arms or Hams, playing at Tennis or Foot-ball: To thoſe of weak Backs, or Breaſts, ringing a Bell, or working at the Pump. Walking through rough Roads, even to Laſſitude, will beſt recover the Uſe of the Limbs to the Gouty; tho' Riding will beſt prevent the Diſeaſe. But the Studious, the Contemplative, the Valetudinary, and thoſe of weak Nerves, muſt make *Exerciſe* a Part of their Religion. — A Condition neceſſary to render *Exerciſe* as beneficial as may be, is that it be uſed on an empty Stomach. — Under the Head of *Exerciſe*, Cold-Bathing, and the Fleſh-Bruſh, come alſo to be recommended. — *Id.* — *Ibid.* p. 103, 104, *&c.* See COLD-BATHING and FLESH-BRUSH.

EXERCISES, in the Plural, is particularly underſtood of what is taught young Gentlemen in the Academies of the Ecuyers at *Paris*, &c. As Riding the great Horſe, Dancing, Fencing, Vaulting, drawing Fortifications, *&c.* — This young Nobleman went thro' all his *Exerciſes* with great Applauſe. See ACADEMY, *&c.*

EXERCISE, in the Art of War, is the ranging a Body of Soldiers in Form of Battle, and making them practiſe the ſeveral Motions and military Evolutions, with the divers Management of their Arms, *&c.* to make, or keep them expert thereat againſt Occaſion.

This is what *Vegetius*, and other *Latin* Writers call *Meditatio*.

EXÆRESIS, or EXHERESIS, in Chirurgery, an Operation whereby ſomething foreign, uſeleſs, and even pernicious, is taken from the human Body.

The *Exæreſis* is perform'd two Ways: By *Extraction*, when ſomething formed in the Body is drawn out of the ſame: And by *Detraction*, when ſomething is taken away, that had been introduced into the Body from without. See LITHOTOMY, *&c.*

The Word is *Greek*, ἐξαίρεσις, which ſignifies the ſame Thing.

EXERGUM, among Medalliſts, a little Space, around or without the Work or Figures of a Medal; for an Inſcription, Cypher, Device, Date, or the like, to be put thereon. See MEDAL, LEGEND, *&c.*

The Word is derived from the *Greek*, ἐξ and ἔργον, *Opus*, Work.

EXFOLIATION, in Chirurgery, the ſcaling of a Bone; or its riſing and ſeparating in Leaves, or Laminæ. See BONE.

Any Part of the Surface of the Cranium that has been bored, is liable to *Exfoliation*. The Uſe of the Cephalic Powders avails nothing for promoting the *Exfoliation*. *Dionis*. The Wound muſt not be ſtopp'd too much, but the Bone left at Liberty to recover it ſelf, which it ſometimes does, without *Exfoliating*, particularly in Children. See TREPANNING.

The Word is compounded of the Latin *ex* and *folium*, Leaf.

EXFOLIATIVE. — An *Exfoliative* Trepan, is a Trepan proper to ſcrape, and at the ſame Time pierce, a Bone, and ſo to *exfoliate*, or raiſe ſeveral Leaves, or Flakes, one after another.

The Uſe of the *Exfoliative* Trepan is very dangerous; as being apt to ſhake and diſorder the Head.

EXHA-

EXHALATION, a Fume, or Steam, *exhaling*, or iſſuing from a Body, and diffuſing it ſelf in the Atmoſphere. See EFFLUVIA.

The Terms *Exhalation* and *Vapour*, are ordinarily uſed indifferently; but the more accurate Writers diſtinguiſh them: Appropriating the Term *Vapour* to the moiſt Fumes rais'd from Water, and other liquid Bodies; and *Exhalation* to the dry ones emitted from ſolid Bodies; as Earth, Fire, Minerals, Sulphurs, Salts, &c. See VAPOUR.

In this Senſe, *Exhalations* are dry, ſubtile Corpuſcles, or Effluvia, looſen'd from hard terreſtrial Bodies, either by the Heat of the Sun, or the Agitation of the Air, or ſome other Cauſe; and emitted upwards to a certain Height of the Atmoſphere, where mixing with the Vapours, they help to conſtitute Clouds, and return back again into Dews, Miſts, Rains, &c. See ATMOSPHERE, CLOUD, RAIN, &c.

Nitrous, and ſulphureous *Exhalations* are the chief Matter of Thunder, Lightning, and divers other Meteors generated in the Air. See THUNDER, &c.

Sir *Iſaac Newton* takes true and permanent Air to be form'd from the *Exhalations* rais'd from the hardeſt and moſt compact Bodies. See AIR.

EXHAUSTED *Receiver*, a Glaſs, or other Veſſel, applied on the Plate of the Air-Pump, and the Air extracted out of the ſame, by the working of the Engine. See RECEIVER, AIR-PUMP, &c.

Things placed in an *Exhauſted Receiver*, are ſaid to be *in Vacuo*. See VACUUM.

EXHAUSTIONS, in Mathematicks. — The *Method of* EXHAUSTIIONS, is a Way of proving the Equality of two Magnitudes, by a *Reductio ad abſurdum*; ſhewing, that if one be ſuppoſed either greater or leſs than the other, there will ariſe a Contradiction. See REDUCTION.

The *Method of Exhauſtions*, is of frequent Uſe in the antient Mathematicians, as *Euclid*, *Archimedes*, &c. See METHOD.

It is founded on what *Euclid* ſaith in his tenth Book, *viz.* That thoſe Quantities whoſe Difference is leſs than any aſſignable Quantity are equal: For if they were unequal, be the Difference never ſo ſmall, yet it may be ſo multiplied, as to become greater than either of them; if not ſo, than it is really nothing.

This he aſſumes in the Proof of *Prop.* 1. of Book X. which imports, that if from the greater of two Quantities, you take more than its half, and from the Remainder more than its half, and ſo continually, there will at length remain a Quantity leſs then either of thoſe propoſed.

On this Foundation they demonſtrate, that if a regular Polygon of infinite Sides be inſcribed in, or circumſcribed about, a Circle, the Space, which is the Difference between the Circle and the Polygon, will, by Degrees, be quite exhauſted, and the Circle equal to the Polygon. See CIRCLE, QUADRATURE, POLYGON, &c.

EXHEREDATION, or EXHÆREDATION, in the Civil Law, with us ordinarily call'd *Diſinheriting*, is the Father's excluding his Son from inheriting his Eſtate. See DISINHERITING.

There are fourteen Cauſes of *Exheredation* expreſs'd in *Juſtinian*'s Novel: Without ſome one of which Cauſes, he decrees the *Exheredation* null, and the Teſtament inofficious, *Teſtamentum inofficioſum*, as the Civilians call it. See TESTAMANT.

Indeed, by the antient *Roman* Law, the Father might pronounce *Exheridation* without any Cauſe; but the Rigour of this Law was reſtrain'd, and moderated by *Juſtinian*. See HEIR.

EXHIBIT, in Law. When a Deed, Acquittance, or other Writing, is in a Chancery Suit exhibited to be proved by Witneſs; and the Examiner writes on the Back, that it was ſhew'd to ſuch a one, at the ſame Time of his Examination: This is call'd an *Exhibit*. See EXHIBITION.

EXHIBITION, a producing, or ſhewing of Titles, Authorities, and other Proofs of a Matter in Conteſt.

The Parties have *exhibited* their Titles and Pretenſions before the Arbitrators.

Antiently, they uſed the Phraſe *Exhibition* of a Tragedy, Comedy, or the like; but now we ſay *Repreſentation* in Lieu thereof. See REPRESENTATION.

EXHUMATION, the Act of digging up a Body interr'd in holy Ground, by the Authority of the Judge. See INTERMENT.

In *France*, the *Exhumation* of a dead Body is order'd upon Proof that he was kill'd in a Duel. --- A Parſon has a Right to demand the *Exhumation* of the Body of one of his Pariſhioners, when interr'd out of the Pariſh, without his Conſent. See BURIAL.

The Word is compounded of the Latin *ex*, out of, and *humus*, Ground.

EXIGENCE, or EXIGENCY, that which a Thing requires, or which is ſuitable thereto.

The Criminals were remitted back to the Judges, to be puniſh'd according to the *Exigency* of the Caſe.

EXIGENT, in Law, a Writ that lies where the Defendant in a perſonal Action cannot be found, nor any Thing of his within the County, whereby to be attach'd, or diſtrain'd. See WRIT, ATTACH, &c.

It is directed to the Sheriff, ordering him to proclaim and call the Party five County Days ſucceſſively, and charge him to appear under Pain of Out-lawry.

The ſame Writ alſo lies in an Indictment of Felony, where the Party indicted cannot be found.

It is call'd an *Exigent*, by Reaſon it *exigit*, i. e. *exacts* or requires the Party to appear, or be forthcoming, to anſwer the Law. If he appear not at the laſt Days Proclamation, he is ſaid to be *quinquies exactus*, and then is out-law'd. See OUT-LAWRY.

EXIGENTERS, are four Officers of the Court of Common Pleas, who make all *Exigents* and Proclamations, in all Actions where the Proceſs of the Out-lawry lies. See EXIGENT.

Antiently, the making of Writs of *Superſedeas* upon ſuch *Exigents* as were made in their Offices, did likewiſe belong to them: But this Branch of Buſineſs was taken from them under King *James* I. and committed to a particular Officer in the Court of Common-Pleas, created by Patent. See SUPERSEDEAS.

EXILE, *Baniſhment*. See BANISHMENT.

Among the *Romans*, the Word Exile, *Exilium*, properly ſignified an Interdiction, or Excluſion from Water and Fire; the neceſſary Conſequence of which was, that the interdicted Perſon muſt betake himſelf into ſome other Country, ſince there was no living without Fire and Water.

Thus, *Cicero ad Herenn.* obſerves, that the Form of the Sentence did not expreſs *Exile*, but only *Aquæ & Ignis Interdictio*. See INTERDICTION.

The ſame Author remarks, that *Exile* was not properly a Puniſhment, but a voluntarily flying, or avoiding the Puniſhment decreed: Exſilium *non eſſe Supplicium ſed perfugium, portuſq; Supplicii.* Pro Cæcinna.

He adds, that there was no Crime among the *Romans*, as among other Nations, puniſh'd with *Exile*; but *Exile* was a Recourſe People flew voluntarily too, to avoid Chains, Ignominy, Starving, &c.

The *Athenians* frequently ſent their Generals, and great Men into *Exile*, out of Envy of their Merits, or Diſtruſt of their too great Authority. A perpetual *Exile* is a Civil Death, and imports Confiſcation.

EXILE, is ſometimes alſo uſed for the *relegating* a Perſon into a Place, whence he is obliged not to ſtir without Leave. See RELEGATION.

The Word is derived from the Latin *Exilium*, or from *Exul*, a baniſh'd Perſon; and that, probably, from *Extra-ſolum*, out of his Native Soil.

Figuratively, we uſe the Phraſe honourable *Exile* for an Office, or Employment, which obliges a Man to reſide in ſome remote, or diſagreeable Place. Under the Reign of *Tiberius*, remote Employments were a Kind of myſterious *Exiles*. --- A Biſhopric, or even a Lord Lieutenancy, in *Ireland*, is ſometimes deem'd a Kind of *Exile*. A Reſidence, or Embaſſy, in ſome barbarous Country, is a Sort of *Exile*.

EXINANITION, the ſame as *Evacuation*. See EVACUATION.

EXISTENCE, that whereby a Thing has an actual *Eſſence*; or that whereby a Thing is ſaid *to be*, *eſſe*; See ESSENCE and ESSE.

This Notion of *Exiſtence*, is applicable not only to a created, but an uncreated Subſtance. ---- But it muſt be added, that the *Exiſtence* of created Subſtances, and eſpecially Corporeal ones, implies a Reſpect to Place, Time, and even an Efficient Cauſe; whence the Schoolmen generally define it; *That whereby a Thing is formally and extrinſically without, or beyond its Cauſes, and this here, and now.*

Exiſtence, and Eſſence, come very near the Nature of each other: In Effect, they only differ in that we have different Manners of conceiving the ſame Thing.

For, 1°. Eſſence is uſually explain'd either by the firſt, nobleſt, and radical Attribute of the Thing, *e. gr.* That of Body, by Extenſion; that of Mind, by thinking, &c. or by the ſpecifying of all the intrinſic Attributes: And *Exiſtence*, by the ſpecifying of all Place, and all Time, as in that of God; or by the ſpecifying of ſome definite Place, and Time, together with the Cauſes; as in the Creatures.

2°. The Foundation, and Occaſion of this Diſtinction, is this; that Eſſence belongs to the Queſtion, What is it? *Quid eſt?* But *Exiſtence* to the Queſtion, Is it? *An eſt?*

3°. *Exiſtence* neceſſarily preſuppoſes Eſſence, and cannot be conceiv'd without it: But Eſſence may be conceiv'd without *Exiſtence*; in that Eſſence belongs equally to Things that are in *Potentia*, and in *Actu*: But *Exiſtence*, only

only to those in *Actu*. Note, however, that this does not obtain in God; about whose Nature and Essence the Mind cannot think, without conceiving his *Existence*.

We have divers Ways of arriving at the Knowledge of the *Existence* of Things.---Our own *Existence* we know by Intuition; the *Existence* of a God, by Demonstration: And that of other Things by Sensation.

As for our own *Existence*, we perceive it so plainly, that it neither needs, nor is capable of any Proof. I think, I reason, I feel Pleasure and Pain: Can any of these be more evident to me than my own *Existence*? If I doubt of all other Things, that very Doubt makes me perceive my own *Existence*, and will not suffer me to doubt of that. If I know I doubt, I have as certain a Perception of the Thing doubting, as of that Thought which I call Doubt. Experience then convinces us, that we have an intuitive Knowledge of our own *Existence*, and an internal, infallible Perception that we are. In every Act of Sensation, Reasoning or Thinking, we are conscious to our selves of our own Being, and in this Matter come not short of the highest Degree of Certainty. See CARTESIANISM.

As to our Knowledge of the *Existence* of a God; tho' he has given us no innate Ideas of himself, yet having furnish'd us with Faculties of Sense, Perception and Reason, we can never want a clear Proof thereof. See GOD.

The Knowledge of the *Existence* of other Things, *i. e.* of external Objects, Bodies, a World, *&c.* we only have by Sensation; for there being no necessary Connexion of real *Existence* with any Idea a Man hath in his Memory; nor of any other *Existence* but that of God, with the *Existence* of any particular Man; no particular Man can know the *Existence* of any other Being, but only, when by actually operating upon him, it makes it self be perceived by him. The having the Idea of any Thing in our Mind, no more proves the *Existence* of that Thing, than the Picture of a Man evidences his Being in the World; or the Visions of a Dream make a true History. It is therefore the actual receiving of Ideas from without, that gives us notice of the *Existence* of other Things, and makes us know that something doth *exist* at that Time without us, which causes that Idea in us, tho' we neither know, nor consider how it doth it.

This Notice which we have by our Senses of the *existing* of Things without us, tho' it be not altogether so certain as Intuition and Demonstration, yet deserves the Name of Knowledge, if we persuade our selves, that our Faculties act and inform us right, concerning the *Existence* of those Objects that affect them. See KNOWLEDGE.

Now besides the Assurance of our Senses 'emselves, that they do not err in the Information they give us of the *Existence* of Things without us, we have other concurrent Reasons: As 1°. It is plain those Perceptions are produced in us, by exterior Causes affecting our Senses, because those that want the Organs of any Sense, never have the Ideas belonging to that Sense produced in their Minds. 2°. Because we find we cannot avoid the having those Ideas produced in our Minds: When our Eyes are shut, we can at Pleasure recal to our Mind the Ideas of Light, or the Sun, which former Sensations had lodged in our Memories; but if we turn our Eyes towards the Sun, we cannot avoid the Ideas, which the Light or the Sun then produces in us; which shews a manifest Difference between those Ideas laid up in the Memory, and such as force themselves upon us, and we cannot avoid having. Besides, there is no Body who doth not perceive the Difference in himself between actually looking upon the Sun, and contemplating the Idea he has of it in his Memory; and therefore he hath certain Knowledge, that they are not both Memory or Fancy. Thirdly, Add to this, that many Ideas are produced in us with Pain, which we afterwards remember without the least Offence: Thus, the Pain of Heat or Cold, when the Idea of it is receiv'd in our Minds, gives us no Disturbance; which when felt, was very troublesome; and we remember the Pain of Hunger, Thirst, Head-ach, *&c.* without any Pain at all, which would either never disturb us, or else constantly do it, as often as we thought of it, were there nothing more but Ideas floating in our Minds, and Appearances entertaining our Fancies, without the real *Existence* of Things affecting us from abroad. 4°. Our Senses, in many Cases, bear Witness to the Truth of each others Report, concerning the *Existence* of sensible Things without us: He that doubts, when he sees a Fire, whether it be real, may feel it too, if he pleases, and by the exquisite Pain may be convinced, that it is not a bare Idea or Phantom.

Such is Mr. *Lock*'s Demonstration of the *Existence* of External Bodies.

The ingenious Mr. *Berkeley* has a quite different System. External Bodies, he contends, have no *Existence* but in a Mind perceiving them; that is, they only *exist*, quatenus they are perceiv'd; there *Existere* is *percipi*. They have no *Existence*, nor Shadow of *Existence* out of our Minds. And of this he has given us what he and some others account a Demonstration. See BODY, EXTERNAL *World*, &c.

As to the *Existence* of Spirits, Mr. *Lock* allows, that our having Ideas of them, does not make us know, that any such Things do *exist* without us; or that there are any finite Spirits, or any other spiritual Beings, but God. We have ground from Revelation, and several other Reasons, to believe with Assurance, that there are such Creatures; but our Senses being not able to discover them, we want the Means of knowing their particular *Existence*: For we can no more know that there are finite Spirits really *Existing* by the Idea we have of such Beings, than by the Ideas any one has of Fairies, or Centaurs, he can come to know that Things answering to those Ideas do really *exist*.

EXIT, properly expresses the Departure of a Player from off the Stage, when he hath acted his Part.---The Word is also used in a figurative Sense to express any Kind of Departure.

EXITUS, in Law, *Issues*; or, the yearly Rents, or Profits of Lands or Tenements. See ISSUE.

EX-*mero motu*, are formal Words used in the King's Charters, and Letters patent; signifying that he does what is contain'd therein *Of his own Will and Motion*.---The Effect of these Words is to bar all Exceptions that might be taken to the Instrument, by alledging that the Prince, in passing such Charter, was abused by false Suggestion.

EXOCATACOELUS, in Antiquity, a general Denomination, under which were included several grand Officers of the Church at *Constantinople*; as the *Grand Oeconomus*, *Grand Sacellarius*, *Grand Master of the Chappel*, *Grand Scevophylac*, or Keeper of the Vessel, *Grand Cartophylax*, *the Master of the little Chappel*, and the *Protecdicus*, or first Defender of the Church.

The *Exocatacœli*, were of great Authority: In public Assemblies they had the Precedence of Bishops; and in the Patriarchate of *Constantinople*, did the Office of Deacons; as the Cardinals originally did in the Church at *Rome*. Accordingly, in the Letter of *John* IX. to the Emperor *Basil Leo*, they are call'd *Cardinales*. See CARDINAL.

At first they were Priests; but some Patriarch of *Constantinople*, whom *Codin* does not mention, would have them for the future to be no more than Deacons. The Reason was, that being Priests, each of them had their several Churches, wherein they were to officiate on all the grand Festival Days; so that it unhappily fell out, the Patriarch on the most solemn Days was deserted by all his chief Ministers. See DEACON.

The Criticks are not at all agreed about the Origin of their Name *Exacatacœli*: *Junius*, in his Edition of *Codin*, breaks the Word into two, and reads ἑξ Κατακοιλῳ, q. d. *Six Catacœli*; but this Reading, tho' authorized by several MSS. is faulty; the Generality of Copies only making one Word: Beside that they are call'd *Exacatacœli*, even when there were only five of them. The same *Junius* derives *Catacœlus* hence, that these Officers dwelt in the Valleys, κατα τας κοιλαδας.

Pet. Gregor. Tolosan, takes the Word to have been form'd from καταπαλεω, *permulceo*, *suavitate Animum delinio*: But *Gretser* rejects this Etymology, as without any Foundation. In Lieu thereof, he proposes another Conjecture, tho' with a good deal of Timidity: He reads ἐξωκαλακοίτας, instead of ἐξωκαλακοίλας, as if they were thus called by Reason they lodged, or lived out of the Patriarchal Palace.

Fa. *Goar* rejects this Opinion, and had rather they should read ἐξωκατακελλας, as intimating they were thus call'd in Opposition to the *Syncellus*, who lay in the Patriarch's Apartment, which the rest did not; but he is far from being of the Opinion that Officers of so much Eminence, should take their Denomination from a Thing which testifies a Want of a Privilege. He chuses, therefore, to imagine that all the inferior Priests were call'd Κατακοιλοι, *Catacœli*, q. d. People of a low Condition; and that their Superiors were call'd *Exocatacœli*, q. d. People out of the Number of *Katacœli*, or above them.

Upon the whole, however, he adheres to the Sentiment of *G. Coresius*, who says, that the Patriarchal Palace and the Apartments of the *Syncellus*, and the Monks in the Patriarch's Service, were in a very low Part of the City, which with Regard to the rest seem'd a Valley or Pit; and that the Offices above mentioned had their several Houses, or Palaces, ἐξω, out of the Valley: Whence the Name *Exocatacœli*.

The Opinion of M. *du Cange* is the last we shall name: He derives the Appellation from their being above the Level, or Rank of the other Clerks; and seated at Church, *&c.* in more

honourable Places rais'd for that Purpoſe by the Patriarch's Sides: Theſe two laſt Syſtems are the moſt probable.

EXOCIONITÆ, Exocionites, in Church Antiquity. --- *Meurſius* tells us, that there was a Monaſtery at *Conſtantinople* call'd *Exocionium*; and that the firſt who were call'd *Exocionites*, were the Monks thereof: But this is a Miſtake.

'Twas the *Arians* who were firſt call'd *Exocionites*; by Reaſon, when expell'd the City by *Theodoſius* the Great, they retired into a Place call'd *Exocionium*, and there held their Aſſemblies. *Juſtinian* gave the Orthodox all the Churches of the Hereticks, excepting that of the *Exocionites*. Cedrenus. See Arian.

The Word is derived from ἐξακιόνιον, or ἐξωκιόνιον, the Name of the Place abovementioned.

Codin, in his *Origines*, ſays, that the *Exocionium* was a Place encompaſſed with Walls, built and adorn'd by *Conſtantine*; and that without the Circumference of this Wall, there was a Column, with a Statue of that Emperor, whence the Place took its Name, *viz.* from ἔξω, *without*, and κίων, *Column*.

Gothefrid holds, that *Theodoret* is miſtaken, in ſaying that the *Arians* were call'd *Exocionites*, or *Exacionites*, from the Name of the Place where they aſſembled; and takes the Name to be the ſame with that of *Exoucontians*, which was attributed to the *Arians*, by Reaſon they held that the Son was made out of nothing, ἐξ οὐκ ὄντων. But a mere Conjecture of *Gothefrid* is not ſufficient to make us ſet aſide the Authority of ſo able a Perſon as *Theodoret*.

EXODE, or Exodium, in the antient *Greek* Drama, was one of the four Parts or Diviſions of Tragedy. See Tragedy.

The *Exodium*, according to *Ariſtotle*, was ſo much as was rehearſed after the Chorus had ceas'd to ſing for the laſt Time; ſo that *Exodium* with them, was far from being what the Epilogue is with us, as ſeveral People have imagined it was. See Epilogue.

The *Exode* was ſo much of the Piece as included the Cataſtrophe and unravelling of the Plot; which Cataſtrophe, *&c.* in Pieces regularly compoſed, always begun after the laſt ſinging of the Chorus; anſwering nearly to our 4th and 5th Acts. See M. *Dacier's* Comment. on *Ariſtotle's Poeticks*, p. 166. See alſo the Articles Catastrophe, Chorus, *&c.*

Among the *Romans*, the *Exodium* was a different Thing; 'twas pretty nearly what Farces are with us. After the Tragedy was over, came a Pantomime on the Stage, call'd the *Exodiarius*, who by his Grimace, Jeſting, and Buffoonry, diverted the People, compoſed their Minds, and wiped away the Tears with the Tragic Spectacle had occaſion'd to be ſhed.

This was his Office, as related by the antient Scholiaſt of *Juvenal:* Exodiarius, *apud Veteres in fine Ludorum intrabat, quod ridiculus foret, ut quidquid Lacrymarum atque Triſtitiæ coepiſſent ex tragicis Affectibus, hujus Spectaculi Riſus detergeret.*

Such was the original Intention of the *Exodium*, but it afterwards degenerated into a bitter, malicious Kind of Raillery.

Vigenere on *T. Livy*, ſays the *Exodium* conſiſted of certain humorous, drolling Verſes, rehearſed by the Youth at the End of the *Fabulæ Attellanæ*, and anſwering to our Farces. --- In another Place, the ſame Author ſays, that the *Exodes* were a Kind of Interludes, in the Intervals, between the Acts, partly Fable and Pleaſantry, partly Muſic, *&c.* to give Time both for the Spectators and Actors to recover Breath.

The Paſſage in *Livy*, whence he takes the Notion, is *Lib.* VII. *Dec.* 1. *Ridicula intexta Verſibus, quæ Juventus inter ſe more Antiquo jactare cæpit eaque conſerta ſunt fabulis potiſſimum Attellanis.* So alſo *Juvenal*,

> *Urbicus* Exodio *riſum movet Attellanæ*
> *Geſtibus Antonoes.*

The Word is form'd from the *Greek*, ἔξοδος, *going out*, or even *Digreſſion*, going *aſide*, out of the Way; of ἐξ and ὁδὸς, *Road*. Feſtus, *Lib.* V. calls it *Exitus:* Varro, πάφη μενίππη. — The ſame Author uſes the Phraſe *in Exodium Vitæ*.

Exodium, in the Septuagint, ſignifies the End, or Concluſion of a Feaſt. See Feast.

In Particular, it is uſed for the Eighth Day of the Feaſt of Tabernacles, which, 'tis ſaid, had a ſpecial View to the Commemoration of the *Exodus*, or Departure out of *Egypt*. Tho' there is nothing of it expreſſed in Scripture.

The *Hebrew* Text calls the Day עצרת which the Seventy render ἐξόδιον.

Exodium, was alſo the Name of a Song, ſung at the Concluſion of a Meal.

EXODIARY, Exodiarius, in the antient *Roman* Tragedy, was a Droll, or Mime, who appear'd on the Stage, when the Tragedy was ended, and perform'd what they call'd the *Exodium*, or Concluſion of the Shew; to divert the Company. See Exodium.

EXODUS, the ſecond of the five Books of *Moſes*. See Pentateuch.

The Word in its original *Greek*, Ἔξοδος, literally imports a *going out*, or *Journey*; and was applied to this Book, by reaſon the Hiſtory of the *Iſraelites* Paſſage out of *Egypt* is related therein. Beſide this, it contains the Story of what was tranſacted in *Egypt*, from the Death of *Joſeph*, to the Delivery of the *Jews*; as well as what paſs'd in the Wilderneſs, and particularly at Mount *Sinai*, to the building of the Tabernacle.

The *Hebrews* call it *Vëelle Semoth*, ſignifying, *& hæc nomina; Theſe are the Names*; which are the initial Words of the Book: For the ſame reaſon as they call *Geneſis*, *Bereſith*, q. d. *in principio, in the Beginning*. See Genesis.

EX *Officio*. ---- By a Branch of a Statute of 1 *Eliz.* the Queen, by her Letters Patents, might authorize any Perſons, *&c.* to adminiſter an Oath *Ex Officio*; whereby the ſuppoſed Offender was forced to confeſs, accuſe, or clear himſelf of any criminal Matter, *&c.*

But this Branch relating to this Oath, is repealed by 17 *Car.* I. *cap.* 11.

EXOMOLOGESIS, a Term little uſed but in ſpeaking of the ancient Rites of Repentance; whereof the *Exomologeſis* was a Part. See Confession.

It ſignifies *Confeſſion*; being pure *Greek*, ἐξομολόγησις, form'd of ἐξομολογέω, *I confeſs*.

Some of the Ancients, and particularly *Tertullian*, *de pœnit.* C. 9. uſes the Word in a greater Latitude, as comprehending the whole of Repentance: A public *Exomologeſis* was never commanded by the Church for ſecret Sins; as may be ſeen in the Capitularies of *Charlemaign* and the Canons of divers Councils.

EXOMPHALUS, in Medicine, a Generical Name for divers Diſorders.

Exomphalus expreſſes all Kinds of Ruptures, or Tumors, happening in the *Umbilicus*, or Navel. See Rupture.

Authors diſtinguiſh three Kinds of *Exomphali*; the firſt are, Tumors, or Swellings of the ſolid Parts, whereof there are three Varieties, denominated from the ſeveral Parts affected, as the *Enteromphalus*, *Epiplomphalus*, and *Entero-epiplomphalus:* The ſecond are, Tumors form'd by Collections, or Gatherings of Humours, of which there are four Varieties, diſtinguiſh'd by the particular Humours they are form'd of, as the *Hydromphalus*, *Pneumatomphalus*, *Sarcomphalus*, and *Varicomphalus:* The third are thoſe compounded of both the other, *viz.* the *Entero hydromphalus*, and *Epiploſarcomphalus*. See each Species under its ſeveral Heads, Enteromphalus, *&c.*

EXORCISM, Prayers, or Conjurations, wherewith to *exorciſe*, i. e. drive out Devils from Perſons poſſeſs'd, purify unclean Creatures, or preſerve from Danger.

Exorciſms are of great Uſe in the *Romiſh* Church: Their Prelates, *&c.* are frequently *Exorciſing* Demoniacal Perſons. The Prieſts make the Holy Water, by *Exorciſing* common Water a certain Number of Times.

The *Exorciſm* is a Part in moſt of their Conſecrations. See Exorcist.

It muſt be allow'd, the Uſe of *Exorciſms* is almoſt as ancient as the Church: Recourſe was had to ſuch Machines, to drive away Diſeaſes both of Men and Beaſts, to expel and deſtroy Vermine, and other Animals, noxious to the Earth, and the Fruits thereof.

M. *Thiers*, in his *Traite des Superſtitions*, gives divers Formula's of ſuch *Exorciſms*; and quotes, particularly, the Inſtance of St. *Grat*, who, by Means of *Exorciſms*, obtain'd of God, the Favour, that there ſhould be no Rat found in the Country of *Aoſt*, nor three Miles around the ſame.

The ſame Author is of Opinion, that ſuch *Exorciſms* may be ſtill uſed to good Purpoſe, againſt Rats, Mice, Locuſts, Caterpillars, Storms, *&c.* But in order to perform any Thing of this Kind, he obſerves, a Man muſt have the proper Quality and Character, and be approv'd of by the Church; and muſt likewiſe uſe Words and Prayers authoriz'd thereby; otherwiſe, his *Exorciſms* will be damnable Superſtitions.

Exorciſms had anciently another and further Purpoſe, being applied by way of Trial, or Purgation, to extort the Truth from the accuſed. See Purgation.

The *Exorciſm*, in this Senſe, was a Sort of Bread conjured and *Exorciſed* for the Purpoſe: And the Opinion,

nion was, that if the Perſon were criminal, he could not ſwallow the Bread.

This, it ſeems, was a frequent Practice in the Time of our *Edward* III. and the Bread thus *Exorciſed*, was ſaid to be *Corſned*. *Lindenbrock* gives Inſtances of *Exorciſms* with Barley Bread, and others with Cheeſe. And hence, probably, might ariſe that popular Imprecation, May this Bread choak me, if I tell a Lye. See ORDEAL, JUDICIUM *Dei*, &c.

The Word is derived from the *Greek*, ἐξορκίζειν, *adjurare*, *conjurare*, to adjure, or conjure.

In moſt Dictionaries, *Exorciſm* and Conjuration are uſed as ſynonymous: But, in Reality, *Conjuration* is only a Part of the *Exorciſm*; and the *Exorciſm* the Ceremony entire. --- The Conjuration is properly the Formula, whereby the Devil is commanded to come forth, &c. See CONJURATION.

EXORCIST, in the *Romiſh* Church, a Prieſt, or tonſured Clerk, who has receiv'd the four leſſer Orders, one of which is that of *Exorciſt*. See ORDER.

The Term is likewiſe applied to a Prelate, who actually *Exorciſes* a Perſon poſſeſs'd. See EXORCISM.

'Tis a Diſpute among Divines, whether ever the *Greeks* had properly any ſuch Order, as that of *Exorciſt*: Fa. *Goar*, in his Notes on the *Greek* Euchologue, has made it very probable they had, from ſeveral concurring Paſſages in St. *Dionyſius*, and St. *Ignatius Martyr*.

The Ordination of *Exorciſts* is perform'd in the Time of Maſs: Their principal Office being to expel Devils, the IV *th* Council of *Carthage*, Can. 7. appoints, that in the Ordination of *Exorciſts*, the Biſhop putting the Book of *Exorciſms* in their Hands, ſhall ſay theſe Words, *Receive it, and keep it in Remembrance, and have Power to lay Hands on Energumeni, whether Baptized, or Catechumens*; which Form ſtill obtains.

M. *Fleury* mentions certain People among the *Jews*, who travell'd round the Country, making Profeſſion of driving out Devils by Invocations, which they pretended had been taught them by *Solomon*: Theſe were alſo call'd *Exorciſts*. See *Joſeph. Antiq. Jud.* L. VIII. C. 2. *Origen. Tract.* XXXV. in *Matth.* XXVII. 63.

EXORDIUM, in Oratory, &c. the Preamble, or Beginning of a Diſcourſe, or Speech; ſerving to prepare the Audience, and introduce the Matter in Hand: Call'd alſo the *Prologue*, *Prælude*, and *Proem*. See PROLOGUE, &c.

Cicero defines *Exordium*, a Part of an Oration, whereby the Minds of the Audience are duly prepar'd for what remains to be ſaid: --- The *Exordium* is a Part of principal Importance, and to be labour'd with extraordinary Care; whence *Tully* calls it, *difficilima pars Orationis*. See ORATION.

The Word is form'd of the Latin, *Ordiri*, to begin; or by a Metaphor from the Weavers, who are ſaid *ordiri telam*, *ourder*, *begin*, or *warp* a Web, by diſpoſing and ordering the Threads in a certain Manner for the future Work.

Exordiums are of two Kinds: either juſt, and formal; or vehement and abrupt. In the firſt, the Audience is prepared and conducted, by due and eaſy Steps: In the ſecond, the Orator, as if ſeiz'd with ſome ſudden Paſſion, breaks out upon his Audience at once. Such is that *Exordium* of *Iſaiah*, *Hear, Oh Heavens, and give Ear, Oh Earth*. Or that of *Cicero* againſt *Catiline*, *Quouſq; tandem abutere patientia noſtra Catilina?*

Abrupt *Exordiums* are the moſt ſuitable, on Occaſions of exceeding Joy, Indignation, or the like; tho' we have Inſtances of Panegyricks of the greateſt Orators, begun abruptly without any ſuch Occaſions: Such is that of *Gorgias*, who began his Eloge of the City and People of *Elis*, with ἦλις πολις ἐυδαιμων, *Elis, beata civitas:* Or that of *Greg. Nazianzen*, in Praiſe of *Athanaſius*, Ἀθανασιον ἐπαινῶν αρετὴν ἐπαινεσομαι, *Athanaſium laudans virtutem laudabo*. Abrupt, haſty *Exordiums*, were more of the Taſte and Manner of the *Greeks* than the *Latins*.

The Requiſites in an *Exordium*, are, 1°. *Propriety*, whereby the *Exordium* becomes of a-piece with the whole Diſcourſe, and matches it, as a Part does a whole; ſo as that it could not be accommodated to any other, or perhaps a contrary Occaſion. The ancient Orators were very defective in this Point: Their *Exordiums* had frequently nothing in common with the Subject.

2°. *Care*, Accuracy, and Magnificence, as being the Part moſt minded, and moſt expoſed to Shew. Thus *Tully*, *Veſtibula, adituſq; ad cauſam facias illuſtres*.

3°. *Modeſty*, or an ingenuous Baſhfulneſs, which recommends the Orator exceedingly to the Favour of his Audience. This is what *Cicero* extols ſo much in *L. Craſſus*, *Fuit enim in L. Craſſo pudor quidam, qui non modo non obeſſet ejus Orationi, ſed etiam probitatis commendatione prodeſſet*. The ſame *Tully* owns, of himſelf, that at the Beginning of his Orations, he trembled every Limb, and his whole Mind was in a Flutter.

And, 4°. *Brevity*, not amplified, or ſwell'd with a Detail of Circumſtances, or a long Circuit of Words: Such as that muſt be of the Lawyer, who being to ſpeak of a Difference between two Neighbours, deduced his *Exordium* from *Adam*.

The *Exordium* appears an eſſential Part of an Oration: Tho', anciently, in the *Areopagus*, *Julius Pollux* tells us, they ſpoke without any *Exordium*, any Paſſions, and any Peroration, or Epilogue. The like is ſaid to have been done by *Xenophon*, who begins thus, *Darius & Pariſatis duos habuere filios*.

EXOSTOSIS, from ἐξ and ὀστέον, *Os*, a Bone; is any unnatural Protuberance of a Bone; frequent in Venereal Caſes: Or rather, it is a Swelling, occaſion'd by a Bone's being out of its natural Place, or Poſition. See BONE.

EXOTIC, a Term properly ſignifying *foreign*, or extraneous, *i. e.* brought from a remote, ſtrange Country: In which Senſe we ſometimes ſay *Exotic* or barbarous *Terms*, or *Words*, &c.

But *Exotic* is chiefly applied to Plants which are Natives of Foreign Countries, particularly thoſe brought from the *Eaſt* and *Weſt-Indies*; and which do not naturally grow in *Europe*.

The Generality of *Exoticks*, or *Exotick* Plants, do not thrive in *England*, without ſome peculiar Culture. They require the Warmth of their own Climates; whence the Uſe of hot-Beds, Glaſs Frames, Green-Houſes, &c. The Green-Houſe is properly a Conſervatory of *Exoticks*. See GREEN-HOUSE.

The Word is derived from the *Greek*, ἔξω, ἔξωθεν, *extra*; whence ἐξωτικὸς.

Dr. *Liſter* has a Diſcourſe in the Philoſoph. Tranſact. on *Exotic Diſeaſes*, i. e. Such Diſeaſes as are never bred among us, but brought from Time to Time by Infection from other Countries. Such, according to this Author, are, 1°. The *Plague*, which is properly a Diſeaſe of *Aſia*, where it is Epidemic. 2°. The *Small-Pox*, which is an *Oriental* Diſeaſe, and not known to *Europe*, or even *Aſia minor*, or *Africa*, till a Spice Trade was open'd to the remoteſt Part of the *Indies*; whence it originally came, and where it ſtill rages more cruelly than among us. 3°. The *Griping of the Guts*, which he takes for a Diſeaſe peculiar to the *Weſt-Indies*, and yearly receiv'd from thence. For this, he adds, is a quite different Diſeaſe from the *Tormina Ventris* of the Ancients; and is ſcarce ever known in the mid-land Countries, or far in the North of *England*.

EXPANSION, in Metaphyſicks, expreſſes the Idea we have of laſting, or perſevering Diſtance; *i. e.* of Diſtance, all the Parts whereof exiſt together. See DISTANCE.

EXPANSION, in Phyſicks, is the dilating, ſtretching, or ſpreading out of a Body; whether from any external Cauſe, as the Cauſe of Rarefaction; or from an internal Cauſe, as Elaſticity. See DILATATION, RAREFACTION, ELASTICITY.

Bodies naturally *Expand* by Heat, beyond their Dimenſions when cold; whence their ſpecific Gravities are different, at the different Seaſons of the Year. See SPECIFIC *Gravity*.

Air compreſſed, or condenſed, aſſoon as the compreſſing, or condenſing Force is removed, *Expands* it ſelf by its Elaſtic Power, to its former Dimenſions. See AIR.

But this may ſeem a leſs accurate Notion of *Expanſion*; which ſome Authors reſtrain to an Increment of the natural, or ordinary Dimenſions of a Body, by the mere Action of Heat. See HEAT.

Dr. *Halley* found by Experiment, that Water *Expands* it ſelf by one twenty ſixth part of its Bulk, when made to boil: But a moderate Heat does not induce any ſenſible *Expanſion* at all. ---- Mercury, with a very gentle Heat, *Expands* it ſelf one ſeventy fourth part of its ordinary Dimenſions. See WATER, &c.

Spirit of Wine, with a Heat leſs than that of boiling Water, *Expanded* it ſelf by one twelfth part of its Bulk; and then fell a boiling. The moſt ſenſible *Expanſion* of Water, is by Freezing. Mr. *Boyle*, in his *Hiſt. of Cold*, aſſures us, that Ice takes up one twelfth part more Space than Water. See FREEZING.

Dr. *Gregory*, in his *Aſtron.* p. 407. proves, that a Globe of our Air, of an Inch Diameter, if it were removed to the Diſtance of a Semi-diameter of the Earth, would *Expand* it ſelf ſo, as to fill all the planetary Region, as far as, nay, far beyond, the Sphere of *Saturn*.

EX *parte*, i. e. *partly*, or of *one part*, is thus uſed in the Court of Chancery: A joint Commiſſion is that wherein both Plaintiff and Defendant joyn; A Commiſſion *Ex parte*, is that taken out and executed by one Party only.

EX-

EXPECTANT-*Fee*, in Law, differs from Fee ſimple; Thus, *e. gr.* Lands being given to a Man and his Wife, in frank Marriage, to hold to them and their Heirs: In Caſe they have Fee-ſimple. If it be given to them, and the Heirs of their Body, *&c.* they have *Fee-Expectant.* See FEE.

EXPECTATIVE, a Hope founded on a Promiſe of obtaining the next Benefice that ſhall become vacant, or a Right to the Reverſion of the next.

Expectative Graces, *Gratiæ Expectativæ*, call'd alſo Preventions, were Bulls frequently given by the Popes, or Kings, for future Benefices: The Biſhops were exceedingly mortified with them; by reaſon they encroach'd on their Privileges. Beſides that ſuch *Expectatives* are odious, as they induce People to wiſh for the Death of others. See PREVENTION.

The Uſe of *Expectatives* is very ancient, tho' it was not near ſo frequent in the firſt Ages, as at preſent. Originally they were no more than ſimple Requeſts made on the Part of Kings, or Popes, which the Biſhops conſented to with the more Willingneſs, as they only preſented to them Perſons fit to ſerve the Church. But the frequent Exerciſe of this Privilege, made it at length be deem'd a Matter of Obligation and Neceſſity. See PRÆMUNIRE.

The Council of *Trent* annull'd all *Expectatives*; but thoſe Canons were never admitted in *France*; where the Right of conferring *Expectative* Graces, is look'd on as one of the Regalia.

EXPECTORATION, the Act of evacuating, or bringing up of Phlegm, or other Matters, out of the Lungs; by Coughing, Hawking, Spitting, *&c.* See LUNGS.

Expectoration eaſes the Lungs of the viſcid, or putrid Matters, which obſtruct its Veſſels, and ſtraitens the Breaſt.

EXPEDITATION, in the Foreſt Laws, ſignifies a cutting out the Ball of a Dog's Fore-feet, for the Preſervation of the King's Game. See FOREST and GAME.

Every one that keeps any great Dog not *expeditated*, forfeits three Shillings and Four Pence to the King. In Maſtiffs, not the Ball of the Feet, but the three Claws, are to be cut to the Skin. *Inſtit.* P. 4. pag. 308. *Nullos dominicos canes, Abbatis & Monachorum* expeditari, *Cogat. Chart.* Hen. 3. *Et ſint quieti de* Eſpedimentis *Canum. Ex mag. Rot. Pip. de Ann.* 9. Ed. 2.

This *Expeditation* was to be performed once in every three Years; and was done to every Man's Dog who lived near the Foreſt, and even the Dogs of the Foreſters themſelves.

EXPEDITION, a military Enterprize. Such were the *Expedition* of *Cyrus* againſt *Xerxes*; of *Alexander* into the *Indies*; the *Expedition* of *Xerxes* againſt *Greece*, was unhappy. *Cæſar* himſelf, in the middle of his *Expeditions* in the *Gauls*, compoſed two Books of the Analogy of Words.

The *Expeditions* for the Recovery of the Holy Land, were call'd *Croiſades*. See CROISADE.

EXPENSIS *militum levandis*, is a Writ directed to the Sheriff, for levying Allowance for the Knights of Parliament. See PARLIAMENT.

EXPERIENCE, a Kind of Knowledge acquired by long Uſe, without any Teacher.

Experience conſiſts in the Idea's of Things we have ſeen, or read, which the Judgment has reflected on, to form it ſelf a Rule, or Method.

Authors make three Kinds of *Experience*: The 1°. is the ſimple Uſe of the external Senſes, whereby we perceive the Phænomena of natural Things, without any direct Attention thereto, or making any Application thereof.

The 2°. is, when we premeditately, and deſignedly, make Trials of various Things, or obſerve thoſe done by others; attending cloſely to all the Effects and Circumſtances.

The 3°. is, that preceded by a Fore-knowledge, or, at leaſt, an Apprehenſion of the Event; and which determines whether the Apprehenſion were true or falſe. Which two latter Kinds, eſpecially the third, are of great Service in Philoſophy. See EXPERIMENT.

EXPERIMENT, in Philoſophy, a Trial of the Effect or Reſult of certain Applications, and Motions of natural Bodies; in Order to diſcover ſomething of the Laws and Relations thereof, or to aſcertain ſome Phænomenon, or its Cauſe.

The Schoolmen define *Experiment*, a Compariſon of ſeveral Things before obſerved by the Senſes, and retain'd in the Memory; in ſome one ſimilar convenient Inſtance.

The Nature of *Experiment*, therefore, according to them, conſiſts in comparing ſeveral Things by one Act; whence they diſtinguiſh two Things in every *Experiment*, the one *material*, viz. the ſeveral Idea's remember'd; the other *formal*, viz. the comparing of theſe Idea's in the Mind.

This will be illuſtrated by an Example: A Phyſician gives a Quantity of Rhubarb to ten ſeveral Perſons, and remembers each of them: Now, coming afterwards to compare the ſeveral Remembrances together, and finding the Effect of the Exhibition of Rhubarb to be the ſame in all, *viz.* A Purging: This is an *Experiment* of Rhubarb.

The making of *Experiments*, is grown into a Kind of form'd Art; and we now abound in Syſtems of *Experiments*, under the Denomination of *Courſes of experimental Philoſophy*. *Sturmius* has made a curious Collection of the principal Diſcoveries and *Experiments* of the preſent Age, under the Title of *Collegium Experimentale*. The Chymiſts chuſe to call their *Experiments*, by way of Diſtinction, or Eminence, *Proceſſes*, or *Operations*. See PROCESS.

EXPERIMENTAL *Philoſophy*, by the *Greeks* call'd Εμπειρια, *or* Εμπειρικη, is that which proceeds on *Experiments*; or which deduces the Laws of Nature, and the Properties and Powers of Bodies, and their Actions upon each other, from ſenſible *Experiments* and Obſervations.

Experiments are of the laſt Importance in Philoſophy; and the great Advantages the modern Phyſicks have above the Ancient, is chiefly owing to this, that we have a great many more *Experiments*, and that we make more Uſe of the *Experiments* we have.

Their Way of Philoſophizing was, to begin with the Cauſes of Things, and argue to the Effects and Phænomena; ours, on the contrary, proceeds from *Experiments* and Obſervations alone.

My Lord *Bacon* firſt paved the Way for the new Philoſophy, by ſetting on Foot the making of *Experiments*. His Method has been proſecuted with laudable Emulation by the Academy *del Cimento*, the Royal Society, Royal Academy at *Paris*, Mr. *Boyle*, Sir *Iſ. Newton*, and many others.

In Effect, *Experiments*, within theſe 50 or 60 Years, are come into ſuch Vogue, that nothing will paſs in Philoſophy, but what is founded on *Experiment*, or confirm'd by *Experiment*, &c. So that the new Philoſophy is almoſt altogether *Experimental*. See PHILOSOPHY.

Indeed, the Ancients, whatever we commonly ſay to the contrary, ſeem to have thought as well of the *Experimental* Way, as the Moderns. *Plato* miſſes no Occaſion of ſpeaking of the Advantages of the εμπειρια; and as to *Ariſtotle*, his Hiſtory of Animals may bear Witneſs for him. *Democritus*'s great Buſineſs was to make *Experiments*; and even *Epicurus* himſelf owes Part of his Glory to the ſame Cauſe. *Plato* calls it, in reſpect to its Subject, ευαισθησια, Subtlety of Senſe.

Yet there are thoſe, even among the Learned, who conceive of *Experiments* in a different Manner.

Dr. *Keill* allows, that Philoſophy has receiv'd very conſiderable Advantages from the Makers of *Experiments*; but complains of their Diſingenuity, in too often wreſting and diſtorting their *Experiments*, and Obſervations, to favour ſome darling Theories they had eſpouſed. But this is not all: M. *Hartſoeker*, in his *Recueil de pluſieurs pieces de phyſique*, undertakes to ſhew, that they who imploy themſelves in the making of *Experiments*, are not properly Philoſophers, but, as it were, the Labourers, or Operators of Philoſophers, who work under them, and for them, furniſhing them with Materials to build their Conjectures upon.

The learned M. *Dacier*, in the Beginning of his Diſcourſe on *Plato*, at the Head of his Tranſlation of the Works of that Philoſopher, deals ſtill more ſeverely with the Makers of *Experiments*. He breaks out with a Sort of Indignation, at a Tribe of idly curious People, whoſe Philoſophy conſiſts in making *Experiments* on the Gravity of the Air, the Equilibrium of Fluids, the Loadſtone, *&c.* and yet arrogate to themſelves the noble Title of Philoſophers.

EXPERIMENTUM *Crucis*, is a Capital, leading, or deciſive Experiment; thus call'd, either as, like a *Croſs* or Poſt of Directions placed in the meeting of ſeveral Roads, it guides and directs Men to the true Knowledge of the Nature of the Thing they are enquiring after: Or, as it is a Kind of Torture, whereby the Nature of the Thing is as it were extorted by Violence. See CRUCIS.

EXPIATION, the Act of *Suffering* the Puniſhments adjudged to a Man's Crimes, and thus paying off and diſcharging the Guilt.

The *Romaniſts* hold, that Souls, after Death, are ſent to Purgatory, to *expiate*, or atone for their Sins. See PURGATORY.

The Word is alſo applied to *Sacrifices* offered to the Deity, to implore his Mercy and Forgiveneſs. See SACRIFICE.

The Feaſt of EXPIATION, among the *Jews*, call'd by our Tranſlators the *Day of Atonement*, was held on the Xth Day of the 7th Month of the *Jewiſh* Year, anſwering to our *September*. It was inſtituted by God himſelf, *Levit.* XXIII. 27, *&c.* On that Day, the High-Prieſt, the Figure or Type of Jeſus Chriſt, confeſs'd his Sins;

Sins; and after ſeveral Ceremonies, made an Atonement for all the People to waſh them from their Sins.

EXPIATION, among the Heathens, was a Purification uſed for effacing, or aboliſhing of a Crime.

It was practiſed with divers Ceremonies: The moſt uſual was *Ablution*. See ABLUTION.

Expiations were perform'd for whole Cities, as well as particular Perſons.

After the young *Horatius* had been abſolved by the People from the Murther of his Siſter; he was further purified by the ſeveral *Expiations* preſcribed by the Laws of the Pontifices for involuntary Murthers. *Halicarnaſs.*

EXPILATION, in the Civil Law, the Act of *Withdrawing*, or diverting any Thing belonging to an Inheritance, before any Body had declared himſelf Heir thereof.

This made a peculiar Species of Theft: For there cou'd not properly be a Theft in taking a Thing not poſſeſs'd by any Body; or ere the Inheritance was accepted.

For this Reaſon, the *Roman* Legiſlature introduced the Action of *Expilation*, for the Puniſhment of this Crime.

EXPIRATION, in Medicine, that Motion in an Animal, whereby the Air, inſpired into the Lungs, is expell'd, or thruſt out of the ſame, and the Cavity of the Breaſt contracted. See LUNGS.

Reſpiration conſiſts of two alternate Motions, or Actions of the Lungs, correſponding to thoſe of a Pair of Bellows; *Inſpiration*, whereby the Air is drawn in; and *Expiration*, whereby 'tis driven out again. See RESPIRATION.

By Means of this Alternation, the Circulation of the Blood, and the Motions of the Heart are maintain'd. See CIRCULATION and HEART.

EXPIRATION, is alſo uſed figuratively, for the End of a Term of Time granted, agreed on, or adjudged.---'Tis not above eight Days, till the *Expiration* of the Term of his Impriſonment. The Term of ſuch a Bill of Exchange is *expired*, i. e. it is fallen due. See BILL.

EXPLICIT, in the Schools, ſomething clear, diſtinct, formal, and unfolded.--- The Will, Intention, *&c.* is ſaid to be *Explicit*, when 'tis fully explain'd, in proper Terms; and *implicit*, when 'tis only learnt by Deductions and Conſequences.

The *Jews* had not all an *Explicit* Knowledge of Jeſus Chriſt, but they had at leaſt an implicit one.

Such a Teſtator has declared his Will *explicitly*, i. e. in formal Terms; there is no need to have Recourſe to Explications.

EXPLOSION, in Phyſicks, the Action of a Thing that drives another out of the Place it before poſſeſs'd.

The Term is chiefly uſed for the going off of Gun-Powder, and the Expulſion of the Ball, Shot, or the like Conſequent thereon. See GUN-POWDER.

Hence the Word comes likewiſe to be figuratively uſed to expreſs ſuch ſudden Actions of other Bodies, as have ſome Reſemblance thereto; as thoſe which ferment with Violence, immediately upon their Mixture, and occaſion a crackling Sound.

Some Writers have likewiſe applied it to the Excurſions of the Animal Spirits, and inſtantaneous Motions of the Fibres, ariſing without the Direction of the Mind; but the Term then becomes too figurative to expreſs any determinate Idea, ſo as really to inform the Underſtanding.

EXPOLITION, in Rhetoric, a Figure, whereby we explain the ſame Thing in different Phraſes and Expreſſions, in order to ſhew it more fully.

Expolition was the favourite Figure of *Balzac* --- A Man, but moderately verſed in the Style of Scripture, will perceive that this is no more than an *Expolition*; that is, a Figure whereby the ſacred Author explains the ſame Thing in different Terms. The Scriptures are full of ſuch Figures; and I ſcarce think there is any one more ordinary. *Souciet.*

EXPONENT, in Arithmetic, or EXPONENT *of a Power*, the Number which expreſſes the Degree of the Power; or which ſhews how often a given Power is to be divided by its Root, ere it be brought down to Unity. See POWER.

Thus the *Exponent* of a Square Number is 2; of a Cube 3: The Square being a Power of the ſecond Degree; the Cube of the third, *&c.*

EXPONENT, is alſo uſed in Arithmetic, in the ſame Senſe with *Index*, or *Logarithm*.

Thus a Series of Numbers in Arithmetical Progreſſion, being placed under another Series in Geometrical Progreſſion, are call'd the *Exponents*, Indices, or Logarithms thereof. See INDEX.

E. gr. In the two Progeſſions,

Geom. 1, 2, 4, 8, 16, 32, 64, 128, 256, 512

Arith. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

0 is the *Exponent*, Index, or Logarithm, of the firſt Term 1; 5 that of the *6th.* 32, &c.

Hence, Unity is to the *Exponent* of the Power, as the Logarithm of the Root, to the Logarithm of its Power: Conſequently, the Logarithm of the Power is had, by multiplying the Logarithm of the Root by its *Exponent*; and the Logarithm of the Root is had, by dividing the Logarithm of the Power by its *Exponent*. See LOGARITHM.

EXPONENT *of a Ratio*, is the Quotient ariſing upon a Diviſion of the Antecedent by the Conſequent.--- Thus, in the Ratio 3 to 2, the *Exponent* is $1\frac{1}{2}$; and the *Exponent* of the Ratio 3 to 2, is $\frac{2}{3}$. See RATIO.

Hence, 1°. If the Conſequent be Unity, the Antecedent is the *Exponent* of the Ratio. *E. gr.* The *Exponent* of the Ratio 4 to 1, is 4. And again: The *Exponent* of a Ratio is to Unity, as the Antecedent to the Conſequent.

2°. Since, in a rational Ratio, the *Exponent* of the Ratio is had by dividing a rational Number by another rational; the *Exponent* of a rational Ratio, is a rational Number.

EXPONENTIAL *Calculus*, or *Calculus* EXPONENTIALIS, is the Method of differencing *Exponential* Quantities, and of ſumming up the Differentials of *Exponentials*. See CALCULUS.

EXPONENTIAL *Curve*, is that defined by an *Exponential Equation* ---Tranſcendental Curves partake both of the Nature of Algebraic and Tranſcendent ones; Of the former, becauſe they conſiſt of a finite Number of Terms, tho' thoſe Terms themſelves are indeteterminate; and of the latter, becauſe they cannot be Algebraically conſtructed. See CURVE.

EXPONENTIAL *Equation*, is that wherein there is an *Exponential* Quantity; call'd alſo a *Tranſcendental Equation*, and by ſome, a *Geometrical Irrational*. See EQUATION, TRANSCENDENTAL, *&c.*

EXPONENTIAL *Quantity*, is a Power whoſe *Exponent* is an indeterminate, variable, or flowing Quantity. See QUANTITY.

Exponential Quantities are of ſeveral Degrees and Orders; when the *Exponent* is a ſimple indeterminate Quantity, it is call'd an *Exponential* of the firſt or loweſt Degree.

When the *Exponent* it ſelf is an *Exponential* of the firſt Degree, then the Quantity is an *Exponential* of the ſecond Degree.

Thus z^y is an *Exponential* of the firſt Degree, becauſe the Quantity y is a ſimple flowing Quantity. But z^{y^x} is an *Exponential* Quantity of the ſecond Degree; becauſe y^x is an *Exponential* of the firſt Degree. So alſo $z^{y^{x^y}}$ is an *Exponential* of the third Degree, the *Exponent* y^{x^y} being one of the ſecond.

EXPORTATION, in Commerce, the Act of ſending Commodities out of one Kingdom into another. See COMMERCE.

The Merchandizes yearly *Exported* from *England* are immenſe.--- The principal Articles are Corn, Cattle, Cloth, Iron, Lead, Tin, Leather, Coal, Hops, Flax, Hemp, Hats, Malt Liquors, Fiſh, Watches, Ribbands, *&c.*

The Woollen Manufacture alone, yearly *Exported*, is computed to amount to 2000000 Pound Sterling; and Lead, Tin, and Coals, 500000 Pound. See WOOLLEN.

Wool, Fullers Earth, *&c.* are contraband Goods, *i. e.* prohibited to be *exported*. See CONTRABAND.

For the Duties of *Exportation*. See DUTY.

EXPOSING, the ſetting a Thing to publick View.

Perjury, Forgery, Libelling, falſe Weights and Meaſures, are puniſh'd, by *Expoſing* the Criminal in the Pillory, to the Deriſion of the People. See PILLORY.

In the *Romiſh* Church, the Sacrament is ſaid to be *Expoſed*, when 'tis ſhewn in public, uncover'd, on Feſtival Days, and during the Time of plenary Indulgences.

The Term is alſo uſed with a further Latitude: Thus, we ſay, 'tis prohibited to *Expoſe* falſe, or clipp'd Money.

Children are ſometimes *Expoſed* in the Streets; *i. e.* are left in the Streets, with Deſign to be loſt. --- Such a Houſe ſtands very high, and has a delicious Proſpect, but it is *expoſed* to all the Four Winds. Such a City being on the Frontiers, and not fortified, is *Expoſed* to the Inſults of every Party of Forces.

EXPOSITION, the Act of *Expoſing*.--- But the Term has a further Meaning; being likewiſe applied to the Interpretation, or Explication of an Author, or a Paſſage therein.

Thus we ſay, an *Expoſition* of the 39 Articles, of the Lord's Prayer, *&c.* In which Senſe we do not ſay *Expoſing*, but *Expounding*. See EXPOSURE.

EXPOSITOR, or EXPOSITORY, a Title ſome Writers have given to a little Kind of Dictionaries, or Vocabularies,

laries, *expounding*, or explaining the Meaning of the hard Words of the Language. See DICTIONARY and VOCABULARY.

EXPOSURE, or EXPOSITION, in Gardening, the Aſpect, or Situation of a Garden, Wall, Building, or the like, with reſpect to the Sun, Winds, *&c.* See GARDEN.

There are four regular Kinds of *Expoſures*, viz. *Eaſt*, *Weſt*, *North*, and *South*. But it muſt be obſerved, that among Gardeners, theſe Terms ſignifie juſt the contrary to what they do among Geographers.

The Gardeners, in Effect, do not give the Names *Eaſt*, *Weſt*, &c. to the Places where the Sun is; but to thoſe whereon he ſhines; and they conſider the Manner wherein he ſhines, whether as to the whole Garden, or ſome one of its Sides.

If they find, that the Sun at its Riſing, and during the firſt half of the Day, continues to ſhine on one Side of a Garden or Wall; they call that an *Eaſtern Expoſure*, or *Eaſt Wall*, &c. And if the Sun begin to ſhine later, or end ſooner, 'tis not a proper *Eaſtern Expoſure*.

For the ſame Reaſon, they call the *Weſt*, the Side the Sun ſhines on in the latter half of the Day, *i. e.* from Noon to Night. And accordingly, the *South*, or *South Expoſure*, is the Place whereon he ſhines, from about Nine a Clock in the Morning, till Night; or which, in the general, he ſhines longeſt on in the whole Day; and the Part he ſhines leaſt on, is the *North*, or *Northern Expoſure*; at what Hour ſoever it begin or end, being uſually from 11 a Clock to 1.

Such is the Gardeners Language with Regard to the *Expoſures*, and particularly thoſe of Walls; by which we are let into the Signification of this or the like Expreſſions, uſual among them. --- My *Eaſt* Wall proves, hits, or thrives better, than my *Weſt*. My *Eaſt* Fruit Trees have had fewer Showers than my *Weſt*, &c.

The *Eaſtern* and *Southern Expoſures* are, by common Conſent of all Gardeners, the two principal; and have a conſiderable Advantage above the reſt. A *Weſt Expoſure* is not much amiſs; at leaſt, 'tis better than a *Northern* one, which is the worſt of all. Each has its Inconveniencies.

The *Eaſtern*, commencing differently at different Seaſons of the Year, and ending about Noon, ſubjects the Trees, *&c.* to the *N. E.* Winds, which wither the Leaves and new Shoots, blow down the Fruit, *&c.* beſide that it has little Benefit of Rains, which come moſtly from the *Weſt*. Yet does the Reverend Mr. *Lawrence* judge, the *Eaſt* better than the *Weſt* Wall, for all Kinds of Fruit: Not that it has more Hours of Sun, or that there are any peculiar Virtues in the *Eaſtern* Rays, but becauſe the early Rays of the Sun do ſooner take off the cold chilly Dews of the Night.

M. *Gentil* recommends the *Eaſtern Expoſure*, as beſt for all Kinds of Peaches; adding, that they ripen ſoooeſt, grow bigger, are better colour'd, and of a finer Taſt than in any other: But Mr. *Carpenter* reſtrains the Rule to the early and middle Sorts: For the backward, he rather chuſes a *Southern*, or *South Eaſt Expoſure*; which is beſt for all late Fruits; becauſe the Influence of the Sun is ſtrongeſt, and continues longeſt therein.

The *Weſtern*, accounted from half an Hour paſt 11, till Sun-ſet, is backwarder than an *Eaſtern* one by 8 or 10 Days; but it has this Advantage, that it receives little Damage from the Froſts, which melt before the Sun comes to ſhine upon the Fruit, and fall off like Dew, without doing any Prejudice: So that it may bear Apricocks, Peaches, Pears, and Plums. But it is incommoded with *North Weſt* Winds in the Spring, as alſo the Autumn Winds, which blow down a deal of Fruit.

The *Northern Expoſure* has le's Sun than the *Weſt*; yet is it not without its Advantages. In the Northerly Parts of *England*, it bears little elſe but Pears, Cherries, and Plums. But in the warmer Parts it ſerves for Apricocks, which have the Advantage of continuing later, than in any other *Expoſure*, beſides being free from Inſects.

The *Southern Expoſure*, accounted from about 9 till 4, is recommended for Peaches, Pears, Grapes, and Plums.

EXPRESS, ſomething that is preciſe, in formal Terms, or for ſome particular Deſign.

I told him as much in *Expreſs* Terms: He gave me a Commiſſion *Expreſs*: He had *Expreſs* Orders. A Courier was diſpatch'd *Expreſs*.

We alſo ſay, ſomewhat abuſively, to ſend an *Expreſs*, meaning a Courier. See COURIER.

EXPRESSED *Oils*, are ſuch as are procured from Bodies, only by preſſing; as the Oils of Olives, Almonds, and the like. See OIL and EXPRESSION.

EXPRESSION, in Medicine, Chymiſtry, *&c.* the Act of *Expreſſing*, or extracting the Juices of Plants, Fruits, and other Matters, by ſqueezing, wringing, or preſſing them in a Preſs. See PRESS.

After having let the Herbs infuſe their due Time, their Juice muſt be drawn by *Expreſſion* in a Linen Cloth, or under a Preſs. See INFUSION.

EXPRESSION, the Manner of delivering, or conveying a Man's Ideas to another.

The Simplicity of the *Expreſſion*, leaves the Grandeur, or Littleneſs of the Thought, to be perceiv'd.

Expreſſion is particularly uſed for the Elocution, Diction, and Choice of Words in a Diſcourſe. --- 'Tis not enough a Poet, or Orator, have fine Thoughts, he muſt likewiſe have a happy *Expreſſion*. Defects in the *Expreſſion* ordinarily ariſe from Defects in the Imagination. Abundance of the Beauties of the ancient Writers, are attach'd either to an *Expreſſion* peculiar to their Language; or to Relations, which not being ſo familiar to us as to them, do not give us the ſame Pleaſure. *De la Motte*.

EXPRESSION, in Painting, the natural and lively Repreſentation of the Subject, or of the ſeveral Objects intended to be ſhewn. See PAINTING.

The *Expreſſion* conſiſts principally in repreſenting the human Body, and all its Parts, in the Action ſuitable to it; in exhibiting in the Face, the ſeveral Paſſions proper to the Figures; and obſerving the Motions they impreſs on the other external Parts. See ALTITUDE.

The Term *Expreſſion*, is ordinarily confounded with that of Paſſion: But they differ in this, that *Expreſſion* is a general Term, implying a Repreſentation of an Object, agreeably to its Nature and Character, and the Uſe, or Office it is to have in the Work; and Paſſion, in Painting, is a Motion of the Body, accompanied with certain Diſpoſitions, or Airs of the Face, which mark an Agitation in the Soul. So that every Paſſion is an *Expreſſion*; but not every *Expreſſion* a Paſſion. See PASSION.

The Laws, or Rules of Expreſſion *in Painting.*

Expreſſion, we have ſaid, is a Repreſentation of Things according to their Character; and may be conſider'd either with reſpect to the *Subject* in general; or to the *Paſſions* peculiar thereto.

I. With regard to the *Subject*, 'tis to be obſerved, 1°. That all the Parts of the Compoſition are to be transform'd, or reduced, to the Character of the Subject; ſo as they may conſpire to impreſs the ſame Sentiment, Paſſion, or Idea: Thus, *e. gr.* in a Repreſentation of Joy and Peace, every Thing is to appear calm and agreeable; of War, turbulent, and full of Terror, *&c.*

2°. In Order to this, if any Circumſtance occur in Hiſtory, or Deſcription, that would invert, or take from the Idea; it muſt be ſuppreſſed; unleſs eſſential to the Subject.

3°. To this End, the Hiſtory, or Fable, is to be well ſtudied in the Authors who deſcribe it, in Order to conceive its Nature and Character truly, and impreſs it ſtrongly on the Imagination; that it may be diffuſed and carried thro' all the Parts of the Subject. See ACTION, FABLE, *&c.*

4°. A Liberty to be taken of chuſing favourable Incidents, in order to diverſifie the *Expreſſion*; provided they be not contrary to the principal Image of the Subject, or the Truth of Hiſtory. See EPISODE.

5°. The Harmony of the *tout Enſemble* to be particularly regarded, both with regard to the Actions, and the Light and Colour. See CLAIR *obſcure*.

6°. The Modes and Cuſtoms to be obſerved; and every Thing made conformable to Time, Place, and Quality. See CUSTOM.

7°. The three Unities of Time, Place, and Action, to be obſerved: That is, nothing to be repreſented in the ſame Picture, but what paſſes at the ſame Time, and may be ſeen at the ſame View.

II. With regard to the particular *Paſſions* and *Affections* of the Subject; the Rules are, 1°. That the Paſſions of Brutes are few and ſimple, and have almoſt all an immediate Reſpect, either to Self-Preſervation, or the Propagation of the Kind: But, in Men, there is more Variety; and accordingly, more Marks and *Expreſſions* thereof. Hence, Man can move his Eye-brows, which, in Brutes, are immoveable: And can likewiſe move the Pupil every way, which Brutes cannot.

2°. Children, having not the Uſe of Reaſon, act much on the Footing of Brutes; and *expreſs* the Motions of their Paſſions directly, and without Fear or Diſguiſe.

3°. Tho' the Paſſions of the Soul, may be *expreſs'd* by the Actions of the Body; 'tis in the Face they are principally ſhewn; and particularly in the Turn of the Eye, and the Motion of the Eye-brows.

4°. There are two Ways of lifting up the Eye-brows, the one at the middle, which likewiſe draws up the Corners of the Mouth, and argues pleaſant Motions: The other, at the Point next the Noſe, which draws up the middle of the Mouth, and is the Effect of Grief and Sadneſs.

5°. The

5°. The Paſſions are all reducible to Joy and Sadneſs; each of which is either ſimple, or mix'd and paſſionate.

6°. Simple Joy cauſes a Dilatation of all the Parts: The Eye-brows riſe in the middle, the Eyes half open, and ſmiling, the Pupil ſparkling and moiſt, the Noſtrils a little open, the Cheeks full, the Corners of the Mouth drawn a little upwards, the Lips red, the Complexion lively, the Forehead ſerene.

7°. Paſſionate Joy proceeding from Love, ſhews the Forehead ſmooth and even, the Eye-brows a little elevated on the Side the Pupil is turn'd to, the Eyes ſparkling and open, the Head inclined towards the Object, the Air of the Face ſmiling, and the Complexion ruddy: --- That proceeding from Deſire, ſhews it ſelf by the Body, the Arms extended towards the Object, in uncertain and unquiet Motions.

8°. Simple Sadneſs, is *Expreſs'd* by the Body being caſt down, the Head careleſſy hanging aſide, the Forehead wrinkled, the Eye-brows rais'd to the midſt of the Fore-head, the Eyes half ſhut, the Mouth a little open, the Corners downwards, the under-Lip pointing and drawn back, the Noſtrils ſwell'd, and drawn downwards. --- That mix'd with *Fear*, cauſes the Parts to contract and palpitate, the Members to tremble and fold up, the Viſage to be pale and livid, the Point of the Noſtrils elevated, the Pupil in the middle of the Eye, the Mouth openeſt at the Sides, and the under-Lip drawn back. --- In that mix'd with *Anger*, the Motions are more violent, the Parts all agitated, the Muſcles ſwell'd, the Pupil wild and ſparkling, the Point of the Eye-brows fix'd towards the Noſe, the Noſtrils open, the Lips big and preſs'd down, the Corners of the Mouth a little open and foaming, the Veins ſwell'd, and the Hair erect. --- That with *Deſpair*, reſembles the laſt, only more exceſſive and diſorder'd.

9°. The Hand has a great Share in the *Expreſſion* of our Sentiments and Paſſions: The raiſing of the Hands conjoyn'd --- towards Heaven, *expreſſes* Devotion: Wringing the Hands, Grief: Throwing them towards Heaven, Admiration: Fainting, and dejected Hands, Amazement and Deſpair: Holding the Hands, Idleneſs: Holding the Fingers indented, muſing: Holding forth the Hands together, Yielding and Submiſſion: Lifting up the Hand and Eye to Heaven, calling God to Witneſs: Waving the Hand from us, Prohibition: Extending the right Hand to any one, Pity, Peace, and Safety: Scratching the Head, Thoughtfulneſs and Care: Laying the Hand on the Heart, ſolemn Affirmation: Holding up the Thumb, Approbation: Laying the Fore-finger on the Mouth, bidding Silence: Giving with the Finger and Thumb, *parce dare*: And the Fore-finger put forth, the reſt contracted, *Monſtrari & dicier hic eſt.*

10. The *Sex* of the Figure to be regarded; and Man, as he is of a more vigorous and reſolute Nature, to appear in all his Actions freer and bolder than Women, who are to be more reſerved and tender.

11. So alſo the *Age*, the different Stages whereof incline to different Motions both of Body and Mind.

12. The *Condition*, or Honours, a Perſon is inveſted withal, renders their Actions more reſerved, and their Motions more grave; contrary to the Populace, who obſerve little Conduct or Reſtraint; giving themſelves, for the moſt part, up to their Paſſions; whence their external Motions become rude and diſorderly.

Laſtly, in *Spirits* we muſt retrench all thoſe corruptible Things, which ſerve only for the Preſervation of Life, as Veins, Arteries, *&c.* only retaining what may ſerve for the Form and Beauty of the Body. --- In *Angels*, particularly, as being ſymbolical Figures, we are to mark out their Offices and Virtues, without any Draught of ſenſual Paſſions; only appropriating their Characters to their Functions of Power, Activity, and Contemplation.

EXPULSION, the Act of driving a Man by Force out of a City, Community, or the like.

Milton is upbraided by one of his Antagoniſts, Archbiſhop *Bramhall*, with his *Expulſion* from the Univerſity of *Oxford*; but he ſhews it a groundleſs Suggeſtion. --- Mr. ..... was expell'd from *Cambridge*, on Suſpicion of Hereſy. --- *Expulſion* out of Parliament, *&c.*

EXPULSION, is alſo uſed in Medicine, for the Act of driving a Thing out with Violence, from the Place it was in.

The *Uterus* has the chief Office in the *Expulſion* of the *Fœtus*: If the *Expulſion* of the *Fœtus* happen within ſeven Days after Conception, 'tis call'd a falſe Birth. See FOETUS, DELIVERY, *&c.*

EXPURGATION, in Aſtronomy, is uſed by ſome Authors, for the State or Action of the Sun; wherein, after having been Eclipſed and hid by the Interpoſition of the Moon, it begins to appear again: But the later Aſtronomers do all call this, *Emerſion*, not *Expurgation*. See EMERSION.

EXSICCATION, in Chymiſtry, *&c.* the Act of drying, or evaporating the Moiſture of a Thing. See EVAPORATION.

The Word is *Latin*, form'd of *ex*, and *ſiccus*, dry.

EXSUDATION, the Act of ſweating out --- in which manner Gums, Balſams, *&c.* are produced from Trees. See GUM and BALM.

EXTANT, ſomething ſtill ſubſiſting, or in being.

'Tis but part of the Hiſtory of *Livy*, of the Writings of *Cicero*, *Cæſar*, &c. that are *Extant*; the reſt are loſt. We have nothing *Extant* of *Socrates*; tho' he wrote a great deal.

EXTASY, a Rapture, or Removal of the Mind out of its natural State and Situation: Or, a Tranſport, whereby a Perſon is hurried out of himſelf, and the Office of his Senſes ſuſpended.

In Eccleſiaſtical Hiſtory, we read of divers Monkiſh Saints being in *Extaſies* for ſeveral Days ſucceſſively. --- St. *Paul*'s being taken up into the Third Heaven, was what we call an *Extaſy*.

EXTASY, in Medicine, is a Diſeaſe much like a Catalepſy, only differing in this, that the Cataleptic Patient has no Perception of what paſſes in his Paroxyſm, nor any Remembrance thereof when 'tis over; whereas the *Extatic* is taken up with a very lively Idea, or Imagination, which he remembers afterwards.

In an *Extaſy*, there muſt be an unuſual Tenſion of the Fibres of the Senſory, as in moſt Deliriums, *&c.* See PHRENZY, MANIA, MELANCHOLIC, *&c.*

EXTENDING, in a Legal Senſe, ſignifies the valuing of Lands and Tenements, of one bound by Statute, *&c.* and who hath forfeited his Bond, to ſuch an indifferent Rate, as that by the Yearly Rent, the Obligator may, in Time, be fully paid his Debt. See EXTENT.

EXTENSION, in Phyſicks, that whereby a Thing is conſtituted long, broad, or deep, *&c.* See BODY.

Extenſion is uſually deſcribed, as conſiſting *in the Situation of Parts, beyond Parts*; which ſome Authors cavil withal, as holding that we can conceive abſolute *Extenſion*, without thinking of any Relation of Parts.

If a Man conſider the Diſtance between two Bodies, abſtractedly, and without having Regard to the Bodies that fill that Interval, it is call'd *Space:* And when he conſiders the Diſtance between the Extremes of a ſolid Body, it is call'd *Extenſion*. See SPACE.

Extenſion is frequently confounded with *Quantity* and *Magnitude*; and, for what we can perceive, without much Harm: The Thing ſignified by them all appearing to be the ſame. Unleſs we admit a Diſtinction made by ſome Authors, that the *Extenſion* of a Body is ſomething more abſolute; and its Quantity and Magnitude more reſpective, or implying a nearer Relation to much and little. See QUANTITY, MAGNITUDE, BULK, *&c.*

EXTENSOR, in Anatomy, a Name common to divers Muſcles, ſerving to *extend*, or ſtretch out the Parts; and particularly the Hands and Feet: Such are the

EXTENSOR *Carpi Ulnaris*, call'd alſo *Cubitæus internus*, a Muſcle, which coming from the internal Protuberance of the *Humerus*, and paſſing tendinous under the *Ligamentum Annulare*, is inſerted into the upper Part of the Bone *Metacarpium*, which anſwers to the little Finger. This, and the *Ulnaris flexor*, moving together, draw the Hand ſide-wiſe towards the *Ulna*.

EXTENSOR *Carpi Radialis*, call'd alſo *Radiæus Externus*, and *Bicornis*, is really two diſtinct Muſcles. The firſt ariſes from above the external Protuberance of the *Humerus*; and the ſecond from the lowermoſt Part of the external Protuberance. They both lie along the external Part of the *Radius*, and paſſing under the annular Ligament, one is inſerted into the Bone of the *Metacarpus*, that ſuſtains the Fore-finger; and the other to that which ſuſtains the Middle-finger. Theſe two extend the Wriſt.

EXTENSOR *communis digitorum manus*, ariſes from the external Protuberance of the *Humerus*, and at the Wriſt divides into three flat Tendons, which paſs under the annular Ligament, to be inſerted into all the Bones of the Fore, Middle, and Ring-finger.

EXTENSOR *primi internodii pollicis*, ariſes from the upper and external Part of the *Ulna*, and paſſing obliquely over the Tendon of the *Radius externus*, is inſerted near the ſecond Joint of the Thumb.

EXTENSOR *ſecundi internodii pollicis*, ariſes from the upper and internal Part of the *Radius*, and is inſerted into the upper Part of the ſecond Bone of the Thumb.

EXTENSOR *tertii internodii pollicis*, ariſes from the *Ulna*, a little below the firſt Extenſor, and is inſerted into the third Bone of the Thumb.

EXTENSOR *indicis*, comes from the middle and external Part of the *Ulna*, and paſſing under the annular Ligament, is inſerted into the third Bone of the Fore-finger, where it joins the *Extenſor Communis*.

EXTEN-

EXTENSOR *minimi Digiti*, ariſes from the external Protuberance of the *Humerus*, and from the upper Part of the *Ulna*; and paſſing under the annular Ligament, is inſerted into the third Bone of the little Finger.

EXTENSOR *Pollicis*, ariſes from near the upper half of the *Perone* forwards, and paſſing under the annular Ligament, is inſerted into the laſt Bone of the great Toe.

EXTENSOR *digitorum Pedis longus*, is a Muſcle derived from the fore Part of the upper Epiphyſis of the *Tibia*, and growing tendinous about the middle thereof, runs in four Tendons under the annular Ligament, to the third Bone of every Toe, except the *Pollex*.

EXTENSOR *digitorum pedis brevis*, comes from the exterior and fore Part of the *Calcaneum*, and goes to the ſecond Joint of the Toes.

EXTENSOR *pollicis Pedis longus*, riſes large and fleſhy from the fore Part of the *Fibula*, a little below its upper Proceſs; whence, paſſing under the annual Ligament, it is inſerted into the upper Part of the ſecond Bone of the great Toe.

EXTENSOR *pollicis Pedis brevis*, ſprings fleſhy from the fore Part of the *Os Calcis*, and after a ſhort Belly, is contracted into a ſlender Tendon; which running obliquely over the upper Part of the Foot, is inſerted into the ſecond Bone of the *Pollex*.

EXTENT, in Law, hath three Significations; ſometimes it denotes a Writ, or Commiſſion to the Sheriff, for the valuing of Lands and Tenements: Sometimes the Act of the Sheriff upon this Writ. And ſometimes the Eſtimate, or Valuation of Lands, *per proprios Viros*. Fleta, *Lib.* 2. See EXTENDING.

EXTENUATION, the Act of diminiſhing, or leſſening, the Force of a Thing.

Thus, in Medicine, we ſay, Fevers, Agues, long Abſtinences, *&c.* occaſion great *Extenuations* or Emaciations.

EXTENUATION, is alſo a Figure in Rhetoric, oppoſite to the Hyperbole. The *Greeks* call it λιτότης.

EXTERIOR *Polygon*, } See { POLYGON.
EXTERIOR *Talus*, } See { TALUS, *&c.*

EXTERMINATION, the Act of *Extirpating*, or totally deſtroying a People, Race, Family, *&c.*

The *Jews* have been *Exterminated* out of *Portugal*; the *Moors* out of *Spain*; the *Albigenſes* out of *France*, &c. *Philip* the Fair of *France*, to be revenged on the *Knights Templars*, took a Reſolution in 1307, to *Exterminate* them. See TEMPLAR.

The Word is Latin, form'd of *ex* and *terminus*, Boundary.

EXTERNAL, or EXTERIOUR, a Term of Relation, applied to the Surface, or out-ſide of a Body; or that Part which appears, or preſents, to the Eye, Touch, *&c.* In which Senſe it is expoſed to *Internal*, or *Interior*. See INTERNAL.

External Medicines are alſo call'd *Topicks*. See TOPIC.

The Senſes are divided into *External*, which are thoſe whereby we perceive Ideas, or Perceptions of *External* Objects; as *Seeing*, *Hearing*, &c. and *Internal*. See SENSES.

EXTERNAL, is alſo uſed to expreſs any Thing that is without-ſide a Man, or that is not within him, and particularly in his Mind. In this Senſe, we ſay *External Objects*, &c. See OBJECT.

The Exiſtence of an *External World*, i. e. of Bodies, and Objects, out of the Mind, is a Thing has been greatly call'd in Queſtion of late. See MATTER, BODY, WORLD, *&c.*

'Were it poſſible for Bodies, *i. e.* ſolid, figured, *&c.* 'Subſtances to exiſt without the Mind, correſponding to 'thoſe Ideas we have of *External* Objects, yet how were 'it poſſible for us to know it? Either we muſt know 'it by Senſe, or Reaſon: As for our Senſes, by them 'we have only the Knowledge of our Senſations or Ideas: 'They do not inform us that Things exiſt without 'the Mind, or unperceiv'd, like thoſe which are perceiv'd. 'It remains, therefore, that if we have any Knowledge 'at all of *External* Things, it muſt be by Reaſon, in'ferring their Exiſtence from what is immediately per'ceiv'd by Senſe. But how ſhall Reaſon induce us to 'believe the Exiſtence of Bodies without the Mind, when 'the Patrons of Matter themſelves deny that there is any 'neceſſary Connection betwixt them and our Ideas. In 'Effect, 'tis granted on all Hands, and what happens in 'Dreams, Phrenzies, Deliriums, Extaſies, *&c.* puts it be'yond Diſpute, that we might be affected with all the 'Ideas we have now, tho' there were no Bodies exiſting 'without, reſembling them. Hence, it is evident, the Sup'poſition of *External* Bodies is not neceſſary for the 'Production of our Ideas.' *Berkeley's Princ. of Human Knowledge*, p. 59.

'Granting the Materialiſts their *External* Bodies, they 'by their own Confeſſion, are never the nearer knowing 'how our Ideas are produced; ſince they own themſelves unable to comprehend in what Manner Body can 'act upon Spirit; or how it is poſſible it ſhould imprint 'any Idea in the Mind. Hence, the Production of Ideas, 'or Senſations, in our Minds, can be no Reaſon why 'we ſhould ſuppoſe Matter, or Corporeal Subſtances; 'ſince that is equally inexplicable with or without the 'Suppoſition. In ſhort, tho' there were *External* Bodies, 'tis impoſſible we ſhould ever come to know it; and if 'there were none, we ſhould have the ſame Cauſe to 'think there were that we now have.' *Id. ibid.* p. 60, 61.

'Try, whether you can conceive it poſſible for a Sound, 'or Figure, or Motion, or Colour, to exiſt without the 'Mind, or unperceiv'd. This may perhaps convince you, 'that what you contend for, is a downright Contradiction. '—I am content to put the whole upon this Iſſue: If 'you can but conceive it poſſible for one extended, move'able Subſtance, or, in general, for any one Idea to exiſt 'otherwiſe than in a Mind perceiving it; I ſhall readily 'give up the Cauſe. *Id. ibid.* p. 63.

'It is worth while to reflect a little on the Motives 'which induced Men to ſuppoſe the Exiſtence of material 'Subſtance; that ſo, having obſerved the gradual ceaſing 'and Expiration of thoſe Motives, we may withdraw the 'Aſſent grounded on them. Firſt, Therefore it was thought 'that Colour, Figure, Motion, and the reſt of the ſenſible 'Qualities, did really exiſt without the Mind; and 'for this Reaſon, it ſeem'd neceſſary to ſuppoſe ſome 'unthinking Subſtratum, or Subſtance, wherein they did 'exiſt, ſince they could not be conceiv'd to ſubſiſt by 'themſelves. Afterwards, in Proceſs of Time, Men being 'convinced that Colours, Sounds, and the reſt of the ſenſible ſecondary Qualities had no Exiſtence without the 'Mind; they ſtripp'd this Subſtratum of theſe Qualities, 'leaving only the primary ones, Figure, Motion, *&c.* 'which they ſtill conceiv'd to exiſt without the Mind, 'and conſequently to ſtand in need of a material Sup'port. But having ſhewn above, that none, even of theſe, 'can poſſibly exiſt otherwiſe than in a Spirit, or Mind, 'which perceives them, it follows, that we have no longer 'any Reaſon to ſuppoſe the Being of Matter.' *Id. Ibid.* p. 118, 119. See QUALITY.

This Syſtem, Mr. *Lock* endeavours to ſet aſide, and to prove the Exiſtence of *External Bodies*.—His Arguments ſee under the Article EXISTENCE.

EXTERNAL *Angles*, are the Angles of any right-lined Figure form'd without it, when all the Sides are ſeverally produced. See ANGLE.

Theſe are all, taken together, equal to four right Angles.

Particularly, in a Triangle, the *External* Angle e, (*Tab. Geometry Fig.* 76.) is equal to both the internal and oppoſites ones z and y. See TRIANGLE.

EXTERNAL *Ear*, } See { EAR.
EXTERNAL *Rights*, } See { RIGHT.
EXTERNAL *Beauty*, } See { BEAUTY.

EXTERNUIS *Auris*, in Anatomy, a ſmall Muſcle coming from the Side of the *Meatus Auditorius*, to the ſhort Proceſs of the *Malleus*; ſerving to draw the Handle thereof downwards, and ſo to relax the *Membrana Tympani*. See TYMPANUM and MALLEUS.

EXTINCTION, the Act of *Extinguiſhing*, or deſtroying Fire or Light.

Boerhaave denies, that there is properly any ſuch Thing as extinguiſhing of Fire. 'Tis a Body *Sui generis*, of an immutable Nature, and we can no more extinguiſh, or deſtroy it, than create it. See FIRE.

The *Ariſtotelians* account for the *Extinction* of Fire from the Principle of Contrariety; thus, ſay they, Water puts out Fire, by Reaſon the Qualities of Water are contrary to thoſe of Fire; the one being cold, and moiſt, and the other, hot and dry. But how far this will go, may appear hence, that Fire is extinguiſhed by hot Water as readily as cold; nay by Oil, Earth, *&c.* See ANTIPERISTASIS.

Some of the Moderns offer two more plauſible Cauſes of *Extinction*, viz. *Diſſipation*, as when the next, immediate Fuel of the Flame, is diſperſed and blown off by too forcible a Wind: And *Suffocation*, when it is ſo compreſs'd, as that its free Motion cannot be maintain'd; as happens upon throwing Water, *&c.* thereon. See FUEL.

EXTINCTION, in Chymiſtry and Pharmacy, is when a Metal, Mineral, or the like Body, after having been heated red hot in the Fire, is plunged in ſome Fluid; either to ſoften and temper its Acrimony, as the Tutty made of Pearl; or to communicate its Virtue to the Liquor, as Iron or Steel in Water; or, laſtly, to give it a Temper, as in the *Extinction* of Steel in Water, or other Preparation. See TEMPER.

EXTINGUISHMENT, in Law, is uſed for a *Conſolidation*. See CONSOLIDATION.

E. gr.

E. gr. If a Man, having a yearly Rent due to him out of my Lands, afterwards purchaſe the ſame Lands; both the Property and Rent becoming Conſolidated, or United in one Poſſeſſor, the Rent is ſaid to be *extinguiſh'd*.

So, where a Man has a Leaſe for Years, and afterwards buys the Property, there is a *Conſolidation* of the Property, and an *Extinguiſhment* of the Leaſe. See CONSOLIDATION.

So alſo if there be Lord, Meſn, and Tenant, and the Lord purchaſe the Tenancy, the Meſnalty is *extinct*.

EXTIRPATION, the Act of pulling up, or deſtroying a Thing to the very Roots. — Dogs Graſs is a Weed very difficult to *Extirpate*.

Among the Prayers of the *Romiſh* Jubilee, there is one for the *Extirpation* of Hereſy.

The Word is form'd of the Latin *ex* and *ſtirps*. But its chief Uſe is in a figurative Senſe.

EXTIRPATION, is alſo uſed in Chirurgery, for the cutting off any Part entirely; as a Wen, *&c.* or the eating it away, as a Wart, *&c.* by corroſive Medicines.

EXTISPEX, in Antiquity, an Officer who viewed, and examined the Entrails of Victims; in order to draw Preſages therefrom as to Futurity. See SACRIFICE.

This Kind of Divination, call'd *Extiſpicium*, was mightily in Vogue throughout *Greece*, where there were two Families, the *Jamides* and *Clytides*, conſecrated, or ſet a-part, peculiarly for it.

In *Italy*, the firſt *Extiſpices* were the *Hetrurians*; among whom, likewiſe, the Art was in great Repute. *Lucan* gives us a fine Deſcription of one of theſe Operations in his Firſt Book.

The Word is form'd from the Latin *exta* and *ſpicere*, of *ſpicio*, I view, conſider.

EXTORTION, in Law, an illegal Manner of wreſting any Thing from a Man, either by Force, Menace, or Authority.

Thus, *e. gr.* if an Officer, by terrifying, or ſpunging another on Pretence of his Office, takes more than his ordinary Fees, or Dues, he commits, and is indictable for *Extortion*.

So alſo the Exacting of unlawful Uſury, winning by unlawful Games, and, in fine, all taking of more than is juſtly due by Colour or Pretence of Right, as exceſſive Tolls in Millers, exceſſive Prices of Ale, Bread, Victuals, Wares, *&c.* comes under *Extortion*. See EXACTION.

Crompton ſays, that Wrong done by any Man, is properly a Treſpaſs, but exceſſive Wrong is *Extortion*; which is moſt properly applicable to Sheriffs, Mayors, Bailiffs, and other Officers, who, by Colour of their Office, greatly oppreſs and wrong the King's Subjects, by taking exceſſive Rewards, or Fees, for executing their Office.

EXTRA *Judicial*, in Law, is when Judgment is given in a Cauſe, or Caſe, not depending in that Court where ſuch Judgment is given, or wherein the Judge has not Juriſdiction.

EXTRA *Parochial*, what is out of the Bounds of any Pariſh; or privileged, and freed from the Duties of a Pariſh. See PAROCHIAL.

EXTRACT, in Pharmacy, the pureſt, and fineſt Part of a Vegetable, or other Body, ſeparated from the coarſer, by diſſolving and digeſting it with a proper Menſtruum; and afterwards reduced into a thick, moiſt Conſiſtence by a Diſtillation, or Evaporation of the Humidity of the Menſtruum. See EXTRACTION.

EXTRACT, in Matters of Literature, *&c.* is uſed for ſome Matter, Doctrine, Paſſage, or the like taken from a Book, or Regiſter.

The Journals, *Nouvelles*, *Bibliotheques*, *Memoires*, and other Monthly or Quarterly Accounts of the Affairs of Learning, conſiſt principally of *Extracts* of the moſt material Paſſages, Doctrines, *&c.* found in the ſeveral Books, publiſh'd in that Time. See JOURNAL.

EXTRACTING, an artful drawing out of the Juices, Virtues, and Qualities of a natural Body. See EXTRACTION.

There are divers Ways of *Extracting* the Virtues of Vegetables, Minerals, *&c.* by *Preſſion*, *Infuſion*, *Lotion*, *Calcination*, *Diſtillation*, *Cohobation*, and other Operations taught in Chymiſtry and Pharmacy. See PRESSION, *&c.*

EXTRACTION, in Pharmacy and Chymiſtry, an Operation, whereby Eſſences, Tinctures, *&c.* are drawn from natural Bodies. See EXTRACT.

Some will have *Extraction* to ſignify any Solution made by Menſtruums: But, in Strictneſs, there is this Difference; that in *Solution* the Menſtruums abſorb the whole Subſtance of the Body, but in *Extraction* they carry off only certain Part of it: And in this Senſe, Camphire is diſſolved in Spirit of Wine, but Jalap is more properly ſaid to be *extracted*; for the Reſin is only taken out by the Menſtruum, the other Particles being left untouch'd. See SOLUTION and DISSOLUTION.

Extraction does alſo frequently ſignify ſuch an Inſpiſſation, or thickening of a Solution, as that when a certain Quantity of the Menſtruum is drawn off, reduceth the remaining Mixture to the Conſiſtence of Honey; as in the *Extracts* of Saffron, Gentian, and the like.

Extracts are chiefly made from Vegetables, and require different Menſtruums, according to the different Nature of the Plants; eſpecially in Gummous Kind: For ſuch as are mucilaginous, as *Gum Arabic*, and *Tragacanth*, &c. are not eaſily diſſolved but in aqueous Liquors; whereas, on the other Hand, reſinous Gums, as *Galbanum*, *Scammony*, &c. muſt have burning Spirits to diſſolve them. See GUM.

There are others again of a middle Nature, which may be diſſolved in either Sort of Menſtruums, tho' not ſo eaſily in one as the other. See GUMMO *Reſin*.

Thus Aloes, and Rhubarb, which are ſomething reſinous, are better made into *Extracts* with Spirit of Wine, than Water: But Plants, which abound leſs with Reſin, ſuch as Hellebore, *&c.* are more commodiouſly *extracted* with Water. — To perform *Extraction* therefore aright, a proper Menſtruum is neceſſary, and one which is as near a-kin as poſſible to the Body to be *extracted*. See MENSTRUUM.

EXTRACTION, in Chirurgery, an Operation whereby ſome foreign Matter, formed in the Body, contrary to the Order of Nature, is drawn out of the ſame.

Such is the *Extraction of a Stone*, formed in the Bladder, or in the Kidneys, *&c.* See STONE. See alſo LITHOTOMY.

Extraction belongs to the *Exæreſis*, as a Species to its Genus. See EXÆRESIS.

EXTRACTION, or *Deſcent*, in Genealogy, is the Line, Stem, Branch, or Family which a Perſon is deſcended from. See DESCENT.

In ſome military Orders, Chapters, *&c.* a Candidate muſt make Proof of the Nobility of his *Extraction* ere he is admitted. See DESCENT.

EXTRACTION *of Roots*, is the Method of finding the Root of a given Number or Quantity. See ROOT.

The Square, Cube, and other Powers of a Number, or Root, are form'd by multiplying the given Number into it ſelf a greater, or leſs Number of Times, as the Power required is higher or lower.

This Multiplication compounds the Powers; and the *Extraction* of the Root decompounds them again, or reduces them to their firſt Principles or Roots. So that the *Extraction* of the Root is to the Multiplication of the Power, what the Analyſis is to the Syntheſis.

Thus, 4, multiplied by 4, produces 16; which is the Square of 4, or the Factum of 4 by it ſelf: And 16 multiplied by 4, makes 64, which is the Cube of 4, or the Factum of 4 by its Square: — Such is the *Compoſition of Powers*.

Again, the Square Root of 16 is 4, by Reaſon 4 is the Quotient of 16 divided by 4; and the Cube Root of 64 is likewiſe 4; by Reaſon 4 is the Quotient of 64 divided by the Square of 4: — Such is *the Extraction of Roots*.

Hence, to *extract the Root out of a given Power*, is the ſame Thing as to find a Number, *e. gr.* 4, which being multiplied a certain Number of Times into it ſelf, produces the given Power, *e. gr.* 16 or 64. See POWER.

For the *Extraction* of Square and Cube Roots, 'tis neceſſary to have the Squares, and Cubes of all the Digits in Readineſs; as exhibited in the following Table.

Roots	1	2	3	4	5	6	7	8	9
Square	1	4	9	16	25	36	49	64	81
Cubic	1	8	27	64	125	216	343	512	729

To Extract the Square Root *out of a given Number.*

1°. Divide the given Number into Claſſes, of two Figures a-piece; and include each Claſs between two Dots, commencing with the Place of Unites, or right Hand Figure: The Root will conſiſt of ſo many Parts, or Figures, as you have Claſſes. — By the Way obſerve, it may happen that for the laſt Claſs on the left Hand there ſhall only be one Figure left.

2°. Then, the left Hand Claſs being the Square of the firſt Figure of the Root ſought; look in the Table of Roots for the Square Root anſwering to that Number: Or, if that Square Number be not preciſely there, to the next leſs Number: This Root write down for the firſt Figure of the Quotient: And ſubtract its Square from the left Hand Claſs. — To the Remainder, bring down the next Claſs toward the right.

3°. Write down the double of the Quotient Figure under the left Hand Figure of the ſecond Claſs; and ſeek how oft this Duple is contain'd in the Figure over it; The Quotient gives the ſecond Figure of the Root.

4°. Write the ſame Quotient under the right Hand Figure of the ſame Claſs; and ſubtract the Product of the whole Number underwritten, multiplied by the laſt Figure of the Root, from the Number over it, as in Diviſion.

5°. The Operation being repeated according to the third and fourth Steps, *i. e.* the Remainder being ſtill divided by the double of the Root as far as *extracted*, and from the Remainder, the Square of the Figure that laſt came out, with the Duple of that foreſaid Diviſor augmented thereby, being ſubtracted; you will have the Root required.

E. gr. To *extract* the Root of 99856, point it after the following Manner, 99856, then ſeek a Number, whoſe Square ſhall equal the firſt Figure 9, *viz.* 3, and write it in the Quotient; then having ſubſtracted from 9, 3 × 3, or 9, there will remain 0; to which ſet down the Figures as far as the next Point, *viz.* 98 for the following Operation. Then, taking no Notice of the laſt Figure 8, ſay, How many Times is the double of 3, or 6, contained in the firſt Figure 9? Anſwer 1. Wherefore having wrote 1 in the Quotient, ſubtract the Product, of 1 × 61, or 61 from 98, and there will remain 37, to which connect the laſt Figures 56, and you will have the Number 3756, in which the Work is next to be carried on. Wherefore alſo neglecting the laſt Figure of this, *viz.* 6, ſay, How many Times is the double of 31, or 62, contain'd in 375, (which is to be gueſs'd at from the initial Figures 6 and 37, by taking Notice how many Times 6 is contained in 37?) Anſwer 6; and writing 6 in the Quotient, ſubtract 6 × 626, or 3756, and there will remain 0; whence it appears, that the Buſineſs is done, the Root coming out 316.

```
  : : :
99856 ( 316
9
---
098
 61
---
3756
3756
---
   0
```

Otherwiſe, with the Diviſors ſet down, it will ſtand thus:

```
  . . .
99856 ( 316
9
---
6) 98
   61
---
62) 3756
    3756
---
       0
```

And ſo in others.

Again, if you were to *Extract* the Root out of 22178791: firſt, having pointed it, ſeek a Number, whoſe Square (if it cannot be exactly equall'd) ſhall be the next leſs Square, (or neareſt) to 22, the Figures to the firſt Point, and you will find it to be 4. For 5 × 5, or 25, is greater than 22; and 4 × 4, or 16, is leſs; wherefore 4 will be the firſt Figure of the Root. This therefore being writ in the Quotient, from 22, take the Square 4 × 4, or 16; and to the Remainder 6, adjoin the next Figures 17, and you'll have 617; from whoſe Diviſion, by the double of 4, you are to obtain the ſecond Figure of the Root, *viz.* neglecting the laſt Figure 7, ſay, How many Times 8 is contained in 61? Anſwer, 7; wherefore write 7 in the Quotient, and from 617, take the Product of 7 into 87, or 609, and there will remain 8, to which join the two next Figures 87, and you will have 8879 by the Diviſion whereof by the double of 47, or 94, you are to obtain the third Figure; in order to which ſay, How many Times is 94 contained in 88? Anſwer, 0; wherefore write 0 in the Quotient, and adjoin the two laſt Figures 91, and you will have 88791, by whoſe Diviſion by the double of 470, or 940, you are to obtain the laſt Figure, *viz.* ſay, How many Times 940 in 8879? Anſwer 9; wherefore write 9 in the Quotient, and you will have the Root 4709. But ſince the Product 9 × 9409, or 84681, ſubtracted from 88791 leaves 4110, the Number 4709 is not the Root of the Number 22178791 preciſely, but a little leſs.

```
  . . . .
22178791 ( 4709, 43637, &c.
16
---
617
609
---
 88791
 84681
---
 411000
 376736
---
  3426400
  2825649
---
  60075100
  56513196
---
  356190400
  282566169
---
   73624231
```

If then it be required to have the Root approach nearer; carry on the Operation in Decimals, by adding to the Remainder two Cyphers in each Operation. Thus the Remainder 4110, having two Cyphers added to it, becomes 411000; by the Diviſion whereof, by the double of 4709, or 9418, you will have the firſt Decimal Figure 4. Then having writ 4 in the Quotient, ſubtract 4 × 94184, or 376736, from 411000, and there will remain 34264. And ſo having added two more Cyphers, the Work may be carried on at Pleaſure, the Root at length coming out 4709, 43637, &c.

But when the Root is carried on half Way or above, the reſt of the Figures may be obtain'd by Diviſion alone: As in this Example if you had a Mind to *extract* the Root to nine Figures, after the five former 4709,4 are *extracted*, the four latter may be had, by dividing the Remainder by the double of 4709,4.

Thus if the Root of 32976, were to be *Extracted* to five Places, in Numbers; after the Figures are pointed, write 1 in the Quotient, as being the Figure whoſe Square 1 × 1, or 1, is the greateſt that is contain'd in 3, the Figure to the firſt Point; and having taken the Square of 1 from 3, there will remain 2: Then having ſet the two next Figures, *viz.* 29 to it, (*viz.* to 2) ſeek how many Times the double of 1, *viz.* 2, is contain'd in 22, and you will find indeed that it is contained more than 10 Times; but you are never to take your Diviſor 10 Times, no, nor 9 Times in this Caſe; becauſe the Product of 9 × 29, or 261, is greater than 229, from which it would be to be taken, or ſubtracted: Wherefore write only 8. And then having wrote 8 in the Quotient, and ſubtracted 8 × 28, or 224, there will remain 5; and having ſet down to this the Figures 76, ſeek how many Times the double of 18, or 36, is contained in 57, and you will find 1, and ſo write 1 in the Quotient; and having ſubtracted 1 × 361, or 361, from 576, there will remain 215. Laſtly, to obtain the remaining Figures, divide this Number 215, by the double of 181, *viz.* 362, and you will have the Figures 59, which being writ in the Quotient, give the Root 181, 59.

```
  . . .
32976 ( 181, 59
1
---
2)229
  224
---
36)  576
     361
---
362) 215 (59 &c.
```

After the ſame manner are Roots *Extracted* out of Decimal Numbers. — Thus the Root of 329, 76 is 18, 1595 and the Root of 3, 2976 is 1, 81595; and the Root of 0, 032976, is 0, 18159, and ſo on. But the Root of 3297, 6 is 57, 4247; and the Root of 32, 976 is 5, 74247. And thus the Root of 9, 9856 is 3, 16.

To Extract the Cube, *or other higher* Root, *out of a given Number.*

The *Extraction* of the Cubic Root, and of all other Roots may be comprehended under one general Rule; *viz.* Every third Figure, beginning from Unity, is firſt to be pointed, if the Root to be *Extracted* be a Cubic one; or every fifth, if it be a Quadrato Cubic, (or of the fifth Power) and then ſuch a Figure is to be writ in the Quotient, whoſe greateſt Power (that is, whoſe Cube, if it be a Cubick Power, or whoſe Quadrato-Cube, if it be the fifth Power, &c.) ſhall either be equal to the Figure, or Figures, before the firſt Point, or next leſs under them; and then having ſubtracted that Power, the next Figure will be found by dividing the Remainder augmented by the next Figure of the Reſolvend, by the next leaſt Power of the Quotient multiplied by the Index of the Power to be *Extracted*, that is, by the triple Square, if the Root be a Cubick one; or by the Quintuple Biquadrate (that is, five Times the Biquadrate) if the Root be of the fifth Power, &c. And having again ſubtracted the Power of the whole Quotient from the firſt Reſolvend, the third Figure will be found by dividing that Remainder, augmented by the next Figure of the Reſolvend, by the next leaſt Power of the whole Quotient, multiplied by the Index of the Power to be *Extracted*.

Thus, to *Extract* the Cube Root of 13312053, the Number is firſt to be pointed after this manner, *viz.* 13312053, then you are to write the Figure 2, whoſe Cube is 8, in the firſt Place of the Quotient, as, that which is the next leaſt Cube to the Figures 13, (which is not a perfect Cube Number) or as far as the firſt Point; and having ſubtracted that Cube, there will remain 5; which being augmented by the next Figure of the Reſolvend 3, and divided by the triple Square of the Quotient 2, by ſeeking how many Times 3 × 4, or 12, is contained in 53, it gives 4 for the ſecond Figure of the Quotient. But ſince the Cube of the Quotient

```
  . . .
13312053 ( 237
Subtract the Cube 8
---
12) rem: 53 (4 or 3
Subtract Cube 12167
1587) rem: 11450 ( 7
---
13312053
Remains 0
```

24,

24, *viz.* 13824, would come out too great to be ſubtracted from the Figures 13312 that precede the ſecond Point, there muſt only 3 be writ in the Quotient: Then the Quotient 23 being in a ſeparate Place multiplied by 23, gives the Square 529, which again multiplied by 23, gives the Cube 12167, and this taken from 13312, will leave 11455 which augmented by the next Figure of the Reſolvend 0, and divided by the triple Square of the Quotient 23, *viz.* by ſeeking how many Times 3×529, or 1587, is contained in 11450, it gives 7, for the third Figure of the Quotient. Then the Quotient 237, multiplied by 237, gives the Square 56169, which again multiplied by 237, gives the Cube 13312053, and this taken from the Reſolvend, leaves 0. Whence it is evident, that the Root ſought is 237.

So, to *Extract* the Quadrato Cubical Root of 36430820, it muſt be pointed over every fifth Figure, and the Figure 3, whoſe Quadrato Cube, or fifth Power 243, is the next leaſt to 364, *viz.* to the firſt Point, muſt be writ in the Quotient. Then the Quadrato Cube 243, being ſubtracted from 364, there remains 121, which augmented by the next Figure of the Reſolvend, *viz.* 3, and divided by five Times the Biquadrate of the Quotient, *viz.* by ſeeking how many Times 5×81, or 405, is contain'd in 1213, it gives 2 for the ſecond Figure. That Quotient 32, being thrice multiplied by it ſelf, makes the Biquadrate 1048576; and this again multiplied by 32, makes the Quadrato Cube 33554432, which being ſubtracted from the Reſolvend, leaves 2876388. Therefore 32 is the integer Part of the Root, but not the true Root; wherefore if you have a Mind to proſecute the Work in Decimals, the Remainder, augmented by a Cypher, muſt be divided by five Times the aforeſaid Biquadrate of the Quotient, by ſeeking how many Times 5×1048576, or 5242880, is contain'd in 2876388, 0, and there will come out the third Figure, or the firſt Decimal 5. And ſo by ſubtracting the Quadrato Cube of the Quotient 32,5 from the Reſolvend, and dividing the Remainder by five Times its Biquadrate, the fourth Figure may be obtained. And ſo on *in infinitum*.

```
  36430820 ( 32, 5
  243
  405 ) 1213 ( 2
  33554432
  5242880 ) 2876388, 0 ( 5
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In ſome Caſes, 'tis convenient only to indicate the *Extraction* of a Root; eſpecially where it cannot be had exactly. Now, the Sign, or Character, whereby Roots are denoted, is $\surd$: To which is added the Exponent of the Power, if it be above a Square. *E. gr.* $\surd^2$ denotes the Square Root. $\surd^3$ the Cube Root, *&c.*

When a Biquadratick Root is to be *Extracted*, you may *Extract* twice the Square Root, becauſe $\surd^4$ is as much as $\surd^2 \surd^2$. And when the Cubo Cubick Root is to be *Extracted*, you may firſt *Extract* the Cube Root, and then the Square Root of that Cube Root, becauſe the $\surd^6$ is the ſame as $\surd^3 \surd^3$; whence ſome have called theſe Roots, not Cubo Cubick ones, but Quadrato Cubes. And the ſame is to be obſerved in other Roots, whoſe Indexes are not prime Numbers.

To prove the Extraction of Roots.

1°. For a *Square Root:* Multiply the Root found by it ſelf, and to the Product add the Remainder, if there were any: If the Sum be equal to the Number given, the Operation is juſt.

2°. For a *Cube Root:* Multiply the Root found by it ſelf; and the Product, again, by the ſame Root. To the laſt Product, add the Remainder if there were any. If the Sum come out the Number firſt given, the Work is juſt.

After the like Manner may the *Extraction* of other Roots be proved.

To Extract *the Roots of Equations, or Algebraic Quantities.*

The *Extraction of Roots* out of ſimple Algebraic Quantities, is evident, even from the Nature, or Marks of Notation it ſelf, as — that $\surd aa$ is a, and that $\surd aacc$ is ac, and that $\surd 9aacc$ is $3ac$; and that $\surd 49a^4xx$ is $7aax$. And alſo that $\surd \frac{a^4}{cc}$, or $\frac{\surd a^4}{\surd cc}$ is $\frac{aa}{c}$, and that $\surd \frac{a^4bb}{cc}$ is $\frac{aab}{c}$, and that $\surd \frac{9aazz}{25bb}$ is $\frac{3az}{5b}$, and that $\surd \frac{4}{9}$ is $\frac{2}{3}$, and that $\surd \frac{8b^6}{27a^3}$ is $\frac{2bb}{3a}$, and that $\surd^4 aabb$ is $\surd ab$. Moreover, that $b \surd aacc$, or b into $\surd aacc$, is b into ac, or abc. And that $3c\surd \frac{9aazz}{25bb}$, is $3c \times \frac{3az}{5b}$, or $\frac{9acz}{5b}$. And that $\frac{a+3x}{c}\surd \frac{4bbx^4}{81aa}$ is $\frac{a+3x}{c} \times \frac{2bxx}{9a}$, or $\frac{2abxx+6bx^3}{9ac}$. I ſay theſe are all evident, becauſe it will appear at firſt Sight, that the propoſed Quantities are produced, by multiplying the Root, into themſelves (as aa from $a \times a$, $aacc$ from ac into ac, $9aacc$ from $3ac$ into $3ac$, *&c.*) But when Quantities conſiſt of ſeveral Terms, the Buſineſs is performed as in Numbers.

Thus to *extract* the Square Root out of $aa+2ab+bb$, in the firſt Place, write the Root of the firſt Term aa, *viz.* a in the Quotient, and having ſubtracted its Square $a \times a$, there will remain $2ab+bb$ to find the Remainder of the Root by. Say therefore, How many Times is the double of the Quotient, or $2a$, contained in the firſt Term of the Remainder $2ab$? I anſwer b, therefore write b in the Quotient, and having ſubtracted the Product of b into $2a+b$, or $2ab+bb$, there will remain nothing. Which ſhews that the Work is finiſhed, the Root coming out $a+b$.

```
aa + 2ab + bb ( a + b
aa
0. + 2ab + bb
   + 2ab + bb
0   0
```

And thus to *extract* the Root out of $a^4+6a^3b+5a^2bb-12ab^3+4b^4$, firſt ſet in the Quotient the Root of the firſt Term a^4, *viz.* aa, and having ſubtracted its Square $aa \times aa$, or a^4, there will remain $6a^3b+5aabb-12ab^3+4b^4$ to find the Remainder of the Root. Say therefore, How many Times is $2aa$ contained in $6a^3b$? Anſwer $3ab$; wherefore write $3ab$ in the Quotient, and having ſubtracted the Product of $3ab$, into $2aa+3ab$, or $6a^3b+9aabb$, there will yet remain $-4aabb-12ab^3+4b^4$ to carry on the Work. Therefore, ſay again, How many Times is the double of the Quotient, *viz.* $2aa+6ab$ contained in $-4aabb-12ab^3$, or which is the ſame Thing, ſay, How many Times is the double of the firſt Term of the Quotient, or $2aa$, contained in the firſt Term of the Remainder $-4aabb$? Anſwer $-2bb$. Then having writ $-2bb$ in the Quotient, and ſubtracted the Product $-2bb$ into $2aa+6ab-2bb$, or $-4aabb-12ab^3+4b^4$, there will remain nothing. Whence it follows, that the Root is $aa+3ab-2bb$.

```
a^4 + 6a^3b + 5aabb - 12ab^3 + 4b^4 (aa + 3ab - 2bb
a^4
  - 6a^3b + 5aabb - 12ab^3 + 4b^4
0 + 6a^3b + 9aabb
      - 4aabb - 12ab^3 + 4b^4
      - 4aabb - 12ab^3 + 4b^4
0   0   0
```

And thus the Root of the Quantity $xx-ax+\frac{1}{4}aa$ is $x-\frac{1}{2}a$; and the Root of the Quantity y^4+4y^3-8y+4 is $yy+2y-2$; and the Root of the Quantity $16a^4-24aaxx+9x^4+12bbxx-16aabb+4b^4$ is $3xx-4aa+2bb$, as may appear underneath.

```
xx - ax + 1/4 aa ( x - 1/2 a
xx
0  - ax + 1/4 aa
0   0

                + 16a^4
9x^4 - 24aa x^2 - 16aab^2 ( 3x^2 - 4aa
     + 12bb     + 4b^4          + 2bb
9x^4
0
          + 16a^4
  - 24aa x^2 - 16a^2b^2
  + 12bb     + 4b^4
0   0

y^4 + 4y^3 - 8y + 4 ( yy + 2y - 2
y^4
0
  4y^3 + 4yy
0 - 4yy
    - 4yy - 8y + 4
0   0   0
```

If you would *extract* the Cube Root of $a^3+3aab+3abb+b^3$, the Operation is performed thus:

```
a^3 + 3aab + 3abb + b^3 ( a + b
a^3
3aa ) 0 + 3aab ( b
        a^3 + 3aab + 3abb + b^3
        0   0   0
```

Extract

Extract firſt the Cube Root of the firſt Term a^3, *viz.* a, and ſet it down in the Quotient: Then ſubtracting its Cube a^3, ſay, How many Times is its triple Square, or 3 a a, contained in the next Term of the Remainder 3 a a b? and there comes out b; wherefore write b in the Quotient, and ſubtracting the Cube of the Quotient, there will remain 0; therefore a + b is the Root. After the ſame Manner, if the Cube Root is to be *extracted* out of $z^6 + 6z^5 - 40z^3 + 96z - 4$, it will come out $zz + 2z - 4$. And ſo likewiſe in higher Roots.

EXTRACTS, in Law. See ESTREATS.

EXTRAORDINARY, ſomething rare and uncommon.

Extraordinary COURIERS, are thoſe ſent expreſs on ſome urgent Occaſion. See COURIER.

An *Embaſſador*, or *Envoy Extraordinary*, is ſuch a one as is ſent to treat, or negotiate ſome ſpecial and important Affair, as a Marriage, a Treaty, Confederacy, *&c.* or even on Occaſion of ſome Ceremony, as Condolance, Congratulation, *&c.* See EMBASSADOR and ORDINARY.

A *Gazette*, *Journal*, or other *News-paper Extraordinary*, is that publiſh'd after ſome great and notable Event, containing the Detail, or Particulars thereof, which were not found in the ordinary Papers. — Our News Writers generally uſe Poſt-ſcripts, inſtead of *Extraordinaries*.

EXTRAVAGANTES, a Part of the Canon Law, containing divers Conſtitutions of the Popes, not contain'd in the Body of the Canon Law; whence the Denomination of *Extravagantes*; *Quaſi extra corpus juris vagantes*. See CANON *Law*.

They are divided into two Parts: The firſt contains XX Conſtitutions of *John* XXII; and the ſecond, other later Conſtitutions of the ſaid *John* and his Succeſſors. See CONSTITUTION.

EXTRAVASATION, in Medicine, the Act, or Motion, whereby the Blood *extravaſates* it ſelf, *i. e.* breaks out of its ordinary Veſſels, the Veins and Arteries, and gathers and ſtagnates in ſome Part of the Body: The Blood that flows out of the Body, or that is drawn from it in opening a Vein, is not properly ſaid to be *Extravaſated*. See BLOOD.

Extravaſated Blood always corrupts and turns into an Impoſthume. See IMPOSTHUME, TUMOR, *&c.*

The ordinary Cauſes of *Extravaſations*, are unnatural Repletions, and Diſtentions of the Veſſels; or Lacerations, and Eroſions thereof.

There is a Neceſſity for bleeding, to prevent the Blood's growing to ſuch a Head as to *Extravaſate*. See PHLEBOTOMY.

In Wounds of the Head, particularly, bleeding is neceſſary, to prevent the *Extravaſation* of the Blood in the Brain.

The Term is likewiſe uſed with Regard to other Humours beſide the Blood, as the Lympha, Urine, *&c.* See DROPSY.

The Gardeners likewiſe uſe it, in ſpeaking of Gums, Juices, *&c.* oozing out of their Trees either ſpontaneouſly, or at Inciſions. See GUM, BALM, *&c.*

The Word is form'd of the Latin, *extra*, without, and *vas*, veſſel.

EXTREME, or EXTREAM, is applied to the laſt Part of any Thing; or that which finiſhes, and terminates it, and beyond which you cannot go.

There is no paſſing out of one *Extreme*, into the other, without going thro' the middle. — *Extreme* Remedies muſt only be had Recourſe to in *Extreme* Diſeaſes.

Some Anatomiſts apply the Denomination *Extreams*, or *Extremities*, to the Arms and Legs.

The Arms, or *upper Extremes*, *ſuperiour Extremities*, conſiſt of 60 Bones; thirty one in each, *viz.* the *Omoplate*, *Humerus*, *Cubitus*, *Radius*, eight in the *Carpus*, four in the *Metacarpus*, and fifteen in the Fingers. See each in its Place, OMOPLATE, *&c.*

The *Lower Extremities*, or Legs, conſiſt of ſixty; thirty in each, *viz.* the *Femur*, *Rotula*, *Tibia*, *Fibula*, ſeven in the *Tarſus*, five in the *Metatarſus*, and fourteen in the Fingers. See LEG, FEMUR, *&c.*

EXTREMES, in Logic, are the two *Extream* Terms of the Concluſion of a Syllogiſm, *viz.* the Predicate and Subject. See CONCLUSION.

The Predicate, as being likewiſe had in the firſt Propoſition, is call'd the *majus extremum*, greater *Extreme*; and the Subject, as being put in the ſecond, or *minor* Propoſition, is call'd the *minus Extremum*, leſſer *Extreme*. See PREDICATE and SUBJECT.

They are both call'd *Extremes*, from their Relation to another Term, which is a Medium, or Mean between them. See MEDIUM.

Thus, in the Syllogiſm, *Man is an Animal, Peter is a Man; therefore Peter is an Animal:* The Word *Animal* is the greater *Extreme*; *Peter* the leſs *Extreme*; and *Man* the Medium. See SYLLOGISM.

EXTREME and *mean Proportion*, in Geometry, is when a Line is ſo divided, that the whole Line is to the greater Segment, as that Segment is to the other.

Or, as *Euclid* expreſſeth it, when the Line is ſo divided, that the Rectangle under the whole Line and the leſſer Segment, ſhall be equal to the Square of the greater Segment.

The Invention of this Diviſion is thus: Let the given Line be A B = a, (*Tab. Geometry*, *Fig.* 64.) and for the greater Segment put *x*, the leſſer will be a − *x*. Then by the Hypotheſis, $a : x : a - x \div$. Therefore $a\,a - a\,x = x\,x$, conſequently $a\,a = x\,x + a\,x$. And by adding $\frac{1}{4}\,a\,a$ on each Side, to make $x\,x + a\,x + \frac{1}{4}\,a\,a$ a compleat Square, the Equation will ſtand thus $\frac{5}{4}\,a\,a = x\,x + x\,a + \frac{1}{4}\,a\,a$.

Now, ſince the latter is exactly a Square, its Root $x + \frac{1}{2}\,a = \sqrt{\frac{5}{4}\,aa}$, and by Tranſpoſition it will be $\sqrt{\frac{5}{4}\,aa} - \frac{1}{2}\,a = x$; which laſt Equation is a Canon to find *x*.

For at the Foot of A B = a, ſet at right Angles $CB = \frac{1}{2}\,a$: Then draw C A, the Square of which is equal, $AB\,q + CB\,q = \frac{5}{4}\,a\,a$. And therefore $AC = \sqrt{\frac{5}{4}\,aa}$; make C D = C A.

From whence $CB = \frac{1}{2}\,a$ being taken, as the Caſe requires, there remains B D = *x*; which transferr'd into A B, ſhall give the Point E, where A B is cut according to *Extreme* and *mean Proportion*.

This cannot be exactly done in Numbers; but if you would have it tolerably near, add together the Square of any Number, and the Square of its half, and extract as near as you can, the Square Root of the Sum; from whence taking half, the Remainder is the greater Part.

EXTREME-UNCTION, one of the Sacraments of the *Romiſh* Church, the fifth in Order, adminiſter'd to People dangerouſly ſick, by anointing them with holy Oils, and performing ſeveral Prayers over them. See UNCTION and SACRAMENT.

This Sacrament is not only in Uſe in the *Latin*, but alſo in the *Greek* Church, and throughout the *Eaſt*, tho' under another Name, and with ſome Difference in the Circumſtances; in that the Orientals don't wait till their Sick are come to Extremity, in Order to anoint them: But the Sick generally go to Church themſelves; and it is adminiſter'd to them as often as they are indiſpoſed. The *Greeks* taking that Direction of St. *James*, C. V. ver. 14. which is the Foundation of the Practice, in a general Senſe: *Is any Sick among you? let him call for the Elders of the Church, and let them pray over him, anointing him with Oil.*

Fa. *Dandini* diſtinguiſhes two Kinds of *Unction* among the *Maronites:* The one call'd, *Unction with the Oil of the Lamp*; but this, he ſuggeſts, is not the ſacramental *Unction*, ordinarily adminiſter'd to ſuch as are in extreme Sickneſs, for that the Oil is only Conſecrated by a ſimple Prieſt, and that it is given to all who are preſent, not to the ſick only, but alſo to the healthy, and even to the Prieſt himſelf who officiates. The other Kind of *Unction*, according to that Father, is only for the Sick; it is perform'd with Oil Conſecrated by the Biſhop alone, on *Holy Thurſday*. And this, it ſeems, is their ſacramental *Unction*.

But that *Unction* with Lamp Oil, is in Uſe not only among the *Maronites*, but throughout all the *Eaſtern* Church, who uſe it very religiouſly. The Truth is, they don't ſeem to have any other Sacrament of *Extreme Unction* beſide this.

Fa. *Goar* obſerves, that tho' it be only a Ceremony, with regard to thoſe in Health, it is a real Sacrament to thoſe that are ſick.

In their great Churches they have a Lamp, wherein this Oil for the Sick is preſerved: This Lamp they call, Καντήλα τῆς εὐχέλαιου, that is, *the Lamp of Oil join'd with Prayer*; For what the *Latins* call *Extreme Unction*, the *Greeks* call, εὐχέλαιον, or ἅγιον ἔλαιον, that is, *Oil with Prayer*, or *Holy Oil*.

'Tis call'd *Extreme Unction*, as being only given to Perſons in *Extremity*. — In the XIII*th* Century, it was call'd the *Unction of the Sick*, and not *Extreme Unction*. For in the earlier Ages, it was given before the *Viaticum*. Which Practice, according to Fa. *Mabillon*, was not changed till the XIII*th* Century. See VIATICUM.

The Reaſons he aſſigns for the Change are, that in that Age there aroſe divers miſtaken Opinions, ſeveral of which we find mention'd and condemn'd in the *Engliſh* Councils. Among the reſt, 'twas held, that ſuch as had received this Sacrament, in caſe they recover'd, might not uſe the Rites of Marriage, nor eat Meat, nor go bare-footed: Whence, they choſe to forbear uſing it till the laſt *Extremity*; which Practice prevail'd. See the Councils of *Worceſter* and *Exeter*, in the Year 1287; that of

of *Winchester* in 1308; and Fa. *Mabillon*, *Acta Sanct. Benedict. Sec.* III. p. 1. The Form of *Extreme Unction* is now deprecative, as the Divines call it; formerly 'twas abſolute and indicative.

EXTRINSIC, is applied in the Schools in various Senſes.

Sometimes it ſignifies a Thing's not being of the Eſſence of another; in which Senſe the efficient Cauſe, and the End or Scope of a Thing, are ſaid to be *Extrinſic*, or *Extrinſic* Cauſes. See CAUSE.

Sometimes it implies a Thing's not being contain'd within the Capacity of another; in which Senſe thoſe Cauſes are ſaid to be *Extrinſic*, which introduce ſomething into a Subject from without; as when Fire introduces Heat, *&c.*

Sometimes it denotes a Thing added, or applied to another. — Thus, Accidents and Adherences are ſaid to be *Extrinſic* to the Subject; and thus Viſion is *Extrinſic* to the Wall ſeen. See ACCIDENT.

EXUBERANCE, in Rhetoric, *&c.* a Redundancy. See REDUNDANT.

The Word is compounded of the Latin *ex* and *uber*, plentiful, of *uber*, Udder.

EXULCERATION, in Medicine, the Act of occaſioning, or producing Ulcers. See ULCER.

Thus, Arſenic *Exulcerates* the Inteſtines: Corroſive Humours *Exulcerate* the Skin.

The Term is ſometimes alſo uſed for an Ulcer it ſelf; but more generally for thoſe beginning Eroſions, which wear away the Subſtance, and form Ulcers. — *Exulcerations* in the Inteſtines, are Marks of Poiſon. See POISON.

EXUSTION, a burning with Fire; as it is uſed in ſome Operations by Surgeons. See BURNING.

EXUVIÆ, in Nat. Hiſtory, the Shells, and other marine Bodies, which are found every where in the Bowels of the Earth. See EARTH, FOSSIL, DELUGE, SHELL, *&c.*

EYE, the Organ, or Part of the Body, whereby Viſion is effected, *i. e.* whereby viſible Objects are repreſented to the Mind. See VISION.

The *Eye*, or Organ of Sight, is generally divided into *Internal* and *External* Parts; or into the *Eye* properly ſo call'd, and the Appendages thereof.

Under the latter Claſs, come the *Orbit*, or Cavity wherein the *Eye* is placed; the *Supercilium*, or *Eye-brow*, whereby Sweat, and other Nuſances, are prevented falling down into it: The *Palpebræ*, or *Eye-lids*, which cover and defend it in Time of Sleep; with their *Cilia*, or Fringes of Hair, to break the too fierce Impreſſion of the Light, and keep off Flies and Moats: And the *Canthi*, or Angles. See each Part particularly deſcribed under its proper Article, PALPEBRA, SUPERCILIUM, CILIA, ORBIT, and CANTHUS.

The *Eye*, properly ſo call'd, is of a globular Form, and conſiſts of *Tunicks*, *Humours*, and *Veſſels*. See TUNIC, HUMOUR, *&c.*

In ſome Parts it is lined with *Fat*; and it is moved with *Muſcles*; which two latter are by ſome Anatomiſts, tho' ſomewhat inaccurately, reckon'd among the conſtituent Parts of the *Eye*.

The *Tunicks*, *Coats*, or *Membranes* of the *Eye* are ſix: *viz.* 1°. The *Adnata*, or *Conjunctiva*, covering the whole Ball of the *Eye*, except the fore-part, call'd the *Sight*; and making what we popularly call the *White* of the *Eye*: Tho' this is not reckon'd as a proper Tunic of the *Eye*. 2°. Immediately under the *Adnata*, is the *Sclerotica*, which covers the whole Globe of the *Eye*; being opake every where but in the fore-part, which covers the Sight and is tranſparent like Horn; which has occaſion'd Anatomiſts to account this a diſtinct Membrane, the 3*d* in Number, and to denominate it the *Cornea*. The 4*th* is the *Choroides*, ſituate immediately under the *Sclerotica*. Its fore-part, like the former, is tranſparent, and therefore accounted a diſtinct, or 5*th* Coat, and call'd the *Uvea*. Of the Duplicature of this Part of the Tunic, is form'd a ſtriped, variegated Circle, call'd the *Iris*, which, in different Subjects, is of different Colours, and gives the Denomination of this or that Colour to the *Eye*. In its middle is an Aperture, or Perforation, call'd the *Pupil*, or Apple of the *Eye*, about which the *Iris* forms a Ring. From the Inſide of this Tunic, ſpring certain Fibres, which ſpreading round the cryſtalline Humour, form the *Ligamentum Ciliare*. The 6*th* Tunic, which ſome only make the 3*d*, is the *Retina*, ſo call'd, as reſembling a Net, and covering only the Fund, or Bottom of the *Eye*, oppoſite to the Sight.

Of the three proper Tunicks, the *Sclerotica*, *Choroides*, and *Retina*; the firſt is derived from the *Dura Mater*, being detach'd from the Brain as an outer Coat, or Cover of the Optic Nerve, till arriving at the Ball of the *Eye*, it is there expanded into a Tunic: The ſecond is derived from the *Pia Mater*, and tranſmitted likewiſe from the Brain, along with the Optic Nerve; the third may be ſaid to be derived from the Brain, or *Medulla* it ſelf, as being an Expanſion of the medullary Subſtance of the Optic Nerve. See each Tunic deſcribed under its proper Article, CONJUNCTIVA, SCLEROTICA, CORNEA, CHOROIDES, UVEA, and RETINA. See alſo IRIS and PUPILLA.

The *Humours of the Eye*, incloſed between theſe Tunics, are three: *viz.* 1°. The *Aqueous*, a limpid, tranſparent Humour, ſituate in the fore-part of the *Eye*, immediately under the *Cornea*, and occaſioning its Protuberance. 2°. The *Cryſtalline*, ſituate immediately under the *Aqueous*, behind the *Uvea*, oppoſite to the Pupil. 3°. The *Vitrious*, or Glaſſy Humour, which fills all the hind-part of the Cavity of the Globe; and is that which gives the ſpherical Figure to the *Eye*. On its back Part is the *Retina* ſpread. See each Humour under its proper Article, AQUEOUS, CRYSTALLINE, and VITRIOUS.

Some Authors finding theſe Humours cover'd with proper Membranes, have given diſtinct Names to them; as the *Aqueous*, *Cryſtalline*, and *Vitrious Tunics*; but theſe being only Productions of the other Coats abovemention'd, the Diſtinction is not much regarded.

The *Veſſels of the Eye* are Nerves, Glands, Arteries, and Veins.

1°. The Nerves are the *Optic* Pair, which iſſuing thro' a Perforation in the Skull, behind the Orbit, enter the Ball of the Eye, and diffuſe and loſe themſelves therein; the outer Coat, as already obſerved, going to form the *Sclerotica*, the inner to the *Choroides*; and the *Medulla* to the *Retina*. See OPTIC *Nerve*, &c.

Beſide which, the *Motorii*, *Pathetici*, the firſt Branch of the fifth Pair, call'd *Ophthalmicus*, and the 6*th* Pairs are beſtow'd on the Muſcles of the *Eye*. See NERVES.

2°. On the upper part of the Ball of the *Eye*, near the leſſer or outer *Canthus*, is the *Glandula Innominata*, or *Lacrymalis*, which ſeparates the Matter of the Tears, to be diſcharged, by the continual Motion of the *Eye-lid*, upon the *Cornea*, to moiſten it, and facilitate its Motion. The Tears falling down the *Cornea*, are ſtopp'd by the Edge of the under *Eye-lid*, along which they run, till they fall into two ſmall Holes in the great Angle, one in each *Eye-lid*, call'd *Puncta Lacrymalia*, which lead to a ſmall Bag, from the Bottom of which a ſmall Tube ariſing, opens into the Noſe. Between the two *Puncta*, is a Caruncle, or Eminence, which ſerves to ſeparate and keep them open, and which was anciently taken for the *Glandula Lacrymalis*. See LACRYMALIS *Glandula*, *Puncta* LACRYMALIA, TEARS, *&c.*

3°. The *Eye* receives Arteries, both from the internal and external *Carotids*, and returns the Blood by Veins that go to the Jugulars. See CAROTID and JUGULAR.

The Muſcles of the *Eye* are ſix; four of which are from their Situation call'd *Recti*, or ſtraight Muſcles; and two, *Obliqui*. The *Recti* come from ſeveral Points of the Bottom of the Orbit, and run immediately between the *Sclerotica* and *Adnata*: They derive ſeveral Denominations from their ſeveral Offices, *viz.* *Attollens*, or *ſuperbus*, which draws the *Eye* upwards: *Deprimens*, or *humilis*, which caſts it down: *Adducens*, and *Potator*, which draws the *Eye* towards the Noſe: And *Abducens*, or *Indignator*, which draws it the other Way towards the leſſer Angle. The two oblique Muſcles are, the *ſuperior*, call'd alſo *Rotator*, and *Trochlearis*; and the *inferior*. See each Muſcle in its proper Place, ATTOLLENS, DEPRIMENS, ADDUCENS, ABDUCENS, OBLIQUUS, TROCHLEARIS, *&c.*

The whole Structure and *Apparatus* of the *Eye* tends to this, that there be produced a diſtinct and vivid Collection in the Bottom of the *Eye*, directly under the Pupil, of all the Rays, which proceeding from any Point of an Object, and entering the *Eye*, penetrate the cryſtalline Humour; and that ſo many Points be painted in the Bottom of the *Eye*, as are conſpicuous in an Object; that ſo a ſmall Image like thereto, may be repreſented on the *Retina*. See RAY and RADIANT.

In order to this, the Rays from any radiant or reflecting Point, ſtriking on the Cornea, are refracted towards the Perpendicular, and thus determined to proceed thro' the Aperture of the Pupil to the Surface of the Cryſtalline: While other Rays, which enter'd ſo obliquely as to be thrown upon the *Iris*, are reflected out again, that they may not diſturb the Diſtinctneſs of the Sight; and others whoſe leſs Obliquity threw them between the *Uvea* and vitrious Humour, are extinguiſh'd in the Darkneſs thereof: So that none can be propagated thro' the vitrious, but ſuch as paſſing thro' the Pupil, ſtrike on the Cryſtalline. See CRYSTALLINE and REFRACTION.

In the mean Time the *Iris*, contracting by its circular, or dilating by its right Fibres, the *Pupilla* of the *Eye*; admits

fewer or more Rays, as the Object is nearer or more vivid; or remoter and more languid. See PUPIL.

Now, the flatter the Figure of the *Cornea* is, the leſs does it collect the Rays emitted from any lucid Point; whence fewer arrive at the Cryſtalline, and thoſe more diverging, unleſs when they come from a very remote Object: On the contrary, the rounder it is, the more of the Rays from any Point does it collect, and throw on the Cryſtalline; and thoſe the more converging: Whence one great Cauſe of the Defects in the *Eyes* both of Old Men and Myopes.

Again, the Rays tranſmitted thro' the Pupil to the Cryſtalline, are there refracted a-new, further collected, and render'd converging; ſo as that thoſe which came from the ſame Point of the Object, are now thrown in one Point thro' the Vitrious, upon the *Retina*; where they paint or exhibit that preciſe Point of the Object whence they flow'd. Accordingly, if the Cryſtalline be very denſe, or ſpherical, the Focus, or the Point wherein they are united, will be too near; and if too flat, or thin, the Point will be too remote: The Effect of both which is Confuſion. And hence another Cauſe of the Defects of *Myopes* and *Presbytæ*. See MYOPES and PRESBYTÆ.

'Tis not, however, *Myopes* and old Men alone, that would labour under theſe Defects, and have their Viſion, in moſt Caſes confuſed, as in Objects very near, or very remote, very ſmall, or very great: But thoſe would be the common Condition of Viſion.

Diſtinct Viſion, depending abſolutely on the Union of all the Rays coming from the ſame Point of the Object, on the ſame preciſe Point of the *Retina*; and Rays from Objects at different Diſtances, being united at different Diſtances behind the Cryſtalline; it were impoſſible, *e. gr.* for the ſame *Eye* to ſee diſtinctly any two Objects differently removed from it. But Nature has made a Proviſion againſt theſe Defects; and that principally, by bringing the Cryſtalline nearer to the *Cornea*, or further from it, occaſionally; which is effected two Ways, *viz.* either by compreſſing the Bulb of the *Eye* by the four Muſcles all ſtrongly contracted at once, which changes the Figure of the aqueous Humour, and renders the *Eye* oblong; or by the *Ligamentum Ciliare*, augmenting and diminiſhing the Convexity of the Cryſtalline, and ſetting it nearer or further from the *Retina*. See SEEING, SIGHT, *&c.*

As complex as the Mechaniſm of the *Eye* may ſeem, and as manifold as the Parts are which have a Relation hereto: The Juſtneſs of Viſion ſeems to require an exact Habitude in them all. — Thus, tho' the Pupil be no ſubſtantial Part of the *Eye*, but only an Aperture of the *Uvea* almoſt perpetually changing its Bigneſs according to the different Degrees of Light the *Eye* chances to be expoſed to; and therefore ſhould ſeem, while this Hole remains open, to perform its Office, by giving Entrance to the incident Rays of Light: Yet Mr. *Boyle* ſaw a Woman, who, after a Fever, not being able to dilate the *Pupillæ* of her *Eyes*, as before, tho' they were very little narrower than ordinary; yet had ſhe thereby almoſt loſt her Sight. — And on the other Side, tho' a competent Wideneſs of the Pupil be requiſite to a clear and diſtinct Viſiion, yet if its Dilatation exceeds the due Limits, there is thereby produced a conſiderable Diſtemper of Sight.

It may ſeem alſo but a ſlight Circumſtance, that the tranſparent Coats of the *Eye* ſhould be devoid of Colour; and of as little Moment, that the *Cornea* ſhould be very ſmooth, provided it remain tranſparent: Yet when either of theſe Circumſtances is wanting, the Sight is greatly vitiated. — Thus we ſee, that in the yellow Jaundice, the adventitious Colour, wherewith the *Eye* is tinged, makes the Patient think he ſees many Objects yellow, which are of a contrary Colour.

It has of late been an Opinion, that tho' both *Eyes* be open, and turned towards an Object, yet only one of them at a Time is effectually employed in giving the Repreſentation of it: So that the having of two *Eyes* ſhould ſeem in ſome Sort a Redundance. — But Mr. *Boyle* furniſhes ſeveral Conſiderations which invalidate this Opinion, and ſhew that both the *Eyes* are of Uſe at the ſame Time. — He aſſures us, he has found by frequent Experiment, that his two *Eyes* together, beheld an Object in another Situation, than either of them apart would do. — He adds, that he has met with a Perſon, who had a Cataract in his *Eye* for two or three Years, without finding any Impediment in his Sight, tho' others had, during that Time, taken Notice of a white Film that had croſſed his *Eye*; till, at length, happening to rub his ſound *Eye*, he was ſurprized to find himſelf in the dark: And that a very ingenious Perſon, who by an Accident had one of his *Eyes* ſtruck out, told him, that for ſome Months after, he was apt to miſtake the Situation and Diſtances of Things; for having frequent Occaſion to pour Liquors out of one Vial into another, after this Misfortune he often ſpilt them, and let them run quite beſides the Necks of the Vials, he thought he was pouring them directly into.

The like was related to him by another Perſon, who had, by a Wound, loſt the uſe of one of his *Eyes*; viz. that for ſome Time after, he often, in pouring out his Wine, miſs'd the Mouth of the Bottle, or Glaſs.

A yet more conſiderable Inſtance of this Kind, the ſame Author gives us, of a noble Perſon, who, in a Fight, had one of his *Eyes* ſtrangely mangled by a Muſket Ball, which came out at his Mouth; after which Accident, he could not well pour Drink out of one Veſſel into another; but had broken many Glaſſes by letting them fall out of his Hand, when he thought he had given them to another, or ſet them down on the Table: He added, that this Aptneſs to misjudge of Diſtances and Situation, continued with him, tho' not in the ſame Degree, for two Years.

The comparative Structure, and Anatomy of the *Eye*, is very curious: The Situation, Number, Conformation, *&c.* of this Organ, in different Animals, being finely and wonderfully adapted to their different Circumſtances, Occaſions and Manners of Living.

In *Man*, and ſome other Creatures, an ingenious Author obſerves, the *Eye* is placed chiefly to look forwards; but withal ſo order'd, as to take in nearly the Hemiſphere before it. — In *Birds*, and ſome other Creatures, the *Eyes* are ſo ſeated, as to take in near a whole Sphere, that they may the better ſeek their Food and eſcape Danger. — In others they are ſeated, ſo as to ſee behind them, or on each Side, whereby to ſee the Enemy purſuing them: Thus, in *Hares* and *Conies*, the *Eyes* are very protuberant, and placed ſo much towards the Side of the Head, that their two *Eyes* take in nearly a whole Sphere: Whereas in *Dogs*, that purſue 'em, the *Eyes* are ſet more forward in the Head, to look that Way more than backward.

Generally, the Head is contrived to turn this and that Way, chiefly, for the Occaſions of the *Eyes*; and generally the *Eyes* themſelves are moveable upwards, downwards, backwards, ſidewiſe, for the more commodious Reception of the viſual Rays. Where Nature deviates from theſe Methods, ſhe always makes uſe of very artful Expedients to anſwer the ſame End.

Thus, in ſome Creatures, the *Eyes* are ſet out at a Diſtance from the Head, to be moved here and there, the one this Way, and the other that; as in *Snails* particularly, whoſe *Eyes* are contain'd in their four Horns, like atramentous Spots fitted to the End of their Horns, or rather to the Ends of thoſe black Filaments, or Optic Nerves, ſheath'd in the Horn. *Power*, Exper. Phil. *Obſ.* 31.

And in other Creatures, whoſe *Eyes* or Head is without Motion, as in divers Inſects; that Defect is ſometimes made up by their having more *Eyes* than two; as in *Spiders*, which having no Neck, and conſequently the Head being immoveable, the Defect is ſupplied by the Situation and Multiplicity of their *Eyes*; ſome having four, ſome ſix, and others eight, all placed in the forefront of the Head, which is round, like a Locket of Diamonds. The Reaſon Dr. *Power* gives, is, that being to live by catching ſo nimble, and ſhy a Prey as Flies, they ought to ſee her every Way, and ſo take her *per ſaltum*, without any Motion of the Head to diſcover them.

Again, Men, and moſt Quadrupeds, are found to have ſeveral Muſcles belonging to their *Eyes*, by Help whereof they can turn them any Way, and ſo obvert the Organ of Senſe to the Object. — But Nature not having given that Mobility to the *Eyes* of Flies, ſhe in Recompence furniſhes them with a Multitude of little protuberant Parts, finely ranged upon the Convex of their large bulging *Eyes*; ſo that by Means of theſe numerous little Studs, numberleſs Rays of Light are reflected from Objects placed on either Hand, above, or beneath the Level of the *Eye*, and conveniently thrown upon that Organ, to render the Objects they come from, viſible to the Animal; and by the Help of a good Microſcope, and a clear Light, ſome Hundreds of theſe little round Protuberances may be diſcover'd, curiouſly ranged on the Convexity of a ſingle *Eye* of an ordinary Fleſh Fly.

So *Scorpions* are found to have above an hundred *Eyes*; and *Swammendam* has obſerved no leſs than two thouſand in the little Inſect call'd *Ephemera*.

In other Creatures, the like Deficiency is ſupplied by having their *Eyes* nearly two protuberant Hemiſpheres, each conſiſting of a prodigious Number of other little Segments of a Sphere.

The *Eyes* of a *Cameleon*, Dr. *Goddard* obſerves, reſemble a Lens, or Convex Glaſs, ſet in a verſatile globular Socket,

Socket, which ſhe turns backward and forward without ſtirring the Head; and ordinarily the one a contrary Way to the other.

Laſtly, *Moles*, which the Antients, *Ariſtotle*, *Pliny*, *Alb. Magnus*, &c. ſuppoſed to have no *Eyes* at all, are now found to furniſh a notable Inſtance of the Diverſity of the Apparatus of Viſion. For that Animal living altogether underground, Sight would generally be uſeleſs to it, and ſo tender a Part as the *Eye* troubleſome. It has therefore *Eyes*, but thoſe ſo exceedingly ſmall, and withal ſituate ſo far in the Head, and cover'd ſo ſtrongly over with Hair, that they cannot ordinarily be either of Service or Diſſervice to it. Yet, to guide and ſecure it a little when it chances to be above ground, *Borrichius*, *Blaſius*, *Schneider*, Mr. *Derham*, and others, obſerve, that it can protend, or put them forth beyond the Skin, and again draw them back at Pleaſure, ſomewhat after the Manner of Snails.

In the *Eyes* of Nocturnal Animals is a Part not yet mention'd, *viz.* a Sort of *Tapetum* at the Bottom of the *Eye*, which gives a Kind of Radiation on the Pupil, enabling them to ſee and catch their Prey in the Dark. Thus Dr. *Willis*: *Hajus uſus eſt* Oculi *pupillam quaſi jubare inſito illuminare* —— *quare in Fele plurimum illuſtris eſt, at Homini, Avibus & Piſcibus deeſt.* *De* Animi Brutor.

He adds, that in ſome Perſons the *Iris* has a Faculty alſo of darting out Light: And inſtances in a Man of a hot Head, who after a plentiful drinking of generous Wine, could ſee to read in the darkeſt Night. *Willis*, ibid.

The like *Pliny* tells us of *Tib. Cæſar*, that upon his firſt waking in the Night, he could ſee every Thing for a little while, as if in broad Day light. *Nat. Hiſt.* L. II. *C.* 37. And Dr. *Briggs* give a parallel Inſtance of a Gentlemen in *Bedforſhire*. Opthalm. *C.* 5. §. 12.

Frogs, beſide the Parts of the *Eye* which they have in common with Men, and moſt Quadrupeds, have a peculiar Membrane, or Cartilage, which is not commonly perceived, wherewith they can, at Pleaſure, cover the *Eye*, without too much hindring the Sight, becauſe the Membrane is both tranſparent and ſtrong; ſo that it may paſs for a Kind of moveable *Cornea*, or occaſional Safeguard to the *Eye*.

In furniſhing Frogs with this ſtrong Membrane, the Providence of Nature ſeems very conſpicuous; for that being amphibious Creatures, deſigned to paſs their Lives in watery Places, which for the moſt part abound in Plants, endowed with ſharp Edges, or Points; and the progreſſive Motion of this Animal, being not by walking, but by leaping, if his *Eyes* were not provided with ſuch a Caſe, he muſt either ſhut them, and ſo leap blindfolded, or by leaving them open, muſt run the Riſk of having the *Cornea* cut, pricked, or otherwiſe offended: But this Membrane, like a Kind of Spectacle, covers the *Eye*, without taking away the Sight; and as ſoon as the Occaſion for it is over, the Animal withdraws it into a little Cell, where it reſts, till its Uſe be again required. This Membrane becomes viſible, by applying the Point of a Pin, or any ſuch ſharp Thing, to the *Eye* of a Frog, whilſt his Head is held ſteady; for to ſcreen his *Eye*, he will preſently cover it therewith, and afterwards withdraw it, upon a Removal of the ſuſpected Danger. — And becauſe many Birds are deſtined to fly among the Branches of Trees and Buſhes, leſt by this Means the Prickles, Twigs, Leaves, *&c.* ſhould wound or offend their *Eyes*, Nature has alſo given them ſuch another Kind of horny Membrane as we ſee in Frogs. See NICTITATING *Membrane*.

Naturaliſts relate Wonders of the Sharpneſs and Accuracy of the *Eyes* of ſome Animals, as the Eagle, *&c.* beyond thoſe of Men. See EAGLE, *&c.*

Yet do thoſe of Men ſeem improveable to a ſurprizing Degree: — Mr. *Boyle* inſtances in a Major of a Regiment of King *Charles* I. who being afterwards forced Abroad, ventured at *Madrid*, to do his King a Piece of Service of an extraordinary Nature and Conſequence; which being there judged very irregular, he was committed to an uncommon Priſon, or rather Dungeon; having no Window belonging to it, only a Hole in the Wall, at which the Keeper put in Proviſion, and preſently cloſed it again on the Outſide, but not perhaps very exactly. — For ſome Weeks this Gentleman continued utterly in the Dark very diſconſolate; but afterwards he began to think he ſaw ſome little Glimmering of Light, which, from Time to Time, increaſed, ſo that he could not only diſcover the Parts of his Bed, and other ſuch large Objects, but at length, amidſt this deep Obſcurity, cou'd perceive the Mice that frequented his Chamber, to eat the Crumbs of Bread which fell upon the Ground, and diſcern their Motions very well.

The Author juſt mention'd, in his *Obſervations on Viciated Sight*, gives us ſome uncommon Phænomena, that regard the *Eyes*. — He furniſhes ſeveral Inſtances of *Nyctalopias*, or People, whoſe *Eyes* in the Day-time were quite dark, or at leaſt ſo dim, that they could hardly diſcern their Way; who yet, ſoon after Sun-ſet, and during Twilight, ſaw very clearly. See NYCTALOPIA.

This brings to mind an odd Caſe of an old learned Divine, who complained, that during the Day-time, his right Hand ſhook ſo much, that he could not manage his Pen; and therefore was forced to make Uſe of it only by Candle-Light.

But, which is yet more ſtrange, one of theſe Patients who could only ſee by Night, cou'd diſtinguiſh ſome Colours, *viz.* black and white, but not others, eſpecially red and green. The Meadows to this Perſon did not appear green, but of an odd, darkiſh Colour; and when ſhe had a Mind to gather Violets, tho' ſhe kneeled in the Place where they grew, ſhe could not diſtinguiſh them by the Colour from the Graſs about them, but only by their Shape or Touch.

Artificial EYE, is an Optical Machine, wherein Objects are repreſented after the ſame manner as in the natural *Eye*; of conſiderable Uſe in illuſtrating the manner of Viſion.

Its Conſtruction is thus: Provide two hollow Hemiſpheres of hard, dry Wood, well cemented together, to repreſent the *Ball* of the *Eye*: Let the *Anterior*, or Fore-Hemiſphere, be perforated with a round Hole in C, (*Tab. Opticks, Fig.* 9.) to ſupply the Place of a *Pupil*; and therein fit a thin, plane Glaſs, or, which amounts to the ſame, a Concavo-convex Glaſs, to ſerve for the *Cornea*. In the Inſide, have a ſhort draw-Tube G, with a Lens Convex on both Sides, to do the Office of the *Cryſtalline* therein. In the hind, or poſterior Hemiſphere, fit another Draw-Tube E F, with a plain Glaſs therein, having its inner Surface ſmooth, tho' not poliſh'd, repreſenting the *Retina* and *Optic* Nerve.

If now the Aperture C, be turn'd towards any Object; and the Draw-Tube F E be gradually pull'd out; you will have the Object beautifully and ſtrongly repreſented in all its Colours on the *Retina*, only in an inverted Order. See VISION.

It being of no Conſequence what the Figure of the inner Cavity is; any Room, or Chamber, ſo darken'd as only to receive Light from a ſingle Hole, with a Glaſs Convex on both Sides fitted therein; will do the Office of an *Artificial Eye*, and exhibit all the Objects oppoſed to the Aperture, on a Wall, or a white Cloth, ſtretch'd at a proper Diſtance from the Aperture: With this Circumſtance, that the leſs Sphere the Glaſs is a Segment of, the greater will the Figures appear. And this is the celebrated *Camera Obſcura*. See CAMERA *Obſcura*.

EYE, in Architecture is uſed for any round Window made in a Pediment, an Attic, the Reins of a Vault, or the like. See WINDOW.

BULLOCKS-EYE, or *Oeuil de Bœuf*, is a little Sky-Light in the Covering, or Roof, intended to illumine a Granary, or the like. The ſame Term is applied to the little Luthern in a Dome, as in that at St. *Peters* at *Rome*, which has 48 in three Rows. See LUTHERN.

EYE *of a Dome*, is an Aperture at the Top of the Dome; as that of the *Pantheon* at *Rome*, or of St. *Pauls* at *London*. It is uſually cover'd with a Lanthorn. See DOME.

EYE *of the Volute*, in Architecture, is the Centre of the Volute, or that Point wherein the Helix, or Spiral, whereof it is form'd, commences: Or it is the little Circle in the middle of the Volutes, wherein are found the thirteen Centres for the deſcribing the Circumvolutions thereof. See VOLUTE.

EYE, in Agriculture and Gardening, is a little Bud, or Shoot, inſerted into a Tree by Way of *Graft*. See ENGRAFTING.

The Term is alſo uſed for a Gem, or Bud, as it ſtands on the parent Tree. A Tree with fine, ſtrong, healthy *Eyes*. *La. Quint.* P. I. *C.* 3. *Art.* 6. The good Branches are thoſe which have come in the Order of Nature, and that have large *Eyes* pretty near each other. *Id.* This Branch muſt be cut off at the third *Eye*. Liger. See BUD, GEM, *&c.*

EYE, among Phyſicians, is frequently taken for a Hole, or Aperture. — Whence it is that the firſt of the big Inteſtines is call'd *Cæcum*, or the blind Gut, as having no *Eye*, or Perforation. — For the ſame Reaſon the Chymiſts call the Alembic, uſed in Circulation, a *blind Head*.

EYE, in Printing, is ſometimes uſed for the Thickneſs of the Types, or Characters, uſed in Printing: Or, more ſtrictly, it is the Graving in Relievo, on the Face, or Top of the Letter. See TYPE.

'Tis the *Eye* alone that makes the Impreſſion; the reſt, which they call the *Body*, ſerving only to ſuſtain it. A big

Eye,

Eye, ſmall *Eye*, &c. — The *Eye* of the e, is the little Aperture at the Head of that Character, which diſtinguiſhes it from the c.

EYE, is alſo uſed among Jewellers, for the Luſtre and Brilliant of Pearls and precious Stones; more uſually call'd the *Water*.

EYE-*lids*, EYE-*brows*, } See { PALPEBRÆ. SUPERCILIUM.

EYE-*brow* is ſometimes uſed in Architecture, in the ſame Senſe with Liſt, or Fillet. See LIST and FILLET.

Bulls-EYE, in Aſtronomy, is a Star of the firſt Magnitude, in the Conſtellation *Taurus*; by the *Arabs* call'd *Aldebaran*.

Its Longitude, Latitude, &c. See among thoſe of the other Stars in the Conſtellation TAURUS.

Cats-EYE, *Oculus Cati*, in Nat. Hiſtory, a precious Stone; call'd alſo *Sun's Eye*, or *Oculus Solis*. See PRECIOUS *Stone*.

'Tis tranſparent, very ſhining, and of divers Colours, uſually oblong as to Figure, and not unlike the Opal, only much harder.

'Tis found in divers Parts of the *Eaſt Indies*, but thoſe of the Iſland of *Ceylon* are the moſt prized.

Hares-EYE, *Oculus Leprinus*, in Medicine, a Diſeaſe ariſing from a Contraction of the upper *Eye-lid*, which prevents its being able to cover its Part of the *Eye*. Whence the Patient is obliged to ſleep with the *Eye* half open after the Manner of *Hares*.

The Phyſicians call it *Lagophthalmia*, a *Greek* Word ſignifying the ſame Thing; being compounded of λαγὼς, *Hare*, and ὀφθαλμὸς, *Eye*.

Goats-EYE, *Oculus Caprinus*, is when there is a white Speck on the *Cornea*; as is ſeen in the *Eye* of *Goats*. Phyſicians call it *Aigis*.

Crabs-EYES, *Oculus Cancrorum*. See CRABS-*Eyes*.

EYRE, or EIRE, in Law, ſignifies the Court of Juſtices Itinerant. See ITINERANT.

Hence Juſtices in *Eyre*, are thoſe whom *Bracton* calls, *Juſticiarios Itinerantes*. See JUSTICE *in Eyre*.

The EYRE *of the Foreſt*, is otherwiſe call'd *Juſtice Seat*; which by the ancient Cuſtoms was to be held every three Years, by the Juſtices of the Foreſt journeying up and down for that Purpoſe. See JUSTICE *Seat*.

The Word is form'd of the French, *Erre*, *Iter*, Journey.

EYRIE, or AYRIE, among Falconers, the Neſt where Hawks ſit, and hatch, and feed their Young. See NEST.

Hence a young Hawk newly taken from the Neſt, is called an *Eyeſs*. See HAWK and FALCON.

EZECHIEL's *Reed*, or *Rod*, a Scripture Meaſure, computed by late Writers to amount to 1 *Engliſh* Foot, 11 Inches, $\frac{1}{3}$ of an Inch. See MEASURE.

EZRA, or ESDRAS, in Divinity. — The Books of *Ezra*, are two Books of Holy Scripture, compoſed by *Ezra*, or *Eſdras*, the High-Prieſt of the *Jews* during the Captivity; and particularly about the Time when they return'd to *Paleſtine*, under the Reign of *Cyrus*.

The Original of the Books of *Eſdras* is in *Hebrew*; and the ſecond is particularly call'd by the *Hebrews*, and from them by the *Engliſh* Tranſlators, *Nehemiah*.

They contain the Hiſtory of the Return of that People from the *Babyloniſh* Captivity, and their Re-eſtabliſhment in the Holy Land. They are Canonical, and are allow'd as ſuch both by the Church and the Synagogue.

The *Canon of Ezra*, is the Collection of the Books of Scripture made by that Pontiff. See CANON.

It appears, however, that the Synagogue added other Books to *Eſdras*'s Canon; witneſs the Book of *Ezra* it ſelf, and that of *Nehemiah*.

F

FAB

F, THE ſixth Letter of the Alphabet, and the fourth Conſonant. *See* Letter.

The letter F may be either conſider'd abſolutely and in it ſelf; or with regard to the particular Languages where it is found. In the firſt view, F is placed by ſome Grammarians among the Mutes, like the Φ among the *Greek* Grammarians: But others give it the Quality of Semi-vowel. See MUTE, *&c.*

Joh. Conrad Aman, in his Diſſertation *de Loquela*, divides the Conſonants into ſingle and double; and the ſingle into hiſſing and exploſive. Among thoſe called *Hiſſing*, there are ſome pronounc'd by the Application of the upper Teeth to the lower Lip; and theſe are the f and the ph. The Reaſon why ſome account it a Semi-vowel, and *Aman* places it among the Hiſſers, is, that one may produce a little Sound, without any other Motion of the Organs, than what is neceſſary to the Pronunciation of the *F*.

This Letter is derived to us from the *Romans*, who borrowed it from the *Æolians*; for the *F* does not at all differ from the *Æolic* Digamma, or double Gamma, thus call'd as reſembling two Γ's, one over the other: and the Digamma ſeems no other than the *Greek* Φ, which being made at three Strokes, degenerated at length into the Figure *F*; for the Letter Φ being compounded of an O, *Omicron*, with a Perpendicular drawn through it: If that Perpendicular be made firſt, and the O at two Strokes afterwards, *viz.* firſt the upper, then the under part; it will happen, eſpecially in writing faſt, that the two Parts ſhall not join; and even inſtead of two Arches of Circles, Haſte and Conveniency may naturally enough make two ſtraight Lines.

Thus it is that the tranſverſe Stroke of the Letter Ψ, is frequently ſeen ſtraight; and the Letter, in form of a Croſs †. And what confirms this Tranſmutation of the Φ into *F* ſtill further, is, that on the Medals of *Philip*, and the Kings of *Syria*, in the Words ΕΠΙΦΑΝΟΥΣ and ΦΙΛΑΔΕΛΦΟΥ, the *Phi* Φ is frequently ſeen in the Form juſt mentioned, *i. e.* it has no Circle or Omicron; but a-croſs the Middle of the Perpendicular, is a kind of Right-line, form'd only of two Dotts, the one on the right ſide, and the other on the left, repreſenting a Croſs, †. Such appears to be the Origin of the Letter *F*; which, of conſequence is no other than a Corruption of the *Greek* Φ: And accordingly, on the Medals of the *Faliſci*, the F is ordinarily put in lieu of the *Greek* Φ; but it muſt be added, that tho' the *Greek* and *Latin* Letter were thus the ſame thing, yet the Sound was much ſofter among the *Latins*, than among the *Greeks*: As was long ago obſerv'd by *Terentianus*.

The *Romans*, for ſome time, uſed an inverted F, Ⅎ, in lieu of an V conſonant, which had no peculiar Figure in their Alphabet: thus in Inſcriptions we meet with TERMINAⅎIT, DIⅎI, *&c.* *Lipſius*, in his Comment on the Annals of *Tacitus*, L. XI; *Covarruvias*, and *Dauſquius* in his Treatiſe of Orthography, hold, that it was the Emperor *Claudius*, who firſt introduced this Uſe of the inverted Digamma, or Ⅎ; which they call the Invention of a Letter, as being equivalent to the Invention of the Letter V. In effect, *Tacitus*, in the 4th Chapter of the ſaid Book, and *Suetonius* in his Life of *Claudius*, c. 41. aſſure us, that the Emperor invented three Letters; one of which *Lipſius* ſhews muſt be the inverted *Eolic* Digamma: But, before *Claudius*, *Varro* made an Attempt to introduce the ſame thing, but could not ſucceed. All the Authority of an Emperor was neceſſary to make it take: Nor did it ſubſiſt long; for after *Claudius*'s Death it was thrown by again; as we are told by the ſame *Tacitus*; and *Quintilian* obſerves, it did not ſubſiſt in his time. So far is the Cuſtom of a Language from being ſubject even to the Maſters of the World. It may be added, that the Pronunciation of the F is almoſt the ſame with that of the V; as will be evident by attending to the manner of pronouncing the following Words, *F*avour, *V*anity, *F*elicity, *V*ice, *F*oment, *V*ogue, *&c.* The *French* particularly, in borrowing Words from other Languages, uſually turn the final *v* into an *f*, as Chetif of Cattivo; Neuf of Novus; Nef of Navis, *&c.*

In the later *Roman* Writers we find the *Latin F* and *Greek ph* frequently confounded; as in *F*alanx, for *Ph*alanx; Filoſophia, for Philoſophia, *&c.* Which Abuſe is ſtill retain'd by many *French* Writers, who write Filoſophie, Filippe, Epifane, *&c.* and even ſometimes by the *Engliſh*, as in Fantaſy, Filtre, *&c.*

F, in the Civil Law. Two ff's join'd together, ſignify *Digeſt*; See the Reaſon thereof under the Article DIGEST.

F, in Muſick, is one of the ſigned Clefs or Keys, plac'd at the Beginning of one of the Lines of a piece of Muſick. See CLEF.

F is the Baſs-clef, and is plac'd on the fourth Line upwards. See BASS.

Indeed, the Character or Sign by which the *f* and *c* Clefs are mark'd, bear no Reſemble to thoſe Letters. Mr. *Malcolm*, thinks it were as well if we uſed the Letters themſelves, but Cuſtom has carried it otherwiſe. The ordinary Character of the F or Baſs-clef is): which *Kepler* takes a deal of pains to deduce, by Corruption, from the Letter F it ſelf. See CHARACTER.

F, in our antient Cuſtoms. He that ſhall maliciouſly ſtrike any Perſon with a Weapon in Church or Church-yard, or draw any Weapon there with Intent to ſtrike, ſhall have one of his Ears cut off; and if he have no Ears, he ſhall be mark'd on the Cheek with an hot Iron, having the Letter F, whereby he may be known for a Fray-maker or Fighter.

F, in Phyſical Preſcriptions, ſtands for *Fiat*, let it be done; as F. S. A. denotes as much as *fiat ſecundum artem*.

F, among ſuch as give us the numeral Value of the Letters, ſignifies 40, according to the Verſe,

Sexta quaterdenos gerit quæ diſtat ab alpha.

And when a Daſh was added a-top, $\overline{F}$ it ſignified 40 thouſand.

FA is one of the Notes of Muſic, being the fourth in riſing in this order of the Gamma, Ut, re, mi, fa. See NOTE.

FABIANS, FABII, in Antiquity, a part of the Luperci. See LUPERCI, and LUPERCALIA.

Thoſe Prieſts were divided into two Parts; one of which was called the *Fabians*, and the ſecond the *Quintilians*, from their reſpective Chiefs. The *Fabians* were for *Romulus*, and the *Quintilians* for *Remus*. See QUINTILIANS.

FABLE, a *Tale*, or feign'd Narration, deſign'd either to inſtruct or divert: Or, *Fable*, as Monſ. *de la Motte* defines it, is an Inſtruction diſguis'd under the Allegory of an Action.

Fable ſeems to be the moſt antient way of teaching: The principal Difference between the Eloquence of the Antients, and that of the Moderns, conſiſts, according to *Pere Boſſu*, in this, that our manner of ſpeaking is ſimple and proper; and theirs, full of Myſteries and Allegories. The Truth was uſually diſguis'd under thoſe ingenious Inventions, call'd by way of Excellence, μυθοι, *Fabulæ*, *Fables*, that is, *Words*; as intimating that there was the ſame Difference between theſe *fabulous* Diſcourſes of the learned, and the common Language of the People, as between the Words of Men, and the Voices of Beaſts.

At firſt, *Fables* were only employ'd in ſpeaking of the Divine Nature, as then conceiv'd: Whence, the antient Theology was all *Fable*. The Divine Attributes were ſeparated as into ſo many Perſons; and all the Oeconomy of the Godhead laid down in the feigned Relations and Actions thereof; either by reaſon the human Mind could not conceive ſo much Power and Action in a ſingle indiviſible Being; or perhaps, becauſe they thought ſuch Things too great and high for the Knowledge of the Vulgar. And as they could not well ſpeak of the Operations of this Almighty Cauſe, without ſpeaking, likewiſe of its Effects; natural Philoſophy, and at length human Nature and Morality it ſelf came thus to be veil'd under the ſame *fabulous* allegoric Expreſſion; whence the Origin of Poetry, and particularly of Epic Poetry. See EPIC *Poem*.

The Criticks, after *Aphtonius* and *Theon*, reckon three kinds of *Fables*, Rational, Moral, and Mix'd.

Rational FABLES, call'd alſo *Parables*, are Relations of Things ſuppoſed to have been ſaid and done by Men; and which might poſſibly have been ſaid, or done, though in reality they were not. Such, in the Sacred Writings, are thoſe of the ten Virgins; of *Dives* and *Lazarus*; the prodigal Son, *&c.* Of theſe *Rational Fables* we have likewiſe about a dozen in *Phædrus*. See PARABLE.

Moral FABLES, call'd alſo *Apologues*, are thoſe wherein Beaſts are introduced as Actors, Speakers, *&c.* Theſe Moral *Fables* are alſo call'd *Eſopic Fables*: not that *Eſop* was their Inventor, for they were in uſe long before him, *viz.* in the times of *Homer* and *Heſiod*; but becauſe he excell'd therein. In this kind not only Beaſts, but even ſometimes

Trees, Hammers, &c. are ſuppos'd to ſpeak. See APOLOGUE.

Rational differs from the *Moral Fable* in this; that the former, though it be feign'd, might be true; but the the latter is impoſſible; as 'tis impoſſible for Brutes or Stocks to ſpeak.

Mix'd FABLES, are thoſe compoſed of both ſorts, rational and moral; or wherein Men and Brutes are introduc'd converſing together. Of this we have a fine Inſtance, in *Juſtin* L. XXXIII. c. 4. made by a petty King, to alarm the antient *Gauls* againſt the *Maſſilians*, who arriving out of *Aſia*, in *Spain*, charm'd with the Place, beg'd leave of the Inhabitants to build a City.

The Bitch and Shepherd, a Mix'd FABLE.

A Bitch big with young, beg'd of a Shepherd, a Place to lay her Whelps in; which when ſhe had obtain'd, ſhe further beg'd for leave to rear 'em in the ſame. At length, the Whelps being now grown up, depending on the Strength of her own Family, ſhe claim'd the Property of the Place. So the *Maſſilians* who are now only Strangers, will hereafter pretend to be Maſters of this Country.

As to the Laws of *Fable*, the principal are; *Firſt*, That to every *Fable* there be ſome Interpretation annexed, to ſhew the moral Senſe, or Deſign thereof. This Interpretation, if it be plac'd after the *Fable*, is called ἐπιμυθιον, or *affabulatio*; if before it, προμυθιον, *præfabulatio*. *2dly*, That the Narration be clear, probable, ſhort and pleaſant. To preſerve this Probability, the manners muſt be expreſs'd, and cloſely kept to, as in Poetry. See PROBABILITY and MANNERS.

M. de la Motte, has ſome fine Remarks on the Subject of *Fables*, at the Beginning of his *Fables nouvelles, dedies au Roi* 1719. A *Fable*, according to this polite Writer, is a little Epic Poem; differing in nothing from the great one, but in Extent, and in that being leſs confin'd as to the Choice of its Perſons, it may take in all ſorts at pleaſure, as Gods, Men, Beaſts, or Genii; or even, if occaſion be, create Perſons, *i. e.* perſonify Virtues, Vices, Rivers, Trees, &c. Thus *M. de la Motte* very happily introduces Virtue, Talent, and Reputation, as Perſons making a Voyage together. See EPOPEA, and PERSONIFYING.

That Author ſuggeſts two Reaſons, why *Fables* have pleas'd in all Ages and Places. The firſt is, that Self-love is ſpared in the Inſtruction. The 2d, that the Mind is exerciſed by the Allegory. Men don't love direct Precepts; too proud to condeſcend to thoſe Philoſophers who ſeem to command what they teach; they will needs be inſtructed in a more humble manner: They would never amend, if they thought that to amend were to obey. Add, that there is a ſort of Activity in the Mind, which muſt be humour'd. It pleaſes it ſelf in a Penetration, which diſcovers more than is ſhewn: and in apprehending what was hid under a Veil, fancies it ſelf in ſome meaſure the Author of it. The *Fable* muſt always imply or convey ſome Truth: in other Works, Delight alone may ſuffice; but the *Fable* muſt inſtruct. Its Eſſence is to be a Symbol, and of conſequence to ſignify ſomewhat more than is expreſs'd by the Letter. This Truth ſhould for the generality be a moral one; and a Series of Fictions conceiv'd and compos'd in this View, would form a Treatiſe of Morality preferable to any more direct and methodical Treatiſe: Accordingly, *Socrates*, we are told, had a Deſign to compoſe a Courſe of Morality in this way. This Truth ſhould be concealed under the Allegory; and in Strictneſs, it ought not to be explain'd either at the Beginning or End.

The Truth, or Idea intended, ſhould ariſe up in the Reader's Mind from the *Fable* it ſelf. However, for the Conveniency of the leſs diſcerning Readers, it may be a good way to point out the Truth or Moral in preciſer terms. To have the Moral at the End of the *Fable*, ſeems much better than at the Beginning: The Mind is apt to be foreſtall'd in the latter Caſe: I carry the Key all along with me, ſo that there is no room to exerciſe my Mind, in finding any thing my ſelf.

The Image, *M. de le Motte* obſerves, muſt be *juſt*, and expreſs the Thing intended, directly and without any Equivoque: It muſt be *one*, that is, all the Parts muſt be viſibly acceſſory to one principal end; and it muſt be *natural*, that is, founded on Nature, or at leaſt on Opinion.

The Writers of *Fables* are not many. If there were any before *Æſop*, his Succeſs has quite effaced their Memory; and even occaſion'd all the good Things of that kind to be aſcrib'd to him. His Life, as wrote by *Planudes*, is it ſelf a thorough *Fable*. It muſt be own'd to be very happily imagin'd, to make the Inventor of *Fables* a Slave, and his Maſter a Philoſopher. The Slave has his Maſters Pride, and ill Humour to deal with all, throughout. His Leſſons were all contain'd in the *Fables* themſelves; and the Readers were left the Pleaſure of picking them out themſelves.

'Tis generally allow'd among the Learned, that tho' the Matter and Invention of the *Fables* be *Æſop*'s, the Turn and Expreſſion is not. The Greek is of *Planudes*, and bad Greek it is in the Judgment of *F. Vavaſſor*, de *Ludicra Dict.* Some Authors will have *Socrates* the Author of the *Fables* of *Æſop*; others attribute them to *Solomon*, and others to *Homer*.

Phædrus was a Slave too, and a freed-Man; but he had the Advantage over *Æſop* in Education. He is only a Fabuliſt, as he tranſlates and copies. Tho' his *Fables* be generally ſhort, yet is he prolix, compared to his Author. His Style however is always florid, his Deſcriptions conciſe, and his Epithets ſuitable: He frequently adds Graces never dreamt of by the Inventor; and every where enriches the Simplicity of *Æſop* in the moſt delicate manner.

Philpai, another Fabuliſt, govern'd *Indoſtan* a long time under a powerful Emperor: but he was not the leſs a Slave; for the prime Miniſters of ſuch Princes are always more ſo than the meaneſt Subjects. *Philpai* compriz'd all his Politicks in his Fables; and accordingly his Work long continued the Book of State; or the Diſcipline of *Indoſtan*. It was tranſlated into *Perſian* and *Arabic*, and ſince into the modern Languages. His *Fables*, *M. de la Motte* obſerves, are rather famous than good: but he is the Inventor, and the Merit of Invention will always compenſate for a deal of Faults. His *Fables* are often wild, and artleſs; and the Collection is a ſort of Romantic Aſſemblage of Men and Genii; compoſed, in its kind, like *Cyrus* or *Orlando*; where the Adventures are continually thwarting and claſhing with each other.

We ſay nothing of the *Fables* of *Gabrias*, *Babrius*, *Avienus*, *Abſtemius*, &c.

Among the Moderns, we have none that deſerve to be ſeen in the Company above-mention'd, but *Meſſ. de la Fontaine*, and *Motte*. The firſt of whom has pick'd out all the beſt things in *Æſop*, *Phædrus* and *Philpai*, and given them a-new in *French* with a Delicacy and Simplicity peculiar to himſelf, and which in the Judgment of his Country-men, ſets him even above *Phædrus*.

The latter, rather than take up with what *de la Fontaine* had left, choſe to be an Inventor himſelf. He has ſucceeded. His *Fables* are many of them very happy, tho' ſome think 'em too full of Thought and Reaſoning. His Verſification is infinitely more correct than that of *la Fontaine*; and more ſuitable to the Subject, than that of *le Noble*.

FABLE, is alſo us'd for the *Plot* of an Epic or Dramatic Poem; or the *Action* which makes the Subject of ſuch Poem, or Romance. See POEM, DRAMA, EPIC and ACTION.

The *Fable*, according to *Ariſtotle*, is Αρχὴ, καὶ οἷον ψυχὴ, μῦθος, the principal Part, and as it were the Soul of a Poem. It muſt be conſider'd as the firſt Foundation of the Compoſition; or the Principle, which gives Life and Motion to all the Parts. In this Senſe, the *Fable* is defined *A Diſcourſe invented with Art, to form the Manners by Inſtructions diſguis'd under the Allegory of an Action.*

The *Epic Fable*, according to *Boſſu*, is confin'd to the *Rational* kind, *i. e.* the Actors and Perſons are to be Gods and Men. And yet it admits of a deal of Latitude: it may be either grave, illuſtrious, and important; or low, and popular: either whole, or defective: in verſe, or in proſe: much epiſodified, or brief: rehearſed by an Author, or repreſented by Actors on the Scene; all which are only ſo many Circumſtances, which do not make any Alteration in the Nature and Eſſence of the *Fable*.

The Characters that ſpecify the *Epic Fable* are theſe: It is Rational and Probable; it imitates a whole, and an important Action; and it is long, and related in Verſe. None of which Properties affect the nature of the *Fable*; or make it leſs a *Fable* than thoſe of *Æſop*.

The *Fable*, according to *Ariſtotle*, conſiſts of two eſſential Parts, *viz.* Truth, as its Foundation; and Fiction, which diſguiſes the Truth, and gives it the Form of *Fable*. The Truth is the Point of Morality intended to be inculcated: the Fiction is the Action, or Words the Inſtruction is cover'd under.

To make a *Plot* or *Fable*: The firſt thing, according to the great Critick juſt mention'd, is to pitch on ſome moral Inſtruction to be exemplify'd.

E. gr. I would exhort two Brothers, or other Perſons who have ſome common Intereſt to live in Amity; in order to preſerve it. This is the end of the *Fable*, and the firſt thing I have in view. In order to this, I endeavour to impreſs this Maxim on their Minds, that *ill Underſtanding ruins Families, and all kinds of Society*. This Maxim is the Moral, or Truth which is to be the Ground of the *Fable*: which moral Truth is now to be reduc'd into Action; and a general Action to be framed from ſeveral ſingle and real Actions of ſuch as were ruined by ill Underſtanding.

Thus

Thus *e. gr.* I ſay, that certain Perſons united together for the Preſervation of ſomething that belong'd to them in common; coming to diſagree; their diviſion left them open to an Enemy who ruin'd them. Such is the firſt Plan of a Fable. The Action preſented by this Narration has four Conditions: It is univerſal, imitated, feign'd, and contains a moral Truth under an Allegory.

The Names given to the ſeveral Perſons, begin to ſpecify the *Fable*. *Eſop* uſes thoſe of Brutes.

Two Dogs, ſays he, appointed to watch a Flock, fall out, fight, and leave all open to the Wolf, who carries off what he pleaſes. If you would have the Action more ſingular, and render the *Fable* rational, take the Names of Men. *Pridamant* and *Orontes*, Brothers by a ſecond Venter, were left very rich by their Father's Will: But diſagreeing about the Partition of their Effects, they engaged themſelves ſo far againſt each other, that they took no care of their common Intereſt, againſt *Clitander* their eldeſt Brother, by the firſt Venter; which laſt, artfully inflaming their Quarrel, and feigning he had no View but to ſome moderate Augmentation, which might be made him without preſſing them; he, in the mean time, gets the Judges on his ſide, and the other Perſons intruſted with the Affair, procures the Will to be annull'd, and becomes entituled to the whole Eſtate the Brothers were at Variance about.

Now, this *Fable* is rational; but the Names being feign'd, as well as the Things, and beſides, the Perſons being only of a private Rank, it is neither *Epic*, nor *Tragic*. However, it may be employ'd in Comedy; it being a Rule laid down by *Ariſtotle*, that Epic and Tragic Poets only invent Things; but Comic Poets invent both Names and Things. See Comedy, *&c.*

To accommodate this comic *Fable* more to the Mode and Taſte of the Town, ſome *Dorinda* muſt be imagin'd to have been promis'd to *Clitander*; but her Father, finding him diſinherited by the Will, changes his Reſolution, and will have her marry one of the rich, ſenſeleſs, younger Brothers, whom ſhe deſpiſed, *&c.*

But to return. The Fiction may be ſo diſguiſed with the Truth of Hiſtory, that there ſhall not appear any Fiction at all. To effect this, the Poet looks back into Hiſtory, for the Names of ſome Perſons to whom the feign'd Action either really or probably did happen; and relates it under thoſe known Names, with Circumſtances which do not change any thing of the Ground of the *Fable*.

Thus, In the War of 1302, between King *Philip* the Fair, and the *Flemiſh*: The *French* Army was under the Command of *Robert*, Earl of *Artois*, as General, and *Ralph de Neſle*, his Conſtable. Being in the Plain of *Courtray*, in ſight of the Enemy, the Conſtable was of Opinion it were eaſy to ſtarve them; and that it was not worth while to hazard ſo many of the Nobles, againſt a vile, deſperate Populace. This Advice the Earl rejected with Scorn, taxing the Conſtable with Cowardice and Infidelity. It ſhall be ſeen, anſwers the Conſtable, which of us two is the braveſt, and the moſt faithful; and clapping Spurs to his Horſe, led the whole *French* Cavalry precipitately to the Charge. This Precipitation, with the Duſt they rais'd, prevented their ſeeing a large deep Ditch, behind which the *Flemiſh* were poſted. The Cavalry therefore plunging into it, periſh'd miſerably; and the Infantry, aſtoniſh'd with the Loſs, let themſelves be cut in pieces by the Enemy. Thus may Fiction be made to conſiſt with Truth.

As for the *Fable*, it matters but little, whether the Perſons be called *Dogs*; or *Orontes* and *Pridamant*; or *Robert* of *Artois*, and *Ralph de Neſle*; or *Achilles* and *Agamemnon*.

The Epic *Fable* we ſhall now propoſe in its juſt Extent, under theſe two Names, laſt mention'd. It is too ſhort for the *Epopea* in the two preceding ones. We chuſe the *Fable* of the Iliad, as being the fineſt Plan of an Epic Poem in the World; and at the ſame time the moſt uſeful Syſtem of the Precepts of the Art; it being hence, that *Ariſtotle* was furniſh'd with all his Reflexions.

In every diſcrete Undertaking the End is the firſt Thing propoſed; and by this the whole Work and all its Parts are regulated: Conſequently, the Deſign of the Epopea being to form the Manners, 'tis with this firſt View the Poet muſt begin. Now, the Philoſopher dwelling on Virtues and Vices in general, the Inſtructions he gives, ſerve equally for all States and all Ages; but the Poet has a more immediate Regard to his Countrymen, and the preſſing Occaſions of his fellow Citizens. On this view it is that he chuſes his Moral, which he is to inſinuate into the People, by accommodating himſelf to their peculiar Cuſtoms, Genius and Inclinations. See how *Homer* has acquitted himſelf of all this.

He ſaw the *Greeks*, for whom he wrote, divided into as many States, as Cities; each thereof was a Body apart, and had its Government, independant of the reſt. Yet were theſe different States frequently obliged to unite into one Body againſt their common Enemies. Here then were two ſorts of Government, too different to be commodiouſly treated in one Poem. The Poet accordingly had Recourſe to two Fables; the one for all *Greece*, conſider'd as confederated together, only conſiſting of independant Parts: the other, for each particular State; ſuch as they are in Time of Peace, and without the firſt Relation. The firſt is the Subject of the *Iliad*, the ſecond of the *Odyſſee*. See Iliad and Odyssee.

For the firſt kind of Government, all Experience agrees, that that only Thing can render it happy, and its Deſigns ſucceſsful, is a good Underſtanding, and due Subordination among the ſeveral Chiefs that compoſe it; and that Miſunderſtandings, a deſire of Sway, *&c.* are the inevitable Bane of ſuch Confederacies. The beſt Inſtruction therefore that could be given them, was to ſet before their Eyes the Deſtruction of the People, and even of the Princes themſelves, thro' the Ambition and Diſcord of theſe latter. *Homer* therefore, for the Ground or Moral of his *Fable*, choſe this great Truth, that the Miſunderſtandings of Princes ruin their States. *I ſing*, ſays he, *the Wrath of* Achilles *ſo fatal to the* Greeks, *and which deſtroy'd ſo many Heroes, occaſioned by a Diſagreement between King* Agamemnon *and that Prince.*

To enforce this Truth, he repreſents divers confederate States firſt at Variance, and unproſperous; then reconciled and victorious. All which he thus includes in one univerſal Action.

Several independant Princes league againſt a common Enemy: he whom they chuſe as their Leader, affronts the braveſt of all the Confederacy; upon which the offended Prince withdraws, and refuſes any longer to fight for the Common Cauſe. This Miſunderſtanding gives the Enemy ſo much Advantage, that the Confederates are ready to relinquiſh the Enterprize. The diſaffected Perſon himſelf becomes a Sharer in the Calamities of his Allies; one of his chief Friends and Favourites being kill'd by the Chief of the Enemies. Thus, both Parties grown wiſe at their own Coſts, are reconciled. Upon which the valiant Prince again joining in the War, turns the Scale to his own Party, and kills the Enemy's Chief.

Such is the firſt general Plan of the Poem. To render this probable and more intereſting, Circumſtances of Time, Place, Perſons, *&c.* are to be added; that is, he looks in Hiſtory, or Tradition, for Perſons, to whom ſuch Action may with Truth or Probability be attributed.

He pitches on the Siege of *Troy*, and ſuppoſes the Action to have paſſed there. The brave, cholerick Character he calls *Achilles*; the General, *Agamemnon*; the Chief of the Enemies, *Hector*, &c. To inſinuate himſelf unto his Readers, he accomodates himſelf to their Manners, Genius, Views, *&c.* And to render his *Fable* more intereſting, makes his chief Perſons, and thoſe who remain'd at length victorious, to be *Greeks*, the Fathers of thoſe very People. The Courſe of the Work is fill'd up, and extended with other uſeful Leſſons and Inſtructions. See Episode.

That the Epopea in all its Glory is ſtill juſtly and ſtrictly a mere *Fable*, in the ſame Senſe as the Fictions of *Eſop*'s are, is ſhewn by *M. Boſſu*, in a Parallel between the *Fable* of the *Iliad*, and that of *Eſop* already mention'd. The moral Inſtruction is viſibly the ſame in both: ſo is the Fiction. All the Difference lies in the Names and Qualities of the Perſons.

Homer's are Kings; he calls 'em *Achilles*, *Patroclus*, *&c.* and the general Good to be preſerv'd, he calls the *Greeks*. *Eſop*, after this manner, gives his Perſons the Names of Beaſts. The *Dogs* are confederated, the *Wolf* is their Enemy; and what *Homer* calls the *Greeks*, he calls *Sheep*. One ſays, that while the confederate Princes are at Variance, *Hector* ruſhes on the *Greeks*, and makes them pay dear for the Folly of their Soveraigns (*Delirant Reges, plectuntur Achivi*): but that the Allies, brought by Misfortunes to themſelves again, re-unite, repulſe *Hector*, and kill him. The other, that while the Dogs are together by the Ears, the Wolf falls on the Sheep; and that the Dogs, ſeeing the Havock he makes, join together, drive him away, and kill him.

The two *Fables* were capable of a ſtill nearer Reſemblance. *Homer* has extended his by long Speeches, Deſcriptions, Compariſons and particular Actions; and that of *Eſop* might be amplified after the like Manner, without corrupting or altering it.

There needs only to relate what Cauſe ſet the Dogs at Variance, and ſhew the Riſe of the fatal Wrath in all its Circumſtances; to make fine Deſcriptions of the Plain wherein the Sheep fed, and of ſome neighbouring Wood, where the Wolf was ſhelter'd: to give this Enemy Whelps to rear; make them follow their Father in ſearch of Prey; and deſcribe the Carnage they made at divers Expeditions: nor would the Genealogy of the Hero's be forgotten. The Wolf ſhould boaſt himſelf a Deſcendant of *Lycaon*; and one of the Dogs be ſprung in a direct Line from *Canicula*.

Which

Which laſt would be the proper Hero of the Poem, as being hot and apt to be enraged. He would repreſent the Perſon of *Achilles* to Admiration; and the Folly of ſome *Ajax* his Couſin, would afford a good Proof of ſo divine an Extraction. Nothing more were required to engage Heaven in the Cauſe, and divide the Gods; which, no Doubt, have as much Right in *Æſop*'s Republic, as in the States of *Homer*. Witneſs *Jupiter* taking care to give a King to the Nation of the Frogs.

The Reader has here field enough for an Epopea; if he have any thing of Fancy and Expreſſion, and do but take care to repeat, as often as *Homer* does,

Τὸν δ' ἀπαμειβόμενος προσέφη πόδας ὠκὺς.

For the Unity of the FABLE, *ſee* UNITY.

FABRICK, the Structure, or Conſtruction of any thing, particularly a Building. See BUILDING.

The Word is form'd of the Latin *Fabrica*, which originally ſignifies a *Forge*.

In *Italy*, the Word *Fabrick* is applied to any conſiderable Building. In *France* it rather ſignifies the manner of building.

FABRICK *Lands*, are Lands given towards the Maintenance, Rebuilding or Repair of Cathedrals or other Churches; mentioned in the Act of Oblivion, 12 *Car.* 2. cap. 8. See CHURCH, GLEBE, &c.

In ancient time almoſt every one gave by his Will more or leſs to the *Fabrick* of the Cathedral or Pariſh Church where he lived. See INTESTATE.

FABULOUS, denotes ſome thing that has a Relation to *Fable*. See FABLE.

Varro divides the Duration of the World into three States or Periods. The firſt, ἄδηλον, the obſcure or dark, including all the Time before the Deluge; for the Heathens had ſome faint Idea of a Deluge, and a Sort of Tradition founded therein; but knew nothing of what had paſſed before. See DELUGE.

The ſecond Period he calls the μυθικὸν, *fabulous Age*, including the Time from the Deluge to the firſt Olympiad; and making, according to *Petavius*, 1552 Years; or to the Deſtruction of *Troy*, which was 1164 Years after the Deluge, or 308 after the Delivery from *Egypt*. See AGE.

This Period is called ſometimes *Fabulous*, and ſometimes *Heroic*. The firſt, on account of the *Fables* wherein the Hiſtory and Learning of thoſe Ages are veil'd: The Second, from the Heroes, or Sons of the Gods, whom the Poets feign to have lived in thoſe Days. See HERO and HEROIC.

FACE, the Surface, or firſt Side, which a Body preſents to the Eye. See SURFACE.

Thus we ſay, *The Face of the Earth*, *of the Waters*, &c. *Polyhedrons* have ſeveral regular *Faces*. See POLYHEDRON.

A Die, or Cube has ſix *Faces*. See CUBE.

FACE, is particularly uſed for the Viſage of an Animal, and eſpecially of a Man; as being the only Part of the Body, that ordinarily appears bare to the Eye. The *Latins* call it *Facies*, *Vultus*, *Os*, &c. In other Animals it is ſometimes call'd *Bill* or *Beck*; ſometimes *Snout*, &c. See BILL, &c.

The great Variety obſervable in Mens *Faces*, Voices and Hand-writing, furniſhes a noble Argument of a Providence. See VOICE.

The human *Face* is call'd the *Image of the Soul*, as being the Seat of the principal Organs of Senſe; and the Place where the Ideas, Emotions, &c. of the Soul are chiefly ſet to View. Pride and Diſdain are ſhewn in the Eye-brows; Modeſty on the Cheeks, Majeſty in the Forehead, &c. 'Tis the *Face* ſhews the Sex, Age, Temperament, Health, or Diſeaſe, &c.

The *Face*, conſider'd as the Index of the Paſſions, Habitudes, &c. of the Perſon, makes the Subject of *Phyſiognomy*. See PHYSIOGNOMY.

Anatomiſts uſually divide it into two Parts, the Upper, and Lower: The Upper is the *Front*, or Fore-head; the Lower includes the *Eyes*, *Noſe*, *Ears*, *Mouth*, and *Chin*. See each Part deſcribed under its reſpective Article, EYE, NOSE, MOUTH, &c.

FACE, or *Facade*, is ſometimes uſed for the *Front* of a Building; or the Side on which the chief Entrance is: as alſo for the Side it preſents to a Street, Garden, Court, &c. And ſometimes for any Side oppoſite to the Eye. See FRONT.

FACE, in Aſtrology, is uſed for the third Part of a Sign. Each Sign is ſuppoſed to be divided into three *Faces*. The ten firſt Degrees compoſe the firſt *Face*; the ten following ones the ſecond; and the laſt ten the third. *Venus* is in the third *Face* of *Taurus*, that is, in the firſt ten Degrees thereof. See SIGN.

FACE, *Facia*, or *Faſcia*, in Architecture, is a flat Member, having a conſiderable Breadth, and but a ſmall Projecture: ſuch are the Bands of an Archdrave, Larmier, &c. See FASCIA.

FACE *of a Stone*, is the Surface or Plain of Stone, which is to lie in the Front of the Work. The *Face* is eaſily known when the Stone is ſcapled, as being always oppoſite to the Back; and the Back going rough as it comes from the Quarry.

But rough Stones, the Workmen generally chuſe to make one of thoſe Sides the *Face*, which when in the Quarry, lay perpendicular to the Horizon; and conſequently the Breaking, and not the Cleaving way of the Stone. See STONE.

FACE *of a Place*, includes the Curtain, together with the two Flanks raiſed above it, and the two *Faces* of the Baſtion, which look towards one another, and flank the Angle of the Tenaille.

FACE *of a Baſtion*, or *of a Bulwark*, is the moſt advanced Part of a Baſtion towards the Field; or the Diſtance comprehended between the Angle of the Shoulder, and the Flank'd Angle. See BASTION.

The *Face*, or Flat of a Baſtion, Ravelin, Demi-baſtion, Horn-work, Crown-work, &c. is more uſually underſtood of that Part of the Work terminated between the Angle of the Epaule, and the flank'd Angle; or between the Point of the Baſtion, and the Flank.

FACE *prolonged*, in Fortification, is that Part of a Line of Defence raſant, which is between the Angle of the Epaule or Shoulder of a Baſtion, and the Curtain; or the Line of a Defence raſant cut by the Length of the *Face*.

FACET, or *Facette*, a little *Face*, or Side of a Body cut into a great Number of Angles.

Multiplying Glaſſes ate cut in *Facets*, or *Facet-wiſe*.

Diamonds are alſo cut in *Facets*, or Tables. See DIAMOND.

FACIA, in Architecture. See FASCIA.

FACIES *Hippocratica*, in Medicine, is when the Noſtrils are ſharp, the Eyes hollow, the Temples low, the Tips of the Ears contracted, the Fore-head dry and wrinkled, and the Complexion pale, or livid.

The *Facies Hippocratica* is chiefly obſerved toward the Period of Phthiſes and other Conſumptions. It is held a ſure Prognoſtick of Death.

FACTION, a Cabal, or Party, form'd in a State to diſturb the publick Repoſe.

The moſt celebrated *Factions* in the World were that of the *Guelphs* and *Gibelins*, who kept *Italy* in Alarm for many Ages; and that of the *Whigs* and *Tories* in *England*. See GUELPH, TORY, &c.

FACTION, was originally the Name given the divers Troops or Companies of Combatants in the Games of the *Circus*. Of theſe there were four, *viz.* the *Green Faction*, the *Blue Faction*, the *Red Faction*, and the *White Faction*. See CIRCUS and COLOURS.

Theſe *Factions*, with their Liveries and Badges were at length aboliſh'd. The Emulation which was at firſt between them, growing to ſuch height, that in *Juſtinian*'s Time they came to Blows.

FACTITIOUS, ſignifies any thing made by Art; in Oppoſition to what is the Produce of Nature.

Thus Cinnabar is divided into Natural and *Factitious*. See CINNABAR.

Diſtilled Waters are *Factitious* Liquors. See WATER.

De-FACTO, ſee DE-FACTO.

FACTOR, in Commerce, an Agent or Perſon who acts, and negotiates for a Merchant, by Commiſſion, call'd alſo *Commiſſioner*, and on ſome Occaſions *Broker*, and throughout the *Levant*, *Coagis*. See COMMISSIONER, BROKER, &c.

Factors are chiefly either charged with the Buying, or the Selling of Goods; or with both.

Thoſe of the firſt Kind are uſually eſtabliſhed in Places of conſiderable Manufactures, or Cities of great Trade. Their Office is to buy up Commodities for other Merchants, reſiding elſewhere; to ſee them packed, and ſend them to the Perſons for whom they were bought.

Factors of Sale, are uſually fix'd in Places where there is a great Vent. To theſe, Merchants and Manufacturers ſend their Goods to be ſold for them according to the Price and other Conditions expreſs'd in the Orders deliver'd them.

The Wages, or Allowances for ſelling, are uſually clear of all Expences, of Carriage, Exchange, Remittances, &c. excepting Poſtage of Letters, which are never ſet to Account. See FACTORAGE.

FACTORS, in Arithmetick, is a Name given to the Multiplicand and Multiplier; by reaſon they do *facere productum*, make or conſtitute the Product. See MULTIPLICATION.

FACTORAGE, ſee FACTOR, BROKAGE, &c.

The *Factorage*, or Wages, call'd alſo *Commiſſion*, is different, at different Places, and for different Voyages: at a Medium it may be fix'd at three *per Cent.* of the Value of the Goods bought; beſide the Charge of Package, which is pay'd over and above.

At *Virginia*, *Barbadoes*, and *Jamaica*, the *Factorage* is from three to five *per Cent.* and the like throughout the greateſt

greateſt Part of the *Weſt-Indies*. In *Italy* it is two and a half. In *Holland* one and a half. In *Spain*, *Portugal*, *France*, &c. two *per Cent*.

FACTORY, a Place where a conſiderable Number of *Factors* reſide, to negotiate and officiate for their Maſters or Principals. See FACTOR.

The Term is chiefly uſed in ſpeaking of the *Eaſt-Indies* and other Parts of *Aſia*, whither the *European* Nations ſend their Ships every Year, and keep Factors to buy the Commodities of the Country, and ſell thoſe brought from *Europe*.

The greateſt and nobleſt *Factory* in the World, is that of the *Engliſh* at *Smirna*. It uſually conſiſts of 80 or 100 Perſons, moſt of them young Gentlemen of the beſt Families, and frequently younger Sons of Peers. 'Tis a ſort of Seminary of Merchants. As there is a Neceſſity for ſerving an Apprenticeſhip of ſeven Years, to be entitled to trade to the *Levant*; the Cuſtom is for Perſons of Fortune, to bind their younger Sons to ſome Merchant, who, in Conſideration of 3 or 400 Pound Sterling agrees, after the three firſt Years of their Apprenticeſhip are expired, to ſend them to *Smyrna*, where they have not only the Management of their Maſters Affairs, with very plentiful Allowances, but are likewiſe permitted to trade for themſelves; whereby they are enabled to live ſplendidly the reſt of their Apprenticeſhip, and at length come out the beſt qualified for Buſineſs of any young Perſons in the World. See COMPANY.

FACTUM, in Arithmetick, The Product of two Quantities multiplied by each other. See PRODUCT and FACTOR.

FACULÆ, in Aſtronomy, a Name given by *Scheiner* and others after him, to certain Spots on the Sun's Disk, that appear brighter, and more lucid than the reſt of his Body. See SUN.

The *Faculæ* or bright Spots differ very conſiderably from the *Maculæ* or dark Spots, both in Light, Colour, Figure, Magnitude aud Duration. See MACULÆ.

Hevelius aſſures us, that *July* the 20th 1634. he obſerv'd a *Facula* that took up a third Part of the Sun's Diameter. And from the Obſervations of the ſame *Hevelius*, we learn, that the Maculæ frequently change into *Faculæ*; the *Faculæ* into Maculæ rarely, if ever. Some Authors even contend that all the Maculæ degenerate into *Faculæ*, e'er they quite diſappear.

Huygens however, declares he was never able to diſcover any *Faculæ*; though the Maculæ occurr'd to him very frequently. All the Foundation he could ſee for the Notion of *Faculæ*, was, that in the darkiſh Clouds which frequently ſurround the Maculæ, one ſometimes diſcerns little Points or Sparks brighter than the reſt.

However, Authors after *Kircher* and *Scheiner*, have generally repreſented the Sun's Body full of bright, fiery Spots, which they conceive to be a ſort of Volcano's in the Body of the Sun. But *Huygens*, and others of the lateſt and beſt Obſervers, finding that the beſt Teleſcopes diſcover nothing of the Matter, agree to explode the Phænomena of *Faculæ*: Their Cauſe, theſe Authors attribute to the tremulous Agitation of the Vapours near our Earth; the ſame as ſometimes ſhews a little Unevenneſs in the Circumference of the Sun's Disk, when view'd through a Teleſcope. Strictly then, the Maculæ are not Eructations of Fire and Flame, but Refractions of the Sun's Rays in the rarer Exhalations, which being condenſed in the Neighbourhood of that Shade, ſeem to exhibit a Light greater than that of the Sun. See SPOT, &c.

The Word is pure Latin, *Facula* being a Diminutive of *Fax*, Torch; and ſuppos'd to be here applied from their appearing and diſſipating by turns.

FACULTY, a *Power*, or Ability of performing an Action. See POWER.

The Term is much uſed by the antient Philoſophers, and ſtill retain'd in the Schools, to explain the Actions of natural Bodies by.

Thus, to account for the Act of Digeſtion, they ſuppos'd a *Digeſtive Faculty* in the Stomach: To account for Motion, they imagin'd a *Motive Faculty* in the Nerves, &c. which is only a ſubſtituting of one Name of an unknown Phænomenon for another.

Yet this Practice of attributing Effects to their reſpective Virtues or *Faculties*, ſtill obtains in divers Things, which our Philoſophy has not yet afforded us a better Account of. Thus, ſay our Medicinal Writers, Senna and Rhubarb have a *Purgative Faculty*; Barberries an *Aſtringent Faculty*, &c. which amounts juſt to this, that Senna purges, and Barberries bind.

The FACULTIES or *Powers of the Soul*, are commonly reputed two, *viz.* of *Underſtanding* and *Willing*. See POWERS. See alſo UNDERSTANDING and WILLING.

A FACULTY *of an Animal Body*, is defined to be the Principle whereby the Body performs its Functions. This is uſually diſtinguiſh'd with regard to the ſeveral Functions, into *Vegetative* and *Animal*.

Under the *Vegetative Faculty*, are comprehended the divers ſubaltern ones, whereby Nutrition and Generation are effected.

Under the *Animal Faculties*, are comprehended thoſe relating to Senſe and Motion.

The *Vegetative Faculty* then is divided into *Nutritive* and *Generative*; and the Nutritive is again ſubdivided into *Natural* and *Vital*.

To the firſt, belong the Functions of the lower Belly, relating to the Preparation of the Food; to the latter, the Actions of the Heart and Lungs, wherein Life is chiefly concern'd.

Others ſubdivide the Vegetative *Faculty* into *Attractive*, *Retentive*, *Concoctive*, and *Expulſive*.

The *Animal Faculties*, being thoſe whereby an Animal perceives and moves, become divided into *Senſitive* and *Loco-motive*. See ANIMAL, VEGETATIVE, VITAL, NATURAL, &c. See alſo FUNCTIONS.

FACULTY is alſo applied in the Schools, to the divers Parts or Members of an Univerſity, divided according to the Arts or Sciences taught or profeſs'd therein.

There are four *Faculties* in moſt Univerſities: That of the *Arts*, which includes the Humanities and Philoſophy, and which is much the moſt antient and extenſive: The ſecond, is that of *Theology*: The third, *Medicine*: And the fourth, *Juriſprudence*. See each under its proper Article, THEOLOGY, &c. See alſo UNIVERSITY.

The Degrees in the ſeveral *Faculties* in our Univerſities are, thoſe of *Batchelor*, *Maſter* and *Doctor*. See DEGREE. See alſo BATCHELOR, MASTER and DOCTOR.

The *Faculty* is frequently uſed abſolutely, and by way of Eminence for that chiefly ſtudied or taught in that Place. Thus, the *Faculty of London* and *Montpelier* is Medicine: That of *Paris* Theology: That of *Orleans* Law, &c. See COLLEGE *of Phyſicians*, SORBONNE, &c.

FACULTY, as it is reſtrain'd from the original and active Signification to the particular Underſtanding in Law, is uſed for a Privilege or ſpecial Power granted to a Man by Favour, Indulgence, and Diſpenſation, to do that which by Law he cannot: As to eat Fleſh upon Days prohibited; to marry without Banes firſt ask'd.

The *Court of* FACULTIES belongs to the Archbiſhop of *Canterbury*, and his Officer is called *Magiſter ad Facultates*. His Power is to grant Diſpenſations, as to marry, to eat Fleſh on Days prohibited, the Son to ſucceed his Father in his Benefice, one to have two or more Benefices incompatible, &c.

The Office where ſuch Diſpenſations are taken out, is alſo call'd the FACULTY-OFFICE.

FÆCAL *Matter*, a Term uſed by Phyſicians, particularly the *French*, for the *Fæces* or great Excrements of a Man, *i. e.* thoſe diſcharged by Stool. See EXCREMENT.

The *Fæcal Matter* is become famous for a chymical Operation thereon, by Monſ. *Homberg*, related at length in the *Mem. de l'Academie R. An.* 1711. He had a Notion ſuggeſted to him, that the *Fæcal Matter*, by Diſtillation, yielded an Oil clear as Water, without any Smell, and which had the Property of fixing Mercury into fine Silver. Upon this, to work he goes; and becauſe he would have as laudable and promiſing a *Matter* as he could, hired four robuſt healthy young Fellows, whom he ſhut up for three Months, and agreed with them, that they ſhould eat nothing but the fineſt Bread, which he ſupplied them withall freſh every Day, and drink the beſt *Champain* Wine as long as they would. After a long Proceſs, and numerous Eſſays on the Excrements they made, he at length got the clear, inodorous Oil; but it had no Effect at all on Mercury, which was the great Point aim'd at.

However, miſſing of what he expected, he fell on ſomething he never dreamt of, *viz.* a *Phoſphorus*. The *Caput Mortuum* of the Oil, he found to have a ſurprizing Property of taking Fire without any Motion, or the Application of any other Fire; inſomuch, that it might deſerve a Place in the firſt Rank of Phoſphori known.

The Quantity of a Pea taken out of the Matras, and laid on a Paper, or other combuſtible Matter, begins to ſmoak immediately, and ſets the Paper on Fire. See PHOSPHORUS *Ardens*.

FÆCES, or FOECES, or FECES, the Dregs, Sediment, or Impurities remaining of a mixt Body, after the purer, more volatile and fluid have been ſeparated therefrom by Evaporation, Diſſolution, Decantation, Derivation, or the like.

Thus we ſay the *Fæces* of *Oil*, &c. Thoſe of Wines are properly call'd *Lees*. See LEES. Thoſe of Malt-liquors, *Grounds*. See GROUNDS.

FÆCES is particularly uſed in Medicine, &c. For the groſs, impure Matters found at the Bottom of the Compoſitions and Preparations of either Pharmacy.

FÆCES, in Chymiſtry, denotes the Lees, Refuſe, Dirt, Mud, Ordures, Impurities, Excrements and heterogeneous Matters remaining in the Alembic after the Diſtillation of any Body. See DISTILLATION.

What remains in the Retort, inſtead of *Fæces*, is properly denominated *Caput mortuum*, or *Terra damnata*. See DAMNATA TERRA, CAPUT MORTUUM.

FÆCES is alſo uſed for the Excrements of an Animal voided by Stool. See EXCREMENT.

FÆTOR, Stench. See FOETOR.

FAGGOT, or FAGOT, in Fortification. See FASCINE. *Menage* derives the Word from the Latin *Facottus*, which was form'd of the Greek φακὸς. *Nicod.* borrows it from *Faſciculus*, a Bundle: *Du Cange* from the baſe Latin *Fagatum*, and *fagotum*.

A *Faggot of Steel* is the Quantity of 120 *l.* weight.

In the time of Popery in theſe Kingdoms, *Faggot* was a Badge wore on the Sleeve of the upper Garment by ſuch as had abjur'd Hereſy; being put on after the Perſon had carried a *Faggot* by way of Penance to ſome appointed Place of Solemnity. The Leaving this Badge was ſometimes conſtrued Apoſtacy.

FAGGOTS, among the Military Men, are ineffective Perſons, who receive no regular Pay, nor do any regular Duty, but are hired, occaſionally to appear at a Muſter, to fill up the Companies, and hide the real Deficiences thereof.

FAGONA, in Anatomy, a conglomerate Gland, call'd alſo *Thymus*. See THYMUS.

FAILLIS, in Heraldry, a *French* Term, denoting ſome Failure or Flaw in an Ordinary, as if it were broke, and a Splinter taken from it.

FAILURE, or FAILING, a Species of Bankrupcy; popularly call'd *Breaking*, or *Stopping Payment*. See BANKRUPT.

FAINT, *alias* FAINT-ACTION, is as much as *feign'd Action*; that is ſuch Action, as albeit the Words of the Writ be true, yet, for certain Cauſes the Party has no Title to recover thereby. A falſe Action is that where the Words of the Writ are falſe. *Coke on Littl. fol.* 361. Yet ſometimes the two are confounded. See ACTION.

FAIR, a publick Place, where Merchants Traders, and other Perſons from divers Parts meet, on ſome fix'd Day of the Year, to buy and ſell Commodities, and to partake of the Diverſions uſually accompanying ſuch Aſſemblies.

FAIRS are either free, or charg'd with Tolls and Impoſitions.

The Privileges of *Free Fairs* conſiſt chiefly, firſt, In that all Traders, &c. whether Natives, or Foreigners, are allow'd to enter the Kingdom, and are under the Royal Safeguard and Protection in coming and returning, they and their Agents, with their Goods, &c. 2ly, In that the ſaid Perſons and their Effects are exempt from all Duties, Impoſitions, Tolls and Servitudes. 3ly, That Merchants in going to, or returning from the *Fair*, &c. cannot be arreſted, or their Goods ſtop'd, &c. 'Tis the Prince alone that has a Right, by his Letters Patent, to eſtabliſh *Fairs*, whether *free*, or ſubject to Duties, and the other ordinary Laws and Penalties.

The Word *Fair* is formed of the *French Foire*, which ſignifies the ſame Thing. And *Foire* ſome derive from the Latin *Forum*, Market: Others from the Latin *Feriæ*, by reaſon *Fairs* were antiently always held in the Places where the Wakes, or Feaſts of the Dedications of Churches, call'd *Feriæ*, were held. See FERIÆ.

The *Romans* call'd them *Nundinæ*. *Eric Puteanus* has a very pretty little Treatiſe on the *Fairs of the Romans*, *De Nundinis Romanorum*, which he calls *Nova faſtorum facula*.

Several *Fairs* are held in the open Fields, or on Heaths & Commons; under Tents, Booths and Barracks erected for the Purpoſe, as *Sturbridge Fair*, &c. Others in Places wall'd in for the Purpoſe; and form'd into regular Streets, Lanes, &c. for the Occaſion. As the *Fair* of St. *Laurence* at *Paris*: Laſtly, others are held in the open Places and Streets of Cities, as *Bartholomew Fair*, the *Briſtol Fair*, the *Fair* of St. *Germains*, &c.

FAIRS, particularly *Free Fairs*, make a very conſiderable Article in the Commerce of *Europe*, eſpecially that of the Mediterranean or Inland Parts, as *Germany*, &c. where the continual Paſſage and Repaſſage of Veſſels is impracticable.

The moſt celebrated *Fairs* in *Europe* are thoſe, 1. of *Francfort*, held twice a Year, in Spring and Autumn: The firſt commencing the Sunday before Palm-Sunday, and the other on the Sunday before the eighth of *September*. Laſts 14 Days, or two Weeks, the firſt of which is called the *Week of Acceptance*, and the ſecond the *Week of Payment*. They are famous for the Sale of all Kinds of Commodities, but particularly the immenſe Quantity of curious Books, no where elſe to be found, and whence the Booksellers throughout all *Europe* uſed to furniſh themſelves. Before each *Fair* there is a Catalogue of all the Books to be ſold thereat, printed and diſperſed, to call together Purchaſers; though the Learned complain of divers unfair Practices therein; as factitious Titles, Names of Books purely imaginary, &c. beſide great Faults in the Names of the Authors, and the Titles of the real Books.——2. The *Fairs of Leipſick*, which are held thrice a Year; one beginning on the firſt of *January*, another three Weeks after *Eaſter*; and a third after *Michaelmas*. They hold twelve Days a-piece, and are at leaſt as conſiderable as thoſe of *Franckfort*. 3. The *Fairs* of *Novi*, a little City in the *Milaneſe*, under the Dominion of the Republic of *Genoa*. There are four in the Year, commencing on the ſecond of *February*, the ſecond of *May*, the firſt of *Auguſt*, and ſecond of *September*. Tho' the Commodities bought and ſold here be very conſiderable; yet, what chiefly contributes to render them ſo famous, is the vaſt Concourſe of the moſt conſiderable Merchants and Negotiants of the neighbouring Kingdoms for the tranſacting of Affairs, and ſettling Accounts. 4. The *Fairs* of *Riga*, whereof there are two in the Year; one on *May*, and the other in *September*. They are much frequented by the *Engliſh*, *Dutch* and *French* Ships, as alſo from all Parts of the *Baltick*. The beſt Time for the Sale of Goods at *Riga*, is during the *Fairs*. Since the Building of the famous City of *Petersbourg*, theſe *Fairs* have ſuffer'd ſome Diminution. 5. *Fair* of *Archangel*, during which, all the Trade Foreigners have with that City, is managed. It holds a Month, or ſix Weeks at moſt, commencing from the middle of *Auguſt*. The *Muſcovite* Merchants attend here from all Parts of that vaſt Empire; and the *Engliſh*, *Dutch*, *French*, *Sweediſh*, *Daniſh* and other Ships in the Port of that City, on this Occaſion, ordinarily amount to three hundred. But this is no *Free Fair*, as the reſt are. The Duties of Exportation and Importation are very ſtrictly paid, and on a very high footing. 6. *The Fair of St. Germain*, one of the Suburbs of *Paris*, commencing on the third of *February*, and holding till *Eaſter*; tho' it is only *free* for the firſt fifteen Days. 7. The *Fairs of Lyons*, which Monſ. *du Cheſne*, in his Antiquity of Cities, would inſinuate from a Paſſage in *Strabo*, were eſtabliſh'd by the *Romans*: Tho' 'tis certain, the *Fairs*, as they now ſtand, are of a much later Date. There are three in the Year, each laſting twenty Days, and *free* for ever. They begin on *Eaſter* Monday; the 26th of *July*; and the firſt of *December*. 8. *Fair of Guibray*, a Suburb of the City *Falaiſe* in the lower *Normandy*. It is ſaid to have been eſtabliſh'd by our *William* the Conqueror, in Conſideration of his being born at *Falaiſe*. It commences on the 16th of *Auguſt*, and holds 15 Days, *free* by Charter, and longer by Cuſtom. 9. *Fair of Beaucaire*, held partly in a City of that Name, in *Languedoc*, and partly in the open Country, under Tents, &c. It commences on the 22d of *July*, and only holds for three Days; yet it is the greateſt and moſt celebrated of all the *Fairs* in that Part of *Europe*, both for the Concourſe of Strangers from all Parts of the World; and for the Traffick of all kind of Goods: The Money return'd in theſe three Days amounting ſometimes to above ſix Million of Livres.

The *Fairs of Porto-bello*, *Vera Crux*, and the *Havana*, are the moſt conſiderable of all thoſe in *America*. The two firſt laſt as long as the Flota and Gallions continue in thoſe Parts; and the laſt is open'd as ſoon as the Flota or Gallions arrive there upon their Return for *Spain*; this being the Place where the two Fleets join. See FLOTA, and GALLIONS.

FAIR *Pleading*. See BEAU-PLEADER.

FAIRY, a Term frequently occurring in antient Traditions and Romances, denoting a kind of Genii, or imaginary Deities, converſant on Earth, and diſtinguiſh'd by abundance of fantaſtical Actions and Offices, either good or evil.

The *Fairies* are a peculiar ſpecies of Divinities, that have but little Relation to any of thoſe of the antient *Greeks* and *Romans*; unleſs perhaps to the *Larvæ*. See LARVÆ. Tho' others, and with Reaſon, won't have them rank'd among *Gods*; but ſuppoſe them an intermediate kind of Beings, neither Gods, nor Angels, nor Men, nor Devils.

They are of Oriental Extraction, and ſeem to have been invented by the *Perſians* and *Arabs*, whoſe Hiſtory and Religion abounds with Tales of *Fairies* and Dragons. The *Perſians* call them *Peri*, and the *Arabs Ginn*, having a peculiar Country, which they ſuppoſe them to inhabit, call'd *Ginniſtan*, and by us *Fairy Land*. Our great Countryman *Spencer*'s Maſter-work, the *Fairy Queen*, is an Epic Poem under the Perſons and Characters of *Fairies*.

Nauda, in his *Maſcurat* derives the Origin of our Fables of *Fairies*, from thoſe of the *Parcæ* of the Antients; and ſuppoſes both the one and the other to have been a kind of Envoys, or Interpreters of the Will of Heaven to Men. But then, by *Fairies* he means a ſort of Witches, famed for foretelling future Events, by means of ſome Communication with the Genii above-mentioned. The ſilly ſuperſtitious Notions of the Antients, he obſerves, were not near ſo formidable as ours; nor their Hell and Furies any thing comparable to our Devils. Accordingly, in lieu of our Hags and Witches, who do nothing but ill, and are employ'd in the loweſt, baſeſt Offices, they had a ſort of finer Goddeſſes, call'd by *Latin* Authors *Albas Dominas*, who ſcarce did any thing but good, and took Pleaſure in noble, honourable Deeds:

Deeds: Such were their *Lamia*, and Nymph *Egeria*; from whom the later fairy Queens, *Morga*, *Alcina*, *Fata Manto* of *Arioſto*, *Gloriana* of *Spencer*, and other Machines in *Engliſh* and *French* Fable were, no doubt, deriv'd. Some of them are uſually made to attend the Births of young Princes and Cavaliers, to inform them of their Deſtiny, as was antiently done by the *Parcæ*, witneſs *Hyginus*, c. 171, and 174.

But with *Nauda*'s Leave, the Antients were not without Witches, as wicked as our own; witneſs the *Canidia* of *Horace* Epod. IV. Od. V. & Satyr L. I. 10. Nor did the *Fairies* ſucceed the *Parcæ*, or even *Venificæ* of the Antients; but rather the *Nymphæ*: for ſuch were *Lamia* and *Egeria*. See NYMPH, PARCÆ, &c.

FAIRY *Circle* or *Ring*, is a Phænomenon pretty frequent in the Fields, &c. being a kind of Round, ſuppos'd, by the Vulgar, to be trac'd by the *Fairies* in their Dances.

There are two kinds; one of them ſeven or eight Yards in Diameter, containing a round bare Path, a Foot broad, with green Graſs in the Middle: The other, of divers Bigneſſes; being incompaſs'd with a Circumference of Graſs, much freſher and greener than that in the Middle.

Mr. *Jeſſop* and Mr. *Walker*, in the Philoſ. Tranſact. aſcribe them to the Lightning; which is confirm'd by their being moſt frequently produc'd after Storms of that kind; as well as by the Colour and Brittleneſs of the Graſs's Roots, when firſt obſerv'd. 'Tis no Wonder that Lightning, like all other Fires, moves round, and burns more in the Extremity than the Middle.

According to thoſe Gentlemen, the ſecond Kind of Circle ariſes originally from the firſt: The Graſs burnt up by the Lightning, uſing to grow the more plentifully afterwards.

Other Authors have aſſerted, that theſe *Fairy* Rings are form'd by Ants; by reaſon thoſe Inſects are ſometimes found travelling in Troops therein.

FAITH, in Philoſophy, call'd alſo *Belief*, is that Aſſent we give to a Propoſition advanc'd by another, the Truth of which Propoſition we don't immediately perceive, from our own Reaſon or Experience, but believe it diſcover'd and known by the other: Or, *Faith* is a Judgment or Aſſent of the Mind, the Motive whereof is not any intrinſick Evidence, but the Authority or Teſtimony of ſome other, who reveals, or relates it. See REASON.

Hence, as there are two Kinds of Authorities or Teſtimonies; the one of God, and the other of Man; *Faith* becomes diſtinguiſh'd into *Human*, and *Divine*.

Divine FAITH is that founded on the Authority of God; or 'tis that Aſſent we give to what is affirm'd by God. The Object of this *Faith* is Matters of Revelation. See REVELATION.

Human FAITH is that whereby we believe what is told us by Men: The Object hereof is Matter of human Teſtimony and Evidence. See TESTIMONY, and EVIDENCE.

Faith again, may be diſtinguiſh'd into *implicit*, and *ſcientific*.

Implicit or *blind* FAITH is that whereby we give our Aſſent to a Propoſition advanc'd by another, of whoſe Knowlege and Veracity we have no certain and evident Reaſon or Proof; and this is only *Opinion* under another Name. See OPINION.

Scientifical or *ſeeing* FAITH, is that by which we give our Aſſent to a Propoſition advanc'd by one who can neither deceive, nor be deceiv'd; which may be properly refer'd to *Science* or *Knowledge*. See KNOWLEDGE.

Divine Faith, *cæteris paribus*, is ſtronger than human. When we are fully convinc'd that any Propoſition comes from God, *Faith* becomes Aſſurance, or Science; it being an Ingredient in our Idea of God, that he can neither deceive, nor be deceiv'd: But when there is any Doubt, whether the Propoſition is declared by God, or whether he has commanded that we ſhould believe ſuch a Thing; the *Faith* can be no ſtronger, or weaker than the *Reaſons* on which it is founded: Divine *Faith* therefore, may either be ſtrong, weak or none at all.—Again, the Reaſons or Motives of believing Men, may be of ſuch Weight and Force, that being perfectly underſtood, they may equal a mathematical Evidence: And then the human *Faith* is ſcarce inferior to the Divine; there being, as it were, an equal Neceſſity of giving our Aſſent on each Side. See CREDIBILITY *of human Teſtimony*.

Hence it is eaſily obſerv'd, that all our *Faith* or Belief has its Foundation on Reaſon, which cannot deceive us, if we make a due Uſe of our Liberty, and do not acquieſce, till it neceſſarily compels us. See LIBERTY, and JUDGMENT.

Strictly, and philoſophically ſpeaking, no Man can have what we call a *Divine Faith*, but a Prophet, to whom God has immediately ſpoken. See PROPHET, and PROPHECY.

All our preſent religious *Faith* is really *human*, as depending on the ſecondary Teſtimony of Men; of whoſe Veracity however, we have the ſtrongeſt Proofs. The Prophets, or thoſe to whom God immediately revealed his Will, believ'd him, for that they knew he could not deceive. We, at this Day, believe them, or rather their Writings, for other Reaſons, *viz.* the ſame which oblige us to believe all undoubted Hiſtories. See REVELATION.

FAITH, in Theology, is the firſt of the Theological Virtues, or Graces. See GRACE.

Faith, in this Senſe, is a Gift of God, whereby we are led to give a firm Aſſent to the Truths he has reveal'd to his Church: Or, *Faith* is a Gift or Impreſſion, which leads us to give our Aſſent to certain Things relating to God, his Nature, Attributes, Worſhip, Truth, &c. The Evidence of which Things, we do not ſee and underſtand clearly enough, to have given our Aſſent on the common Footing of Reaſon, and Neceſſity. See REVELATION, and TRUTH.

St. *Paul* defines *Faith* the Subſtance or Support of Things hoped for, and the Evidence of Things not ſeen. The Life of *Faith* conſiſts in ſerving God without knowing him in any ſenſible manner. *Nicole*.

Beſide the two Species of *Faith*, human and divine; the Romaniſts make a third, or intermediate Kind, call'd *Eccleſiaſtical* FAITH, which is the Aſſent, orthodox Perſons give to certain Events decided by the Church, and propos'd to be believed of all: As when ſhe declares that ſuch a Book contains heretical Doctrine: That ſuch a Perſon is in Heaven, &c. This Term, *Eccleſiaſtical Faith*, was firſt introduc'd by Mr. *Pereſixe*, to diſtinguiſh the *Faith* whereby we believe Matters of Divine Revelation, from thoſe of Eccleſiaſtical Determination.

Confeſſion of FAITH, is a *Creed* or Formula containing all thoſe Articles, the Belief whereof is eſteemed neceſſary to Salvation. See CREED, and SYMBOL.

FAITH *and Homage*, in the Feudal Law. See FEALTY.

FAKIR, or *Faquir*, a kind of Dervice, or Mahometan Religious, who travels the Country, and lives on Alms: Or rather, as *d'Herbelot* obſerves, *Fakir* and Dervice are the ſame thing.

The *Turks* and *Perſians* uſe the Name *Dervice* for any poor Perſon, whether he be ſo out of Neceſſity, or Choice: And the *Arabs* apply *Fakir* in the ſame Senſe. Whence, in ſome Countries of Muſſulmaniſm, the Religious are call'd *Dervices*; and in others, particularly throughout the States of the great *Mogul*, *Fakirs*. See DERVICE.

The *Fakirs* ſometimes travel ſingly, and ſometimes in Companies. When they go in Companies, they have a Superior, who is diſtinguiſh'd by his Habit. Each *Fakir* bears a Horn, which he blows at his Arrival in any Place, as alſo at his Departure; and a kind of Scraper or Trowel, to ſcrape the Earth in the Place where he ſits or lies down. When they go together, they divide their Alms equally amongſt them; give what is left every Night to the Poor, and never reſerve any thing for the Morrow.

There are alſo a kind of idolatrous *Fakirs*, who follow much the ſame Trade. D. *Herbelot* reckons in the *Indies* eight hundred thouſand Mahometan *Fakirs*; and twelve hundred thouſand idolatrous ones: To ſay nothing of divers extraordinary ſpecies of *Faquirs*, particularly *Penitents*; whoſe Mortification and Penance conſiſts in very odd Obſervances. Some, *v. gr.* remain Night and Day for many Years in certain uneaſy Poſtures. Others never ſit or lay down to ſleep, but ſuſtain themſelves by a Rope, hung down for the Purpoſe. Others bury themſelves in a Ditch, or Pit, for nine or ten Days without eating or drinking. Others keep their Arms lifted up to Heaven, ſo long, till they cannot let them down again, if they would. Others lay Fire on their Heads, and burn the Scalp to the very Bone. Others roll themſelves naked on Thorns. *Tavernier*, &c.

Another Claſs of *Fakirs*, retire unto Moſques, live on Alms, and devote themſelves to the Study of the Law, the reading of the Alcoran, &c. to fit themſelves for *Moulas* or Doctors.

People of Quality ſometimes aſſume the Character and Quality of *Fakirs*: And the famous *Orangzeb* himſelf, e'er he aſcended the Throne, gave out, that he intended to commence *Fakir*.

The Word *Fakir* is *Arabic*, and ſignifies a poor Perſon. It is form'd of the Word פקר, *fakara*, to be in want.

FALCATED, one of the Phaſes of the Plants, popularly call'd *Horned*. See PHASES.

The Aſtronomers ſay the Moon, or any Planet appears *Falcated*, when the enlighten'd Part appears in form of a Sickle, or Reaping-hook, by the *Latins* call'd *Falx*.

The Moon is *Falcated*, whilſt ſhe moves from the Conjunction to the Oppoſition, or from New Moon to Full; from Full to a New again, the enlighten'd Part appears gibbous, and the dark *Falcated*. See MOON.

FALCON, or *Faucon*, a Bird of Prey, of the Hawk-kind, ſuperior to all others for Goodneſs, Courage, Docibility, Gentleneſs, and Nobleneſs of Nature. See HAWK.

The *Falcon* or *Falcon Gentle*, is both for the Fiſt, and the Lure: Its Feet are yellow, its Head black, and Back ſpotted. In the Choice, obſerve that the Head be round, the

the Beak thick and ſhort, the Neck long, the Shoulders broad, Thighs long, Legs ſhort, Feet large, the Feathers of the Wings ſlender, Pounces black, &c.

The *Falcon* is excellent at the River, Brook, and even Field; and flies chiefly at the larger Game, as Wild-gooſe, Kite, Crow, Heron, Crane, Pye, Shoveler, &c.

It muſt be added, that the Name *Falcon* is retrain'd to the Female; for as to the Male *Falcon*, 'tis much ſmaller, weaker, and leſs courageous than the Female, and therefore denominated *Taſſel*, or *Tiercelot*.

John de Janua, and ſeveral others, take the Name *Falcon* to have been occaſion'd by its crooked Talons, or Pounces, which reſemble a *Falx* or Sickle. *Giraldus* derives it *a falcando*, becauſe it flies in a Curve.

As in the Courſe of this Work, the ſeveral Terms of Falconry are explain'd, it may be here neceſſary to ſay ſomething in the general, of the Management and Diſcipline of the *Falcon*, as being the Foundation of the Art of *Falconry*. For the reſt, the Reader may have Recourſe to the Heads HAWK, and HAWKING.

When a young *Falcon* is firſt taken, ſhe muſt be *ſeel'd*; and the Seeling at length gradually ſlacken'd, that ſhe may be able to ſee what Proviſions are brought her. Her Furniture is to be Jeſſes of Leather, maild Leaſhes, with Buttons at the End, and Bewets. Beſide, a ſmall round Stick hanging in a String to ſtroke her frequently withal; which, the oftener 'tis done, the ſooner and better will ſhe be man'd: Two Bells on her Legs, that ſhe may be the more readily found, or heard when ſhe ſtirs, ſcratches, &c: And a Hood rais'd, and boſs'd over her Eyes. Her Food to be Pidgeons, Larks, and other live Birds, of which ſhe is to eat twice or thrice a Day, and till ſhe be full gorged. When the Falconer is about to feed her, he muſt hoop and lure, that ſhe may know when to expect it. Then unhooding her gently, he gives her two or three Bits, and putting her Hood on again, gives her as much more; but takes care ſhe is cloſe ſeeled, and after three or four Days leſſens her Diet. At going to bed, he ſets her on a Pearch by him, that he may awake her often in the Night; continuing to do ſo, till ſhe grow tame and gentle. When ſhe begins to feed eagerly, he gives her Sheeps-heart; and now he begins to unhood her by Day, but it muſt be done far from Company: Feeds her and hoods her again; and feeds her as before, but takes care not to fright her with any thing, when he unhoods her; and if he can, reclaims her without over-watching. The *Falcon* muſt be born continually on the Fiſt, till ſhe be throughly manned, and induced to feed in Company: For two or three Days give her waſh'd Meat, and then Plumage, according as you eſteem her foul within; if ſhe caſt, hood her again, and give her nothing till ſhe gleam after her Caſting: But when ſhe has gleamed and caſt, give her a little hot Meat in Company; and towards Evening let her plume a Hen's Wing, likewiſe in Company: Cleanſe the Feathers of her Caſting, if foul and ſlimy: If ſhe be clean within, give her gentle Caſting; and when ſhe is well reclaimed, manned, and made eager and ſharp ſet, you muſt venture to feed her on the Lure.

But three things are to be conſider'd before your Lure be ſhew'd her. 1. That ſhe be bold and familiar in Company, and not afraid of Dogs and Horſes. 2. Sharp-ſet and hungry, having regard to the Hour of Morning and Evening when you would lure her. 3. Clean within, and the Lure well garniſh'd with Meat on both Sides. When you intend to give her the Length of a Leaſe, you muſt abſcond your ſelf: She muſt alſo be unhooded, and have a bit or two given her on the Lure, as ſhe ſits on your Fiſt. That done, take the Lure from her, and ſo hide it that ſhe may not ſee it: When ſhe is unſeeled, caſt the Lure ſo near her, that ſhe may catch it within the Length of her Leaſh; and as ſoon as ſhe has ſeiz'd it, uſe your Voice as Falconers do, feeding her upon the Lure on the Ground.

After having lur'd your *Falcon*, in the Evening give her but little Meat; and let this Luring be ſo timely, that you may give her Plumage, &c. next Morning on your Fiſt: When ſhe has caſt and gleamed, give her a little beaching of warm Meat: About Noon, tye a Creance to her Leaſe, go into the Field, there give her a bit or two upon the Lure, and unſeel her; if you find ſhe is ſharp-ſet, and has eagerly ſeiz'd on the Lure, let a Man hold her, to let her off to the Lure; then unwind the Creance, and draw it after you a good way, and let him who has the Bird, hold his Right-hand on the Taſſel of her Hood readily to unhood her, as ſoon as you begin to lure; to which if ſhe come well, ſtoop roundly upon it, and haſtly ſeize it, let her caſt two or three bits thereon. That done, unſeize, take her off the Lure, and deliver her again to the Perſon that held her; and going further off the Lure, feed her as before; and ſo daily farther and farther off the Lure. Afterwards, you may lure her in Company, but do not fright her: And having us'd her to the Lure on foot, do it alſo on Horſe-back; which may be ſooner accompliſh'd, by cauſing Horſemen to be about you, when you lure her on Foot: 'Tis alſo ſooner done, by rewarding her upon the Lure on Horſe-back among Horſemen. And when ſhe is grown familiar this way, let ſomebody a-foot hold the Hawk, and he that is on Horſe-back, muſt call, and caſt the Lure about his Head, while the Holder takes off the Hood by the Taſſel; and if ſhe ſeize eagerly on the Lure without fear of a Man or Horſe, then take off the Creance, and lure at a greater Diſtance, Laſtly, if you would have her love Dogs as well as the Lure, call Dogs when you give her Plumage. See BATHING, ENSEAMING, &c.

FALCON, FALCONET, } in Gunnery { See FAUCON, and FAUCONET.

FALCONER, a Perſon who brings up, tames, tutors, and manages Birds of Prey; as *Falcons*, Hawks, &c. See FALCONRY.

The Grand Seignior uſually keeps ſix thouſand *Falconers* in his Service.

The *French* King has a *Grand Falconer*, which is an Office diſmembred from that of Great Hunt, Grand Veneier. The Hiſtorians take notice of this Poſt as early as the Year 1250.

One great Buſineſs of the *Falconer*, is to conſider the Quality and Mettle of his Birds, to know which to fly early, and which late. He muſt alſo be buſy and cleanly in freeing them of Lice, Nits, and Vermine. Every night after flying, he ſhould give his Bird Caſting; nor muſt he forget to water her, unleſs ſhe have been bath'd. After this, ſhe muſt be put in a warm Room, having a Pearch with a Candle burning by her; where ſhe is to ſit unhooded, that ſhe may prune and pick her ſelf. Next Morning ſhe ſhould be weather'd, &c.

FALCONRY, or FAUCONRY, the Art of taming, managing, and tutoring Birds of Prey, particularly *Falcons* and *Hawks*; and employing them with Advantage in the Purſuit of *Game*, call'd alſo HAWKING.

The Word is form'd of *Falco*, *Falcon*, or *Faucon*, the Bird of moſt Uſe and Eſteem in this kind of Sport. See FALCON.

Falconry, as now practic'd, was unknown among the *Greeks* and *Romans*. All their Writings don't furniſh ſo much as a proper Name to call it by: So far are they from teaching us the Terms. 'Tis the *French* Language alone, that has particular Words for all the Parts of *Falconry* and Hunting; and from them moſt of our Terms, as well as what we know of the Art it ſelf, are borrow'd.

The Writers of Reputation on *Falconry*, are *Deſparon*, *Franchiere*, *Tardif*, *Artelouche*, *Dalagona*, and *Latham*. *M. de S. Martha* has put the Principles of the Art into fine *Latin* Verſes, in his *Hieracoſophon, ſive de re accipitraria, libri tres.*

FALDAGE, an antient Privilege, which ſeveral Lords reſerved to themſelves of ſetting up Sheep-folds, or Pens, in any Fields within their Manors, the better to manure them; and this not only with their own, but with their Tenants Sheep.

This was alſo term'd *Secta Faldæ*; and in ſome old Charters *Fold-ſoca*; and in ſome Places a *Fold-courſe*, or *Free-fold*.

FALL, *Deſcent*, in Phyſicks, the Tendency of any heavy Body towards the Center of the Earth. See DESCENT.

Gallileo firſt diſcover'd the Ratio of the Acceleration of *falling* Bodies, *viz.* That dividing the whole Time of falling into equal Parts, the Body will *fall* thrice as far in the ſecond Moment, as in the firſt; five times as far in the third; ſev'n times in the fourth, &c. and ſo on in the Order of the uneven Numbers. See ACCELERATION.

For the Cauſe of the FALL *of Bodies*, ſee GRAVITY.

For the Laws of the FALLING *Bodies*, ſee DESCENT.

Water-FALL, ſee CATARACT.

FALL, is alſo us'd in a moral Senſe; as the *Fall* of *Adam*. See ORIGINAL SIN: The *Fall* of the *Roman* Empire, &c.

Authors contend, that *Plato* had a Notion of the *Fall* of *Adam*, which he had learnt from *Moſes*. *Euſeb. de Præparat. Evangel. L.* 12. *c.* 11. quotes a Fable in *Plato*'s *Sympoſ.* wherein he finds the whole Hiſtory, allegorically related.

FALL, in Muſick and Poetry. See CADENCE, EPIGRAM, &c.

FALLACY, a Deception, or falſe Appearance or Report. See ERROR, and TRUTH.

The *Epicureans*, deny that there is any ſuch thing as a *Fallacy* of the Senſes. According to them all our Senſations, and all our Perceptions, both of Senſe and Phantaſy, are true: So that Senſe is the firſt grand Criterion of Truth. That the Senſes are never deceiv'd, they argue from their being incapable of all Ratiocination and Remembrance: Hence they can neither add, take away, couple, nor disjoin; they cannot, therefore, infer, or conclude, or invent; and conſequently cannot deceive by any Inference, or Invention. This the Mind may do, but not the Senſe, whoſe only

only Buſineſs is to apprehend what is preſent. *E. gr.* Colours, not to diſcern or diſtinguiſh between this Body and that. But a Thing that barely apprehends without pronouncing any thing, cannot deceive. Add, that there is nothing to convict our Senſes of Falſhood. The right Eye, *e. gr.* cannot convict the left; nor *Plato*'s Eyes, thoſe of *Socrates*; ſince the Reaſons or Pretenſions of each are equal; and the pur-blind Perſon ſees what he ſees as much as the *Lynceus*. Nor can a Senſe of one Kind convict another; as the Sight, the Smell; by reaſon their Objects are different; and conſequently their Reports, or Judgments are not of the ſame Things. Thus again, if I ſee a Stick ſtreight, when out of the Water; but when in it, crooked: My Perception is altogether as true in the latter, as in the former Caſe; *i. e.* 'Tis as true that I have the Perception or Idea of the crooked Stick, as of the ſtreight one. And this Idea is all that the Senſe ſuggeſts; ſo that it does not deceive. Laſtly, Reaſon cannot ſhew our Senſes miſtaken, ſince all reaſoning depends on previous Senſations; and the Senſes muſt firſt be true, before any Reaſoning founded thereon, be ſo. Thus, the *Epicureans*; whoſe Syſtem is ſtrongly confirm'd by what we have already laid down from Mr. *Berkely*, concerning the External *World*.

The *Carteſians*, on the other hand, are continually crying out againſt the Senſes, as the great Sources of all Deception. Every thing, which our external Senſes preſent us, they ſay, ſhould be ſuſpected as falſe, or at beſt dubious, till our Reaſon has confirm'd the Report. They add, that our Senſes, as being *fallacious*, were never given us by Nature, for the Diſcovery of any thing of Truth, but only to point out what Things are convenient, or hurtful to our Bodies.

The *Peripateticks* keep a middle Courſe: They hold, that if a ſenſible Object be taken in its common or generical View, the Senſe cannot be deceiv'd about it; for the Sight can ſee nothing but what is viſible; nor can it err in perceiving what is viſible *quatenus* ſuch. But they add, that if the Object be taken under its ſpecific View, the Senſe may be miſtaken about it, *viz.* from a Want of the Diſpoſitions neceſſary to a juſt Senſation, as an Indiſpoſition in the Eye, in the Medium, *&c.* See Sense, Reason, *&c.*

Fallacy, in Logic, or *Syllogiſtic Fallacy*, is a captious Argument, call'd alſo a *Sophiſm*. See Sophism.

Fallacies either ariſe from Words, or Things: The Foundation of all Illuſion and *Fallacy* in Words, is that one Article of *Ambiguity*; which is of two Kinds, *viz.* a ſimple *Homonymia*, and an *Amphibology*. See Homonymia, and Amphibology.

The Kinds of *Fallacy* in Things are very numerous, but may be reduc'd to ſeven Heads, *viz. Ignoratio Elenchi*, *Petitio Principii*, *falſa Cauſa*, *Interrogatio multiplex*, *Limitatio vitioſa*, *Accidens & Conſequens*. See Elenchus, Petitio Principii, *&c.*

Falling *Sickneſs*. See Epilepsy.

Dr. *Turberville* in the Philoſoph. Tranſact. gives the Hiſtory of a Patient, much troubled with the *Falling* Sickneſs. In her Urine he obſerv'd a great Number of ſhort Worms, full of Legs, and like Mille-pedes. While theſe continued lively, and full of Motion, the Fits return'd daily; but upon preſcribing her half an Ounce of Oxymel Helleboratum in Tanſey Water, the Worms and the Diſtemper were both effectually deſtroy'd.

FALLOPIAN *Tubes*, in Anatomy, two Ducts ariſing from the Womb, one on each Side of the Fundus thereof, and thence extended to the Ovaries; having a conſiderable Share in the Affair of Conception. See Conception.

They are call'd *Tubæ*, i. e. Trumpets, in reſpect of their Form; for that in their Riſe or Opening into the Womb, they are exceedingly ſmall, ſo as ſcarce to admit a knitting Needle; but in their Progreſs, towards the Ovaries, they grow much bigger; and at length are capable, to receive the Finger: From whence they contract again; and at the Extremity next the Ovaries, are expanded into a ſort of Flanch or Foliage, which is fringed round with innumerable little Fibres, bearing ſome Reſemblance to the Flanch of a Trumpet.

Theſe Tubes are four or five Inches long: They conſiſt of a double Membrane, derived from the outer and inner Membranes of the Uterus. The Extremity next the Ovary, at the Time of Impregnation, at which Time the whole Tube is expanded, reaches to, and embraces the Ovary; tho' at other times it ſeems to fall a little ſhort of it, and is only ſlightly tied by the Fringe, to the Underſide of the Ovary.

The Uſe of theſe Tubes, is to convey the Seed, or rather Ova of Women, and other Animals, from the Teſticles, or Ovaries, into the Uterus, or Womb. See Ovary, and Uterus.

Their inner Subſtance is compos'd, in good Meaſure of Ramifications of Veins, and Arteries, which form a kind of reticular, or cavernous Body, not unlike that of the Clitoris. This Structure makes them capable of Dilatation, and Contraction, according to the Quantity, and Stop of the Blood; and conſequently, of being, as it were, erected, in Coitu, and of embracing the Ovary at that Time, which in their State of Flaccidity they did not. See Generation.

They take their Denomination *Fallopian*, from *Gabriel Fallopius*, a *Modeneſe*, who died in 1562; and who is commonly reputed their firſt Inventor; tho' we find them deſcribed long before him, in *Rufus* of *Epheſus*.

The Ova, or Embryos, are ſometimes detain'd in the *Tubæ Fallopianæ*, and cannot make their Way into the Womb. See Fætus.

Inſtances of this Kind, have frequently been met with-al in Diſſections. But the moſt remarkable, is that related by *Abraham Cyprianus*, a celebrated Phyſician of *Amſterdam*, in a Letter, addreſs'd to Sr. *Tho. Millington*, wherein he deſcribes the Manner, in which he drew a Fœtus 21 Months old, out of the Tuba of a living Woman, who lived and had ſeveral Children after the Operation.

FALLOW, a Colour, of a paliſh red, like that of a Brick half burnt; as a *Fallow* Deer, *&c.*

Fallow *Field*, or *Fallow* Ground, is Land laid up; or that has lain untill'd for a conſiderable Time.

So, to *Fallow*, is to prepare Land by plowing, long before it is plow'd for Seed. To do this twice, is to *twifallow*, and thrice, to *trifallow*. See Ploughing.

FALSE *Arms*, in Heraldry, are thoſe wherein the fundamental Rules of the Art are not obſerv'd: As if Metal be put on Metal; or Colour on Colour, *&c.* See Arms.

False *Attack*, in War, a feigned Attack, intended to draw all the Enemy's Force to one ſide, in order to favour a real Attack, intended in another Part. See Attack.

False *Braye*, in Fortification, a ſmall Mount of Earth, four Fathom wide, erected on the Level round the Foot of the Rampart, on that Side towards the Field, and ſeparated by its Parapet from the Berme, and the Side of the Moat.

It is made uſe of to fire upon the Enemy, when he is already ſo far advanced, that you cannot force him back from off the Parapet of the Body of the Place; and alſo to receive the Ruins, which the Cannons make in the Body of the Place.

False *Claim*, is where a Man claims more than his Due. See Claim.

False *Conception*. See Mole.

False *Diamond*, a Diamond counterfeited with Glaſs. See Diamond.

False, or *Falſe Poſition*, in Arithmetick. See Position.

False *Flower*, a Flower, which does not ſeem to produce any Fruit; as thoſe of the Hazle, Mulberry-Tree, *&c.* Or a Flower, that does not ariſe from any Embryo, or that does not knit; as thoſe of the Melon, Cucumber, *&c.* See Flower.

False *Impriſonment*, is a Treſpaſs committed againſt a Man, by impriſoning him without lawful Cauſes. It is alſo uſed for the Writ brought upon this Treſpaſs.

False *Keel*, in a Ship, is a ſecond Keel, which is ſometimes put under the firſt, to make it deeper. See Keel.

False *Muſter*, is when ſuch Men paſs in Review, as are not actually liſted as Soldiers. See Muster, Fagot, *&c.*

False *Opal*. See Girasol.

False *Prophecies*, See Prophecies.

False *Roof* of a Houſe, is that Part between the upper Rooms, and the Covering. See Roof.

False *Money*, False *Weights*, &c., False *Ribs*, False *Birth*, } See { Money. Weight, *&c.* *Spurious* Ribs. Abortion.

FALSEHOOD, *Falſeneſs*, in Philoſophy, an Act of the Underſtanding, repreſenting a Thing, otherwiſe than it is, as to its Accidents: Or, a falſe Enunciation, or Judgment of any Thing. As if a Perſon ſhould judge, that the King of *Spain* is in *America*. See Error, and Truth.

The Circumſtance, *as to its Accidents*, is of abſolute Neceſſity in the Definition; inaſmuch as a thing cannot be repreſented otherwiſe than it is as to Eſſentials: for in ſuch Caſe the Eſſence of the thing would not be repreſented: And ſince the Eſſence is the Thing it ſelf, it would not be that Thing, which is repreſented, but another.

There is no *Falſehood* in Apprehenſion, or Senſation: Our Ideas of Senſe are all juſt, and true, ſo far as they go; and all our Deluſions ariſe from our Reaſonings and Concluſions. See Fallacy.

The School-men diſtinguiſh *Falſehood* into *Objective*, which is the Object of the falſe Judgment; *e.gr.* the King of *Spain* being in *America*: *Entitative*, that of the Things appearing what it is not, and thus occaſioning the Fallacy: And *Tranſcendental* and *Metaphyſical*; which is a Repugnancy to the Eſſence, nor Eſſentials of the Thing.

Crimen FALSI, in the Civil Law, is a fraudulent Subornation, or Concealment, with deſign to darken, or hide the Truth, and make Things appear otherwiſe, than they are.

The *Crimen Falſi* is committed three ways; by Words, as when a Witneſs ſwears falſly. See PERJURY. By Writing, as when a Man frames or alters ſomething, antedates a Contract, or the like. See FORGERY. And by Deed, as when he ſells by falſe Weights, or Meaſures, debaſes the Coin, &c.

FALSO *Judicio*, a Writ, which lies for falſe Judgment, given in the *County Court*, *Court Baron*, or other Court, not of Record.

FALSO *Retorno Brevium*, a Writ, which lies againſt the Sheriff for making falſe Returns of Writ. See RETURN.

FALX, in Anatomy, a Part of the Dura Mater, deſcending between the two Hemiſpheres of the Brain, and ſeperating the Fore-part from the hinder. See DURA *Mater*.

It is call'd *Falx*, i. e. *Sickle*, by reaſon of its Curvature, occaſion'd by the Convexity of the Brain. See BRAIN It divides the Brain, as low as the *Corpus calloſum*.

FAMES *Canina*, by the *Greeks* call'd *Cynodes Arexis*, q. d. Dog appetite, is ſuch an inſatiable Hunger, as is not to be ſatisfied with Eating; but continues, even when the Stomach is full. See BULIMIA.

This is a Caſe, much talk'd of by Antients; but rarely met with amongſt us.

It may be ſuppoſed, to ariſe from ſharp fretting Juices in the Stomach, which by their continual Vellications excite a Senſe like that of Hunger. See HUNGER.

FAMILIA, *Family*, commonly implies all the Servants, belonging to a particular Maſter.

In another Senſe, 'tis taken for a Portion of Land, *viz.* as much as is ſufficient to maintain one *Family*.

The Term *Hide* is by our Writers ſometimes call'd a *Manſe*; ſometimes a *Family*; and ſometimes *Carucata*, or a *Plow-land*; containing as much as one Plow and Oxen could cultivate in a Year. See HIDE, PLOUGH-LAND, &c.

FAMILY *of Curves*, is a Congeries of ſeveral Curves of different Orders, or Kinds; all which are defin'd by the ſame indeterminate Equation, but in a different Manner, according to their different Orders.

Suppoſe, *e. gr.* the indeterminate Equation, $a^m - {}^x x = y^m$. If $m=2$, $ax=y^2$. If $m=3$, $a^2x=y^3$. If $m=4$, $a^3x=y^4$, &c. in Infinitum. All which Curves are ſaid to be of the ſame *Family*. See CURVE.

FAN, a Machine, uſed to raiſe a Wind, and cool the Air, by agitating it.

The Cuſtom which now prevails among the Ladies, of wearing *Fans*, was borrow'd from the *Eaſt*; where the hot Climate renders the Uſe of *Fans* and Umbrellas almoſt indiſpenſible. It is not long, ſince the *European* Women firſt began to uſe a kind of *Fans*, made of Leather, in the Summer time: But they are now found of Neceſſity in Winter.

In the *Eaſt* they chiefly uſe large *Fans*, made of Feathers, to keep off the Sun, and the Flies. In *Italy* and *Spain* they have a huge ſort of ſquare *Fans*, ſuſpended in the middle of their Apartments, and particularly over the Tables: Theſe by a Motion at firſt given them, and which they retain a long Time, by reaſon of their perpendicular Suſpenſion, help to cool the Air, and drive off Flies.

In the *Greek* Church, a *Fan* is put into the Hand of the Deacons, in the Ceremony of their Ordination; in Alluſion to a Part of the Deacon's Office in that Church, which is to keep the Flies off the Prieſts, during the Celebration of the Sacrament.——

Wicquefort in his Tranſlation of the Embaſſy of *Garcias de Figueroa*, gives the Name *Fans* to a Kind of Chimneys or Ventiducts, in uſe among the *Perſians*, to furniſh Air, and Wind into their Houſes; without which the Heats would be inſupportable. See the Deſcription thereof in that Author, *p.* 38.

At preſent, what is call'd a *Fan* amongſt us, and throughout the beſt Part of *Europe*, is a very thin Skin, or Piece of Paper, Taffaty, or other light Stuff, cut in a Semi-circle and mounted on ſeveral little Sticks of Wood, Ivory, Tortoiſe-ſhell, or the like.

Fans are either made with a double, or ſingle Paper.

If the Paper be ſingle, the Sticks of the Mounting are paſted on the leaſt ornamental Side; if double, the Sticks are ſewed betwixt them. E'er they proceed to place the Sticks, which they call, *mounting the Fan*; the Paper is to be plaited in ſuch manner, as that the Plaits may be alternately inward and outward.

'Tis in the Middle of each Plait, which is uſually about an Inch broad, that the Sticks are to be paſted; which again, are to be all join'd, and riveted together at the other End: They are very thin, and ſcarce exceed $\frac{1}{4}$ of an Inch, in breadth: And where they are paſted to the Paper, are ſtill narrower; continuing thus to the Extremity of the Paper. The two outer ones, are bigger and ſtronger than ordinary. The Number of Sticks rarely exceed twenty two. The Sticks are uſually provided by the Cabinet-makers, or Toymen: The San-painters plait the Papers, paint, and mount them.——

The common Painting is gold Leaf, applied on a ſilver'd Ground, both prepared by the Gold-beaters. Sometimes they paint on a Gold-ground; but 'tis rarely: True Gold being too dear; and falſe too paltry. To apply the ſilver Leaves on the Paper, they uſe a Compoſition, which they pretend is a great Secret, but which appears to be no other than *Gum Arabic*, Sugar Candy, and a little Honey, melted in common Water, and mix'd with a little Brandy. This Compoſition is laid on with a Spunge; then, laying the Silver-leaves thereon, and preſſing them gently down, with a linnen Ball, ſtuffed with Cotton, they catch hold, and grow together. When inſtead of Silver, Gold-ground is laid, the ſame Method is obſerv'd.

The Ground being well dry'd, a Number of them are well beaten together on a Block; by which means the Silver, or Gold, get a Luſtre, as if they had been burniſh'd.

FANATICK, a wild, extravagant, viſionary, enthuſiaſtical Perſon; who pretends to Revelation, and Inſpiration, and believes himſelf poſſeſs'd with a Divine Spirit.

Such were the Anabaptiſts, Quakers, &c. at their firſt Riſe; and ſuch are ſtill the modern Prophets, *Muggletoneans*, &c.

Wigelius, and *Behmen*, were the Leaders of the *Fanaticks* of *Germany*; and both came out of the School of *Paracelſus*. *Wigelius* is held the Father of the *Roſycrucians*.

The Word is form'd of the Latin *Fanum*, a heathen Temple; for which Reaſon the firſt Chriſtians call'd all the Gentiles *Fanaticks*. And accordingly the antient Chronicles of *France*, call *Clovis*, *Fanatick* and Pagan. But the Word is yet of higher Original.

Among the Heathens themſelves, there were thoſe, call'd *Fanaticks*; from whom the Denomination ſince paſs'd to all the reſt. They had their Name from the Latin *Fanum*, Temple, by reaſon they liv'd altogether in Temples. *Struvius*, *Antiq. Rom. Synt. C. 6. p.* 212. Such, particularly, were the Prieſts of *Iſis*, of the Mother of the Gods; of *Bellona*, &c. Some others, who were always call'd *Fanaticks*. In *Gruter*, *p. CCCXII*, *n.* 7. we have an Inſcription, wherein one *L. Cornelius Januarius*, is call'd *Fanaticus*. AB ISIS, SERAPIS. ABAEDEM BELLONE. And *p. DCLIV*, *n.* 7. *Fanaticus de Ædæ Bellonæ*.

What might give further Occaſion to the Appellation of *Fanaticks*, was, that they perform'd their Sacrifices in a wild, enthuſiaſtical manner.——

FANATIO, in our antient Cuſtoms, the *Fawning-time*, or *Fence-month*, in Foreſts. See FENCE.

FANCY, ſee PHANTASY, and IMAGINATION.

FANTASTICAL *Colours*, are the ſame as thoſe call'd *Emphatical Colours*. See EMPHATICAL COLOURS.

FAPESMO, in Logic, one of the Moods of Syllogiſms. See MOOD.

A Syllogiſm in *Fapeſmo*, has its firſt Propoſition an univerſal Affirmative; the ſecond an univerſal Negative; and the third, a particular Negative. See SYLLOGISM.

FAQUIR, ſee FAKIR.

FARCE, was originally a *Droll*, or petty Shew, or Entertainment, exhibited by Charletans, and their Buffoons, in the open Street, to gather the Croud together.

The Word is *French*, and ſignifies literally, *force-meat*, or *Stuffing*. It was applied on this Occaſion, no doubt, on account of the Variety of Jeſts, Gibes, Tricks, &c. wherewith the Entertainment was interlarded.

At preſent, *Farce* is of a little more Dignity. 'Tis remov'd from the Street, to the Theater; and inſtead of being perform'd by Jack-puddings, to amuſe the Rabble, is now acted by our Comedians, and become the Entertainment of the politeſt Audiences.

The Poets have reform'd the Wildneſs of the primitive *Farces*; and brought them to the Taſte, and manner of Comedy. The Difference between the two, on our Stage, is, that the latter keeps to Nature, and Probability; and in order to that, is confin'd to certain Laws, Unities, &c. preſcrib'd by the antient Criticks.

The former, diſallows of all Laws; or rather, ſets them all aſide, on occaſion. Its End is purely to pleaſe, or make merry: And it ſticks at nothing, which may contribute thereto, however wild, and extravagant. Hence, the Dialogue is uſually low; the Perſons, of inferior Rank; the Fable, or Action, trivial, or ridiculous; And Nature, and Truth, every where heighten'd, and exaggerated, to afford the more palpable Ridicule. See COMEDY.

Some Authors derive the Word *Farce* in this Senſe from the Latin *Facetia*; others from the *Celtic Farco*, Mockery; others from the Latin *farcire*, to ſtuff.

FARCIN, FARCY, or FASHIONS, a Diſeaſe in Horſes, and ſometimes in Oxen, &c. The *Farcin* is ſomewhat of the nature of a Scabies, or Mange.

Vegetius calls it *morbus farciminoſus*. It conſiſts in a Corruption of the Blood; which ſhews it ſelf in Eruptions of hard Puſtles, Knots, or Strings, along the Veins; and in Ulcers, which are not cured, without great Difficulty, by running hot Irons into them. There is a *ſpreading Farcin*, which diffuſes it ſelf over the whole Body; an *inner Farcy*; a *ſtringed Farcy*, &c.

The

The *Farcin* is infectious; and has the Effect of a true Plague. *Geſner* derives the Word from *Varices*, by changing the *v* into a Digamma, or *f*.

The *Farcy* is ordinarily occaſion'd by Over-heats, and Colds; ſometimes by Spur-galling with ruſty Spurs, Snaffle, Bit, or the like: Or by the Bite of another Horſe, infected with it: Or, if in the Leg, by cutting, or interfering.

The *Water-Farcin* proceeds from a Horſe's feeding, on low, watery Grounds, and Pits, or Holes, where the Graſs grows above the Water: For the Horſe, in picking out the Graſs, licks up the Water, which occaſions him to ſwell under the Belly, or Chaps. The Cure is by a red-hot Iron.

FARDEL *of Land*, is according to ſome Authors, the fourth Part of a Yard-land. See YARD-LAND.

FARDING-*Deal*, in our antient Cuſtoms, ſignifies the fourth Part of an Acre, now call'd a Rood. See ACRE.

In the Reg. of Writs, we have alſo *Denariata*, *Obolata*, *Solidata*, and *Librata Terræ*; which muſt probably riſe in Proportion of Quantity from the *Farding-deal*, as an halfpenny, Penny, Shilling and Pound, riſe in Value: On which footing *Obolata*, muſt be half an Acre; *Denariata*, an Acre; *ſolidata*, twelve Acres; and *Librata*, twelve Score Acres.

Yet we find, *Viginta libratas terræ, vel redditus Reg. fol.* 94. *a.* and 248. *b.* whereby it ſeems *librata terra* is ſo much, as yields xx *s. per Annum:* and *centum ſolidatas terrarum tennementorum & redituum, fol.* 249. *a.* See FURLONG.

Others holds *Obolata* to be but half a Pearch; and *Denariata*, a Pearch. See PEARCH.

FARE, a Voyage, or Paſſage; or the Money paid for paſſing by Water, *&c.*

For the *Fares* of Hackney Coach-men, Water-men, *&c.* ſee COACH-MAN, *&c.*

FARINA, the Flower, or Powder of ſome Grain, or Pulſe ground, and ſifted from the Bran. See FLOWER, PULSE, BRAN, *&c.*

The Word is pure Latin, *Farina*, form'd of *Far*, Corn, Wheat: And *Far*, according to *Guichard*, comes from the *Hebrew* בר, *bar*, ſignifying the ſame Thing.

FARINA *fœcundans*, among Naturaliſts, is a fine Duſt, prepar'd in the Male flowers of Plants; which being afterwards ſhed on the Female, does the Office of a Sperm, or Semen, by impregnating the ſame. See GENERATION, PLANT, and FLOWER.

The *Farina fœcundans*, call'd alſo the *Male-duſt*, and *Male-ſeed*, is form'd and ſecreted in the *Apices*, or Tops of the *Stamina*; where, when it becomes mature, and copious enough, burſting its Capſula, it is ſpilt on the Head of the *Piſtil*, and thence convey'd to the *Matrix*, or *Utricle* thereof, to fœcundify the *Ova*, or female Seed, contain'd therein, See STAMINA, APICES, PISTIL, and UTERUS.

This *Duſt*, in any one Plant, being view'd with a Microſcope; every Particle thereof appears of the ſame Size and Figure: But in different Plants, the Figure, Size, Colour, *&c.* of the Duſt, is very different. Some are clear, and tranſparent, as Cryſtal; as thoſe of the *Maple*, *Burrach*, and *Hemlock:* Others are white, as thoſe of *Hen-bane*, *Balſamins:* Others blue, as thoſe of *Flax*: Others purple, as of ſome *Tulips:* Others fleſh-colour'd, as ſome Species of *Lychnis*; and others red, as thoſe of the *Geum*.

It may be obſerv'd, however, that the Colour of the *Farina* varies, in the ſame Species, according to the Colour of the Flower; and even, ſometimes, the *Farina* of the ſame Flower is of different Colours; as is eaſily obſerv'd in the *Caryophillus arvenſis*.

The Figures of the divers Kinds of *Farinæ* are much harder to deſcribe. The moſt general Figure is the Oval, more or leſs ſharp at the Ends, with one or more Channels, or Furrows, running length-wiſe; ſo that through the Microſcope they look not unlike the Stone of a Date, a grain of Wheat, a Coffee-berry, or an Olive. Such are thoſe of the Polygonatum, Bugles, Bryony, Tithimal, *&c.* Thoſe of the Melilot, are Cylinders: Thoſe of the Panſey, are Priſms, with four irregular Sides: Thoſe of the great Conſolida, repreſent two cryſtal Globules, cloſely faſten'd to each other: Thoſe of the Sycamore, repreſent two Cylinders, plac'd a-croſs: Thoſe of the Jonquille, are in form of a Kidney: Thoſe of the *Camponulæ*, Paſſion-flower, *&c.* are nearly round, but unequal in their Surfaces: Thoſe of *Caryophyllus ſilveſtris*, are round, and cut in Facets: Thoſe of the *Geranium*, and ſome other Species, are round, with a kind of *Umbelicus*, or Indenture, as in an Apple, *Bradley* ſays, they are perforated quite through, like the Bead of a Necklace, which we doubt: Thoſe of the *Caltha*, *Corona Solis*, &c. are little Globes, ſet with Prickles, *&c.*

Of theſe *Farinæ*, ſome are very hard; others, ſoft, and eaſily broke. They all contain a deal of ſulphureous Matters, more than the other Parts; whence, they are very odorous. Thoſe of the Lilly, are ſo full of Oil, that they greaſe the Paper they are put in, as if it had been oil'd. The *Farinæ* of moſt Aromatic Plants, ſwim in an eſſential Oil, or ſort of liquid Turpentine: Others are involved in a dry Roſin; as theſe of the *Lycopodium*, or *Muſcus terreſtris clavatus*. C. B. Others, as thoſe of Fumitory, are inclos'd in a little, viſcid, mucilaginous Matter; and all, in effect, have ſomething ſo glutinous, that they ſtick to any thing, that touches them: So that 'tis difficult to ſeparate them from each other.

Some have imagin'd, that theſe *Farinæ* were only Particles of Wax, or Roſin: But the Contrary is eaſily prov'd: For they neither diſſolve in Water, nor Spirit, nor Oils; even when aſſiſted with Fire.

Mr. *Bradley* ſuppoſes a Magnetick Virtue lodg'd in the *Farina fœcundans*, or Male Duſt; by means whereof, when depoſited in the Utricle of the Female, it draws the Nouriſhment from the other Parts of the Plant into the *Ova*, or Rudiments of the Fruit, and makes them ſwell. The Reality of this Virtue, he argues from the ſame being found in Wax, which is chiefly, or wholly gather'd hence by the Bees. See WAX.

Some, againſt the great Uſe of the *Farina fœcundans* in Generation, may object, that in Flowers, which hang downwards, as the Cyclamen, *&c.* the *Farina fœcundans* cannot be caſt on the Orifice of the Piſtil: To which it may be anſwer'd, that the Piſtils of ſuch Flowers, hanging lower than the duſty Apices which ſurround them, the glutinous Matter and Velvet, covering the Extremity of the Piſtil, may be capable of receiving, and retaining ſome of the *Farina*, as it falls: And without any Intromiſſion of the *Farina*, its Lodgment on the Mouth of the Piſtil, may by Virtue of its attractive Power fecundify the Seed in the *Uterus*.——

FARM, or FERM, in Law, ſignifies a little Country-Domain, or Diſtrict, containing Houſe and Land, with other Conveniences; hired, or taken by Leaſe, either in Writing, or Parole. See LEASE.

This in divers Parts is call'd diverſely: In the North, it is a *Tack*; in *Lancaſhire*, a *Fermeholt*; in *Eſſex*, a *Wike*, &c.

The Word originally is form'd of the Latin *firmus*.

In the corrupted Latin, *firma* ſignified a Place inclos'd, or ſhut in: Whence, in ſome Provinces, *Menage* obſerves, they call *Cloſerie*, or *Cloſure*, what in others they call *Farm*. Add, that we find *locare ad firmum*, to ſignify *to let*, *to farm*; probably, on account of the Sure hold the Tenant here has in Compariſon of Tenants at Will.

But *Spelman*, and *Skinner*, chuſe to derive the Word *Farm*, from the *Saxon Feorme*, that is, *Victus*, or Proviſion; by reaſon the Country-people and Tenants antiently paid their Rents in Victuals, and other Neceſſaries; afterwards converted into the Payment of a Sum of Money. Whence a *Ferm* was originally a Place that furniſh'd its Owner or Lord with Proviſions. And among the *Normans*, they ſtill diſtinguiſh between *Farms*, that pay in Kind, *i. e.* in Proviſions; and thoſe, which pay in Money; calling the former ſimply *Fermes*, and the latter *Blanche Ferme*, white *Farm*.

Spelman ſhews farther, that the Word *firma* ſignified not only what we now call a *Farm*, but alſo a Feaſt, or Entertainment, which the Farmer gave the Proprietor, or Landlord for a certain Number of Days, and at a certain Rate, in Conſideration of the Lands, *&c.* he held of him.

Thus, *Fearm*, in the Laws of King *Canutus*, is render'd by Mr. *Lambard*, *victus*; and thus we read of *reddere firmam unius noctis*; and, *reddebat unum diem de firma*; which denote, Proviſion for a Night, and Day; The Rents about the Time of the Conqueſt being all reſerved in Proviſions: The Cuſtom whereof is ſaid to have been firſt alter'd under *Henry* I.

We alſo ſay, *to farm* Duties, Impoſts, *&c.* The Duty of Exciſe in *Scotland* is farm'd, or *let to farm*, for at 33500 *per Annum*. See EXCISE.

FARREATION, in Antiquity, the ſame with *Confarreation*. See CONFARREATION.

FARRIER, a Perſon, whoſe Office is to ſhoe Horſes, and cure them, when they are diſeaſed, or lame. See SHOEING, *&c.*

FARTHING, a ſmall *Engliſh* Copper Coin, amounting to $\frac{1}{4}$ of a Penny. See COIN.

It was antiently call'd *Fourthing*; as being a fourth of the Integer, or Penny. See PENNY.

FASCE, *Faſcia*, in Heraldry. See FESSE.

FASCES, in Antiquity, were Axes, or Hatchets, tied together with Rods, and bore before the *Roman* Magiſtrates, as a Badge of their Office, and Authority.

Florus, L. I. c. 5. aſſures us, that the Uſe of *Faſces* was introduc'd by the elder *Tarquin*, the 5th King of *Rome*; and were then the Mark of the ſoveraign Dignity. In after Times, they were bore before the Conſuls. They had each

of

of them twelve, bore by ſo many Uſhers, call'd *Lictors*. See LICTOR. *Dionyſ. Halicarn.* L. III. c. 84.

Others will have *Romulus* the Author of the Inſtitution, and aſcribe the Number twelve, to the Number of Birds, which foretold him his Kingdom. Others hold, that he borrow'd it from the *Hetrurians*; and that the Number twelve anſwer'd to the twelve Nations of *Hetruria*, who in creating him King, gave him each an Officer, to ſerve him as Lictor. *Silius Italicus* aſcribes their firſt Invention to a City of *Hetruria*, call'd *Vetulonia*.

Theſe *Faſces* conſiſted of Branches of Elm; in the Middle whereof was a *Securis*, or Hatchet, the Head whereof ſtood out beyond the reſt. *Plutarch* relates the Reaſons of this Diſpoſition. *Publicola* took the Hatchet out of the *Faſces*, as *Plutarch* aſſures us, to remove from the People all Occaſion of Terror.

After the Conſuls, the Prætors aſſum'd the *Faſces*. *Cenſorin. de Die Natal.* obſerves, that the Prætors had only two: Tho' *Polybius* and *Plutarch* give them ſix. In the Government of the Decem-vir's, it was the Practice, at firſt, for only one of them to have the *Faſces*. Afterwards, each of them had twelve, in the ſame manner as the Kings.

FASCIA, in Architecture, by the Workmen call'd *Facia*, *Facio*, or *Face*, a Broad-liſt, Fillet, or Band; particularly uſed in Architraves, and Pedeſtals. See ARCHITRAVE, and PEDESTAL.

The Architrave conſiſts of three *Faſciæ*, or Bands; thus call'd by *Vitruvius*, as reſembling *Swaths*, call'd in Latin *Faſciæ*.

That Author admits no *Faſciæ*, in the *Tuſcan*, and *Doric* Architrave, *i. e.* he makes it all plain, without any Diviſion, or cantoning into Parts or *Faſciæ*: But the modern Architects take Liberty to differ from him herein. See TUSCAN, DORIC, &c.

In Brick-buildings, the Juttings out of the Bricks, beyond the Windows, in the ſeveral Stories, except the higheſt, are call'd *Facia's*, or *Faſciæ*.

Theſe are ſometimes plain, and ſometimes moulded. But the Moulding is only a *Cima reverſa*, or an O G, at the Bottom, with two plain Courſes of Bricks over it; then an *Aſtragal*, and laſtly a *Boultine*.

FASCIA *lata*, or *Faſcialis*, in Anatomy, a Muſcle of the Leg; call'd alſo *Membranoſus*. See MEMBRANOSUS.

FASCIÆ, in Aſtronomy, two Rows of bright Spots, obſerv'd on *Jupiter*'s Body; appearing like Swaths, or *Belts*. See JUPITER.

The *Faſciæ*, or *Belts* of *Jupiter*, are more lucid than the reſt of his Diſk, and are terminated by parallel Lines. They are ſometimes broader, and ſometimes narrower; nor do they always poſſeſs the ſame Part of the Diſk.

M. *Huygens*, likewiſe, obſerv'd a very large Kind of *Faſcia*, in *Mars*; but it was darker than the reſt of the Diſk, and took up the middle Part thereof. See MARS.

FASCIALIS, in Anatomy, a Muſcle of the Leg; call'd alſo *Sartorius*. See SARTORIUS.

FASCICULUS, in Medicine, a Term ſometimes uſed to expreſs a certain Quantity, or Meaſure of Herbs.

By *Faſciculus* is meant ſo much, as may be held in the Arm, when bent, and reſted on the Top of the Haunch. Phyſicians note it in Perſcription by *Faſc.*

FASCINATION, Witchcraft; or a Charm, or Spell, which alters the Appearance of Things, and repreſents 'em different, from what they are. See WITCHCRAFT.

Linder, a *Swediſh* Phyſician, has treated very well of *Faſcination*, in the VIIIth Chapter of his little Work, *De Venenis*.

The Word is form'd of the *latin* Verb *faſcinare*, of the *Greek* βασκαίειν, ſignifying the ſame Thing. See CHARM.

FASCINES, or *Faggots*, in Fortification, are ſmall Branches of Trees, or Bavins, bound up in Bundles; which being mix'd with Earth, ſerve to fill up Ditches, to ſcreen the Men, make the Parapets of Trenches, &c.

Some of them are dipp'd in melted Pitch or Tar; and being ſet on Fire, ſerve to burn the Enemies Lodgements, or other Works.

A pitch'd *Faſcine* is a Foot and half about: A *Faſcine* for Defence, two or three Foot.

In the corrupt *Latin*, they uſe *Faſcenina*, *Faſcennia*, and *Faſcinata*, to ſignify the Pales, *Faſcines*, &c. uſed to encloſe the antient Caſtles, &c.

FASHION, ſee MODE, CUSTOM, &c.

FASHION is particularly us'd among Artificers, for the Trouble, Time, and Labour, employ'd on a piece of Work; particularly ſome ſilver, or gold Utenſil, Inſtrument, Toy, &c. 'Tis by the *Faſhion*, that the Workmens Wages, or Salary are regulated. We paid ſo much a-piece for the *Faſhion* of theſe Spoons, excluſive of the Matter, or Silver. That Weaver has ſo much a-piece for the *Faſhion* of the Stuffs we give him to weave. The Word is *French*, Façon.

FASHION-*Pieces*, are thoſe two Timbers, which form the Breadth of a Ship, at the Stern; and are the outmoſt Timbers of the Stern, on each Side, except aloft, where the Counters are. See STERN.

FAST, a Space of Time, wherein a Perſon takes little, or no Food. See FOOD.

The Advantages of *Faſting*, with regard to Health, with extraordinary Inſtances of long *Faſting*, ſee under the Article ABSTINENCE.

The *Bramins* never bleed their Sick, but make them faſt in lieu thereof.

FAST, is peculiarly uſed for an Abſtinence, on account of Religion; or a ſpace of Time, wherein the Church prohibits the uſe of Food; or at leaſt reſtrains it to certain Things, and certain Hours.

The ſtrict, canonical *Faſt*, only allows of one Meal in 24 Hours. *Fa. Thomaſſin* obſerves, that the antient *Faſt* was, to ſup, without dining, *i. e.* only to take one Meal, and that not till after Nones: Adding, that to dine, though without ſupping, was a Breach of the *Faſt*. The Practice of the *Latin* Church, was to faſt 36 Days in the Year; which, is as it were, the Tyth of the Year.

Tertullian wrote an expreſs Treatiſe *de Jejuniis*, of *Faſts*; to ſupport the new Laws of *Faſting*, which the *Montaniſts* were for impoſing. See MONTANIST.

The antient Catholicks allow'd of no *Faſts* of *Obligation*, or Command, beſide that preceding *Eaſter*, ſince call'd *Lent*; the Terms of which were to forbear Eating till the Evening. See LENT.

The other *Faſts* obſerv'd were only of *Devotion*: Such were the fourth and ſixth *Feriæ*, i. e. *Wedneſdays*, and *Fridays*. This *Faſt* was call'd *Station*. Beſides theſe there were occaſional *Faſts*, injoyn'd by the Biſhops, &c. See FERIÆ.

In the Book of *Hermas*, call'd the *Paſtor*, the Angel tells him, The Day thou *faſteſt*, thou ſhalt take nothing but Bread and Water; and having computed the uſual Expences of each Day, thou ſhalt lay aſide ſo much for the Widow, the Orphan, and the Poor.

In the ſame Paſſage, the *Faſt* is call'd *Station*, and the Perſon who *faſted*, was to begin early in the Morning to retire to Prayer. See STATION.

St. Fructuoſus, *Flery* tells us, going to ſuffer, ſome People, out of a Principle of Charity, offer'd him Drink, to ſupport him: But he refus'd it, ſaying, It is not yet Time to break *Faſt*; for it was but ten in the Morning, and it was *Friday*, Station-day. Which ſhews the Exactneſs of the primitive Chriſtians, in this Point; and that Drinking was held breaking of *Faſt*.

Some introduced the Xerophagy into *Faſts*; that is, the Uſe of dried Fruits for their Meals; and made a Practice of abſtaining not only from all Meats, and Wines, but alſo from ſucculent Fruits, for the whole 24 Hours: And ſome reduc'd themſelves to Bread and Water. But this was more than was commanded. See XEROPHAGY.

The Practice of *Faſting* is more antient than Chriſtianity. The *Iſraelites faſted* often, and had their ſtated *Faſt*-days. The Day of Attonement, which they call'd *Kipparim*, was a Day of *Faſting*, injoin'd in *Levit*, xxiii, 27. &c. Some will have this the Day St. *Paul* refers to in Acts xxvii. 9. The *Jews* had likewiſe *Faſts*, inſtituted by Precept of the Synagogue: Such were thoſe of the fourth, fifth, and tenth of the Month, mention'd by *Zachariah* vii. 3. and viii. 19.

The Heathens adopted the ſame Cuſtom, in all Probability, from the People of God; tho' their Religion inclin'd more to Feaſting, than *Faſting*: as appears from the long Liſt of *Feaſts*, enumerated under the Article FEAST.

Yet they *faſted* in the *Eleuſinia*; as appears from *Arnobius*, and *Clemens Alexand.* See *Salmaſius*, p. 150. and *Scaliger*, Poeti l. I. c. 32.

The *Faſts* of the *Calogeri* are ſo ſevere, that they remain ſeven Days, without Eating at all. For the *Faſts* of the *Greeks*, ſee *Spon. Voyag.* P. II.

The *Turks* are ſo ſcrupulous on the point of *Faſting*, that they will not ſo much as take the Smell of any Perfume, by the Noſe. They hold that Odors themſelves break *Faſt*. If they bath, 'tis forbid to put the Head under Water, for fear of ſwallowing any of it: And as for Women, they are forbid to bath at all on *Faſt-days*.

FASTERMANS, or FASTING *men*, q. d. *homines habentes*, was uſed in our antient Cuſtoms, for Men of Repute, and Subſtance; or rather for Pledges, Sureties, or Bonds-men, which according to the *Saxon* Polity were *faſt* bound to anſwer for one anothers peaceable Behaviours. See DECENNA.

FASTI, in Antiquity, was the *Roman* Calendar; wherein the ſeveral Days of the Year, with their Feaſts, Games, and other Ceremonies, were expreſs'd. See CALENDAR.

The *Romans* had their greater and leſſer *Faſti*. The *Great Faſti* were call'd, the *Faſti of the Magiſtrates*; and the *leſſer*, the *Faſti Calendares*.

The *Faſti Calendares*, which were, what was properly, and primarly call'd *Faſti*, are defined by *Feſtus Pompejus*, to be Books, containing a Deſcription of the whole Year; *i. e.* Ephemerides, or Diaries, diſtinguiſhing the ſeveral kinds

kinds of Days, *Feſti*, *Profeſti*; *Faſti*, *Nefaſti*, &c. See FESTI, &c.

The Author hereof was *Numa*, who committed the Care and Direction of it to the *Pontifex Maximus*; whom the People uſed to go and conſult on every Occaſion. This Cuſtom held to the Year of *Rome* 550. when *C. Flavius*, Secretary of the Pontifices, expos'd in the *Forum* a Liſt of all the Days, whereon it was lawful to work; which was ſo acceptable to the People, that they made him *Curule Ædile*. *Liv.* L. IX. c. 46.

Theſe *leſſer Faſti*, or *Faſti Calendares*, were of two Kinds: *Urbani*, and *Ruſtici*. The *Faſti Urbani*, or *Faſti* of the City, were thoſe, which obtain'd, or were obſerv'd in the City. Some will have them thus call'd, by reaſon they were expos'd publickly in divers Parts of the City; tho' by the divers Inſcriptions, or Gravings thereof on antique Stones, one would imagine, that private Perſons had them likewiſe in their Houſes. It was theſe *Faſti Urbani*, *Ovid* undertook to illuſtrate, and comment on, in his *Faſtorum*; whereof we have the ſix firſt Books ſtill remaining; the ſix laſt, if ever they were wrote, being loſt. Beſide *Ovid*, ſeveral other Authors had undertook the ſame Subject, particularly *L. Cincius Alimentatus*, *Fulvius Nobilior*, *Maſurius Sabinus*, *Cornelius Labeo*, *C. Licinianus*, and *Niſus*: Of all whom, *Macrobius* makes Mention, in his *Saturn.* and preſerves Fragments of each; beſide a Work of one *Bæbius Marcus*, entitled, *De Faſtis diebus*, quoted by *Fulgentius*, *De Priſco Sermone*.

In the *greater Faſti*, or *Faſti* of the Magiſtrates, were expreſs'd the ſeveral Feaſts, with every thing, relating to the Gods, Religion, and the Magiſtrates; the Emperors, their Birth-days, Offices, Days conſecrated to them; and Feaſts, and Ceremonies, eſtabliſh'd in their Honour, or for their Proſperity, &c.

With a Number of ſuch Circumſtances, did Flattery, at length, ſwell the *Faſti*; whence they became denominated *Magni*, to diſtinguiſh them from the bare Calendar, or *Faſti Calendares*.

In the *Faſti Ruſtici*, or *Country-Faſti*, were expreſs'd, the ſeveral Days, Feaſts, &c. to be obſerv'd by the Country-people: For as theſe were taken up in tilling the Grounds, fewer Feaſts, Sacrifices, Ceremonies, and Hollidays were enjoyn'd them, than on the Inhabitants of Cities: And they had ſome peculiar ones, not obſerv'd at *Rome*.

Thoſe *Ruſtick Faſti*, contain'd little more, than the Ceremonies of the Calends, Nones, and Ides; the Fairs, Signs of the Zodiac, Increaſe, and Decreaſe of the Days, the Tutelary Gods of each Month, and certain Directions for the rural Works, to be perform'd each Month.

FASTI, was alſo a Tablet, Chronicle, or Regiſter of Time, wherein the ſeveral Years were denoted by the reſpective Conſuls, with the principal Events, that happen'd during their Conſulates; call'd alſo *Faſti Conſulares*, or *Conſular Faſti*.

Onuphrius Panvinius, *Pighius*, and *Janſon d'Almeloween*, have given us the *Faſti Conſulares*; the two firſt, with long, and learned Comments, wherein are expreſs'd, not only the Conſuls, but alſo the Dictators, *Magiſtri Equitum*, Triumphs, and Ovations. *Pighius* even adds as many of the other Officers, as he could find, *viz.* Prætors, Tribunes, &c. *Janſon* confines himſelf to the Conſuls alone.

FASTI, is ſtill applied to the Archives, and publick Regiſters, wherein are kept Hiſtorical Memoirs, of the moſt memorable Things, befallen a People.

In the like Senſe, the Martyrology is call'd the *Sacred Faſti* of the Church. See MARTYROLOGY.

The Jeſuit *Du Londel* has compil'd the *Faſti of Lovis le Grand*, &c.

FASTI, or *Dies Faſti*, were Court-days, anſwering, in ſome meaſure, to our Terms. See TERM.

The Word *Faſti*, *Faſtorum*, is form'd of the Verb *Fari*, to ſpeak; by reaſon, during thoſe Days the Courts were open, Cauſes might be heard; and the Prætor was allow'd *fari*, to pronounce the three Words, *Do*, *Dico*, *Addico*: The other Days, wherein this was prohibited, were call'd, *Ne-faſti*. Thus *Ovid*:

Ille Ne-faſtus *erit per quem tria verba ſilentur*,
Faſtus *erit per quem lege licebit agi*.

Theſe *Dies Faſti* were noted in the Calendar, by the Letter *F*. But obſerve, that there were ſome Days, *ex parte Faſti*, partly *Faſti*, partly *Ne-faſti*, i. e. Juſtice might be diſtributed at certain Seaſons of the Day; and at others not. Theſe Days were call'd *Interciſi*, or *Endotherciſi*: Theſe were mark'd in the Calendar thus, *F. P. Faſtus primo*, denoting, that Juſtice might be demanded during the firſt Part of that Day.

FASTIDIUM *Cibi*. See NAUSEA.

FASTIGIUM, in Architecture, the ſame with *Pediment*. See PEDIMENT.

FAT, in an Animal Body, a white, oily, ſulphurous Subſtance, collected in little membranous *Loculi* or Cells, in divers Parts of the Body; ſerving to keep the Parts warm, and to ſoften and temper the ſharp Salts in the Maſs of Blood.

Phyſicians diſtinguiſh two kinds of *Fat*: the firſt, call'd in Latin *Pinguedo*, and *Axungia*, and in *Engliſh*, abſolutely, and by way of Eminence, *Fat*, is a groſs, whitiſh Oil, found immediately under the *Cutis*, incloſ'd in little Bags, call'd *Cellulæ Adipoſæ*, adhering to the outer Surface of a Membrane, call'd *Adipoſa*, all over the Body, except on the Forehead, Eye lids, Penis, and Scrotum.

This *Fat* is nothing but the oily Part of the Aliment, or Chyle, ſeparated from the Arterial blood, by the adipoſe Glands, and carried by peculiar Ducts to the membranous Cells; whence it is tranſmitted again to the Blood by the Veins.

Dr. *Grew* takes it to be a Coagulum of the oily Parts of the Blood, made, either by ſome of its own ſaline Parts, or by the nitrous Particles of the Air mingled therewith in the Lungs; which Sentiment is confirm'd by an Experiment of that learned Perſon, who made an artificial *Fat*, by only mixing Oil of Olives with Spirit of Nitre for ſome Days: And hence it is, that divers Animals, as Conies, Hares, &c. grow *fat* in Winter, and particularly in ſevere froſty Weather; the Air then abounding moiſt in Nitre. Hence alſo it is, that the *Fat* of Land Animals, is much firmer, then that of Fiſhes; the watery Element containing leſs nitrous Matter, than the Air.

In ſome Subjects the *Cellulæ* are ſo full and diſtended, that the *Fat* is above an Inch thick: In others they are almoſt flat; and in emaciated Subjects, inſtead of *Fat*, we find a ſort of flaccid tranſparent Subſtance, which is nothing, but the bare Membrane; the Cells being all exhauſted. See *Membrana* ADIPOSA.

The ſecond kind of *Fat*, call'd *Sevum*, *Suet*, and *Leaf*, is whiter, harder, and more brittle, than the former; being found in the Cavities of the Abdomen, Omentum, &c. See OMENTUM, &c.

The *Fat* of both Kinds, ſerves as a natural Balſam, to preſerve the Body; and by mixing with, and enveloping the Salts wherewith the Blood and Serum are highly ſaturated, keeps them from fretting and corroding the Parts of the Body, through which they paſs.

It is thought likewiſe, and not without Probability, to make a conſiderable Part of the Nouriſhment of our Bodies; whence, the fatteſt Perſons, falling into an Atrophy, gradually loſe all their *Fat*, which is always quite expended in ſuch Caſes, e're the Diſeaſe become fatal.

Too much *Fat* is uſually attended with Heavineſs, and Drowſineſs, not only from the Unwieldineſs of an overgrown Body, nor from the ſtuffing of the Cavities and *Thorax* alone, which ſometimes obſtructs the Expanſion of the Diaphragm and Lungs, and produces a *Dyſpnæa*, or an *Orthopnæa*; but it is likewiſe probable, that the Abundance of *fatty*, or oily Particles, return'd into the Blood, and implicating the more ſubtle and active Parts, may hinder the neceſſary Secretions in the Brain.

The *Fat* of Animals, for the generality, is not reckon'd good Food; as being hard of Digeſtion, and producing a thick, viſcid Chyle. But it is of good uſe in Medicine.

Calves Fat is us'd in Pomatums, and Unguents; being reſolutive, and emollient.——That of *Hogs* and *Boars*, has the ſame Qualities, and is ſtrengthening beſides.——*Deers Greaſe* is good to fortify the Nerves, againſt the Rheumatiſm, Sciatica, Gout, and Fractures.——*Hares Greaſe*, applied externally, promotes Digeſtion, and the Suppuration of Abſceſſes.——That of *Rabbits*, is nervous, and reſolutive.——That of *Cocks*, and *Hens*, reſolves and ſoftens Hardneſſes.——That of *Geeſe*, has the ſame Qualities; and likewiſe abates Hemorrhoids, aſſuages Pains in the Ear, being applied within the ſame; and opens the Belly, being taken inwardly.——*Eels Fat* is eſteem'd good againſt the Hemorrhoids and Deafneſs; to take away Pits of the Small-pox, and to make the Hair grow.——That of the *Trout*, beſide its being emollient, is good in Diſeaſes of the Anus, and Ulcers of the Breaſt.

FAT, in the Sea Language, is the ſame with *Broad*.

Thus, if the Truſſing in, or Tuck of a Ship's Quarter under Water be deep, they ſay, ſhe hath a *fat* Quarter.

FAT, or *Vat* is a great wooden Veſſel, which among Brewers and Maltſters is uſed to meaſure Malt for Expedition; containing a Quarter or eight Buſhels. See MALT.

It is likewiſe a Veſſel, or Pan of Lead, uſed in the making Salt, &c. See SALT.

FATE, *Fatum*, a Term much uſed among the antient Philoſophers.

It is form'd *a fando*, from *ſpeaking*: and primarily implies the ſame with *Effatum*, viz. a Word, or Decree, pronounc'd by God; or a fix'd Sentence, whereby the Deity has preſcrib'd the Order of Things, and allotted every Perſon, what ſhall befall him.

The *Greeks* call it, εἱμαρ, εἱμαρμένη, *quaſi* εἱρμὸς, *Catena*, a Chain, or neceſſary Series of Things, indiſſolubly link'd together; and the Moderns, *Providence*. See PROVIDENCE.

But beſide this Senſe of the Word, wherein it is us'd, ſometimes to denote the Connexion of Cauſes in Nature, and ſometimes in the Divine Appointment; the Word *Fate* has a further Intention; being us'd to expreſs, I know not what *Neceſſity*, or eternal Deſignation of Things, whereby all Agents, both neceſſary, and voluntary, are ſway'd, and directed to their Ends. See NECESSITY.

In this Acceptation, ſome Authors divide *Fate* into *Aſtrological*, and *Stoical*.

The firſt, is a *Neceſſity* of Things and Events, ariſing from the Influence, and Poſitions of the heavenly Bodies, which give Law, both to the Elements, and mix'd Bodies, and to the Wills of Men.

In this Senſe is the Word often uſed by *Manilius*: *Certum eſt & inevitabile fatum: materiæque datum eſt cogi, ſed cogere ſtellis*. See ASTROLOGY.

The *Stoical* FATE, or *Fatality*, is defin'd by *Cicero*, an Order, or Series of Cauſes, wherein Cauſe being link'd to Cauſe, each produces other; And thus, all Things flow from the one prime Cauſe.

Chryſippus defines it a natural invariable Succeſſion of all Things *ab æterno*, each involving other. To this *Fate* they ſubject the very Gods.

Thus the Poet: The Parent of all Things made Laws at the Beginning, by which he not only binds other Things, but himſelf. So *Seneca*: *Eadem* neceſſitas *& Deos alligat. Irrevocabilis divina pariter & humana curſus vehit.—Ipſe ille omnium Conditor & Rector ſcripſit quidem* Fata, *ſed ſequitur: ſemel ſcripſit, ſemper paret.*

This eternal Series of Cauſes, the Poets call μοιρῶν, and *Parcæ*, or *Deſtinies*. See STOICISM.

Fate, is divided by ſome later Authors, into *Phyſical*, and *Divine*.

The firſt, is an Order, and Series of natural Cauſes, appropriated to their Effects.

This Series is neceſſary; and the Neceſſity is natural. The Principle, or Foundation of this *Fate*, is Nature, or the Power and Manner of acting which God, originally gave the ſeveral Bodies, Elements, Mixts, *&c.* By this *Fate* it is, that Fire warms; Bodies communicate Motion to each other; the Sun and Moon occaſion the Tides, *&c.* And the Effects of this *Fate*, are all the Events, and Phænomena in the Univerſe; except ſuch, as ariſe from the human Will. See NATURE.

Divine FATE, is what we more uſually call *Providence*. See PROVIDENCE.

Plato, in his *Phædo*, includes both theſe in one Definition, as intimating, that they were one and the ſame thing actively and paſſively conſider'd: Thus, *Fatum eſt ratio quædam divina, lexque naturæ comes, quæ tranſiri nequeat, quippe a cauſa pendens, quæ ſuperior ſit quibuſvis impedimentis*. Tho' that of *Boetius* ſeems the clearer, and more juſt: *Fatum*, ſays he, *eſt inhærens rebus mobilibus diſpoſitio, per quam Providentia ſuis quæque nectit ordinibus.*——

FATHER, *Pater*, a Term of Relation, denoting a Perſon who begot a Child, either Male or Female. See SON, and DAUGHTER.

Among the antient *Romans*, the *Fathers* of three Children had very conſiderable Privileges allow'd them. By the Laws of *Romulus*, a *Father* had an abſolute unlimited Power over his Children.

Adoptive FATHER, is he who takes the Children of ſome other; and owns them as his own. See ADOPTION.

Putative FATHER, is he who is only the reputed, or ſuppoſed *Father*; as *Joſeph* was *putative Father* of our Saviour. See PUTATIVE.

Natural FATHER, is he who has illegitimate Children. See BASTARD.

A *Father-in-Law*, is a Perſon married to a Woman, who has Children by a former Husband, *&c.*

FATHER, is alſo uſed in Theology, for the firſt Perſon in the Trinity. See PERSON, and TRINITY.

God the Father, is the *proper Father* of Jeſus Chriſt; with regard to Men, he is call'd *heavenly Father*. See GOD, and SON.

FATHER, is alſo us'd in a figurative Senſe, on divers Moral, and Spiritual Occaſions. Thus, it is applied to the Patriarchs; as we ſay, *Adam* was the *Father* of all Mankind; *Abraham*, the *Father* of the Faithful, *&c.* See PATRIARCH.

In an Eccleſiaſtical Senſe, *Fathers* is uſed for the antient Prelates, and Doctors of the Church. The *Fathers* aſſembled at the Council of *Nice*: *Chryſoſtom*, *St. Baſil*, &c. were *Greek Fathers*: *St. Auguſtin*, *St. Ambroſe*, &c. *Latin Fathers*.

The *Fathers*, ſay the *Meſſieurs de Port Royal*, are the proper Interpreters of the Goſpel; and are only honour'd with that ſacred Appellation, as their Works are, in ſome meaſure, a Patrimony, or Inheritance, left the Faithful, as their proper Children.

Scaliger obſerves, that the *Fathers* were good People, but not learned ones. To which St. *Evremond* ſubjoins, that when a Man comes to look near the *Fathers*, he loſes a great Part of the Veneration, which Time and Opinion has procur'd them: The great Diſtance between them and us, makes them appear much greater, than they are.

The *Fathers*, ſays the ſame Author, had more Imagination and Vivacity of Mind, than Judgment, and good Senſe. They gave altogether into Allegories, and affected the Brillant to an Exceſs. Juſtneſs of Mind was a thing they valued themſelves of the leaſt.

FATHER, is alſo a Title of Honour, given to Prelates, and Dignitaries of the Church. The Right Reverend *Father* in God, *Tho.* Lord Biſhop of, *&c.* See TITLE. See alſo REVERENCE.

FATHER, is alſo applied to the Superiors of Convents; the *Father* General; *Father* Provincial; Exprovincial: *Father* Prior, Sub-Prior: *Father* Definitor, in the Order of *Benedictines*: *Father* Guardian, in that of the *Franciſcans*: *Father* Corrector, among the *Minimi*, &c.

FATHERS, is alſo us'd plurally for all Congregations of Eccleſiaſticks, whether Regular, or Secular; as, the *Fathers Cordeliers*, *Capuchins*, *Auguſtins*, *Jacobins*, &c. The *Fathers Jeſuites*, *Fathers* of the Oratory, *Barnabites*, *Theatins*, of the Miſſion, *&c.* See each under the proper Article. See alſo BROTHER.

FATHERS, is alſo us'd for Perſons venerable for their Age, Quality, or the Services they have done the Publick. Thus, at *Rome*, the Senators were call'd, *Conſcript* FATHERS, *Patres Conſcripti*, &c. See PATRES *Conſcripti*. See alſo SENATORS.

FATHIMITES, or FATHEMITES, the Deſcendants of *Mahomet*, by *Fathima*, or *Fathemah*.

The Dynaſty of *Fathimites*, that is, of Princes deſcending in a direct Line from *Ali*, and *Fathima* his Wife, *Mahomet*'s Daughter, commenc'd in *Africa*, in the Year of the *Hegira*, 296; of Jeſus Chriſt, 908.

The *Fathimites* afterwards conquer'd *Egypt*, and eſtabliſh'd themſelves therein, in Quality of *Kaliphs*. See KALIPH.

The *Fathimites* of *Egypt*, ended in *Abed*, in the Year of the *Hegira*, 567; 268 Years after their firſt Eſtabliſhment in *Africa*; and 208, after the Conqueſt of *Egypt*.

FATHOM, a long Meaſure, containing ſix Feet; taken from the utmoſt Extent of both Arms, when ſtretch'd into a right Line. See MEASURE.

The *Fathom* is chiefly us'd at Sea, in eſtimating the Lengths of Cables, and other Ship-ropes, with the Depths and Soundings of the Sea: Alſo in Mines, Quarries, Wells, and all Works of Fortification.

There are three kinds of *Fathoms*, accommodated to the different Ranks of Veſſels. The firſt, which is that of Men of War, contains ſix Feet: The middling, or that of Merchant Ships, five Feet, and a half; and the ſmall one, uſed in Fluyts, Flyboats, and other Fiſhing-veſſels, only five Feet.

Fathom is alſo us'd in ſeveral Countries, particularly *Italy*, for the common Yard, or Ell, whereby Things are ordinarily meaſur'd, in Commerce: In which Senſe it is commonly call'd *Brace*, or *Braccio*, q. d. Arm. See BRACE.

FATNESS, *Obeſity*, or *Corpulency*, in Medicine, the State of a Perſon too much loaded with Fleſh, and Fat. See FLESH, and FAT.

Fatneſs ariſes from a laudable, copious, oily, ſoft Blood containing leſs than its Share of Salt.

Such a Conſtitution of Blood, occaſioning but a feeble Fermentation, there is leſs conſumed, than is made; the Lymph, which ſeems to be the Matter of Nutrition, preſerves its viſcid Conſiſtence longer; and by that means adheres the more plentifully to the divers Parts of the Body. Add, that there is more a Fat ſeparated from the Blood, than can well be depoſited in the adipoſe Cells. Hence the Body grows very conſiderably, and the Parts ſometimes diſtend to a monſtrous Bulk.

Fatneſs is promoted by any thing that tempers and ſoftens the Blood, and renders it leſs ſharp, and ſaline: Such is want of Exerciſe, and Motion; an indolent Life; too much Sleep; nouriſhing Foods, *&c.* It is prevented, or removed, by the contrary Cauſes; and particularly by the Uſe of ſaline and acid Meats, and Drinks.

Fatneſs is the Occaſion of divers Diſeaſes, and particularly the Apoplexy.

Sennertus mentions a Man, that weigh'd ſix-hundred Pound; and a Maid, 36 Years of Age, who weighd 450. *Chiapin Vitelli*, Marqueſs of *Cerona*, a noted General in his Time, from an exceſſive *Fatneſs*, reduced himſelf, by drinking of Vinegar, to ſuch a Degree of Leanneſs, that he could fold his Skin ſeveral times round him.

Fatneſs was infamous among the *Lacedemonians*.

FATUA-

FATUARII, in Antiquity, were Persons, who appearing inspir'd, foretold Things to come.

The Word is form'd of *Fatua*, Wife of the God *Faunus*, who was suppos'd to inspire Women with the Knowledge of Futurity; as *Faunus* himself did the Men.

Fatua, had her Name from *Fari*, q. d. *Vaticinari*, to propheſy.

FATUUS *Ignis*, a kind of fiery Meteor, popularly call'd *Will-with-a-Wiſp*. See METEOR.

The *Ignis Fatuus* is a Vapour, ſhining without Heat; and is there not the ſame Difference between this Vapour, and Flame, as between rotten Wood, ſhining without Heat, and burning Coals of Fire? *Newt. Opt. p.* 316.

FAUCON, a ſort of Cannon, whoſe Diameter at the Bore is $5\frac{1}{4}$ Inches; Weight, 750 Pound; Length, 7 Foot; Load, $2\frac{1}{4}$ Pound; Shot, $2\frac{1}{2}$ Inches Diameter; and $2\frac{1}{2}$ Pound weight. See CANON.

FAUCONET, a piece of Ordnance, whoſe Diameter at the Bore is $4\frac{1}{2}$ Inches; Weight, 400 Pounds; Length, 6 Foot; Load, $1\frac{1}{4}$ Pound; Shot, ſomething more than two Inches diameter, and $1\frac{1}{4}$ Pound Weight. See CANON.

FAVISSA, among Antiquaries, A Hole, Pit, or Vault under Ground, wherein is kept ſomething of rare Value.

The *Faviſſa*, according to *A. Gellius*, and *Varro*, was much the ſame, with what the antient *Greeks* and *Romans* called Θησαυρὸς, *Theſaurus*; and what in ſome of the modern Churches is called the *Archives* and *Treaſury*.

In the Capitol there were divers *Faviſſæ*. They were ſubterraneous Places, wall'd, and vaulted; having no Entrance, or Light, but by a Hole a-top, which was ſtop'd up with a huge Stone.

They were chiefly deſtined for keeping the old, worn Statues, and other antient Moveables, formerly us'd in the Temple; ſo religiouſly did the People reſpect, and preſerve whatever was conſecrated. *Catulus* would have lowerd the Floor of the Capitol; but that the *Faviſſæ* prevented him.

Feſtus, however, gives us a different Account of the *Faviſſæ*. According to that Author, they were Wells, or Pits of Water, near the Temples, and for the Uſe thereof: The ſame with what the *Greeks* call'd Ὀμφαλὸς, Navel, as being round, *&c.* *Gellius* likewiſe gives them the Name of *Ciſterns*, as well as *Feſtus*; but 'tis apparently, for no other Reaſon, than that they bore a Reſemblance thereto in figure.

In effect, the two Notions are pretty eaſily reconciled: It being certain, that the Treaſuries of ſome of the antient *Greek* Churches were Ciſterns, or Reſervoirs of Water, wherein People us'd to waſh themſelves, e're they enter'd the Temple.

The Word *Faviſſa*, ſeems form'd of *Foviſſa*, a Diminutive of *Fovea*, Pit or Ditch.

FAUNALIA, in Antiquity. Feaſts celebrated by the *Romans*, in honour of the God *Faunus*. See FEAST.

The *Faunalia* were held on the Day of the Nones of *December*, i. e. on the fifth Day of that Month. The principal Sacrifice was a Roe-buck; or rather, according to *Horace*, a Kid, attended with Libations of Wine, and burning of Incenſe.

It was properly a Country Feſtival; being perform'd in the Fields and Villages with peculiar Joy and Devotion.

Horace gives us a very gay Deſcription thereof, in the XVIIIth Ode of his 3^{d} Book.

——Teneor pleno cadit hædus anno
Larga nec deſunt Veneris ſodali
Vina Crateræ, vetus ara multo
Fumat odore.

Struvius, in his *Roman* Calendar, marks the Feaſt of *Faunus* on the Day of the Ides of *February*, which is the 13th Day of that Month; and the *Faunalia* he places on the 5th of the Ides of *December*, or the 9th of that Month. And in C. IX. he ſhews, that there really were two *Faunalia*; the one in *February*, mention'd by *Ovid*, *Faſt.* L. VI, v. 246; the other, on the 9th of *December*, mention'd by *Horace*, in the Place juſt cited.

The Deity *Faunus*, to whom the Solemnity was devoted, and from whom it was denominated, was the ſame among the *Romans*, with the *Pan* of the *Greeks*.

FAUNS, FAUNI, among the Antients, were a Species of Demi-Gods, inhabiting the Foreſts; call'd alſo *Silvans*, *Silvani*. See SILVANS.

The *Fauns* are reputed pure *Roman* Deities; unknown to the *Greeks*. They were repreſented as half Men, half Goats; having the Horns, Ears, Feet, and Tail of a Goat, a very flat Noſe; and the reſt human.

The *Roman Faunus*, we have obſerv'd, was the ſame with the *Greek Pan*. Now, in the Poets, we find frequent Mention of *Fauns* and *Panes* in the plural Number; in all Probability therefore, the *Fauns* were the ſame with the *Panes*. See PANES.

The Reaſon was, that there were ſeveral *Faunus's* and *Pan's*; tho' all deſcended from one principal one. Thus *Ovid*:

Aut quas ſemideæ Dryades, Faunique bicornes
Numine contactas attonuere ſuo.

The *Romans* call'd them *Fauni*, *Ficarii*, and *Fauni Ficarii*.

The Denomination *Ficarii* was deriv'd, not from the Latin *Ficus*, *ficûs*, a Fig, as ſome have imagin'd; but from *ficus*, *fici*, a ſort of fleſhy Tumor, or Excreſcence, growing on the Eyelids and other Parts of the Body; with which the *Fauns* were repreſented.

Tho' the *Fauns* were held for Demi-Gods; yet were they ſuppos'd to dye, after a long Life. *Arnobius* ſhews, that their Father or Chief, *Faunus* himſelf, only liv'd 120 Years.

FAVOUR, in Commerce, *ſee* GRACE.

FAUSSE-*braye*, in Fortification, *ſee* FALSE *braye*.

FAWN, among Hunters, is a Buck, or Doe, of the firſt Year; or the young one, of the Buck's Breed, in its firſt Year.——

FEALTY, an Oath, taken at the Admittance of every Tenant, to be true to the Lord, of whom he holds his Land.

He that holds Land by this only Oath of *Fealty*, holds in the freeſt manner; for all, even thoſe that have Fee, hold *per fidem & fiduciam*, that is, by *Fealty* at the leaſt.

This *Fealty* is alſo us'd in other Nations; as in *Lombardy*, and *Burgundy*.

Indeed, as the very firſt Creation of this Tenure grew from the Love of the Lord, towards his Followers; ſo did it bind the Tenant to Fidelity; as appears by the whole Courſe of the Feuds; and the Breach thereof is Loſs of the Fee.

Hotoman, in his Commentaries *De Verbis Feudalibus*, ſhews a double *Fealty*; one *General*, to be perform'd by every Subject to his Prince; the other *Special*, requir'd only of ſuch, as in reſpect of their Fee, are tied by this Oath towards their Landlords. We read of both in the Grand Cuſtomary of *Normandy*, &c.

Fealty Special, is with us perform'd, either by *Freemen*, or *Villains*.

The Form of both, ſee *Anno* 17 *Ed.* 2. in theſe Words: When a Freeman ſhall do *Fealty* to his Lord, he ſhall hold his right Hand upon a Book, and ſhall ſay thus: *Hear you, my Lord* R. *that* J P. *ſhall be to you, both faithful and true, and ſhall owe my* Fealty *to you, for the Land that I hold of you, on the Terms aſſigned. So help me GOD, and all his Saints.*

When a Villain ſhall do *Fealty* to his Lord, he ſhall hold his right Hand over the Book, and ſay thus: *Hear you, my Lord* A. *that* J B. *from this Day forth, unto you ſhall be true and faithful, and ſhall owe you* Fealty, *for the Land that I hold of you in Villainage, and ſhall be juſtified by you in Body and Goods. So help me GOD, and all his Saints.*

Fealty is uſually mention'd as ſynonomous, with Homage; but it differs from it.

Homage conſiſts in taking an Oath, when the Tenant comes to his Land; and is done but once; being an Obligation, which is permanent, and binds for ever: which *Fealty* does not. See HOMAGE.

They differ alſo in the manner of the the Solemnity; for the Oath of Homage is taken by the Tenant kneeling; but that of *Fealty* is taken ſtanding, and includes ſix Things, which are compriſed in the Words, *Incolume*, *Tutum*, *Utile*, *Honeſtum*, *Facile*, *Poſſibile*.

Incolume, that he do no bodily Injury to the Lord: *Tutum*, that he do him no ſecret Injury in any thing, which is for his Defence; as in his Houſe, or Caſtle: *Honeſtum*, that he do him no Injury in his Reputation: *Utile*, that he do not damage him in his Poſſeſſions: *Facile*, and *Poſſible*, that he make it eaſy, and not difficult for the Lord to do any good, which otherwiſe he might do; all which is likewiſe compris'd in *Leg. H.* 1. *cap.* 5.

FEAST, or FESTIVAL, a Church-Solemnity, or Rejoycing, in Honour of God, or a Saint.

The Word is form'd of the Latin *Feſtum*, which ſome derive *a feriari*, to keep Holiday. Others derive it from the *Greek* ἑστία, which ſignifies the ſame Thing, and is form'd of ἑστία, *Hearth*, and *Veſta*. See FESTUM, and FERIÆ.

FEASTS, and the Ceremonies thereof, have made a great Part of the Religion of almoſt all Nations and Sects: Witneſs thoſe of the *Greeks*, *Romans*, *Hebrews*, *Chriſtians*, and *Mahometans*.

Feaſts, among us, are either *immoveable*, or *Moveable*.

Immoveable FEASTS, are thoſe conſtantly celebrated on the ſame Day of the Year: The principal are, *Chriſtmas-day*,

or

or the *Nativity*; the *Circumciſion*, *Epiphany*, *Candlemaſs*, or the *Purification*; *Lady Day*, or the *Annunciation*, call'd alſo the *Incarnation*, and *Conception*; *All Saints*, and *All Souls*: Beſides the Days of the ſeveral *Apoſtles*, St. *Thomas*, St. *Paul*, &c. which with us, are *Feaſts*, tho' not *Feriæ*. See each *Feaſt* under its proper Article, NATIVITY, CIRCUMCISION, EPIPHANY, *&c.*

Moveable FEASTS are thoſe, which are not confined to the ſame Day of the Year. Of theſe the principal is *Eaſter*, which gives Law to all the reſt; all of them following, and keeping their proper Diſtance therefrom: Such are, *Palm-Sunday*, *Good-Friday*, *Aſh-Wedneſday*, *Sexageſima*, *Aſcenſion-day*, *Pentecoſt*, and *Trinity Sunday*. See EASTER, SEXAGESIMA, PENTECOST, TRINITY, *&c.*

Beſide theſe *Feaſts*, which are general, and enjoyn'd by the Church, there are others, *Local*, and *Occaſional*, enjoyn'd by the Magiſtrate, or voluntarily ſet on Foot by the People: Such are Days of *Thankſgiving* for Delivery from Wars, Plagues, *&c.*

Such alſo are the *Vigils*, or *Wakes*, in Commemoration of the Dedications of particular Churches. See VIGIL, *&c.*

The *Romans* had abundance of ſtated *Feaſts*, in honour of their Deities and Heroes: Such were the *Saturnalia*, *Cerealia*, *Lupercalia*, *Liberalia*, *Neptunalia*, *Conſualia*, *Portumnalia*, *Vulcania*, *Palilia*, *Divalia*, &c.

They had alſo *Feaſts*, inſtituted occaſionally *Carmentalia*, *Quirinalia*, *Terminalia*, *Floralia*, *Compitalia*, *Lemuria*, *Vernalia*: Beſide other moveable, and occaſional ones; as to give Thanks to the Gods, for Benefits receiv'd; to implore their Aſſiſtance, or to appeaſe their Wrath, *&c.* as the *Paganalia*, *Feralia*, *Bacchanalia*, *Ambarvalia*, *Amburbalia*, *Suovetaurilia*; and divers others, particularly denominated *Feriæ*; as *Sementinæ*, *Latinæ*, &c. See each *Feaſt* and *Feria* in its proper Place, SATURNALIA, LUPERCALIA, SEMENTINÆ, *&c.*

Theſe *Feaſts*, were divided into Days of Sacrifice, and Days of *feaſting*, or banqueting; Days of Games, and Days of Reſt, or Feriæ. See GAMES, SACRIFICES, *&c.*

There being but little Hiſtory wrote, or at leaſt publiſh'd in thoſe Days; one end of theſe *Feaſts*, or ſpeaking Ceremonies, was to ſerve the People to keep up the Remembrance of Things, in lieu of reading, and Books.

The principal *Feaſts* of the *Jews* were, the *Feaſt* of *Trumpets*; that of the *Expiation*; of *Tabernacles*; of the *Dedication*; of the *Paſſover*, and of *Pentecoſt*. See *Feaſt* of EXPIATION, TABERNACLES, PASSOVER, *&c.*

FEAST is alſo us'd for a Banquet, or ſumptuous Meal, without any immediate Regard to Religion.

The Uſe of the Word in this Senſe, is owing to this, that a Part of the Ceremony of many of the antient *Feſtivals*, both thoſe of the Heathens, and the Agapea of the Chriſtians, was good Eating: Tho' M. *Huet* chuſes to derive the Word from *Feſtinare*, which is found in an antient *Latin* Verſion of *Origen*'s Comment on *Matthew*, to ſignify *to Feaſt*. *Ut veniens illuc Jeſus feſtinet cum Diſcipulis ſuis.*

In all Antiquity, both ſacred, and profane, Sacrifices were little more than religious *Feaſts*. See SACRIFICE.

It has been often obſerv'd by Authors, that there is no Nation in the World comes near the *Engliſh*, in the Magnificence of their *Feaſts*. Thoſe made at our Coronations, Inſtallments, Conſecrations, *&c.* tranſcend the Belief of all Foreigners; and yet it is allow'd, that thoſe now in uſe are no way comparable to thoſe of our Forefathers.

The *Perſians* never diſcourſe, and deliberate of their moſt important Affairs, but in the middle of their *Feaſts*.—

FEATHER, *Plume*, that Part in Birds, which covers them; and by which they are enabled to fly. See WING, FLYING. See alſo BIRD.

Feathers make a conſiderable Article in Commerce; particularly thoſe of the *Oſtrich*, *Heron*, *Swan*, *Peacock*, *Gooſe*, &c. For Plumes, Ornaments of the Head, filling of Beds, writing Pens, *&c.* See PLUME, QUILL, *&c.*

Some of our lateſt Naturaliſts contend for *Feathers* being a Species of Plants; as having the two great Characters of Vegetables, *viz.* That they grow, and are not ſenſible. They add, that the Growth of *Feathers* is not perform'd with leſs Art or Apparatus, than that of Plants; and that they have all the eſſential, or characteriſtick Parts thereof, as a Root, Stem, Branches, and Leaves. See PLANTS.

Others, take *Feathers* to be that on Birds, which Leaves are on Trees. See LEAVES.

Others ſeem to be nearer to Nature, in making *Feathers* to be what Hairs are on other Animals. See HAIR.

Others, will have *Feathers* a kind of Neophytes, or Plant-Animals; ſuch as the Fætus is in the Womb. Accordingly, in *Feathers*, eſpecially thoſe of unfledg'd Birds, the Stem, or Quill, is found full of Blood; which argues, that there is ſome umbelical Nodus, whereby the firſt Rudiment of the *Feather* was connected to the extreme Fibres, *i. e.* to the Veins and Arteries of the Bird.

In effect, *Feathers* ſeem only Productions and Expanſions of the laſt, extreme *Fibrillæ* of the Cutis; and hence, upon ſtripping off the Cutis, the *Feathers* are likewiſe taken away: Juſt, as the Leaves, and Fruit follow, upon peeling the Bark off a Tree. Add, that *Feathers* as well, as Hairs, ariſe out of Pores in the Cutis; which Pores are not mere Apertures, or Foramina, but a kind of Vaginulæ, wove of the Fibres of the Skin; which terminate in the Oſcula or Anaſtomaſes of the internal Fibres of the *Feather*.

Feathers, Mr. *Derham* obſerves, are a very commodious Dreſs for the Inhabitants of the Air; not only a Guard againſt wet and cold, and a Means for the Hatching and Brooding the Young, but moſt commodious for Flight: To which purpoſe they are nicely placed over the Body, to give an eaſy Paſſage; every where neatly poſited, from the Head towards the Tail in cloſe uniform Order: So that being preen'd and dreſs'd by an unctuous Matter, ſecreted in a proper Gland, and depoſited in a *Oil bag*, placed therein for that Purpoſe (See OIL-BAG); they afford as eaſy a Paſſage through the Air, as a Boat new clean'd and dreſs'd, through the Waters. Without all this Nicety they would have been apt to be ruffled and diſcompos'd; would have gather'd Air, and prov'd an Obſtruction to the Paſſage of the Body.

Moſt of the *Feathers* tend backwards, and are laid over each other in exact Method, arm'd with warm and ſoft Down next the Body; and more ſtrongly made, as well as more curiouſly clos'd next the Air, and Weather. To which Purpoſe the Apparatus Nature has made, and the Inſtinct ſhe has given them to *preen*, or dreſs their *Feathers*, are admirable. See PREENING.

The Mechaniſm of the *Feather* is wonderful: The *Shaft*, or Rib exceeding ſtrong, but hollow below, for Strength and Lightneſs ſake, and above, not much leſs ſtrong; fill'd with a *Parenchyma*, or Pith both ſtrong and light.

But the *Vanes*, or *Webs* in the flag Part of the Wing, are incomparable; nicely gauged; broad on one Side, and narrower on the other: The Edges of the exterior Vanes bending downwards, and thoſe of the interior, or wider, upwards; by which means they catch, hold, and lie cloſe to each other, when the Wing is ſpread; ſo that not one *Feather* may miſs its full Force and Impulſe upon the Air: The Tips all made ſloping; thoſe of the interior Vanes ſloping to a Point towards the outer Part of the Wing, and the exterior Vanes towards the Body; ſo that the Wing, whether extended, or ſhut, is as neatly ſlop'd and form'd, as if conſtantly trim'd with a pair of Sciſſars.

Mr. *Derham* has ſeveral new Obſervations on the Mechaniſm of the *Vanes* or Webs of the *Feathers*, as they preſent themſelves to the Microſcope, by which the wonderful Care and Accuracy of the Creator in ſo ſmall a Part, are excellently illuſtrated.

The Vane conſiſts not of one continued Membrane (becauſe if once broken, it would then be ſcarce reparable); but of many *Laminæ*, admirably contriv'd to hook and hang together. On the under ſide they are thin, and ſmooth; but their upper, outer Edge (repreſented *Tab. Nat. Hiſtory*, *Fig.* 3.) parted into two hairy Edges; each Side having a different ſort of Hairs, laminated, or broader at Bottom, and ſlender, and bearded towards the Top. Thoſe bearded Hairs, on one ſide the Laminæ, have ſtrait Beards, as repreſented in *Fig.* 4. Thoſe on the other, have hook'd Beards on one Side, the ſlender part of the Briſtle; and ſtrait ones on the other, as in *Fig.* 5.

Both Kinds are repreſented, as they grow on the upper Edge of the Lamina, in *Fig.* 3. In the Vane, the hooked Beards of one Lamina always lie next the ſtrait Beards of the next Lamina; by which means they lock, and lay hold of each other; and by a pretty Mechaniſm, braſe the Laminæ cloſe to one another.

FEATHER *Edg'd Boards and Planks*, are thoſe which are thicker on one ſide, than on the other.

FEATHER *in a Horſes Fore-head*, &c. Is a Turning, or Parting of the Hair, which in ſome reſembles an Ear of Barley, and in others, a kind of Oeilet-hole.

FEBRIFUGE, in Medicine, a ſpecifick Remedy for the Cure of *Fevers*. See FEVER.

The Word is a Compound of *Febris*, and *Fugo*, I drive away.

The Quinquina, or Jeſuit's Bark, is the greateſt, and ſureſt of all the Claſs of *Febrifuges*. See QUINQUINA.

The little Centaureum is ſometimes alſo call'd *Febrifugum*, on account of its Virtues. See CENTAUREUM.

The *Chineſe* Ginſeng is particularly fam'd as a *Febrifuge*. See GINSENG.

For ſuch as cannot take the Bark in Subſtance, Dr. *Fuller* preſcribes a *Febrifuge Enema*, made of a Decoction thereof.

The inner Bark of the Aſh-tree, with a little Salt of Wormwood, taken like the *Peruvian* Bark, is ſaid to equal, or even exceed it, as a *Febrifuge*.

The like is ſaid of the Bark of the *Elm* near the Root. The Flowers of *Sal Armoniac* are held an excellent

Febri-

Febrifuge, especially in intermitting Fevers. Cold Water has been lately much extoll'd as a *Febrifuge*. Dr. *Hancock* gives it the emphatical Denomination of *Febrifugium Magnum*. See WATER.

Mr. *Reneaume*, in the *Hist. de l'Academ. R. de Sciences*, *An.* 1711. proposes a new *Febrifuge*, of his own Discovery, *viz. Galls*. From a great Number of Experiments, he has learnt, that Galls alone will frequently cure an intermitting Fever, as well as the Quinquina; over which it has some Advantages in other Things; in that it is not so bitter, does not heat, is taken in a lesser Dose, seldomer, and cheaper.

At his Motion, several other Physicians tried it with Success, particularly Mr. *Homberg*; though it did not succeed so well with M. *Bulduc*, *Lemery*, and *Geoffroy*. See GALLS.

FEBRIS, in Medicine. See FEVER.

FEBRUA, in Antiquity, A Feast, held by the *Romans*, in the Month of *February*; in behalf of the Manes of the Deceased.

Macrobius tells us, that Sacrifices were here perform'd; and the last Offices pay'd the Shade of the Defunct. *Saturn. L. I. c.* 13. And from this Feast it was, that the Month of *February* took its Name.

The Design of these Sacrifices is somewhat controverted: *Pliny* says, that they were perform'd, to render the infernal Gods propitious to the Deceas'd; tho' some of the Moderns have imagin'd, that they were intended, to appease the Deceas'd themselves, and were offer'd immediately to them, as a sort of Deities. What confirms the former Sentiment, is, that *Pluto* himself is surnam'd *Februus*. They held for twelve Days.

The Word is of a very antient standing in the *Latin* Tongue. From the very Foundation of the City, we meet with *Februa*, for *Purifications*; and *Februare*, to purify. *Varro*, *de Ling. Lat. L. V.* derives it from the *Sabins*: *Vossius*, and others, from *ferveo*, I am hot; by reason, that Purifications chiefly were perform'd with Fire, and hot Water. Some go higher, and even deduce the Words from פור, *Phur*, or *Phavar*, which in *Syriac* and *Arabic* has the same Signification with *Ferbuit*, or *Efferbuit*; and might probably, likewise signify, *to purify*: For *phavar*, in *Arabic*, denotes a Preparative, given to Women in Childbed, to bring away the After-birth, and other Impurities, remaining after Delivery: Much as among the *Romans*, who gave the Name *Februa* to the Goddess suppos'd to preside over the Delivery of Women. *Ovid. Fast.*

FECES, and FECAL *Matter*, } See { FÆCES. FÆCAL MATTER.

FECIALES, FÆCIALES, or FETIALES, were publick Officers among the antient *Romans*.

The *Feciales* were a sort of Heralds, or Kings at Arms; who, when the *Romans* had any Dispute with their Neighbors, were sent, first, to demand the Thing pretended to be usurp'd; or require Satisfaction for the Injury alledg'd to be done. If an Answer was not return'd by them, that was satisfactory to the People and the Senate; they were dispatch'd again to declare War: And the like in treating of Peace; the *Feciales* being the only Persons appointed to treat between the Senate, *&c.* and the Enemy.

Plutarch, in the Life of *Numa*; and *Halicarnasseus* L. II. observe, that they were first instituted by that Prince. The latter adds, that they were chosen out of the best Families in *Rome*; that their Office, which was reputed a sort of *Sacerdotium*, or Priesthood, only ended with their Life; that their Persons were sacred, and inviolable, as those of other Priests; that they were even charged to see the Republick did not declare War unjustly; that they were to receive the Complaints and Remonstrances of Nations, who pretended to have been any way injur'd by the *Romans*; that if those Complaints were found just, they were to seize the Criminals, and deliver them up to those they had offended; that they were invested with the Rights and Privileges of Embassadors; that they concluded Treaties of Peace, and Alliance, and took Care they were executed, and lastly abolish'd them, if they were not equitable.

But *Varro* assures us, that in his time most of these Functions of the *Feciales* were set aside; as those of the antient Heralds at Arms are among us: Tho' *Plutarch* observes, that they had still some Authority in his Time. See HERALD.

The *Feciales* went crown'd with *Verbena*, Vervein, when they went to declare War: Their Head was cover'd with a Veil, over which the Crown was applied. In this Equipage they proceeded to the Frontiers of the new Enemy's Country, and threw a bloody Dart, or Javelin into the Earth, within the same. In *Livy*, and other antient Authors, as also among the modern Criticks and Grammarians, we have the Formala's us'd in such Declarations.

Festus derives the Word from *ferio*, I strike; as *ferire fœdus*, signifies to conclude a Treaty: And accordingly, instead of *Feciales*, he would have it wrote *Fetiales*.

Others derive it from *fœdus*, which was antiently wrote *fœdus*; or from *fides*, Faith: Others from *facio*, *feci*, I make, *&c.* by reason they made War and Peace.

Vossius chuses to derive it from *fatu*, of the Verb *fari*, to speak; in which sense the *Feciales* should be the same with *Oratores*; which Sentiment is confirm'd from the Authority of *Varro*, who says, they were call'd indifferently, *Feciales* and *Oratores*. *De Vita Popul. Roman.* L. II.

FECULA, or FÆCULA, in Pharmacy, A white, mealy Substance, or Powder, which subsides, and gathers at the Bottom of the Juices, or Liquors of divers Roots; as those of Briony, Arum, Iris, *&c.*

This Substance, or Sediment, they dry in the Sun, after having pour'd off the Liquors; and it serves for divers Remedies.

The Word *Fœcula* is a Diminutive of *Fœces*.

FECULENT, or FÆCULENT, is applied to the Blood, and other Humors, which abound in Fæces, or Dregs; or have not the proper and usual Degree of Purity.——

FECUNDITY, or FÆCUNDITY, *Fertility*, or the Quality of a thing, which denominates it fruitful.

The *Fecundity* of divers Plants is very extraordinary. M. *Dodart* has an express Treatise thereof in the Memoirs of the Academy of Sciences.

He shews, that at a moderate Computation, an Elm, one Year with another, yields 329000 Grains, or Seeds; each of which, if properly lodg'd, would grow up unto a Tree. Now, an Elm ordinarily lives 100 Years; consequently, in the Course of its Life, it produces 33000000 Grains; all which arise from one single Grain.

He shews farther, that the same Elm, by frequently cutting off its Head, *&c.* might be brought to produce 15840000000 Seeds; and that there are so many actually contain'd in it, see PLANT.

FEE, FEUD, FEUDUM, FEODUM, or FIEF, an Estate, Land, Tenement, Lordship, or Right held of a superior Lord, on condition of Fealty, Homage, or other Acknowledgement.

The Term *Fees* is properly applied to Lands and Tenements, which we hold in perpetual Right, on condition of an Acknowledgment of Superiority in a higher Lord. See TENURE.

The Writers on this Subject, divide all Lands and Tenements, wherein a Man hath a perpetual Estate to him and his Heirs, into *Allodium*, and *Feudum*.

Allodium is defin'd, to be a Man's own Land, which he possesses merely in his own Right, without Acknowledgment of any Service or Payment of any Rent to another; and this is Property in the highest Degree. See ALLODIUM.

He that hath *Fee* holds of another by some Duty, or other, call'd *Service*, see SERVICE.

Feudum is that, which we hold by the Benefit of another, and for which we do Service, or pay Rent, or both, to the chief Lord.

Originally, a *Feud* was only an Estate for Life; and those to whom it was granted, were call'd *Vassalli*, who, by such means, were brought to a stricter Discipline and Obedience to the Princes, and were bound to serve them in Wars. See VASSAL.

The Origin of *Fees* is one of the darkest, and most intricate Points in modern History; Authors being exceedingly divided about it.

Some attribute the Invention thereof to the *Lombards*: Others find some Appearance of the Duties of a Vassal to his Lord, in the antient Relations between the Patron, and his Client: And others look for its Rise in the *Roman* Beneficia.

The Emperors, it seems, distributed Lands among the antient Legions, on condition of their holding themselves ready at all Times, to take up Arms, in defence of the Frontiers of the Empire; which affords us a good Image enough of *Feuds*; and in all Probability, their first Origin was no otherwise: But in Process of Time their Nature was changed, and Duties were annex'd to them, which originally were not.

Du Moulin makes no Doubt, that these Distributions of Lands, call'd *Benefices*, were the first matter of *Fees*; for which reason he uses the Terms *Benefice* and *Feud* promiscuously; as if they were the same Thing: And yet, there was a good deal of Difference between them; as there was neither Fealty, nor Homage, nor the other *feudal* Rights annex'd to the Benefice; and as the Benefice was not hereditary. See BENEFICE.

Probably, *Benefices* began then to be call'd *Feuds*, when they became hereditary; and when those, of whom the Benefices were held, began to demand Faith, or Fealty, from them. See FEALTY.

This Fealty seems to constitute the *Fee*; the Word *Fee* it self, signifying in the antient *Norman* Language, *Faith*.

There is no fixing the precise Æra, when these Changes commenced; For *Fees*, such as they now are, were not establish'd all at once: And in different Countries they took place at different Times, and in different manners. The Great

Lords, after the Deſtruction of the *Roman* Empire, having in ſeveral Parts uſurp'd the Property of their Benefices; laid likewiſe hold of the Juriſdiction; and made their Vaſſals their Subjects, ſo that each became a ſort of petty Sovereign in his own Territory.

Mezeray obſerves, that the Donation of *Fees* to the Nobleſſe of *France* commenc'd under the Principality of *Charles Martel*.

Hugh Capet, when he came to the Crown, was himſelf ſo little eſtabliſh'd, that he durſt not oppoſe thoſe Uſurpations; and was forc'd to ſuffer, what he could not redreſs. See *le Fevre, de l'Origine des Fiefs:* and *Hauteſerre*'s *Origines Feudorum pro Moribus Galliæ*.

The Origin of *Fees* in *England*, *Cambden* attributes to *Alexander Severus*. That Prince having built a Wall in the North of *England*, to prevent the Incurſions of the *Picts*; he ſome time after, began to neglect the Defence thereof, and gave, as *Lampridius* aſſures us, the Lands conquer'd from the Enemy, to his Captains and Soldiers, whom that Author calls *Limitarios Duces, & Milites*, i. e. Captains and Soldiers of the Frontiers; but it was on this Condition, that their Heirs ſhould continue in the Service; and that the Lands ſhould never deſcend to private Perſons, *i. e.* to ſuch as did not bear Arms. That Prince's Reaſon was, that People, who in ſerving defended their own, would ſerve with a deal more Zeal, than others.

Such was the Riſe of *Fees* in our Nation, according to *Cambden. Britan. p.* 651.

All our Lands in *England* (the Crown Land which is in the King's own Hand, in right of his Crown excepted) is in the Nature of *Feude* or *Fee*.

For tho' many have Land by Deſcent from their Anceſtors, and others have bought Lands; yet cannot Land come to any, either by Deſcent, or Purchaſe, but with the Burden that was laid on him who had the *Novel Fee*, or who firſt received it as a Benefice from his Lord to him, and ſuch as ſhould deſcend from him, or to whom it ſhould be otherwiſe convey'd and transfer'd; ſo that no Man has *directum Dominium*, i. e. the very Property or Demain in any Land, but the Prince, in right of his Crown. *Camb. Britan. p.* 93.

Tho' he who has *Fee*, has *Jus perpetuum*, and *utile Dominium*, yet he owes a Duty for it; ſo that it is not ſtrictly his own. Indeed, as much is imported by the Terms in which we expreſs our higheſt Right in Lands, *&c.* the moſt he can ſay, is, *I am ſeiz'd of this Land, in my Demain, as of* Fee.

In the Stat. 37 *Hen.* 8. *cap.* 16. *Fee* is alſo us'd for Lands inveſted in the Crown; but 'tis from Ignorance of the Import of the Word; for *Fee* cannot be without Fealty ſworn to a Superior: But the King owns Fealty to no Superior, but God alone.

The Words *Fee*, *Feud*, or *Fief*, are deriv'd by ſome Authors from *fœdus*, as ariſing from *Treaty*, or Alliance, made with the Lord: Others, as *Cujas*, &c. fetch them from *fides*, on account of the Faith the Perſon is oblig'd to bear his Lord: Others derive them from the *Saxon* Feh, Hire, Wages, q. d. *Status beneficiarius*.

Bodin takes the Latin *Fedum* to be form'd by Abbreviation of the initial Letters of *Fidelis Ero Domino Vero Meo*, which is an antient Formula of Fealty and Homage. *Nicod* derives it from the German *Feld*, which ſignifies the ſame Thing: *Hottoman* from *Feed*, a *German* Word, ſignifying *War: Pontanus* from the Daniſh *Feide*, Militia: Others from the Hungarian *Foeld*, Land: Others from *foden*, to feed: But the Opinion of *Selden*, ſeems the beſt authoriz'd, who brings it from the Saxon *Feon*, Stipendium; the *Fee* being a kind of Prebend to live upon; and accordingly we find, that in antient Times it was us'd for the Wages, and Appointment of Officers.

Fee is divided in our Laws, into *Fee abſolute*, call'd alſo *Fee Simple*; and *Fee Conditional*, alſo call'd *Fee Tail*.

Fee-*Simple*, *Feudum ſimplex*, is that, whereof we are ſeiz'd *to us and our Heirs, for ever*.

Fee-*Tail*, *Feudum taliatum*, is that, whereof we are ſeiz'd with Limitation *to us and the Heirs of our Body*. *Fee-Tail* is of two kinds, *General*, and *Special*.

Fee-Tail general is, where Land is given to a Man, and the Heirs of his Body; ſo that if a Man ſeiz'd of ſuch Land by ſuch Gift, marry one, or more Wives, and have no Iſſue by them, and at length marry another, by whom he hath Iſſue; this Iſſue ſhall inherit the Land.

Fee-Tail ſpecial is, where a Man and his Wife are ſeiz'd of Lands to them, and the Heirs of their two Bodies; becauſe in this Caſe, the Wife dying without Iſſue, and he marrying another, by whom he hath Iſſue; this Iſſue cannot inherit the Land, it being eſpecially given to ſuch Heirs, *&c.*

This *Fee-Tail ſpecial* has its Origin from the Stat. of *Weſtm.* 2. *cap.* 1. Before that Statute, all Land given to a Man, and his Heirs, either General, or Special, was reputed in the nature of a *Fee*; and therefore ſo firmly held to him, that, any Limitation notwithſtanding, he might alienate it at pleaſure. For Redreſs of which Inconvenience, the Statute provides, that if a Man give Lands in *Fee*, limiting the Heirs to whom it ſhall deſcend, with a Reverſion to himſelf, and his Heirs for Default of ſuch former Heirs; that the Form and Meaning of the Gift ſhall be obſerv'd.——

Fee is alſo us'd for the Compaſs or Circuit of a Manor, or Lordſhip. Thus *Bracton, in eadem Villa, & de eodem Feodo.*——

Alſo for a perpetual Right Incorporeal; as to have the keeping of Perſons in *Fee:* Rent granted in *Fee:* an Office held in *Fee*, &c.

Laſtly, *Fee* ſtill ſignifies a Reward, or ordinary Due, given a Perſon for the Execution of his Office, or the Performance of his Part, in his reſpective Art or Science. Thus, the Lawyer, and Phyſician, are ſaid to have their *Fees*, *i. e.* Conſiderations for the Pains taken with the Client, or Patient. A Barriſter, or Phyſician, are ſuppos'd to receive their *Fees* from time to time, as their Service is perform'd: They cannot make a Bill.

Fee-*Expectant*, *Feudum expectativum*, ſee Expectant.

Fee-*Farm*, or Fee-*Ferm*, *Feudi-firma*, or *Feofirma*, ſignifies Lands holden to a Man and his Heirs for ever, under Rent.

Fee-Farm ariſes, when the Lord upon Creation of the Tenancy reſerves to himſelf, and his Heirs, either the Rent for which it was before let to Farm, or at leaſt a fourth Part of the Rent; and that without Homage, Fealty, or other Services more than are eſpecially compriz'd in the Feoffment.

Tho', by *Fitz-herbert*, it appears that the third Part of the Value may be appointed for the Rent, or the finding of a Chaplain, to ſay Divine Service, *&c.* And the Nature of it is this, that if the Rent be behind, and unpaid for the Space of two Years; then the Feoffer or his Heirs have Action, to recover the Lands as their Demeans. See Farm.

Fees are alſo ſettled Perquiſites, or Allowances, paid to Publick Officers, by Perſons who have Buſineſs with them.

The Smallneſs of the Salaries of divers of the Queens Servants, is compenſated by the Perquiſites, or *Fees* of Honour.

The *Fees* paid to the ſeveral Officers by every Perſon, upon his being knighted, amount to 78 *l.* 13 *s.* 4 *d.* And if it be done within the Verge of the Courts, there is three Pound more to the ſix Pages of the Bed-Chamber, which brings it to 81 *l.*

FEELING, or *Touching*, one of the external Senſes, whereby we get the Ideas of *ſolid, hard, ſoft, rough, hot, cold, wet, dry*, or other *tangible* Qualities; as alſo of *Diſtance, Titillation, Itching, Pain*, &c. See Sense, Solid, Hard, *&c.*

Feeling, is the groſſeſt, but at the ſame time the moſt extenſive of our Senſes; having more Objects than all the reſt taken together: And ſome even reduce all the other Senſes, to this one of *Feeling*.

Ariſtotle is expreſs, that all Senſation is only *Feeling*; and that the other Senſes, as *Seeing, Hearing, Taſting*, and *Smelling*, are only the more exquiſite Species or Degrees thereof. *De Anim. lib.* 4. *c.* 3. and *lib.* 3. *c.* 12. See Seeing, Hearing, *&c.*

Naturaliſts are divided as to the Organ, or Inſtrument of *Feeling*.

Ariſtotle takes this Senſe to reſide in the Fleſh, *quatenus* Fleſh; inaſmuch as all Fleſh, is, in ſome meaſure capable of *feeling. Hiſt. Anim. L. I. c.* 4. Others will have it in all the Parts that have nervous Fibres; which extends it to the Skin, Fleſh, Muſcles, Membranes, and Parenchyma's: Others reſtrain it to the Skin, or *Cutis*; it being obſerv'd, that only thoſe Parts cover'd with a Cutis, have properly the Faculty of *Touching*, or perceiving tangible Qualities. But what part of the Cutis to aſſign immediately for this Office, is again diſputed.

Some will have it the membranous Part; others the Carnous; and others the medullary Part, derived from the Nerves.

Malpighi, and after him, all our lateſt, and beſt Authors, hold the immediate Organ of the Senſe of *Feeling*, to be the pyramidal Papillæ under the Skin.

Theſe Papillæ are little, ſoft, pulpous, medullary, nervous Prominences, lodg'd every where immediately under the Cuticula. They are form'd of the ſubcutaneous Nerves, which in order hereto, firſt lay aſide their outer Membrane, and are left exceedingly ſoft, and ſenſible; are continually moiſten'd by a thin, ſubtle Humor; and only covered over, and defended by the Cuticle, or ſcarf Skin. They are largeſt, and moſt conſpicuous in thoſe Parts, chiefly deſign'd for the Office of *Feeling, viz.* the *Tongue, Tips* of the *Fingers*, and *Toes*; and are contractile, and again expanſive at pleaſure. See Papillæ; ſee alſo Tongue, Finger, *&c.*

Feeling, then, is thus effected: The Tip of the Finger, for inſtance, being applied to an Object to be examined; By that Intention of the Mind, the Papillæ are emitted or elevated; and being lightly rubb'd over the Surface of the Object, a Motion is impreſs'd on them; which being thence propagated by the Nerves communicating with them, to the common Senſory, excites the Perception of Heat, Cold, Hardneſs, or the like. See SENSATION.

Hence we ſee, why *Feeling* becomes painful, when the Cuticle is wore off, burnt, macerated, &c. And why, when the Cuticle becomes thick, hard, callous, or cicatrized, &c. the Senſe of *Feeling* is loſt; whence the Numbneſs impreſs'd by the Torpedo; why that exquiſite Painfulneſs under, and at the Roots of the Nails, &c. See CUTICLE, BURNING, CALLUS, TORPEDO, and NAIL.

Feeling is, on many Accounts, the moſt univerſal of our Senſes: There is no Animal without it.

Pliny obſerves, that ſeveral Animals, as Oyſters, and Earth-worms, which have no other Senſe, yet have this of *Feeling*. *Nat. Hiſt. lib.* 10. *c.* 71. The other Senſes are confin'd to narrow Bounds; *Feeling* only is coextended with the Body, as being neceſſary to the Well-being of every Part. Hence *Cicero*, *Feeling* is equally diffuſed throughout the whole Frame, that we might be ſenſible of all Impulſes in every Part, and feel all the Degrees of Heat, Cold, &c. *De Nat. Deor. L. II. c.* 56.

Naturaliſts obſerve, that Spiders, Flies, and Ants have the Senſe of *Feeling* in a much greater Perfection than Men; though we have Inſtances of Perſons, who could diſtinguiſh Colours by their *Feeling*; and of others, who could perceive what People ſaid, by the ſame Senſe. See COLOUR, and DEAFNESS.

FEINT, in Muſick, a Semi-tone; the ſame with what we alſo call *Dieſis*. See DIESIS.

FEINT, in Rhetorick, A Figure whereby the Speaker touches on ſome thing, in making a Shew of paſſing it over in Silence. The *Latins* call it *Prætermiſſio*. See PRETERMISSION.

FEINT, in Fencing, a falſe Attack, or a Shew of making a Stroke, or Puſh in one Part, with Deſign to bring the Enemy to guard that Part, and leave ſome other Part unguarded, where the Stroke is really intended. See GUARD.

Feints are either ſingle, or double; high, or low; without, or within, &c. In Prime, in Tierce, in Quart, in Demi, and in the whole Circle; in one, two, or three Meaſures.

The *ſimple Feint* is a mere Motion of the Wriſt, without ſtirring the Foot, &c.

FELAPTON, in Logick, one of the Moods of Syllogiſms. See MOOD.

In a Syllogiſm, in *Felapton*, the firſt Propoſition is an univerſal Negative; the ſecond, an univerſal Affirmative; and the third, a particular Negative. See SYLLOGISM.

FELLING *of Timber*, ſee TIMBER.

FELLOWS, in Fortification, are ſix pieces of Wood, each of which form an Arch of a Circle; and theſe joyn'd all together by Duledges, make an entire Circle; which with twelve Spokes, make the Wheel of a Gun-Carriage. See CARRIAGE.

Their Thickneſs is uſually the Diameter of the Ball of the Gun they ſerve for, and their Breadth ſomething more.

FELLOWSHIP, *Company*, or *Partnerſhip*, in Arithmetick, is a Rule of great Uſe in ballancing Accounts amongſt Merchants, and Owners of Ships; where a Number of Perſons putting together a general Stock; it is requir'd to give every one his proportional Share of the Loſs, or Gain.

The Golden Rule ſeveral times repeated, is the Baſis of *Fellowſhip*, and fully anſwers all Queſtions of that Kind: For, as the whole Stock is to the Total thereby gain'd, or loſt; ſo each Man's particular Share, is to his proper Share of Loſs, or Gain. Wherefore, the ſeveral Sums of Money of every Partner are to be gather'd into one Sum, for the firſt Term; the common Gain, or Loſs for the ſecond; and every Man's particular Share for the third: and the Golden Rule to be wrought ſo many times, as there are Partners.

There are two Caſes of this Rule; the one *Without*, the other *With Time*.

FELLOWSHIP *without Time*, is where the Quantity of Stock, contributed by each Perſon, is alone conſider'd; without any particular regard to the Length of Time, that any of their Monies were employ'd. An Example will make this Proceſs eaſy.

A, *B*, and *C*. freight a Ship with 212 Tun of Wine; *A*. laying out 1342 *l*. *B*. 1178 *l*. and *C*. 650 *l*. towards the ſame: The whole Cargo is ſold at 32 *l*. *per Tun*. Query, what ſhall each Perſon receive?

Find the whole Produce of the Wine, by multiplying 212 by 32, which yields 6784: Then, adding together the ſeveral Stocks, 1342, 1178, and 630, which make 3150, the Work will ſtand thus:

$$3150 : 6784 \left\{ \begin{array}{l} 1342 — \text{Anſw.} — 2890 \\ 1178 \quad — \quad — \quad 2537 \\ 630 \quad — \quad — \quad 1356 \end{array} \right.$$

Proof 3150 6784

FELLOWSHIP *with Time*, is, where the Time, wherein the Money, &c. was employ'd, enters into the Account. An Example will make it clear.

A. B. C. commence a Partnerſhip the firſt of *January*, for a whole Year. *A*. the ſame Day diſburſed 100 *l*. whereof he receiv'd back again on the firſt of *April*, 20 *l*. *B*. pays on the firſt of *March* 60 *l*. and more the firſt of *Auguſt*, 100 *l*. *C*. pays the firſt of *July* 140 *l*. and the firſt of *October* withdraws 40 *l*. At the Years End their clear Gain is 142 *l*. Query, what is each Perſon's Due?

A's 100 *l*. multiplied by 3 Months, the Time it was in, makes 300 *l*. and the remaining 80, by 9 Months=720, In all 1020 *l*. of *A*'s Contribution. For *B*. 60 into 10, gives 600; and 100 into 5, 500; in all 1100 *l*. for *B*. For *C*, 140 into 3, gives 420; and 100 into 3, is 300; in all 720 *l*. for *C*.

Now, 1020+1100+720=2840 for the common Antecedent; and the Gain 142, is for the general Conſequent: Then the Rule will ſtand thus:

$$2840 : 142 \left\{ \begin{array}{l} 1020 — \text{Anſw.} — 51 \\ 1100 \quad — \quad — \quad 55 \\ 720 \quad — \quad — \quad 36 \end{array} \right.$$

Proof 2840 142

FELO-*de-ſee*, is he, that commits Felony, by willingly killing himſelf.

The *Saxons* call'd him *Self-bane*. See SUICIDE.

He is to be interr'd without chriſtian Burial, with a Stake driven through his Corps; and to forfeit his Goods.

FELONY, was antiently uſed for a violent and injurious Action of a Vaſſal, or Tenant againſt his Lord.

In which Senſe, *Felony* was equivalent to petty Treaſon; or it was a Crime next below High Treaſon. The Crime of *Felony* inported Confiſcation of the Fee, to the Profit of the Lord.

The ſame Term *Felony*, is applied to an Injury of the Lord to his Vaſſal; which imports a Forfeiture of the Homage and Service thereof, and make it revert to the Soveraign.

Fidelity, and *Felony* are reciprocal between the Lord and the Vaſſal. See LORD.

Menage derives the Word from *Felonia*, form'd of *felo*, or *fello*, which occurs in the Capitularies of *Charles* the Bald, and is ſuppos'd to come from the *German Fehlen*, or *Saxon Felen*, to fail, or be delinquent. Others derive it from the barbarous Latin *Vilania*.

My Lord *Coke*, *Nicod*, &c. derive it *a felle*, Gall, as being ſuppos'd to be done maliciouſly. Laſtly, others derive it from the *Greek* φήλειν, to deceive.

FELONY, in Common Law, is an Offence next below that of Petty-Treaſon.

Felony includes ſeveral Species of Crimes, whoſe Puniſhment is the ſame, *viz.* Death: Such as *Murther*, *Theft*, *Suicide*, *Sodomy*, *Rape*, wilful *Burning* of Houſes, receiving of *ſtolen Goods*, and divers others found in the Statutes, which are daily making Crimes *Felony*, that were not ſo before.

Felony is eaſily diſtinguiſh'd from *Treaſon*. See TREASON.

From leſſer Crimes, it is diſtinguiſh'd by this, that its Puniſhment is Death; tho' not univerſally: For Petty Larceny, *i. e.* ſtealing of a thing, under the Value of 12 *d*. is *Felony*, according to *Brook*; tho' the Crime be not capital, but only a Loſs of Goods.

The Reaſon *Brook* gives for its being *Felony*, is that the Indictment runs, *Felonice cepit*.

Till the Reign of *Henry* I. *Felonies* were puniſh'd by pecuniary Fines: That Prince firſt order'd *Felons* to be hang'd, about the Year 1108.

Felony is of two Kinds: The one lighter, which for the firſt time is entitled to the *Benefit of Clergy*; as *Manſlaughter*. See MANSLAUGHTER. The other is not.

Felony is alſo puniſh'd by Loſs of all Lands, not intail'd; and all Goods and Chattels, both real and perſonal: Tho' the Statutes make a Difference in ſome Caſes, concerning Lands; as appears by Stat. 37 *Hen.* 8.

Felony ordinarily works Corruption of Blood, unleſs the Statute, ordaining the Offence to be *Felony*, provide otherwiſe; as the Stat. 39 *Eliz.* c. 17. See FURCA.

FELT, a kind of Stuff, either of Wool alone, or of Wool and Hair; neither ſpun, croſs'd, nor wove, but deriving all its Conſiſtence from its being wrought, and full'd with Lees and Size, and afterwards faſhioned on a Block or Mould, by help of Fire and Water.

Caſtor's, Camels, and Coneys Hair; Lambs and Sheeps Wool, &c. are the moſt uſual Ingredients of *Felts*: And Hats of all kinds, are the Works, they are chiefly employed in.

The

The *Felt* intended for a Hat, being ſufficiently full'd, and prepar'd, is reduc'd into one Piece, ſomewhat in the figure of a large Funnel: In which State it remains ready, to be put into Form, and become a Hat. See HAT.

FELUCCA, or FELUCCO, a little Veſſel, with ſix Oars, not cover'd over; and much us'd in the Mediterranean. It may bear its Helm on both Sides; which is likewiſe ſhifted from behind, forewards occaſionally. Its Size is about equal to that of a Sloop, or Chaloup. See BOAT.

The Word is form'd from the *Arabick Felicon*, a Ship.—

FEMALE, the Sex that conceives, and bears Fruit. See SEX, and WOMAN.

An Animal that generates in it ſelf, is called *Female*; and that which generates in another, *Male*. See MALE.

The *Female* both in Quadrupeds, and even Birds, is uſually ſmaller, and weaker than the Male; tho' in Birds of Prey, as the Falcon, Hawk, &c. it is otherwiſe; the *Female* being bigger, ſtronger, bolder, hardier, and more courageous. See FALCON.

The like is obſerv'd in moſt Inſects, particularly Spiders; to that Degree, that Mr. *Homberg* aſſures us, he has weigh'd five or ſix Male Garden-Spiders againſt one *Female* of the ſame Species.

For the *Proportion of Males to* FEMALES, ſee MARRIAGE, BIRTHS, &c.

Naturaliſts diſtinguiſh Male and *Female* Plants; Male and *Female* Flowers, &c. See PLANT, FLOWER, GENERATION, &c.

FEMALE *Screw*. See SCREW.

FEME *Covert*, in Law, a married Woman; who is alſo ſaid to be under *Covert Baron*. See COVERT.

FEMININE, in Grammar, one of the Genders of Nouns. See GENDER.

The *Feminine Gender* is that, which denotes the Name to belong to a *Female*. In the *Latin*, the *Feminine* Gender is form'd of the Maſculine, by altering its Termination; particularly by changing *us* into *a*. Thus, of the Maſculine *bonus equus*, a good Horſe, is form'd the *Feminine*, *bona equa*, a good Mare: So, of *parvus homo*, a little Man, is form'd, *parva fæmina*, a little Woman, &c.

In *French*, the *Feminine* Gender is expreſs'd, not by a different Termination; but a different Article: Thus, *le* is joyn'd to a Male, and *la* to a Female.

In *Engliſh*, we are generally more ſtrict, and expreſs the Difference of Sex, not by different Terminations, nor by different Particles, but different Words; as Boar, and Sow; Boy, and Girl; Brother, and Siſter, &c. tho' ſometimes the *Feminine* is form'd by varying the Termination of the Male into *eſs*; as in Abbot, Abbeſs, &c.

FEMININE *Rhimes*, ſee RHIME.

FEMUR, or *Os* FEMORIS, in Anatomy, the Thigh-bone. See BONE, and THIGH.

The *Femur* is the largeſt and ſtrongeſt Bone in the Body; and its Articulations are proportion'd to its Bulk, and Strength. Its upper Part is jointed with the Iſchium, by Enarthroſis; the Head of the *Femur* being receiv'd into a Cavity of the Iſchium; and the two kept together by a ſtrong Cartilage, or Bandage. The lower End is articulated with the Tibia by Ginglimus; two Heads of the *Femur* being receiv'd into two Cavities of the Tibia; beſide a Cavity between the two Heads, which receives a Proceſs of the Tibia.

The *Femur* is pretty much incurvated, or bent; the convex Part being before, and the Concave behind. It is divided into three Parts; the upper, middle, and lower.

The upper, conſiſts of a Head, and a Neck; in which are contain'd three Epiphyſes, *viz.* the *Extremity*, or Head, which is round, and big, and receiv'd into the Acetabulum of the Coxendix, wherein it is tied by two Ligaments; the one from the Head, and the other from the Bottom of the Acetabulum, but both inſerted into the Middle of the Head. Immediately under the Head, is the *Neck*, which is ſmall, long, and a little oval, and makes an Angle with the Body of the Bone; by means whereof the Thighs and Feet are kept at a due Diſtance from each other, to make our Standing the firmer; Beſide that the Obliquity of the Neck conduces to the Strength of the Muſcles, which muſt otherwiſe have paſs'd too near the Centre of Motion. The other two Epiphyſes are call'd the greater and leſs *Trochanters*. See TROCHANTER.

The middle Part, or Shank of the *Femur*, is round, ſmooth, and poliſh'd on its Fore-ſide, and rough on the Hind-ſide; along which there runs a ſmall Ridge, the whole Length of the Bone, called the *Linea aſpera*, ſerving for the Inſertion of Muſcles.

The lower Part of the *Femur* is divided by a Sinus in the Middle, into two Heads, or Apophyſes, call'd *Condili*, which make the Ginglymus above mention'd; being both received into the Sinus of the Tibia. See CONDILUS.

Between the hind Parts of theſe Heads is a Space for the Paſſage of the great Veſſels and Nerves, which go to the Leg.

The *Femur* has a very large Cavity, running its whole Length, filled, like the reſt, with Marrow. The Curvity of the *Femur* makes it ſerve as a Buttreſs to the Body, to prevent its falling, or bearing too much forward.

Surgeons and Bone-ſetters ſhould take Care, that in fractures of the *Femur* they don't endeavour to ſet it ſtreight, which is unnatural.

Monſ. *Dionis* derives the Word *Femur* from *fero*, by reaſon it bears the whole Weight of the Body.——

FEN, in Geography, a kind of Lake, or rather, Moraſs. See LAKE, and MORASS.

Fens are of two Kinds: The firſt of a Boggy Conſiſtence, compoſed of Water and Earth intermixed; ſcarce firm enough to ſuſtain the Tread of a Man. See BOG, and MOSS.

The ſecond are Ponds, or Collections of Waters, with pieces of dry Land, raiſed here and there, above the Surface thereof.

The former kind neither receive, nor emit any River: But the latter are frequently the Heads or Springs of Rivers: Such is the Head of the *Nile*, *Tanais*, &c.

FENCE-*Month* (*Menſis prohibitionis*, or *Menſis vetitus*) is a Month, wherein the female Deer do fawn; for which Reaſon it is unlawful to hunt in the Foreſt, during that Time.

It begins fifteen Days before Midſummer, and ends fifteen Days after; in all, thirty Days.

There are alſo certain *Fence*, or *Defence* Months, or Seaſons for Fiſh, as well as wild Beaſts; as appears by Stat. *Weſtm.* 2. *cap.* 13. in theſe Words:

All Waters, where Salmons are taken, ſhall be in *Defence* for taking of Salmon, from the Nativity of our Lady, unto St. *Martin*'s Day. And likewiſe, young Salmons ſhall not be taken or deſtroyed by Nets, &c. from the Midſt of *April*, to the Nativity of St. *John Baptiſt*, &c. See TEMPUS, FOINESUN, FANATIO, &c.

FENCE-*Walls*, are Walls of Brick, or Stone, made round Gardens, &c. See WALL.

FENCING, the Art of *Defence*; or of uſing the Sword, to wound an Enemy, and ſhelter one's ſelf from his Attacks. See SWORD, and GUARD.

Fencing is one ſo the Exerciſes learnt in the Academies, &c. See EXERCISE.

Fencing is learnt by practiſing with *Files*, called in *Latin*, *Rudes*; whence *Fencing* is called *Gladiatura rudiaria*. See GLADIATOR.

Pyrard aſſures, that the Art of *Fencing* is ſo highly eſteemed in the *Eaſt Indies*, that none but Princes and Noblemen are allowed to teach it. They wear a Badge or Cognizance on their right Arms, called in their Language *Eſaru*, which is put on with great Ceremony, like the Badges of our Orders of Knighthood, by the Kings themſelves.

Montaign aſſures us, that when he was a Youth, the Nobility all ſhunned the Reputation of being good *Fencers*; as ſomething too ſubtle, and deſigning, and apt to corrupt virtuous Manners.

Fencing is divided into two Parts, Simple, and Compound.

Simple is, what is performed directly and nimbly, on the ſame Line; and is either Offenſive, or Defenſive. The principal Object of the firſt, is whatever may be attempted, in puſhing or paſſing from this or that Point, to the moſt uncovered Part of the Enemy. The ſecond, conſiſts in parrying, and repelling the Thruſts aimed by the Enemy.

The *Compound*, on the offenſive Side, includes all the poſſible Arts and Inventions, to deceive the Enemy, and make him leave that Part we have a Deſign on, bare, and unguarded, upon finding we cannot come at it by Force, nor by the Agility of the ſimple Play.

The principal Means hereof are Feints, Appeals, Claſhings, and Intanglings of Swords, half-Thruſts, &c. And in the Defenſive, to puſh in ſpeaking.

FEND, in the Sea Language, is uſed for the ſaving a Boat from being daſh'd againſt the Rocks, Shore, or Ships Side.

Hence the Phraſe, *Fending the Boat*, &c. Hence alſo

FENDERS, any Pieces of old Cable Ropes, or Billets of Wood, hung over the Ship's Side, to *fend* or keep other Ships from rubbing againſt her.

Boats have the like.——

FENDUE *en Pal*, in Heraldry, a *French* Phraſe, applied to a Croſs, to denote it cloven down from Top to Bottom, and the Parts ſet at ſome Diſtance from one another.

FENESTRA, in Anatomy, a Name applied to two Holes, or Apertures in the inner Ear. See EAR.

The *Feneſtræ* are two Openings in the Labyrinth; the firſt of them incloſ'd by the Baſis of the Stapes, and from its oval Figure denominated *Feneſtra ovalis*; the latter, call'd *rotunda*, is cloſ'd with a tranſverſe tranſparent Membrane, plac'd a little within the Surface of its Aperture.

Theſe *Feneſtræ*, with the whole Labyrinth, are comprehended in that Part of the *Os temporum*, properly call'd from its Hardneſs *petroſum*. See LABYRINTH, &c.

FENNEL, or *Fennel-ſeed*, in Commerce, &c. a longiſh, ſtriated Seed, flat on one Side, and roundiſh on the other; of a ſweetiſh Taſte, not unlike that of Anis-ſeed; being the Produce of an umbelliferous Plant of the ſame Name, well known as a Pot-herb.

Fennel makes part of the Commerce of the Druggiſts and Apothecaries. 'Tis eſteem'd a Carminative, and us'd like Anis-ſeed, to diſpell Winds in the Body; and correct Senna, and the reſt of the vegetable Purgatives.

There is alſo a ſtrong Water, or Brandy made of the Seeds of *Fennel*, and call'd *Fennel-Water*. The Ingredients are *Fennel* Seed, Liquorice, Brandy, and white Wine, which are diſtill'd together; and to the Eſſence thereof are added Spirit of Wine, Sugar, and ſweet Almonds: The whole ſtrain'd, &c.

FENUGREE, *Fænum Græcum*, or *Fennigreek*, a medicinal Plant, thus call'd, becauſe antiently brought from *Greece*, tho' now cultivated in ſeveral Parts of *Europe*.

Its Stem is about a Foot high: Its Leaves ſmall, and diſpos'd ſomewhat like thoſe of Trefoil. It yields a little white Flower, from whence ariſes a long, pointed Pod, ſhap'd not unlike a Bullocks Horn.

The Grain, or Seed is inclos'd in this Pod, which bears the Name of the Plant it ſelf, is leſs than Muſtard Seed, very hard, and ſolid, of a triangular Form, and a ſtrong diſagreeable Smell: When new, 'tis of a yellow, gold Colour; but when kept, ruddy, or brown.

The Farina, or Flower of theſe Seeds is eſteem'd good to ripen and digeſt; and as ſuch, is uſed in Cataplaſms of thoſe Intentions; as alſo in emollient Clyſters, Decoctions, and Cataplaſms.

It yields a Mucilage uſed in Inflammations of the Eyes and on other Occaſions.

FEODARY, FEUDARY, or FEUDATARY, was an Officer, antiently made and authorized by the Maſter of the Court of Wards. See WARD.

His Office was, to be preſent with the Eſcheator, at the finding any Office; and to give Evidence for the King, concerning the Tenure and the Value thereof: To ſurvey the Land of the Ward after the Office found, and rate it. He alſo aſſign'd the Kings Widows their Dowers, and received the Rents of Wards Lands. This Office is taken away by Stat. 12 *Car.* 2.

FEODER, a Capital Meaſure for Liquids, uſed throughout *Germany*. See MEASURE.

FEODUM, or FEUDUM, the ſame with *Fief*, or *Fee*. See FEE.

FEOFFMENT, in Common Law, ſignifies any Gift, or Grant of any Honours, Caſtles, Manors, Meſſuages, Lands, or other corporeal or immoveable Things of like nature, unto another in Fee ſimple; that is, to him, and to his Heirs for ever, by the Delivery of Seiſin, and the Poſſeſſion of the Thing given; whether the Gift be made by Deed, or Writing.

When it is in Writing, it is called the *Deed of Feoffment*.

In every *Feoffment*, the Giver is called the *Feoffer*, or *Feoffator*.

The proper Difference between a *Feoffer*, and a Donor, is, that the Feoffer gives in Fee ſimple; and the Donor in Fee-tail. See DONOR, and FEE.

FERALIA, in Antiquity, a Feaſt held by the *Romans*, on the 21ſt of *February*, in honour of the Dead. See FEAST.

Macrobius, *Saturn.* L. I. c. 13. refers the Origin of the Ceremony to *Numa Pompilius*. *Ovid*, in his *Faſti*, goes back as far as *Eneas*, for its Inſtitution. He adds, that on the ſame Day, a Sacrifice was perform'd to the Goddeſs *Muta*, or Dumb; and that the Perſons who officiated, were an old Woman, attended with a Number of young Girls.

Varro derives the Word from *inferi*, or from *fero*; on account of a Repaſt, carried to the Sepulchers of ſuch, as the laſt Offices were that Day render'd to.

Feſtus derives it from *ferio*, on account of the Victims ſacrificed. *Voſſius* obſerves, that the *Romans* called Death *fera*, *cruel*, and that the Word *Feralia* might ariſe thence.



FER *de Fourchette*, in Heraldry. *Croix a Fer de Fourchette* is a Croſs, having a forked Iron at each End, like that formerly us'd by Soldiers, to reſt their Muſkets; by which it is diſtinguiſh'd from the Croſs *Fourchee*; the Ends whereof turn forked, whereas in this, the Fork is fix'd on the ſquare End; as in the adjoining Figure.



FER *de Moulin*, q. d. Iron of the Mill, is a Bearing in Heraldry of the Figure adjoining.

It repreſents the Iron-Ink, or Ink of a Mill, which ſuſtains the moving Mill-ſtone.

There are divers ways of bearing it: The moſt uſual is that here repreſented.

It is born by the Name of *Beveatham*, and alſo by the Name of *Turner*.

FERD-*wit*, in our antient Cuſtoms, A Formulary, by which the King pardoned Manſlaughter, committed in the Army.

The Word is form'd of the *Saxon Fird*, Army, and *Wite*, Puniſhment.

FERENTARII, or FERENDARII, a Term in Hiſtory. The *Ferentarii* among the *Romans*, were auxiliary Troops, lightly arm'd; their Arms being a Sword, Arrows, and a Sling; which are much leſs cumberſome, than a Buckler, Battle-ax, Pike, &c.

The Name *Ferentarii* was derived *a ferendo auxilio*; theſe being auxiliary Forces: Tho' *Varro* thinks, they might be ſo called, by reaſon, the Sling and Stones *feruntur*, *non tenentur*.

We have alſo Mention of another ſort of *Ferentarii*, whoſe Buſineſs was, to carry Arms after the Armies, and to be ready to ſupply the Soldiers therewith in Battle.

Lydius uſes the ſame *Ferentarii* for the *Cataphracti Equites*, i. e. Cavaliers, arm'd Cap-a-pee.

FERIÆ, among the *Romans*, were Holidays; or Days wherein they abſtain'd from Work.

The *Feriæ*, or *Dies feriati*, were obſerv'd and diſtinguiſh'd chiefly, by Reſt; whereas the *Feaſts*, or *Dies feſti*, beſide a Ceſſation from Labour, were celebrated with Sacrifices and Games; ſo that there were *Feriæ*, which were not Faſt-days. Tho' Authors frequently confound the *Feriæ*, and *Feſti*. See FEAST, and FESTI DIES.

Others confound the *Feriæ* with the *Dies Ne-faſti*, or Non-Court-Days. See FASTI *Dies*.

The Latin *Feria*, amounts to the *Sabbath* of the *Hebrews*. See SABBATH.

The *Romans* had divers kinds of *Feriæ*: Their Names, at leaſt the principal thereof, are, The *Æſtivales*, Summer-*Feriæ*; *Anniverſariæ*, Anniverſary *Feriæ*; *Compitalitiæ*, *Feriæ* of the Streets, and *Compita*, or Croſs-ways; *Conceptivæ*, Votive *Feriæ*, which the Magiſtrates promis'd every Year: *Denicales*, for the Expiation of a Family polluted by the Death of any one; *Imperativæ*, or *Indictivæ*, thoſe decreed by the Magiſtrate; *Latinæ*, the Latin *Feriæ*, inſtituted by *Tarquin* the Proud, for all the Latin People, amounting to above fifty Nations; being celebrated on *M. Alba*, in Memory of the Peace, concluded by *Tarquin*, with the People of *Latium*; *Meſſis Feriæ*, the *Feriæ* of Harveſt; *Paganales Feriæ*, or *Paganalia*, an Account of which is given in its Place; *Præcidaneæ*, which were, what we properly call, the Vigils, or Eves of the Feaſts; *Privatæ*, or *Propriæ*, thoſe peculiar to the ſeveral Families; as the *Familiæ Claudiæ*, *Æmiliæ*, *Juliæ*, &c. *Publicæ*, thoſe obſerv'd by all in general, or for the Publick Weal; *Sementivæ*, thoſe held in Seed-time; *Stativæ*, thoſe kept conſtantly to the ſame Day of the Year; *Saturnales*, whereof we ſhall ſpeak in their Places; *Stultorum Feriæ*, or *Quirinalia*, the *Feriæ* of Fools, held on the 17th of *February*; *Victoriæ Feriæ*, thoſe of Victory, in the Month of *Auguſt*; *Vindemiales*, thoſe of the Vintage, from the 20th of *Auguſt*, to the 15th of *October*; *Vulcani Feriæ*, thoſe of *Vulcan*, which fell on the 22d of *May*.

FERIÆ was alſo uſed among the *Romans* for Fair Days; by reaſon it was the Cuſtom to hold their Fairs, on *Dies feriati*, or Holidays. *Struvius Synt. Antiqq. Rom. C. IX. p.* 425. 443. &c. See NUNDINA.

The Word *Feriæ*, is uſually deriv'd *a feriendis Victimis*. *Martinius* ſays, that *Feriæ dictæ ſunt velut ἱερὰι, μέρὰι, dies ſacri*, holy Days. Others obſerve, that all Days in general, tho' they were not Feaſt-days, were antiently call'd *Feſtæ*; or as *Voſſius* reads it, *Feſiæ*; whence, according to that Author, is form'd the Word *Feriæ*.

FERIA is ſtill retain'd in the *Romiſh* Breviary, tho' in a Senſe ſomewhat different from the *Feriæ* of the Antients.

It is applied to the ſeveral Days of the Week, beginning with Sunday; provided none of thoſe Days be a Feaſt, or Faſt Day. Thus, *Monday* is the ſecond *Feria*; *Tueſday* the third, &c.

Theſe are the ordinary *Feriæ*; beſide which they have extraordinary, or greater *Feriæ*, *viz.* the three laſt Days of Paſſion Week; the two Days following Eaſter Day, and Whitſunday; and the ſecond *Feria* of Rogation.

The Word *Feria*, in this Senſe, is doubtleſs borrowed from the antient *Feria*, a Day of Reſt. Accordingly, Sunday is the firſt *Feria*: For antiently, all the Days of Eaſter Week were accounted Feſtival Days, by a Decree of *Conſtantine*; whence thoſe ſeven Days were called *Feriæ*: Sun-

day being the first, Monday the second, &c. And this Week being then accounted the first of the Ecclesiastical Year; they afterwards accustom'd themselves, to call the Days of the other Weeks after the same manner, first, second, third, &c. *Feriæ*.

Tho' others will have it, that the Days of the Week were not called *Feriæ*, from resting the People, that is, on account of being oblig'd to abstain from servile Works; but to advertise the Faithful, that they ought to abstain from Sin. See *Durand. de Off. Div. L. VIII. c.* 1.

FERIAL *Days*, *Dies feriales*, or *Feriæ*, among the Antients, signify Holidays, or Days vacant from Labour and Pleading. See FERIÆ.

But in the Stat. 27 *Hen. 6. c.* 5. and in *Forteſcu*, *De Laudibus LL. Angliæ*, *Ferial Days* are taken for working Days. *S. Silveſter* ordained—*Sabbati & Dominici dies nomine retento, reliquos hebdomadæ dies* feriarum *nomine diſtinctos, ut jam ante in Eccleſia vocari cæperant, appellari.*

So that *Ferial Days* are properly all the Days of the Week, except Saturday and Sunday.

FERM, in Law, see FARM.

FERMENT, in Phyſicks, A Body of any Kind, which being applied to another, produces a *Fermentation* therein: Or, any thing capable of exciting an inteſtine Motion, in the Part of another; and of ſwelling, or dilating the ſame, by means of its more penetrating and moveable Parts, which by their Agitation divide and agitate the Particles thereof. See FERMENTATION.

Thus, the Acid in Leven, is a *Ferment*, which makes Bread riſe, or ſwell. The Moiſture in Hay is the *Ferment*, which heats and makes it ſmoak. Thus alſo, Rennet is the *Ferment*, that curdles and breaks Milk: Balm, or Yeaſt is the *Ferment*, that ſets Wort a-working, &c. See LEVEN, &c.

The Force or Effect of a *Ferment*, ariſes hence, that by diſſolving, and breaking the Texture or Combination of the component Parts or Principles of the Body, and giving them a new Motion; it diſpoſes them to take a new Arrangement, or to combine again in a new manner; and ſo to conſtitute a new Species of Body. Its Effect is ſomewhat like that of a Perſon, who opening the Gates of a City, lets in the Enemy, who ſoon raiſes terrible Diſorders: Thus, the Bite of a mad Dog excites a ſlow Fermentation in the Blood, whereby the divers Liquors, or Matters it conſiſts of, loſe that Nexus, or Union, neceſſary to a State of Health; and occaſion an Irregularity in the Spirits, from which ariſe the Horrors, and other Symptoms of the Diſeaſe. See HYDROPHOBIA.

One way of accounting for Digeſtion, is by ſuppoſing a certain *Ferment* or Menſtruum in the Stomach, which diſſolves the Food contain'd therein. But what this *Ferment* is, or whence it ſhould be derived, is greatly diſputed. Some will have it an Acid; others, alcalious; others, ſulphureous; others, alcalino-ſulphureous; others, muriatick, &c. as their own Fancies ſuggeſt to them. See DIGESTION, and MENSTRUUM.

FERMENTARII, or FERMENTACEI, a Denomination thoſe of the *Latin* Church have given to the *Greeks*, on account of their conſecrating and uſing leven'd, or *fermented* Bread in the Euchariſt.

As the *Greeks* call the *Latins Azymites*, the *Latins*, in return, call them *Fermentarii*. See AZYMUS.

FERMENTATION, an inteſtine Motion, or Commotion of the ſmall, inſenſible Particles of a mix'd Body, ariſing without any apparent mechanical Cauſe, and producing a conſiderable Alteration therein.

Or, it is an eaſy, ſlow, gentle Motion of the inteſtine Particles of a Body, ariſing uſually from the Operation of ſome active, acid Matter; which rarifies and ſubtilizes the ſofter, yielding Particles thereof. See FERMENT.

Fermentation differs from *Diſſolution*, as the latter is the Reſult or Effect of the former. *Fermentation* is frequently without Diſſolution, *i. e.* the fermentative Motion frequently does not go ſo far as to diſſolve the Body: But Diſſolution always ſuppoſes an antecedent *Fermentation*. See DISSOLUTION.

Fermentation differs from *Ebullition*, and *Effervescence* in this, that the Motion, which in the former is ſlow; in the two latter, is violent; and that in the former, the Motion is reſtrain'd to the minute Particles of the Body; but in the latter it extends to large Maſſes thereof. See EBULLITION, and EFFERVESCENCE.

Indeed it muſt be obſerv'd, that Authors uſually allow of divers kinds of *Fermentations*; *viz.* an *inſenſible* one, which is only known from its Effects; and a *ſenſible* one: A *violent* and a *moderate* one: A *hot*, and a *cold* one: A *natural*, and an *artificial* one.

Plants bruis'd, and left a certain Time in a cloſe Veſſel, *ferment* of themſelves; and if let alone, the *Fermentation* will proceed to Putrefaction. See PUTREFACTION.

In order to *Fermentation*, 'tis neceſſary, the Ferment or Liquor have ſomething acid and ſpirituous in it; that its Motion be tumultuous; that it be in an open, ſpatious Place, and aſſiſted by the Air; and that it tend to exalt and puriſy the Liquor, and produce vinous, or inflammable Spirits. Theſe are the particular Properties and Conditions of *Fermentation*; tho' in the general, all required to effect a *Fermentation*, is a Body, or Liquor, which is not homogeneous, that is, conſiſts of different Principles; that there be a ſtrong Attraction between the Particles of the *Ferment*, and the Body; that the Parts of this latter be moved and agitated irregularly; and that this Motion produce ſome Alteration in the mixt.

Fermentation is one of the moſt obſcure Proceſſes in all Nature. The Generality of our later Philoſophers allow it in great Meaſure a Myſtery, to which their Principles will not fully reach.

Dr. *Morgan*, in his late *Philoſoph. Prin. of Medicine*, attempts to account for it, on the *Newtonean* Syſtem. His Principle is, that the expanſive Force of Air, rarified by the Action of Fire; or the mutual Action of Fire and Air, is the univerſal natural Cauſe of *Fermentation* and Diſſolution.

To ſhew this, he conſiders, two great Powers, or Principles in Bodies; *viz.* an attractive, coheſive Power, in the ſmall Particles of Matter, as the Principle of all Reſt, Concretion, &c. And the expanſive Force of heated Air; as that of *Fermentation*. On the different Proportion and Adjuſtment of theſe two oppoſite Forces, with reſpect to each other, the Conſtitution, Texture and Coheſion of Bodies depend.

By the attractive Force, acting alone, the conſtituent Parts of compound Bodies, muſt be brought to their neareſt and greateſt Contacts, and remain there in a Degree of Firmneſs, and Coheſion, proportional to the Quantities of Contact. See FIRMNESS.

On the other hand, by the repulſive, expanſive Force, acting alone, all Bodies, even the moſt compact and ſolid, muſt be diſſolved and diffuſed into one perfectly fluid, incoherent Maſs. See FLUIDITY.

If both are found in the ſame Body, and equal in Degree, ſuch Body muſt continue in its preſent State of Fluidity, or Coheſion; if the attractive Power prevail, the Quantity of Contact, or Degree of Coheſion will be continually increaſed to a certain Pitch, where it will reſt: On the Contrary, if the expanſive Force of the Fire and Air, included in any Body, or Maſs of Matter, prevails againſt the attractive Power of the contiguous Parts, the Parts muſt neceſſarily recede from their Points of Contact.

And this happening thro' all the Subdiviſions of which the Body or Maſs is capable, every ſmall Part muſt be divided and ſeparated into other ſmaller Parts; and theſe again into others, and ſo on, till we come to the firſt conſtituent Particles or Atoms, which are ſuppoſed to be perfectly ſolid, and indiviſible. See ATOM.

This Receſs of the Parts of Bodies from their Points of Contact, and the Separation, and Diviſion conſequent thereon, is what we call *Rarefaction*; as, on the Contrary, the Approach of the Parts nearer to the Points of Contact, is called *Condenſation*. Now from the contrary Effects of theſe two Forces, there neceſſarily ariſes an inteſtine Commotion, Colliſion, and natural Struggle of the Parts among themſelves, *i. e.* the Parts acted on by two ſuch oppoſite Forces, will fly off, and recoil, recede, and accede, in Proportion to the Strength and Energy of the oppoſite Powers, till one or the other prevail, either to *fix* and condenſe, or *diſſolve* and diffuſe it; which alternate Motion is what we call *Fermentation*. See RAREFACTION, &c.

If the attractive Force prevail, the moſt fluid Body will be conſolidated, as Water into Ice. See FREEZING.

On the contrary, if the expanſive Force prevail, the firmeſt Body will be broke, and diſſolved. See DISSOLUTION.

Fermentation is a Point of the utmoſt Conſequence in Medicine: It is one of the principal Means, or Inſtruments we have for altering, exalting, or calling forth the Properties and Powers of Bodies. To get an Idea of theſe Changes, we cannot conſider it better, than in the procuring of a ſpirituous Liquor from Malt, by means thereof.

It is to be obſerv'd then, that the Malt being made, as ſhewn under the Article MALT; and then laid to infuſe or *maſh* in hot Water, the reſt of the Proceſs of Brewing is nothing but a raiſing and directing of a *Fermentation*, or inteſtine Motion. See BREWING.

How ſuch Motion is mechanically effected, and how it brings forth ſuch a Spirit, may be conceived from what follows; ſuppoſing the Reader acquainted with theſe common Propoſitions in Hydroſtaticks; *viz.* 1°. That a Body immerſed in any Fluid, ſpecifically lighter than itſelf, will ſink; otherwiſe, emerge and get to the Top.

2°. That if two equal Bodies of different ſpecifick Gravities be immerſed in a Fluid, lighter than either of them, the Celerities of their Deſcents will be as their Gravities.

3°. That

3°. That if two unequal Bodies of unequal ſpecifick Gravities be immerſed in a Fluid lighter than either, the Celerities of their Deſcents will be compounded of their Gravities and Dimenſions together.

The ſame Law, by which Bodies deſcend, hold good in the Aſcent of thoſe ſpecifically lighter than the Fluid.

Hence in all heterogeneous Fluids, the conſtituent Parts of which are not fitted to aſſociate and cohere, ſo as to form what is called an uniform homogeneous Fluid, the heavier may be accounted as ſolid Bodies, immerſed in a Fluid ſpecifically lighter; and the lighter Parts, as ſuch Bodies in a Fluid ſpecifically heavier; as it may be demonſtrated, that the component Parts of all Fluids, ſeparately conſider'd, are ſolid. See FLUID, SOLID, &c.

This Liquor, therefore, called *Wort*, which is a Decoction of Malt, may be conſider'd as ſuch an heterogeneous Fluid, whoſe Parts cannot be interchang'd in their Poſitions, till each has obtained ſuch an Elevation, as correſponds to its proper Gravity: But leſt this alone ſhould fail of the Intention, by not being ſufficient to break thoſe Moleculæ and Vicidities, which entangle the ſpirituous Parts, and likewiſe to prevent their flying off at the Surface, ſome Portion of an already fermented Subſtance is mix'd with it.

This Subſtance, term'd *Barm*, or *Yeaſt*, conſiſts of a great Quantity of ſubtile ſpirituous Particles, wrapp'd up in ſuch as are viſcid. Now, when this is mix'd with ſuch a Liquor, it cannot but much contribute to that inteſtine Motion, which is occaſioned by the Intercourſe, and Occurſions of Particles of different Gravities; as the ſpirituous Particles will be continually ſtriving to get up to the Surface, and the viſcid ones continually retarding ſuch Aſcent, and preventing their Eſcape.

So that by theſe two concurring Cauſes the Particles extracted from the Grain, will by ſuch frequent Occurſions be ſo comminuted, as continually to increaſe the more ſubtile and ſpirituous Parts, until all that can be made ſo by Attrition, are ſet looſe from their former viſcid Confinements: and this appears by the Warmth of the Liquor, and the Froth drove to the Top; juſt at which Time, if it be thrown into the Still, it affords ſome Quantity of an high inflammable Spirit.

Moderate Warmth much haſtens this Proceſs, as it aſſiſts in opening the Viſcidities, in which ſome ſpirituous Parts may be entangled, and unbend the Spring of the included Air, which cannot but contribute to the Rarefaction and Comminution of the whole.

The viſcid Parts, which are raiſed to the Top, not only on account of their own Lightneſs, but by the continual Efforts and Occurſions of the Spirit to get uppermoſt, both ſhew, when the Ferment is at the higheſt, and prevent the finer Spirits making their Eſcape: For if this inteſtine Luctus be permitted to continue too long, a great Deal will get away, and the remaining grow flat, and vapid, and raiſe little beſides Phlegm in the Still.

The greateſt Uſe of this Theory in Medicine, will be in teaching, what Parts of the Materia Medica are moſt properly brought under this Procedure; and how ſuch inteſtine Motion, does in ſome Things, deſtroy their Virtues: For by ſome Medicines an Intention is aimed at, which is not to be procured, but by their being ſpirituous; whereas in others the very contrary Property is required: In ſuch Caſes therefore, when by any adventitious Cauſe thoſe Medicines get into a *Ferment*, they are deſtroyed, and ſhould not be adminiſtred.

FERNAMBOUC, *ſee* BRASIL *Wood*.

FERRUGINOUS, a Term, intimating a Thing to partake of the Nature of Iron; or to contain Particles of that Metal. See IRON.

It is particularly applied to certain mineral Springs, whoſe Water in their Paſſage along the Strata of the Earth meet with the Ore, or Marcaſſite of the Metal, part of which they waſh off, and carry with them; and thus become impregnated with the Principles thereof. Such are what we call *chalybeate* Waters. See CHALYBEAT, and MARS.

The Waters of *Tunbridge*, thoſe of Forges, and of the iron Spring at *Bourges*, are *ferruginous*.

FERRUGO, the Ruſt of Iron; or a kind of Calx, found on the Surface thereof. See IRON, and RUST.

FERRUM, ſee IRON.

FERTILITY, *Fruitfulneſs*, or the Quality, which denominates a thing *fertile*, or *prolific*. See FECUNDITY; ſee alſo BARRENNESS, DISEASE, &c.——

The *Egyptian* Nitre, or Natron, renders the Ground exceedingly *fertile*. *M. de la Chambre* obſerves, that Plants grow in ſuch Abundance in *Egypt*, that they would choak one another, if they were not hindred, by throwing Sand upon the Fields: Inſomuch that the *Egyptians* muſt take as much Pains to leſſen the Fatneſs of their Soil, as other Nations do to increaſe it. *Philoſ. Tranſact.* N° 160.

Nothing is more *fertile* than Wheat, which Faculty was given it by the Creator, in regard it was to be the principal Food of Men: Thus a ſingle Meaſure of that Grain, ſown in a proper Soil, will yield 150 Meaſures.—One of *Auguſtus*'s Procurators ſent him 400 Ears, all produced from one Seed. *Nero* had 340 Ears ſent him, from a ſingle Seed. *Plin. Nat. Hiſt. lib.* 18. *c.* 10. See SEMBRADOR.

FERULA, a little wooden Pallet, or Slice; reputed the Schoolmaſters Sceptre, wherewith he chaſtiſes the Boys, by ſtriking them on the Palm.

The Word is pure *Latin*, and has alſo been uſed to denote the Prelates Crozier, and Staff. Under the Eaſtern Empire, the *Ferula* was the Emperor's Sceptre, as is ſeen on divers Medals. It conſiſts of a long Stem, or Shank, and a flat, ſquare Head. The Uſe of the *Ferula* is very antient among the *Greeks*, who uſed to call their Princes ῥαβδηκόρους, q. d. *Ferula-bearers*.

The Word is ſuppoſed to be form'd of the Latin *ferire*, to *ſtrike*; or, perhaps, *Ferula* in this Senſe may be derived from the Name of a Plant, called *Ferula*, the Stem whereof was antiently uſed to correct Children withal; tho' others think, the Plant took its Name from the Inſtrument, or rather from its Uſe, *ferire*.

In the antient Eaſtern Church, *Ferula* ſignifies a Place ſeparated from the Church, wherein the Penitents, or Catechumens of the ſecond Order, called *Auſcultantes*, ἀκροώμενοι, were kept; as not being allowed to enter the Church. Whence the Name of the Place; the Perſons therein being under Penance, or Diſcipline: *Sub Ferula erant Eccleſiæ*.

FERULÆ, among Chirurgeons, called alſo *Splinters*; are little Chips, of different Matter, as Woods, Barks, Fir, Leather, Paper, &c. applied to Bones, that have been diſjointed, when they are ſet again.

The Bark of the Herb Sagapene, called in Latin *Ferula*, was antiently much uſed on this occaſion; whence the Name *Ferula* became common to all.

FESCENNINE, in Antiquity. *Feſcennine* Verſes were a kind of ſatyrical Verſes, full of open, wanton, and obſcene Expreſſions, ſung or rehears'd by the Company, at the ſolemnizing of a Marriage among the *Romans*. See SATYR.

The Word *Feſcenninus* is borrowed, according to *Menage*, from *Faſcinum*, a Charm; the People taking ſuch Songs to be proper to drive away Witches, or prevent their Effect. See LIGATURE.



FESSE, one of the nine Honourable Ordinaries of the Eſcutcheon, which it divides horizontally in the Middle, and ſeparates the Chief from the Point. It is ſuppoſed to repreſent a broad Girdle, or Belt of Honour, which Knights at Arms were antiently girded withal.

It poſſeſſes the Centre of the Eſcutcheon, and contains in Breadth one third Part thereof.

Thus, he beareth Azure, a *Feſſe* Or, by the Name of Eliott.

When the *Feſs* takes up leſs than its proper Breadth, it is called a *Bar*. See BAR.

FESSE-*Point*, is the exact Centre of the Eſcutcheon. See ESCUTCHEON.

It is thus called, as being the Point, through which the *Feſs* Line is drawn from the two Sides; and accordingly divides the Eſcutcheon into two equal Parts; when the Eſcutcheon is parted *Per-feſs*.

FESSE-*ways*, or *in Feſſe*, denotes Things born after the manner of a *Feſſe*, *i. e.* in a Line, or Range, a-croſs the Middle of the Shield, which the *French* call *en Feſſe*.

Party per FESSE, implies parted a-croſs the Middle of the Shield from Side to Side, through the *Feſſe* Point.

This the *French* expreſs by one Word, *Couppe*.

FESTI *Dies*, among the Antients, were *Feaſt*-Days, or Holidays. See FEAST.

Numa diſtinguiſh'd the Days of the Year into *Feſti*, *Profeſti*, and *Interciſi*.

The firſt were thoſe dedicated to the Gods: The ſecond, were thoſe allowed to Men, for the Management of their own Affairs; being thus called, according to *Feſtus*, *Quod procul ſint a religione Numinis divinæ*: The third were ſhared between the Gods and Men.

The *Feſti dies*, again, were divided, according to *Macrobius*, *Saturn. c.* 16. into Sacrifices, Epulæ, or Banquets; Ludi, or Games; and Feriæ. See FERIÆ, &c. And the Profeſti into *Faſti*, *Comitiales*, *Comperendini*, *Stati*, and *Præliares*. See FASTI, &c.

FESTINO, in Logick, one of the Moods of Syllogiſms. See MOOD.

In a Syllogiſm in *Feſtino*, the firſt Propoſition is an univerſal Negative; the ſecond, a particular Affirmative; and the third a particular Negative. See SYLLOGISM.

FESTIVAL, ſee FEAST, and FESTUM.

FESTOON, a *Garland*, or Ornament of Flowers, Fruits and Leaves intermix'd; antiently much uſed at the Gates of Temples, where Feaſts, or ſolemn Rejoycings were held; or at any other Places, where Marks of publick Joy and Gayety were deſired; as at Triumphal Arches, Tournaments, &c.

Feſtoons,

Feſtoons, or Garlands, were alſo put on the Heads of Victims in the antient heathen Sacrifices. St. *Paulinus*, in his Poem on St. *Felix*, does not forget the *Feſtoons* and Crowns of Flowers, plac'd at the Door of the Church, and on the Tomb of that Saint. See GARLAND.

The *Italians* have a ſort of Artificers, called *Feſtaroli*, whoſe Office is, to make *Feſtoons* and other Decorations for Feaſts.

The Word is *French*, *Feſton* form'd of the *Latin Feſtum*, Feaſt.

FESTOON, in Architecture, Sculpture, *&c.* A Decoration uſed by Architects, Painters, Joyners, *&c.* to enrich their reſpective Works.

It conſiſts of a String, or Collar of Flowers, Fruits, and Leaves tied together, ſomewhat biggeſt in the Middle, and ſuſpended by the two Extremes; from which, beſide the main Part which falls down in an Arch, two leſſer Parts hang perpendicularly.

This Ornament is made in Imitation of the *Feſtoons*, or long Cluſters of Flowers, plac'd by the Antients on the Doors of their Temples, *&c.* on feſtival Occaſions.

Feſtoons are now chiefly uſed in Freezes, and other vacant Places, required to be filled up, and adorn'd.

FESTUM, ſee FEAST.

In our Law Books, *Feſtum* is alſo frequently uſed for a general Court; in regard ſuch were antiently always kept on the Great Feſtivals of the Year. Thus, in our Chronicles we read, that in ſuch a Year the King kept his *Feſtum* at *Wincheſter*, &c. that is, he kept a Court there at that Time. *Rex apud Winton. maximum* Feſtum *& Convivium celebravit, tempore Natalis Domini, convocatis ibidem Principibus & Baronibus totius Regni.*

FET-*Lock*, in the Manage, the Hair that grows behind on a Horſes Foot: Hence, the Joint where it grows, is called the *Fetloch Joint.*

FETUS, ſee FOETUS.

FEUD, or FEUDE, FEODUM, is the ſame with *Fief*, or *Fee*. See FEE.

FEUD is alſo uſed in our antient Cuſtoms, or a capital Quarrel, or Enmity, called alſo *Feed*, or *Feeth.*

Feud, or *Feed*, called alſo *Feida*, and *Faida*, in the original *German* ſignifies *Guerram*, i. e. *Bellum*, War.

Lambart writes it *Feeth*, and ſaith, it ſignifies *Capitales inimicitias.*

In *Scotland*, and the North of *England*, *Feud* is particularly uſed for a Combination of Kindred, to revenge the Death of any of their Blood againſt the Killer and all his Race, or any other great Enemy.

FEUDAL, or FEODAL, of, or belonging to a *Feud*, or *Fee*. See FEE.

A *Feudal* Lord, in default of Fealty and Homage from his Vaſſal, may ſeize the Fruits of the Fee. A *Feudal* Matter: *Feudal* Juriſprudence: *Feudal* Seiſure.

A *Neapolitan* Lawyer, called *Caravita*, has not long ago publiſh'd a *Latin* Treatiſe of the *Feudal Law*, entitled, *Prælectiones Feodales.*

When once the Uſe of *Fees* was thoroughly eſtabliſh'd in *France*, they would need extend it much further: And almoſt all the great Offices of the Crown thus became *Feudal*; even the Courts of Juſtice were drawn in; in order to which they were annex'd to certain Lands, or Revenues.

The Deſign of theſe *Infeodations* was to render the Offices hereditary, after the manner of Fees, which were now become ſo. Thus the Offices of Grand Chamberlain, Grand Butler, *&c.* came to be held by hereditary Right.

FEUDATARY, a *Vaſſal*, or Perſon who holds of a Superior in *Fee*, i. e. on condition of yielding Fealty and Homage, or other Service. See FEE.

The Electors, Princes, and free Cities of *Germany* are all *Feudataries* of the Emperor. See EMPEROR, ELECTOR, *&c.*

Fa. Daniel obſerves, that *Charles* VII. forbad the Count *d'Armignac* to call himſelf in his Titles, *by the Grace of God Count d'Armignac*; ſuch Terms, which ſeem to exclude all Dependance, except on God, being an Innovation, prejudicial to the Right of the Soveraign, and which had never been allowed to any Duke, or Count, who was a *Feudatary* of any Crown. *Hiſtoire de France*, T. II. p. 1162.

FEUDBOTE, a Recompence, for engaging in a Feud, or Faction, and for the Damages conſequent therein; it having been the Cuſtom of antient times for all the Kindred to engage in their Kinſmens Quarrels, according to that of *Tacitus de Morib. Germanor. Suſcipere tam Inimicitias ſeu patris, ſeu propinqui quam amicitias neceſſe eſt.*

FEUDIST, a Lawyer, or Doctor learned, or much converſant about *Feuds*, or *Fees.*

Du Moulin is reckon'd a Great *Feudiſt.*

FEVER, *Febris*, in Medicine, a Diſeaſe, or rather Species, or Claſs of Diſeaſes; it being an Obſervation of *Sydenham*, that *Fevers* with their Appendages, make two Thirds of all the Diſeaſes of the Body. See DISEASE.

This Diſorder is very differently defined by Phyſicians, according to the different Views and Relations they conſider it in.

Sydenham defines it a ſtrenuous Endeavour or Effort of Nature, to throw off ſome morbific Matter, that greatly incommodes the Body.

Etmuller, with the ſame View, calls it a Motion, or Struggle of Nature, whereby with the Aſſiſtance of the Spirits, more or leſs alter'd, ſhe ſeeks to expell what is hurtful to the animal Oeconomy.

Quincy defines it an augmented Velocity of the Blood: Others, a Fermentation of the Blood, accompanied with a quick Pulſe, and exceſſive Heat.

The Cauſes of *Fevers* are innumerable; and the Diſeaſe even often ariſes in the ſoundeſt Bodies, where there was no previous morbific Apparatus; as Cacochymia, Plethora, *&c.* But merely from a Change of Air, Food, or other Alteration in the Non-naturals.

A *Fever*, *Boerhave* obſerves, is an inſeparable Companion of an Inflammation.

The Symptoms are many: Every *Fever* ariſing from any internal Cauſe, is attended with a quick Pulſe and unuſual Heat, at different Times, and in different Degrees. Where theſe are intenſe, the *Fever* is *acute*; where remiſs, *ſlow.* The Diſeaſe begins almoſt always with a Senſe of Chilneſs; and in its Progreſs is chiefly diſtinguiſh'd by the Velocity of the Pulſe: So that a too quick Contraction of the Heart, with an increaſed Reſiſtence or Impulſe againſt the Capillaries, furniſhes the proper Idea of a *Fever*; and he Health of the Patient is the ſcope Nature chiefly aims at in the Diſeaſe.

The other attendant Symptoms are uſually a laborious and diſturb'd Reſpiration; an uniform, high colour'd Urine; a Parchedneſs and Dryneſs of the Tongue, Mouth, *&c.* a Clammineſs of the Saliva; Thirſt; Wakefulneſs; and Nauſea againſt every thing but thin diluting Liquors.

From theſe Symptons, Dr. *Morgan*, our lateſt Writer on that Subject, lays it down as a Principle, that in every *Fever*, there is a *general Obſtruction, and Diminution of the glandular Secretions*; that is, a great Part of the Lymph, or Serum of the Blood, which ought to be continually drain'd off by the Glands, is, during the *Fever*, ſo retain'd in, and cloſely united to the Maſs, that it circulates together with it in the Veins and Arteries. This he endeavours to prove to be the State and Condition of the Blood in the Production of a *Fever*, by accounting for all the above mentioned Phænomena from it, as the juſt and adequate Effects of ſuch a Cauſe. How he does it, ſee in his *Philoſ. Princ. of Med.* p. 207, *&c.*

The general Indication in the Cure of *Fevers*, is, to reſtrain the Commotion of the Blood, with in the Bounds agreeable to the End, Nature had in raiſing it, *i. e.* neither to let it riſe too high, for fear of the Conſequence; nor yet keep it too low, for fear of fruſtrating the Endeavour of Nature. And hence the Rule and Meaſure of letting more, or leſs Blood, or none at all.

The Cure of *Fevers*, *Boerhave* ſummarily comprehends in correcting the ſharp, irritating febrile Matter, diſſolving the Lentor, and mitigating the Symptoms. If Nature ſeem to carry the *Fever* too high, it muſt be moderated by Abſtinence, thin Diet, drinking of Water, bleeding and cooling Clyſmas: If ſhe bring it on too ſlowly, it muſt be excited by Cardiacs, Aromaticks, Volatiles, *&c.* The Cauſe removed, the Symptoms ceaſe of courſe; and if they can be bore without much Danger of Life, it were beſt not to enter into any particular Cure thereof: If they be unſeaſonable, or too ſevere, they are each to be abated with the proper Remedies.

Sydenham recommends an Emetick in the Beginning of a *Fever*; or if it have been then omitted, in any other Stage thereof; eſpecially where there is a Propenſity to Vomiting: For want of this, a Diarrhæa frequently ſucceeds, which is exceedingly dangerous. After this, he uſes a Paregorick; and the following Days, if there be no Indication to repeat the Venæſection, nor any Diarrhæa, he preſcribes every other Day an Enema, till the twelfth Day, when Matters coming to a Criſis, he has Recourſe to hotter Medicines, in order to promote and accelerate it. He adds, that if the Diſeaſe proceed well, and the Fermentation be laudable, there is no occaſion for any Phyſick at all. About the 15th Day, if the Urine be found to ſeparate, and give a Sediment; and the Symptoms be abated, a Cathartick is uſually order'd, leſt the Sediment returning into the Blood again, occaſion a Relapſe. Nothing cools the Patient, and abates the *Fever* ſo much, as a Cathartick after Venæſection.

The more acute the *Fever*, the thinner, according to *Etmuller*, muſt be the Diet. 'Tis no matter, if the Patient ſhould faſt for ſeveral Days running; for never did feveriſh Perſons die of Hunger: Eating, always exaſperates the Diſeaſe. Vomitories, he allows the principal Place in the Cure of all *Fevers*; but, as a Patron of the hot Regimen,

men, aſſigns Sudorificks the ſecond. Spirit of Sal Ammoniack, or its Sal Volatile, he obſerves is an univerſal Febrifuge, and rarely fails: All ſugar'd Things are hurtful.

Hippocrates, in all *Fevers*, preſcribes Wine. Dr. *Hancock*, Water. See FEBRIFUGE.

So long as the Urine remains crude, that is, does not give a Sediment, the Patient's Caſe is very dubious: But when once the Coction commences, and the Urine ſeparates, the great Danger is over.

Among the Signs of Death, the ſame Author adds, there is none more certain, than a frequent blowing of the Noſe, without any Diſcharge of Matter. A ſtrong, equable Pulſe, with Deliria, Tremors, Twitches of the Tendons, and other Symptoms, fatal in Diſeaſes of the nervous kind, always preſage well in *Fevers:* On the contrary, a quick, weak, faltering Pulſe, howſoever favourable the other Symptons may ſeem, infallibly proclaim Death at the Door. *Morton.*

It appears, by Obſervation, that a frequent letting of Blood, renders Perſons more inclinable to *Fevers.*

There are various Kinds of *Fevers*, denominated and diſtinguiſh'd from the particular Cauſe that produce them; the Time they continue; their Acceſſes, or Returns; and their ſeveral Symptoms.

The moſt general and genuine Diviſion of *Fevers*, is into *Eſſential*, and *Symptomatick.*

An ESSENTIAL FEVER, is that whoſe primary Cauſe is in the Blood it ſelf; and which does not ariſe as an Effect, or Symptom from any other Diſeaſe in the Solids, or other Parts. This is, what we abſolutely and properly call a *Fever.*

A *Symptomatick* FEVER is that which ariſes as an Accident, or Symptom of ſome other antecedent Diſorder, as an *Inflammation*, *Phlegmon*, *Eryſipelas*, *Impoſtume*, ſmall *Pox*, *Pleuriſy*, &c. Whence it is peculiarly denominated *Inflammatory*, *Eryſipelatous*, *Purulent*, &c.

Eſſential Fevers are generally diſtinguiſhed into *Continued* and *Intermitting.* Others chuſe to divide them into *Diary*, *Intermitting*, *Continent*, and *Continued.*

A CONTINUED FEVER is that which gives the Patient no Reſpite, or Intermiſſion; but ſticks to him from its firſt Seizure, to its final Period. This is ſubdivided into *Putrid*, and *not putrid.*

A *Continued Fever not putrid*, is that wherein the Parts of the Blood are not ſo diſſolved and broke, as to give Room and Occaſion for the principal Parts thereof to be ſecreted: Or that, wherein there is not any Diſcharge of putrid, purulent Matter into the Blood. Of this there are two Kinds, the *Diary*, and *Synochus*; to which ſome add the *Hectick.*

A *Diary Fever* is that, which does not ordinarily hold beyond 24 Hours. 'Tis alſo called *Ephemera*, from the *Greek* ἡμέρα, Day. It is the gentleſt of all *Fevers:* Is frequently got by too much Exerciſe, or other external Accident. It is cured by Reſt alone, and keeping a-bed: If it remain for ſeveral Days, it is either called a continued *Ephemera*, or Simple *Synochus.*

A *Hectick Fever* is a ſlow, durable *Fever*, which extenuates and emaciates the Body by inſenſible degrees. It is thus called from the *Greek* ἕξις, Habitude, as being difficult to get rid off.

It has three Stages; the firſt, while it conſumes the Juices of the Body: The ſecond, when it exhauſts the fleſhy Subſtance of its Humidity: And the third, when it lays hold of, and deſtroys the Solids themſelves: In which laſt Stage it is reputed incurable. Its Effect is ſomewhat like that of a Flame; firſt conſuming the Oil of the Lamp; then the Moiſture of the Wick; and laſtly the Wick it ſelf. But this *Fever* is frequently conſider'd as of the *Symptomatick*, or ſecundary kind, ariſing in *Phthiſes*, &c. See HECTICK *Fever.*

A *Putrid*, or *continued Putrid Fever*, is that wherein the Texture of the Blood is render'd ſo lax, or even diſſolv'd, that its Parts or Principles ſeperating, ſome of the principal are ſecreted, and loſt. See BLOOD.

Or *Putrid Fevers* are frequently conſider'd as ſecundary ones, ariſing from the Diſcharge of putrid, purulent Matter from ſome morbid Part, as an Ulcer in the Lungs, &c.

Putrid Fevers are divided into *Simple*, and *Compound* or *Remitting.*

A *Simple continued putrid Fever*, or a *Continued Fever*, properly ſo called, by the *Greeks* called Συνοχὼ, is that which continues uniformly, from firſt to laſt, without any Fits or Periods of Exaſperation and Remiſſion of Heat, and the other Symptoms.

Willis divides the *Putrid Fever* into four Stadia, or Stages. The *Beginning*, which is attended with a Chillneſs, Shivering, Wearineſs, Thirſt, Wakefulneſs, Pain in the Head and Loins, Nauſea, and Vomiting: The *Increaſe*, wherein the former Symptoms are heighten'd, with the Addition of Deliria, convulſive Motions, Foulneſs of the Mouth, high turbid Urine, without any laudable Sediment, or Hypoſtaſis; the *State*, which contains the Criſis, which in this Diſeaſe is much what the Paroxyſm is in Intermitters: For as that returns at certain Hours, ſo do the critical Motions in continued *Fevers* happen on the fourth, fifth, ſixth, or ſeventh Day. See CRISIS. The laſt Stage is the *Declenſion*, which ends either in Recovery, or Death.

Theſe *Fevers* are divided into *Burning*, and *Slow.*

Ardent, or *Burning Fever*, called by the *Greeks* καυσὼ, is a very acute *Fever*, attended with a vehement Heat, intolerable Thirſt, a dry Cough, Delirium, and other violent Symptoms.

It frequently kills on the third, and fourth Day; rarely exceeds the ſeventh.

It often goes off in a Hemorrhage, on the third, or fourth Day; which, if it prove too ſparing, is deadly. Sometimes it goes by Stool, Vomiting, &c. and ſometimes ends in a Peripneumony.

To the Claſs of *Burning Fevers* ure reducible, the *Liperia*, *Aſſodes*, *Elodes*, &c.

The *Fever Liperia* is a burning *Fever*, wherein the Heat is very intenſe within ſide, and at the ſame time the external Parts cold.

The *Aſſodes* is a burning *Fever*, attended with great Inquietudes, Nauſeas, Vomitings, &c.

The *Elodes* is a *Fever*, wherein the Patient ſweats continually.

The *Syncopal Fever* is that attended with frequent Swoonings.

The *Epeal Fever* is that wherein both Heat and Cold are felt in the ſame Part at the ſame Time.

Slow Fevers are gentle, but durable ones, which conſume the Patients by degrees.

They uſually ariſe from Diſorders in the Lympha, or Pituita; whence *Sylvius* calls them *Lymphatick Fevers.*

The principal of theſe are the Catarrhal, attended with a Catarrh, Cough, Hoarſeneſs, &c. And the *Scorbutick Fever*, into which acute *Fevers*, and ſometimes Intermitters degenerate. To this Claſs are reducible,

Colliquative Fevers, wherein the whole Body is conſumed and emaciated in no long Time; the ſolid Parts, with the Fat, &c. melted down, and carried off by a Diarrhœa, Sweat, Urine, &c. See COLLIQUATION.

A REMITTING FEVER, called alſo a *Continent*, Συνεχὴς, and a *compound continued Fever*, is that which continues ſome Time, without any gradual Increaſe of Heat; yet is liable to alternate Fits of Remiſſion and Aggravation; either ſtated and periodical, or irregular.

Of this there are divers Kinds, denominated from the Periods of returning; as the *Remitting*, *Continued*, *Quotidian*, the *Continued Tertian*, *Continued Quartan*, &c. which are only a continued *Fever*, whoſe Acceſſes or ſeverer Fits return every Day, or any other Day; or every third Day; or every fourth Day.

Some enumerate divers other more complicated continued *Fevers*; as the *double* or *triple*, *Quotidian*, which has two or three Paroxyſms every Day: *Double*, or *triple Tertian*, or *Quartan*, which have two or three every third or fourth Day: The *Semi-tertian*, by the *Greeks* called ἡμιτριτὰιὸ, which conſiſts of a *Continued*, and two intermitting *Fevers* of different Kinds, *viz.* a Quotidian, and Tertian. The Patient, beſide a Continued *Fever*, has an extraordinary Fit every Day; and every other Day two.——

Others divide the *Remitting*, Συνεχὴς, *Continent*, or *Compound Continued Fever*, into *Simple*, and *Spurious.*

The *Simple Remitter* returns regularly, and is only diſtinguiſh'd from an Intermitter, in that the feveriſh Heat in the Intervals of this latter is never quite extinguiſh'd; and that the Paroxyſms don't begin with ſo much Chillneſs and Horror; and go off in profuſe Sweats.

The *Spurious Remitter* is attended with grievous Symptoms in the nervous Kind, reſembling thoſe of the Rheumatiſm, Colick, Pleuriſy, and other inflammatory and ſpaſmodick Diſeaſes; beſide immoderate Excretions, Vomitings, Diarrhœas, &c. Whence its Returns are uncertain, and variable.

The *Simple* rarely, if ever, kills; the *Spurious*, frequently. Sometimes it degenerates into a malignant Συνὸχὼ.

The firſt is cured with the Cortex Peruv. almoſt as infallibly an Intermitter; the febrile Ferment being much the ſame in both: And the ſame Medicine is found almoſt a ſure, tho' not ſo ſpeedy a Remedy of the Spurious, if properly applied.

An INTERMITTING FEVER, or *Ague*, is that which ceaſes, and returns again alternately, at ſtated Periods.

In this kind, Cold, and Heat, Shivering, and Sweating ſucceed each other.

The Paroxyſms are attended with Sickneſs, Nauſea's, Vomitings, Headach, Pain in the Back and Loins, &c. The Paroxyſms are acute, but the Diſeaſe uſually more or leſs chronical.

No body was ever killed of an intermitting *Fever*, except in the firſt Stage of the Paroxyſm, during the Shiver-

ing, cauſed by the Oppreſſion of the Spirits. When the Diſeaſe becomes of a very old ſtanding, it ſometimes degenerates into other very fatal ones.

As to the Cure, 'tis found by abundant Obſervations, that neither Bleeding, nor Emeticks, nor Catharticks, nor any other Remedy, adminiſter'd during the Fit, avail any thing. A juſt Doſe of *Vinum Benedictum*, three Hours before the Paroxyſm, *Morton* aſſures us, has often cured it: *Antimonium Diaphoreticum*, a little before the Paroxyſm, has the like Effect: And Salt of Wormwood is commended on the ſame Occaſion. *Dolæus* mentions *Lapis Lazuli* taken in Spirit of Wine before the Fit, is admirable.

And ſeveral Bitters, as Carduus Benedictus, Gentian Root, Camomile Flowers, Pulvis Febrifugus, &c. were much valued before the Invention of the Cortex Peruv. But that Bark has almoſt thrown them all out of uſe; being by the univerſal Conſent of all Phyſicians allowed a Pianacea, or Specifick for all intermitting *Fevers*, on all Seaſons, Ages, and Conſtitutions. See CORTEX *Peruvianus*; ſee alſo FEBRIFUGE.

Intermitting *Fevers* are of divers kinds, as the

Quotidian Fever, where the Paroxyſm returns every Day.

Double Quotidian, which returns twice in twenty four Hours.

Tertian Fever, which only returns every other Day; which again is, either Legitimate, or Spurious.

The *Legitimate Tertian* only holds twelve Hours, and is followed by an abſolute Intermiſſion.

The *Spurious Tertian* exceeds twelve Hours, and ſometimes holds 18, or 20.

The *Double Tertian* is that which returns twice every other Day. The Word *Double Tertian* is alſo uſed, where the *Fever* returns every Day, like a Quotidian; only at different times of the Day; the third Fit anſwering to the Time of the firſt; the fourth to that of the ſecond, &c.

The *Quartan Fever* is that which only returns every fourth Day; leaving two Days Intermiſſion between every two Fits.

The *Double Quartan* is that which has two Fits every fourth Day. The ſame Name is given to a *Fever*, which returns two Days ſucceſſively; only leaving one Day's Intermiſſion.

Triple Quartan Fever is that which has three Fits every fourth Day: Or that which returns every day like a Quotidian, only at different Seaſons of the Day; the fourth Fit anſwering to the Time of the firſt; the fifth to the ſecond, &c.

There are alſo intermitting *Fevers*, which only return every *fifth* Day, or every *ſixth*, or every *ſeventh*, and at other Intervals.

Laſtly, there are ſome extraordinary Species of *Fevers*, not reducible to any of the forementioned Claſſes; as *Malignant*, *Eruptive*, and *Peſtilential Fevers*.

Malignant FEVERS are thoſe, wherein the uſual, regular Symptoms do not appear (Nature being oppreſs'd with the Malignity of the febrile Matter) but other foreign Symptoms ariſe; as a Pain about the Stomach, and Præcordia; a livid Complexion, with the Face much disfigur'd, &c. Sometimes Efflorescences on the Skin, &c.

Some Authors, from microſcopical Obſervations affirm, that in all malignant *Fevers* the Blood is ſo corrupted, that Swarms of little Worms are generated therein, which occaſion moſt of the Symptoms.

In all malignant *Fevers* the Blood is too fluid. Bloodletting has here no Place: Vomitories do well at firſt; afterwards Sudorificks and Alexipharmachicks: Bliſters are commended in the Progreſs of the Diſeaſe.

Eruptive FEVERS are thoſe, which beſide the Symptoms common to other *Fevers*, have their Criſes attended with cutaneous Eruptions. Such are thoſe of the ſmall Pox, Meazles, Petechiæ, the Purple or Scarlet *Fever*, and Miliary *Fever*: Their other Symptoms are, a grievous Oppreſſion of the Breaſt; laborious, ſhort Breadth, obſtinate Waking; Spaſms, ſoar Throat, Cough, &c. See PETECHIÆ, SMALL-POX, MEAZLES, and MILIARY *Fever*.

Peſtilential FEVERS, are acute, contageous, and mortal Diſeaſes. Some will have the *Fever* to be the Diſeaſe or Plague it ſelf: Others only account it a Symptom of the Plague. See PLEAGUE.

Petechial FEVER, is a malignant *Fever*, wherein, beſide the other Symptoms, on the fourth, or more frequently the ſeventh Day, *Petechiæ*, or red Spots, like Fleabites, appear, chiefly on the Breaſt, Shoulders, and Abdomen. The Spots afterwards turn paler, then yellow, and ſo diſappear. When they grow livid, or black, they uſually prove fatal.

This *Fever* is contagious, and often Epidemical. It is treated much as thoſe juſt mentioned.

FEUILLANS, an Order of Religious, cloathed in White, and going bare-foot; who live under the ſtrict Obſervance of the Rule of St. *Bernard*. See BERNARDINES.

The Name was occaſioned by a Reform of the Order of *Bernardines*, firſt made in the Abby of *Feuillans*, a Village in *France*, five Leagues diſtant from *Tholouſe*, by the Sieur *Barriere*, who was Abbot thereof in 1589.

It was approved of by Pope *Sixtus* V. And the Popes *Clement* VIII. and *Paul* V. granted it its particular Superiors. King *Henry* II. founded a Convent of *Feuillans* in the *Fauxbourg*, St. *Honorius* at *Paris*.

There are alſo Monaſteries of Nuns, who follow the ſame Reform, called *Feuillantines*.

FEUILLE *de Scie*, in Heraldry, expreſſes that an Ordinary, as a Feſſe, Pale, or the like, is indented only on one Side; in regard it then looks like a *Saw*, as the *French* Phraſe imports. See INDENTED.

FEWEL, or FUEL, in Philoſophy, the *Pabulum* of Fire, or whatever receives, and retains Fire, and is conſumed, or render'd inſenſible thereby. See FIRE.

Pure Fire, if left to it ſelf, would diſperſe, and diſappear: To preſerve it, it is neceſſary there be ſome *Fuel*, to ſuſtain, and keep it together.

The only proper *Fuel*, known in all Nature, is Oil, commonly called Sulphur: And all Bodies, whether vegetable, foſſil, or animal, are only inflammable, as they contain Oil in them.

Oil feeds and ſuſtains Fire by virtue of its ramoſe, tenacious Particles, which are diſpoſed to be put into a moſt vehement, rotatory Motion, before they will let each other go. But, by this rotatory Motion the Fire at length breaks and comminutes the ramoſe Particles of the *Fuel*; till, ceaſing to cohere, they are no longer able to ſuſtain the Fire.

In the popular Senſe of the Word, *Fewel* is any Body, which contains this Pabulum, or Oil, in ſuch Quantity, as to fit them for culinary Uſes.

Such 1°, Are dry, or green Vegetables; eſpecially thoſe abounding in Oil; as the roſinous, and balſamick Woods.

2°, Foſſil Coals, whether vegetable, or animal; as being little elſe, but the oily Part of the Vegetable, or animal, purged of the Salt, Water, &c. ſo that the blacker they are, the better.

3°, Foſſil, and bituminous Earths, as Turf, and Peat, which are a fatty Earth, dug out of the Ground.

4°, All mineral Sulphur, whether pure, or mix'd with Earth, Stone, &c.

5°, The Fat and Dungs of Animals dried.

And 6°, The Productions of Chymiſtry, which are either Coals, or Oil, or oily Bodies; as, inflammable Spirits, produced by Fermentation, Putrifaction, &c. See COAL, TURF, &c.

FIBRA *Auris*, ſee EAR.

FIBRE, in Anatomy, a ſimilar Part of the animal Body, called alſo *Filament*; and when very ſmall, *Fibrilla*, or *Capillament*. See CAPILLAMENT.

A *Fibre* is a long, ſlender Thread; which being variouſly interwove, or wound up, forms the various ſolid Parts of an animal Body; ſo that *Fibres* are the Stamen, or Matter of the Animal. See SOLID, and STAMEN.

Anatomiſts uſually diſtinguiſh four kinds of *Fibres*, viz. *Carnous*, or *Fleſhy*; *Nervous*; *Tendinous*; and *Oſſeous*, or *Bony*; of one or other of which all the other Parts conſiſt. See FLESH, NERVE, TENDON, BONE, MUSCLE, and SENSATION.

Fibres again are divided, with reſpect to their Situation, into *Direct* or *Longitudinal*, which proceed in right Lines; *Tranſverſe*, which cut, or go a-croſs the former, at right Angles: And *Oblique*, which interſect, or croſs them at unequal Angles.——

Some Anatomiſts reduce the animal *Fibres* to two Species, viz. *Muſcular*, or *Motive*; and *Nervous*, or *Senſitive*.

The *Nervous* FIBRES are the minute Threads, whereof the Nerves are compoſed. They ariſe from the Medulla of the Brain; as that does from the Cortex; and that again from the laſt, fineſt Ramifications of the carotid and vertebral Arteries: So it is probable, theſe Nerves are only Continuations of thoſe Arteries. See BRAIN.

From every Point of the Cortex there ariſes a fine, medullary *Fibrilla*, which uniting in their Progreſs form the Medulla of the Cerebrum, Cerebellum, and Oblongata; and *Fibrillæ* ariſing from each Point of theſe again, form the ſpinal Marrow. See MEDULLA.

From the medullary Subſtance of all theſe Parts ariſe Nerves; which are Combinations or Aſſemblages of a Number of theſe minute medullary *Fibres* incloſed, after they are got out of the Cranium in a common Membrane, or Coat from the Pia mater: And 'tis probable, that to each Nerve, there concur *Fibres* from all three; as alſo that theſe *Fibres* are ſo many fine hollow Tubuli or Canals, for the Conveyance of a fine Juice or Spirit from the Brain throughout the Body. See NERVE.

The *Muſcular* FIBRES are thoſe whereof the Muſcles, or fleſhy Part the Body are compoſed. Every Muſcle is diviſible into other leſs ones; and theſe into others, ſtill leſs, beyond all Imagination. The laſt and ſmalleſt are the muſcular

muſcular *Fibres*; which whether or no they be veſicular, is ſome queſtion.

Now, there are Nerves propagated to every Muſcle, and diſtributed through the Body thereof; ſo as there is no aſſignable Point wherein there is not ſomewhat of a Nerve. Add, that all the Nerves here diſappear; and that in other Parts of the Body, the Extremities of the Nerves are expanded into Membranes. 'Tis therefore probable, the muſcular *Fibres* are only Continuations of the nervous ones. See MUSCLE.

The animal *Fibres* have different Properties; ſome are ſoft, flexible, and a little elaſtick: And theſe are either hollow, like ſmall Pipes; or ſpongious, and full of little Cells, as the nervous and fleſhy *Fibres* above mentioned. See FLESH.

Others are more ſolid, flexible, and endowed with a ſtrong Elaſticity, or Spring; as the membranous and cartilaginous *Fibres*. See MEMBRANE, *&c.*

A third ſort are hard, and inflexible, as the *Fibres* of the Bones. See BONE.

Now of all theſe, again, ſome are very ſenſible, and others deſtitute of all Senſe: Some ſo very ſmall, as not to be eaſily perceived; and others on the contrary, ſo big, as to be plainly ſeen; and moſt of them, when examin'd with a Microſcope, appear to be compoſed of ſtill ſmaller *Fibres*. Theſe *Fibres* firſt conſtitute the Subſtance of the Bones, Cartilages, Ligaments, Membranes, Nerves, Veins, Arteries, and Muſcles. And again, by the various Texture, and different Combination of ſome, or all of theſe Parts, the more compound Organs are framed; ſuch as the *Lungs*, *Stomach*, *Liver*, *Legs*, and *Arms*, the Sum of all which make up the Body. See BODY.

The great Property of *Fibres*, is *Elaſticity*, or a Power of Contraction, after the diſtractile Force is removed; upon which the Knowledge of the animal Mechaniſm greatly depends. See ELASTICITY.

To underſtand this, it may be obſerved, that any Membrane or Veſſel may be divided into very ſmall *Fibres*, or Threads; and that theſe Threads may be drawn out into a very conſiderable Length, without breaking; and that when ſuch external Force is removed, they will again reſtore themſelves to their proper Dimenſions. It is farther alſo manifeſt, that this Property is preſerved to them by a convenient Moiſture; becauſe if one of thoſe Threads be dried, it immediately looſes it; ſo that upon the Application of any Force to ſtretch it, it will break; as alſo will its lying ſoked in Liquor too much, render it flaccid, and deſtroy all its Power of Reſtitution, when diſtended.

Now ſome Hints of that Configuration of Parts, upon which this Property depends, may be had from the Contrivance and Properties of a Syringe; with the Reaſon, why it is ſo difficult to draw back the Embolus, when the Pipe is ſtopp'd; and the Neceſſity of any Liquors following it, wherein the Pipe is immerſed.

All that is neceſſary hereto, is, that the Embolus be ſo exactly adapted to the inner Surface of the Barrel, as to prevent any Air paſſing between them, when it is drawn up: It matters not what Figure the Barrel is of, ſo that the Embolus is well fitted to it. A Caſe of Syringes therefore might be contrived, wherein every Barrel may alſo ſerve as an Embolus to its exterior, which immediately includes it.

In this manner it is not difficult to imagine a continued Series of Particles, ſo put together, that they may be moved, and drawn upon one another, without ſuffering the Air immediately to enter into the Interſtices made by their Diſtraction; whereupon as ſoon as that Force, which drew them, is removed, they will, for the very ſame Reaſon as the Embolus of a Syringe, ruſh up again into their former Contacts.

As ſuppoſe *A. B.* (Fig. 1.) two Particles touching one anothe in *e. f.* and *C. D.* two others, covering the oppoſite Sides of their Contacts. It is alſo to be ſuppoſed, that on the other Sides they are covered with other Particles in the ſame manner, as by *C. D.* ſo that the Places of their Contacts are on all Sides covered from the Air, or the Inſinuation of any fluid Body.

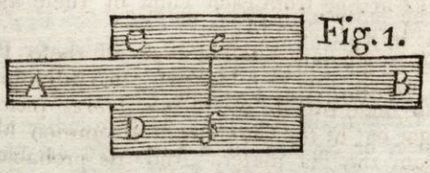


Fig. 1.

If now *A. B.* by an external Force, greater than that of their Coheſion be drawn from each other, as far as *G. I.* and *H. K.* (in Fig. 2.) as ſoon as that Force is removed, they will again run into their former Contacts in *e. f.* (Fig. 1.) that is, if they are not ſo far as to bring their tranſverſe Surfaces to coincide with *C.* and *D.* for then the Air, or circum-ambient Fluid will interpoſe and prevent their Reunion; ſo that by this Contrivance, ſo much of *A.* and *B.* as is incloſed by other ſurrounding Particles, is as the Embolus of a Syringe, and the Particle ſurrounding them as its Barrel. And therefore when *A.* and *B.* are diſtracted from their Contacts in *e. f.* it will be with ſome Difficulty; and when the diſtracting Force is taken away, they will again run up in their former Contacts; juſt as the Embolus of a Syringe, and for the ſame reaſon. See SYRINGE.



Fig. 2.

It is not rigidly contended that this muſt exactly be the Contexture of a *Fibre*; but only ſome thing like this; whereby the Interſtices of the interior Orders are covered by the exterior in ſuch a manner, that when the Thread is diſtended, that is, when its conſtituent Parts are drawn from their tranſverſe Contacts, neither the Air, nor any other external Fluid can get between them, ſo as to hinder their Re-union, as ſoon as ſuch Force is withdrawn; that is, if their Diſtraction, as was before ſaid, be not ſo far as to bring their tranſverſe Surfaces to a Co-incidence with one another; for then the circum-ambient Fluid will interpoſe, that is, the Thread will be broke.

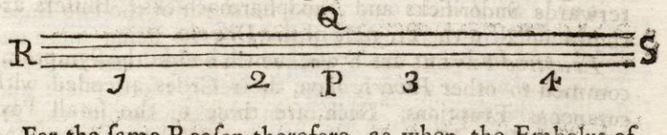
But beſides this peculiar Arrangement of a determinate Set of Particles to compoſe the main Suſtance of an animal *Fibre*, endowed with the Properties above-mentioned; it ſeems not at all unreaſonable to conjecture, that into their Compoſition alſo enters a common Capſula, or Covering, which aſſiſts in the wrapping up, and holding together thoſe Faſciculi, or Series of Particles already deſcribed; not much unlike the Perioſtium of the Bones; the Contexture of which covering, reſembling that of a Net, cannot any ways hinder, either the tranſverſe, or longitudinal Diſtractions of the other Parts.

Suppoſing this, then, the Contexture of a *Fibre*, it will be neceſſary to conſider, what farther Requiſites are needful to put them into that State, which they are in, in a living Body; to ſhew how they are maintained in continual Motion; and what are the Conſequences of it.

And 1°, it is neceſſary to take notice, that all the *Fibres* in a living Body are in a State of Diſtention; that is, they are drawn out into a greater Length than they would be in, if ſeparated from any Part, and taken out of the Body; which is demonſtrable upon any Solutio Continui, as in the tranſverſe Diviſion of a Nerve, or Artery; for immediately the divided Parts run up, and leave a great Diſtance between them; and the Fluids contained between them, upon ſuch Contraction are ſqueezed out. This alſo ſhews, that their natural Diſtractions are owing to ſome Fluids being propelled into the Veſſels which they compoſe, with a Force greater than their Endeavours of Reſtitution, ſo far as to obtain a cloſe Contact of all their tranſverſe Surfaces; but yet leſs than that which is neceſſary to diſtract them, ſo as to bring them into a Coincidence; for then the Veſſels would break.

2°, This State of Diſtraction muſt neceſſarily leave Vacuola between all the tranſverſe Surfaces; as betwen *G. I.* and *H. K.* (in Fig. 2.) which may be repreſented by the ſeveral Series of Particles (Fig. 3.) which Vacuola will continue as long, as the longitudinal Surfaces of its component Parts continue to cloſe to one another, as to prevent the Inſinuation of any foreign Matter, how ſubtile ſoever between them.

Fig. 3.



For the ſame Reaſon therefore, as when the Embolus of a Syringe is drawn, and the Pipe is ſtopp'd, there muſt be continually a *Niſus reſtituendi*, or an endeavour of Contraction.

There is alſo this farther Neceſſity of their being continued in a State of Diſtraction, becauſe if they were cloſely to touch one another in all Parts, they could not be put into, and continue in thoſe undulatory Motions, which they are always in, in a living Body, without being altered in their Figures and Contextures.

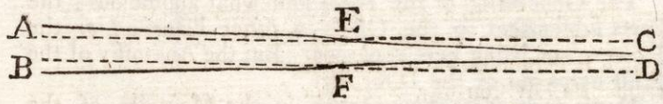
3°. It being manifeſt, that all animal *Fibres* are continued by the perpetual ſucceſſive Impulſe of the Fluids, in ſuch undulatory Motions; beſides this Neceſſity of their Diſtraction, they muſt alſo be continually moiſten'd with ſome convenient Fluid; becauſe otherwiſe their continual Attritions againſt one another, would wear them out, as well as render it difficult to move them: The Fluid alſo for this purpoſe, muſt be very ſoft and ſubtile, becauſe otherwiſe it cannot inſinuate into all the Interſtices of the *Fibres*, without ſo far ſeparating their Parts, as is inconſiſtent with that Contexture and Mechaniſm here laid down.

Upon this View there ariſes a very natural Explication of ſeveral Terms, much uſed by mechanical Writers; ſuch as *Diſtraction*, *Contraction*, *Vibration*, *Undulation*, *Tonick Motion*, *Concuſſion*, *Relaxation*, *Corrugation*, and *Elaſticity* of the Solids; all which are but different ways of expreſſing the various Modifications and Diſpoſitions of thoſe Machinulæ with which all the *Fibres* are compoſed.

Thus much being granted of the Contexture of a *Fibre*, and the Requiſites for its Office, it is to be conſider'd, how it comes firſt to be ſet in Motion, and by what Mechaniſm it is afterwards carried on. Suppoſe then the *Fibre* (Fig. 3.) in ſuch a State of Diſtraction, as before mentioned; it is certain by *Req.* 2. that in all its Parts there is a *Niſus reſtituendi*: Where, then, any external Impulſe is made againſt it from *R* to *S*, ſucceſſively thruſting it from *P* towards *Q*, it is certain that againſt 1 for inſtance, the Thread will be more diſtracted, than in any other Part; and thereby will there be a greater Endeavour of Reſtitution. And therefore the Impulſe paſſing on towards S, all the conſtituent Machinulæ, 1, 2, 3, 4, will ſucceſſively move after one another.

To make this Matter ſtill more plain, let a Portion of an Artery be repreſented by Fig. 4. through which the Blood is continually propelled in a Direction parallel to its Axis: Nothing is more certain, than that if it were not for the Reſiſtance of the Sides of the Artery at *E F*, the Blood ſetting out at *A*, *B*, would go on by the prick'd Lines *C*, *D*; and therefore it cannot but ſtrike againſt the Sides of the Artery at *E*, *F*, and diſtract them there more, than any where elſe; whereby their Endeavours of Reſtitution will be there the greateſt: And therefore, when the Impulſe of the Blood has raiſed them to a certain Meaſure, wherein their Endeavours of Reſtitution will exceed the Impulſe which raiſed or diſtracted them, their contractile Powers will draw them again into the ſame Dimenſions; and conſequently the Blood will be thruſt forward into the next Section of the Artery, and ſo on ſucceſſively from one to another, thro' the whole Courſe of its Circulation; the Contraction of one Section of an Artery being the true Cauſe of the Blood's Impulſe againſt, and raiſing the next. See CIRCULATION.

Fig. 4.



FIBRE is alſo uſed in Phyſicks, for long, fine Parts, or Threads, whereof other natural Bodies are compoſed, and which prevent their being friable, or brittle.

Trees, Plants, and Fruits have their *Fibres*, or Capillaments; which are Modifications of their woody Subſtance, penetrating and terminating in the Parenchyma, or Pith. See PLANT, WOOD, &c.

In the common Uſe, *Fibre* is only applied to the ſlender, capillary Roots of Plants.

Kepler even gives *Fibres* to the Stars; and explains ſeveral of their Motions from the Situation of their *Fibres*.

FIBRILLA, a little Fibre, or Capillament. The Word is a Diminutive of *Fibra*. Each Fibre is diviſible into a number of leſſer Threads, called *Fibrillæ*. See FIBRÆ.

FIBULA, in Anatomy, one of the Bones of the Leg, called alſo *Perone*, *Sura*, and *Focile minus*. See BONE, LEG, FOCIL, &c.

The *Fibula* is the outer, and ſlenderer of the two Bones of the Leg; and yet, notwithſtanding its being more expoſed, and its being much weaker than the inner Bone, or Tibia, 'tis not ſo often broken, as being more pliant and flexible; ſo that the Tibia often breaks, leaving the *Fibula* entire.

The *Fibula* is join'd or articulated with the Tibia, at both Ends, by a kind of cloſe Arthrodia.

It is divided into three Parts; the *upper*, which is a round Head, which terminates a little below the Knee, and receives a lateral Protuberance of the Tibia into a ſmall Sinus; by which the Articulation of this Part is effected: The *Middle* is very ſlender, long, and triangular, like the Tibia, but ſomewhat more irregular. The *lower* Part is receiv'd into a Sinus of the Tibia, and then ſhoots out into a large Proceſs, called the Malleolus internus, or outer Ankle: It is a little hollow on the Inſide, to give Liberty for the Aſtragalus to move; and a little Convex on the Out-ſide, that it may have the more Strength, to retain the Aſtragalus.

The Tibia and *Fibula* only touch at the two Extremes, like the Radius, and Ulna: The Space between them is filled up with a ſtrong membranous Ligament, which ties them together, and ſtrengthens the Articulation. See TIBIA.

FIBULA, *Button*, in Surgery, an Inſtrument in uſe among the Antients, for the cloſing of gaping Wounds.

Celſus ſpeaks of the *Fibula*, as to be uſed when the Wound was ſo patent as not eaſily to admit of being ſewed.

Authors are ſomewhat at a loſs as to the Form of the *Fibulæ*. *Guido* ſays, they were made of iron Circles, or Semi-circles, bent backwards both ways; the Hooks whereof being faſten'd on both Sides to the Wound, anſwer'd exactly to each other: But, as this muſt have been an inſupportable Pain to the Patient, this Deſcription is generally ſet aſide.

Fallopius, *Sanctorius*, and others, take the *Fibula* to have been, in reality, no more than the ſewing up of the Wound with a Needle and Thread, uſed at this Day. See SUTURE.

FIBULÆUS, in Anatomy, a Muſcle of the Leg, call'd alſo *Peroneus primus*. See PERONEUS.

FICUS, a kind of Wart, or Excreſcence, yielding a very ſtinking Sanies, ariſing ſometimes on Fractures of the Skull, but more uſually about the Fundament, and Pudenda.

The Phyſicians more uſually call it *Sarcoma*, of σάρξ, Fleſh. See SARCOMA.

FICHANT, *Figens*, a *French* Term, uſed in Fortification: Thus, a Flank *Fichant*, or a Line of Defence *Fichant*; is the Place, whence the Shots are made, that not only raſe the oppoſite Face to be defended, but alſo enter within it.

The Word is form'd of *ficher*, to ſtick a Thing in.

FICHE, in Heraldry; ſee FITCHEE.

FICTION, ſee FABLE, FALLACY, &c.

FIDDLE, ſee VIOLIN.

FIDE-*Juſſor*, in the Civil Law, is the ſame with Repromiſſor, Adpromiſſor, Sponſor, Prædes, and Vades; that is, a *Surety*, or one that obliges himſelf in the ſame Contract with a Principal, for the greater Security of the Creditor, or Stipulator.

FIDEI-*Commiſſum*, in the *Roman* Law, the appointing of an Heir, or Bequeathing of a Legacy to a Perſon, on this View or Condition, that he ſurrender the Inheritance or Legacy to another Perſon, for whom the ſame is originally meant: Or, it is an Inheritance left in truſt with any one, for the uſe of another. See TRUSTEE.

Fidei-Commiſſa were much uſed among the *Romans*. In the *French* Law the thing is become odious; as being, ordinarily, no other than an Expedient in favour of Perſons to whom the Laws forbad any thing to be given. In order to this, ſome Friend was choſe, whom they truſted to make legal Heir, under a tacit Agreement, to deliver the Succeſſion to the Perſon incapacitated by Law: At length, the ſame Expedient came to be uſed with regard to Perſons capable of inheriting; to whom the Teſtator for particular Reaſons did not care to leave the Succeſſion directly.

As it happen'd, that the *Fidei-Commiſſioners* did not always faithfully reſtore, what was truſted to them, *Auguſtus* took proper Meaſures to oblige them thereto: To this End a Pretor was erected, whoſe Buſineſs was reſtrain'd to the ſingle Matter of *Fidei-Commiſſions*. Juſt. Lib. II. T. 23.

FIDEI-*Commiſſioner*, a Truſtee, or Heir intruſted with Charge, to reſtore the Inheritance or Succeſſion to another Perſon.

A *Fidei*-commiſſionary Heir had a Right to reſerve the *Trebellianick* Fourth to himſelf: as a Teſtament was null without the Inſtitution of an Heir; and it frequently happening, that the *Fidei-Commiſſioner* refuſed to accept the Truſt, upon which the Teſtament fell to the Ground; To engage ſome body to accept it out of the Conſideration of Advantage, the *Pegaſian* Senatus-Conſultum decreed, that the *Fidei-Commiſſioner* ſhould be at Liberty to retain a Fourth of the Fidei-commiſſum.

By the *Trebellian* Senatus-Conſultum, a farther Regulation was made. And in courſe of Time, the two Senatus-Conſulta, the *Pegaſian* and *Trebellian*, came to be confounded under the Name of the *Trebellian*.

FIDEI-*Juſſio*, in the Civil Law, a Security, or Guaranty. See GUARANTY.

FIDICINALES, in Anatomy, a Name given to ſeveral Muſcles of the Fingers, called alſo *Lumbricales*. See LUMBRICALIS *Manus*.

FIEF, the ſame with *Feud*, or *Fee*. See FEE.

FIELD, in Agriculture, a piece of Land, or Ground incloſed, and fit for Tillage, to bear Hay, Grain, &c. See TILLAGE, PLOUGHING, FALLOW, &c.

FIELD, *Campus*, in Antiquity, is frequently uſed for a publick Place, or Square in a City, &c. as the *Field* of *Mars*, *Campus Martius*; and *Field* of *Flora*, *Campus Floræ*, in *Rome*; the *Field* of *May*, *Campus Maji*, among our Anceſtors, &c. See CAMPUS.

The FIELD *of Mars* was denominated from a Temple of that Deity, built therein. It was the Scene, or Place of the Aſſemblies called *Comitia*. See COMITIA.

Tarquin the Proud at length appropriated it to his own Uſes;——But after the Expulſion of the Kings, the Conſuls

ſuls *Brutus* and *Collatinus* reſtor'd it to the publick Uſe of Aſſemblies and Elections.

Originally it was no more than a Meadow, on the Banks of the *Tiber*, where Horſes grazed, and the *Roman* Youth were exerciſed to War. But it was afterwards erected into a magnificent Square, adorn'd with Statues, &c. The *Field of Flora* was the Place, where the Laws, Edicts and Conſtitutions were publiſh'd.——

For *Field of May*, ſee CAMPUS *Maji*.

FIELD, in Heraldry, is the Surface, or Face of the Shield, or Eſcutcheon; thus called, as containing the Atchievements antiently acquired in the *Field* of Battle.

The *Field* is the Ground whereon the Colours, Bearings, Metals, Furs, Charges, &c. are repreſented. In blazoning a Coat, we always begin with the *Field*: He bears Sable, &c.

Among the more Modern Heralds, *Field* is leſs frequently uſed than Shield, or Eſcutcheon. See SHIELD, and ESCUTCHEON.

FIELD *of a Painting*, &c. is more uſually call'd the *Ground* thereof. See GROUND.

FIELD, in War, the Place where a Battle was fought.—The General remain'd Maſter of the *Field* of Battle——*Cloſe Field* was antiently a Place incloſed, or rail'd in with a Barrier, for Juſts and Turnaments to be perform'd. See BARRIER, JUST, and TOURNAMENT.

FIELD-*Colours*, are ſmall Flags about a Foot and an half ſquare, which are carried along with the Quarter-maſter General for marking out the Ground for the ſeveral Squadrons and Battallions of an Army.

FIELD *Pieces*, are ſmall Cannon, uſually carried along with an Army in the *Field*; ſuch as three Pounders, Minions, Sakers, ſix Pounders, Demi-Culverins, and twelve Pounders; which being light, and ſmall, are eaſily carried.

FIELD *Works*, in Fortification, are thoſe thrown up by an Army, in the Beſieging of a Fortreſs; or elſe by the Beſieged, in defence of the Place. Such are the Fortifications of Camps; thoſe of the High ways, &c.

FIELD *Staff*, is a Staff carried by the Gunners: It is about the Length of an Halbert, with a Spare at the End, which on each Side has Ears ſcrewed on, like the Cock of a Match lock; and in theſe the Gunners ſcrew in lighted Matches, when they are on Command. And this is called, arming the *Field Staffs*.

Elyſian FIELDS, ſee ELYSIAN *Fields*.

FIERI *Facias*, is a Writ Judicial, that lieth at all times within the Year and Day, for him that hath recovered in an Action of Debt and Damages, to the Sheriff, to command him to levy the Debt, or the Damages of his Goods on him againſt whom the Recovery was had.

FIFTEENTH, *Decima quinta*, an antient Tribute, or Impoſition of Money, laid upon any City, Borough, or other Town through the Realm; not by the Poll, or upon this or that Man, but in general upon the whole City, or Town. See TRIBUTE, TAX, &c.

It is ſo called, becauſe amounting to a *Fifteenth* Part of that which the City hath been valued at of old; or to a *Fifteenth* Part of every Man's perſonal Eſtate, according to a reaſonable Valuation.

This is impoſed by Parliament, and every Town thro' the Realm knows what a *Fifteenth* for themſelves amounts to, becauſe it is always the ſame: Whereas the *Subſidy*, which is raiſed of every particular Man's Lands, or Goods, muſt needs be uncertain. See SUBSIDY.

In this View, the *Fifteenth* ſeems to have been a Rate, antiently laid upon every Town, according to the Land or Circuit belonging to it.

Cambden mentions many of theſe *Fifteenths* in his *Britan.* *viz.* pag. 171. *Bath geldebat pro viginti hidis, quando Schira geldabat*, &c. And *p.* 181. *Old Sarum pro quinquaginta hidis geldabat*, &c. Which Rates were according to Domeſday.

The *Fifteenth* therefore ſeems in old Time to have been a yearly Tribute in Certainty; whereas now, though the Rates be certain, yet it is not levied but by Parliament. See QUINSIEME.

FIFTH, in Muſick, one of the harmonical Intervals, or Concords. See INTERVAL.

The *Fifth* is the Third in order, of the Concords. The Ratio of the Chords that afford it, is 3:2. See CONCORD.

It is called *Fifth*, becauſe containing *five Terms*, or Sounds between its Extremes; and four Degrees: So that in the natural Scale of Muſick it comes in the *fifth* Place, or Order, from the Fundamental. See DEGREE, and SCALE.

The Antients called this Interval, *Diapente*. See DIAPENTE.

The *imperfect*, or *defective Fifth*, by the Antients called *Semi-Diapente*, is leſs than the *Fifth* by a mean Semi-tone. See TONE, and SEMI-TONE.

FIG, *Ficus*, a ſoft, ſweet, delicious Fruit; the Produce of a Tree of the ſame Name.

There are *Figs* of divers Kinds; chiefly denominated from their Colours; White, Violet, Black, Purple, Green, and Ruddy: The White are eſteem'd the beſt: The Black and Violet are the worſt.

They are gather'd in Autumn, and laid on a Rack, or Hurdle, to dry in the Sun.

Figs contain a deal of Phlegm; a little volatile, alcali Salt, and a moderate Quantity of Oil.

They are very nouriſhing, and ſoften the Aſperities of the Breaſt, &c. And accordingly are uſed in Medicine, to make Gargariſms, againſt Diſorders of the Throat and Mouth. They are alſo applied externally, to ſoften, digeſt, and promote Maturation.

Figs are dried, either by a Furnace, or the Sun. The *Latins* call them *Caricæ*, or *Ficus paſſæ*, when thus dried. In this Condition they are uſed both as Medicine and Food; being both the wholeſomer, and eaſier of Digeſtion, for being thus clear'd of a deal of their aqueous and viſcid Parts.

The Word is form'd of the *Latin Ficus*; and that of the *Greek* φύω, I produce; by reaſon the *Fig* Tree is a great Bearer, and has uſually two Crops a Year.

The beſt *Figs* are the Produce of *Italy*, *Spain*, *Provence*, &c. The Iſlands of the Archipelago yield *Figs* in great Abundance; but they are much inferior in Goodneſs to thoſe of *Europe*. The *Greeks* in thoſe Iſlands cultivate them with wonderful Care, and Attention; as making the principal Food, and a conſiderable Part of the Riches of the Country.

They have two Kinds of *Fig* Trees, the firſt called *Ornos*, or the wild *Fig* Tree; the ſecond, the domeſtick *Fig* Tree. The wild, called by the Latins *Caprificus*, yields ſucceſſively three ſorts of Fruits, called *Fornites*, *Cratitires*, and *Orni*; none of which are of any uſe as Foods; but all abſolutely neceſſary for the ripening thoſe of the domeſtick *Fig* Tree.

The Art of cultivating and ripening theſe *Figs*, makes a peculiar Art, by the Antients called *Caprification*; often ſpoke of among them in Terms of Admiration. Some of the modern Naturaliſts have look'd on it as a Chimera; but Monſ. *Tournefort* has aſſured us of the Contrary, and given us that Proceſs, as he learn'd it upon the Spot; which ſee under the Article CAPRIFICATION.

The Generation of the *Fig* is ſomewhat anomolous; the Parts ſubſervient to the Office in other Plants; *i. e.* the Flower, not being here apparent. But the Anatomy of the Fruit helps out of the Difficulty.

Monſ. *de la Hire* the younger, in the Memoirs of the Fr. Academy, ſhews, that the *Fig* is a Flower, as well as a Fruit. By Diſſection it diſcovers all the Eſſentials of a Flower, *viz.* Stamina, Apices, and a Farina fecundans.

To ſhew this, that ingenious Author divides the Length of the *Fig* into three Parts or Spaces, A, U, X, *Tab. Nat. Hiſt. Fig.* 4. The firſt of which, A, being the next the Pedicle, and much the greateſt, contains the Grains, or Seeds of the *Fig*. Theſe Seeds are little Stones, repreſented by A, *Fig.* 5. within which are Kernels. Each Stone is half incompaſs'd with a Parenchyma, B, ſupported by a Calyx, laid on the Parenchyma: This Calyx is fix'd to a pretty long Pedicle, which grows to the inner Rind of the *Fig*, as repreſented in the Figures.—The Diviſion X of the *Fig* is full of little Leaves, like thoſe repreſented in *Fig.* 6. which are faſten'd by their Baſes to the Rind or Skin of the *Fig*. In this Diviſion there is a Hole B, *Fig.* 4. called the Umbilicus, or Navel, whoſe outer, or upper Edge is furniſh'd with little Leaves, which cloſe the Aperture.—— Laſtly, the Space V is full of little whitiſh Bodies, repreſented Fig. 4. which ariſe from the internal Parietes of the *Fig*, by a large Pedicle A, at whoſe Extremity is a Calyx B C; from the Diviſions whereof ariſe three other Bodies, D, E, F. Theſe Bodies terminate in little Eminences in E, F, &c. which are Capſulæ, that include an infinite Number of little Grains, eaſily perceivable by the Microſcope, and all alike, and of a Size, perfectly ſimilar to the Farinæ in the Apices or Capſulæ of other Flowers. Whence it follows, that the Bodies contain'd in the Space V, of the *Fig*, are real *Fig* Flowers; tho' ſeveral Naturaliſts have taken theſe in the Diviſions A, and X, for the Flowers; which have no eſſential Marks of Flowers at all.

FIGURATE, or FIGURATIVE, that which has relation to a *Figure*; or that teaches under ſome obſcure Reſemblance.

A *Figurative Stile* is that which abounds in Figures.

The *figurative* Stile, Fa. *Bouhours* obſerves, is neither the moſt juſt, nor the beſt. For this reaſon, *Cicero* directs us to the Antients, who, not having yet bethought themſelves to uſe figurative Expreſſions, but keeping to the moſt proper, and natural way, have almoſt all wrote well. *Sunt enim illi veteres, quia nondum ornare poterant ea quæ dicebant, omnes prope præclare loquuti.* Long Uſe, ſay the Grammarians, renders that proper in all Languages, which at firſt was *figurative*.

The ſame Thoughts appear more lively when expreſs'd by a Figure, than when in ſimple Terms. The Reaſon is,

that *figurative* Expreſſions denote not only the principal Matter, but alſo the Emotion and Paſſion of the Perſon who ſpeaks.

The Term *figurative* is alſo much uſed in ſpeaking of the Myſteries and Figures of the old Law. Thus, Manna is ſaid to be *figurative* of the Euchariſt.

In the *Greek* Grammar, *figurative* is alſo uſed for what we otherwiſe call *characteriſtick*, viz. a Letter that characteriſes certain Tenſes of the *Greek* Verbs; or that diſtinguiſhes, and ſpecifies them.

In the firſt Conjugation of the *Barytonous* Verbs, the ω is characteriſtick, or *figurative* of the Preterit; and the ψ of the Future. See CHARACTERISTICK.

FIGURATE *Counter-point*, in Muſick, is that wherein there is a Mixture of Diſcords along with the Concords. See COUNTER-POINT.

Figurative Counter-point is of two Kinds: That wherein the Diſcords are introduced occaſionally, to ſerve only as Tranſitions, from Concord to Concord; and that, wherein the Diſcord bears a chief Part in the Harmony. See DISCORD.

'Tis a Rule in Compoſition, that the Harmony muſt always be full on the accented Parts of the Bar, or Meaſure *i. e.* Nothing but Concords are allowed in the Beginning and Middle; or the Beginning of the firſt half of the Bar, and Beginning of the latter half thereof in common Time; and the Beginning, and firſt three Notes in triple Time. But upon the unaccented Parts, this is not ſo neceſſary: But Diſcords may tranſiently paſs there without any Offence to the Ear.

This the *French* call *Suppoſition*, becauſe the tranſient Diſcord ſuppoſes a Concord immediately to follow it. See SUPPOSITION.

Where the Diſcords are uſed as a ſolid, and ſubſtantial Part of the Harmony, the *Counter-point* is properly called the *Harmony of Diſcords*. See HARMONY *of Diſcords*.

FIGURE, in Phyſicks, is the Surface, or terminating Extremes of a Body.

All Bodies have ſome *Figure*; whence, *Figurability* is generally rank'd among the eſſential Properties of Body, or Matter. See MATTER.

A Body that ſhould have no *Figure*, would be an infinite Body. See INFINITE.

The corpuſcular Philoſophers account for every thing from the *Figures*, Bulks, and Motions of the Atoms, or primary Corpuſcles. See CORPUSCULAR.

The Earth is of a ſpherical *Figure*, or rather a ſpheroidical. See EARTH. *Saturn* ſometimes appears of an Elliptick, or Oblong *Figure*. See SATURN.

For the *Figures* of Bodies, conſider'd as Objects of Sight, ſee VISION.

The Author of a Collection of Diſſertations, printed at *Paris*, in 1715. ſhews in the firſt Diſſertation on the *Hebrew* Medals, *p.* 66. That the Jews were allowed to make any kind of *Figures*, or Images of Trees, Plants, Flowers, Buildings, &c. excepting thoſe of Animals, the Sun, Moon, and Stars. See IMAGES.

FIGURE, is particularly uſed by the Philoſophers, in oppoſition to eſſential Form. See FORM.

There are Bodies of the ſame nature, and they only differ in *Figure*, or *Configuration*. See CONFIGURATION.

The Schoolmen diſpute, whether or no the Quality of *Figure* be the ſame with that of *Form*; and if they differ, what it is conſtitutes the Difference.

Boetius will have *Figure* only predicated of inanimate Bodies, and Form of animate. Others extend *Figure* to all natural Things, and Form to all artificial ones: Whence the Verſe,

Formam viventis, picti dic eſſe Figuram.

Laſtly, others apply *Figure* indifferently to all kinds of Bodies, but not in all Relations. If only the bare Circumference, or Circumſcription be conſider'd, they call it *Figure*; but if the Circumference be conſider'd as endued with Colour, then they call it *Form*.

FIGURE is alſo applied to all Repreſentations, or Images of Things, in Prints, &c. Such a Book is printed with *Figures*.

The *Figures*, or Schemes in Mathematical and Phyſical Writings, ſhould be made to fold out of the Book.

Some Readers chuſe to have the *Figures*, eſpecially the Mathematical ones, in Wood, for the Convenience of having them immediately annex'd to the Matter they refer to: Others, rather chuſe to be at the Pains of turning over, and having Recourſe to another Part of the Book, that they may have the *Figures* more neat and accurate on Copper.

FIGURE, in Geometry, a Surface incloſed, or circumſcribed with one or more Lines. See SURFACE.

Such are *Triangles*, *Squares*, *Polygons*, *Circles*, *Ellipſes*, &c. which ſee.

Wolfius defines *Figure* a Continuum, terminated by a Perimeter.

In which Senſe *Figure* is applicable both to Superficies and Solids.

In the former Caſe, the Perimeter is Lines; in the ſecond, Surfaces. See PERIMETER.

Figures are either *Rectilinear*, or *Curvilinear*, or *Mixt*, according as the Perimeter conſiſts of right Lines, curve Lines, or both. See CURVE.

The ſuperficial Parts of a *Figure* are called its *Sides*; the loweſt Side, its *Baſe*; and the Angle oppoſite to the Baſe, the *Vertex*. See BASE, VERTEX, &c.

The Height of a *Figure* is the Diſtance of the Vertex from the Baſe. See HEIGHT.

An Equilateral *Figure* is that whoſe Sides are equal. See EQUILATERAL.

A *Figure Circumſcribed*, and *Inſcribed*, ſee CIRCUMSCRIBED, and INSCRIBED.

Similar FIGURES, ſee SIMILAR *Figure*.

All Similar *Figures*, both Regular, and Irregular, are in a duplicate Ratio of the homologous Sides.

A *Regular* FIGURE is that which is Equilateral, and Equiangular.

An *Irregular* FIGURE is that which is not both. See REGULAR.

FIGURE, in Conicks, is the Rectangle, made under the Latus rectum, and tranſverſum in the Hyperbola, and Ellipſis.

FIGURE *of the Diameter*. The Rectangle under any Diameter, and its proper Parameter, is in the Ellipſis and Hyperbola called the *Figure of that Diameter*. See DIAMETER.

FIGURE, in Painting, and Deſigning, is the Lines and Colours, that form the Repreſentation of a Man, or other Animal. See DESIGN.

Thus we ſay, There are above an hundred *Figures* in this Piece: Such a *Figure* is lame, &c.

But the Term *Figure* is in a more immediate and peculiar manner underſtood of human Perſonages: Thus, a Painting is ſaid to be full of *Figures*, when there are abundance of Repreſentations of Men: And a Landſkip is without *Figures*, when there is nothing but Trees, Plants, Mountains, &c. See COLOUR.

FIGURE, in Architecture, and Sculpture, is uſed for Repreſentations of Things, made in ſolid Matters; ſuch as Statues, &c.

In this Senſe we ſay, *Figures* of Braſs, of Marble, of Stuck, of Plaſter, &c. But in this Senſe too, the Term is more uſually applied to human Repreſentations, than other Things. Thus we ſay, an Equeſtrian *Figure*, for a Man on Horſeback. See STATUE.

Daviler, however, obſerves, that thoſe, either repreſented ſitting, as Popes, &c. or kneeling, as thoſe on Monuments, &c. or laid all along, as Rivers, &c. are more properly called *Figures*, than Statues.

FIGURE, in Heraldry, a bearing in a Shield, repreſenting, or reſembling a human Face; as a Sun, a Wind, an Angel, &c.

Among the Maſters of Defence, *Figures* are the divers Guards, Poſtures or Diſpoſitions of the Body, Arm, or Sword.——

In Aſtronomy we ſay, the *Figure of an Eclipſe*, meaning the Repreſentation of the Path, or Orbit of the Sun and Moon, during the Time of the Eclipſe, upon Paper; with the Number of Digits eclipſed, and the Beginning, Middle and End of Darkneſs. See ECLIPSE.

The *Figure*, or Delineation of the Full Moon, ſuch as viewed thro' a Teleſcope, with two convex Glaſſes, is of conſiderable uſe in Obſervations of Eclipſes, and Conjunctions of the Moon with other Luminaries. In this *Figure*, of the Moon, are repreſented the Maculæ, or Spots of the Moon, mark'd by Numbers; beginning with the Spots, which uſually enter firſt, within the Shade at the Time of great Eclipſes, and alſo emerge the firſt. See MOON, MACULÆ.

FIGURE, in Aſtrology, a Deſcription, or Draught of the State and Diſpoſition of the Heavens, at a certain Hour; containing the Places of the Planets and Stars, mark'd down in a *Figure* of twelve Triangles, called *Houſes*.

This is alſo called a *Horoſcope*, and *Theme*. See HOROSCOPE, &c.

In Geomancy, *Figure* is applied to the Extremes of Points, Lines or Numbers, thrown, or caſt at random; on the Combinations or Variations whereof the Sages of this Art found their fantaſtical Divinations.

FIGURE, in Fortification, is the Plan of the fortified Place; or the interior Polygon. See POLYGON, &c.

When the Sides and Angles are equal, 'tis called a *Regular*; when unequal, an *Irregular Figure*. See REGULAR, &c.

FIGURE, in Dancing, the ſeveral Steps which the Dancers make in Order, and Cadence; which mark divers *Figures* on the Floor.

FIGURE,

FIGURE, in the Manufactures, is applied to the various Deſigns repreſented, or wrought on Velvets, Damasks, Taffaties, Sattens, and other Cloths and Stuffs.

The moſt uſual *Figures* of ſuch Deſigns are Flowers, imitated from the Life; or Groteſques and Compartiments of pure Fancy. Repreſentations of Men, Beaſts, Birds, Landſkips, have only been introduced ſince the Taſt for the *Chineſe* Stuffs, particularly thoſe called *Furees*, have begun to prevail among us.

'Tis the Woof of the Stuff that forms the *Figures*: The Warp only ſerves for the Ground. In working *figured* Stuff, there is required a Perſon to ſhew the Workman, how far he muſt raiſe the Threads of the Warp, to repreſent the *Figure* of the Deſign with the Woof, which is to be paſs'd a-croſs between the Threads thus raiſed. This ſome call reading the Deſign. See DESIGN.

For the *Figures on Tapeſtry*, *Brocade*, &c. ſee TAPISTRY, *&c.*

For thoſe given by the *Callenders*, *Printers*, &c. ſee CALLENDER, *&c.*

FIGURES, in Arithmetick, are the numeral Characters; or the Characters whereby Numbers are expreſs'd, or wrote. See CHARACTER.

Thus the Number four hundred and fifty, is wrote, or expreſs'd by three *Figures* 450.

For the Antiquity, Uſe, *&c.* of the *Numeral Figures*, ſee NUMERAL *Character.*

The *Figures* in Arithmetick, are the nine Digits; 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0.

FIGURE, in Logick, a certain Diſpoſition of the Terms of a Syllogiſm; particularly of the Medium, with regard to the Extremes.

Chauvin defines it, a proper placing or connecting of the middle Term with the Extremes, ſo as to have the Effect of a Proof, or Concluſion. See SYLLOGISM.

Hence it follows, that there are ſo many *Figures* of Syllogiſms, as there are different Connections of the Extremes with the Medium: So that, tho' the School-men ordinarily only reckon three; yet a fourth might be admitted.

For the Medium may be either prefix'd to both Extremes; or ſubjoin'd to both: Or, it may be before the Major, and after the Minor; or before the Minor, and behind the Major.

If it be after the Major, and before the Minor, it is uſually called the *Firſt Figure*; this ſeeming the neareſt way of arguing to the natural way.

If it be before the Major, and after the Minor, it is called the *Fourth* and *Laſt*; and by the Peripateticks, the *Indirect*, and by others, the *Galenical Figure*; as varying too far from the natural Form.

If it precede both, 'tis called the *Second Figure.*

And if it follow both, the *Third Figure*; as in the following Technical Diſtich:

Prima *infra*, *&* *ſupra*: *ſupraque bis*, Altera: *biſque*
Tertia *vult infra medium*: *ſupra*, Ultima, *&* *infra.*

A Syllogiſm, therefore, *of the Firſt Figure* is that wherein the Medium is ſeverally join'd with both Extremes of the Concluſion, ſo as to be predicated of the leſſer; the Concluſion being ſometimes Affirmative, and ſometimes Negative. In that of the *Second Figure*, the Medium is predicated of both; and the Concluſion is always negative. In the *Third Figure*, the Concluſion, which in the former Caſes is ſometimes General, ſometimes Special, is always Special.

The *Fourth*, called the Indirect *Figure*, ſome prefer before all the others; by reaſon 'tis in this alone, that the Medium or mean Term has its natural Situation, *viz.* in the Middle, between the Extremities; it being in the reſt no more than a Medium by Office: But in the Fourth *Figure*, the Medium is in the middle Place.

E. gr. Take the two Terms. *Man*, and *Living* for Extremes, and Animal for the Medium. The Mind argues thus, There is a Connection between *Man* and *Animal*; and between *Animal*, and *Living*: Therefore the Order is, Man, Animal, Living; and by Animal, as a Medium, the two Extremes are conjoin'd, as the Extremes of a Line are connected by the Middle.

A C A B C
B

FIGURE, in Rhetorick, is an Ornament, or Turn of Speech or Diſcourſe, finer and nobler than what is uſed in natural, or ordinary talking.

Figures, by the *Greeks* called *Schemata*, are the Enrichments of Diſcourſe, which we only uſe when raiſed and moved with the Conſideration of ſome thing extraordinary. See SUBLIME.

There are two kinds of *Figures*; the one of *Sentences*, and contained in the *Senſe* it ſelf, without any immediate Dependance on any particular Words; the other are only in the *Words* themſelves.

Of the FIGURES *of Sentences* ſome are deſign'd to move; others to teach; and others only to delight: Of the firſt kind, the moſt conſiderable are, *Exclamation*, *Imprecation*, *Obſecration*, *Interrogation*, *Doubting*, *Præterition*, *Expolition*, and *Epiphonema.*

Thoſe of the Second, are the *Antitheſis*, *Correction*, *Communication*, and *Suſpenſion.*

Thoſe of the Third, the *Apoſtrophe*, *Hypotypoſis*, *Proſopopæia*, *Ethopæia*, and *Proſegraphia.* See each under its proper Head, EXCLAMATION, *&c.*

Of *Figures of* WORDS, ſome are *Tropes*, i. e. Tranſlations of Words from their proper Signification, to ſome more remote and extraordinary one. See TROPE.

The principal of theſe are, the *Metaphor*, *Allegory*, *Metonymy*, *Synecdoche*, *Irony*, and *Sarcaſm*; *Metalepſis*, *Antonomaſia*, and *Syllepſis.*

Others, are *Figures* of *Words*, properly ſo called, and not Tropes; being ſo inherent in the Words, that upon changing of thoſe, the *Figure* is deſtroy'd; as in *Amantes ſunt Amentes*, where the *Figure* would be loſt, if inſtead of *Amentes* you ſhould put *Stulti.*

Of theſe, the principal are, the *Repetition*, *Converſion*, *Complexion*, *Gradation*, *Synonymy*, *Polyſyndeton*, and *Polyptoton*, *Reticency*, *Diſjunction*, *Similitude*, *Paronomaſy*, and *Tranſition.* See each *Figure* under its Article, as METAPHOR, ALLEGORY, METONOMY, SYNECDOCHE, IRONY, SARCASM, *&c.*

FIGURE, in Grammar, is an Expreſſion that deviates from the common and natural Rules of Grammar; either for the ſake of Elegancy, or Brevity. The beſt Grammarians only reckon four *Figures*; the *Ellipſis*, *Pleonaſm*, *Syllepſis*, and *Hyperbaton*: Others add two more, viz. *Antiptoſis*, and *Enallage.* See each in its Place, ELLIPSIS, PLEONASM, *&c.*

FIGURE is alſo uſed among the Divines, for the Myſteries repreſented or delivered obſcurely to us under certain Types or Actions in the Old Teſtament. See TYPE.

Thus Manna is held a *Figure*, or Type of the Euchariſt: The Death of *Abel* a *Figure* of the Suffering of Chriſt.

Many Divines and Criticks contend that all the Actions, Hiſtories, Ceremonies, *&c.* of the Old Teſtament are only *Figures*, Types, and Propheſies of what was to befal under the New. See MYSTICAL.

The Jews are ſuppoſed to have had the *Figures* or Shadows, and we the Subſtance. See PROPHESY.

Figure is alſo applied in the like Senſe to prophane Matters; as the *Emblems*, *Enigma's*, *Fables*, *Symbols*, and *Hieroglyphicks* of the Antients. See EMBLEM, ENIGMA, DEVISE, *&c.*

FIGURED, in the Manufactures; A *figured* Camlot, Stuff, Tabby, *&c.* is that whereon there are divers Deſigns of Flowers, Figures, Branches, *&c.* impreſs'd by means of hot Irons. See CAMLOT.

FIGURED *Velvet*, ſee VELVET.

FIGURED *Ribbonds*, firſt came into Faſhion about the Year 1680. The Method of Performance was by ſucceſſively applying Steel Plates engraven with divers Ornaments, as Flowers, Birds, Groteſques, *&c.*

But one *Chandelier*, a Ribbonmaker of *Paris*, invented a much better and readier way of doing it; by a Machine not unlike the Flatter uſed in Coining to flatten the Pieces of Metal, only much ſimpler.

The principal Parts thereof, were two Steel Cylinders, engraven with the Figures intended to be repreſented. Theſe Cylinders were plac'd over each other, like the Rolls of a Rolling Preſs; having each of them, at one of its Extremes, a little dented Wheel, one of which catching into the other, the whole was put in Motion, by means of a Winch, or Handle, faſten'd to the firſt. The Machine thus prepared: The Workman heats the Cylinders; and places the Ribbond in the little Space remaining between the two, which he contracts yet further by a Screw, that preſſes the upper down upon the lower; then, turning the Rolls by the Handle, a whole Piece of Ribbon is *figured* in leſs Time than a ſingle Yard could be done in the ordinary way. See RIBBOND.

FILAMENT, in Medicine, Anatomy, Nat. Hiſtory, *&c.* a Term uſed in the ſame Senſe with *Fibre*; for thoſe fine Threads, whereof the Fleſh, Nerves, Skins, Plants, Roots, *&c.* are compoſed. See FIBRE.

FILANDERS, in Falconry, a Diſeaſe in Hawks, *&c.* conſiſting of Filaments, or Strings of Blood, coagulated and dried; occaſioned by a violent Rupture of ſome Vein, by which the Blood extravaſating, hardens into Points like Needles, to the great Annoyance of the Reins, Hips, *&c.*

FILANDERS are alſo a ſort of fine, ſmall Worms, that greatly incommode the Hawk in the Gorge and about the Heart, Liver and Lungs; and which, on ſome Occaſions, are of Service, as they feed on the Superfluities of thoſe Parts.

There

There are five kinds of these *Filanders*, or *Vermiculi*.

The first, in the Gorge, or Throat; the second, in the Belly; the third, in the Reins; the fourth, are called Needles, on account of their exceeding Fineness. The Symptoms that discover the Disease, are, the Bird's gaping frequently; straining the Fist or Perch with her Pounces; croaking in the Night; ruffling her Train; rubbing her Eyes, Wings, Nostrils, &c.

As the Worms are very restless, the Bird is frequently endeavouring to cast them up; and in opening his Mouth you will readily discover them. From the Throat, &c. they will ascend to the Larynx, Brain, &c. and over over the whole Body.

The ordinary Cause is bad Food. The Cure is, not by killing them, for fear of Imposthumes from their Corruption; but chiefly by stupifying them, that they may be offensive but seldom.

This is best effected by making the Bird swallow a Clove of Garlick, after which she'll feel nothing of the *Filanders* for forty Days. Others use Rue, Worm-powder, Aloes, Vervain, Saffron, &c.

The Word is form'd of the *French Filanders*, of Fil, Thread.

FILAZER (from the *French* Fil, a Thread, Line, or String) is an Officer in the Court of Common Pleas, so called, because he *files* the Writs, whereon he makes out Process. Of these there are fourteen, in the several Divisions and Counties.

They make out all *Writs*, and *Process* upon original Writs, issuing out of the Chancery, as well real, as personal and mix'd, returnable in that Court. See WRIT, &c.

In Actions merely personal, where the Defendants are return'd summon'd, they make out *Pone's* or *Attachments*; which being return'd and executed, if the Defendant appears not, they make out a Distringas, and so *Ad infinitum*, or till he does appear. See DISTRINGAS, &c.

If he be return'd Nihil, then Process of Capias infinite, if the Plaintiff will; or after the third Capias, the Plaintiff may proceed to Outlawry, in the County where his Original is grounded, and have an Exigent with Proclamation.

The *Filazers* likewise make out all Writs of View in real Actions, where the View is prayed; and upon Replevins or Recordare's, Writs of Retorno habendo, second Deliverance, and Writ of Withernam. In real Actions, Writs of Grand and Petit Cape before Appearance.

They enter all Appearances, and special Bails, upon any Process made by them. They make the first Scire Facias upon Special Bails, Writs of Habeas Corpus, Distringas nuper Vice-Comitem vel Balivum, and Duces tecum; and all Supersedeas's upon Special Bail or Appearance, &c. Writs of Habeas Corpus cum Causa upon the Sheriffs return, that the Defendant is detained with other Actions, Writs of Adjournment of a Farm, in case of Pestilence, War, or publick Disturbance. Till an Order of Court made 14 *Jac.* which limited the *Filazers* to all Matters and Proceedings before Appearance, and the Prothonotaries to all after, they also enter'd Declarations, Imparlances, Judgments, and Pleas, whereto a Serjeant's Hand was not requisite, and made out Writs of Execution, and divers other Judicial Writs after Apperance.

FILBERDS, the best sort of small *Nuts*, worth planting in Orchards, or Gardens. See NUT.

They are raised from Nuts set in the Earth, or Suckers from the Roots of an old Tree; or may be grafted on the common Hazle Nut.

They delight in a fine, mellow, light Ground, but will grow almost any where, especially if defended from violent and cold Winds.

The Tree is easily propagated, bears well, and is of two sorts, the *White*, and the *Red*; but the former is the best.

FILE, an Instrument of Steel, cut in little Hatches, or Furrows; used by the Workmen in Metals, to smooth, polish and fashion the same.——*Files* bear a near Resemblance to *Rasps*: The only Difference between them, is, that the former are cut with Edge Tools; and the latter punch'd with pointed ones. See RASP.

The *File* is a principal Instrument in all the Kinds and Parts of Smithery.

It should be forged of the best Steel; after which rubbing it with Grease, to make it more soft under the Chissel, they *cut* it with Chissels and a Mallet, this and that way, and this or that Depth, according to the Grain or Tooth required. After *cutting* the *File*, it remains to be *temper'd*; which being the principal Mystery in the making of *Files*, will deserve to be particularly described.

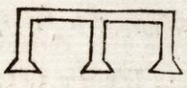
Files, then, are temper'd with a Composition of Chimney Sooth, very dry, and hard, diluted and work'd up with Urine and Vinegar; to which is added common Salt: The whole being to be reduced to the Consistence of Mustard.

Now, the *Files* being cut, and rubb'd over with Vinegar and Salt, to scour off the Grease laid on it for the cutting, they cover them over with this Composition; and having laid several of them together in a Packet, and cover'd them in Loam, they put them in a Charcoal Fire: Out of which they are taken out again, by that Time they have acquired a Cherry Colour, which is known by a little Rod of the same Steel, put in along with them. Upon raking them out, they cast them into the coldest Spring Water they can get.

Iron *Files* require a more intense Heat, than Steel ones. When the *Files* are cold, they clean them with Charcoal, a Rag, &c. to take away any of the Soot or Fæces left in the Cuttings: Then drying them before the Fire, they put them up carefully in a Box of Wheat Bran, to keep them from rusting.

Files are of different Forms, according to the different Occasions: Those in common use are the *Square*, *Flat*, *Triangular*, *Half-round*, *Round*, *Thin File*, &c. all which are made of different Sizes, as well as different Cuts, and Degrees of Fineness, to take place, according as the Work is more or less advanced: Some cutting faster, as the *rough tooth'd File*, &c. others more slowly, as the *fine tooth'd File*, &c. See FILING.

FILE, is also a Thread or Wire, whereon Writs, or other Exhibits in Courts, or Offices are fasten'd, properly called *Filed*, for the more safe keeping them.



FILE, or *Label*, in Heraldry, a bearing of this Form; tho' sometimes of more, and sometimes of fewer Points.

It is sometimes born as a Charge in a Coat of Armour, of which *Guillim* gives many Instances: But it is usually the Difference or Mark of Distinction, which the elder Brother bears in his Coat, during his Fathers Life. See DIFFERENCE.

Some distinguish *File*, and *Label*, calling the *File* the upper horizontal Line, and the Label the Point, that issues from it. See LABEL.

FILE *of three or more Labels*, see LABEL.

FILE in a Military Sense, is a Row of Men standing one behind, or below another from Front to Rear.

Or FILE, in War, is a Line or Series of Soldiers, placed one before another; and thus composing the Depth of a Battallion, which in the Infantry ordinarily consists of six Soldiers in a *File*; and in the Cavalry, of three.

They say, *Close the Files*, that is, bring the Men nearer each other: *Double the Files*, *i. e.* Double the Depth of the Batallion; and diminish its Breadth, or Front by one half. The last or hindmost Person is said to bring up the *File*.

The Word is *French*, *File* literally signifying a long Series or Succession of any kind of Things, of *Fil*, Thread.

FILIAL, something belonging to the Relation of Son. See SON.

The Divines usually distinguish between a Servile, and a *Filial* Fear. The most abandon'd may have a servile Fear of God, such as that of a Slave to his Master; but not a *Filial* Fear, *i. e.* a Fear resulting from Love and Respect.

FILLIGRANE, or, as some call it, FILLIGRAM, or FILLIGREAN, a kind of Enrichment on Gold, or Silver, wrought delicately in manner of little Threads, or Grains, or both, intermix'd.

In *Latin* it is called *Filatim elaboratum opus*, *argentum*, *aurum*. This Cabinet is furnish'd with divers fine Pieces of *Filligrean* Work. Vases, Torches, &c. of *Filligrean* Work.

The Word is a Compound of Fil, or *Filum*, Thread, and *Granum*, Grain.

FILING, one of the principal Operations in Smithery, &c. succeeding to *Forging*. See FILE.

The coarser Cut Files are always to be succeeded by finer; and in all the Kinds the Rule is, to lean heavy on the File in thrusting it forward, because the Teeth of the File are made to cut forwards: But in drawing the File back again for a second Stroak, it is to be lightly lifted just above the Work, by reason it cuts not coming back.

The *rough*, or *coarse-tooth'd File* (which, when large, is called a *Rubber*) serves to take off the Unevennesses of the Work, left by the Hammer, in Forging. See FORGING.

The *bastard-tooth'd File* is to take out the too deep Cuts, and File Strokes made by the *rough File*. The *fine-tooth'd* File takes out the Cuts, or File Strokes the Bastard File made. And the *smooth File* those left by the fine File.

In this Order the Files of several Cuts are to succeed each other, till the Work is as smooth as it can be filed. After which it may be made yet smoother with Emery, Tripoli, &c. See POLISHING.

FILIUS *ante Patrem*, q. d. The Son before the Father, a Phrase applied by Botanists and Florists, to Plants, whose Flowers come out before their Leaves.

FILLET, in Anatomy, is the Extremity of the membranous Ligament under the Tongue, more usually called the *Frænum*, or Bridle. See FRÆNUM.

FILLET, in Botany, is understood of those Threads usually found in the middle of Flowers; as in the Lilly, Tulip, Rose, &c. There

There are two Kinds: Thoſe which ſupport Apices, are particularly called *Stamina*; and thoſe which have none, ſimply *Fillets*. See STAMINA.

FILLET, *Tæniola*, in Heraldry, a kind of Orle, or Bordure, containing only a third or fourth Part of the Breadth of the common Bordure. See BORDURE.

It is ſuppoſed to be withdrawn, inwards; and is of a different Colour from the Field. It runs quite round, near the Edge, as a Lace over a Cloak.

FILLET is alſo uſed for an Ordinary drawn, like the Bar, from the ſiniſter Point of the Chief a-croſs the Shield; in manner of a Scarf: tho' it is ſometimes alſo ſeen in the Situation of a Band, Feſs, Croſs, &c.

According to *Guillim*, the *Fillet* is a fourth Part of the Chief; and placed in the chief Point of the Eſcutcheon. See CHIEF.

FILLET, or FILET, in Architecture, a little ſquare Member, or Ornament, uſed in divers Places, and on divers Occaſions; but generally as a ſort of Corona, over a greater Moulding.

The *Fillet* is the ſame with what the *French* call *Reglet*; the *Italians*, *Liſta*, or *Liſtella*; and others, *Band*, or *Bandelette*. See REGLET, LIST, &c.

The Word is *French*, *Fillet*, of Fil, Thread.

FILLET is alſo uſed among Painters, Gilders, &c. for a little Rule, or Reglet of Leaf Gold, drawn over certain Mouldings; or on the Edges of Frames, Pannels, &c. eſpecially when painted white; by way of Enrichment.

FILLETS, in the Manage, are the Loins of an Horſe; which begin at the Place, where the hinder part of the Saddle reſts.

FILM, a thin Skin, or Pellicle, dividing ſeveral Parts of the Fleſh.

In Plants, it is that thin woody Skin, which ſeparates the Seeds in the Pods, and keeps them apart.

FILTRATION, the Act of paſſing a thing thro' a *Filtre*; called alſo *Percolation*, and *Tranſcolation*. See PERCOLATION.

Filtration is a kind of Diſtillation; perform'd by ſtraining a Liquor thro' a Cloth, Bag, Linen, or brown Paper, in order to clarify or purify it. The moſt commodious way of *filtrating* is by brown Paper, faſten'd over the Mouth or Aperture of a Funnel. See FILTRE.

The Secretion of the divers Juices in the Body, from the Maſs of Blood, ſeem to be little elſe but *Filtration*. See SECRETION.

Pitcairn, and other late Authors, hold that the Differences of *Filtrations* don't depend on the different Configurations of Pores; but on their different Sizes or Diameters. And Springs ſeem to be rais'd from the Ocean by the ſame Principle. See SPRING, ASCENT *of Water*, CAPILLARY *Tubes*, &c.

There are alſo *Filtrations* thro' Sand, pulverized Glaſs, &c. Spirits of Vitriol, Salt, and Nitre, are *filtrated* thro' a Quantity of beaten Glaſs, in the Bottom of a Funnel.

Filtration is chiefly concern'd in Tinctures; as when ſome Portion is drawn from the Ingredients, or ſuſpended in the Tincture, which is not neceſſary thereunto; but diſturbs and renders the reſt unpleaſant, both to the Palate, and Sight.

The *Filtration* moſt in uſe, is the ſtraining a Liquor thro' Paper, which by the Smallneſs of the Pores admits only the finer Parts through, and keeps the reſt behind.

Beſide this, there is a *Filtration*, which hath much tortur'd the Philoſophy of ſome Ages to account for, *viz.* that perform'd by the Aſcent of the finer Parts of a Liquor, up a Cord, or Skain of Cotton, or ſuch like Matter, which is contrived to drop over another Veſſel, and leave the groſſer behind.

Some ſay, that the Cauſe of this Aſcent is, becauſe the Liquor ſwells thoſe Parts of the Filtre, that touch it by entering into the Pores of the Threads, which compoſe it, whereby they riſe up, touch, and wet thoſe next above them; and theſe again the next Threads; and ſo on, to the Brims of the Veſſel; when, the Liquor runs over, and deſcends in the other Part of the Filtre, which hangs down, by its own natural Gravity.

But this Account is liable to many Objections; eſpecially as Liquors riſe, after the like manner in Glaſs Tubes, much above the Surface of the Liquor they are immerſed in; where the Glaſs cannot be imagin'd thus to ſwell.

Others account for it, by conſidering every Filtre, as compoſed of a great Number of long, ſmall, ſolid Bodies, which lie very cloſe together; ſo that the Air getting in between them, loſes much of its Preſſure, and cannot gravitate ſo ſtrongly, as it doth on the Fluid without them: The Conſequence is, that the Parts of the Water between the Threads of the Filtre muſt be preſs'd upwards, and aſcend till they come ſo high, as by their Weight to counter-ballance the general Preſſure on the other Parts of the Surface of the Water.

Laſtly, the Retainers to Sir *I. Newton*'s Philoſophy deduce the Phænomenon from the Principle of Attraction. See ATTRACTION.

The Principle of this *Filtration* is doubtleſs the ſame with that whereby Fluids aſcend up Heaps or Lumps of Aſhes, Sand, &c. The ſame with that, whereby Water is raiſed in form of Vapour: The Sap riſes in Vegetables; and the Blood circulates through the capillary Arteries, and the extremely minute glandular Strainers. See ASCENT *of Liquors*.

FILTRE, FILTER, or PHILTER, in Chymiſtry, &c. A piece of Cloth, Linen, Paper, or other Matter, uſed to *filtrate* or ſtrain Liquors through. See FILTRATION.

The *Filtre* has the ſame Uſe and Effect, with regard to Liquids, that the Sieve or Searce has in dry Matters.

Filtres are of two ſorts: The firſt, ſimple pieces of Paper, or Cloth; through which the Liquor is paſs'd without further Ceremony.

The ſecond are twiſted up like a Skain or Wick, and firſt wet, then ſqueez'd, and one End put in the Veſſel that contains the Liquor to be filtrated. The other End is to be out, and hang down below the Surface of the Liquor. By means hereof, the pureſt Part of the Liquor diſtills Drop by Drop out of the Veſſel; leaving the coarſer Part behind.

This *Philtre* acts as a Syphon. See SYPHON.

FILTRE is alſo a Charm, ſuppoſed to have a Virtue of inſpiring Love. See CHARM.

The Word is derived from the *Greek* φιλεῖν, which ſignifies the ſame Thing, of φιλέω, *amo*, I love.

FIMASHING, in Heraldry. See FUMETS.

FIMBRIA, the Extremities or Border of the Tubæ Fallopianæ were formerly thus called; the Word ſignifying a fringed Border, which that Part reſembles. See FALLOPIAN *Tube*.



FIMBRIATED, a Term in Heraldry, ſignifying that an Ordinary is edged round with another of a different Colour.

Thus, He beareth Or, a Croſs, Patee Gules *fimbriated* Sable.

FIN, that Part of a Fiſh, made in Faſhion of a Feather. See FISH.

The Office of the *Fins* has commonly been ſuppoſed to be analogous to that of Feathers in Fowls; and to aſſiſt the Fiſh in its progreſſive Motion, or Swimming: But the later Naturaliſts find this a Miſtake.

'Tis the Tail is the great Inſtrument of Swimming: The *Fins* only ſerve to keep the Fiſh upright, and prevent Vacillation, or Wavering. See SWIMMING, TAIL, &c.

Whale FINS are commonly taken for that Part of the Whale, which the Populace call Whale-bone; but whence the Miſtake ſhould ariſe, is not eaſy to determine.

'Tis certain, that fibrous, flexible Matter is not the *Fins* of that Fiſh, but rather its Teeth; that Species of Whales wherein they are found having no other Teeth. They are taken out of the Throat, and are uſually about a Span broad, and 14 or 15 long. See WHALE *Bone*.

The Whale *Fins* are the moſt valuable Part of the Animal. See *Whale* FISHERY.

FINAL, that which terminates, or comes laſt in any Thing: *Final* Judgment; *Final* Sentence, &c.

Divines call the Impenitence of the Reprobate *Final*, as ſuppoſing it to continue to the End of their Life.

FINAL *Cauſe*, is the end for which any thing is done, The *final Cauſe* is the firſt thing in the Intention of a Perſon who does a thing; and the laſt, in the Execution. See *Final* CAUSE.

Final Cauſes are of good uſe in Ethicks; but miſchievous in Phyſicks, and by no means to be allowed; yet Mr. *Boyle* propoſes ſome Views and Regulations, under which they may be admitted, in an *Expreſs Inquiry into the* Final Cauſes *of Natural Things*.

FINAL *Letters* are thoſe which cloſe the Words. The Figure call'd Apocope, conſiſts in retrenching *final* Letters.

The *Hebrews* have five *final* Letters; which, when at the End of a Word, have a different Figure from what they have at the Beginning, or in the Middle thereof. Theſe are the ך, ם, ן, ף, ץ, Caph, Mem, Nun, Pe, Tſade; which every where but at the Ends of Words are wrote כ, מ, נ, פ, צ.

FINANCE, a Term uſed by the *French*, for the Revenues of the King, or State. Thus, The Council of the *Finances*, correſponds to our Commiſſioners of the Treaſury: The Comptroller General of the *Finances*, to our Lord High Treaſurer, &c. See REVENUE, TREASURY, &c.

The Word is derived from the *German Finantz*, Uſury. Tho' *du Cange* chuſes rather to deduce it from the barbarous *Latin Financia*, *præſtatio pecuniaria*.

FINANCES, in the *French* Cuſtoms, denote the publick Treaſury of the King and Government: Much the ſame with the Treaſury, or Exchequer of the *Engliſh*, and the Fiſcus of the *Romans*. See TREASURY, EXCHEQUER, &c.

The Word is ſometimes alſo uſed for the Stock or Caſh of a Banker, &c.

The *French* have a peculiar kind of Figures, or numeral Characters, which they call *Chiffre de Finance*. See CHARACTER.

FINE, that which is pure, and without Mixture. The Term is particularly uſed in ſpeaking of Gold and Silver.

Fine Gold ſhould be 24 Carats; but there is but little, if any, that riſes to ſuch a Degree of Fineneſs.

Gold thus fine, is ſoft, and difficult to work; for which reaſon they always mix a certain Quantity of Alloy with it. See GOLD, ALLOY, and CARACT.

Fine Silver is that of twelve-penny Weights. See SILVER; ſee alſo REFINING.

FINE, in Law, hath divers Uſes or Significations.

The firſt and moſt noble is, a Covenant made before Juſtices, and enter'd of Record for Conveyance of Lands, Tenements, or any thing inheritable, being *in eſſe tempore Finis*, to cut off all Controverſies. See COVENANT.

A *Fine*, then, appears to be a Concord, acknowledged and recorded before a competent Judge, touching ſome Hereditament or Thing immoveable, that was in Controverſy between the Parties to the ſame Concord; and for the better Credit of the Tranſaction, it is ſuppoſed to be made in the Preſence of the King, becauſe levied in his Court.

Hence it binds Women Covert, being Parties, and others whom ordinarily the Law diſables to tranſact, only for this Reaſon, That all Preſumption of Deceit or evil Meaning is excluded, where the King and his Court of Juſtice are ſuppoſed to be privy to the Act.

Originally this Final Concord was inſtituted and allowed, in regard that by the Law and antient Courſe of Proceedings, no Plaintiff could agree or end the Cauſe without Licence of the Court: So as *Fines* have been antiently levied in perſonal Actions; and for no greater a Sum of Money than 11 *l.*

But Time has produced other Uſes of *Fine*, *viz.* To cut off Entails; and with more Certainty to paſs the Intereſt or Title of any Land or Tenement, though not controverted, to whom we think good either for Years, or in Fee: Inſomuch as the paſſing a *Fine* in moſt Caſes now is but *Fictio Juris*, ſuppoſing an Action or Controverſy, where in Truth none is; and ſo not only operating a preſent Bar and Concluſion againſt the Parties to the *Fine*, and their Heirs; but at five Years End againſt all others, not expreſly excepted, and not claiming (if it be levied upon good Conſideration, and without Covin) as Woman Covert; Perſons under twenty one Years; Priſoners, or ſuch as are out of the Realm at the Time of its acknowledging.

This *Fine* hath in it five eſſential Parts: 1°. The original Writ taken out againſt the Cognizor. 2°. The King's Licence, giving the Parties Liberty to accord; for which he hath a *Fine*, called the King's Silver; being accounted part of the Crown Revenue. 3°. The Concord it ſelf, which begins thus, *Et eſt Concordia talis*, &c. 4°. The Note of the *Fine* beginning thus, K. *inter* R. *querentem*, & S. & T. *uxorem ejus deforcientes*, &c. (where inſtead of *Deforcientes*, antiently *Impedientes* was uſed) 5°. The Foot of the *Fine* (*Hæc eſt finalis concordia facta in Curia Domini Regis apud Wiſt. a die Paſchæ in quindecim dies Anno*, &c.) concludes all, containing the Day, Year, and Place, and before what Juſtice the Concord was made.

This *Fine* is either *Single*, or *Double*.

A *Single Fine* is that, by which nothing is granted or render'd back again by the Cognizees to the Cognizors, or any of them.

A *Double Fine* contains a grant and Render-back, either of ſome Rent, Common, or other thing out of the Land, or of the Land it ſelf, to all or ſome of the Cognizors for ſome Eſtate, limiting thereby Remainders to Strangers, not named in the Writ of Covenant.

Sometimes a *Double Fine* is, when the Lands do lie in ſeveral Counties.

Again, a *Fine* is with regard to its Effect divided into a *Fine executed*, and a *Fine executory*.

A *Fine executed* is ſuch, as, of its own Force, gives a preſent Poſſeſſion (at leaſt in Law) to a Cognizee, ſo that he needs no Writ of *Habere facias ſeiſinam*, for Execution of the ſame, but may enter; of which ſort is a *Fine*, *Sur Cognizance de droit come ceo que il ad de ſon done*, that is, Upon Acknowledgment that the Thing mentioned in the Concord, is *Jus ipſius cognizati, ut illa quæ idem habet de dono Cognitoris*. Weſt. Sect. 51. K.

The Reaſon is, becauſe this *Fine* paſſeth by way of Releaſe of that Thing which the Cognizee hath already (at leaſt by Suppoſition) by Virtue of a former Gift of the Cognizor; which is in truth the ſureſt *Fine* of all.

Fines executory are ſuch, as of their own Force do not execute the Poſſeſſion in the Cognizees; as *Fines ſur Cognizance de droit tantum*; Fines *ſur done*, Grant, Releaſe, Confirmation, or Render.

For if ſuch *Fines* are not levied; or ſuch Render made to thoſe who are in Poſſeſſion at the time of the *Fines* levied, the Cognizees muſt needs ſue out Writs of *Habere facias ſeiſinam*, according to their ſeveral Caſes, for obtaining their Poſſeſſion; except, at the levying ſuch executory *Fines*, the Parties to whom the Eſtate is limited, be in Poſſeſſion of the Lands paſſed thereby: For in this Caſe ſuch *Fines* do enure by way of Extinguiſhment of Right, not altering the Eſtate or Poſſeſſion of the Cognizee, but perhaps bettering it. *Weſt. Symb. Sect.* 20.

As to the Form of theſe *Fines*, it is to be conſider'd, upon what Writ or Action the Concord is to be made; which is commonly on a Writ of Covenant. In this Caſe there muſt firſt paſs a pair of Indenture between the Cognizor, and Cognizee; whereby the Cognizor covenants with the Cognizee, to paſs a *Fine* to him of ſuch and ſnch Things by a Day limited. As theſe Indentures are firſt in this Proceeding, ſo are they ſaid to *lead the Fine*. See INDENTURE.

Upon this Covenant, the Writ of Covenant is brought by the Cognizee againſt the Cognizor, who thereupon yields to paſs the *Fine* before the Judge; and ſo the Acknowledgment being recorded, the Cognizor and his Heirs are preſently excluded, and all Strangers (not excepted) after five Years paſſed.

If the Writ whereon the *Fine* is grounded, be not a Writ of Covenant, but of *Warrantia Charta*, or a Writ of Right, or Meſn, or of Cuſtoms and Services (for of all theſe *Fines* may alſo be found) then this Form is obſerved: The Writ is ſerved upon the Party that is to acknowledge the *Fine*; and then he appearing, doth accordingly. See *Dyer*.

Fines are now only levied in the Court of Common Pleas at *Weſtminſter*, in regard of the Solemnity thereof, ordain'd by the Statute of 18 *Edw.* 1. Before which Time they were ſometimes levied in the County-Courts, Court-Barons, and in the Exchequer; as may be ſeen in *Origines Juridiciales*, &c.

Plowden ſays, There were *Fines* levied before the Conqueſt: *Fulbeck* ſays, He has ſeen the Exemplification of one of *Henry* the Firſt's time: *Dugdale* affirms, That there were none till *Henry* the Second. See IMPEDIENS.

FINE alſo ſignifies a Sum of Money, paid as an Income for Lands or Tenements let by Leaſe; antiently called *Gerſuma*.

Sometimes it alſo denotes an Amends, pecuniary Puniſhment or Recompence, upon an Offence committed againſt the King and his Laws; or againſt a Lord of a Manor.

In which Caſe a Man is ſaid, *Facere* Finem *de Tranſgreſſione cum Rege*, &c.

In all the Diverſities of Uſes of *Fine*, it hath but one Signification; and that is, a *Final Concluſion*, or End of Differences between Parties.

And in this laſt Senſe, wherein it is uſed for the ending and Remiſſion of an Offence, it is uſed by *Bracton*, who ſpeaks of a Common *Fine*, that the County pays to the King for falſe Judgments or other Treſpaſſes, which is to be aſſeſſed by the Juſtices in Eyre before their Departure, by the Oath of Knights, and other good Men, upon ſuch as ought to pay it.

There is alſo a *Common Fine* in Leets.

FINES *for Alienation*, are reaſonable *Fines* paid to the King by his Tenants in Chief, for Licence to alien their Lands according to the Statute, 1 *Edw.* 3. cap. 12. See ALIENATION.

FINE-DRAWING, or *Rentering*, a dexterous ſowing up, or rejoining the Parts of any Cloth, Stuff, or the like; torn or rent in the dreſſing, wearing, &c. 'Tis prohibited to *fine-draw* Pieces of foreign Manufacture, upon thoſe of our own; as has formerly been practiſed. See RENTERING.

FINERS *of Gold and Silver*, are thoſe that purify, and part thoſe Metals from other coarſer, by Fire and Water.

They are alſo called *Parters* in our old Law-Books, and ſometimes *Departers*.

FINESSE, a *French* Term, of late current in *Engliſh*. Literally, and as it is uſed among the *French*, it is of no further Import than our *Engliſh Fineneſs*.

But among us, 'tis chiefly uſed to denote that peculiar kind of Fineneſs, Delicacy, or Subtlety perceived in Works of the Mind; and the niceſt and moſt ſecret and ſublime Parts of any Science, or Art.

A Perſon of Taſte can never be fond of a Pun, where all the *Fineſſe* lyes in an Equivoque, or an Ambiguity. This Man underſtands all the *Fineſſes* of his Art. The Subſtance and neceſſary Part of a Language is learnt at a little Expence: 'Tis the *Fineſſes* and Delicacies that coſt the moſt.

FINGERS, *Digiti*, the extreme Part of the Hand, divided into five Members. See HAND.

The *Fingers* conſiſt of fifteen Bones, diſpoſed in three Rows, or Ranks; each *Finger* having three Bones.

The Joints or Jointures are called *Condyli*, and *Internodii*; and their Arrangement or Rows, *Phalanges*: The uppermoſt of which is the longeſt and largeſt; the ſecond leſs, but yet longer and larger than the third. See PHALANX.

The firſt *Finger* is called the *Pollex*, or Thum: The ſecond, *Index*, ſometimes *ſalutaris* Digitus, and ſometimes *numerans*: The third, the *Middle Finger*, *Infamis*, *Obſcenus*, *Impudicus*, and *Famoſus* becauſe uſed in mocking and Deriſion: The fourth, *Annularis*, the Ring *Finger*, *medio proximus*, and *Medicus*; by reaſon the Antients uſed

to

to ſtir and mix their Medicines therewith: The fifth, the little *Finger*, *Auricularis*; by reaſon the Ear is pick'd therewith.

FINGERS *Breadth*, a Meaſure, of two Barley Corns in Length, and four laid Side to Side. See MEASURE.

FINING, ſee REFINING, CLARIFYING, &c.

FINISHING, in Architecture, &c. is frequently applied to a Crowning, Acroter, &c. rais'd over a piece of Building, to terminate, and *finiſh*, or compleat it. See CROWNING.

FINITE, ſomething bounded, or limited; in Contradiction to Infinite. See INFINITE.

The School-men make two kinds of *Finites*: The one as *to Extenſion*; which is applied to Things that have not all poſſible, or conceiveable Extenſion.

The other as *to Perfection*, applied to Things, which have not the laſt Perfection.

To get an Idea, *e. gr.* of a Thing *finite* in Point of Perfection, we firſt conceive the thing as having certain Perfections; and then conceive ſome other Perfection, which it has not, or ſome Perfection in a further Degree.

Thus, when I ſay that Three is a finite Number, I firſt conceive a Number, conſiſting of three Unites; then conceive other Unites beyond theſe three. Thus it is I conceive my Mind *finite*, by obſerving certain Perfections beyond what I find in my Mind.

After the ſame manner I conceive this Study to be *finite*, by having an Idea of Extenſion beyond what is contained therein. See EXTENSION.

FINITOR, in Aſtronomy, the *Horizon*; thus called, by reaſon it *finiſhes* or bounds the Sight or Proſpect. See HORIZON.

FIOL, ſee PHIOL.

FIRE, in Phyſiology. The moſt univerſal and ſenſible Character of *Fire*; and that which beſt defines and diſtinguiſhes it from every other thing, is its *Heating*.

Fire, therefore, may be defined to be whatever warms, or heats Bodies. See HEAT.

Again, as Heat is ſomething, whoſe Preſence we beſt perceive by the Dilatation of the Air or Spirit in the Thermometer: *Fire* may be defined to be that whoſe Preſence we perceive by the Expanſion of the Air, or Spirit in the Thermometer. See RAREFACTION.

Whence it follows, that *Fire* is a Body, and a Body in Motion.

Its *Motion* is argued from its expanding the Air; which is not effected without communicating Motion thereto: And its *Corporeity* is proved by Experiment.

For pure Mercury being incloſed in a Phial with a long Neck, and kept in a gentle Heat for the ſpace of a Year, is reduced into a Solid; and its Weight conſiderably increaſed; which Increaſe can ariſe from nothing but the Acceſſion of *Fire*. See MERCURY.

'Tis a Diſpute of ſome Standing among Philoſophers, Whether *Fire* be any ſpecifick Subſtance, originally diſtinct from all other; or whether it be the Matter of other Bodies, only under certain peculiar Modifications, *i. e.* Whether *Fire* be ſuch by its own Nature, or by Motion.

Fire, makes one of the vulgar, or Peripatetick Elements, defined to be hot, and dry; or, it is that Part, or Ingredient in all Bodies, which is hot in the higheſt Degree, and dry in an inferior one. See ELEMENT.

What the School-Philoſophers add further, as to the Nature of *Fire*, is, that it is a *Simple* Body; as not including any Contrariety of Qualities; and a Body abſolutely *light*, as tending naturally upwards: For which reaſon they hold its natural Place above all the other Elements, between the Extremity of our Atmoſphere, and the Moon; and the Source of *Fire* ſuppoſed to reſide in that Sphere, they call *Elementary Fire*. See ELEMENTARY.

Fire, according to the *Carteſians*, is an Aſſemblage of the more ſolid, earthy Particles; which ſwimming in the rapidly fluid Matter of the firſt Element, become vehemently agitated thereby; and by this intenſe Agitation or Motion are diſpoſed to give the Senſation of Heat, Light, &c. See CARTESIANISM.

Fire, according to Sir *I. Newton*, is a Body heated ſo hot, as to emit light copiouſly.

For what elſe, ſays that Philoſopher, is red-hot Iron, but *Fire*? And what elſe is a *fiery* Coal, than red hot Wood? By which he ſuggeſts, that Bodies which are not *Fire*, may be changed and converted into *Fire*. See FLAME.

Fire, according to ſome of the lateſt Philoſophers, is a certain Subſtance, or Body *ſui generis*, originally ſuch; and not producible by any Motion or Alteration of other Bodies.

Theſe Authors lay it down as a very ſubtile, moveable, penetrating Body; and the Cauſe or Inſtrument of Heat and Light. Some of them add, that when *Fire* enters the Eye in right Lines, it produces or excites the Idea of *Light*; which rectilinear Motion they account abſolutely neceſſary to the Idea of Light. See LIGHT.

Whereas, to produce Heat, and the other Effects of *Fire*, ſuch Motion is not required; but on the Contrary, an irregular, various Motion is fitter to produce the ſame. See HEAT.

The Nature of *Fire* is ſo wonderful, and abſtruſe, that the Antients generally revered it as a God: Among the Moderns, we can ſcarce name one one Point in all Philoſophy of more Importance, or leſs underſtood.

Fire, in Effect, is the univerſal Inſtrument of all the Motion, and Action in the Univerſe: Without *Fire*, all Bodies would become immoveable; as in a ſevere Winter we actually ſee our Fluids become ſolid, for want thereof. Without *Fire*, a Man would harden into a Statue; and the very Air cohere into a firm, rigid Maſs.

Fire, then, is the univerſal Cauſe of all Mutation, or Change; for all Mutation is by Motion; and all Motion by *Fire*.

Several Authors have labour'd to ſet this grand Agent in its juſt Light; and particularly the excellent *Boerhave*, in a new Courſe of Experiments, and Lectures expreſly on the Subject, *De Igne*. That Author has indeed done Wonders: The Sum of his Doctrine we ſhall here ſubjoin.

Fire, then, is diſtinguiſh'd into two Kinds; as it is in it ſelf, called *Elementary*; or as it is join'd with other Bodies, called *Culinary Fire*.

Pure, or *Elemental* FIRE, is ſuch as it exiſts in it ſelf; which alone we properly call *Fire*.

Common, or *Culinary* FIRE is that exiſting in ignited Bodies; or excited, by the former, in combuſtible Matters, the minute Particles whereof joining with thoſe of the pure *Fire*, conſtitute pure Flame.

This latter is improperly called *Fire*; in regrad only a ſmall Part of it is real, or pure *Fire*.

Pure *Fire*, ſuch as collected in a Burning Glaſs, yields no Flame, Smoak, Aſhes, or the like: Conſequently, in *ignited* Bodies, that which flames, ſmoaks, &c. is not ſimply *Fire*.

The Effects, Nature, Properties, &c. of each ſhall be conſider'd.

I. *Pure*, or *Elemental Fire* of it ſelf, is imperceptible; and only diſcovers it ſelf by certain Effects, which it produces in Bodies; which Effects are only learnt, by obſerving the Changes that ariſe in thoſe Bodies.

The Firſt *Effect of Elemental Fire* on Bodies, is *Heat*; which ariſes wholly from *Fire*; and in ſuch manner as that the Meaſure of Heat is always the Meaſure of *Fire*; and that of *Fire*, of Heat. So the Heat is inſeparable from *Fire*. See HEAT.

The Second is, *Dilatation* in all ſolid Bodies; and *Rarefaction* in all Fluids.

That both theſe are inſeparable from Heat, is evident from numerous Experiments. An iron Rod, or Bar being heated, increaſes in all its Dimenſions; and the more ſo, as it is further and further heated: Upon expoſing it to the Cold again, it contracts and returns ſucceſſively through all the Degrees of its Dilatation, till it arrive at its firſt Bulk; being never two Minutes ſucceſſively of the ſame Magnitude.

The like is obſerved in the heavieſt of all Bodies, Gold; which, when fuſed, takes up more Space than before: So Mercury, the heavieſt of all Fluids, we have known to aſcend in a narrow Tube over the *Fire*, to above 30 times its Height. See RAREFACTION, and DILATATION.

The Laws of this Expanſion, are 1°. That the ſame Degree of *Fire* rarefies Fluids ſooner, and in a greater Degree than it does Solids. Without this, the Thermometer would be of no uſe; ſince the Cavity of the Tube would then be dilated in the ſame Proportion, as the Fluid is rarified. 2°. The lighter the Liquid, the more it is dilated by *Fire*. Thus Air, the lighteſt of all Fluids, expands the moſt; and after Air, Spirit of Wine. See THERMOMETER.

The Third *Effect of Fire* on Bodies, is *Motion*: For *Fire*, in warming and dilating Bodies, muſt of Neceſſity move their Parts.

In Effect, all the Motion in Nature ariſes from *Fire* alone; and taking this away, all Things become immoveable: Upon the Abſence of only a certain Degree of *Fire*, all Oils, Fats, Waters, Wines, Ales, Spirits of Wine, Vegetables, Animals, &c. become hard, rigid, and inert: And the leſs the Degree of *Fire*, the ſooner, and more violently is this Induration made.

Hence, if there were the greateſt Degree of Cold, and all *Fire* were abſolutely taken away, all Nature would grow into one concrete Body, ſolid as Gold, and hard as Diamond. But upon the Application of *Fire*, it would recover its former Mobility.

Conſequently, every Diminution of *Fire* is attended with a proportionable Diminution of Motion: And *vice verſa*. See COLD.

This *Fire*, whoſe Effects we have been relating, needs no Air, or Pabulum to ſuſtain or preſerve it.

For

For, putting ſome Calx of Tin or Lead, in the exhauſted Receiver of an Air Pump; and apply a Burning Glaſs, ſo as the Focus ſhall fall on the Calx; the Conſequence will be a vehement Dilatation of the Calx, from the Centre towards the Circumference, whereby the Receiver will be broke into a thouſand Pieces. And if a Quantity of any eſſential aromatick Oil be pour'd in Vacuo, upon Spirit of Nitre, there will immediately ariſe a huge *Fire*, to the great Danger of the By-ſtanders.

All the above-mentioned Effects of Elemental *Fire* may be increas'd divers ways, *viz.*

1°. By *Attrition*, or a ſwift Agitation, or rubbing of one Body againſt another. This is apparent in Solids: A vehement Attrition of a Flint, and Steel, every body knows, will produce Sparks. So in Fluids, Cream, by long churning to ſeparate the Butter, will grow ſenſibly warm; and a Barometer renders the Effect ſtill more diſcernable. See ATTRITION.

In effect, all the Heat of an Animal is owing to the Agitation and Attrition of the Parts of its Juices againſt each other, and the Sides of the Veſſel. See CALIDUM *Innatum*.

The more ſolid, hard, and elaſtick the Bodies thus agitated are; the more Points of Contact they have; the more intenſe the Force whereby they are ſtruck againſt each other, is; the greater their Motion; the quicker the Returns of the Strokes; and the longer continued; the greater is the Heat produced.

Thus, a piece of Spunge rubb'd lightly, and for a little while againſt another, acquires no ſenſible Heat: But a large, heavy piece of Iron briſkly rubb'd againſt another in a cold Seaſon (when Bodies are the denſeſt) will preſently acquire an intenſe Heat, ſufficient to *fire* Sulphur, Gunpowder, or the like.

So a Knife whetted briſkly on a dry rough Stone, ſhall yield Sparks of *Fire*; but if Oil, or any other fatty Matter be interpoſed, no ſenſible Heat ſhall ariſe: And the Points of two Needles rubb'd againſt each other ever ſo ſtrongly, or ſo long, will never grow warm; as only touching in a few Points.

Hence 1°, The Globules of the Cruor, or red Blood drove by the Force of the Heart againſt each other, or againſt the Sides of the Arteries, excite more Heat than the Globules of the Serum, or any other Humor in the Animal. Hence 2°. Thoſe Parts abounding moſt in theſe Globules thus agitated, as the Heart, Liver, and Head, will be the hotteſt of all others: And the denſer the Blood, *cæteris paribus*, the greater the Heat, &c. 3°, The quicker the Contractions of the Heart are repeated, the greater will the Heat be.

The Second *Manner of increaſing the Effect of Elemental Fire*, is by throwing a Quantity of moiſt or green Vegetables, cut down while full of Sap, into a large Heap, and preſſing them cloſe down: The Reſult of which, is, that they grow warm, hot, ſmoak, and break out into Flame.

The Third way is, by the Mixture of certain cold Bodies. Thus, Water and Spirit of Wine, firſt warm'd, grow much hotter by the Mixture: So, any of the heavy aromatick Oils, as of Cloves, Cinnamon, Saſſafras, Guiacum, &c. mix'd with Spirit of Nitre, grow exceedingly hot, and burſt forth like Vulcano's. And the ſame may be ſaid of Spirit of Nitre, and Steel Filings.

The like Effect may be had from dry Bodies. Thus, pure Sulphur, and Steel Filings, well ground and mix'd in equal Quantities, with Water enough to make them into a dry Paſte, and laid an Hour or two any where, even under Ground, will ſmoak and emit Flame; and that with the greater Vehemence, as it is more ſtrongly preſs'd down. See EARTHQUAKE.

The Fourth is by *Phoſphorus*, which is a kind of Magnet, prepar'd from the Parts of Animals, that imbibes and retains *Fire* for many Ages. See PHOSPHORUS.

But, in all theſe manners, it does not appear, that any *Fire* is excited, or generated of what was not *Fire* before: For, if in a ſevere Winter's Day you rub a Plate of Gold briſkly againſt another, they will both grow hotter and hotter by Degrees, till at length they become red hot, and at the point of melting: And yet all this time the Plates loſe nothing of their Weight; but ſwell or grow bigger in all their Dimenſions.

Hence it follows, that the Particles of the Gold are not converted by the Friction, into *Fire*; but the *Fire* exiſted before; and all the Effect of the Friction, &c. is to collect, or bring together a Quantity thereof before diſperſed throughout the Atmoſphere.

In Effect, there is no making or producing of *Fire de novo*. All we can do, is, of inſenſible, to render it ſenſible, *i. e.* to collect it out of a greater Space into a leſſer; and to direct and determine it to certain Places, This is effected, as above mention'd, by Motion, Attrition, &c.

The Sun alſo contributes very much to the bringing of *Fire* to light, by means of his rapid Motion round his Axis; whereby the fiery Particles, every where diffuſed, are directed and determined in parallel Lines towards certain Places, where their Effect becomes apparent. See SUN.

Whence it is that we perceive the *Fire* when the Sun is above the Horizon; but that, when he diſappears, his Impulſe or Preſſion being then taken away, the *Fire* continues diſperſed at large thro' the ethereal Space.

In effect, there is not leſs *Fire* in our Hemiſphere in the Night time, than by day; only it wants the proper Determination to make it perceived.

Another way of rendering it ſenſible, is, by collecting the parallel Rays into a leſs Compaſs, by means of Convex Glaſſes, or Concave Specula. See LENS, BURNING GLASS, &c.

This Elemental *Fire* is preſent every where, in all Bodies, all Space, and at all Times; and that in equal Quantities: For, go where you will, to the Top of the higheſt Mountain, or deſcend into the loweſt Cavern; whether the Sun ſhine, or not; in the coldeſt Winter, or the moſt ſcorching Summer; by one or other, or all of the means above mentioned may *Fire* be collected. In a Word, there is no aſſignable phyſical Point without *Fire*; no Place in Nature, where the Attrition of two Sticks will not render it ſenſible.

So long as *Fire* remains equably, and undetermin'd in any Place, it does not diſcover it ſelf by any Effect. In the ſevereſt Weather we perceive no Influence or Effect of *Fire*, when, at the ſame time being collected and determined by Attrition, it becomes manifeſt.

By changing *Fire* out of its indeterminate State, and impelling it in converging Lines, its Moment is increaſed. Witneſs the Phænomena of Burning Glaſſes.

But, how Attrition, crude Vegetables, &c. contribute towards altering the Direction, &c. of *Fire*, does not appear.

Of this *Fire*, and the Effects thereof above mentioned, depends all Fluidity of Humours, Juices, &c. All Vegetation, Putrifaction, Fermentation, animal Heat, &c. See FLUIDITY, VEGETATION, PUTRIFACTION, &c.

II. But in what manner ſoever, *Fire* is collected in Bodies; upon a Ceſſation of the collecting Cauſe, it ſoon diſappears again, unleſs it be ſupplied with a *Pabulum*, or Fuel. In which caſe it becomes Culinary *Fire*.——

By *Pabulum*, or *Fuel* of *Fire*, we mean whatever receives, and retains *Fire*; and is conſumed, or at leaſt render'd inſenſible thereby. See FUEL.

The only *Pabulum* of *Fire*, in all Nature, is the Oil, Sulphur, or Fat of Bodies: And Bodies are only Fuel, on account of the Oil they contain.

Hence 1°, All Vegetables, not too moiſt, nor too dry, afford ſuch a Pabulum; particularly thoſe, which contain the greateſt Quantity of Oil; as Balſamick and Reſinous Woods, &c. 2°, All vegetable and animal Coals are a proper Pabulum for maintaining of *Fire*; as being only the Parts of Vegetables and Animals, which have exhaled their Water and Salt, and retain'd the Oil alone inhering, in a black Form, in their Earth. 3°, All foſſil and bituminous Earths, Turfs, &c. 5°, All Mineral Sulphur, whether pure or join'd with Earth, Stone, or Metals; as Pit-Coal, &c. 6°, The Fat and Dung of Animals; and 7°, Several Productions of Chymiſtry; as Oils, inflammable Spirits, &c.

This *Fire*, which burns combuſtible Bodies, requires Air, to ſuſtain it; which taken away, the *Fire* is immediately diſſipated: As appears from the Experiments in Vacuo.

And yet, *Fire* does not immediately bear, or endure the Air; but always repels it: And by that means forms a kind of Vault, or aerial Furnace all round; which by its Weight, and the Preſſure of the incumbent Air acts on all the Particles, or Corpuſcles that would make their Way through it; and thus retains the *Fire*, and applies it to the combuſtible Matter.

Hence, the heavier the Air, the more vehement the *Fire*: And accordingly, in ſtill cold Weather we obſerve the *Fire* to act with more Violence than in warm Weather.

But whether the Air retains *Fire* by its Weight alone (which Water it ſelf would do), may be queſtioned: And whether its Elaſticity does not contribute ſomething thereto; as alſo, whether there be not ſome further unknown Property in the Air, that has a Share, may be doubted. Something of this kind one would ſuſpect from hence, that all Air is not proper to maintain Flame. See AIR.

This *Fire*, in burning a combuſtible Matter, affords a *ſhining Fire*, or a Flame, or both, according to the Diverſity of Fuel; and frequently, Smoak, Soot and Aſhes.

Shining, or *luminous Fire*, ſeems to be elemental *Fire*, attracted towards the Parts of the Sulphur, or Oil, with ſuch Force and Velocity, as to move, and ſhake them very violently, whirl them about, divide, and attenuate them, and thus render them volatile, and ready to be expelled: While, in the mean time, the Air, making its Vault all around, reſtrains and keeps them in, directs them to the Sulphur, and keeps them ſtill collected in their Place or Pabulum, while the combuſtible Matter is diffuſed all around.

Flame

Flame ſeems to be nothing but a thick Sulphur agitated, as before, by Elemental *Fire*; ſo as the *Fire* is driven with a great Motion around the revolving Particles of the Sulphur. See FLAME.

Soot, ſeems to be produced, when *Fire* and Sulphur cannot break into a Flame; being a ſort of Coal, conſiſting of a thick Sulphur, and an attenuated Oil with Earth and Salt. See SOOT.

Smoak ſeems to be the combuſtible Matter, when it begins to be relinquiſh'd by the Elemental *Fire*: For, if this Smoak be afterwards paſs'd thro' a Flame, it will it ſelf become Flame, as before. See SMOAK.

Laſtly, *Aſhes* are the Earth, and Salt; which the *Fire* leaves untouch'd. See ASHES.

FIRE may be diſtinguiſh'd into *Shining*, and *not Shining*: For, that there is *Fire* which does not emit Light, is evident hence, that a piece of Iron taken out of the *Fire*, before it be red hot, ſhall yet give *Fire* to Sulphur.

Shining Fire again may be ſubdivided into two Kinds: That which *warms*, as red hot Iron; and that which does *not warm*, as that obſerved in putrid Fiſhes, rotten Wood, &c. The Oil whereof beginning to be agitated, and attenuated, produces Light, without any Heat, ſo far as the Thermometer may be a Judge.

Of *Shining*, and at the ſame time *Warming Fires*, the principal is that of the *Sun*, as it is called; tho', whether the *Fire* be really emitted from the Body of the Sun; or whether it be only the common, vague, univerſal *Fire*, determin'd by the Sun, is not eaſy to ſay. This *Fire* we more uſually conſider under the Denomination of *Light*. See SUN, and LIGHT.

This *Solar Fire*, in calcining certain Bodies, makes ſome Addition to the Weight thereof.

Thus, Antimony expoſed in the Focus of a Burning Glaſs, will ſmoak a conſiderable Time; and the greateſt Part of it ſeem to evaporate in Fumes: But, if tried by the Balance, it will be found to have gain'd in Weight. And if it be again applied in the Focus of a larger Glaſs, it will again emit Fumes; and yet ſtill be increaſed in Weight.

Beſide the *Solar*, there is likewiſe a *Subterraneous Fire*. This appears in digging under Ground: For the firſt Glebe, next to the Surface, is warm'd by the Heat of the Sun; and as you go deeper, you will find it colder; whence in hot Countries they have Conſervatories of Ice at ſome Depth under Ground: Till, arriving at a certain Depth, *viz.* forty or fifty Foot, it begins to grow warmer; ſo as no Ice can there ſubſiſt: And at a yet greater Depth, 'tis ſo hot, as to take away Reſpiration, extinguiſh Candles, &c. And if the Miner will venture further, and carry a Candle along with him, he frequently ſets the whole Place in a Flame, the ſulphurous Fumes render'd volatile by the ſubterraneous *Fire*, catching Flame from the Candle.

Whence it appears, that there is another Source of *Fire*, or another Sun, in the Boſom of the Earth, which gives Motion and Life to every thing growing in, or upon the Globe; and even, that the Centre of the Earth is mere *Fire*: which *Fire* is likewiſe argued to be perpetual from Vulcano's or burning Mountains, which have been known to caſt up *Fire*, from the earlieſt Account of Times. See VULCANO.

There are two great *Fires* therefore, the Higher, or Solar; and the lower, or ſubterraneous; in every other reſpect perfectly alike. See SUBTERRANEAN, CENTRAL, SOLAR, &c.

FIRE, in Chymiſtry, is the great Inſtrument, by which moſt of the Operations of that Art are perform'd. See CHYMISTRY.

The Kind, Degree, Direction, &c. of *Fire* are Things the Chymiſt is principally to attend to. The Diverſity of *Fire* makes a great Difference in the Reſult of the Experiment; ſo as, the ſame Effect, *e. gr.* ſhall not ariſe, if an Experiment be made with the *Fire* of Spirit of Wine, and that of Pitcoal.

And to this Cauſe, Mr. *Boyle*, in his Treatiſe of the unexpected Failure of Experiments, attributes it, that a great many Experiments ſucceſsfully tried by ſome, have not ſucceeded to others.

The *Fires* chiefly required by the Chymiſts, are ſuch as yield no Fæces, or Remains; no Salt, or Smoak: And ſuch alone are thoſe of the Sun, and of Spirit of Wine. Thoſe which come next in Purity, are Oils diſtilled per Veſicam; which loſe their Earth and Salt, by their Boyling and Agitation in the Water; ſo that the oftener the Diſtillation is repeated, the purer they are render'd: After theſe come Turf.

Indeed, the very Manner wherein the *Fire* is blown, is found to have ſome Effect: Thus, *Acoſta*, *lib.* 4. *c.* 5. relates, that in *Peru*, when they would melt and ſeparate their Silver from the Earth, &c. if the *Fire* be blown up with Bellows, the Fuſion will not ſucceed: Nor will any other *Fire* do but that blown by the Wind raiſed from the Fall of ſome Water; ſo that they are forc'd to have Recourſe to large Tubes laid to the Feet of large Mountains, or Cataracts to convey the Wind generated by the Fall of Water to their Works.

The *Degree of Fire*; or the Collection and Direction of *Fire*, to the Degree proper for each Operation, is almoſt the Whole of Chymiſtry: For the *Fire*, *e. gr.* requiſite to melt Metals, is by no means proper for the Diſtilling of Spirit of Wine.

Now, the greater or leſs Force of *Fire* depends altogether on a greater or leſs Quantity thereof collected into a Focus: For, as to its Motion, it does not ſeem in our Power to alter it; or to make any Increaſe or Diminution of the Force of the *Fire* on that account.

The Chymiſts uſe four principal *Degrees of Fire* in their Operations.

The Firſt is equal to the natural Heat of the human Body; or rather that of a Hen, hatching her Eggs; which is the Standard: And accordingly this firſt Degree is beſt meaſured by applying a Thermometer to a Hen; and ſome Chymiſts, by keeping a *Fire* continually to this Degree, by means of a Thermometer, have hatch'd Chickens.

By this Degree all their Digeſtions, eaſy Separations and Solutions, gentle Diſtillations, with all Fermentations and Putrifactions are perform'd. See DIGESTION, DISTILLATION, &c.

The Second *Degree of Fire* is that which gives a Man Pain, but does not deſtroy, or conſume the Parts: Like the Heat of a ſcorching Summers Sun, which chafes and inflames the Skin; and even ſometimes raiſes Bliſters.

It is uſed in making Separations of the more ponderous Bodies, which the firſt Degree is not equal to; as alſo in ſome Fixations, particularly that of Mercury, which is render'd fix'd by a gradual Introduction of ſuch *Fire* among the Parts of the Mercury.

It makes the Serum of the Blood, and White of an Egg coaleſce, and ſo occaſions deadly Inflammations; and is too intenſe for any Digeſtion, Putrifaction, or Fermentation to be effected by it.

The Third *Degree of Fire* is that of boiling Water, which ſeparates and deſtroys the Parts of Bodies. This Degree is perfectly ſtable; for Water, when once it boils, is at its utmoſt Degree of Heat, and cannot be rais'd a whit further, by any Augmentation of *Fire*, or Fuel; as was firſt obſerv'd by Monſ. *Amontons*.

This Degree ſerves to attenuate, ſeparate, fix, and perform other Operations, where the two former would not be effectual.

The Fourth *Degree* is that which melts Metals, and deſtroys every thing elſe.

This Degree is too vehement to be eſtimated by the Thermometer; that Inſtrument not being able to endure it; ſo that it is only determinable by its Effect in the Fuſion of Metals: As the Heat of boiling Water cannot be increaſed, ſo neither can that of melted Metals.

This Degree is uſed in abundance of Operations, and particularly about Minerals, where the three preceding Degrees are inſufficient. This is the laſt Degree known to the antient Chymiſts.

The lateſt Chymiſts reckon a Fifth *Degree of Fire*. viz. that where by Gold is made to emit Fumes, and evaporate. This was firſt diſcover'd in the Year 1690, by Mr. *Tſchirnhauſen*, whoſe Burning Glaſs render'd every thing, even Gold it ſelf volatile. See VOLATILITY, BURNING GLASS, GOLD, &c.

Beſide theſe five Degrees, the Chymiſts have ſeveral intermediate ones; all which however may be eaſily reduc'd to the former.

As, *the digeſting Fire*, or *Venter Equi*, which is the Heat of a Dunghil.

The *Balneum Mariæ*, *Arenoſum*, &c. explain'd under the Article BALNEUM.

The *Naked*, or *Immediate Fire*, which is the common *Fire* applied under a Veſſel.

The *Fire of a Lamp*, which is moderate and equal, and may be increaſed by the Addition of more Wick; uſed by Enamellers, &c.

The *Wheel Fire*, which is lighted all round a Crucible, or other Veſſel, to heat it all alike.

That called *by Suppreſſion*, which is when the Veſſel is not only encompaſs'd round, but cover'd over with *Fire*.

The *Reverberatory Fire*, when it is in a Furnace cloſe a-top, by which the *Fire* is reflected back, and all around upon the Veſſel. See REVERBERATORY.

The *Melting*, or *Fuſing Fire*, for the Solution and Calcination of Metals and Minerals. See FUSION.

The *Glaſs-houſe Fire*, for the Vitrifying of the Aſhes of Vegetables. See GLASS.

And the *Olympick Fire*, which is that of the Sun collected in the Focus of a burning Mirror, &c.

To the ſeveral Degrees of *Fire* required, ſeveral Forms of Furnaces are accomodated; which ſee under the Article FURNACE.

There are five principal ways of *altering the Degrees of Fire*.

For *Fire* differs 1°, According to the *Weight of the Pabulum*, or Fuel; it being a Rule, that the heavier the Fuel or combuſtible Matter is, the more vehement, *cæteris paribus*, is the *Fire*. Thus, Spirit of Wine affords a weaker and leſs deſtructive *Fire* than Oil; and this, than Pitch, and ſo on; the heavier and groſſer, ſtill the fiercer.

2°, According to the *Quantity of the Pabulum*.

3°, According to the *Diſtance of the Fire* from the Object; it being a Rule, that the Heat of the *Fire* at different Diſtances is reciprocally, as the Squares of thoſe Diſtances.

4°, By the introducing or blowing of Air into the *Fire*; it being a Rule, that the ſtronger the Current of Air, or Wind, provided it be not ſo ſtrong as to break the aerial Fornix or Vault incumbent on the *Fire*, the more is the *Fire* increas'd.

For a briſk Blowing puts the minute Parts of the Pabulum into a greater Motion, whence a greater Attrition ariſes, and of conſequence, more *Fire* is collected.

5°, According to the *Solidity*, or *Reſiſtance* of the Medium between the *Fire* and the Object: For the more ſolid the Medium, the greater Quantity of Heat, *cæteris paribus*, does it receive from the *Fire*, and communicate to the Object.

Thus, a Vapour Bath communicates much leſs Heat to the Bodies diſtilled by it, than a Water Bath; and this, leſs than a Sand Bath; and this again leſs than a Bath of Steel Filings; for all Bodies expoſed to the *Fire*, grow hot in Proportion to their ſpecifick Gravities.

Thus, if a piece of Metal be put in Water, and both ſet over the *Fire*; while the Water only grows lukewarm, the Metal ſhall be ſo hot, as to be paſt touching: And thus, a Key in a Perſon's Pocket ſitting near the *Fire*, ſhall frequently be very hot, while his Cloaths themſelves have not any ſenſible Warmth.——Indeed, this Rule admits of ſome Exceptions; for we have Oils, lighter than Water, which yet admit of triple its Degree of Heat, before they boil.

'Tis a great Controverſy in Chymiſtry, whether *Fire*, when applied to Bodies, only ſeparates and diſſolves them; or whether it does not alſo change them.

Mr. *Boyle*, in his *Sceptical Chymiſt*, we think, has abundantly proved, that *Fire* alters Bodies; and that the Parts or Elements procured from Bodies by *Fire*, did not exiſt ſuch in the Bodies themſelves. See ELEMENTS.

Add, that *Fire* does not only ſeparate and decompound; but it alſo compounds and mixes Bodies. This no body can doubt of, who knows that *Fire* in acting on many Bodies, inſinuates and fixes it ſelf among them, and ſo conſtitutes one Body together with them.

This is the Caſe in diſſolving of Lead by *Fire*; as is evident from the Increaſe of the Weight of the Lead: The like is obſervable in Salt of Tartar, which when firſt melted, loſes ſomewhat of its Weight; but as it is calcined further and further, grows ſtill heavier and heavier. In like manner, Antimony calcined by a Burning Glaſs, receives a notable Acceſſion of Weight.

To ſay no more, Phoſphorus muſt derive its ſhining Matter from the fiery Particles it imbibes in the Diſtillation: For no body will imagine that any of that ſhining Matter before exiſted in the human Body. See PHOSPHORUS.

FIRE, in Medicine and Chirurgery, is uſed in the ſame Senſe with Cautery; and is diſtinguiſh'd into *Actual*, and *Potential*.

Actual Fire is a hot Iron. There are ſeveral Diſeaſes, only to be cured by the Application of *Actual Fire*; which Method of Cure is practiced with great Succeſs in the *Eaſt Indies*. See BURNING.

Potential Fire is that contain'd in Cauſtick Medicines. See CAUSTICK, and CAUTERY.

Fire alſo gives the Denomination to divers Diſeaſes, as St. *Anthony*'s FIRE, by Phyſicians more uſually called *Eryſipelas*. See ERYSIPELAS.

St. *Anthony*'s *Fire* is alſo called *Holy Fire*, or *Sacer Ignis*; and in an antient Inſtrument, belonging to the Hoſpital in the Church of St. *Anthony*, at *Marſeilles*, it is called *Fire of Hell*, or *Ignis infernalis*.

This Diſtemper made great Ravages in *France*, in the XIth and XIIth Century; and it was for the Relief of Perſons labouring under it, that the religious Order of St. *Anthony* was founded, in the Year 1093. under the Pontificate of *Urban* II.

Walking FIRE, called alſo Will-with-a-wiſp, *Jack in a Lanthorn*, *Ignis fatuus*, &c. See *Ignis* FATUUS.

FIRE, in Theology, is frequently underſtood of the Puniſhment of the Wicked after Death. See HELL, GEHENNA, PURGATORY, &c.

'Tis ſuppoſed the World will periſh at laſt by *Fire*. See CONFLAGRATION.

God has made ſeveral Revelations of himſelf, under the Appearance of *Fire*: He appeared to *Moſes* under the Form of a *Fire* burning in a Buſh.: The Holy Ghoſt deſcended on the Apoſtles in Tongues of *Fire*; and the Camp of the *Iſraelites* was guided and conducted in the Night-time by a Pillar of *Fire*.

The *Perſians* ador'd *God* under the Image or Repreſentation of *Fire*; by reaſon 'tis *Fire* gives Motion to every thing in Nature. They are ſaid to have *Fires* ſtill ſubſiſting, which have burnt above a thouſand Years.

The *Hebrews* kept up the *Holy Fire* in the Temple; and the Veſtals were appointed expreſs, to keep up the ſacred *Fire* of the *Romans*. See VESTAL.

Vulcan was worſhip'd among the Antients, and particularly the *Egyptians*, as the Inventor of *Fire*: And *Boerhave* has made it highly probable, that the *Vulcan* of the Heathens was the *Tubal-Cain* of the *Hebrews*, the firſt who appears to have known the Uſe of *Fire*; and to have applied it in the Fuſion of Metals, and other Preparations of Chymiſtry. See CHYMISTRY.

FIRE-*Stone*, a kind of Stone, called alſo *Rigate Stone*, from the Place whence 'tis chiefly brought: 'tis very good, and much uſed for Chimneys, Hearths, Ovens, Stoves, &c. See STONE.

FIRE *Office*, ſee OFFICE, of INSURANCE.

FIRE *Maſter*, in our Train of Artillery, Is an Officer that gives Directions and the Proportions of the Ingredients for all the Compoſitions of *Fire* Works, whether for Service in War, or for Rejoycings and Recreations.

The Orders are given to the *Fire* Workers and Bombardeers, who are oblig'd to execute them.

FIRE *Workers*, are ſubordinate Officers to the *Fire* Maſter, who command the Bombardeers.

They receive the Orders from the *Fire* Maſters, and ſee that the Bombardeers execute them.

FIRE-*Eater*. We have a great Number of Charletans, who have procured the Attention and Wonder of the Publick, by *eating of Fire*, *walking on Fire*, *waſhing their Hands in melted Lead*, &c.

The moſt celebrated is our Countryman *Richardſon*, much talk'd of abroad. His Secret, as related in the *Journal des Scavans*, of the Year 1680, conſiſts in a pure Spirit of Sulphur, wherewith he rubs his Hands, and the Parts that are to touch the *Fire*; which burning and cauterizing the Epidermis, hardens and enables the Skin to reſiſt the *Fire*.

Indeed, this is no new Thing: *Amb. Pare* aſſures us he had tried on himſelf, that after waſhing the Hands in ones own Urine, or with Unguentum Aureum, one may ſafely waſh them in melted Lead.

He adds, that by waſhing his Hands in the Juice of Onions, he could bear a red hot Shovel on them, while it diſtill'd Lard.

FIRE *Works*, or *Artificial* FIRES are Preparations made of Gunpowder, Sulphur, and other inflammable and combuſtible Ingredients, on occaſion of publick Rejoycings, and other Solemnities.

The principal of theſe are *Rockets*, *Serpents*, *Stars*, *Hail*, *Mines*, *Bombs*, *Garlands*, *Letters*, and other Deviſes. See ROCKET, STAR, BOMB, &c.

The Art of preparing and managing *Fire* Works, is called *Pyrotechnia*. See PYROTECHNIA.

Wild FIRE, is a kind of artificial or factitious *Fire*, which burns even under Water; and that with greater Violence than out of it.

It is compoſed of Sulphur, Naphtha, Pitch, Gum, and Bitumen; and is only extinguiſhable by Vinegar, mix'd with Sand and Urine; or with raw Hides.

Its Motion or Tendency is ſaid to be contrary to that of natural *Fire*, and always follows the Direction in which it is thrown; whether it be downwards, ſidewiſe, or otherwiſe.

The *French* call it *Greek Fire*, or *Feu Gregeois*, becauſe firſt uſed by the *Greeks*, about the Year 660; as is obſerv'd by the Jeſuit *Petavius*, on the Authority of *Nicetas*, *Theophanes*, *Cedrenus*, &c.

The Inventor, according to the ſame Jeſuit, was an Ingineer of *Heliopolis*, in *Syria*, named *Callinicus*, who firſt applied it in the Sea Fight commanded by *Conſtantine Pogonat*, againſt the *Sarazens*, near *Cizicus*, in the *Helleſpont*; and with ſuch Effect, that he burnt the whole Fleet therewith, wherein were thirty thouſand Men.

But others will have it of a much older Date; and hold *Marcus Gracchus* the Inventor; which Opinion is ſupported by ſeveral Paſſages, both in the *Greek* and *Roman* Writers, which ſhew it to have been antiently uſed by both thoſe Nations in their Wars. See *Scaliger* againſt *Cardan*.

Conſtantine's Succeſſors uſed it on divers Occaſions, with equal Advantage, as himſelf; and what is remarkable enough, is, that they were ſo happy as to keep the Secret of the Compoſition to themſelves; ſo that no other Nation knew it in the Year 960.

Hugh, King of *Burgundy*, demanding Ships of the Emperor *Leo*, for the Siege of *Freſne*, deſired likewiſe the *Greek Fire*. *Chorier Hiſt. de Dauph.*

Fa. *Daniel* gives us a good Deſcription of the *Greek Fire*, in his Account of the Siege of *Damiette*, under St. *Louis*.

Every body, ſays that Author, was aſtoniſh'd with the *Greek Fire* which the *Turks* then prepared; and the Secret where-

whereof is now loſt. They threw it out of a kind of Mortar; and ſometimes ſhot it with an odd ſort of Croſs Bow, which was ſtrongly bent by means of a Handle, or Winch, of much greater Force than the bare Arm. That thrown with the Mortar, ſometimes appear'd in the Air of the Size of a Tun, with a long Tail, and a Noiſe like that of Thunder. The *French* by Degrees got the Secret of extinguiſhing it; in which they ſucceeded ſeveral times.

FIRE, in the Military Language, is ſometimes uſed for the *Fires* lighted in an Army in the Night time.

Thus, the Enemy's *Fires* were ſeen on the Top of the Mountains.

But, the Term *Fire* is more frequently uſed for the Diſcharge of the *Fire Arms*; or the Shot made on the Enemy from the Artillery, *&c.*

The Horſe ſuffered extremely from the *Fire* of the Foot, which took them in Flank: The Trench was expoſed to the *Fire* of the Place: In this Aſſault the Courtin was all in *Fire.*——

In Fortification, the *Fire of the Place* is the Flank, or that Part of the Courtin where the Line of Defence terminates; from whence they *fire*, to defend the oppoſite Face of the Baſtion.

The beſt way of fortifying is that which gives the moſt *Fire.* See FORTIFICATION.

FIRE *Arms* are thoſe charged with Gunpowder: Such are *Canons*, *Mortars*, and other *Ordnance*; *Muſquets*, *Carabines*, *Piſtols*, and even *Bombs*, *Granado's*, *Carcaſſes*, &c. See CANON, MORTAR, ORDNANCE, &c.

For the *Rebound* or *Reſilition of Fire Arms*, ſee REBOUND: See alſo GUNPOWDER, BULLET, SHOT, &c.

In the Hiſtory of the *Royal Academy* for the Year 1707, we have an Account of ſome Experiments made with *Fire Arms*, differently charged, by Mr. *Caſſini.*

That Author, among other Things obſerves, that by loading the Piece with a Ball which is ſomewhat leſs than Caliber; and only laying a little Gunpowder below the Ball, and a good deal above it, it will yield a vehement Noiſe, but have no ſenſible Effect or Impulſe on the Ball.

This he takes to have been all the Secret of thoſe People who pretended to ſell the Art of rendering ones ſelf invulnerable, or Shot proof.——

FIREBOTE, *i. e.* Fuel for neceſſary Occaſions, which by the Common Law any Man may take out of the Lands granted to him. See HAYBOTE, ESTOVERS, and LIGNAGIUM.

FIRKIN, an *Engliſh* Meaſure of Capacity, for Things liquid. See MEASURE.

The *Firkin of Ale* contains eight Gallons; and that *of Beer*, nine: Two *Firkins* of Beer make the Kilderkin; two Kilderkins the Barrel; and two Barrels the Hogshead. See KILDERKIN, GALLON, BARREL, and HOGSHEAD.

The *Firkins* of Soap and Butter are on the footing of the *Firkin* of Ale, *viz.* a Gallon *per Firkin* leſs than that of Ale.

FIRMAMENT, in the antient Aſtronomy, the eighth Heaven, or Sphere; being that wherein the fix'd Stars are ſuppoſed to be placed. See SPHERE.

'Tis called the *Eighth*, with reſpect to the ſeven Heavens or Spheres of the Planets, which it ſurrounds.

It is ſuppoſed to have two Motions: A Diurnal Motion, given it by the Primum Mobile, from Eaſt to Weſt, about the Poles of the Ecliptick: and another oppoſite Motion from Weſt to Eaſt; which laſt it finiſhes, according to *Tycho*, in 25412 Years; according to *Ptolomy*, in 36000; and according to *Copernicus*, in 258000: In which Time the fixed Stars return to the ſame preciſe Points wherein they were at the Beginning. This Period is commonly called *Plato*'s Year, or the Great Year. See PRÆCESSION *of the Equinox.*

In divers Places of Scripture the Word *Firmament* is uſed for the middle Region of the Air. Many of the Antients allowed, with the Moderns, that the *Firmament* is a fluid Matter; tho' they, who gave it the Denomination of *Firmament*, muſt have taken it for a ſolid One.

FIRMAN, in the *Eaſt Indies*, and particularly in the Territories of the Great *Mogul*, is the Paſſport, or Permit, granted to foreign Veſſels, to trade within their Juriſdiction.

FIRMNESS, or FIRMITY, in Philoſophy, a *Conſiſtence* of a Body; or that State, wherein its ſenſible Parts cohere, or are united together, ſo that the Motion of one Part induces a Motion of the reſt: In which Senſe, *Firmity* ſtands oppoſed to *Fluidity.* See FLUIDITY.

Some Authors confound *Firmneſs* with *Denſity*; as thinking the ſame State or Property of Body, implied by both; or at leaſt, that *Firmneſs* follows Denſity: But this is a Miſtake: For Mercury, the denſeſt Body in Nature, excepting Gold, is yet one of the moſt fluid: And even Gold it ſelf, with all its *Denſity*, when fuſed, wants *Firmneſs*, or Coheſion. See DENSITY.

Many of the *Carteſians*, and others, hold *Firmneſs* to conſiſt in the mere Quiet of the Particles of the Body, and their mutual immediate Contact; urging, that a Separation of Parts can only ariſe from ſome Matter interpoſed between them, which is excluded, by the Notion of Contiguity.

But the Inſufficiency of this Hypotheſis is evident: For mere ſimple Quiet has no Force, either to act, or reſiſt; conſequently two Particles only join'd by Reſt and Contiguity, would never cohere ſo as that a Motion of the one ſhould induce a Motion of the other. This is obvious in the Caſe of two Grains of Sand, which however contiguous, and at reſt, will never conſtitute a *firm*, coherent Body.

The *Firmneſs* of Bodies, then, depends on the Connection or Coheſion of their *Particles.* Now, the Cauſe of Coheſion, Sir *I. Newton* and his Followers, hold to be an attractive Force, inherent in Bodies, which binds the ſmall Particles thereof together; exerting it ſelf only at, or extremely near, the Points of Contact, and vaniſhing at greater Diſtances. See ATTRACTION.

The *Firmneſs* of Bodies, therefore, follows the Laws of the Coheſion of Bodies; which ſee under COHESION.

Hence, *Firmneſs* in all Bodies muſt be as the Surfaces, and Contacts of the component Parts: Thus a Body, whoſe Parts are by their peculiar Shapes capable of the greateſt Contacts, is moſt *firm*; and that, whoſe Parts are capable of the leaſt Contact, will be moſt ſoft.

In the former, the greateſt Requiſite is to be as near Cubes as poſſible, and in the latter to Spheres. And in the ſame manner are to be accounted for, not only all the intermediate Degrees between the moſt *firm*, and the moſt ſoft Bodies, but thoſe different Conſiſtences, which are diſtinguiſh'd by other Names, as *friable*, *tenacious*, *glutinous*, and the like: for the greater are the Solidities of the component Parts of any Body, in Proportion to their Surfaces, though that Body by the Aptitude of the Contacts, may be what we call very *hard*; yet it will be moſt *friable* or brittle. And where the Surfaces of the compounding Particles are much extended upon a ſmall Quantity of Matter, the Bodies they compoſe, though they may be light and ſoft, yet they will be *tenacious* or glutinous: For although the Flexibility of their compounding Parts admits of their eaſy Changing of Figure by any external Force, yet by their touching one another in ſo many Points, they are very difficultly ſeparated.

The former is the Caſe in cryſtalized Salts, Reſins, and the like; the latter in Turpentines, Gums, and all of that Sort. See SOLIDITY, &c.

FIRST *Fruits*, *Annates*, or *Primitiæ*, are the Profits of every Benefice for one Year. See PRIMITIÆ, &c.

The *Firſt Fruits* were originally intended for the Pope's Benefit, and were accordingly, before the Reformation, paid to him: But King *Henry* VIII. by a Statute in the twenty ſixth Year of his Reign, tranſlated them to the Crown.

Queen *Anne*, in the third Year of her Reign, made a Grant of the whole Revenue of *Firſt Fruits* and Tenths, to ſettle a Fund for the Augmentation of the Maintenance of the poor Clergy. See AUGMENTATION.

By the Act 26 *Hen.* 8. he, who enters on any ſpiritual Living, before he pays, or compounds for it, on Conviction, forfeits double the Value thereof.

Every Clerk therefore, before his Induction (or ſoon after) ſhould go himſelf with one Friend, or ſend two Friends for him to the *Firſt Fruits* Office, and there enter into Bond to pay the *Firſt Fruits* of his Benefice within two Years next enſuing, at four equal half-yearly Payments. Only one Tenth of the whole yearly Sum, enter'd in the King's Books, is to be deducted; becauſe that muſt be paid by it ſelf the firſt Year.

Formerly four Bonds were given for the four ſeveral Payments; but by Statute 2 and 3 of Queen *Anne*, one Bond only is appointed to be given; and the Rates of all Benefices, according to the King's Books, are declared unalterable. The Succeſſor is chargeable with Arrears of Tenths, due from his Predeceſſor; and conſequently, by 27 *H.* 8. c. 8. is impower'd to diſtrain his Predeceſſor's Goods, being upon the Benefice; and hath likewiſe a good Action at Law againſt him or his Executors.

FISC, FISCUS, in the Civil Law, the Treaſury of a Prince, or State; or that, to which all Things due to the Publick, do fall.

By the Civil Law, none but a Sovereign Prince has a Right to have a *Fiſc*, or publick Treaſury. At *Rome*, under the Emperors, the Term *Ærarium* was uſed for the Revenues deſtin'd for the Support of the Charges of the Empire; and *Fiſcum* for thoſe of the Emperor's own Family.

The Treaſury, in effect, belong'd to the People, and the *Fiſc* to the Prince. See TREASURY.

The Word is derived from the *Greek* φίσκος, a great Baſket.

FISCAL, ſomething relating to the pecuniary Intereſts of the King, the Publick, or a private Perſon.

The

The Emperor *Adrian* erected the Office of *Fiſcal Advocate* in the *Roman* Empire.

FISH, in Natural Hiſtory, an Animal that lives in the Waters, as its proper Place of Aboad. See ANIMAL.

Naturaliſts obſerve a World of Wiſdom, and deſign in the Structure of *Fiſhes*, and their Conformation to the Element they are to reſide in.

Their Bodies are cloathed and guarded in the beſt Manner, with Scales or Shells, ſuitable to their reſpective Circumſtances, the Dangers they are expoſed to, and the Motion and Buſineſs they are to perform. See SHELL, and SCALE.

The Centre of Gravity is placed in the fitteſt Part of the Body for Swimming; and their Shape moſt commodious for making way through the Water, and moſt agreeable to Geometrical Rules. See SWIMMING.

They have ſeveral Parts, peculiar to themſelves; as *Fins*, to ballance and keep them upright. See FIN.

And an *Air Bladder*, to enable them to riſe and ſink to any Height and Depth of Water, at pleaſure. See *Air* BLADDER.

They have Gills, or *Branchiæ*, whereby they reſpire; as Land Animals do by the Lungs. See BRANCHIÆ, and RESPIRATION.

The *Tail* is the Inſtrument of progreſſive Motion, and ſerves to row them forward. See TAIL.

Their *Eyes* are peculiarly form'd to enable them to correſpond to all the Convergences and Divergences of Rays, which the Variations of the watery Medium, and the Refractions thereof, may occaſion: In which reſpect they bear a near Reſemblance to Birds. See EYE, CHOROEIDES, and BIRD.

Fiſhes are diſtinguiſh'd into *Sea* or *Salt-Water-Fiſh*, *Piſcis Marinus*; as the Whale, Herring, Mackarel, *&c.* *River* or *Freſh-Water-Fiſh*, *Piſcis Fluviatilis*; as the Pike, Trout, *&c.* and *Pond* or *Lake-Fiſh*; as the Carp, Tench, *&c.* To which may be added others, which abide indifferently in freſh Water, or ſalt, as Salmons, Shad-*Fiſh*, &c.

There are alſo an *Amphibious* Kind, which live indifferently on Land, or Water; as the Caſtor, Otter, *&c.* See AMPHIBIOUS.

Ariſtotle, and after him Mr. *Willoughby*, more accurately diſtinguiſh *Fiſhes* into *Cetaceous*, *Cartilaginous*, and *Spinous*.

The *Cetaceous* Kind, called alſo *Bellæ Marinæ*, have Lungs and Breath like Quadrupeds; they copulate alſo like them; and conceive and bring forth their Young alive, whom they ſuckle with their Milk.

The *Cartilaginous* Sort are produc'd from large Eggs, like Birds; which are excluded the Womb, alſo, like thoſe of Birds.

The *Spinous* Kind are alſo oviparous; but their Eggs are ſmaller, and they have Spinæ up and down in their Fleſh to ſtrengthen it.

Willoughby thinks, it would be yet more proper to divide *Fiſhes* into ſuch as *breath with Lungs*; and into ſuch as *breath with Gills*: And then, to ſubdivide thoſe that breath with Gills, not into Cartilaginous and Spinous, but into *Viviparous* and *Oviparous*.

The *Viviparous* Kind that breath *with Gills*, he ſubdivides into *Long*; ſuch as the *Galei & Canes*, or Sharks, and Dog *Fiſh*: And *Broad*, ſuch as the *Paſtinaca*, *Raja*, &c. The Subdiviſions of each whereof he gives in his Chapter of *Cartilaginous Fiſhes* in general.

The *Oviparous* Kind that breath *with Gills*, are the moſt numerous; and theſe he ſubdivides into ſuch as are what we uſually call *Flat Fiſh*; and ſuch as ſwim with their Back upright, or at Right Angles to the Horizon.

The *Plain* or *Flat Fiſh* Kind, called uſually *Plani Spinoſi*, are either *Quadrati*, as the *Rhombi* and *Paſſeres*; or *Longiuſculi*, as the *Soleæ*.

Such as ſwim *with their Backs erect*, are either *Long*, and *Smooth*, and *without Scales*, as the *Eel kind*; or *ſhorter* and *leſs ſmooth*: And theſe have either but *one Pair of Fins* at their Gills, which are called *Orbes*, and *Congeneres*; or elſe *another Pair of Fins* alſo on their Bellies: And this latter Kind he divides into two Kinds.

1°. Such as have *no prickly Fins on their Backs*, but ſoft and flexible ones. 2°. Such as *have prickly Fins* upon their Backs.

Thoſe *Fiſhes* which have only ſoft and flexible Fins on their Backs, may be divided into ſuch as have *three*, *two*, or but *one* ſingle Fin there.

No *Fiſh* but the *Aſelli* have *three* Fins on their Backs.

Fiſhes with *two* Fins on their Backs, are either the *Truttaceous*, or *Trout Kind*; or the *Gobionite*, or *Loach*, or *Gudgeon Kind*.

Fiſhes with but *one* ſoft back Fin, are of three ſorts: The firſt Kind have one *long continued Fin*, from Head to Tail, as the *Hipparus* of *Rondeletius*, &c.

The ſecond, have their *Fin but ſhort*, and placed juſt in the Middle of their Back; and theſe are either *Marine*, as the *Herring Kind*;

Or *Fluviatile*, as thoſe we call *leather-mouthed Fiſhes*; ſuch as Carp, Tench, *&c.*

Such *Fiſhes* as have *prickly Fins on their Backs*, are of two Kinds.

Firſt, ſuch as have *two prickly Fins* on their Backs; and in theſe the anterior Radii of their Fins are always prickly.

Or, 2°. Such as have but *one prickly Fin* there.

Mr. *Willoughby* gives us the following Catalogue of our *Engliſh Fiſhes*.

(1) Of the *Long Cartilaginous* Kind are the

1 *Canis Carcharius*, or *Lamia*, the White Shark.
2 *Galeus Glaucus Rondeletii*, the Blue Shark.
3 *Canis Galeus Rondeletii*; called a *Tope* in *Cornwall*.
4 *Galeus Acanthias*, *ſive Spinax*, the Prickled Dog, or Hound-Fiſh.
5 *Galeus*, *ſeu Muſtela levis*, the Smooth, or unprickled Hound-Fiſh.
6 *Catulus Major*, *vulgo Canicula Ariſtotelis*, the Rough Hound, called in *Cornwall*, the *Bounce*.
7 *Catulus Minor*, the leſſer Hound-Fiſh, or Morgay.

(2) Of the *Plain Cartilaginous* Kind, are the

1 *Raja levis undulata*, the Skate, or Flare.
2 *Raja clavata*, the Thornback.
3 *Raja aſpera noſtras*, the White-Horſe.
4 *Squatinu*, the Angel, or Monk Fiſh.
5 *Rana piſcatrix*, the Thoad Fiſh, or Sea-Devil.

(3) Of the Plain Spinous Kind, are the

1 *Rhombus maximus aſpero ſquamoſus*, called the *Turbot*, or Brett.
2 *Rombus non aculeatus ſquamoſus*, in *Cornwall* called the *Lug-alefe*.
3 *Paſſer Bellonii*, the Place.
4 *Paſſer aſper*, *ſive ſquammoſus*, the Dab.
5 *Paſſer fluviatilis*, *ſive amphibius*, the Flounder, Fluke, or Butt.
6 *Hippogloſſus Rondeletii*, the Holy-But, called in the North the *Turbot*.
7 *Bugloſſus*, or *Solea*, the Sole.

(4) Of the Eel Kind we have,

1 *Lampreta major*, the Lamprey, or Lamprey-Eel.
2 *Lampreta parva*, and *Fluviatilis*, the Lampern.
3 *Anguilla*, the common Eel.
4 *Conger*, the Conger, or Sea-Eel.
5 *Ammodytes Geſneri*, the Sand-Eel, or Launce.
6 *Gunnellus Cornubienſis*, the Butter-Fiſh.
7 *Muſtela vulgaris Rondeletii*, the Sea-Loach, or Whiſtle-Fiſh.
8 *Muſtela fluviatilis*, the Eel-Pout, or Turbou.
9 *Lupus marinus*, the Wolf-Fiſh, or Sea-Wolf.
10 *Alauda non criſtata*, the Sea-Lark; called in *Cornwall* Mulgranock, and Bulcard.
11 *Alauda Criſtata*, the creſted Sea-Lark.
12 *Liparis Rondeletii*.
13 *Gobio fluviatilis*, the Bull-head, or Miller's-Thumb.
14 *Scorpana Bellonii ſimilis*, the Dutch-Pots-Hog; the *Corniſh* Boys call it *Father-Laſher*.

(5) Of the Kind of *Fiſhes* wanting the Belly Pair of Fins; we have,

1 *Mola Salviani*, the Sun-Fiſh.
2 *Acus Ariſtotelis*, *ſpecies major*.
3 *Acus Ariſtotelis congener*, the Sea-Adder.
4 *Xiphias*, *ſeu Gladius piſcis*, the Sword-Fiſh.

(6) Of the Non-ſpinous Kind of *Fiſhes*, with three unprickly ſoft Fins on their Backs; we have

1 *Aſellus vulgaris major*, the Cod-Fiſh, or Kaling.
2 The *Whiting* Pollack.
3 *Aſellus niger*, the Coal-Fiſh, or Rawling Pollack.
4 *Aſellus lucus*, the Bib, or Blinds.
5 *Aſinus antiquorum*, the Haddock.
6 *Aſellus mollis major*, the Whiting.

(7) Of the Non-ſpinous Kind, with only two ſoft Fins on their Backs, are found with us,

1 *Merlucius*, the Hake.
2 *Aſellus longus*, the Ling.
3 *Thynnus*, *Thunnut*, the Tunny, or *Spaniſh* Mackrel.
4 *Scomber*, the Mackrel.
5 *Thymallus*, the Gragling, or Umber.

6 *Albula Salmoni ſimilis*, the Guinnard.
7 *Albula Harengi formis*, the Schelly.
8 *Salmo*, the Salmon.
9 *Salmulus*, the Samlet, or Eranlin.
10 *Salmo griſeus*, the Gray.
11 *Trutta Salmonata*, the Salmon Trout.
12 *Trutta Lacuſtris*, the Scurf, or Bull Trout.
13 *Trutta fluviatilis duum generum*, the Trout.
14 *Umbia minor Geſn.* the Red Charr, or Welſh Torgoch.
15 *Carpio lacus Benaci*, the Guilt, or Guilt Charr.
16 *Eperlanus, ſeu Violæ*, the Smelt.
17 *Golius Niger*, the Rock-Fiſh, or Sea Gudgeon.
18 *Lumpus Anglorum*, the Lump, or Sea Owl.
19 *Cataphractus Schonfeldii*, in the Weſt of *England*, a *Dog*.

(8) Of the Non-ſpinous Kind, with only one Fin on the Back; there are,

1 *Harengus*, the Herring.
2 *Harengus minor*, the Pilchard, called alſo *Calchis*.
3 *Enerasicholus*, the Anchoris.
4 *Aloſa, ſeu Clupæa*, the Shad, or Mother of Herrings.
5 *Sardina*, the Sprat, or Sparling; which is nothing elſe but the Fætus of an Herring.
6 *Acus vulgaris*, the Garr Fiſh, or Horn Fiſh.
7 *Sturio*, the Sturgeon.
8 *Lucius*, the Pike, or Pickrel.
9 *Cyprinus*, the Carp.
10 *Cyprinus latus*, the Bream, or Bruma.
11 *Tinca*, the Tench.
12 *Orfus Germanorum*, the Riedd, Oerve, or Nerſling.
13 *Capito, ſeu Cephalus*, the Chub, or Chevin.
14 *Barbus*, the Barbel.
15 *Leuciſcus*, the Dace, or Dare.
16 *Rutilus, ſeu Rubellas*, the Roach.
17 *Alburnus*, the Bleak, or Bley.
18 *Gobius fluviatilis*, the Gudgeon.
19 *Bobites fluviatilis barbatula*, the Locke.
20 *Varias, ſeu Phoxinus lævis*, the Pink, or Minnow.

The laſt twelve of theſe are called by us (*Malacoſtomi*) *Leather-mouthed Fiſhes*; becauſe they have no Teeth in their Jaws, but only deep down in their Mouths.

(9) Of the Spinous Kind, with two Fins on their Back, of which the foremoſt is aculeate, we have,

1 *Lupus*, the Baſſe.
2 *Mugil*, the Mullet.
3 *Gurcardus Piſcis*, the Grey Garnard.
4 *Hirundo Aldrovandi*, the Tub Fiſh.
5 *Cuculus Aldrovandi*, the Red Garnard, or Rotchet.
6 *Lyra prior Rondeletii*, the Piper.
7 *Mullus major*, the Sur-Mullet.
8 *Draco, ſive Araneus Plinii*, the Spider.
9 *Frachurus*, the Scud.
10 *Perca fluviatilis*, the Perch.
11 *Faber Piſcis*, the Dorge.

(10) Of the Aculeate Kind, with only one Fin on the Back, whoſe Radii are ſome prickly, and ſome ſoft; there are,

1 *Aurata*, the Gilt-Head, or Gilt-Poll.
2 *Pagrus*, the Bream.
3 *Turdus, vulg.* the Old Wife, or Wraſs.
4 *Perca fluviatilis minor, ſeu aurata*, the Ruff.
5 *Piſcis aculateus vulgaris, ſeu Pungitius Aberti*, the Common Prickle-Back, or Sharpling, or Branſtickle.
6 *Piſcis aculeatus minor*, the Leſſer Prickle-Back.

(11) Of the Cetaceous Kind, we reckon only

1 *Balæna Britanica Antiquorum*, which ſeems now to be gone from our Seas; and we ſcarce know what kind of Fiſh it was.
2 *Balæna, vulg. Rondeletii*, the Whale, which is ſometimes found ſtranded on our Coaſts, or rambles up our Rivers.
3 *Delphinus Antiquorum*, the Dolphin, very rarely, but ſometimes ſeen here.
4 *Phocæna*, the Porpuſs, called by *Schonfeld*, the *Northern Dolphin*.

Fish, with regard to Commerce, is diſtinguiſh'd into *Dry*, *Pickled*, *Green*, and *Red*.

Dry, or *Salt* Fish, is that which is ſalted and dryed, either by the Heat of the Sun; or by Fire. Such principally are the *Cod*, *Stock-Fiſh*, *Herring*, and *Pilchard*.

Green Fish is that lately ſalted, and which yet remains moiſt; as *Green Cod*, &c.

Pickled Fish is that boil'd and ſteep'd in a Pickle, made of Salt, Vinegar, &c. as *Salmon*, *Cod*, *Herring*, *Mackarel*, *Pilchard*, *Anchovy*, and *Oiſters*.

Red Fish, is ſome freſh *Fiſh*, broil'd on the Grid-iron, then fried in Oil of Olives, and barrel'd up with ſome proper Liquor; as new Olive Oil, Vinegar, Salt, Pepper, Cloves, and Laurel Leaves, or other Herbs. The beſt *Fiſh* thus prepar'd are Sturgeon and Tunny.

Fish, *conſider'd as a Food*, makes a conſiderable Article in the Furniture of the Table; and the Breeding, Feeding, Catching, &c. thereof makes a peculiar Art of no ſmall Moment in the Oeconomy of a Gentleman's Houſe and Garden.

To this relate the Ponds, Stews, &c. deſcribed in their proper Places. See Pond, Stew, &c.

Some General Rules and Obſervations on the ſame Subject, may not here be unacceptable.

1°. *For the Breeding of Fiſh*, the Quality of the Pond, Water, &c. proper for this end, is ſcarce determinable by any certain Symptom, or Rule: For ſome very promiſing Ponds do not prove ſerviceable that way. One of the beſt Indications of a *Breeding* Pond, is when there is good Store of Ruſh, and Grazing about it, with gravelly Shoals; ſuch as Horſe-ponds uſually have: So that when a Water takes thus to Breeding, with a few Milters and Spawners, two or three of each, a whole County may be ſtock'd in a ſhort Time.

Eels and Pearch are of very good Uſe, to keep down the Stock of *Fiſh*; for they prey much upon the Spawn and Fry of bred *Fiſh*, and will probably deſtroy the Superfluity of them.

As for Pike, Pearch, Tench, Roach, &c. they are obſerv'd to breed in almoſt any Waters, and very numerouſly; only Eels never breed in ſtanding Waters, that are without Springs; and in ſuch are neither found, nor increaſe, but by putting in: Yet where Springs are, they are never wanting, tho' not put in. And which is moſt ſtrange of all, no Perſon ever ſaw in an Eel the leaſt Token of Propagation, either by Milt, or Spawn; ſo that whether they breed at all, and how they are produc'd, are Queſtions equally myſterious, and never yet reſolved.

2°. *For the Method of Feeding Fiſh*, take the following Remarks. 1. In a Stew, thirty or forty Carps may be kept from *October* to *March*, without Feeding; and by fiſhing with Tramels, or Flews in *March*, or *April*, you may take from your great Waters, to recruit the Stews: But you muſt not fail to feed all Summer, from *March* to *October* again, as conſtantly as cooped Chickens are fed; and 'twill turn to as good an Account.

2. The Conſtancy and Regularity of ſerving the *Fiſh*, conduces very much to their well eating and thriving.

3. Any ſort of Grain boiled, is good to feed with, eſpecially Peaſe and Malt, coarſe ground: The Grains after Brewing, while freſh and ſweet, are very proper; but one Buſhel of Malt not brew'd, will go as far as two of Grains: Chippings of Bread, and Orts of a Table ſteep'd in Tap-droppings of ſtrong Beer, or Ale, are excellent Food for Carps. Of theſe the Quantity of two Quarts, to thirty Carps, every Day, is ſufficient: And ſo fed Morning and Evening, is better than once a Day only.

There is a ſort of Food for *Fiſh*, that may be called accidental, and is no leſs improving than the beſt that can be provided; and this is, when the Pools happen to receive the Waſh of Commons, where many Sheep have Paſture, the Water is enrich'd by the Soil, and will feed a much greater Number of Carps, than otherwiſe it would do: And farther, the Dung that falls from Cattel ſtanding in Water in hot Weather, is alſo a very great Nouriſhment to *Fiſh*.

The beſt Food to raiſe Pikes to an extraordinary Fatneſs, is Eels; and without them 'tis not to be done, but in a long Time: Setting theſe aſide, ſmall Perches are the beſt Meat. Breams put into a Pike-pond, breed exceedingly, and are fit to maintain Pikes; which will take care they do not encreaſe over-much: The numerous Fry of Roaches and Rouds, which come from the greater Pools into the Pike-Quarters, will likewiſe be good Diet for them.

Pikes in all Streams, and Carps in hungry-ſpringing Waters, being fed at certain Times, will come up, and take their Meat almoſt from your Hand.

The beſt Feeding-place is toward the Mouth of the Pond, at the Depth of about half a Yard; for by that means the Deep will be kept clean and neat; the Meat thrown into the Water, without other Trouble, will be pick'd up by the *Fiſh*, and nothing be loſt: Yet there are ſeveral Devices for giving them Food, eſpecially Peaſe; as a ſquare Board let down with Meat on it.

When *Fiſh* are fed in the larger Pools or Ponds, where their Numbers are great, Malt boiled, or freſh Grains, is the beſt Food. Thus Carps may be fed and rais'd like Ca-

pons, and Tenches will feed as well; but Perch are not for a Stew in Feeding-time.

3°. As to the *Benefits that redound from the keeping of Fiſh*, beſides furniſhing your Table for your Friends, and raiſing Money; your Land will be vaſtly improv'd, ſo as to be really worth, and yield more this way, than by any other Employment whatſoever: For ſuppoſe a Meadow of 2 *l. per* Acre; four Acres in Pond, will return every Year a thouſand fed Carps, from the leaſt Size, to fourteen or fifteen Inches long; beſides Pikes, Perch, Tench, and other Fry: The Carps are ſaleable, and will bring 6 *d.* 9 *d.* and perhaps 12 *d.* a piece, amounting in all to 25 *l.* which is 6 *l.* 5 *s. per* Acre.

FISH-GARTH, according to *Skinner*, ſignifies an Engine, to take *Fiſh*; but it ſeems rather to ſignify the Dam or Wear in a River, where theſe Engines are laid and uſed.

For *Garth*, in the North, is ſtill uſed for a Back-ſide, or Horneſted.

FISH-*Glue*, ſee ICHTHYOCOLLA.

FISH-*Ponds*, Reſervoirs of Water, for the Breeding, Feeding, and Preſerving of *Fiſh*.

For theſe *Ponds*, 'tis agreed, thoſe Grounds are beſt, which are full of Springs, and apt to be mooriſh: The one breeds them well, and the other preſerves them from being ſtolen.

The Situation of the Pond is alſo to be conſider'd, and the Nature of the Currents that fall into it; likewiſe, that it be refreſh'd with a little Brook, or with the Rain-water that falls from the adjacent hilly Ground. Add, that thoſe Ponds, which receive the Stale and Dung of Horſes and other Cattle, breed the largeſt and fatteſt *Fiſh*.

In making the Pond, obſerve that the Head be at the loweſt Part of the Ground; and that the Trench of the Flood-gate or Sluice have a good ſwift Fall, that it may not be too long a-emptying.

If the Pond carry ſix Foot of Water, it is enough; but it muſt be eight Foot deep, to receive the Freſhes and Rains that ſhould fall into it.

It would alſo be advantageous to have Shoals on the Sides, for the *Fiſh* to ſun themſelves in, and lay their Spawn on; beſides in other Places, certain Holes, hollow Banks, Shelves, Roots of Trees, Iſlands, *&c.* to ſerve as their Retiring Places. Conſider farther, whether your Pond be a Breeder; if ſo, never expect any large Carps from thence; the Greatneſs of the Number of Spawn overſtocking the Pond.

For large Carps, a Store-Pond is ever accounted the beſt; and to make a Breeding-Pond become a Store-Pond, ſee what Quantity of Carps it will contain: Then put in all Milters, or all Spawners; whereby in a little Time you may have Carps that are both large, and exceeding fat. Thus, by putting but one Sex, there is an Impoſſibility of the Increaſe of them; yet the Roach will notwithſtanding multiply abundantly.

Reſerve ſome great Waters for the Head-Quarters of the *Fiſh*, whence you may take, or wherein you may put any Quantity thereof. And be ſure have Stews and other auxiliary Waters, ſo as you may convey any Part of the Stock from one to the other; ſo, to loſe no Time in the Growth of the *Fiſh*, but employ the Water, as you do your Land, to the beſt Advantage.

View the Grounds, and find out ſome Fall between the Hills, as near a Flat as may be, ſo as to leave a proper Current for the Water: If there be any Difficulty in judging of ſuch, take an Opportunity after ſome ſudden Rain, or the breaking up of a great Snow in Winter, and you'll plainly ſee which way the Ground caſts; for the Water will take the true Fall, and run accordingly.

The Condition of the Place muſt determine the Quantity of Ground to be cover'd with Water. For Example, we may well propoſe in all fifteen Acres, in three Ponds; or eight Acres in two, and not leſs: And theſe Ponds ſhould be plac'd one above another, ſo as the Point of the lower may almoſt reach the Head or Bank of the upper; which Contrivance is no leſs beautiful, than advantageous.

The Head, or Bank, which by ſtopping the Current, is to raiſe the Water, and ſo make a Pond, muſt be built with the Clay and Earth taken out of the Pan, or Hollow, dugg in the loweſt Ground above the Bank; and that Pan ſhould be ſhap'd as an half Oval, whereof the Flat comes to the Bank, and the longer Diameter runs ſquare from it. See BANKS *for Fiſh-ponds*, and POND-*Heads*.

Royal FISHES, ſee ROYAL *Fiſhes*.

FISHES, in Aſtronomy, ſee PISCES.

FISHES, in Heraldry, are of themſelves of leſs Eſteem in a Coat Armour, than Beaſts and Fowls, as being poſterior thereto in the Order of Creation: But they ſometimes become ſo dignified by the Perſons or Families, who bear them, as to be preferable to many Birds, and Beaſts.

Fiſhes are born divers ways, *Upright*, *Imbowed*, *Extended*, *Endorſed*, *Surmounted* of each other; *Fretted*, *Triangled*, &c.

All *Fiſhes* born Feeding, ſhould be term'd *Devouring*.

Thoſe born directly Upright, ſhould be term'd *Hauriant*.

And thoſe born Traverſe the Eſcutcheon, *Najant*.

FISHERY, a commodious Place for *Fiſhing*; or, a Place wherein great Quantities of Fiſh are caught. See FISH, and FISHING.

The principal *Fiſheries* of *Europe*, for *Salmon*, *Herring*, *Cod*, and *Mackarel*, are along the Coaſts of *England*, *Scotland*, and *Ireland*: For *Whales*, about *Greenland*: For *Pearls*, in the *Eaſt* and *Weſt Indies*, &c.

The *Fiſhery* makes a principal Branch of the *Britiſh* Commerce. A great Quantity of Veſſels and Sea-men are employ'd therein; and beſide what is ſpent at home, above 200000 Pounds Sterling is yearly return'd merely for Herring, and Cod, exported to *Spain*, *Italy*, ſeveral Parts of the Mediterranean, and Iſlands of the Archipelago.

Yet are our Countrymen reproach'd, and with a good deal of Juſtice, for their Remiſsneſs in this Branch of Trade. The advantagious Situation of our Coaſts might be of immenſe Benefit to us, did not we let our Neighbours ſhare with us therein. The *Dutch*, *French*, *Hamburgers*, &c. come yearly in huge Shoals, and not only take the Fiſh from our own Doors; but ſell them us for our Money, when they have done.

Scotland ſuffers incredibly on this Score: No Country in *Europe* can pretend to rival them in the Abundance of the fineſt Fiſh, wherewith their numerous Harbours, Loughs, Rivers, *&c.* are incredibly ſtored. In the River *Dee*, 'tis ſaid, an hundred and ſeventy Head of Salmon is not very extraordinary for a ſingle Draught of Net: And the pickled Salmon ſent hence, is allowed the beſt in *Europe*. The *Scottiſh* Iſlands, eſpecially thoſe on the Weſtern Side, do certainly lye moſt commodiouſly for carrying on the Fiſhing Trade to Perfection.

King *Charles* the Firſt began the Experiment, in Conjunction with a Company of Merchants; but the Civil Wars ſoon ſet it aſide. King *Charles* the Second made a like Attempt; but having preſſing Occaſion for Money, he was perſuaded to withdraw, what he had employ'd in the *Fiſhery*; at which the Merchants, join'd with him, being diſpleas'd, did the like.

Since the Union, ſeveral Efforts have been made, to retrieve it; and there is now a Corporation ſettled on that footing, called the *Royal Britiſh Fiſhery*, though now in a very languiſhing Condition, and ready to ſink.

Whale FISHERY, or *Greenland*-FISHERY.

This huge Fiſh, we have elſewhere obſerv'd, is chiefly caught in the North Sea. The largeſt Sort are thoſe about *Spitzberg*, ſome of them amounting to two hundred Foot in length. Thoſe on the Coaſts of *America* are about ninety, or hundred; and thoſe on the Coaſts of *Guyenne*, and the Mediterranean, the ſmalleſt of all. See WHALE.

The *Dutch* have upwards of theſe hundred Years had the *Whale Fiſhery* almoſt to themſelves; and it is now eſteem'd one of the principal Branches of their flouriſhing Trade: The chief Merchants of the ſeveral Provinces aſſociate themſelves into a Body, for the carrying it on; and ſend every Year a great Fleet of Veſſels to the North Seas for the purpoſe. They attempted to make their firſt Eſtabliſhments in *Grœnland*; but not ſucceeding, they have ſince fix'd their *Fiſhery* about the Weſtern Coaſt of *Spitzberg*; from the Latitude of 76 Deg. 40 Min. to 80 Deg.

This preſent Year 1725. the *Engliſh* South-Sea Company have begun to ſhare it with them; and by the extraordinary Succeſs they met withal in their firſt Attempt, beyond any of their Neighbours, will no doubt be induced to perſiſt in it.

To give ſome Idea of the Manner and Importance of this Trade, we ſhall here ſubjoin the *Diſcipline*, of a long Time obſerv'd in the Whale *Fiſhery*; the *Method of Fiſhing*; the *Cargo* and *Equipage* of a Veſſel; and the *Produce* thereof.

The *Diſcipline* is adjuſted by a ſtanding Regulation, conſiſting of twelve Articles; the principal whereof, are:

That in caſe a Fiſhing Veſſel be ſhipwrack'd, and the Captain and Crew ſaved, the next Veſſel they meet, ſhall take them in; and the ſecond Veſſel take half of them from the firſt: But that no Veſſel ſhall be oblig'd to take any of the Loading of a Veſſel ſhipwrack'd: That what Effects of a ſhipwrack'd Veſſel, which are abſolutely relinquiſh'd, an other Captain ſhall find, and take up, upon his Arrival in *Holland* he ſhall account for one Half of them to the Proprietors of the ſhipwrack'd Veſſel, clear of all Expences: That if the Crew deſert a ſhipwrack'd Veſſel, they ſhall have no Claim to any of the Effects ſaved; but the whole ſhall go to the Proprietor; but if they be preſent, when the Effects are ſaved, and aſſiſt therein, they ſhall have one Fourth thereof: That if a Perſon kill a Fiſh on the Ice, it ſhall be reputed his own, ſo long as he leaves

any

any Perſon with it; but the Minute he leaves it, it becomes the Due of the firſt Captain that comes that way; but that if a Fiſh be tied to an Anchor, or a Rope faſten'd to the Shoar, it ſhall remain to its firſt Proprietor, tho' he leave it alone: That if any Perſon be wounded, or lamed in the Service, the Commiſſioners of the *Fiſhery* undertake to procure him a reaſonable Satisfaction; to which the whole Fleet ſhall contribute.

Beſide this general Regulation, which all the Captains, Pilots, and Maſters of Veſſels are oblig'd to ſwear to ſee obſerved, before they put to Sea; there is alſo a particular one for each Ship's Crew, which they are all ſwore to execute, in Preſence of one of the Commiſſioners, who goes a-board every Ship, to receive the Oath.——

This Regulation is a kind of Charter-Party, importing, That they will attend Prayers Morning and Evening, on pain of an Amercement, at the Diſcretion of the Captain: That they will not get drunk; nor draw their Knives, on Forfeiture of half their Wages; nor fight, on Forfeiture of the whole: That no body ſhall lay Wagers, on the good or ill Succeſs of the Fiſhing; nor buy, or ſell on ſuch Conditions, *In caſe we take one or more Fiſh*, on Penalty of 25 Florins: That they will be contented with the Proviſions allowed them; and that they will never light Fire, Candle, or Match, by Night or Day, without the Captain's Leave, on the like Penalty.

After the Reading of this Regulation, the Crew are all called, to receive the cuſtomary Gratuity before their Setting out, with an Aſſurance of another Sum at their Return, in Proportion to the Succeſs of the Fiſhing.——

The Captain, on this Occaſion, receives from 100, to 150 Florins; the Pilot, from 40, to 60; each Harpineer, from 40, to 50 Florins; the other Officers, from 26, to 36 Florins; the elder Sailors 20; and the younger 12.

The Fleet, which conſiſts moſtly of Fluyts, from two, to three hundred Tuns; and from 35 Men to 41. uſually ſets Sail about the Beginning of *April*, and takes its Courſe by the Iſles of *Iceland*, from 60 to 61 Degrees of Latitude; after which, leaving them to the Weſt, it ſteers Northward, thro' 73, 74, and 75 Deg. of Lat. where they begin to find the Ice.

'Tis through theſe huge Heaps of Ice, wherewith the whole Quarter is filled, that they firſt begin to ſpy the Whales: And there moſt of the Veſſels fix their Abode for the Fiſhing.——But, as the Fiſh are larger and fatter, the further North you go; ſome Captains will venture as far as 80, or 82 Deg. of N. Lat.

Each Veſſel of 300 Tuns has ſix Chaloupes; and each Chaloupe ſix Harpineers, with five Seamen, to row it. To every Chaloup there are ſeven Lines, of three Inches Circumference; five of them in the Hind-part of the Veſſel, and two behind. The hind Lines together make ſix hundred Fathoms, and with the Addition of the other two, 880. If the Whale dive deeper, or run further underneath the Ice, the Line muſt be cut, leſt the Chaloupe be drawn after it.

The Inſtrument, wherewith the Execution is done, is a harping Iron, or Javelin, five or ſix Foot long, pointed with Steel, in a triangular Shape, like the Barb of an Arrow.

The Harpineer, upon ſight of the Fiſh, from one End of the Chaloupe, where he is plac'd, flings the harping Iron with all his Might againſt the Whales Back; and if he be ſo happy as to make it penetrate the Skin and Fat, into the Fleſh, he lets go a String, faſten'd to the harping Iron, at the End whereof is a dry Gourd, which ſwimming on the Water, diſcovers whereabout the Whale is; who, the Minute he is ſtruck, plunges to the Bottom.

If the Whale return to breath in the Air, the Harpineer takes occaſion to give him a freſh Wound; till, fainting by the Loſs of Blood, the Men have an Opportunity of approaching him; and thruſting a long ſteeled Lance under his Gills into his Breaſt, and thro' the Inteſtines, which diſpatches him: And when the Carcaſs begins to float, they cut off the Fins, and Tail; and tying a Rope to the Place where the Tail was, ſwim to the Veſſel, where he is taken in.——

When they have got their Quota of Whales, they begin to take the *Blubber*, or Fat, and the *Fins*, or Whale-bone.

In order to this, the Whale is hoiſted over-board, and kept ſuſpended above the Water, by two Ropes, the one tied around his Neck, the other about his Tail; and under the Carcaſs are two Chaloupes, placed to receive what may chance to drop.

This done, three or four Men go down upon the Whale, with a kind of Calkers, or Irons on their Feet to prevent their Slipping. They begin to open him on the Side, and proceed downwards the Belly; cutting off all the Lard or Fat, in Pieces of about three Foot broad, and eight long: Beſide the Fat on the Sides, they likewiſe cut off that of the Throat, and the under Lip, leaving all the lean behind.——They next proceed to the Whale-bone, which they cut off with a Hatchet, made for the purpoſe, from the upper Jaw of the Fiſh, and make it up in Packets. The Fat and Bone thus procured, what remains of the Whale, they leave for the Bears, who are very fond of it.

In Proportion as the large Pieces of Fat are cut off, the reſt of the Crew are employed in ſlicing them ſmaller, and picking out all tke lean. When this is prepared, they ſtow it under the Deck, where it lies, till the Fat of all the Whales is on Board: Then, cutting it ſtill ſmaller, they put it up in Tubs, in the Hold, or Bottom of the Veſſel, cramming them very full and cloſe.

Nothing now remains, but to ſail homewards, where the Fat is to be boiled, and melted down into *Train Oil*. See WHALE.

Produce of One Years Whale Fiſhery.

To ſtate the Produce, we make choice of the *Fiſhery* of 1697. as being the greateſt, and moſt fortunate that ever was known: To which we ſhall add that of the preſent Year.

In the Year 1697. there were an hundred, ninety eight Veſſels of divers Nations; whereof an hundred, twenty nine were *Dutch*; forty ſeven *Hamburghers*; two *Sweediſh*; four *Daniſh*; twelve of *Bremen*; two of *Embden*; and one of *Lubeck*.

In the preſent Year 1725. there were 226 Veſſels; whereof 144 were *Dutch*; twelve *Engliſh*; forty three *Hamburghers*; twenty three *Bremers*; one and twenty of *Berghen*; two of *Flensburg*. Their Captures each Year were as follow.

In 1697,

129 *Dutch* Veſſels took——	1255	Whales.
47 *Hamburghers* — —	449	——
2 *Sweeds* — — —	113	——
4 *Danes* — — —	52	——
12 *Bremers* — — —	96	——
2 *Embden* — — —	2	——
1 *Lubeck* — — —	1	——
In all, 197 Veſſels took — —	1968	Whales.

In 1725,

144 *Dutch* Veſſels took——	248½	Whales.
12 *Engliſh* — ——	25½	——
43 *Hamburghers* ——	46	——
23 *Bremers* — ——	29	——
2 *Berghen* — ——	0	——
2 *Flensburg* — ——	0	——
In all, 226 Veſſels took — —	349	Whales.

The *Dutch* Captures in 1697 produced 41344 Punchions of Blubber
The *Hamburghers* — — 16414 —
The *Sweeds* — — — 540 —
The *Danes* — — 1710 —
The *Bremers* — — — 3790 —
The *Embdeners* — — 28 —

The *Engliſh* Captures in 1725 produced 1000 Puncheons of Blubber, and 20 Tuns of Whale Bone.

Now, eſtimating the Puncheon of Blubber at 30 Florins *Dutch*; or 2 *l.* 15 *s.* *Engliſh*, the currant Price in the Year 1697, the total Produce of the Years Fiſhing amounting to 63826 Puncheons, yields

l. 175521—10 *s.* Sterl.

As to Fins, or Whale Bones, ſetting them at 2000 Weight *per* Whale; and hundred Weight at 4 *l.* 4 *s.* they will yield *l.* 171233

Total *l.* 346754

Whereof, the Share belonging to the *Dutch*, was 228737

On the ſame Footing might the Produce of the *Fiſhery* of the preſent Year be eaſily ſtated. It will come far ſhort of that of 1697; which indeed vaſtly tranſcends what has ever been known: Each Veſſel, taking one with another, caught that Year 10 Whales, $\frac{9}{24}$: And the preſent Year only *one* Whale $\frac{5}{9}$; tho' the *Engliſh*, more happy than the reſt, caught above two a-piece. But it may be added, that the Whales of the preſent Year being larger and fatter than thoſe of 1697, produced one with another 40 Puncheons of Blubber; and theſe other only 33 Puncheons.

Herring FISHERY.

The *Herring* is a ſmall Salt-water Fiſh, with a blueiſh Back, and a white ſilver'd Belly, not unlike the little Shad Fiſh; whence it is called in Latin *Aloſa minor*. *Rondeletius* calls it *Harengus*.

It is a popular Error to believe the Herring to be the *Halec* of the *Romans*. The Halec was no particular Fiſh, but a kind of Sauce, made of any ſort of Salt Fiſh: The modern

Herring

Herring ſeems to have been unknown to the Antients: It is neither the *Halec*, nor *Halex*, nor *Moenis*, nor *Lencomænis*, nor the *Gerres* of *Pliny*. See *Rondelet. de Piſcib. marin. L. V. c.* 13. and *Voſſius de Idolol.*

Herrings are chiefly found in the North Sea. 'Tis true, there are *Fiſheries* elſewhere, but none ſo copious.

They uſually make two Fiſhing Seaſons; the firſt in *Auguſt*; and the ſecond in Autumn: The latter of which is the more conſiderable, on account of the Fogs, which are very favourable to this kind of Fiſhing.

'Tis commonly ſaid, that no body ever ſaw a Herring alive; and that they die the Minute they are taken out of Water: But there are Inſtances to the Contrary.

The *Herring* is a Fiſh of Paſſage; ſo that it is allowed to fiſh them on Holydays, and Sundays: In the Decretal there is an expreſs Chapter to this Effect. They go chiefly in Droves, and are fond of following Fire, or Light; and in their Paſſage reſemble a kind of Lightning themſelves.

The *Dutch* were the firſt who began the *Herring Fiſhery*, and obſerv'd the ſeveral Seaſons of their Paſſage. Their firſt regular Fiſhing is fix'd to the Year 1163.

The Method of Salting and Barreling them, was not diſcover'd, till the Year 1416. *Willoughby*, in his Hiſtory of *Fiſhes*, obſerves, that *Will. Buckelſz*, a Native of *Bier Uliet*, render'd his Name immortal, by the Diſcovery of the Secret of Curing and Pickling Herring: He adds, that the Emperor *Charles* V. coming in to the Low Countries, made a Journey to *Bier Uliet*, with the Queen of *Hungary*, on purpoſe to view the Tomb of this firſt Barreler of Herring.

The *Dutch* begin their *Herring Fiſhing* on the 14th of *June*, and employ no leſs than 1000 Veſſels therein. Theſe Veſſels are a kind of Barks, by the *Dutch* called *Fly boats*, carrying from 45 to 60 Tun, and two or three ſmall Canon. See Boat.

None of them are allowed to ſtir out of Port without a Convoy; unleſs there be enough of them together, to make 18, or 20 Pieces of Canon: In which caſe they are allowed to go in Conſerve, or Company. Before they ſet out, they make a verbal Convention; which has the ſame Force, as if it were in Writing.

Theſe Regulations of the Admiralty of *Holland* are partly followed by the *French*, and other Nations; and partly improved, and augmented with new ones; as, that No Fiſher ſhall caſt his Net within a hundred Fathoms of another Boat: That while the Nets are caſt, a Light ſhall be kept on the hind Part of the Veſſel: That when a Boat is by any Accident obliged to leave off Fiſhing, the Light ſhall be caſt into the Sea: That when the greater Part of a Fleet leaves off Fiſhing, and caſts Anchor, the reſt ſhall do the ſame, *&c.*

The Manner of *Fiſhing* has nothing particular in it. The Nets wherein the Fiſh is drawn, ſhould, regularly, have their Maſhes an Inch ſquare, that none of the leſſer Fry may be taken. See Nets.

The Commerce of *Herring*, both *pickled*, and *red*, is very conſiderable: But there are ſo many different Sorts prepared; in ſuch different ways, and different Places, that 'tis hard to ſay any thing preciſe thereupon.

Thoſe prepared by the *Dutch*, are in the greateſt Repute: They are diſtinguiſh'd into four Kinds, according to their Sizes. The Goodneſs of this Commodity conſiſts in its being fat, fleſhy, firm, white; ſalted the ſame Day 'tis taken, and with good Salt, and well barrel'd.——

The *Iriſh* Herring are the next in Value after thoſe of *Holland*; and principally thoſe of *Germuth* and *Dublin*, which are ſcarce inferior to the beſt Herring of *Rotterdam*, or *Enkuyſen*. The *Scotch* Herring is not near ſo well prepared, gutted, ſalted, nor barrel'd as the *Dutch*; and yet its Taſte is excellent: Nor is it doubted, but that if the *Scotch* were as careful in theſe Circumſtances, as their Neighbours, their Herring would be the beſt in the World. The Herring fiſh'd in *England* is inconſiderable; the Fiſh being too dry and freſh for the Market.

Method of Curing, and Preparing Pickled, *and* Red Herring.

1°. *For Pickled Herring:* As ſoon as the Herring are taken out of the Sea, one of the Crew, appointed for this Office, cuts them open, and takes out the Guts, and every thing but the Milt, and the Eggs which are always to be left in the Body of the Fiſh. Then, waſhing them in freſh Water, they are left the Space of twelve or fifteen Hours in a Tub full of ſtrong Brine made of freſh Water, and Sea Salt.

When they are taken out, they drain them; and when well drain'd, put them up in Barrels; taking care to diſpoſe and range them evenly, in Rows, or Layers; and preſſing them well down; and ſtrewing a Layer of Salt both at Top, and Bottom.

When the Barrel is full, they ſtop it up very cloſe; that no Air may get in, nor any Brine out; either of which is very prejudicial to the Fiſh.

2°. *For Red Herrings:* The Fiſh being caught, they proceed to waſh, gut, and lay them in Brine, as for pickled Herring; only they let them lie double the Time in Brine, *viz.* twenty four Hours; inaſmuch as they are to take all their Salt here, whereas the other Kind takes half its Salt in the Barrel.

When the Herring is taken out of the Brine, they ſpit them, *i. e.* ſtring them by the Head on little wooden Spits, and thus hang them in a kind of Chimneys, made for the purpoſe; and when the Chimney is as full as it will hold, which leſs than ten or twelve thouſand ſeldom effects, they make a little Fire underneath, of bruſh Wood, which yields a deal of Smoak, but no Flame.

Here the Herring remains, till ſufficiently ſmoaked, and dried; which ordinarily is in 24 Hours. Then they are taken down, and barrel'd up for keeping.

Their Goodneſs conſiſts in their being large, firm, and dry; their Outſide of a yellow, golden Colour; their Eggs, or Milt within, and well ſalted and barrel'd.——

Salmon Fishery.

The *Salmon*, according to ſome, breeds in the Sea; but the Opinion of others ſeems better warranted, that he breeds in the clear ſandy Parts of Rivers, not far from the Mouths thereof. They commonly ſpawn in *October*, and the young becomes a *Samlet* the following Year, and in a few Months a large *Salmon*. The Milter and Spawner having perform'd their Office, betake themſelves to the Sea; and if their Return be prevented by Wears, or the like, they become ſick, lean, pine away, and die in two Years time: If they ſpawn in the mean time, the Produce is a diminutive Salmon, called *Skegger*, which will never arrive at the natural Bulk; it being the Sea that makes them grow big, and the Rivers, fat. The Female is diſtinguiſh'd from the Male, in that its Noſe is longer and more hooked, its Scales not ſo bright, and its Body ſpeckled over with dark-brown Spots; its Belly flatter, and its Fleſh not ſo red; more dry, and leſs delicious to the Taſte. In ſpawning Time, when they repair from the Sea up the Rivers, ſcarce any thing can ſtop their Progreſs. We have ſeen them leap up Cataracts and Precipices, many Yards high.——

The chief *Salmon Fiſheries* in *Europe*, are along the Coaſts of *England*, *Scotland*, and *Ireland*. The Fiſhing uſually begins about the firſt of *January*, and ends by the laſt of *September*. It is perform'd with Nets, in the Places where the Rivers empty themſelves into the Sea; and along the Sea Coaſts there about. The Fiſh are ſeen to croud thither frequently in Shoals from all Parts, in ſearch of the freſh Water: They alſo fiſh for them higher up in the Rivers; ſometimes with Nets; and ſometimes with a kind of Dikes, or Wears made for the Purpoſe, with iron Grates therein, ſo diſpoſed, as that the Fiſh, in going up the River, open them with their Head; but are no ſooner enter'd, than the Gate claps to. Thus the Salmon are incloſed as in a Reſervoir, where it is eaſy taking them. In ſome Places they fiſh for Salmon in the Night time, by the Light of Torches, or kindled Straw. The Fiſhermen watch when the Fiſh draws towards the Light, whereof he is naturally a great Lover, and ſtrike him with a Fork, or Liſter. In ſome Parts of *Scotland*, it is ſaid, they ride a-fiſhing up the Rivers, and when they ſpy them in the ſhallow Parts, ſhoot them with Piſtols.——

When the Fiſh is taken, they open them; take out the Guts and Gills, and ſalt them, in large Tubs for the Purpoſe: Out of which they are not taken before *October*, to be pack'd up in Caſks from three to four hundred and fifty Pound Weight.

Salmon is alſo *fiſh'd* in Rivers, after the manner of Trout, with a Line, and Hook. He bites beſt in the Afternoon, about Three, in *May*, *June*, *July*, and *Auguſt*; the Water being clear, and a little Breeze of Wind ſtirring; eſpecially if the Wind and Stream ſet contrary ways. The Salmon is catch'd like a *Trout*, with Worm, Fly, and Minion; and eſpecially the Garden Worm, if well ſcour'd, and kept twenty Days in Moſs. The Salmon never ſtays long in a Place, but is continually ſhifting; to be as near the Spring Head as poſſible, and ſwimming generally in the deepeſt and broadeſt Parts of the Rivers, near the Ground. Put two, or three Garden Worms well ſcour'd on your Hook at once, as if you were baiting for Trout; and be ſure to give him Time to gorge his Bait, before you ſtrike. Some uſe a Wire-ring on the Top of the Rod, through which the Line may be let run to any Length at Pleaſure, by a Reel near at hand.——

Mackarel Fishery.

The *Mackarel* is a Salt-water Fiſh, without Scales. Its Body is round, and fleſhy; terminating almoſt in a Point, at each Extreme.

Some

Some Perſons, well ſkilled in the Naval Architecture, hold its Figure the moſt commodious for Swimming of all others, and propoſe it as a Model for the Building of Ships.

'Tis ordinarily about a Foot long: When in the Water, it appears yellow; and when out of it, of a Silver White, excepting for Streaks, or Speckles of a deep Blue, on the Back, and Sides.

The Mackarel is found in large Shoals, in divers Parts of the Ocean; but eſpecially on the *French* and *Engliſh* Coaſts.

The Fiſhing is uſually in the Months of *April*, *May*, and *June*, and even *July*, according to the Place. They enter the *Engliſh* Channel in *April*, and proceed up to the Streights of *Dover*, as the Summer advances; ſo that by *June* they are on the Coaſts of *Cornwal*, *Suſſex*, *Normandy*, *Picardy*, &c. where the *Fiſhery* is moſt conſiderable. They are an excellent Food, freſh; and not to be deſpiſed, when well prepared, pickled, and put up in Barrels.

Naturaliſts have obſerved, that the Water wherein Mackarel has been boiled, yields a Light, after ſtirring it a little.——

The Fiſh is taken two ways; either with a Line, or Nets: the latter is the more conſiderable; and is perform'd in the Night-time. The Rules obſerv'd in the Fiſhing of Mackarel are much the ſame as thoſe already mentioned in the *Fiſhery of Herrings*.

There are two ways of pickling them: The firſt is, by opening and gutting them, and filling the Belly with Salt, cramm'd in as hard as poſſible with a Stick: Which done, they range them in Strata or Rows, at the Bottom of the Veſſel, ſtrewing Salt between the Layers.

In the ſecond way, they put them immediately into Tubs full of Brine, made of freſh Water, and Salt; and leave them to ſteep, till they have imbibed Salt enough to make them keep: After which they are taken out, and barrel'd up; taking care to preſs them cloſe down.

Cod Fishery.

The *Cod* is a Fiſh of Paſſage, pretty large, with a frightful Head; Teeth in the Bottom of the Throat; its Fleſh, white; its Skin, browniſh on the Back, white under the Belly; and cover'd with thin, tranſparent Scales.

It eats excellently, when freſh; and, if well prepared and ſalted, will keep a long Time. 'Tis this Fiſh, commonly eaten among us in Lent, &c. under the Denomination of *Salt-Fiſh*, or *Stock-Fiſh*.

There are two Kinds of Salt Cod; the one called *Green* or *White*; and the other *Dried*, or *Cured:* Tho' it is all the ſame Fiſh; only differently prepared.——

Green Cod.

The chief *Fiſheries* for *Green Cod* are in the Bay of *Canada*, on the Great and Little *Bank* near the Coaſt of *New-found Land*, the Iſland of St. *Peter*, and the Iſle of *Sable:* And hither, Veſſels are yearly ſent from divers Parts, both of *America* and *Europe*.

The Veſſels uſed herein, are from an hundred, to an hundred and fifty Tuns; which will bring thirty, or thirty five thouſand Fiſh a-piece.

The moſt eſſential Articles in this *Fiſhery* are three Perſons, who know how to open the Fiſh, to cut off the Heads, and to ſalt them; upon the Ability of which laſt the Succeſs of the Voyage chiefly depends.

Several Authors will have it, that the *Biſcayans*, in purſuing their Whales, made the firſt Diſcovery of the Great and Little *Bank* of Cods, *New-found Land*, *Canada*, &c. a hundred Years before *Columbus*'s time; and that it was a *Biſcayan Newfound-lander*, that gave the firſt Intimation thereof to *Columbus*.

Others ſay, that the Great Bank was diſcover'd by a Native of St. *Maloes*, named *Cartier*. But, be the Inventor of what Name or Nation he will, the Invention is certainly highly valuable: Not a trading Nation in *Europe*, but allows the Commerce of Cod Fiſh one of the moſt ſecure and gainful that is known.

The beſt, largeſt, and fatteſt Cod, are thoſe taken on the South Side of the Great *Bank*; which is a kind of ſubmarine Mountain, 150 Leagues long, and 50 broad; and at the Diſtance of 25 from *New-found Land:* Thoſe on the North Side are much ſmaller.

The beſt Seaſon is from the Beginning of *February*, to the End of *April*; at which Time the Cod, which during the Winter had retired to the deepeſt Parts of the Sea, return to the Bank, and grow very fat.

Thoſe caught from *March*, to *June*, keep well enough; but thoſe in *July*, *Auguſt*, and *September* ſoon ſpoil.

The Fiſhing is ſometimes done in a Month, or ſix Weeks; ſometimes it holds ſix Months. As Lent draws on, if the Fiſhers have but half their Cargo, they ſtrive to make homeward the firſt; the Market being then the beſt.

Some will make a ſecond Voyage, before others have got Loading for the firſt. Each Fiſher only takes one Cod at a time; and yet the more experienc'd will take from 350 to 400 *per* Day: But this is the moſt; for 'tis very fatiguing Work, both on account of the Weightineſs of the Fiſh, and of the extreme Cold which reigns on the Bank.

The Salary uſually allowed the Captain and Sailors, is one Third of the Cod they bring home ſound.

They ſalt the Cod on Board. The Head being cut off, the Belly open'd, and the Guts out; the Salter ranges them in the Bottom of the Veſſel, Head to Tail; and having thus made a Layer thereof, a Fathom or two ſquare, covers it with Salt: Over this he lays another, which he covers as before; and thus he diſpoſes all the Fiſh of that Day, taking care never to mix the Fiſh of different Days together.

By that time the Cod has lain thus to drain three or four Days, they are moved into another Part of the Veſſel, and ſalted a-freſh. After this, they are no more to be touch'd, till the Veſſel have its Burthen.

Sometimes they put them up in Barrels, for the Conveniency of Carriage.——

Dry Cod.

In the Fiſhing of Dry Cod, Veſſels of all Sizes are uſed; though ſuch are generally choſe, as have large Holds, by reaſon this ſort of Fiſh incumbers more than it burthens.

As Cod is only to be dried by the Sun, the *European* Veſſels are obliged to put out in *March*, or *April*, to have the Benefit of the Summer for Drying. Indeed, we ſend Veſſels for Cod in *June*, and *July*; but thoſe only buy what has been fiſh'd and prepared by the Inhabitants of the *Engliſh* Colonies of *New-found Land*, and the neighbouring Parts; in exchange for which, we carry them Meals, Brandies, Biſcuits, Pulſe, Moloſſes, Linen, &c.

The principal *Fiſhery* for Dry Cod is along the Coaſt of *Placentia*, from *Cape-Roſe*, to the *Bay des Experts*; in which Compaſs there are divers commodious Ports for the Fiſh to be dried in.

The Fiſh intended for this Uſe, tho' of the ſame Kind with the Green Cod, is yet much ſmaller; whence it is the fitter to keep, as the Salt takes more hold.

The Method of Fiſhing is much the ſame in both; only this latter is the more expenſive, as it takes up more Time, and employs more Hands; and yet ſcarce half ſo much Salt is ſpent in this, as the other.

When ſeveral Fiſhing Veſſels meet, and intend to fiſh in the ſame Port; he whoſe Chaloupe firſt touches Ground, becomes entitled to the Quality and Privileges of Admiral; has the Choice of his Station, and the Refuſal of all the Wood on the Coaſt at his Arrival.

As faſt as the Captains arrive, they unrig all their Veſſels, leaving nothing but the Shrouds, to ſuſtain the Maſts; and in the mean time the Mates provide a Tent on Shore, cover'd with Branches of Fir, and Sails over them; with a Scaffold, fifty, or ſixty Foot long; and one third as much broad. While the Scaffold is making ready, the Crew are a-fiſhing; and as faſt as they catch, they bring their Fiſh, open them, and ſalt them on moveable Benches: But the main Salting is perform'd on the Scaffold.

When the Fiſh has taken Salt, they waſh them; and to drain them again, lay them in Piles on the Galleries of the Scaffold: When drained, they range them on Hurdles, a Fiſh thick, Head againſt Tail, with the Back uppermoſt; obſerving, while they lie thus, to turn, and ſhift them four times every 24 Hours.

When they begin to dry, they lay them in Heaps, of ten or twelve a-piece, to retain their Warmth; and continue to inlarge the Heap every Day, till it becomes double its firſt Bulk: At length they join two of theſe Heaps into one, which they turn every Day, as before. Laſtly, they ſalt them over again; beginning with thoſe that had been ſalted firſt; and thus lay them in huge Piles, as big as Hay-Stacks.

And thus the reſt: Till they are carried a Ship-board, where they are laid on Branches of Trees, diſpoſed for that purpoſe in the Bottom of the Veſſel, with Mats all around, to prevent their contracting any Moiſture.——

There are four kinds of Commodities drawn from Cod, *viz.* the *Tripes*, and *Tongues*, which are ſalted at the ſame time with the Fiſh, and barrel'd up: The *Rows*, or Eggs, which being ſalted and barrel'd up, ſerve to caſt into the Sea, to draw Fiſh together, and particularly Pilchards: And laſtly, the *Oil*, which is uſed in the dreſſing of Leather, &c.

The *Scots* catch a ſmall kind of Cod on the Coaſts of *Buchan*, which is highly prized, tho' very much like Ling. They ſalt it, and dry it in the Sun, upon Rocks; and ſometimes in the Chimney: But the greateſt Part of it is ſpent at home.——

Sturgeon Fishery.

The *Sturgeon* is a large Sea Fiſh, which at its Seaſon runs up the Rivers; having a ſharp-pointed Snout, flat

Belly, and bluiſh Back. Sturgeons are reckon'd among the Number of Royal Fiſhes; and when left on Shore, belong to the King; but when taken out at Sea, are the Property of the Perſon who takes them. See ROYAL *Fiſh*.

There are Sturgeons of all Sizes; and we even read of ſome twenty Foot long: But the middle Size are reckon'd the beſt.

Some will have this the *Silurus* of the Antients.

'Tis of the Roe, or Eggs of this Fiſh, that the *Cavia* or *Kavia*, ſo much prized by the *Italians*, &c. is prepared. See CAVIA.

Sturgeon, when freſh, eats deliciouſly. To make it keep, they ſalt or pickle it in large Pieces, and put them up in Cags, from 25 to 50 Pounds.

The greateſt *Sturgeon Fiſhery* in the World is in the Mouth of the *Volga*, in the Caſpian Sea; where the *Muſcovites* find Employment for a great Number of Men.

They are not caught in Nets, but in a kind of Incloſure, form'd by huge Stakes, diſpoſed in Triangles, repreſenting the Letter Z ſeveral times repeated. Theſe ſort of *Fiſheries* are open on the Side towards the Sea; and cloſe on the other; by which means the Fiſh, aſcending in its Seaſon up the River, embaraſſes it ſelf in theſe narrow, angular Retreats, and not being able to turn it ſelf, to go back again, by reaſon of its Bulk, is eaſily ſtruck, and killed with a ſort of harping Iron.

The chief Object of this *Fiſhery* is the Roe; which is a Commodity as much uſed in *Muſcovy*, as Butter in *Holland*; and there are Sturgeons, that furniſh 400 Pounds thereof. 'Tis only the leſſer and younger Sturgeon, that they pickle for Eating.——

PILCHARD *Fiſhery*.

The *Pilchard* is a ſmall Salt-water Fiſh, bigger than the Anchovy; but leſs than the Herring, which in other reſpects it reſembles. Its Head is yellow; Belly, white; and Head, a Sea-green. It eats admirably, freſh, or lightly ſalted.

There are Seaſons for fiſhing the Pilchard; which, like the Herring and Anchovy, is a Fiſh of Paſſage. They are prepared and ſalted much as the Anchovy is; with this Difference, that the Head is cut off the latter: But the Pilchard were diſtinguiſhable from the Anchovy, even tho' its Head were off likewiſe; the Pilchard having a very flat Back, and the Anchovy a round one.

The chief *Pilchard Fiſheries* are along the Coaſts of *Dalmatia*, to the South of the Iſland *Iſſea*: On the Coaſts of *Bretagne*, from *Bell* Iſland, as far as *Breſt*; and along the Coaſts of *Cornwall* and *Devonſhire*.

That on the Coaſts of *Dalmatia* is ſo plentiful, that it not only furniſhes all *Greece*; but a great Part of *Italy*. That on the Coaſts of *Bretagne* employs yearly above three hundred Sloops, and moſt of the Seamen of the Country.

The Fiſh caught on our own Coaſts, tho' bigger, are not ſo much valued, as thoſe on the Coaſts of *France*; owing principally to their not being ſo thorougly cured. The Seaſon is from *June* to *September*.——

The Pilchards naturally follow the Light; and will gather about a Boat, which bears a Light in the Night-time; which contributes much to the Facility of the *Fiſhery*.

On the Coaſts of *France* they make uſe of the Roes of Cod-fiſh, as a Bait; which, thrown into the Sea, makes them riſe from the Bottom, and run into the Nets, diſpoſed for the Purpoſe.

On our Coaſts, there are Perſons poſted a-ſhore, who ſpying by the Colour of the Water where the Shoals are, make Signs to the Boats, to get among them, to caſt their Nets.

When taken, the Fiſh are brought to a Ware-houſe on Shore, where they are laid up in broad Piles, ſupported by Backs or Sides.

As they pile them, they ſalt them with Bay Salt; in which, lying ſoaking twenty or thirty Days, they run out a deal of Blood, with dirty Pickle, and Bittern; which laſt draws a deal of the Oil from the Fiſh, to the great Loſs of the Owners. When taken out of the Pile, there remains a deal of Salt, Blood, Scales, &c. at Bottom, which, with freſh Salt, ſerves for another Pile.

They now proceed to waſh them in Sea Water, to clear off the Dirt, and Blood; and when dry, put them up in Barrels, and preſs them hard down, to ſqueeze out the Oil, which iſſues away at an Hole in the Bottom of the Caſk: And in this State, they are fit for Sale, or Uſe.——

Pearl FISHERY, ſee PEARL *Fiſhery*.

FISHING, the Act, or Art of catching *Fiſh*. See FISH.

Fiſhing is diſtinguiſh'd, with regard to its Inſtrument, into that perform'd with the *Net*, for Fiſh that *go in Shoals*; and that with the *Hook*, for *ſolitary* Fiſh: Which latter is properly called *Angling*. See NET, and ANGLING.

Fiſhing again, is diſtinguiſh'd, with regard to its Object, into that perform'd in *Salt Water*; and that in *Freſh*. The firſt practiſed for *Whales*, *Herring*, *Cod*, *Salmon*, *Pearls*, *Mackarel*, and other Sea Fiſh. See FISHERY.

The latter practiſed for *Pike*, *Trout*, *Carp*, *Tench*, *Perch*, *Dace*, *Eels*, &c.

The Inſtruments principally uſed in Angling, or *Fiſhing with the Hook*, are the *Rod*, *Line*, *Hook*, and *Fly*. See FISHING *Rod*, FISHING *Hook*, FISHING *Fly*, &c.

The Points on which the Art of *Fiſhing* chiefly turns, are the proper *Seaſon*, *Place*, *Bait*, and manner of *Application*. What relates to each hereof, we ſhall here entertain the Reader withal, in the ſeveral kinds of *Fiſhing*, chiefly practiſed among us.

Pike FISHING. The *Pike* is reputed the Tyrant of the freſh Waters: By the common Conſent of Naturaliſts, he is the longeſt lived of all Fiſhes. The larger he is found, the coarſer the Food; and ſo *vice verſa*. This Fiſh never ſwims in Shoals, but always ſingle; being very rapacious, and preying even on his own kind. He ſpawns in *February*, and *March*. The beſt Sort is in Rivers: The worſt in Meres and Ponds. His ordinary Food is Pickeral Weed, Frogs, and what Fiſh he can lay hold on.

There are two ways of *fiſhing* for the Pike; by the Ledger Bait, and the Walking Bait. 1°. The *Ledger Bait* is that, fix'd in one certain Place; and which the Angler may leave behind him. Of this kind, the beſt is ſome living Bait, as a Dace, Roach, Gudgeon, or yellow Frog. To apply it, if a Fiſh, ſtick the Hook through his upper Lip; then faſtening it to a ſtrong Line, ten or twelve Yards long, tie the other End of the Line to ſome Stake on the Ground, or Bough of a Tree, near the Pike's uſual Haunt; letting the Line paſs over the Fork of a Stick, plac'd for the purpoſe; ſuſpending the Hook, and about a Yard of Line in the Water; but ſo, as that when the Pike bites, the Fork may give way, and let him have Line enough to his Hold and Paunch. If the Bait be a Frog, the Arming Wire is to be put in at his Mouth, and out at his Gills, and one of the Legs to be ſtitch'd, or tied over the upper Joint of the Wire.—2°. The *Walking Bait* is that the Fiſher caſts in, and conducts with a Rod, &c. This Method is perform'd by a Troll, with a Winch to wind it up withal. At the Top of the Rod is to be placed a Ring for the Line to be run thro'. The Line, for two Yards, and a Quarter next the Hook, to be of Silk, double; and arm'd with Wire, the length of ſeven Inches: On the Shank of the Hook is to be faſten'd a ſmooth piece of Lead, ſo as to ſink the Fiſh Bait, which is to be a Gudgeon, with its Head downwards. Thus diſpoſed, the Bait to be caſt up, and down; and if you feel the Fiſh at the Hook, give him Length enough, to run away with the Bait, and paunch it: Then ſtrike him with a ſmart Jerk. To *fiſh* with a dead Bait, uſe a Minnow, yellow Frog, Dace, or Roach, anointed in Gum of Gee, diſſolved in Oil of Spike; and caſt it where the Pike frequents. After it has lain a little while at the Bottom, draw it to the Top, and ſo up the Stream, and you will quickly perceive a Pike in earneſt Purſuit thereof. The Fiſh bites beſt about three in the Afternoon, in clear Water, with a gentle Gale, from the Middle of Summer, to the End of Autumn; but in Winter all Day long; and in the Spring he bites beſt early in the Morning, and late at Night.——Another Method of *fiſhing* for Pike, ſee under HUXING.

Trout FISHING. The *Trout* is a delicious Freſh-water Fiſh, ſpeckled with red and yellow; coming in, and going out of Seaſon with the Buck, and ſpawning in the cold Months of *October* and *November*; whereas all the other Species ſpawn in hot Summer Weather. There are divers Kinds of this Fiſh, all valuable; but the beſt are the red and yellow Trouts; and of theſe the Female, diſtinguiſh'd by a leſs Head and deeper Body, is preferr'd. They are known to be in Seaſon, by their large Backs; which may ſerve as a Rule for other Fiſh. All Winter long they are ſick, lean, and unwholeſome, and frequently louſy. As the Spring comes on, deſerting the ſtill, deep Waters, they repair to the gravelly Ground, againſt which they continue to rub, till they have got rid of their Lice, which are a kind of Worms, with large Heads. From that Time they delight to be in the ſharp Streams, and ſuch as are ſwift; where they lie in wait for Minnows and May Flies. At the latter End of *May* they are in their prime.

The uſual Baits whereby the Trout is catch'd, are the *Worm*, *Minnow*, and *Fly*, either Natural, or Artificial. The proper *Worms* are the Brandling, Lob-worm, Earth-worm, Dung-worm, and Maggot, or Gentle, eſpecially the two firſt: But whatever Worms are uſed, they are the better for keeping, which is to be done in an earthen Pot, with Moſs frequently changed. For the *Minnow*, ſlip the Hook thro' his Mouth, and the Point and Beard out of the Tail, ſo as it may lie almoſt ſtraight on the Hook. Then try againſt the Stream, whether it will turn. In defect of a Minnow, a ſmall

a ſmall Leach may ſerve the Turn; or for want of either, an artificial one may be made of Cloth, by the Life, which is found every whit as good a Bait as the natural one.

For *Fiſhing with Flies, either Natural, or Artificial*, ſee FISHING *Fly*.

Carp FISHING. The *Carp* is generally held the Queen of Freſh-water Fiſh. It is exceeding ſubtle, and of all others, the Eel only excepted, lives longeſt out of Water. Mr. *Ray* aſſures us, that in *Holland* they have a ſpeedy way of fattening them, by hanging them up in a Net in a Cellar, and feeding them with White-Bread and Milk. They breed ſeveral times in one Year; for which reaſon we ſeldom meet with either Male or Female, without either Melt or Spawn. Their natural Place is a Pond; in running Waters they rarely, if ever, breed. To make them fat and large, 'tis a good way, when the Pond is low, in *April*, to rake all the Sides thereof with an iron Rake, and ſow Hay Seeds thereon. By Autumn there will be a Crop of Graſs; which coming to be overflow'd, as the Pond riſes, will be a fine Feeding Place for them.

A World of Patience is required to angle for Carp, on account of their incredible Policy. They always chuſe to lie in the deepeſt Places: They ſeldom bite in cold Weather; and in hot, a Man cannot be too early, or too late for them. When they do bite, there is no fear of the Hold. The Baits are, the Red Worm, in *March*; the Candice, in *June*; and the Graſhopper in *July*, *Auguſt*, and *September*. Proper Paſtes may alſo be prepared for him; as Honey and Sugar wrought together, and thrown in Pieces into the Water, ſome Hours before you begin to angle. Honey and White Crums of Bread mix'd together do alſo make a good Paſte.

Tench FISHING. The *Tench* is a fine Freſh-water Fiſh, having very ſmall Scales, but large, ſmooth Fins, with a red Circle about the Eyes, and a little Barb hanging at each Corner of the Mouth. It takes more Delight among Weeds in Ponds, than in clear Rivers; and covets to feed in foul Water. His Slime is ſaid to have a healing Quality for wounded Fiſh; upon which Account he is commonly called the *Fiſhes Phyſician*. When the Carp, Pike, &c. are ſick, they find Relief by rubbing themſelves againſt the Tench.

The Seaſon for catching this Fiſh, is in *June*, *July*, and *Auguſt*, very early, and late, or even all Night, in the ſtill Part of Rivers. His Bait is a large Red Worm, at which he bites very eagerly, if firſt dipt in Tar. He alſo delights in all ſort of Paſtes, made up of ſtrong ſcented Oils, or with Tar: Or a Paſte of brown Bread, and Honey. Nor does he refuſe the Cud-worm, Lob-worm, Flag-worm, green Gentle, Cad-bait, or ſoft boil'd Bread, Grain.

Pearch or *Perch* FISHING. The *Pearch* or *Perch* is hook-back'd, not unlike a Hog; arm'd with ſtiff Griſtles, and his Sides with dry thick Scales: He is voracious, and will venture on his own Kind; even with greater Courage than the Pike. He ſeldom grows above two Foot long: He ſpawns in *February*, or *March*; and bites beſt when the Spring is far ſpent.

The proper Baits are, the Brandling, Minnow, and ſmall Frog; as alſo the Cob-Worm, Bob Oak-Worm, Gentle, Waſp, and Cad Bait. The Minnow yields the beſt Sport, which is to be alive, and ſtuck on the Hook through the upper Lip, or Back Fin, and kept ſwimming about Mid-Water. If the Frog be uſed, he is to be faſten'd to the Hook by the Skin of his Leg. When the Fiſh bites, as he is none of the Leather-mouthed kind, he muſt have Time to pouch his Bait. The beſt Place to fiſh for him, is in the turning of the Water Eddy, in a good Gravel Bottom.

Roach FISHING. The *Roach*, or *Rochet* is no delicate, but a very ſilly Fiſh. Thoſe in Rivers are more valued, than thoſe in Ponds; tho' the latter are much the larger. They ſpawn about the Middle of *May*.

To angle for this Fiſh in *April*, Cads or Worms are proper Baits; ſo are ſmall white Snails or Flies in Summer. The Bait is always to be under Water; for the Fiſh will not bite a-top. Others uſe a *May* Fly, in that Seaſon, with good Succeſs. In Autumn a Paſte muſt be uſed, made of the Crum of White Bread, moulded with a little Water, labour'd with the Hands into a tough Paſt, and colour'd, not very deep, with red Lead. In Winter, Gentles are the beſt Bait. Sprouted Malt; the young Brood of Waſps, and Bees, dipt in Blood; and the thick Blood of Sheep, half dried, are Noſtrums in this ſort of *Fiſhing*.

Dace, and *Dare* FISHING. The *Dace*, and *Dare*, bearing a near Reſemblance to each other, in Kind, Size, Goodneſs, Feeding, Cunning, &c. we join them together. They bite at any Fly; but eſpecially the Stone Caddice Fly, or *May* Fly, the latter End of *April*, and moſt Part of *May*; and the Ant Fly in *June*, *July*, *Auguſt*, &c. They rarely refuſe a Fly a-top of the Water, in a warm Day; but when you fiſh under Water for them, 'tis beſt to be within a handful of the Ground. To catch Dace in Winter, the Bait is a white Worm, with a large red Head, gather'd after the Plough in Heaths or ſandy Grounds.——The Noſtrums for Roaches are alſo commended for *Dace*.

Gudgeon FISHING. The *Gudgeon* is a ſmall Fiſh, of a very delicious Taſte. It ſpawns three or four times in the Summer Seaſon, and feeds in Streams, and on Gravel; ſlighting all kind of Flies: But is eaſily taken with a ſmall red Worm, *fiſhing* near the Ground; and being a leather-mouthed Fiſh, will not eaſily be off the Hook, when ſtruck. The Gudgeon may either be fiſh'd for with a Float, the Hook being on the Ground; or by Hand, with a running Line on the Ground, without Cork, or Float. He will bite well at Waſps, Gentles, and Cad Baits; and one may even fiſh him with two or three Hooks at the ſame time; which makes good Sport. When you angle for Gudgeons, ſtir up the Sand or Gravel with a long Pole, which will make them gather to the Place, and bite the faſter.

Flounder FISHING. The *Flounder* is a flat Sea or River Fiſh; caught in *April*, *May*, *June*, and *July*, in any time of the Day; in a ſwift Stream, and ſometimes alſo in the ſtill Deep. The beſt Bait is red Worms, Waſps, and Gentles.—

Eel FISHING. The *Eel* is a Freſh-water Fiſh, much in Shape of a Serpent: Naturaliſts have long been divided, as to the Manner how it is produced; whether by Generation; or Corruption as Worms are; or by certain glutinous Dew Drops, which, falling in *May* and *June* on the Banks of ſome Ponds and Rivers, are by the Heat of the Sun turn'd into Eels. This is certain, that there is not the leaſt Appearance of Sex or Difference therein. *Abr. Mylius*, in a Treatiſe of *the Origin of Animals*, deſcribes a Method of producing them by Art. He ſays, that if you cut up two Turfs, cover'd with *May* Dew, and lay one on the other, the graſſy Side inwards; and thus expoſe them to the Heat of the Sun, on the Banks of a Water: In a few Hours time there will ſpring from them an infinite Quantity of Eels. The Kinds of Eels are various: Some reduce them to four; the *Silver Eel*; a greeniſh, call'd the *Gray Eel*; a *blackiſh Eel*, with a broad flat Head; and an *Eel with reddiſh Fins*. The firſt is allowed to generate: It is viviparous, and the young, when it comes from the Female, is no bigger than a ſmall Needle.

The *Silver* Eel may be caught with divers Baits; particularly powder'd Beef, Garden Worms, or Lobs, Minnows, Hens Gut, Fiſh Garbage, &c. But as they hide themſelves in Winter in the Mud, without ſtirring out for ſix Months, and in the Summer take no Delight to be abroad in the Day, the moſt proper Time to take them, is in the Night, by faſtening a Line to the Bank ſide, with a laying Hook in the Water. Or a Line may be thrown at large with good Store of Hooks baited, and plumbed, with a Float, to diſcover where the Line lies, in the Morning. The Roach does here well for a Bait, the Hook being laid in his Mouth. ——Another uſual way of catching Eels, call'd *Sniggling*, is perform'd in the Day time, by taking a ſtrong Line, or Hook baited with a Lob, or Garden Worm, and reſorting to ſuch Holes and Places, as Eels uſe to abſcond in, near Mills, Wears, or Flood Gates; where, the Bait being gently put into the Hole, by help of a cleft Stick, the Eel will certainly bite.——*Bobbing for Eels* is another Method: In order to this, ſcour ſome large Lobs, and with a Needle run a twiſted Silk through them, from End to End, taking ſo many as may be wrap'd a dozen times round a Board. Tie them faſt with the two Ends of the Silk, that they may hang in ſo many Links. This done, faſten all to a ſtrong Cord, and about an Handful and an half above the Worms fix a Plummet, three Quarters of a Pound Weight; and make the Cord faſt to a ſtrong Pole: *Fiſhing* with theſe in muddy Water, the Eels will bite haſtily at the Bait. When you think they have ſwallow'd it, gently draw up the Line, and bring them aſhore as ſoon as may be.——Others uſe an Eel Spear, with three or four Forks, or jagged Teeth, which they ſtrike at random into the Mud.——

Chub FISHING. The *Chevin* or *Chub* is a Freſh-water Fiſh, with a large Head. It ſpawns in *March*, and is very ſtrong, tho' inactive; yielding in a very little Time, after he is ſtruck; and the larger he is, the quieter. His Bait is any kind of Worm, or Fly, particularly the large Yellow-moth; alſo Grain, Cheeſe, the Pith in the Bone of an Ox's Back, &c. He affects a large Bait, and Variety of them at the ſame Hook. Early in the Morning angle for him with Snails; but in the Heat of the Day chuſe ſome other Bait; and in the Afternoon fiſh for him at Ground, or Fly.

FISHING *Fly*, a Bait uſed in Angling for divers kinds of Fiſh. See FISH, and FISHING.

The *Fly* is either Natural, or Artificial.

Natural Flies are innumerable: The more uſual on this occaſion are the *Dun-Fly*, the *Stone*, or *May-Fly*, the *Red-Fly*, the *Moor-Fly*, the *Tawny-Fly*, the *Vine-Fly*, the *Shell-Fly*, the *Cloudy* and *Blackiſh-Fly*, the *Flag-Fly*; alſo *Caterpillars*, *Canker-Flies*, *Bear-Flies*, &c. all which appear ſooner or later, according to the Forwardneſs or Backwardneſs of the Spring. To know the particular Fly the Fiſh moſt covets, when you come in the Morning to the River-ſide, beat the Buſhes with your Rod, and take up what Variety you can of all ſorts of Flies; try them all, and you will quickly know which are in greateſt Eſteem: Not but that they will ſometimes change their Fly, but it is only when they have glutted themſelves therewith.

There are two ways to fiſh with Natural Flies, either on the Surface of the Water, or a little underneath it.

In angling for Chevin, Roach, or Dace, move not your Natural Flie ſwiftly, when you ſee the Fiſh make at it; but rather let it glide freely towards him with the Stream: But if it be in a ſtill and ſlow Water, draw the Fly ſlowly ſideways by him, which will make him eagerly purſue.

For the *Artificial Fly*, 'tis ſeldom uſed but in bluſtering Weather, when the Waters are ſo troubled by the Winds, that the Natural Fly cannot be ſeen, nor reſt upon them.

Of this Artificial Fly, there are reckon'd no leſs than twelve Sorts; of which theſe are the principal.

1. The *Dun-Fly*, in *March*, made of Dun Wool, and the Feathers of a Partridge Wing. 2. A *Dun-Fly*, made of black Wool, and the Feathers of a black Drake; the Body made of the firſt, and the Wings of the latter. 3. The *Stone-Fly*, in *April*, the Body made of black Wool, dy'd yellow under the Wings, and Tail. 4. The *Ruddy Fly*, in the Beginning of *May*; the Body made of red Wool, and bound about with black Silk, with the Feathers of a black Capon, which hang dangling on his Sides, next his Tail. 5. The *Yellow*, or *Greeniſh Fly*, in *June*; the Body made of black Wool, with a yellow Liſt on either Side, and the Wings taken off the Wings of a Buzzard, bound with black broken Hemp. 6. The *Mooriſh Fly*; the Body made of duſkiſh Wool, and the Wings with the blackiſh Mail of a Drake. 7. *Tawny-Fly*, till the Middle of *June*; the Body made of tawny Wool, the Wings made contrary one againſt the other, of the whitiſh Mail of a white Drake. 8. The *Waſp-Fly*, in *July*; the Body made of black Wool, caſt about with yellow Silk, and the Wings of Drakes-feathers. 9. The *Steel-Fly*, in the Middle of *July*; the Body made of greeniſh Wool, caſt about with the Feathers of a Peacocks-tail, and the Wings made of Buzzards Wings. 10. The *Drake-Fly*, in *Auguſt*; the Body made of black Wool, caſt about with black Silk, his Wings of the Mail of a black Drake, with a black Head.

The beſt Rules for *Artificial Fly-Fiſhing*, are

1°. To fiſh in a River ſomewhat diſturbed with Rain; or in a cloudy Day, when the Waters are moved by a gentle Breeze: The South-wind is beſt; and if the Wind blow high, yet not ſo, but that you may conveniently guard your Tackle, the Fiſh will riſe in plain Deeps; but if the Wind be ſmall, the beſt Angling is in ſwift Streams.

2°. Keep as far from the Water-ſide as may be; fiſh down the Stream, with the Sun at your Back, and touch not the Water with your Line.

3°. Ever angle in clear Rivers, with a ſmall Fly, and ſlender Wings; but in muddy Places uſe larger.

4°. When after Rain the Water becomes browniſh, uſe an Orange-Fly; in a clear Day, a light colour'd Fly; a dark Fly for dark Waters, &c.

5°. Let the Line be twice as long, as the Rod, unleſs the River be incumber'd with Wood.

6°. For every ſort of Fly, have ſeveral of the ſame, differing in Colour, to ſuit with the different Complexions of ſeveral Waters and Weathers.

7°. Have a nimble Eye, and active Hand, to ſtrike preſently with the riſing of the Fiſh; or elſe he will be apt to ſpew out the Hook.

8°. Let the Fly fall firſt into the Water, and not the Line, which will ſcare the Fiſh.

9°. In ſlow Rivers, or ſtill Places, caſt the Fly croſs over the River, and let it ſink a little in the Water, and draw it gently back with the Current.

Salmon-Flies ſhould be made with their Wings ſtanding, one behind the other, whether two, or four. That Fiſh delights in the gawdieſt Colours that can be; chiefly in the Wings, which muſt be long, as well as the Tail.

FISHING *Floats*, are little Appendages to the Line, ſerving to keep the Hook and Bait ſuſpended at the proper Depth, to diſcover when the Fiſh has hold of them, &c.

Of theſe are divers Kinds; ſome made of *Muſcovy* Duck-quills, which are the beſt for ſlow Waters; but for ſtrong Streams, ſound Cork, without Flaws or Holes, bored thro' with an hot Iron, into which is put a Quill of a fit Proportion, is preferable: Pare the Cork to a pyramidal Form, and grind it ſmooth.

FISHING *Hook*, a little Engine, of Steel Wire, of a proper Form to catch and retain Fiſh. See HOOK.

The *Fiſhing Hook*, in general, ought to be long in the Shank, ſomewhat thick in the Circumference, the Point even, and ſtraight; let the Bending be in the Shank.

For ſetting the Hook on, uſe ſtrong, but ſmall Silk, laying the Hair on the Inſide of your Hook; for if it be on the Outſide, the Silk will fret and cut it aſunder.

There are ſeveral Sizes of theſe Fiſhing Hooks, ſome big, ſome little, and of theſe ſome have peculiar Names; as,

1. *Single Hooks*. 2. *Double Hooks*, which have two Bendings, one contrary to the other. 3. *Snappers*, or *Gorgers*, which are Hooks to whip the Artificial Fly upon, or to bait with the Natural Fly. 4. *Springers*, or *Spring Hooks*, a kind of double Hooks, with a Spring, which flies open, being ſtruck into any Fiſh, and ſo keeps its Mouth open.

FISHING *Rod*, a long, ſlender Rod, or Wand, to which the Line is faſten'd, for Angling.——

Of theſe there are ſeveral Sorts; as,

1. A *Troller*, or *Trolling Rod*, which has a Ring at the End of the Rod, for the Line to go through, when it runs off a Reel. 2. A *Whipper*, or *Whipping Rod*, a Top Rod, that is weak in the Middle, and top-heavy, but all ſlender and fine. 3. A *Dopper*, which is a ſtrong Rod, and very light. 4. A *Snapper*, or *Snap Rod*, that is a ſtrong Pole, peculiar for a Pike. 5. A *Bottom Rod*, being the ſame as the *Dopper*, but ſomewhat more pliable. 6. A *Sniggling*, or *Proking Stick*, a forked Stick, having a ſhort ſtrong Line, with a Needle, baited with a Lob-worm: This is only for Eels in their Holes. See ANGLING, &c.

FISHING *Veſſels*, or thoſe uſed in the ſeveral Fiſheries at Sea, or on the Coaſts, are the

Buſſe.	Fluit.
Coble.	Hocker.
Cock.	North Sea Boat.
Dogger.	Peter Boat.
Driver.	Smack.
Eel Boat.	Strand Boat.
Euar Boat.	Trawler.
Flybote.	Trinker.——

FISSURE, FISSURA, in Chirurgery; A Cleft or Crack in a Bone: Or, a longitudinal Fracture of a Bone: Or, a Solution of the Continuity of a Bone, whereby it is only cloven, or crack'd. See FRACTURE.

Fiſſures are of two Kinds: The one apparent, by the *Greeks* called ῥωγμὴ, or ῥῆξις; and by the Latins, *Sciſſura*: The other ſo ſmall, as not to be viſible, called τειχισμὸς, or τειχιάσις, Capillary; as reſembling a Thread.

The Cauſes of *Fiſſures* are Falls, Leaps, and Contuſions of the Parts againſt hard Bodies. See BONE.

Fiſſures, eſpecially in the Cranium, either happen on the Part the Stroke was given on; or on the oppoſite Part: That on the oppoſite Part is called *Counter-Fiſſure*, or *Counter-Cleft*, by the *Greeks* ἀντύχημα; and the Latins, *Reſonatio*.

Old Men are more ſubject to *Fiſſures*, than young ones; by reaſon their Bones are drier.

Fiſſures are difficult to find; but the eaſieſt cured of all Fractures: Tho', if they be not known, or be neglected, they bring on Ulcers, and Caries's; and in ſuch Caſe become dangerous; ſo that there is frequently a Neceſſity of having Recourſe to an Amputation of the Member.

The Signs of a *Fiſſure* of the Cranium, are bilious Vomitings; Vertigo; Flux of Blood at the Mouth, or Noſe; Dumbneſs; Delirium, &c. If there be any *Fiſſure* in the Scull, the Patient will feel a Pain in the Place, upon holding a String between his Teeth, while the Chirurgeon pulls it ſtrongly.

In ſuch Caſes 'tis frequently neceſſary to perforate the Cranium, to give Vent for the Blood and Sanies.

FISTULA, in the antient Muſick, An Inſtrument, of the Wind kind, reſembling our Flute, or Flageolot. See FLUTE.

The principal Wind Inſtruments of the Antients, are the *Tibia*, and *Fiſtula*: Tho' how theſe were conſtituted; or wherein they differ'd; or how they were play'd on, does not appear. All we know, is that the *Fiſtula* was at firſt made of Reeds, and afterwards of other Matters. Some had Holes; ſome none: Some again were ſingle Pipes; others a Combination of ſeveral; Witneſs the Syringa of *Pan*. See TIBIA.

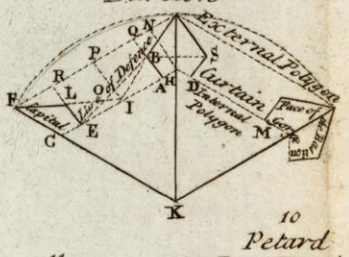
FISTULA, in Medicine, A deep, winding, callous, cavernous Ulcer, with a narrow Entrance, but opening thence into a ſpacious Bottom; and generally yielding a ſharp, virulent Matter.

Fiſtula's differ from winding Ulcers in this, that the former are callous, and the latter not. See ULCER.

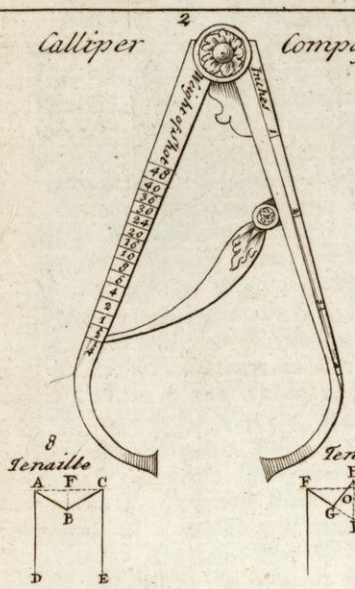
They

TAB: FORTIFICATION

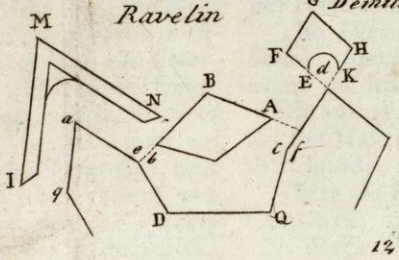
1 & 6 Bastion



2 Calliper Compasses

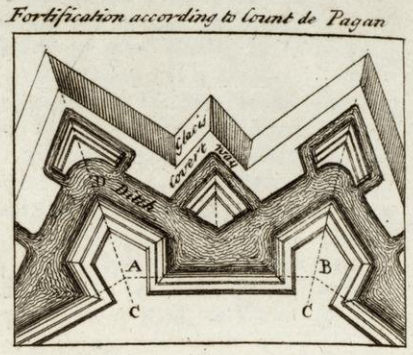


5 Ravelin



6 Demilune

7 Fortification according to Count de Pagan



10 Petard

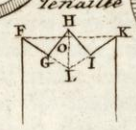


11 Gunnery Quadrant

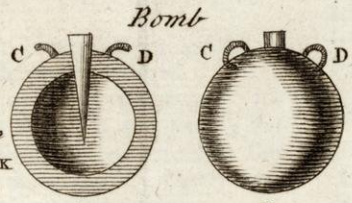


8 Tenaille

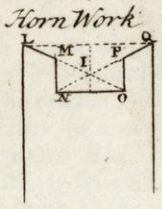
9 Tenaille



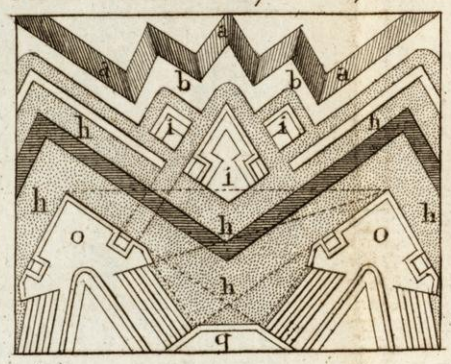
10 Bomb



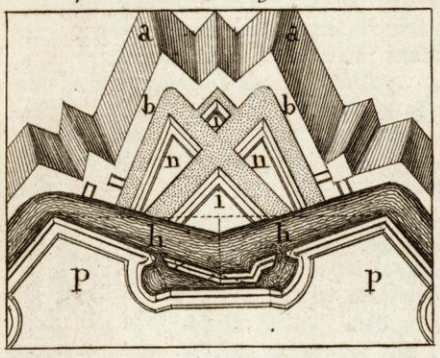
12 Horn Work



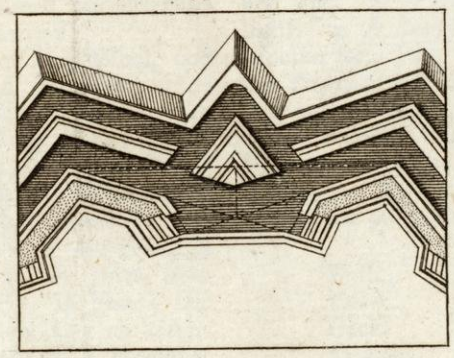
Fortification accord.g to y.e Method of Blondel



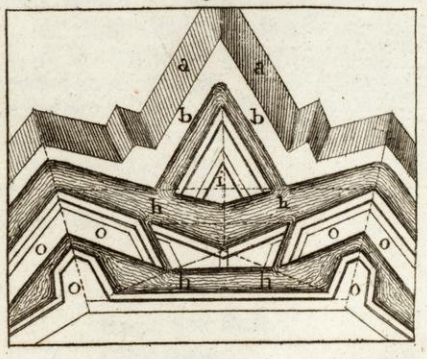
Fortification according to M.r Vauban



Ichnography of a Fortification according to pagan



Method Fortification according to M.r Vaubans new

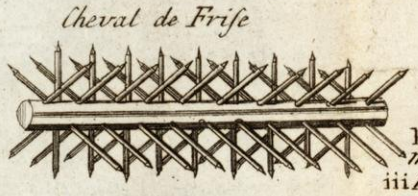


Names of the Works
aaa &c Glacis or Declivity
bb &c Covert way
cc Counterscarp
d Single Tenaille
e Double Tenaille
e Tenaille in y.e Ditch
f Horn Work
gg &c Places of Arms
hhh &c the Moat or Ditch
iii Ravelins
kk Half Moons
ll Crown Work
m Bonnet or Priests Cap
nn Counter Guard
oo &c Bastions
ppp Bastions with Circular Flanks
qq Curtain
rr Rampart or Wall
ss & Bridges

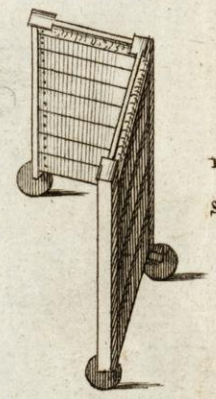


A Hexagon Fortified with all the Kinds of Out Works Together with y.e Manner of carrying on the Trenches of Approach

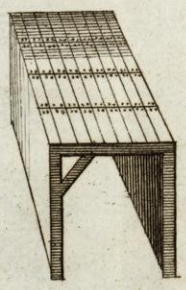
Cheval de Frise



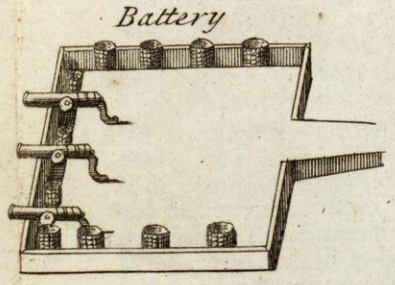
Mantelet or Blind

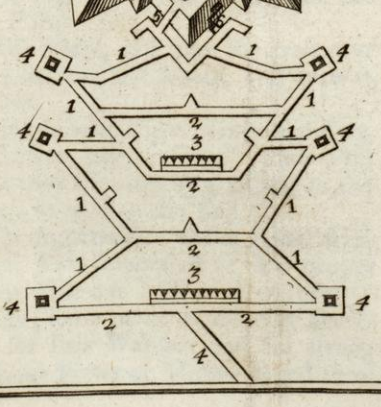


Gallery



Battery

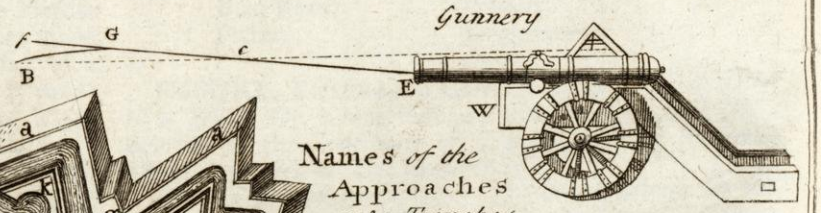




Fascines



Gunnery



Names of the Approaches
11 &c Trenches of approach
22 &c Lines of Communication
33 &c Batteries
44 &c Forts for Defence of the Trenches
5 a Sap
6 a Mine

Pallisadoes



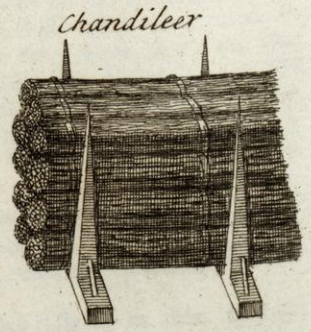
Gabions



Baggs of Earth



Chandileer



H Fletcher, Sculp.

No. VII.

They attack all Parts of the Body, without Exception; particularly the Anus, Foramen lachrymale, Thorax, &c. The general Cauſe of *Fiſtula's*, is ſome Abſceſs, or Ulcer, which either being inveterate, or having been ill uſed, comes to be callous; the Orifice being at firſt lined or incruſtated therewith, and at length the whole Sinus.

The Cure conſiſts, in conſuming the Callus, and healing, and conſolidating the Ulcer with cleanſing Medicines, and Sarcoticks.

The Antients gave the Name *Fiſtula* to this ſort of Ulcers, from the Reſemblance they bear, on account of their Depth, to a *Flute*, or *Pipe*, called by the Latins *Fiſtula*.

Fistula *in Ano*, is a *Fiſtula* form'd in the Anus, or Fundament. See Anus.

Of this, ſome Authors reckon four Kinds, *viz.* the *Cæcum Internum*, which is open outwards, but not into the Rectum: The *Cæcum Externum*, which has an Aperture into the Rectum, but none outwards: The *Compleat*, which opens both into the Anus, and the Inteſtine: And the *Cuniculatus*, or that with ſeveral Sinus's, which diſcharge themſelves into one common Cavity, that is the Fund, and as it were, Reſervoir of them all.

Others, as *Wiſeman*, reduces *Fiſtula's in Ano* to two Claſſes. The *firſt* are thoſe, ariſing from a Phyma: Theſe are very painful, and difficult to cure; as entering deep amongſt the *Inteſtines* of the *Muſcles*, and forming various Cuniculi, or Sinus's; which, the more remote they are from the Anus, the worſe they be, by reaſon they do not allow of being cut: The ſecond, owe their Origin to an internal Hæmorrhage, or Extravaſation between the Coats of the Rectum; and have a ſmall Perforation, near the Circumference of the Anus, whence they yield a thin Sanies, or Ichor, without Pain: They in time bring on Itchings and Excoriations; and the Orifices at length become callous, and are ſometimes cloſed, and ſometimes open again.

Fiſtulæ, if they do no Harm by the Copiouſneſs of the Flux, the Stench, or the like Accidents, are a Benefit to Nature, as carrying off cachectic Humours; and ought not to be cured, but kept open. The freſh, ſimple *Fiſtulæ* may be cured without Danger.

The great way is by cutting; where that may be done without Damage to the Muſcle of the Anus, which might occaſion an involuntary Diſcharge of the Excrements. Cutting is either perform'd with a *Thread*, or a *cutting* Inſtrument. See each Method under the Article Cutting *for the Fiſtula in Ano*.

Fistula *Lachrymalis*, is a *Fiſtula* in the greater Canthus of the Eye, call'd alſo *Ægilops Lachrymalis*.

It is a little deep callous Ulcer, in the greater Caruncle, or the Place of the Glandula Lachrymalis. It uſually begins with an Abſceſs, call'd *Anchylops*, which in time produces an Ulcer, that afterwards degenerates into a *Fiſtula*. When preſs'd with the Finger, it yields a ſtinking Matter, not unlike the Yolk of an Egg; and the corroſive Humor finding, or making it ſelf a Paſſage, there enſues a perpetual Oozing.

Sometimes the Os Ethmoidis it ſelf is corroded, and render'd carious by it; in which Condition it is ſuppoſed to be only curable by an actual Cautery: Sometimes it becomes cancrous; and then, *Riverius* directs, all Medicines to be laid aſide.

The Cure of the *Fiſtula lachrymalis*, is wholly external and chirurgical; excepting that Evacuants and Mercurials may be given internally; as alſo Decoctions of the Woods. Some perforate the Os Naſi, to give room for the Matter, to be evacuated that way.

A *French* Chirurgeon, named *Anel*, has found out a new way, *viz.* by putting a Probe and Syringe of an inconceiveable Fineneſs, thro' the *Puncta lachrymalia* into the *Saccus lachrymalis*.

Fistula was alſo the Pipe put into the Cup, out of which the Communicants antiently ſucked the Wine.

Diviſit Eccleſiis Cruces, Altaria, Scrinia, &c. *Situlas*, Fiſtulas, *& Ornamenta varia*. Flor. Wigorn. Anno 1087.

FISTULAR *Flowers*, among Herbaliſts, are thoſe made up of many long, hollow, ſmall Flowers, like Pipes; all divided into large Jaggs at the end. See Flower.

FISTULOUS, or Fistular, is applied by the Chirurgeons to Wounds and Ulcers, which degenerate into Fiſtula's.

Care muſt be taken, not to leave the Seton too long in the Wound, leſt it renders it callous and *fiſtulous*. Dionis.

Among Botaniſts, *fiſtulous* is underſtood of ſuch Leaves of Plants, as are ronnd and hollow within, like a Fiſtula, or Flute. Thus the Leaves of Onions are ſaid to be *fiſtulous*.

FIT, in Medicine, an Acceſs, or Paroxyſm. See Paroxysm.

Fits *of the Mother*, ſee Hysterick *Affection*.

Fits *of eaſy Reflexion* and *eaſy Tranſmiſſion*, ſee Reflexion, Transmission, Light, &c.



FITCHEE, or Fichee, in Heraldry, is when the lower Part of any Croſs is ſharpen'd into a Point, fit to fix into the Ground.

Thus, Azure, a Croſs Potent *Fitchee*.

The Origin hereof, *Mackenzy* aſcribes to the primitive Chriſtians, who uſed to carry their Croſſes with them, wherever they went; and when they ſtop'd at any Place in a Journey, fix'd them in the Ground.

FITZ, a *French* Term, literally denoting *Son*; ſometimes given by way of Addition to the natural Sons of the Kings of *England*; as *James Fitz-Roy*, Duke of *Grafton*, &c.

FIVE-*leav'd Graſs*, Cinque-foil, in Heraldry, is us'd by ſuch as would introduce a Blazon by Herbs and Flowers, inſtead of Metals and Colours, to ſignify *Vert* or *Green*. See Vert.

FIXATION, the Act of *fixing*, or rendering a thing firm, and fix'd. See Fixity, and Firmness.

Fixation, in Chymiſtry, is a peculiar Preparation of Mercury, whereby it is put in a Condition to bear the Fire without evaporating; or the Hammer without flying, or ſeparating. See Mercury.

The Alchymiſts hold, that if they had the true Secret of fixing Mercury, without the Addition of any foreign leſs heavy and ſolid Ingredient, they could make Gold, at leaſt Silver. See Philosophers *Stone*.

Monſ. *Homberg* has a long Proceſs of many Months, to prepare an Oil from the fecal Matter, or human Excrements, which he imagin'd would have fix'd Mercury into Silver; but he fail'd. See Fecal *Matter*.

The Term is likewiſe applied in the general to any thing that fixes, and binds together what of its own Nature is volatile; and enables it to ſuſtain the Force of the Fire for ſome conſiderable Time.

Geber defines *Fixation* an Operation whereby a volatile thing, *i. e.* a thing that cannot endure the Fire, is render'd capable of enduring it. In the general, *Fixation* is the changing of a volatile Body into a fix'd one. See Fixed.

FIXT, or Fix'd *Bodies*, in the general, are ſuch, as neither the Fire, nor any Corroſive, has ſuch Effect on, as to reduce or reſolve them into their component Elements, *i. e.* abſolutely to deſtroy them.

Chauvin holds it not ſufficient to denominate a Body *fixt*, that it can withſtand the Fire, or any one Agent; but it ſhould withſtand all. He contends, that *Fixity* ſhould not be reſtrain'd, as it uſually is, to an Exemption from Evaporation; but from Deſtruction, or Reſolution into primary Elements; in which ſenſe, Gold, pretious Stones and Glaſs, and even Sulphur, and Mercury it ſelf, are properly *fix'd* Bodies; for Mercury, and Sulphur retain their Nature, notwithſtanding all their Evaporation. See Mercury.

Fixt, or Fix'd *Bodies*, among Chymiſts, are ſuch as bear the Violence of the Fire, without evaporating. See Evaporation.

The Chymiſts divide all Natural Bodies into *fix'd* and *volatile*, *i. e.* Such as bear the utmoſt Force of the Fire, without diſſipating, or ſpending themſelves in Fume; and ſuch as do not.

Of *fix'd* Bodies, the principal are Gold, Silver, pretious Stones particularly the Diamond, Salts, &c.

Of all Metals, Gold and Silver alone are *fix'd*, *i. e.* remaining a long time expoſed to the moſt intenſe Flame; they alone loſe nothing of their Weight. See Volatile.

Whence this Property ſhou'd ariſe, is difficult to ſay. If the Reader is not contented with the Cauſes enumerated under Fixity, he may add the following one from *Boerhave*, *viz.* The Homogeneity and Equality of the Parts.

The Parts, *e. gr.* of Gold being all homogeneous and equal, will equally ſuſtain each other, and leave equal Pores between them; through which Pores, when fus'd, the Fire finding an eaſy, equal Paſſage, goes off, without carrying any thing of the Metal with it: Or rather, the Particles of Gold being of all others the moſt ſolid, and heavy (as appears from the Weight of that Metal) and of all others the moſt ſtrongly united, or bound together (as appears from the infinite Ductility of that Metal) the Force of the Fire is not ſufficient to overcome ſo powerful a Reſiſtance: The Solidity of the Particles, and their Freedom from Air prevents their being rarified, or ſet further apart; which might leſſen their ſpecifick Gravity, and diminiſh their *vis coheſionis*: So that what has the chief Effect in the raiſing of Fumes and Vapours, *viz.* the Rarefaction, or Expanſion of the Body being here precluded, the Metal maintains its natural Weight and Tendency to the Centre. See Rarefaction, and Expansion.

Mr. *Boyle*, the Prince of *Mirandola*, Monſ. *Homberg*, and others, have made numerous Experiments on Gold, Silver, &c. to ſee how far their Fixity extended. Pure Gold, kept in an intenſe Heat for two Months, loſt nothing ſenſible of

its Weight. See GOLD. Silver, under the like Circumſtances and in the like time, loſt one twelfth Part of its Weight; tho' Mr. *Boyle* attributes this to the Metals not being fine and pure. See SILVER. See alſo SALT, DIAMOND, &c.

Indeed, by the great Burning Glaſſes of Meſſ. *Tſchirnhauſen* and *Villette*, the moſt *fix'd* Bodies, as Gold it ſelf, are render'd volatile, and loſe of their Weight; ſo that there is no Body in all Nature abſolutely *fix'd*. See BURNING *Glaſs*, MIRROR, &c.

FIX'D *Stars* are ſuch, as conſtantly retain the ſame Poſition, and Diſtance with reſpect to each other: By which they are contra-diſtinguiſh'd from erratick or wandering Stars, which are continually ſhifting their Situation and Diſtance.

The *Fix'd* Stars are, what we properly and abſolutely call *Stars:* The reſt have their peculiar Denomination of *Planet*, and *Comet*. See STAR, PLANET, and COMET.

FIXED *Signs* of the Zodiack, according to ſome are the Signs *Taurus*, *Leo*, *Scorpio*, and *Aquarius*. See SIGN.

They are ſo called, becauſe the Sun paſſes them reſpectively in the Middle of each Quarter, when that particular Seaſon is more ſettled and fixed, than under the Sign, which begins and ends it.

FIX'D *Salts*. The Chymiſts diſtinguiſh Salts into *fix'd* and volatile.

Fix'd Salts are theſe extracted or gain'd from Bodies by Calcination and Lotion. They are call'd *fix'd*, in that the *Fire* was not able to ſublime or raiſe them; as thoſe carried off in the Courſe of Calcination, by the Vehemence of the Fire, are called *volatile*. See SALTS.

The Aſhes of all Plants yield *fix'd* Salts. See LIXIVIUM.

The Chymiſts alſo give the Appellation *fix'd* to certain of their Preparations.

FIX'D *Nitre* is a Preparation of that Salt, by fuſing it in a Crucible, and then inflaming it with throwing in a few Coals, and this again and again, till no more Flame or Detonation ariſe: Then letting it cool, they pulverize, and then diſſolve it in Water, and afterwards evaporate it into a fine white Salt; which ſerves to draw the Tinctures out of Vegetables. This Salt, *per deliquium*, yields, what we call, the *Liquor of fix'd Nitre*. See NITRE, and SALT-*Petre*.

FIXING *Sulphur*, ſee SULPHUR and METAL.

FIXITY, or FIXEDNESS, in Philoſophy, the Quality of a Body, which denominates and renders it *fix'd:* Or, a Property, which enables it to endure the Fire and other violent Agents.

According to *Chauvin*, *Fixity* conſiſts in this, that the component Principles of the Body are ſo cloſely united, or cohere ſo ſtrongly, and are mix'd in ſuch Proportion, that they cannot eaſily be divided either by Fire, or any other corroſive Menſtruum; or their integral Parts ſeparated, and carried off in Vapour. For a Body may be ſaid to be *fix'd* in two reſpects.

Firſt, when expoſed to the Fire, or a corroſive Menſtruum, its Particles are indeed ſeparated, and the Body render'd fluid; but without being reſolved into its firſt Elements: The Second, when the Body ſuſtains the active Force of the Fire, or Menſtruum, without its integral Parts being carried off in Fumes. Each kind of *Fixity* is the Reſult of a ſtrong or intimate Coheſion between the Particles of the mix'd. See COHESION.

FIXITY, or *Fixedneſs*, in Chymiſtry, is in a peculiar manner uſed for the Property oppoſite to Volatility, *i. e.* the Property whereby Bodies bear the Action of the Fire, without being diſſipated in Fumes. See VOLATILITY.

The principal Cauſes of *Fixity*, or the Qualifications that contribute moſt to the rendering a Body *fix'd*, according to Mr. *Boyle*, are 1° That its Corpuſcles be ſingly of a certain proportionable Bulk, too big and unwieldy to be carried, up by Heat, or buoyed up in the Air. See VAPOUR. 2° That they have alſo a proper Degree of Weight, or Solidity. 3° That their Figure be ſuch as unfits them for Evaporation, or flying off; ſome being branched, others hook'd &c. So that being entangled with one another, they cannot eaſily be extricated, looſen'd, and ſeparated. To theſe may be added a fourth Circumſtance, *viz.* the Nearneſs of the Particles, and their being contiguous in a great many Points, or a deal of their Surface, which produces a ſtronger Force of Attraction and Coheſion. See ATTRACTION, COHESION, &c.

FLACCIDITY, in Medicine, &c. a Diſorder of the Fibres, or ſolid Parts of the Body, oppoſite to *Rigidity*. See FIBRE.

The too great *Flaccidity* of the Parts is cured by Cardiacks; Exerciſe; Friction; a dry warm Air, and Food, &c.

FLAG, a general Name, including *Colours*, *Standards*, *Antients*, *Banners*, *Enſigns*, &c. which Authors frequently confound with each other. See COLOUR, STANDARD, BANNER, &c.

The Faſhion of bearing the *Flags* pointed, or triangular, which now obtains, *Rodric. Toletan.* aſſures us, came from the *Mahometan Arabs*, or *Saracens*, upon their ſeizing of *Spain*; before which Time all the Enſigns of War were ſtretch'd, or extended on croſs-pieces of Wood, like the Banners of the Church; on which account they were called in Latin *Vexilla*, q. d. *Velilla, a veli diminatione*, as is remark'd by *Iſidore*.

The Pirates of *Algiers*, and throughout the Coaſts of *Barbary*, are the only People who bear a hexagonal *Flag*. It is *Gules*, charged with a Moreſk Head, coifed with its Turban, &c. though this be expreſly contrary to their Law, which prohibits the making any Image, or Repreſentation of a Man; founded on an Opinion, that they who make them, ſhall be obliged at the Day of Judgment to find Souls for them; and that in defect hereof they ſhall be damn'd. But this Portrait is that of *Hali Sulficar*, *Mahomet*'s Son in Law, to whoſe Party the *Africans* all retain; who order'd that his Effigy ſhould be expreſs'd on their *Flags* and Standards, believing himſelf ſo formidable to the *Chriſtians*, that the bare Sight of his Image would carry undoubted Victory over them. *Leunclavius*.

FLAG is more particularly uſed at Sea, for the Colours, Antients, Standards, &c. bore on the Top of the Maſts of Veſſels, to notify the Quality of the Perſon who commands the Ship, of what Nation it is, and whether it be equip'd for War, or Trade.

The Admiral alone carries his *Flag* on the Main-Top, or Top of the Main-Maſt. See ADMIRAL.

The Vice Admiral carries his on the Fore-Top; and the Rear Admiral his on the Mizzen Top, or Top of the Mizzen Maſt.

The Commanders of Squadrons bear their *Flag* on the Mizzen Maſt, when in the Body of a Fleet: And on the Main Maſt, when they command a Party. It ſhould be cleft two Thirds of its Height, and terminate in a Point.

The *Flags* bore on the Mizzen, are particularly called *Gallants*. See MAST, GALLANT, &c.

The *Flag* of the *French* Nation is blue, charged with a white Croſs, and the Arms of *France*.

Beſide the National *Flag*, Merchant Ships frequently bear leſſer *Flags* on the Mizzen Maſt, with the Arms of the City, where the Maſter ordinarily reſides; and on the Fore-Maſt, with the Arms of the Place, where the Perſon who fraights them, lives.——

To *Lower*, or *Strike the Flag*, is to pull it down, out of Reſpect or Submiſſion, when a weaker Party meets a more powerful one.

By an Ordinance of *Philip* II. King of *Spain*, 1565. the Captains are peremptorily commanded, to periſh rather, than *lower the Royal Flag*, when once hung out.——

To *hang out the White Flag*, is to aſk Quarter: Or, it ſhews, when a Veſſel is arrived on a Coaſt, that it has no hoſtile Intention, but comes to trade, or the like. The *red Flag* is the Signal of Defiance and Battle.

The way of leading vanquiſh'd Ships in Triumph, is to tye the *Flags* to the Shrouds, or the Gallery in the Hind-part of the Ship, and let them hang downwards to the Water: And to tow the Veſſels by the Stern. 'Twas thus the *Romans* uſed thoſe of *Carthage*, as *Livy* relates.

FLAG *Ship*, a Ship commanded by a General, or *Flag* Officer, who has a Right to carry a *Flag*; in Contra-diſtinction to the ſecondary Veſſels, under the Command thereof.——

FLAG *Officers*, are the General Officers of Fleets, Squadrons, &c. Such are the Admiral, Vice-Admiral and Rear-Admiral. See ADMIRAL.

The *Flag-Officers* in Sea-Pay are the Admiral, Vice-Admiral, and Rear-Admiral of the White, Red, and Blue. See NAVY.

FLAG *Staves* are Staves ſet on the Heads of the Top-Gallant Maſts, ſerving to let fly, and unfurl the *Flags*.

FLAGS, in Falconry, are the Feathers in a Hawk's Wing near the principal ones. See FEATHER.

FLAGELLANTS, or FLAGELLANTES, a Sect of Hereticks, who chaſtiſed and diſciplined themſelves with Whips, in publick.

The Sect of the *Flagellants* had its Riſe at *Perouſe*, in the Year 1260. Its Author was one *Rainier*, a Hermit. 'Twas in all Probability no more than an Effect of an indiſcreet Zeal.

A great Number of Perſons of all Ages made Proceſſions, walking two by two, with their Shoulders bare, which they whip'd, till the Blood ran down, in order to obtain Mercy from God, and appeaſe his Indignation againſt the Wickedneſs of the Age. They were then called the *Devout*; and having eſtabliſh'd a Superior, he was called the General of the Devotion.

Women did not appear in theſe publick Aſſemblies; tho' they practis'd the ſame Severities: But it was in private, and in their own Houſes.

In

In the Middle of the XIVth Century the Sect of the *Flagellantes* was reſtored, on occaſion of a great Mortality; and ſpread it ſelf into all Parts of *Europe*.

The Biſhops and Magiſtrates at length found it neceſſary to put a Stop to their Exceſs. The Writers and Preachers diſputed againſt it; but the *Flagellants* remain'd unſhaken againſt all they could ſay: So that of a Number of perhaps innocent, well-meaning Zealots, Pride, Obſtinacy and Schiſm converted them into a dangerous Sect. They held, that the Blood they thus ſpilt, was mix'd with that of Jeſus Chriſt; and that by a *Flagellation* of twenty four Days they gain'd the Pardon of all their Sins.

Clement VIth forbad all publick *Flagellations*. *Gerſon* wrote an expreſs Treatiſe againſt publick *Flagellations*,

FLAGELLATION, a Term appropriated to the Suffering of JESUS CHRIST, when whipp'd and ſcourged by the *Jews*; from the Latin *Flagellum*, a *Scourge*, or *Whip*.

Thus we ſay, A Painting of the *Flagellation*; or ſimply, a *Flagellation*, to denote a Painting, or Print, repreſenting this Torment inflicted on the Saviour of the World. In this Senſe we ſay, the *Flagellation* of ſuch a Painter, *&c.*

FLAGELLATION, *Whipping*, is alſo uſed for a voluntary Diſcipline, or Penance, frequently practiſed by the antient Penitents.

The Parliament of *Paris* prohibited all publick *Flagellations*, by an Arret of 1601. See FLAGELLANTS.

FLAGEOLET, or FLAJOLET, a kind of little Flute, or muſical Inſtrument of the Flute kind; uſed chiefly by the Shepherds and Country-People. See FLUTE.

'Tis uſually made of Box, or other hard Wood; ſometimes of Ivory. It has ſix Holes, or Stops, beſide that at Bottom, the Mouth-piece, and that behind the Neck.

FLAIL, ſee THRASHING.

FLAMBEAU, or FLAMBOY, a Luminary, made of an Aſſemblage of ſeveral thick Wicks, cover'd over with Wax; ſerving to burn a-nights in the Streets; as alſo at funeral Proceſſions, Illuminations, *&c.* See LUMINARY.

Flambeaux differ from *Links*, *Torches*, and *Tapers*. See TORCH, and TAPER.

They are made ſquare; ſometimes of white Wax, and ſometimes of yellow. They uſually conſiſt of four Wicks, or Branches, near an Inch thick, and about three Foot long; made of a ſort of coarſe hempen Thread, half twiſted.

They are made with the Ladle, much as Torches, or Tapers are; *viz.* by firſt pouring the melted Wax on the Top of the ſeveral ſuſpended Wicks, and letting it run down to the Bottom: This they repeat twice. After each Wick has thus got its ſeveral Cover of Wax, they lay them to dry; then roll them on a Table, and ſo join four of them together, by ſoldering them with a red hot Iron.

When join'd, they pour on more Wax, till the *Flamboy* is brought to the Size required; which is uſually a Pound, and half, or two Pounds.

The laſt Thing is to finiſh their Form, or Out-ſide; which they do with a kind of poliſhing Inſtrument of Wood, by running it along all the Angles, form'd by the Union of the Branches. See *Wax* CANDLE.

The *Flambeaux* of the Antients were different from ours. They were made of Woods, dried in Furnaces, or otherwiſe. They uſed divers kinds of Wood for this Purpoſe: The moſt uſual was Pine. *Pliny* ſays, that in his Time they frequently alſo burnt Oke, Elm, and Hazle. In the VIIth Book of the *Æneid*, Mention is made of a *Flambeau* of Pine: And *Servius* on that Paſſage remarks, that they alſo made them of the Cornel Tree.

FLAME, the brighteſt and ſubtileſt Part of a Fire, aſcending above the Fewel in a pyramidal or conical Figure. See FIRE.

Flame ſeems to be the Smoak, *i, e.* the Fumes, or volatile Parts of the Fewel, greatly rarified, and at laſt kindled, or heated red hot. By the great Rarifaction, the Matter becomes ſo light, as to be rais'd with great Velocity in the Air: And by the Preſſure of the incumbent atmoſpherical Fluid, it is kept for ſome time together; the Air forming a ſort of Arch, or Sphere around it, that prevents its immediate Diffuſion and Diſſipation, and by its Contiguity and Fixation ſuſtains and feeds the Fire of the *Flame*; the aqueous and earthy Parts of the Fume being naturally incapable of being ignited, are only rarified, and ſo impelled upwards, without *flaming*. See SMOAK.

Flame is defined by Sir *I. Newton*, in his little Treatiſe *De Acido*, to be *Fumus Candens*, red hot Smoak. The ſame Author argues, Is not *Flame* a Vapour, Fume, or Exhalation heated red hot, that is, ſo hot as to ſhine? For Bodies do not *flame* without emitting a copious Fume; and this Fume burns in the *Flame*. The *Ignis Fatuus* is a Vapour, ſhining without Heat; and is there not the ſame Difference between this Vapour, and *Flame*, as between rotten Wood, ſhining without Heat, and burning Coals of Fire? In diſtilling hot Spirits, if the Head of the Still be taken off, the Vapour which aſcends, will take Fire at the *Flame* of a Candle, and turn into *Flame*. Some Bodies, heated by Motion or Fermentation, if the Heat grow intenſe, fume copiouſly; and if the Heat be great enough, the Fumes will ſhine, and become *Flame*. Metals in Fuſion do not *flame*, for want of a copious Fume. All *flaming* Bodies, as Oil, Tallow, Wax, Wood, foſſil Coal, Pitch, Sulphur, *&c.* by burning, waſte in Smoak, which at firſt is lucid; but at a little Diſtance from the Body, ceaſes to be ſo, and only continues hot. When the *Flame* is put out, the Smoak is thick, and frequently ſmells ſtrongly; but in the *Flame* it loſes its Smell, and according to the Nature of the Fewel, the *Flame* is of divers Colours. That of Sulphur, *e. gr.* is blue; that of Copper open'd with ſublimate, green; that of Tallow, yellow; of Camphire, white, *&c.* We find that when Gunpowder takes Fire, it goes off in a *flaming* Smoak. The manner we conceive to be this: The Charcoal and Sulphur eaſily take Fire, and ſet Fire to the Nitre; by which the Spirit of the Nitre being rarified into Vapour, ruſhes out, the like Vapour of Water out of an Æolipile. Then the acid Spirit of the Sulphur entering violently into the fix'd Body of the Nitre, ſets looſe the Spirit of the Nitre, and excites a greater Fermentation, whereby the Heat is increaſed, and the fix'd Body of the Nitre rarified into Fume; and thus is a vehement Exploſion effected. The *Flame* of Gun-powder ariſes from a violent Action, whereby the mixt being quickly and vehemently heated, is rarified and converted into Fume and Vapour: Which Vapour by the Violence of the Action becoming ſo hot as to ſhine, appears in the Form of *Flame*. *Newt. Opticks*, p. 318.

'Tis a remarkable Phænomenon of the *Flame* of a Candle, Torch, or the like, that in the dark it appears bigger at a Diſtance, than near at hand. The reaſon is, that at a Diſtance, *e. gr.* of ſix Feet, the Eye can readily diſtinguiſh between the *Flame*, and the contiguous Air illumined by it; and ſees preciſely where the *Flame* terminates: But at the Diſtance, *e. gr.* of thirty Foot, tho' the Angle ſubtended by the *Flame* be much ſmaller than before; yet the Eye not being able to diſtinguiſh the preciſe Bound of the *Flame*, takes part of the Sphere of Air illuminated by it, for the *Flame* it ſelf. See VISION.

We have ſeveral Inſtances of actual *Flames's* being produc'd by the Mixture of two cold Liquors. Dr. *Slare* gives us a Liſt of the Oils which burſt into *Flame*, upon mixing them with compound Spirit of Nitre: Such are thoſe of Carroways, Cloves, Saſſafras, Guaicum, Box, Camphor, Pepper, Hartſhorn, Blood, *&c.* *Phil. Tranſact.* N° 213.

Vital FLAME, FLAMMA, or FLAMMULA *Vitalis*, a fine, warm, kindled, but mild Subſtance, ſuppoſed by many both of the Antients and Moderns, to reſide in the Hearts of Animals, as neceſſary to Life, or rather, as that which conſtitutes Life it ſelf.

To the Preſervation of this *Flame*, they ſuppoſe Air as neceſſary, as it is to the Conſervation of common *Flame*; And hence refer the Neceſſity of Reſpiration to animal Life. See LIFE.

Mr. *Boyle*, by Experiments in an exhauſted Receiver found, that the *Vital Flame* of Animals, if Life may be ſo called, ſurvives, or outlaſts the *Flame* of Spirit of Wine, or of a Wax or Tallow Candle, *&c.* Some Animals would remain alive and well in Vacuo, for three or four Minutes, whereas no common *Flame* would laſt there one Minute. The Light of Gloworms he found would preſently be deſtroy'd by exhauſting the Air; and retriev'd again upon its Re-admiſſion.

Dr. *Quincy* can find nothing more in the Notion of Vital *Flame*, than the natural Warmth, which is the Effect of a circulating Blood; and which is always as its Velocity. See CALIDUM *Innatum*.

FLAMEN, among the antient *Romans*, was a Prieſt, or Miniſter of Sacrifice.

There were as many kinds of *Flamens* at *Rome*, as there were Gods who had Prieſts, and Sacrificers.

Numa, at firſt, only inſtituted three: One for *Jupiter*, called *Flamen Dialis*; another for *Mars*, called *Flamen Martialis*; and a third for *Romulus* or *Quirinus*, call'd *Flamen Quirinalis*. See DIALIS, &c.

In After-times twelve more were added; which made the Number of *Flamens* fifteen.

The three firſt were taken from among the Patricians; and were held of a Rank and Diſtinction ſuperior to the reſt. They were called *Greater Flamens*, *Flamines majores*; in Contra-diſtinction to the other twelve, who were choſe from among the Plebeians, and were called *Leſſer Flamens*, *Flamines minores*.

The *Flamen* of *Jupiter* was the firſt inſtituted, and held in the greateſt Repute. He bore a peculiar Ornament on his Head, called *Albogalerus*, white Cap, or Hat; which was made of a white Victim, ſacrificed to *Jupiter*.

The Cap wore by the reſt, was called *Flamineum*, or *Galerium*. It was made of a Sheeps Skin, with the Wool on:

To

To it was faſten'd a little Branch of an Olive Tree. That of the *Flamen* of *Jupiter* ended in a Point, called *Tutulus*. It was tied under the Chin with Strings. In the Summer time it was only made of woolen Thread: With this the Head was conſtantly cover'd; it being prohibited them to appear bare headed. And hence, according to *Feſtus*, came their Denomination of *Flamen*, *viz.* from *Filamen*, of *Filum*, Thread.

Tho' the *Flamens* all bore one Name; yet did not they conſtitute any thing of a Company or College. Each God had his ſeveral Sacrifices, Feaſts, and Ceremonies a-part: Nor had one *Flamen* any relation to another; only they were all ſubordinate to the *Pontifex Maximus*. *Aulus Gellius* aſſures us, that they were created by the People in the Comitia of the Curiæ: But the *Pontifex Maximus* conſecrated them. Their Prieſthood was perpetual; tho' on ſome Occaſions they might be depoſed.

The Names of the ſeveral *Flamens* are as follow: The three great *Flamens*, as already obſerved, were the *Flamen Dialis*; *Flamen Martialis*, and *Flamen Quirinalis*. The twelve leſſer were, the *Flamen Carmentalis*, or Prieſt of the Goddeſs *Carmenta*: *Flamen Falacer*, or Prieſt of the God *Falacer*; a Name, whoſe Origin *Varro* obſerves, is not known: *Flamen Floralis*, or of the Goddeſs *Flora*: *Flamen Furinalis*, whoſe Etymology is not known: *Flamen Levinalis*: *Flamen Lucullaris*: *Flamen Palatualis*, whom ſome Moderns will have the Prieſt of the Goddeſs that preſided over the Palatium; tho' *Varro* owns himſelf at a loſs for its Original: *Flamen Pomonalis*, or of *Pomona*, Goddeſs of Fruits: *Flamen Virbialis*, or of the God *Virbius*, whom ſome take for the ſame with *Hippolytus*: *Flamen Vulcanalis*, or of *Vulcan*; and *Flamen Volturnalis*, or of the God *Volturnus*.

They had alſo their *Flaminæ* or *Flaminicæ*, who were Wives of the *Flamens*, or the Prieſteſſes of the Deities. In an antient Marble, quoted by *Gruter*, *p.* CCCCLIX. *n.* 9. the Word *Flamina* is uſed for Prieſteſs: And in the ſame Author, *p.* CCCVIII. *n.* 3. the Prieſteſs of the Goddeſs *Feronia* is called FLAM. FERON. that is, *Flamina*, or *Flaminica Feroniæ*.

The *Flamina* bore the ſame Ornament on her Head with the *Flamen*. She had alſo the ſame Surname with her Huſband; as Flamina *Dialis*, *Martialis*, &c.

FLAMMULA, or FLAMULA, in the *Greek* Militia under the Eaſtern Empire, was a kind of Ornament, ſerving as a Mark, or Badge, to diſtinguiſh the ſeveral Companies, Batalions, Regiments, *&c.*

In *Greek* it was called φλάμουλον. The *Flamula* was ſometimes placed on the Caſk; ſometimes on the Cuiraſs, and ſometimes at the End or Tip of the Pike, *&c.*

The Emperor *Maurice* order'd, that the *Flammulæ* of each Diviſion ſhould be of a different Colour, to diſtinguiſh them from the other Batalions or Brigades. φλάμυλα ἑκάστης μοίρας ἐδιόχρωα εἶναι.

They uſed to lay aſide the *Flammula* before an Engagement, leſt it ſhould prove an Incumbrance. The Cavalry had alſo *Flammulæ* on their Horſes, to diſtinguiſh the Troops they belong'd to.



FLANCH, FLANQUE, or FLASQUE, an Ordinary in Heraldry, form'd by an Arch-line, which begins at the Corners of the Chief, and ends in the Baſe of the Eſcutcheon: Thus, He beareth Ermin, two *Flanches* Vert.

Flanches are always born by Pairs.

The *Flanch* bends in more than the Flaſk.

Leigh makes *Flanque* and *Flask* two diſtinct and ſubordinate Bearings; but *Gibbon* judiciouſly makes them but one, which he calls *Flanque*.

FLANEL, or FLANNEL, a kind of ſlight, looſe, woolen Stuff, not croſs'd, but very warm; compos'd of a Woof, and Warp, and wove on a Loom, with two Tredles, after the Manner of Bays, *&c.* See BAYS.

FLANK, or FLANC, in the Manage, is applied to the *Sides* of Horſes Buttocks, *&c.*

In a ſtrict Senſe, the *Flanks* of a Horſe are the Extremes of the Belly, where the Ribs are wanting, and below the Loins.

The *Flanks* of a Horſe ſhould be full; and at the Top of each, a Feather. The Diſtance between the laſt Rib, and Haunch Bone, which is properly the *Flank*, ſhould be ſhort; which they term *well-coupled*: Such Horſes being moſt hardy, and fit to endure Labour.

A Horſe is ſaid *to have no Flank*, if the laſt of the ſhort Ribs be at a conſiderable Diſtance from the Haunch Bone; as alſo when his Ribs are too much ſtreighten'd in their Compaſs.

FLANK, in War, is uſed by way of Analogy, or Similitude, for the Side of a Batalion, Army, *&c.* in Contra-diſtinction to the *Front* and *Rear*.

To attack the Enemy in *Flank*, is to diſcover, and fire upon them on one Side.

The Enemy took us in *Flank*. The *Flank* of the Infantry muſt be cover'd with the Wings of the Cavalry.

FLANK, in Fortification, is a Line, drawn from the Extremity of the Face, towards the Inſide of the Work.

Such is the Line B A *Tab.* Fortification. Fig. 1.

Or, *Flank* is that Part of the Baſtion, which reaches from the Courtin to the Face, and *defends* the oppoſite Face, the *Flank*, and the Courtin. See BASTION.

There is alſo an *Oblique*, or *Second Flank*, which is that Part of the Courtin, where they can ſee to ſcour the Face of the oppoſite Baſtion, and is the Diſtance between the Lines Razant, and Fitchant.

The *Low*, *Cover'd*, or *Retired Flank*, is the Platform of the Caſemate, which lies hid in the Baſtion.

Simple FLANKS, are Lines, going from the Angle of the Shoulder, to the Courtin; whoſe chief Office is for Defence of the Moat, and Place.

FLANK *of the Courtin*, or *Second Flank*, is that Part of the Courtin between the *Flank* and the Point, where the Fitchant Line of Defence terminates.

FLANK *Fitchant* is that from whence a Canon playing, *fireth* its Bullets directly in the Face of the oppoſite Baſtion.

FLANK *Razant* is the Point, from whence the Line of Defence begins, from the Conjunction of which with the Courtin, the Shot only raſeth the Face of the next Baſtion; which happens when the Face cannot be diſcover'd but from the *Flank* alone.

Retired FLANK, or the *Lower* and *Covert Flank*, is that exterior Part thereof, which advanceth to ſecure the innermoſt; which advanced Part, if it be rounded, is called the Orillon; ſo that this *Flank* is only the Platform of the Caſemate, which lies hid in the Baſtion.

FLANK'D *Angle*, is the Angle form'd by the two Faces of the Baſtion, and which of courſe forms the Point of the Baſtion. See BASTION.

FLANK'D *Tenaille*, call'd alſo *double Tenaille*. See TENAILLE.

FLANK'D, *Flanque*, is uſed by the *French* Heralds, to expreſs our *Party per Saltire*; that is, when the Field is divided into four Parts, after the manner of an X.

Tho', *Columbiere* uſes the Term in another Senſe, which to us appears more natural, *viz.* for the taking of *Flanks* or rounding Sections out of the Sides of the Eſcutcheons; the firſt from the Angles of it; the latter in ſtrait Lines, forming an Angle at the Feſs, without making any Saltire.

FLANKING, in the general, is the Act of diſcovering and firing upon the Side of a Place, Body, Batalion, *&c.*

To *flank* a Place, is to diſpoſe a Baſtion, or other Work in ſuch manner, as that there ſhall be no Part of the Place, but what may be defended, *i. e.* may be play'd on, both in Front, and Rear.

To *flank* a Wall with Towers. This Baſtion is *flank'd* by the oppoſite Flank, and a Half-Moon. This Horn-Work is *flank'd* by the Courtin.

Any Fortification that has no Defence but juſt right forwards, is faulty: And to render it compleat, one Part ought to be made to *flank* the other. Hence the Courtin is always the ſtrongeſt Part of any Place, becauſe 'tis *flank'd* at each End. See DEFENCE.

Batalions alſo are ſaid to be *flank'd* by the Wings of the Cavalry: And a Houſe is ſometimes ſaid to be *flank'd* with two Pavillions, or two Galleries; meaning it has a Gallery, *&c.* on each Side.

FLANKING *Line of Defence*, ſee RASANT LINE of *Defence*.

FLASK, FLASQUE, a Bearing, more properly called *Flank*, or *Flanque*. See FLANK.

FLATS, in Muſick, a kind of additional Notes, contriv'd, together with *Sharps*, to remedy the Defects of Muſical Inſtruments. See SHARP.

The Natural Scale of Muſick being limited to fix'd Sounds, and adjuſted to an Inſtrument; the Inſtrument will be found defective in ſeveral Points: As particularly, in that we can only proceed from any Note, by one particular Order of Degrees; that for this Reaſon we cannot find any Interval required from any Note or Letter upwards and downwards; and that a Song may be ſo contrived, as that if it be begun by any particular Note, or Letter, all the Intervals, or other Notes, ſhall be juſtly found on the Inſtrument, or in the fix'd Series; yet were the Song begun with any other Note, we could not proceed. See SCALE.

To remove, or ſupply this Defect, the Muſicians have Recourſe to a Scale proceeding by twelve Degrees, that is, thirteen Notes, including the Extremes, to an Octave; which makes the Inſtruments ſo perfect, that there is but little to complain of. This, therefore, is the preſent Syſtem or Scale for Inſtruments, *viz.* betwixt the Extremes of every Tone of the Natural Scale is put a Note, which divides it into two unequal

unequal Parts, called *Semi-tones*; and the Whole may be called the *Semitonic Scale*, containing twelve Semi-tones betwixt thirteen Notes, in the Compaſs of the Octave. See SEMI-TONE, and *Scale of* SEMI-TONES.

Now, to preſerve the Diatonic Series diſtinct, theſe inſerted Notes either take the Name of the natural Note next below, with a Character ♯ called a *Sharp*; or they take the Name of the natural Note next above, with the Mark ♭ called a *Flat*: Thus D ♭ or D *Flat* ſignifies a Semi-tone below the D natural. And it is indifferent in the main, whether the inſerted Note be accounted as a *Flat*, or *Sharp*.

This Semitonic Series or Scale is very exactly repreſented by the Keys of a Spinet: The foremoſt Range of Keys being the natural Notes; and the Keys behind, the artificial Notes, or the *Flats* and *Sharps*. See SPINET.

FLATULENT, ſometing, that has a relation to *Flatus's* or Winds. See FLATUS.

Peeſe, and moſt kinds of Pulſe, Onions, &c. are *flatulent* Foods.

FLATUS, or FLATULENCY, a Wind gather'd in the Bowels, or other Cavity of the Body, by Indigeſtion, or a groſs internal Perſpiration. It is diſcuſſed by warm Aromaticks, which rarefy it enough to break away wherever Vent can be found.

FLATTER, or FLATTENER, } See COINING.
FLATTING, or FLATTENING, }

FLAX, or LINE, a Plant, with a ſlender hollow Stem, uſually about two Foot high; whoſe Bark conſiſts of Fibres, or Threads, much like thoſe of Hemp, which being dreſs'd and work'd in a due manner, makes that noble Commodity, *Linen Cloth*. See LINEN.

Flax thrives beſt in a Soil that has long lain fallow.

To bear *Flax*, it muſt be well plowed, laid flat and even, and the Seed ſown in a warm Seaſon, about the Middle of *March*, or Beginning of *April*. The beſt Seed is that brought from the Eaſt; which, though dear, repays the Charges with Abundance. One Sowing will produce two or three Crops, before it need be renewed.

Flax pull'd up in the Bloom, proves whiter and ſtronger, than if left ſtanding till the Seed is ripe; but then the Seed is loſt.

The Preparations *Flax* muſt undergo, to fit it for Spinning, are *Pulling*, *Drying*, and *Swingling*. See HEMP.

The Seed of *Flax* has ſeveral conſiderable Properties.

It enters the Compoſition of ſeveral Medicines, and yields an Oil, by Expreſſion, which has moſt of the Properties of Nut-Oil; and which is frequently uſed, in defect thereof in Painting, to burn in Lamps, &c. That drawn cold, is reputed good in divers Diſeaſes. See OIL.

FLEA, in Natural Hiſtory. The Generation of this familiar Vermin affords ſomething very curious, firſt diſcover'd by Sig. *Diacinčto Ceſtone*.

Fleas bring forth Eggs, or Nits, which they depoſit on Animals that afford them a proper Food: Theſe Eggs being very round and ſmooth, uſually ſlip ſtreight down; unleſs detain'd by the Plies, or other Inequalities of the Cloaths, Hairs, &c.

Of theſe Eggs are hatch'd white Worms, of a ſhining Pearl Colour, which feed on the ſcurfy Subſtance of the Cuticle, the downy Matter gather'd in the Plies of Cloaths, or other the like Excrement.

In a fortnight they come to a tolerable Size, and are very lively and active; and if at any time diſturbed, ſuddenly roll themſelves into a kind of Ball.

Soon after they come to creep, after the manner of the Silkworms, that have no Legs, with a very ſwift Motion. When arrived at their Size, they hide themſelves as much as poſſible, and ſpin a ſilken Thread out of their Mouth, wherewith they form themſelves a ſmall round Bag, or Caſe, white within, as Paper, but without always dirty, and foul'd with Duſt.

Here, after a fortnight's Sleep, he burſts out, transform'd into a perfect *Flea*; leaving its Exuvia in the Bag. While it remains in the Bag, it is milk white; till the ſecond Day before its Eruption, when it becomes colour'd, grows hard, and gets Strength; ſo that upon its firſt Delivery it ſprings nimbly away. *Philoſoph. Tranſact.* N° 24.

FLEA-BITTEN *Colour* of a Horſe is white ſpotted all over with dark reddiſh Spots.

FLEAM, is a Surgeon's Inſtrument to lance the Gums; or a Farrier's Tool to let a Horſe blood. See LANCET.

FLEDWITE, or FLIGHT-WITE, in our antient Laws, a Diſcharge or Freedom from Amerciaments, when one, having been an outlaw'd Fugitive, comes to the Peace of our Lord the King, on his own accord, or with Licence. *Raſtal.*

Others rather take it to denote a Mulct, or Fine, ſet upon a Fugitive to be reſtored to the King's Peace.

FLEECE, the covering of Wool ſhorn off the Bodies of Sheep. See WOOL.

The *Golden* FLEECE is famous among the antient Writers. 'Twas this that the *Argonauts* under the Command of *Jaſon* went in Purſuit of to *Colchis*, a Province of *Aſia*, now call'd *Mingrelia*. See ARGONAUTS.

Order of the Golden FLEECE. See GOLDEN *Fleece*.

FLEET, by the *Spaniards* call'd *Flotta*, or *Flota*, and the *French*, *Flotte*, a Number of Veſſels, going in Company, whether on a Deſign of War, or Commerce.

In times of Peace, Merchants Ships go in *Fleets*, for their mutual Aid and Aſſiſtance: In times of War, beſide this Security, they likewiſe procure Convoys of Men of War; either to eſcort them to the Places whither they are bound; or only a part of the way, to a certain Point or Latitude, beyond which they are judg'd out of Danger of Privateers, &c. See CONVOY.

The *Spaniſh Fleet*, ſent againſt *England*, by *Philip* II. conſiſted of 1000 Veſſels. In the Eaſt there have been *Fleets* ſeen of 3000 Veſſels.

Merchant *Fleets* generally take their Denomination from the Place they are bound to; as the *Turky-Fleet*, *Eaſt India Fleet*, &c.

The *Spaniards* call ſimply the *Fleet*, or *Flota* a certain Number of Veſſels, belonging partly to the King, and partly to the Merchants, ſent every Year to *Vera Crux*, a Port of *New Spain*.

The *Flota* conſiſts of the *Captain*, *Admiral*, and *Patach*, or *Pinnace*, which go on the King's account; and about ſixteen Ships, from four hundred to a thouſand Tuns, belonging to particular Perſons. They are all ſo heavy laden both going and coming, that they have much a-do to defend themſelves when attack'd. The *Fleet* puts out from *Cadix* about the Month of *Auguſt*, and makes it eighteen or twenty Months, before its return. See FLOTA.

The *Fleet* ſent annually from the ſame Port to *Peru*, they call the *Gallions*. See GALLION.

When the two *Fleets* put out together, they go in Company as far as the *Antilles*, where they ſeparate; the *Gallions* for *Carthagena*, and *Porto Bello*; and the *Flota* for *Vera Crux*: At their Return they join in the *Havana*.

Of the two *Fleets* the Gallions are the moſt richly laden; not but the Cargo of the *Flota* is very conſiderable. See COMMERCE.

FLEET is alſo a famous Priſon in *London*, thus called from the River *Fleet*, on the Border whereof it ſtands. See PRISON.

To this Priſon Perſons are uſually committed for Contempt of the King and his Laws; or upon abſolute Command of the King, or ſome of his Courts, particularly that of Chancery; and laſtly, for Debt.

FLEGM, FLEGMATICK, FLEGMAGOGUE, &c. ſee PHLEGM, PHLEGMATIC, &c.

FLEMISH, is applied to any thing belonging to *Flanders*, or the Inhabitants of *Flanders*.

The FLEMISH Tongue is what we call *Low-Dutch*, to diſtinguiſh it from the *German*, which is called ſimply *Dutch*, or *High-Dutch*; whereof it is a Corruption, and a kind of Dialect. See DUTCH.

The *Flemiſh* is the Language uſed throughout all the Low Countries. It differs from the *Walloon*; which is a corrupt *French*. See WALLOON.

There are ſeveral *Flemiſh* Tranſlations of the Bible. In the Year 1618. it was decreed by the Synod of *Dort*, that a new *Flemiſh* Verſion ſhould be made of the whole Scripture; by reaſon the old Tranſlation which had been taken from that of *Luther*, was full of Faults. Accordingly, ſeveral Perſons, learn'd in the *Greek* and *Hebrew* Languages, undertook the Work; which was publiſh'd with Notes in 1637. This Bible is highly valued by the Reform'd in *Holland*, &c. though M. *Simon* cenſures it as far from the Perfection of a juſt Tranſlation. See BIBLE.

FLEMISH *Bricks*, a neat, ſtrong kind of Brick, of yelloviſh Colour, brought from *Flanders*, and much uſed for paving. See BRICK.

FLESH, CARO, in Anatomy, a ſimilar, fibrous Part of an animal Body, ſoft, thick, and bloody; being that whereof moſt of the other Parts are compoſed, and whereby they are connected together. See BODY.

The Antients made five different kinds of *Fleſh*: The firſt *Muſculous*, *Fibrous*, or *Fiſtular*; as the Subſtance of the Heart, and other Muſcles. See MUSCLE, FIBRE, &c. The ſecond, *Parenchymous*, as that of the Lungs, Liver and Spleen. See PARENCHYMA, SPLEEN, &c. The third, *Viſcerous*, as the *Fleſh* of the Stomach and Inteſtines. See INTESTINES. The fourth, *Glandulous*, as that of the Breaſts, Panchreas, Tonſils, &c. See BREAST, PANCHREAS, &c. And the fifth, *Spurious*; as that of the Gums, Glans of the Penis, the Lips, &c. See GLANS, &c.

The Moderns only admit of one kind of *Fleſh*, *viz.* That of the Muſcles, conſiſting of little Tubes, or Veſſels with Blood therein. See CARO; ſo that the *fleſhy* and muſcular Parts of the Body with them are the ſame thing. See MUSCLE. Sometimes, however, they apply that Term to the Glands; which they call, by way of Diſtinction, Glandulous *Fleſh*. See GLAND.

As to the Parenchymas, they are now found to be quite other Things than the Antients imagin'd. The Lungs are only an Aſſemblage of membranous Veſicles, inflated with Air. See LUNGS. The Liver a Collection of Glands, wherein the Bile is ſeparated. See LIVER. The Spleen, a Heap of Veſicles, full of Blood; and the Kidneys, like the Liver, a Maſs of Glands, for ſeparating of the Urine. See SPLEEN, and KIDNEY.

FLESH is alſo uſed in Theology, in ſpeaking of the Myſteries of the Incarnation and Euchariſt; The Word was made *Fleſh: Verbum* Caro *factum eſt.* See INCARNATION.

The *Romaniſts* hold, that the Bread in the Sacrament of the Supper is turn'd into the real *Fleſh* of Jeſus Chriſt. See TRANSUBSTANTIATION.

The Reſurrection of the *Fleſh* is an Article of Faith. See RESURRECTION.

The Anthropophagi, or *Cannibals*, feed upon human *Fleſh*. See CANNIBAL, and CARNIVOROUS.

Fungous FLESH, ſee FUNGUS.

FLESH-*Colour*, ſee CARNATION.

FLESH is alſo us'd by Botaniſts, *&c.* for the ſoft pulpy Subſtance of any Fruit, inclos'd between the Outer Rind or Skin, and the Stone: Or that part of a Root, Fruit, *&c.* fit to be eaten.

FLEUR-DE-LISEE, FLEURETTEE, FLEURONNEE, and FLEURY, in Heraldry, ſee FLORY.

FLEXIBLE, in Phyſicks, is applied to Bodies that are capable of being bent, or changed from their natural Form and Direction. See DUCTILITY.

Trees that grow near Waters, as the Willow, Popler, *&c.* are more *flexible* than others. The Fibres being finer and more *flexible* in Women than Men, they have generally a greater Degree of Delicacy of Thought, and Imagination. A *flexible* Voice ſucceeds in Muſic.

A Body is not capable of being thus inflected, or bent, unleſs the whole thereof be at reſt. In bending a Body it conſtitutes, as it were, two Levers; and the Point it is to be bent in, is a Fulcrum: Hence, as a moving Power, the further it is from the Fulcrum, has the greater Force; the longer the *flexible* Body is, the eaſier it is bent.

FLEXION, in Anatomy, &c. is applied to the Motion of an Arm, or other Member, when bent.

The Arm has a Motion of *Flexion*, and another of Extenſion.

The Motion of *Flexion* is, when the Radius and Humerus approach each other, and from an Angle, at the Elbow. See FLEXOR.

FLEXION, or FLEXURE *of Curves*, ſee POINT *of contrary Flexion.*

FLEXOR, in Anatomy, a Name given to ſeveral Muſcles, in reſpect of their Action, *viz.* the *Bending* of the Members, or Joints; in oppoſition to the *Extenſors*, which open or ſtretch them. See MUSCLE.

FLEXOR *Capitis*, is a Muſcle of the Head, called alſo *Rectus major anticus.* See RECTUS *major*, &c.

FLEXOR *Carpi ulnaris*, called alſo *Cubitæus internus*, ariſes tendinous from the inner Protuberance of the Humerus, and upper Part of the Ulna, upon which it runs along, till paſſing under the Ligamentum annulare, it is inſerted by a ſhort ſtrong Tendon into the fourth Bone of the firſt Row of the Carpus.

FLEXOR *Carpi Radialis*, called alſo *Radicæus Internus*, riſes from the ſame Part with the former, and running along the Radius, is inſerted into the upper Part of the Bone of the Metacarpus, which is join'd with the Fore-finger.

Both theſe Muſcles bend the Wriſt.——

FLEXOR *Pollicis longus*, a Muſcle of the Toe, derived from the Back-part of the Fibula, with a double Order of Fibres, and runs tendinous under the inner Ankle, and thro' the Channel in the inner Part of the Bone of the Heel, to its Inſertion at the Extremity of the great Toe, on the under Side.

FLEXOR *Pollicis brevis*, ariſes from the Middle of the Cuneiform Bone. It is ſhort, thick, and fleſhy, ſeemingly two, and running over the Termination of the Peronæus, has a double Inſertion into the Oſſa Seſamoidea.

FLEXOR *primi Internodii Digitorum Pedis*, ſee LUMBRICALES *pedis.*

FLEXOR *ſecundi Internodii Digitorum Manus*, ſee PERFORATUS *manus.*

FLEXOR *tertii Internodii Digitorum Pedis.* See PERFORANS *Pedis.*

FLEXOR *tertii Internodii Digitorum Manus*, ſee PERFORANS *Manus.*

FLEXORES *primi Internodii Digitorum Manus*, are Muſcles of the Fingers, called alſo *Lumbricales Manus.* See LUMBRICALES.

FLEXORES *ſecundi Internodii Digitorum Pedis*, ſee PERFORATUS *Pedis.*

FLEXORES *Pollicis Manus*, are two Muſcles, ſerving to bend the Thumb.

The firſt, called *Flexor tertii Internodii*, &c. ariſes from the internal Protuberance of the Humerus, and part of the Radius, by different Orders of Fibres, and paſſing under the Ligamentum Annulare, is inſerted into the third Bone of the Thumb.——

The ſecond, called *Flexor ſecundi Internodii*, &c. ariſes from the Bones of the Carpus, and Annular Ligament; and is inſerted into the ſecond Bone of the Thumb.——

FLIE, that Part of the Mariners Compaſs, on which the thirty two Winds are drawn, and to which the Needle is faſten'd underneath. See COMPASS.

FLIGHT, the Act of a Bird in *flying*; or the Manner, Duration, *&c.* thereof. See FLYING.

The Feathers of Birds are admirably contriv'd and fitted for the Eaſe and Conveniency of *Flight.* See FEATHER.

Almoſt every kind of Bird has its particular *Flight:* The Eagle's *Flight* is the higheſt: The *Flight* of the Sparrow-Hawk, and Vultur, are noble, diſpos'd for high Enterpriſe and Combat. The *Flight* of ſome Birds is low, weak, tranſient, and as they call it, *terra a terra:* The *Flight* of the Partridge and Pheaſant, is but of ſhort Continuance: That of the Dove, labour'd: That of the Sparrow, in Waves, *&c.*

The Augurs pretended to foretell future Events from the *Flight* of Birds. See AUGURY.

FLIGHT. In melting the Lead Oar in the Works in *Mendip*, there is a ſubſtance flies away in the Smoak, which they call the *Flight.*

They find it ſweetiſh upon their Lips, if their Faces happen to be in the way of the Smoak, which they avoid all they can. This, falling on the Graſs, kills Cattle that feed there; and being gather'd and carried home, kills Rats and Mice in their Houſes: That which falls on the Sand, they gather and melt upon a Flagg-hearth, into Shots and Sheet-Lead.

FLIGHT *of a Stair-Caſe*, ſee STAIR-*Caſe.*

FLIGHT, in Heraldry, ſee VOL.

Capons FLIGHT, in ſome Cuſtoms, is a Compaſs of Ground, ſuch as a Capon might *fly* over, due to the eldeſt born of ſeveral Brothers, in making Partition of the Father's Effects with them, when there is no principal Manor in a Lordſhip.

It it uſually eſtimated by a Bow-ſhot.——

FLINT, a ſmall, hard, livid or black Pebble. See STONE, and PEBBLE.

Flints are one of the principal Ingredients in the making of Glaſs. See GLASS.

FLINT-*Glaſs*, ſee *Flint* GLASS.

FLINT and *Steel*, ſee TINDER.

The *Indians*, inſtead of *Flint* and Steel, uſe two Pieces of green Wood, which they rub violently againſt each other. In the Eaſt, they uſe the Wood Candon; and in *Peru*, Reyaca. See FIRE.

FLINT-*Walls*, ſee WALLS.

FLIP, a ſort of Sailors Drink, made of Malt Liquor, Brandy and Sugar, mix'd.

FLOAT, or FLEET, ſee FLOTA, and FLOTILLA.

FLOAT *of a Fiſhing Line*, a Cork, or Quill, ſwimming on the Water, to obſerve what becomes of the Hook, whether any thing bite, *&c.* See FISHING *Float.*

FLOATS, a certain Quantity of Pieces of Timber joined together with Rafters a-thwart, thrown into a River, to be convey'd down the Stream; and even to convey Burdens down a River with the Stream. The Invention of *Floats* is of great uſe: 'Tis ſaid to have been firſt put in Execution at *Paris*, in the Year 1618.

FLOATING *Veſſels*, ſee BOAT.

FLOATING, in Husbandry, is the drowning or watering of Meadows.

FLOOD, a Deluge, or Inundation of Waters. See DELUGE.

Plato ſeems to have had ſome Notion of the Great *Flood*, and the Intention thereof. ὅταν δ' αὖ ὁι Θεοι τλῶ γλῶ ὑδασι καθαίρησι, &c. When the Gods purge the Earth with a *Flood. Plat. Tim. p.* 22.

FLOOD is alſo us'd in ſpeaking of the Tides.

When the Water is at loweſt, 'tis called *Flood*; when riſing, Young, or Old *Flood*; when at higheſt, and beginning to fall, *Ebb Water.* See TIDES, EBB, FLUX, *&c.*

FLOOK, or FLOAK *of an Anchor*, ſee ANCHOR.

FLOOR, in Building, the Underſide of a Room, or that Part we walk on.

Floors are of divers ſorts; ſome of Earth, ſome of Brick, others of Stone, *&c.*

Carpenters, by the Word *Floor*, underſtand as well the framed Work of Timber, as the Boarding over it.

Earthen Floors are commonly made of Lome, and ſometimes, eſpecially to make Malt on, of Lime, and Brook Sand, and Gun Duſt, or Anvil Duſt from the Forge.

Ox-blood, and fine Clay, temper'd together, Sir *Hugh Plat* ſays, makes the fineſt *Floor* in the World.

For *Brick* and *Stone Floors*, ſee PAVING.

For boarded *Floors*, it is obſervable, that the Carpenters never *floor* their Rooms with Boards, till the Carcaſs is ſet up, and alſo inclos'd with Walls, leſt the Weather ſhould wrong the *Flooring*; yet they generally rough-plane their Boards for the *Flooring*, before they begin any thing elſe about the Building, that they may ſet them by to dry and ſeaſon; which is done in the moſt careful manner.

FLOOR *of a Ship*, ſtrictly taken, is only ſo much of her Bottom, as ſhe reſts on, when a-ground; ſo that ſuch Ships as have long, and withal broad *Floors*, lye on the Ground with moſt Security, and are not apt to feel, or tilt on one Side; whereas others, which are narrow in the *Floor*, or in the Sea-Phraſe, *Cranck'd by the Ground*, cannot be grounded without Danger of being overthrown.

FLORALES *Ludi*, or FLORAL *Games*, in Antiquity, were Games held in Honour of *Flora*, the Goddeſs of Flowers. See FLORALIA.

They were celebrated with horrible Debaucheries. The moſt licentious Diſcourſes were not enough; but the Courtiſans were called together by the Sound of a Trumpet, made their Appearance naked, and entertain'd the People with abominable Shews and Poſtures: The Comedians appear'd after the ſame manner on the Stage. *Val. Maximus* relates, that *Cato* being once preſent in the Theater on this occaſion, the People were aſham'd to aſk for the infamous Pleaſure, in his Preſence; till *Cato*, appriz'd of the Reſervedneſs and Reſpect he inſpir'd them withal, withdrew, that the People might not be balk'd of their accuſtomed Diverſion.

There were divers other ſorts of Shews exhibited on this occaſion; and if we may believe *Suetonius*, in *Galba*, C. 6. and *Vopiſcus* in *Carinus*, theſe Princes preſented Elephants dancing on Ropes.

The *Ludi Florales*, according to *Pliny*, L. XVIII. C. 29. were inſtituted by order of an Oracle of the Sibyls, on the 28th of *April*; not in the Year of *Rome* IↃXVI. as we comconly read it in the antient Editions of that Author; nor in IↃXIV. as *Fr. Hardouin* has corrected it; but as *Voſſius* reads it, in 513. They were chiefly held in the Night time, in the *Patrician-Street*: Some will have it there was a Circus for the purpoſe on the Hill call'd *Hortulorum*.

Some will have the Goddeſs *Flora* to be the ſame with the *Chloris* of the *Greeks*.

Others hold, that this ſame *Flora* was a famous Courtiſan at *Rome*, who having enrich'd her ſelf by Proſtitution, made the People of *Rome* her Heir, on condition that they ſhould celebrate the Anniverſary of her Birth-day, by the Games and Feaſts above-mentioned. Some time afterward, the Senate judging ſuch a Foundation unworthy the Majeſty of the *Roman* People; to ennoble the Ceremony, converted *Flora* into a Goddeſs, whom they ſuppos'd to preſide over Flowers; and ſo made it a piece of Religion to render her propitious, that it might be well with their Gardens, Vineyards, &c.

This is the common Account: But *Voſſius de Idol.* L. I. C. 12. can by no means allow the Goddeſs *Flora* to have been the Courtiſan above-mention'd: He will rather have her a *Sabine* Deity; and thinks her Worſhip might have commenc'd under *Romulus*. His Reaſon is, that *Varro* in his *Fourth Book of the Latin* Tongue, ranks *Flora* among the Deities, to whom *Tatius*, King of the *Sabins*, offer'd up Vows, before he join'd Battle with the *Romans*. Add, that from another Paſſage in *Varro* it appears, that there were Prieſts of *Flora*, with Sacrifices, &c. as early as *Romulus* and *Numa*.

FLORAL *Games*. There are a kind of *Floral Games* obſerv'd at this day in *France*. They were firſt inſtituted in 1324.

The Deſign and Eſtabliſhment is owing to ſeven Perſons of Condition, Lovers of Poetry, who about *All-Saints Day*, in 1323. ſent a Circular Letter to all the Provincial Poets, called *Troubadours*, to meet at *Tholouſe* on *May-day* following, there to rehearſe their Poems; promiſing a Violet of Gold to the Perſon whoſe Piece ſhou'd be judg'd the beſt.

The *Capitouls* found the Deſign ſo good, that it was afterwards reſolv'd at a Council of the City, to continue it at the City Charge; which is ſtill done, in a manner that does Honour to the Place:

In 1325 a Chancellor, and Secretary of the New Academy were choſe; and the ſeven Inſtitutors took the Quality of *Maintainers* thereof. Two other Prizes were afterwards added to the Violet, *viz.* an Eglantine for the ſecond Prize; and a Panſy for the third. It was alſo decreed, that the Perſon who bore away the firſt Prize, might demand to be made Batchelor; and that whoever bore away all three, ſhould be created Doctor in the *Gaye Science*, that is, in Poetry.

There is a Regiſter of theſe Games kept at *Tholouſe*, which gives this Account of their Origin: Tho' others give the thing another turn. It was an antient Cuſtom, they ſay, for the Poets of *Provence*, to meet yearly at *Tholouſe*, to confer together, rehearſe their Verſes, and receive a Prize allotted to the beſt Performance. This held till about the Year 1540, when a Lady of Quality left the beſt part of her Fortune, to eternize the Cuſtom, and bear the Expence of Prizes; the Number of which ſhe increas'd, ordering an Eglantine, a Panſy, a Violet, and a Pink: The three firſt a Cubit high; worth fifteen Piſtoles a-piece.

The Ceremony begins on *May-day*, with a ſolemn Maſs, Muſick, &c. The Corporation attend; and Poems are rehearſed every day: The third Day a magnificent Treat is given the Magiſtracy, &c. and that day the Prizes are adjudged. The three Prizes are the Rewards of three different kinds of Compoſitions, *viz.* a Poem, an Eclogue, and an Ode.

FLORALIA, in Antiquity, a general Name for the Feaſts, Games, and other Ceremonies, held in honour of the Goddeſs *Flora*.

The *Floralia* were alſo called *Anthiſteſes*: They were held at the latter end of the Month of *April*, as *Ovid* witneſſes,

Exit, & in Majas feſtum Florale *Calendas.*

In effect, the *Floralia* began on the 28th of *April*, and laſted ſix Days.

They who aſſiſted at the Ceremony, were crown'd with Ivy, and committed a world of undecent things; which indeed was no extraordinary thing in the Heathen Feaſts.

Some apply the Word *Floralia* indifferently to the Feaſts, and Games of this Goddeſs; but others reſtrain it to the Feaſts alone; calling the Games *Ludi Florales*. See FLORALES *Ludi*.

FLORID *Style*, is that enrich'd and heighten'd with Figures and Flowers of Rhetorick. *Longinus* uſes the Terms *florid* and *affected* Style indifferently, and lays them down as quite contrary to the true ſublime. See STYLE, and SUBLIME.

FLORILEGIUM, FLORILEGE, a Name the *Latins* have given, to what the *Greeks* call ἀνθολόγιον. *Anthology*; *viz.* a Collection of choice Pieces, containing the fineſt and moſt florid Things in their kind. See ANTHOLOGY.

The Term is particularly uſed in the Eaſtern Church, for a kind of Breviary, compiled by *Arcadius*, for the Conveniency of the *Greek* Prieſts and Monks, who cannot carry with them in their Travels and Pilgrimages all the Volumes wherein their Office is diſpers'd.

The *Florilegium* contains the General Rubricks, Pſalter, Canticles, the Horologium, Office of the Feriæ, &c.

FLORIN, is ſometimes us'd for a Coin, or real Money; and ſometimes for an imaginary Money, or Money of Account. See COIN, and MONEY.

As a *Coin*, *Florin* is of divers Values, according to the divers Metals, and divers Countries where it is ſtruck.

Florins were antiently very frequent in Commerce; at preſent they are leſs common, though there were abundance of them ſtruck in *Holland*, of *Engliſh* Silver, during the War which was terminated by the Treaty of *Ryſwick*.

In all appearance they took their Name from the Place where they were firſt ſtruck, *viz.* the City of *Florence*. Their Æra is about the Year 1251. though others aſcribe the Name to a Flower-de-Lis, which was ſtruck on one Side.

The Gold *Florins* are moſt of them of a very coarſe Alloy; ſome of them not exceeding thirteen or fourteen Carats, and none ſeventeen and a half. They weigh about two Penny-weights, and thirteen Grains.

Villani obſerves, that there were Gold *Florins* in the Year 1067; from which time the Names *Frank*, or *Florin* became applied to the Gold Coins, which till that time had been called *Solidi*, Shillings.

As to Silver *Florins*, thoſe of *Holland* are worth about 25 *French* Sols, or 1 *s.* 10½ *d.* Sterling. Thoſe of *Genoa*, &c. are worth about 8 *d.* ¼ Sterling.

Pieces of three *Florins* are called *Ducatoons*. See DUCATOONS.

As a *Money of Account*, the *Florin* is us'd by the *Italian*, *Dutch*, and *German* Merchants and Bankers, in keeping their Books, and making out their Accounts. But this *Florin* is very diverſe, and admits of different Diviſions. In *Holland* it is on the foot of the *Dutch* Coin of that Name, containing 24 *Deniers Groſch*, and divided into *Pacards* and *Penins*.

At *Francfort*, *Nuremberg*, &c. it is equivalent to three Shillings Sterl. and is divided into *Creutzers* and *Pfennings*. At *Liege* it is equivalent to 2 *s.* 3 *d.* At *Strasbourgh* to 1 *s.* 8 *d.* In *Savoy* to 11 *d.* At *Genoa* to 8 *d.* ¼. and at *Geneva* to 6 *d.* ½.

FLORIN was alſo a Gold Coin, ſtruck in *England* in the 18th of *Edw.* 3. of the Value of ſix Shillings.

Cambden ſays, They were ſo called, becauſe made by *Florentines*: And *Fabian* ſays, they were not of ſo fine Gold as the Nobles and Half-Nobles of that Prince.

But what is moſt obſervable, is that *Fabian* calls the *Florin* a Penny, Val. 6 *s.* 8 *d.* the half *Florin* an Half-penny, Val. 3 *s.* 4 *d.* the Quarter *Florin* a Farthing, Val. 1 *s.* 8 *d.*

Theſe Words you will often meet with in old Hiſtories and Accounts, applied to ſeveral Coins, as Rials and Angels,

gels, &c. where you are to underſtand by Denarius the whole, by Obolus the half, and by Quadrans the fourth Part, or Farthing. See DENARIUS, PENNY, OBULUS, FARTHING, &c.

By Indenture of the Mint in 18 *Ed.* 3. every Pound weight of old Standard Gold, was to be coin'd into fifty *Florins*, to be currant at ſix Shillings a-piece; all which made in Tale fifteen Pounds; or into a proportionable Number of half or quarter *Florins*.

FLORINIANS, FLORIANI, a Sect of Hereticks, of the ſecond Century, denominated from its Author *Florinus*, or *Florianus*, a Prieſt of the *Roman* Church, depoſed along with *Blaſtus*, for his Errors.

Florin had been a Diſciple of St. *Polycarp*, along with *Irenæus*. He made God the Author of Evil; and taught the *Gnoſtic* Doctrine of two Principles.

According to *Philaſtrius*, the *Florianians* likewiſe denied a future Judgment and Reſurrection: Held that JESUS CHRIST was not born of a Virgin; and taught that the Reſurrection was in effect a new Generation. They are alſo charged with holding criminal Aſſemblies in the Night-time, and giving into Judaiſm and Paganiſm.

They had other Names given them: *Philaſtrius* ſays, they were the ſame with the *Carpophorians*. He adds, that they were alſo called Soldiers, *Milites*, *Quia de militaribus fuerunt*. St. *Irenæus* calls them *Gnoſticks*: St. *Epiphanius*, *Phibionites*; and *Theodoret*, *Borborites*, on account of the Impurities of their Life: Others call them *Zacheans*; others *Coddians*, &c. though, for what particular Reaſons, 'tis not eaſy, nor perhaps wou'd it be worth while, to ſay.

FLORIST, a Perſon curious, or learned in Flowers; their Kinds, Names, Characters, Culture, &c. See FLOWER.



FLORY, FLOWRY, FLEURY, FLORETTEE, FLEUR-DE-LISEE, &c. are Terms in Heraldry, when the Outlines of any Ordinary are drawn as if trimm'd with, or in the Form of, Flowers, Lillies, Flower-de-Luces, &c.

Thus, He bears a Croſs *Flory*, &c.

FLOTA, or FLOTTA, *i. e. Fleet*, a Name the *Spaniards* give particularly to the Ships which they ſend annually from *Cadix*, to the Port of *Vera-Crux*, to fetch the Merchandizes gather'd in *Mexico* for *Spain*. Thoſe ſent to fetch the Commodities prepared in *Peru*, are called *Gallions*. See FLEET, and GALLION.

They give the Name FLOTILLA to a Number of Ships, which get before the reſt in their Return, and give Information of the Departure and Cargo of the *Flota* and Gallions.——

FLOTAGES, are all ſuch things as are floating on the Top of the Sea, or great Rivers; a Word more eſpecially uſed in the Commiſſions of Water-Bailiffs.

FLOTSON, or FLOTZAM, a Term ſignifying any Goods loſt by Shipwreck, and ſwimming on the Top of the Water; which, with *Jetſon*, and *Lagon*, and *Shares*, are given to the Lord High Admiral, by his Letters Patents. See ADMIRAL.

Jetſon is what is caſt out of the Ship, being in Danger of a Wreck, and beaten to the Shore by the Water; or caſt on Shore by the Seamen. See JETSON.

Lagon, or *Lagan* is that which lies in the Bottom of the Sea. See LAGON.

Shares are Goods due to ſeveral Perſons, by Proportion.

FLOUNDER *Fiſhing*, ſee *Flounder* FISHING.

FLOWER, *Flos*, is that Part of a Plant, which contains the Organs of Generation; or the Parts neceſſary for the Propagation of the Kind. See PLANT and GENERATION *of Plants*.

The *Flower* is a natural Production, which precedes the Fruit, and yields the Grain or Seed. See SEED, and FRUIT.

The Structure of *Flowers* is ſomewhat various; though the Generality, according to *Grew*, have theſe three Parts in common, *viz.* The *Empalement*, the *Foliation*, and the *Attire*. See EMPALEMENT, FOLIATION, &c.

Mr. *Ray* reckons, that every perfect *Flower* has the *Petala*, *Stamina*, *Apices*, and *Stylus*, or *Piſtil*: Such as want any of theſe Parts, he deems *Imperfect Flowers*. See PETALA, STAMINA, PISTIL, &c.

In moſt Plants there is a *Perianthium*, Calix, or *Flower*-Cup, of a ſtronger Conſiſtence than the *Flower* it ſelf, and deſign'd to ſtrengthen and preſerve it. See PERIANTHIUM, and CALIX.

In ſome *Flowers* the two Sexes are confounded, *i. e.* the Male and Female Parts are found in the ſame *Flower*; in others, they are ſeparated: And of theſe again, ſome are followed by Fruits, and others not: Whence, *Flowers* become diſtinguiſh'd into *Male*, *Female*, and *Hermaphrodites*.

The Generality of *Flowers* are of the *Hermaphrodite* kind: Such *e. gr.* are the Lilly, Tulip, Daffodil, Roſemary, Sage, Thyme, Geranium, Althæa, &c. See HERMAPHRODITES.

The Structure of Parts is much the ſame in thoſe where the Sexes are divided: The Difference between them conſiſts in this, that the Stamina and Apices, *i. e.* the male Parts, in theſe, are ſeparated from the Piſtils; being ſometimes on the ſame ſtand, and ſometimes on different ones.——

Thoſe, wherein the Stamina are, in regard they bear no Fruit, are called *Male*, or barren *Flowers*, and by the Botaniſts, *Stamineous Flowers*: Thoſe which contain the Piſtil, being ſucceeded with Fruit, are called *Females*, or *Knitting*, or *Fruitful Flowers*.

Among the Plants which bear both Male and Female Parts on the ſame Stand, but at a diſtance from each other, are reckon'd, the Cucumber, Melon, Gourd, Turky Wheat, Turnſol, Wallnut, Oak, Beech, Fir, Alder, Cypreſs, Cedar, Juniper, Mulberry, Plantan, &c.

Thoſe, where the Male and Female Parts of the *Flowers* are bore on different Stands, are ſome Species of Palm, the Willow, Poplar, Hemp, Mercury, Spinage, Nettles and Hops.——See GENERATION *of Plants*.——

Mr. *Ray* divides *Flowers* into *Perfect*, and *Imperfect*.

Perfect Flowers he here accounts all ſuch as have the Petala, tho' they want the Stamina. Theſe he ſubdivides into *Simple*, which are thoſe not compos'd of other ſmaller ones, and which uſually have but one ſingle Style; and *Compounded*, which conſiſt of many Floſculi, all making but one *Flower*. See *Simple* FLOWERS.

Simple Flowers are either *Monopetalous*, which have the Body of the *Flower* all of one entire Leaf, though ſometimes cut, or divided a little way, into many ſeeming Petala, or Leaves, as in Borrage, Buglois, &c.

Or *Polypetalous*, which have diſtinct Petala, and thoſe falling off ſingly, and not altogether, as the ſeeming Petala of the monopetalous *Flowers* always do.

Both thoſe are farther divided into *Uniform* and *Difform Flowers*.

The former have their Right and Left-hand Parts, and the forward and backward Parts all alike; but the Difform have no ſuch Regularity; as in the *Flowers* of Sage, Dead-Nettle, &c.

A Monopetalous *difform Flower* is likewiſe farther divided into

1° *Semi-fiſtular*, whoſe upper Part reſembles a Pipe, cut off obliquely, as in the Ariſtolochia.

2° *Labiate*: And this either with one Lip only, as in the Acanthum and Scordium; or with two Lips, as in the far greater Part of the Labiate *Flowers*.

And here the upper Lip is ſometimes turned upwards, and ſo turns the convex Part downwards, as in the Chamæciſſus, &c. but moſt uſually the upper Lip is convex above, and turns the hollow Part down to its Fellow below, and ſo repreſents a kind of Helmet, or Monk's Hood; whence theſe are frequently called *Galleate*, *Cucullate*, and *Galericulate Flowers*.

Such are the *Flowers* of the Lamium, and moſt verticillate Plants.

Sometimes alſo the Labium is entire, and ſometimes jagged or divided.

3° *Corniculate*, that is, ſuch hollow *Flowers*, as have on their upper Part a kind of Spur or little Horn; as in the Linaria, Delphinum, &c. And the Corniculum or Calcar is always impervious at the Tip or Point.

Compound FLOWERS are,

1° *Diſcous* or *Diſcoidal*, that is, whoſe Floſculi are ſet together ſo cloſe, thick, and even, as to make the Surface of the *Flower* plain and flat; which therefore, becauſe of its round Form, will be like a Diſcus.

This Diſk is ſometimes radiated, when there are a Row of Petala ſtanding round in the Diſk, like the Points of a Star; as in the Matricaria, Chamæmelum, &c.

And ſometimes naked, having no ſuch radiating Leaves round the Limb of its Diſk, as in the Tanacetum.

2° *Planifolious*, which are compos'd of plain *Flowers*, ſet together in circular Rows, round the Centre, and whoſe Face is uſually indented, notch'd, uneven, and jagged; as the Hieracia, Sonchi, &c.

3° *Fiſtular*, which are compounded of many long, hollow, little *Flowers*, like Pipes, all divided into large Jags at the Ends.

Imperfect Flowers are ſuch as want the Petala, and are called likewiſe *Stamineous*, *Apetalous*, and *Capillacious*.

Thoſe which hang pendulous by fine Threads like the Juli, are by *Tournefort* called *Amentacious*; we call them *Cats-tails*.

Botaniſts furniſh other Diviſions and Denominations of *Flowers*.

Campaniform, or Bell-like FLOWERS, are thoſe in Shape of a Bell. See CAMPANIFORM.

Cruciform FLOWERS, are thoſe conſiſting of four Petala, or Leaves: The Calix alſo containing four Leaves; and the Piſtil always producing a Fruit. Such are thoſe of the Clove Tree, Cabbage Tree, &c.

Infun-

Infundibuliform FLOWERS, are ſuch as reſemble the Figure of a Funnel, *i. e.* broad, and ample at top, and contracted into a Neck at bottom: Such is that of the Bear's Ear.

Cucurbitaceous FLOWERS, are ſuch as reſemble the *Flower* of the Gourd; or have the ſame Conformation therewith. See CUCURBITACEOUS.

Stamineous FLOWERS, are ſuch as have no Petala, but conſiſt wholly of Stamina's or Threads, with Apices a-top.

The Leaves placed around theſe Stamina, are not to be eſteem'd as Petala, but a Calix; in regard they afterwards become a Capſula, or Cover, including the Seed; which is the Office of the Calix alone. See CALIX.

In effect, it is eſſential to the Leaves of *Flowers*, not to ſerve as a Cover to the Seeds that ſucceed them: And this is the only Characteriſtic that diſtinguiſhes the Leaves, or Petala of *Flowers* from their Calix; for, that no particular Colour of the Leaves does determine, whether the Parts in diſpute be Leaves of the *Flower*, or the Calix of the *Flowers*, appears hence, that there are ſome Leaves of *Flowers*, which are green like the Calix; and ſome Calices colour'd, like Petala.——.

Leguminous FLOWERS, are thoſe of Leguminous Plants. Theſe bear ſome Reſemblance to a flying Butterfly; for which reaſon they are alſo called *Papillionaceous Flowers*.

Papillionaceous FLOWERS, conſiſt of four or five Leaves, whereof the uppermoſt is called *Vexillum*, or Standard; and the loweſt *Carina*, as reſembling the Bottom or Keel of a Boat: Thoſe between the two, are called *Lateral* Leaves, or *Alæ*.

From the Bottom of the Calix ariſes a Piſtil, which is incompaſs'd with a Sheath, or Cover, fringed with Stamina. This Piſtil always becomes the Fruit, and is uſually called the Pod, in Latin, *Siliqua*. See *Leguminous*.

Umbelliform FLOWERS, are thoſe with ſeveral Leaves doubled, and diſpos'd in manner of a Roſe; and whoſe Calix eſſentially becomes a Fruit of two Seeds, join'd, before they come to Maturity; but afterwards eaſily ſeparated again.

They have this Denomination, by reaſon they are generally ſuſtain'd by a Number of Threads, which proceeding from the ſame Centre, are branch'd all around, like the Sticks of an Umbrello.

Of this kind are the *Flowers* of Fennel, Angelica, &c. See UMBELLIFORM.

Verticillate FLOWERS, are thoſe ranged, as it were, in Stories, Rings, or Rays along the Stems: Such are thoſe of Horehound, Clary, &c.

FLOWERS, in Gardening, are diſtinguiſh'd, into *Early*, or *Spring-Flowers*, which flouriſh in the Months of *March*, *April*, and *May*.

Such are the Anemonies, Daffodils, Hyacinths, Tulips, Junquils, Cowſlips, Primroſes, &c.

Summer Flowers, which open in *June*, *July*, and *Auguſt*, as Pinks, Gilly Flowers, Lillies, Daſies, Campanulas, Poppies, Sun Flowers, &c.

And *Autumnal*, or *Late Flowers*, thoſe of *September* and *October*; as the Oculus Chriſti, Indian Pinks, and Roſes, Panſy, Flower Gentle, &c.

Of theſe *Flowers*, thoſe which ſubſiſt all the Year, we mean in the Stem, or Root at leaſt, are called *Perennials*; And thoſe which are to be planted, or ſow'd a-freſh every Year, according to the Seaſon, are called *Annuals*.——See GREEN-HOUSE.

FLOWER, in Architecture, according to *Vitruvius*, is a Repreſentation of ſome imaginary *Flower*, by way of crowning, or finiſhing, on the Top of a Dome, &c.

In lieu of this the Moderns commonly uſe a Vaſe, Ball, or the like.

FLOWER *of the Capital*, is an Ornament of Sculpture, in form of a Roſe, in the middle of the Sweep, of the *Corinthian* Abacus: In that of the Compoſite, 'tis an imaginary kind of *Flower*. See CAPITAL.

FLOWERS, in Chymiſtry, are the fineſt, and moſt ſubtle Parts of dry Bodies, rais'd by Fire, into the Head, and Aludels; and adhering to them, in form of a fine Powder, or Duſt. Such are the *Flowers* of Sulphur, Benjamin, &c. See SUBLIMATION.

FLOWER *of Sulphur*, or *Brimſtone*, is prepared by putting the Sulphur groſly powder'd into a Glaſs Body, placed in a ſmall open Fire, with another earthen Veſſel of the ſame form over, or in it, Neck to Neck. This diſpoſed, the Fire will ſublime, or raiſe the *Flowers*, and gather them in the upper Veſſel. See ALUDEL; ſee alſo SULPHUR.

FLOWER *of Wheat*, Rye, and other Pulſe. See FARINA.

FLOWERS, in the Animal Oeconomy, are Womens monthly Purgations, or Menſes. See MENSES.

Nicod derives the Word in this ſenſe from *fluere*, q. d. *Fluors*: Others will have the Name occaſion'd hence, that Women do not conceive, till they have had their *Flowers*; ſo that theſe are a ſort of Forerunners of their Fruit.——

FLOWERS, in Rhetoric, are Figures, or Ornaments of Diſcourſe, by the *Latins* called *Floſculi*. See FIGURE.

FLOWER-*de-Lis*, or, as it is vulgarly wrote, *de Luce*, in Heraldry, is a bearing antiently of great Dignity; being reputed the nobleſt of all *Flowers*, and as ſuch having been in all Ages the Charge of the Royal Eſcutcheon of the Kings of *France*; thoguh Tract of Time has made the bearing thereof more vulgar.

In ſome Coats 'tis bore Single; in others Triple; in others it is Semée, ſeeded all over the Eſcutcheon.

FLOWERAGE, a Collection of Flowers of ſeveral kinds ſet together in Huſks, and hung up with Strings.——

FLOWER'D, in the Manufactures. A Stuff, or Cloth, is ſaid to be *flower'd*, *flouriſh'd*, *ſprig'd*, or *figur'd*, when there are Repreſentations of *Flowers*, either natural, or imaginary wrought thereon.

There are Stuffs *flower'd* of almoſt all kinds of Matters: Flowers of Gold, Silver, Silk, Wool, Thread, Cotton, &c. Stuffs and Cloths are uſually denominated from the Ground, whereon the Flowers are raiſed.

Thus there are *flower'd* Velvets, Taffaties, Damaſks, Satins, Mohairs, Dimities, &c. See VELVET, TAFFATY, DAMASK, &c.

Thoſe *flower'd* with Gold and Silver, are more uſually called *Brocades*. See BROCADE.

The Flowers are uſually wrought at the ſame time with the Cloth, or Ground. The Threads of the Warp are rais'd, and lowerd by means of Packthreads, paſs'd through them in mounting the Loom; and the Manufacturer ſhooting his Warp, or matter of the Flowers, whether Gold, Silver, Silk, or the like between the Threads thus rais'd, forms the Flowers. See WARP, WOOF, WEAVING, &c.

'Tis very curious to ſee them mount a Loom; or, as they call it, *Read a Deſign*, to be repreſented on a Stuff: But it is next to impoſſible to deſcribe it; yet we have endeavour'd to give ſome Idea thereof under the Article DESIGN; ſee alſo TAPISTRY.

FLUIDITY, in Phyſicks, that State or Affection of Bodies, which denominates, or renders them *fluid*; ſee FLUID.

Fluidity ſtands in direct Oppoſition to *Firmneſs*, or Solidity. See FIRMNESS.

It is diſtinguiſh'd from *Liquidity*, and *Humidity*, in that the Idea of the firſt is abſolute, and the Property contain'd in the thing it ſelf; whereas that of the latter is relative, and implies wetting, or adhering; *i. e.* ſomewhat that gives us the Senſation of Wetneſs, or Moiſture, and which would have no Exiſtence, but for our Senſes.

Thus, melted Metals, Air, Æther, and even Smoak and Flame it ſelf are *Fluid* Bodies, but not *Liquid* ones; their Parts being actually dry, and not leaving any Senſe of Moiſture. See LIQUID, and HUMIDITY.

The Nature, or Cauſe of *Fluidity* has been variouſly aſſign'd. The *Gaſſendiſts*, and antient Corpuſcularians, require only three Conditions as neceſſary thereto, *viz.* a Smallneſs and Smoothneſs of the Particles of the Body; Vacuities interſperſed between them; and a Spherical Figure. Thus the Epicurean Poet, Lucretius,

Illa autem debent ex lævibus atque rotundis
Eſſe magis, fluido *quæ corpore liquida conſtant.*

The *Carteſians*, and after them Dr. *Hook*, Mr. *Boyle*, &c. beſide the Circumſtances above mentioned, require a various, perpetual, inteſtine Motion of the Particles of the Bodies, as that which principally contributes to *Fluidity*.

Fluidity then, according to theſe Philoſophers, conſiſts in this, that the Parts of the Body being very fine, and ſmall, are ſo diſpoſed by Motion, or Figure, as that they can eaſily ſlide over one another's Surfaces all manner of ways; and that they be in a conſtant, various, ſeparate Agitation to and fro; and that they only touch one another in ſome Parts of their Surfaces.

Mr. *Boyle* in his *Hiſtory of Fluidity* mentions theſe three as the Conditions principally required to *Fluidity*, viz.

1° The *Minuteneſs of Parts*: As, in effect, we find that Fire, by dividing Metals into fine, ſmall Parts, renders them fluid; and that acid Menſtruums diſſolve and render them fluid after the like manner; and that Fire turns the hard Body of common Salt almoſt wholly into a Liquor, by Diſtillation: Not but that the Figure of the Particles may have a conſiderable Share in *Fluidity*.

Thus Mercury, whoſe Parts are doubtleſs much groſſer than thoſe of Oil and Water, is yet more fluid than either of them: And thus Oil, by the Action of Fire, may be converted into a conſiſtent Subſtance, like Butter.

2° *Store* of *Vacuities* interſperſed between the Corpuſcles, to give room for the ſeveral Particles to move among themſelves.

3° A *Motion* and *Agitation* of the Corpuſcles; either from ſome Principle of Mobility within themſelves, or from ſome extraneous Agent, penetrating and entering the Pores, moving variouſly among them, and communicating to them part of its Motion.

That this laſt is the Qualification chiefly required in *Fluidity*, he argues from divers Obſervations and Experiments.

Thus, a little dry Powder of Alabaſter, or Plaiſter of Paris finely ſifted, being put in a Veſſel over the Fire; it ſoon begins to boil like Water; exhibiting all the Motions and Phænomena of a boiling Liquor. It will kindle variouſly in great Waves like that; will bear ſtirring with a Stick or Ladle like that, without reſiſting; Nay, if ſtrongly ſtirr'd near the Side of the Veſſel, its Waves will apparently daſh againſt them: Yet is it all the while a dry, parch'd Powder.

The like is obſerv'd in Sand: A Diſh of which being ſet on a Drumhead, briſkly beaten by the Sticks; or on the upper Stone of a Mill, it in all reſpects emulates the Properties of a fluid Body. A heavy Body, *e. gr.* will immediately ſink in it to the Bottom, and a light one emerge to the Top: Each Grain of Sand has a conſtant vibratory and dancing Motion; and if a Hole be made in the Side of the Diſh, the Sand will ſpin out like Water.

That the Parts of Fluids are in continual Motion, the *Carteſians* bring divers Conſiderations to prove; as 1° The Tranſmutation of Solids into Fluids, *e. gr.* Ice into Water, and *vice verſa*; the chief Difference between the Body in thoſe two States conſiſting in this, that the Parts being fix'd and at reſt in the one, reſiſt the Touch; whereas in the other, being already in Motion, they gave way upon the ſlighteſt Impulſe,

2° The Effects of Fluids, which commonly proceed from Motion: Such are the Inſinuation of Fluids among the Pores of Bodies; the ſoftening and diſſolving of hard Bodies; the Actions of corroſive Menſtruums, *&c.* Add, that no Solid can be brought to a State of *Fluidity*, without the Intervention of ſome moving, or moveable Body, as Fire, Air, or Water.

Air, the ſame Gentlemen hold the firſt Spring of theſe Cauſes of *Fluidity*; it being this that gives Motion to Fire and Water, though it ſelf receives its Motion and Action from the Æther, or ſubtle Medium. See AIR and ÆTHER.

The Learned *Boerhaave*, in his late Excellent *Inſtitut. Chymiæ*, pleads very ſtrenuouſly for Fire's being the firſt Mover, and the Cauſe of all *Fluidity* in other Bodies, as Air, Water, *&c.* without this, he ſhews, that the Atmoſphere it ſelf would fix into one ſolid Maſs. See FIRE.

Sir *I. Newton* ſets aſide this Theory of the Cauſe of *Fluidity*, and ſubſtitutes a new one, the great Principle of Attraction.

The Corpuſcular Syſtem, with all the Improvements of *Des Cartes*, and Mr. *Boyle*, did not ſufficiently account for the primary Condition, requiſite to conſtitute a Body fluid, *viz.* the various inteſtine Motion and Agitation of its Particles.

But, this Motion is naturally enough accounted for, by ſuppoſing it a primary Law of Nature, that, as all the Particles of Matter attract each other, when within a certain Diſtance; ſo at all greater Diſtances, they fly from, and avoid one another.

For then, tho' theirommon Gravity together with the Preſſure of other Bodies upon them, may keep them together in a Maſs; yet their continual Endeavour to avoid one ananother ſingly, and the adventitious Impulſes of Heat, Light, or other external Cauſes, may make the Particles of Fluids continually move round about one another, and ſo produce this Quality.

There is a Difficulty indeed, in accounting, why the Particles of Fluids always keep at ſuch a Diſtance from one another, as not to come within the Sphere of one another's Attraction.

The Fabrick and Conſtitution of that fluid Body, Water, is amazing; that a Body ſo very rare, and which has a vaſt Over-proportion of Pores, or interſpers'd Vacuity, to ſolid Matter, ſhould yet be perfectly incompreſſible by the greateſt Force: And yet this Fluid is eaſily reducible into that firm, tranſparent, friable Body, which we call *Ice*, by being only expoſed to a certain Degree of Cold. See COLD and FREEZING.

One would think, that tho' the Particles of Water cannot come near enough to attract each other, yet the intervening frigorifick Matter doth, by being mingled *per minima*, ſtrongly attract them, and is it ſelf likewiſe ſtrongly attracted by them, and ſo wedges or fixes all the Maſs into a firm ſolid Body; which ſolid Body loſes its Solidity again, when by Heat the Vinculum is ſolved, and the frigorifick Particles are disjoined from thoſe of the Water, and are forced to fly out of it: And juſt thus may the Fumes of Lead perhaps fix Quickſilver. See FIXATION.

When a firm ſolid Body, ſuch as a Metal, is by Heat reduced into a Fluid, the Particles of Fire disjoinand ſeparate its conſtituent Parts, which their mutual Attraction cauſed before to cohere; and keep them at ſuch a diſtance from one another, as that they are out of the Sphere of each other's Attraction, as long as that violent Motion laſts; and when by their Lightneſs and Activity they are flown off, unleſs they are renewed by a continual Supply, the component Particles of the Metal come near enough again to feel one another's Attractions.

As therefore the Cauſe of Coheſion of the Parts of ſolid Bodies appears to be their mutual Attraction; ſo the chief Cauſe of *Fluidity* ſeems to be a contrary Motion, impreſs'd on the Particles of Fluids, by which they avoid, and fly one another, as ſoon as they come at, and as long as they keep at ſuch a Diſtance from each other.

It is obſerv'd alſo in all Fluids, that the Direction of their Preſſure againſt the Veſſels which contain them, is in Lines perpendicular to the Sides of ſuch Veſſels; which Property being the neceſſary Reſult of the Particles of any Fluid's being ſpherical, it ſhews that the Parts of all Fluids are ſo, or of a Figure very nearly approaching thereunto.

FLUIDS, are Bodies, whoſe Particles are but weakly connected; their mutual Coheſion being in great meaſure prevented from ſome external Cauſe: In which ſenſe a *Fluid* ſtands oppoſed to a *Solid*. See SOLID.

Sir *I. Newton* defines a *fluid* Body, to be that whoſe Parts yield to the ſmalleſt Force impreſs'd, and by yielding are eaſily moved among each other.

The Cauſe, therefore, of *Fluidity*, ſhould ſeem to conſiſt in this, that the Parts do not cohere ſo ſtrongly, as they do in ſolid or firm Bodies; and that their Motion is not hinder'd by any Inequality in the Surface of the Parts; as is the Caſe in Powders.

For, that the Particles whereof *Fluids* conſiſt, are of the ſame nature, and have the ſame Properties with the Particles of Solids, is evident, from the Converſion of Liquids and Solids into each other, *e. gr.* of Water into Ice; of Metals into Fluors, *&c.* Nor can it be reaſonably doubted, that the component Parts of all Bodies are the ſame, *viz.* hard, ſolid, impenetrable, moveable Corpuſcles. See BODY, and MATTER.

The *Carteſians* define a *Fluid* to be a Body whoſe Parts are in continual inteſtine Motion; and Dr. *Hook*, Mr. *Boyle* and *Boerhave*, tho' far from Carteſianiſm, ſubſcribe to the Definition; alledging Arguments to prove that the Parts of *Fluids* are in continual Motion; and even that it is this Motion, which conſtitutes *Fluidity*. See FLUIDITY.

The later *Newtonians* dare not go ſo far: To ſay that the Parts of a *Fluid* are in continual Motion, is more than either our Senſes, Experience, or Reaſon will warrant; and to define a thing from a Property that is diſputable, is certainly bad Philoſophy. See DEFINITION.

Add, that the great Argument from Geometry, produced in favour of this continual Motion, *viz.* That the Reſiſtance of a Body moving in a *Fluid*, is leſs, if the Parts of the *Fluid* be agitated by an inteſtine Motion, than if they were at reſt, is demonſtrated to be falſe. See RESISTANCE.

We add, therefore, with Dr. *Clark*, That if the Parts of a Body either do not touch each other, or eaſily ſlide over one another; and are of ſuch a Magnitude, as that they may be eaſily agitated by Heat: And the Heat be ſufficiently great to agitate them; tho' it may perhaps be leſs than ſuffices to prevent Water from freezing: Or, even, tho' the Parts be not actually moved, yet, if they be ſmall, ſmooth, ſlippery, and of ſuch a Figure and Magnitude as diſpoſes them to move and give way: That Body is *fluid*.

And yet the Particles of ſuch *fluid* Bodies, do, in ſome meaſure, cohere; as is evident hence, that Mercury, when well purg'd of Air, will be ſuſtained in the Barometer, to the Height of 60 or 70 Inches; that Water will aſcend in Capillary Tubes even in Vacuo; and that the Drops of Liquors in Vacuo run into a ſpherical Form: As adhering by ſome mutual Coheſion like that between poliſh'd marble Planes. Add, that theſe *fluid* Bodies, if they conſiſt of Particles that are eaſily entangled with each other, as *Oil*; or if they be capable of being ſtiffen'd by Cold, and join'd by the Interpoſition of little Cunei, or Wedges, as Water; they are eaſily render'd hard: But if their Particles be ſuch as can neither be entangled, as *Air*; nor ſtiffen'd by Cold, as Quickſilver; then they never grow hard and fix'd. See PARTICLE.

FLUIDS are either Natural, as *Water*, and *Mercury*; or Animal, as *Blood*, *Milk*, *Bile*, *Lymph*, *Urine*, &c; or Factitious, as *Wines*, *Spirits*, *Oils*, &c. See each under its proper Article, WATER, MERCURY, BLOOD, MILK, BILE, WINE, SPIRIT, OIL, *&c.*

The Doctrine and Laws of *Fluids* are of the greateſt Extent in Philoſophy.

The Preſſure, and Gravitation of Bodies in *Fluids*, and the Action of the *Fluids* immerſed in them, makes the Subject of *Hydroſtaticks*. See HYDROSTATICKS.

Hydroſtatical Laws of FLUIDS.

I. Of the Preſſure and Equilibrium of FLUIDS.

1° *The upper Parts of all* Fluids, *as Water*, &c. *do preſs upon the lower:* Or, as ſome Philoſophers ſtate it, *All* Fluids *do gravitate* in proprio loco.

The Contrary of this was a Principle in the School-Philoſophy; but the Certainty of ſuch Preſſure is now demonſtrated by a thouſand Experiments: It will be ſufficient to inſtance one or two.

Immerge a Tube, open at both Ends, and half filled with Oil of Turpentine, in a Veſſel of Water, the upper End of the Tube being ſtopp'd with the Finger: If now the upper Surface of the Oil lie as low as that of the Water; the Oil, upon removing the Finger, will not run out at the lower End of the Tube: Nay, and if the Tube be thruſt a little lower, the Water will riſe up in it, and bear the Oil above it: But if the upper Surface of the Oil be conſiderably higher than that of the Water; the Oil will drop out of the Tube. Whence it follows, that the Column of Oil in one caſe preſſes or gravitates leſs on the Plane imagined to paſs under its lower Surface, than a Column of Water; and in the other caſe, more.

Or thus; an empty Vial, cloſe ſhut, being immerſed in Water, and ſuſpended by a Horſe Hair to the Beam of a Balance, with a Weight at the other End exactly counterpoiſing it: Upon unſtopping the Vial, and letting it fill with Water, it will preponderate, and bear down the End of the Balance; without having any Communication with the external Air.

Which two Experiments abundantly prove the Propoſition, that the upper Parts of *Fluids* preſs, or gravitate on the lower. See PRESSURE, and GRAVITATION.

Corol. From this Gravity it follows, that the Surfaces of ſtagnant *Fluids* are plain, and parallel to the Horizon; or rather that they are Segments of a Sphere concentrical with the Earth.

For, as the Particles are ſuppoſed to yield to any Force impreſs'd, they will be moved by the Action of Gravity, till ſuch time as none of them can deſcend any lower. And this Situation once attained, the *Fluid* muſt remain at reſt, unleſs put in Motion by ſome foreign Cauſe; inaſmuch as none of the Particles can now move without aſcending; contrary to their natural Tendency.

2° *If a Body be immerſed in a* Fluid, *either wholly, or in part, its lower Surface will be preſs'd upward by the Water underneath it.*

The Truth of this Propoſition is evident from the Experiment above mention'd; where the Oil of Turpentine was ſuſpended, nay and made to mount up in the Tube by the Preſſure of the Water upwards on its lower Parts.

The Law, or Quantity of this Preſſure is this, that *a Body immerged in a* Fluid, *loſes juſt ſo much of the Weight it would have in Air; as ſo much of the* Fluid *as is equal to it in Bulk, if weigh'd in the Air, would amount to.*

This Preſſure of *Fluids* on the lower Parts of an immerſed Body is farther confirm'd, by attending to the Reaſon why Bodies ſpecifically lighter than *Fluids* aſcend therein. The Effect is owing to this, that there is a greater Preſſure or Weight on every other Part of the Plane or Surface of the *Fluid* imagined to paſs under the lower Surface of the Body, than there is on that whereon the emerging Body inſiſts. Conſequently, to produce an Equilibrium in the *Fluid*, the Parts immediately under the riſing Body being preſs'd by the reſt every way, do continually force it upwards.

In effect, the emerging Body is continually preſs'd on by two Columns of Water, one bearing againſt its upper; and the other againſt its lower Parts: The length of both which Columns being to be accounted from the Top of the Water; that which preſſes on the lower Part, will be the longer, by the Thickneſs of the aſcending Body, and conſequently overbalance it by the Weight of as much Water as will fill the Space that Body takes up. See SPECIFIC *Gravity*.

Corol. 1. Hence we are furniſh'd with one Reaſon, why very minute Corpuſcles, either heavier, or lighter than the Liquor they are mingled with, will be ſuſtain'd therein a good while, without either emerging to the Top, or precipitating to the Bottom: The Difference between the two Columns of the *Fluid* being here inconſiderable.

Corol. 2. Hence alſo, if a Body A be ſpecifically lighter than B, an equal Portion of the *Fluid* in which it is immerged; it will riſe with a Force proportionable to the Exceſs of Gravity of B above A: And if A be ſpecifically heavier than B; it gravitates and deſcends with the Exceſs only of its Weight above that of B.

3° *The Preſſure of the upper Parts of a* Fluid, *on the lower, exerts it ſelf every way, and every way equally; laterally, horizontally, and obliquely as well as perpendicularly.*

For, as the Parts of a *Fluid* yield to any Impreſſion, and are eaſily moved, 'tis impoſſible any Drop ſhou'd remain in its Place: If while it is preſs'd by the ſuper-incumbent *Fluid*, it be not equally preſs'd on every ſide.

The ſame is confirm'd from Experiments: For ſeveral Tubes of divers Forms, ſtraight, curved, angular, &c. being immerſed in the ſame *Fluid*; tho' the Apertures, thro' which the *Fluid* enters, be differently poſited to the Surface or Plane, ſome being perpendicular, others parallel, and others variouſly inclined; yet will the *Fluid* riſe to an equal Height in all.

Corol. 1. Hence, all the Particles of *Fluids* being thus equally preſs'd on all Sides, 'tis argued that they muſt be at reſt, and not in continual Motion, as has been uſually ſuppos'd.——

Corol. 2. Hence alſo a Body being immerſed in a *Fluid*, ſuſtains a lateral Preſſure from the *Fluid*; which is alſo increas'd as the Body is placed deeper beneath the Surface of the *Fluid*.——

4° *In Tubes that have a Communication with each other, whatever their Magnitude be, whether equal, or unequal; and whatever their Form, whether ſtreight, angular, or crooked: Still,* Fluids *riſe in them to the ſame Height.*

5° *If a* Fluid *riſe to the ſame Altitude in two Tubes that communicate with each other; the* Fluid *in one Tube is a Balance, or equal in weight, to that in the other.*

If the Tubes be of equal Diameters, the Columns of the *Fluid* having the ſame Baſe and Altitude, are equal, and conſequently their Gravities equal; ſo that they preſs and gravitate againſt each other with equal Force.

This is demonſtrated from Mechanicks. *E. gr.* Let the Baſe of G I *Tab. Hydroſtaticks, Fig.* 6. be ſuppoſed Quadruple the Baſe of H K; and that the *Fluid* deſcend in the greater Tube the Space of an Inch, as from L to O; it will then riſe in the other the Space of four Inches, as from M to N. Wherefore the Velocity wherewith the *Fluid* moves in the Tube H K, is to that wherewith it moves in G I; as the Baſe of the Tube G I to the Baſe of the other, H K. But the Altitude of the *Fluid* being ſuppoſed the ſame in both Tubes, the Quantity of the *Fluid* in the Tube G I, will be to that in the other Tube H K as the Baſe of the Tube G I to the Baſe of the other, H K.

Conſequently, the Momentum of the *Fluid* in the Tube G I, is to that in the Tube H K, as the Product of the Baſe of the Tube G I into the Baſe of the other H K; to the Factum of the Tube H K into the Baſe of the other G I. Wherefore, the Products being equal; the Momenta muſt be equal.

The ſame is eaſily demonſtrated where one of the Tubes is inclined, and the other perpendicular, &c.

Corol. Hence in Tubes that communicate, the *Fluid* preponderates in that where its Altitude is the greateſt.

6° *In Communicating Tubes,* Fluids, *of different ſpecific Gravities, will equiponderate, if their Altitudes be in the Ratio of their ſpecific Gravities.*

Corol. Hence we have a Way of finding the *Specific Gravities of* Fluids, *viz.* by pouring one *Fluid* into one of the communicating Tubes, as A B (*Fig.* 7.) and another, into the other Tube C D; and meaſuring the Altitudes E B and F D, at which they ſtand when balanced.

For the ſpecific Gravity of the *Fluid* in A B, is to that in D C; as D H, to B G. If the *Fluids* be apt to mix; it may be proper to fill the Horizontal Tube B D with Mercury, to prevent the Mixture.

Corol. Since the Denſities of *Fluids*, are as their ſpecific Gravities; the Denſities will likewiſe be as the Altitudes of the *Fluids* D H and B G: So that we have hence likewiſe a Method of determining the *Denſities of* Fluids. See DENSITY.

7° *The Bottoms, and Sides of Veſſels, are preſs'd in the ſame manner, and by the ſame Laws as the Liquids, contained in them.*

Corol. Hence as Action and Re-action are equal; the *Fluids* themſelves, ſuſtain an equal Preſſure from the Bottoms and Sides. And as the Preſſion of *Fluids* is equal every way, the Bottom and Sides are preſs'd as much as the neighbouring Parts of the *Fluids:* And conſequently this Action increaſes in proportion to the Height of the *Fluid*; and is equal every way at the ſame Depth; as depending altogether on the Height, and not at all on the Quantity of the *Fluid.*

8° *In perpendicular Veſſels of equal Baſes, the Preſſures of* Fluids *on the Bottoms, is in the Ratio of their Altitudes.*

This is evident, in that the Veſſels being perpendicular, the Bottoms are horizontal: Conſequently the Tendency of *Fluids* by the Action of Gravity will be in Lines perpendicular to the Bottom; ſo that they will preſs with all their Weight: The Bottoms therefore are preſs'd in the Ratio of the Gravities. But the Gravities are as the Bulks; and the Bulks here are as the Altitudes: Therefore the Preſſures on the Bottoms are as the Altitudes.

9° *In*

9° *In perpendicular Veſſels of unequal Baſes, the Preſſure on the Bottoms is in a Ratio compounded of the Baſes, and Altitudes.*

From the preceeding Demonſtration it appears, that the Bottoms are preſs'd in the Ratio of the Gravities: And the Gravities of *Fluids* are as their Bulks; and their Bulks in a Ratio compounded of the Baſes and Altitudes. Conſequently, *&c.*

10° *If an inclined Veſſel A B C D, Fig.* 8. *have the ſame Baſe and Altitude with a perpendicular one B E F G, the Bottoms of each will be equally preſs'd.*

For in the inclined Veſſel A B C D, the Bottom C D, is preſs'd in the Direction B D. But the Force of Gravity in the Direction B D, is to the abſolute Gravity, as B E to B D. See GRAVITY.

Conſequently, the Bottom C D is preſs'd in the ſame manner; as if it had been preſs'd perpendicularly by the *Fluid* under the Altitude B E. Therefore, the Bottoms of the perpendicular and inclined Veſſels are equally preſs'd.

11° Fluids *preſs upon ſubjected Bodies, according to their perpendicular Altitude, and not according to their Latitude.*

Or, as others ſtate it, thus: If a Veſſel be taper, or unequally big at Top and Bottom; yet the Bottom will be preſs'd after the ſame manner as if the Veſſel were cylindrical, and the Top and Bottom equal.

Or thus: The Preſſure ſuſtain'd by the Bottom of a Veſſel, whatever the Figure of the Veſſel be, is ever equal to the Weight of a Column of the *Fluid*, whoſe Baſe is the Bottom it ſelf, and Height, the vertical Diſtance of the upper Surface of the Water from the Bottom.

Or, yet more explicitly, thus: If there be two Tubes or Veſſels, having the ſame Heights, and Baſes, both filled with Water; but one of them made ſo tapering upwards, that it ſhall contain but twenty Ounces of Water, whereas the other widening upwards, holds 200 Ounces: Yet, the Bottoms of the two Tubes ſhall ſuſtain an equal Preſſure of Water, *viz.* each of them, that of the Weight of 2000 Ounces.

This is a noble Paradox in Hydroſtaticks, which it is well worth the clearing and inſiſting on. It is found unexceptionably true from abundant Experiments: And may even be demonſtrated and accounted for on Principles of Mechanicks.

Suppoſe *e. gr.* the Bottom of a Veſſel, C D (*Fig.* 9.) leſs than its Top, A B. Since the *Fluid* preſſes the Bottom C D, which we ſuppoſe horizontal, in a perpendicular Direction E C, none but that Part within the Cylinder E C D F can preſs upon it; the natural Tendency and Preſſure of the reſt being taken off by the Sides.

Again, ſuppoſing the Bottom, C D (*Fig.* 10.) much bigger than the Top F G. Or even, for the eaſier Demonſtration, ſuppoſe a Tube F E fix'd in a Cylinder A B C D: And ſuppoſe the Bottom C D rais'd to L; that the *Fluid* may be moved through the Interval D L. Then will it have riſen through the Altitude G H, which is to D L, as the Baſe C D to that G F. The Velocity therefore of the *Fluid* F E, is to its Velocity in the Veſſel A D; as the Baſe C D to the Baſe F G.

Hence, we have the Momentum wherewith the *Fluid* in the Tubes tends downwards, by multiplying the Baſe of the Cylinder C D into its Altitude C K.

Conſequently, the Bottom C D is preſs'd with the ſame Force; as it would be preſs'd by the Cylinder H C D I.

To confirm and illuſtrate this Doctrine of the Preſſure of *Fluids* in the Ratio of the Baſe and Altitude, provide a metallick Veſſel, A C D B (*Fig.* 11.) ſo contrived, as that the Bottom C D may be moveable, and to that End fitted in the Cavity of the Veſſel with a Rim of wet Leather, to ſlide without letting any Water paſs. Then, thro' a Hole in the Top, A B, apply ſucceſſively ſeveral Tubes of equal Altitudes, but different Diameters. Laſtly, faſtening a String to the Beam of a Balance, and fixing the other End by a little Ring K to the moveable Bottom; put Weights in the other Scale, till they be ſufficient to raiſe the Bottom C D: Then will you not only find, that the ſame Weight is required, what Diameter or Magnitude ſoever the Tube be of; but even, that the Weight which will raiſe the Bottom, when preſs'd by the ſmalleſt Tube, will raiſe it when preſs'd by the whole Cylinder H C D I.——

12° *The moſt ſolid and ponderous Body, which near the Surface of the Water would ſink with great Velocity, yet if placed at a greater Depth than twenty times its own Thickneſs, will not ſink, unleſs aſſiſted by the Weight of the incumbent Water.*

Thus, immerge the lower End of a ſlender Glaſs Tube in a Veſſel of Mercury: Then, ſtopping the upper End with your Finger, you will by that means keep about half an Inch of that ponderous *Fluid*, ſuſpended in the Tube. Laſtly, keeping the Finger thus; immerge the Tube in a long Glaſs of Water, till the little Column of Mercury be more than 13 or 14 times its Length under Water. Then, removing the Finger, you will find that the Mercury will be kept ſuſpended in the Tube by the Preſſure of the Water upwards: But if you raiſe the Tube a very little above the former Station; the Mercury will immediately run out: Whereas, if before you had removed the Finger from the Top, you had ſunk the Pipe ſo low, as that the Mercury were 12 or 14 Inches, *&c.* below the Surface of the Water; the Mercury would be violently forced up, and make ſeveral Aſcents and Deſcents in the Tube, till it had gain'd its proper Station, according to the Laws of ſpecific Gravity.

Corol. Hence we have a Solution of the Phænomenon of two poliſh'd Marbles, or other Planes, adhering ſo ſtrongly together: In that the Atmoſphere preſſes or gravitates with its whole Weight on the under Surface and Sides of the lower Marble; but cannot do ſo at all on its upper Surface, which is cloſely contiguous to the upper, and ſuſpended Marble.

II. *For the Laws of the Preſſure and Gravitation in* FLUIDS *ſpecifically heavier, or lighter than the Bodies immerged,* ſee SPECIFIC *Gravity.*

For the Laws of the Reſiſtance of FLUIDS, or the *Retardation of ſolid Bodies, moving in* Fluids, ſee RESISTANCE.

For the Aſcent of FLUIDS *in Capillary Tubes, or between Glaſs Planes,* ſee ASCENT.

The Motions of *Fluids*, and particularly *Water*, make the Subject of *Hydrulicks*. See HYDRULICKS.

Hydrulick Laws of FLUIDS.

1° *The Velocity of a* Fluid, *as* Water, *moved by the Preſſure of a ſuper-incumbent* Fluid, *as* Air, *is equal at equal Depths; and unequal, at unequal ones.*

For the Preſſure being equal at equal Depths, the Velocity ariſing thence muſt be ſo too; and *vice verſa:* Yet does not the Velocity follow the ſame Proportion, as the Depth; notwithſtanding that the Preſſure, whence the Velocity ariſes, does increaſe in the Proportion of the Depth. But here the Quantity of the Matter is concern'd: And the Quantity of Motion, which is compounded of the Ratio of the Velocity and Quantity of Matter, is increaſed in equal times as the Square of the Velocities.

2° *The Velocity of a* Fluid *ariſing from the Preſſure of a ſuper-incumbent* Fluid, *at any Depth, is the ſame as that which a Body would acquire in falling from a Height, equal to the Depth.* As is demonſtrated both from Mechanicks and Experiments. See DESCENT.

3° *If two Tubes of equal Diameters, full of any* Fluid, *be placed any how, either erect, or inclined; provided they be of the ſame Altitude, they will diſcharge equal Quantities of the* Fluid *in equal times.*

That Tubes, every way equal, ſhould, under the ſame Circumſtances, empty themſelves equally, is evident; and that the Bottom of a perpendicular Tube is preſs'd with the ſame Force, as that of an inclined one, when their Altitudes are equal, has already been ſhewn. Whence it eaſily follows, that they muſt yield equal Quantities of Water, *&c.*

4° *If two Tubes of equal Altitudes, but unequal Apertures or Diameters, be kept conſtantly full of Water, the Quantities of Water they yield in the ſame Time, will be as the Diameters: And this, whether they be erect, or any how inclined.*

Corol. If the Apertures or Diameters be circular, the Quantities of Water emptied in the ſame time, are in a duplicate Ratio of the Diameters.

This Law, *Mariotte* obſerves, is not perfectly agreeable to Experiment. If one Diameter be double the other, the Water flowing out of the leſs is found more than a Fourth of what flows out of the greater. But this muſt be owing to ſome accidental Irregularities in making the Experiments.

Wolfius aſcribes it principally to this, that the Column of Water directly over the Aperture is ſhorter than that next the Sides or Parietes of the Veſſel: For the Water, in its Efflux forms a kind of Cavity over the Aperture; that Part immediately over it being evacuated firſt, and the other Water not running faſt enough from the Sides to ſupply it. Now, this Cavity, or Diminution of Altitude being greater in the greater Tube, than the leſs; hence the Preſſure or Endeavour to paſs out, becomes proportionably leſs in the greater Tube, than the leſs.

5° *If the Apertures E and F of two Tubes A B and C D* (Fig. 12) *be equal, the Quantities of Water diſcharged in the ſame time are as the Velocities.*

6° *If two Tubes have equal Apertures E and F, and unequal Altitudes A B and C D; the Quantity of Water diſcharged from the greater A B, will be to that diſcharged from C D, in the ſame time; in a ſubduplicate Ratio of the Altitudes A B and C D.*

Corol.

Corol. 1. Hence, the Altitudes of Waters, A B, and C D, discharged thro' equal Apertures E and F; are in a duplicate Ratio of the Waters discharged in the same time. And as the Quantities of Water are as the Velocities; the Velocities are likewise in a subduplicate Ratio of their Altitudes.

2. Hence, the Ratio of the Waters discharged by two Tubes A B, and C D, together with the Altitude of one of them being given; we have a Method of finding the Altitude of the other, *viz.* by finding a fourth Proportional to the three given Quantities; which Proportional multiplied by it self, gives the Altitude of C D, required.

3. Hence also, the Ratio of the Altitudes of two Tubes of equal Apertures being given; as also the Quantity of Water discharged by one of them: We have a Method of determining the Quantity the other shall discharge in the same time. Thus, to the given Altitudes, and the Square of the Quantity of Water discharged at one Aperture, find a fourth Proportional. The square Root of this will be the Quantity of Water required.

Suppose *e. gr.* the Heights of the Tubes as 9 to 25; and the Quantity of Water discharged at one of them, three Inches: That discharged by the other, will be $= \sqrt{(9.25:9)} = \sqrt{25} = 5$.

7° *If the Altitudes of two Tubes A B, and C D be unequal; and the Apertures E and F likewise unequal: The Quantities of Water discharged in the same time, will be in a Ratio compounded of the simple Ratio of the Apertures; and the subduplicate one of the Altitudes.*

Corol. Hence, if the Quantities of Water discharged in the same time by two Tubes, whose Apertures and Altitudes are unequal, be equal; the Apertures are reciprocally as the Roots of the Altitudes: and the Altitudes in a reciprocal Ratio of the Squares of the Apertures.

8° *If the Altitudes of two Tubes be equal, the Water will flow out with equal Velocity, however unequal the Apertures be.*

9° *If the Altitudes of two Tubes, A B, and C D* (Fig. 13.) *as also their Apertures E, and F be unequal; the Velocities of the Waters discharged are in a subduplicate Ratio of their Altitudes.*

Corol. 1. Hence, as the Velocities of Waters flowing out at equal Apertures, when the Altitudes are unequal, are also in a subduplicate Ratio of the Altitudes; and, as this Ratio is equal, if the Altitudes be equal; it appears, in the general, that the Velocities of Waters flowers out of Tubes is in a subduplicate Ratio of the Altitudes.

2. Hence also, the Squares of the Velocities are as the Altitudes.

Mariotte found from repeated Experiments, that if a Vessel A B C D have a Tube E F fitted to it, there will more Water be evacuated through the Tube, than there could have been in the same time, through the Aperture of the Vessel E, without the Tube: And that the Motion of the *Fluid* is accelerated so much the more, as the Tube E F is the longer.

E. gr. The Altitude of a Vessel A C being one Foot, that of the Tube E F three Feet, and the Diameter of the Aperture three Lines; $6\frac{1}{2}$ Septiers of Water were discharged in the Space of one Minute; whereas upon taking off the Tube, only four Septiers were discharged. Again, when the Length of the Tube E F was six Feet, and the Diameter of the Aperture F, an Inch; the whole Quantity of Water run out in 37 Seconds: But, cutting off half the Tube F H, the Vessel was not evacuated in less than 45 Seconds; and taking it quite away, in less than 95 Seconds.

9° *The Altitudes and Apertures of two Cylinders full of Water, being the same: One of them will discharge double the Quantity of Water discharged in the same time by the other; if the first be kept continually full, while the other runs it self empty.*

For the Velocity of the full Vessel will be equable; and that of the other continually retarded. Now, 'tis demonstrated, that, if two Bodies be impell'd by the same Force, and the one proceeds equably, and the second is equably retarded: By that time they have lost all their Motion, the one has moved double the space of the other.

10° *If two Tubes have the same Altitudes, and equal Apertures; the Times wherein they will empty themselves, will be in the Ratio of their Bases.*

11° *Cylindric, and Prismatic Vessels, as A B C D* (Fig. 14.) *empty themselves by this Law, that the Quantities of Water discharged in equal times, decrease according to the uneven Numbers,* 1. 3. 5. 7. 9. &c. *taken backwards.*

For the Velocity of the descending Level F G is continually decreasing in the subduplicate Ratio of the decreasing Altitudes: But the Velocity of a heavy Body descending, increases in the subduplicate Ratio of the increasing Altitudes. The Motion, therefore, of the Level F G in its Descent from G to B, is the same, as if it were to descend in the inverse Ratio, from B to G. But if it descend from B to G, the Spaces, in equal times, would increase according to the Progression of the uneven Numbers. Consequently, the Altitudes of the Level F G in equal times decrease according to the same Progression inversely taken.

Corol. Hence, the Level of Water F G, descends by the same Law, as, by an equal Force impress'd, it would ascend thro' an Altitude equal to F G.

From this Principle, might many other particular Laws of the Motion of *Fluids* be demonstrated, which for Brevity sake we here omit.

To divide a Cylindrical Vessel into Parts, which shall be evacuated in certain Parts, or Divisions of time, see CLEPSIDRA.

12° *If Water descending thro' a Tube H E* (Fig. 15.) *spout up at the Aperture G, whose Direction is vertical, it will rise to the same Altitude G I, at which the Level of the Water L M, in the Vessel A B C D does stand.*

For since the Water is driven thro' the Aperture G, by the Force of Gravity of the Column E K; its Velocity will be the same as that of a Body by the same Force impress'd, would rise to the Altitude F I. Wherefore, since the Direction of the Aperture is vertical; the Direction of the Water spouting thro' it, will be so too. Consequently, the Water must rise to the Height of the Level of the Water L M in the Vessel.

Indeed, by the Experiment it appears, that the Water does not rise quite so high as I: Beside, that the Aperture G should be smaller, as the Height of the Level of the Water is less: And even smaller, when Mercury is to be spouted, than when Water. But this is no Objection to the Truth of the Theorem; it only shews that there are certain external Inpediments, which diminish the Ascent.

Such are the Resistance of the Air; the Friction of the Tube, and the Gravity of the ascending *Fluid.*

13° Water descending thro' an inclined Tube, or a Tube bent in any manner; will spout up through a perpendicular Aperture to the Height at which the Level of the Water in the Vessel stands.——

14° *The Lenghts or Distances D E and D F, or I H, and I G* (Fig. 16.) *to which Water will spout either thro' an inclined, or a horizontal Aperture D, are in a subduplicate Ratio of the Altitudes in the Vessel or Tube A B and A D.*

For, since Water spouted out thro' the Aperture D, endeavours to proceed in the horizontal Line D F; and at the same time, by the Power of Gravity, tends downwards in Lines perpendicular to the same; nor can the one Power hinder the other, in as much as the Directions are not contrary: It follows, that the Water by the Direction B A will arrive at the Line I G, in the same time wherein it would have arrived at it, had there been no horizontal Impulse at all. Now the Right-lines I H and I G are the Spaces which the same Water would have described in the mean time by the horizontal Impetus: But the Spaces I H and I G, inasmuch as the Motion is uniform, are as the Velocities. Consequently, the Velocities are in a subduplicate Ratio of the Altitudes A B and A D. And therefore, the Lengths or Distances to which the Water will spout in Apertures either horizontal or inclined, are in a subduplicate Ratio of the Altitudes.

Corol. Hence, as every Body projected either horizontally, or obliquely, in an unresisting Medium, describes a Parabola: Water projected either through a vertical or inclined Spout, will describe a Parabola.

Hence we have a way of making a delightful kind of Water Arbours, or Arches, *viz.* by placing several inclined Tubes in the same Right-line.

On these Principles are form'd various Hydraulic Engines for the raising, &c. *of* Fluids, *as* Pumps, Syphons, Fountains, *or* Jets de Eau, *&c. Which see described under their proper Articles,* PUMP, SYPHON, FOUNTAIN, SPIRAL SCREW, *&c.*

For the Laws of the Motion of Fluids, *by their own Gravity, along open Channels,* &c. see RIVER, and WAVE.

For the Laws of Pressure and Motion of Air, consider'd as a Fluid, see AIR, and WIND.

FLUMMERY, A wholesome Jelly, made of Oatmeal.

The manner of preparing it in the Western Parts of *England,* is to take half a Peck of Wheat Bran, which must be soaked in cold Water three or four Days; then strain out the Oil and Milk-water of it, and boil it to a Jelly: Afterwards season it with Sugar, Rose and Orange-flower Water, and let it stand till cold, and thickened again; and then eat it with White or Rhenish Wine, or Milk-cream.

FLUOR, in Physick, *&c.* a *Fluid*; or more properly, the State of a Body, which was before hard, or solid, but is now reduc'd by Fusion or Fire into a State of Fluidity. See FLUIDITY.

Gold and Silver will remain a long time in a *Fluor,* kept to it by the intensest Heat, without losing any thing of their Weight. See FIXITY.

FLUOR is also us'd by the modern Mineral Writers for such soft, transparent, starry kinds of mineral Concretions, as are frequently found amongst Oars, and Stones, in Mines and Quarries.

Fluor *Albus*, or *Uterinus*, a kind of Flux, incident to Women, popularly called the *Whites*. See Whites.

It conſiſts in an irregular, diſorderly Diſcharge of ſome corrupt Humor, ſometimes white, and pale, like Whey; ſometimes yellow, green, or blackiſh: At firſt it is uſually ſoft and harmleſs, but in time grows hot, ſharp, and corroſive, and excoriates all the Parts it touches.

It is attended with a Pain in the Spina Dorſi, a Swelling of the Feet and Eyes, Wearineſs, Lumbago, a Loſs of Appetite, Change of Complexion, &c.

It is frequently produced from a too heavy and laſting Grief. It muſt be well diſtinguiſh'd from an Ulcer in the Uterus, and a Gonorrhæa. See Gonorrhæa.

It happens to all Ages; from Girls of three Years old: And at all times; before, after, or even along with the Menſes; and even to Women with Child.

Etmuller takes it for a *Gonorrhæa muliebris*, analogous to a non virulent Gonorrhæa in Men, and flowing out of the Glandulæ of the Proſtrates.

What the *Coryza* is in the Noſtrils; too much weeping in the Eyes; coughing and hawking in the Fauces; that, according to *Etmuller*, is this *Fluor* in Women.

According to *Pitcairn*, all the Difference between the venereal Gonorrhæa, and a *Fluor albus*, is that the Humor evacuated in the latter is viſcid, and in the former, quite thin and ſerous. The ſame Author adds, that the *Fluor albus*, can only be cured by Medicines proper for the venereal Diſeaſe. See Gonorrhæa.

FLUTE, an Inſtrument of Muſick, the ſimpleſt of all thoſe of the Wind kind. See Musick.

It is play'd, by blowing in it with the Mouth; and the Tones or Notes form'd and changed by ſtopping or opening Holes diſpoſed for that purpoſe all along it.

The *Latins* call it *Fiſtula*, and ſometimes *Tibia*, Pipe; from the former of which, ſome derive the Word *Flute*: Tho' *Borel* will have it derived from *Flutta*, a Lamprey, thus called *a fluitando in Fluviis*; in regard the *Flute* is long, like the Lamprey, and has Holes all along it, like that Fiſh.

The antient *Fiſtulæ* or *Flutes* were made of Reeds; afterwards they were of Wood; and at length, of Metal. But how they were blown, whether as our *Flutes*, or Hautboys, does not appear.

'Tis plain, ſome had Holes, which at firſt, were but few; but afterwards increaſed to a greater Number: And ſome had none. Some were ſingle Pipes; and ſome a Combination of ſeveral, particularly *Pan's Syringa*, which conſiſted of ſeven Reeds, join'd together ſideways.

They had no Holes; each giving but one Note, in all ſeven diſtinct Notes: but at what Intervalls, is not known: Perhaps they were the Notes of the Natural, or Diatonic Scale. See Tibia, and Fistula.

The *German* Flute is different from the common one: 'Tis not put into the Mouth, by the End, as the ordinary ones are: The End is ſtop'd up with a Plug, or Tampion; but the lower Lip is applied to a Hole about half an Inch diſtant from it.

'Tis uſually a Foot long; equally big every where, and perforated with ſix Holes, beſide that of the Mouth. It is us'd as a Treble in a Concert of ſeveral Parts.

Its Baſs is double, or quadruple that Length.

Flutes, or *Flutings*, in Architecture, are perpendicular Channels, or Cavities, cut along the Shaft of a Column or Pilaſter. See Column, and Pilaster.

They are ſuppoſed to have been firſt introduced in Imitation of the Plaits of Womens Robes; and are therefore called by the *Latins*, *Striges*, and *Rugæ*. See Striges, &c.

The *French* call them *Cannelures*, as being Excavations; and we, *Flutes*, or *Flutings*, as bearing ſome Reſemblance to the muſical Inſtrument ſo called.

They are chiefly affected in the *Ionic* Order, where they had their firſt Riſe; tho' they are alſo us'd in all the richer Orders, as the *Corinthian* and *Compente*; but rarely in the *Doric*; ſcarce ever in the *Tuſcan*. See Ionic, Corinthian, Composite, Doric, &c.

Their Number is 24, tho' in the *Doric* only, 20.

Each *Flute* is hollow'd in, exactly a Quadrant of a Circle.

Between the *Flutes* are little Spaces that ſeparate them, called by *Vitruvius*, *Striæ*, and by us, *Liſts*; tho' in the *Doric*, the *Flutes* are frequently made to join each other, without any intermediate Space at all; the Liſt being ſharpen'd off to a thin Edge, which forms a Part of each *Flute*.

In ſome Buildings we ſee Columns with *Flutes* that go winding round the Shaft, ſpirally; but this is rather look'd on as an Abuſe.

Vignola determines the Depth of the *Flutes* by taking the Angle of an equilateral Triangle for the Centre.

Vitruvius deſcribes it from the Middle of the Square, whoſe Side is the Breadth of the *Flute*: Which latter Method makes them deep.

The *Flutes*, or *Striges*, are frequently fill'd up with a prominent, or ſwelling Ornament, ſometimes plain, in form of a Staff or Reed; and ſometimes a little carved, or enrich'd, in imitation of a Rope, or otherwiſe, and therefore called a *Rudenture*, or *Cabling*; and the Columns thus enrich'd, *Cabled Columns*. See Column.

This is moſt frequent in the *Corinthian* Order. The Cablings, or Fillings up commence from about one Third of the Height of the Column, reckoning from the Baſe; and are continued to the Capital: That is, they begin and end with the Diminution of the Column. See Diminution.

Flutes, or *Flutings*, are alſo us'd in Botany, in deſcribing the Stems and Fruits of certain Plants, which have Furrows, analogous to thoſe of Columns.

Flute, or *Fluyt*, is alſo a kind of long Veſſel, with flat Ribs, or Floor Timbers; round behind, and ſwelled in the Middle; ſerving chiefly for the carrying of Proviſions in Fleets, or Squadrons of Ships: tho' it is alſo us'd in Merchandizes.

The Word *Flute*, taken for a ſort of Boat, or Veſſel, is derived, according to *Borel*, from the antient *Flette*, a little Boat. In the verbal Proceſs of the Miracles of St. *Catharine* of *Sweden*, in the XIIth Century, we read, *Unus equum ſuum una cum mercibus magni ponderis introduxit ſuper inſtrumentum de lignis fabricatum, vulgariter dictum* Fluta.

Upon which the *Bollandiſts* obſerve, that in ſome Copies it is read *Flotta*, an Inſtrument call'd by the Latins *Rattis*; and that the Word *Flutta*, or *Flotta*, aroſe from *Flotten*, or *vlotten*, to float.——

Flute-*Grafting*, ſee Engrafting.

FLUX, Fluxus, in Medicine, an extraordinary Iſſue, or Evacuation of ſome Humor. See Humor.

Fluxes are various, and variouſly denominated, according to their Seats, or the Humors thus voided; as, *a Flux of the Belly*; *Uterine Flux*, *Hepatic Flux*, *Salival Flux*, &c.

The *Flux of the Belly* is of four kinds, which have their reſpective Denominations, *viz.* the *Lientery*, or *Fluxus Lientericus*; the *Cæliac*, or *Fluxus Chyloſus*; *Diarrhæa*; and *Diſſentery*, or *Bloody Flux*. See each explain'd under its proper Article, Lientery, Diarrhæa, &c.

A Wound, or Scarification croſs the Crown of the Head is uſed in *Scotland* to cure *Fluxes* and Diſſenteries. *Phil. Tranſact.* N° 312.

Flux *of the Mouth*, or *Salival* Flux, ſee Salivation.

The *Hepatic* Flux of the Antients is a mere Name; being, in reality a hæmorrhoidal *Flux*, out of the hemorrhoidal Veins; and ſo reducible to the *Diſſentery*. See Hæmorrhoids.

Women are ſubject to three kinds of *Fluxes* extraordinary: The firſt, call'd the *Menſes*, or *Menſtrual Flux*, as happening every Mouth; ſometimes *Courſes*, as keeping pace with the Moon; and ſometimes *Flowers*. See Menses, and Flowers.

The ſecond is after Delivery, call'd *Lochia*. See Lochia.

The third is irregular, and præternatural; and for want of a better Name called *Fluor albus*, or *Whites*. See Fluor *Albus*.

Flux, in Hydrography, a regular, periodical Motion of the Sea; happening twice in twenty four Hours; wherein the Water is rais'd, and driven violently againſt the Shores.

The *Flux*, or *Flow*, is one of the Motions of the Tide; the other, whereby the Water ſinks and retires, is call'd the *Reflux*, or *Ebb*. See Tides.

There is always a kind of reſt, or Ceſſation of about half an Hour, between the *Flux* and Reflux: During which the Water is at its greateſt Height, called *High Water*.

The *Flux* is made by the Motion of the Water of the Sea, from the Equator towards the Poles; which, in its Progreſs, ſtriking againſt the Coaſts in its way, and meeting with Oppoſition from them, ſwells, and where it can find Paſſage, as in Flats, Rivers, &c. riſes up, and runs into the Land.——

This Motion follows in ſome meaſure the Courſe of the Moon; as it loſes, or comes later every Day by about three Quarters of an Hour; or more preciſely, 48 Minutes: And by ſo much is the Motion of the Moon ſlower than that of the Sun. It is always higheſt and greateſt in full Moons, particularly thoſe of the Equinoxes. In ſome Parts, as at Mount St. *Michael*, it raiſes 80 or 90 Feet; tho' in the open Sea it never riſes above a Foot, or two: And in ſome Places, as about the *Morea*, there is no *Flux* at all.

It runs up ſome Rivers above 120 Miles. Up the River *Thames* it only goes 80; *viz.* near to *Kingſton* in *Surry*.

Above *London* Bridge the Water *flows* four Hours, and *ebbs* eight; and below the Bridge, *flows* five Hours, and ebbs ſeven. See Flood.

Flux *Powders* are thoſe prepared to facilitate the Fuſion of the harder Metals; as alſo to melt Oars, in order to diſcover what Proportion of Metal they contain. See Fusion.

Powder of Antimony is a very good *Flux* Powder. By this alone may you readily melt Iron or Steel in a Crucible, with

with an ordinary Charcoal Fire. See ANTIMONY; ſee alſo FOUNDERY.

FLUXION, in Medicine, a ſudden Collection of morbid Matter in any Part of the Body.

Fluxions ariſe either from the Weakneſs, Flaccidity, and Inactivity of the Part affected, which does not diſperſe, protrude, or expell the Humors naturally receiv'd into it: Or from the Derivation of ſome extraordinary Quantity of peccant Matter from ſome other Part.

This latter is properly called *Defluxion*, and by the Antients, *Attraction*. See DEFLUXION.

Fluxions are occaſion'd by Motion, Heat, Pain, Fomentation, &c.

A *Fluxion*, or Defluxion on the Lungs, is called a Catarrh. See CATARRH.

FLUXIONS, or the *Method of* FLUXIONS, is the Arithmetick, or Analyſis, of infinitely ſmall variable Quantities; or the Method of finding an Infiniteſimal, or infinitely ſmall Quantity, which being taken an infinite Number of times, becomes equal to a given Quantity. See INFINITE, and INFINITESIMAL.

Sir *I. Newton*, and after him all the *Engliſh* Authors, call theſe infinitely ſmall Quantities, *Fluxions*; as conſidering them as the momentary Increments or Decrements of variable Quantities, *e. gr.* of a Line conſider'd as generated by the *Flux* of a Point; or of a Surface generated by the *Flux* of a Line.

Accordingly, the variable Quantities are called *fluent*, or *flowing Quantities*; and the Method of finding either the *Fluxion*, or the *Fluent*, the *Method of Fluxions*. See METHOD.

M. *Leibnitz*, and the Foreigners after him, conſider the ſame infinitely ſmall Quantities as the *Differences*, or *Differential* of two Quantities; and call the Method of finding thoſe Differences, the *Differential Calculus*. See CALCULUS *differentialis*.

Each of theſe ways of conſidering and denominating, has its Advantages; which the Retainers to this, or that Method, ſtrenuouſly aſſert.

Variable Quantities, *i. e.* ſuch as in the Geneſis of Figures by local Motion are continually increaſing and diminiſhing, are certainly very properly denominated *Fluents*: And as all Figures may be conceiv'd as ſo generated; the infinitely ſmall Increments, or Decrements of ſuch Quantities are very naturally denominated *Fluxions*.

Beſide this Difference in the Name, there is another in the Notation.

Sir *I. Newton* expreſſes the *Fluxion* of a Quantity, as x by a Dot placed over it, as $\dot{x}$; and Mr. *Leibnitz* expreſſes his Differential of the ſame x by prefixing a d as dx; each of which Methods of Notation has likewiſe its Advantage. See *Differential* CALCULUS.

Setting aſide theſe circumſtances, the two Methods are the ſame.

The Method of *Fluxions* is one of the greateſt, moſt ſubtile and ſublime Diſcoveries of this, or perhaps any other Age: It opens a new World to us, and extends our Knowledge, as it were, to Infinity. It carries us beyond the Bounds that ſeem'd to have been preſcrib'd to the human Mind; at leaſt infinitely beyond thoſe to which the antient Geometry was confined.

The Hiſtory of this important Diſcovery, as freſh as it is, is a little dark, and imbroiled. Two of the greateſt Men of this Age, do both of them claim the Invention, Sir *I. Newton*, and M. *Leibnitz*; and nothing can be more glorious for the Method it ſelf, than the Zeal wherewith the Partiſans of either ſide have aſſerted the Title.

To give the Reader a juſt View of this noble Diſpute, and of the Pretenſions of each Party, we ſhall lay before him the *Origines* of the Diſcovery, and mark where each Claim commenced, and how it was ſupported.

The firſt time the Method made its Appearance in publick, was in 1684; when M. *Leibnitz* gave the Rules thereof in the *Leipſic* Acts of that Year; but the Demonſtrations he kept to himſelf. The two Brothers, the *Bernoulli's*, were preſently ſtruck with it; and found out the Demonſtrations, tho' very difficult; and practiſed the Calculus with ſurprizing Succeſs.

This is all we hear of it, till the Year 1687; when Sir *I. Newton's* admirable *Principia* came forth, which is almoſt wholly founded on the ſame Calculus.

The common Opinion at that time, was, that Sir *Iſaac*, and M. *Leibnitz* had each invented it about the ſame time: And what confirm'd it, was, that neither of them made any mention of the other; and that, tho' they agreed in the Subſtance of the thing, yet they differed in their ways of conceiving; called it by different Names, and uſed different Characters.

In effect, Mr. *Leibnitz's* Character, was ſuppos'd by Foreigners to be ſomewhat more comodious than that of Sir *Iſaac Newton*; accordingly, the Method ſoon ſpreading it ſelf throughout Europe, M. *Leibnitz's* Character went with it; by which means the Geometricians were inſenſibly accuſtomed too look on him as the ſole, or principal Inventor.

The two Great Authors themſelves, without any ſeeming Concern, or Diſpute as to the Property of the Invention, enjoy'd the glorious Proſpect of the Progreſſes continually making under their Auſpices; till the Year 1699: when the Peace began to be diſturb'd.

M. *Fatio*, in a Treatiſe of the *Line of ſwifteſt Deſcent*, having declared that he was oblig'd to own Sir *I. Newton* as the firſt Inventor of the Differential Calculus, and the firſt by many Years; and that he left the World to judge, whether M. *Leibnitz*, the ſecond Inventor, had taken any thing from him: This preciſe Diſtinction between firſt and ſecond Inventor; with the Suſpicion it inſinuated; raiſed a Controverſy between M. *Leibnitz*, ſupported by the Editors of the *Leipſic Acta*; and the *Engliſh* Geometricians, who declared for Sir *I. Newton*.

Sir *Iſaac* himſelf never appear'd on the Scene: His Glory was become that of the Nation; and his Adherents, warm in the Cauſe of their Country, needed him not to animate them.

Writings ſucceeded each other but ſlowly, on either ſide; probably on account of the Diſtance of Places; but the Controverſy grew ſtill hotter and hotter: Till at length it came to ſuch Paſs, that in the Year 1711, M. *Leibnitz* complain'd to the Royal Society, that Dr. *Kiel* had accuſed him of publiſhing the Method of *Fluxions* invented by Sir *I. Newton*, under other Names, and Characters.

He inſiſted, that no body knew better than Sir *Iſaac* himſelf, that he had ſtolen nothing from him; and required that Dr. *Kiel* ſhould publickly diſavow the ill Conſtruction which might be put on his Words.

The Society, here appeal'd to as Judge, appointed a Committee to examine all the old Letters, Papers, &c. that had paſſed among the ſeveral Mathematicians, relating to the Point: And after a ſtrict Examen of all the Evidences that could be procured, gave in their Report, "That it "did not appear that M. *Leibnitz* knew any thing of the "differential Calculus before a Letter wrote him by Sir *I.* "*Newton*, and ſent to him at *Paris*, in the Year 1672; "wherein the Method of *Fluxions* was ſufficiently ex- "plain'd, to let a Man of his Sagacity into the whole Mat- "ter; and that Sir *I. Newton* had even invented his Me- "thod before the Year 1669, and of conſequence fifteen "Years before M. *Leibnitz* had given any thing on the "Subject in the *Leipſic Acts*." And thence they concluded, that Dr. *Kiel* had not at all injured Mr. *Leibnitz* in what he had ſaid.

The Society printed this Cenſure of theirs, together with all the Pieces and Materials relating thereto, under the Title of *Commercium Epiſtolicum, de Analyſi promota. London*, 1712.

The Book was carefully diſtributed through *Europe*, to vindicate the Title of the *Engliſh* Nation to the Diſcovery; for Sir *Iſaac*, as already hinted, never appear'd in it: Whether it were, that he truſted his Honour with his Compatriots, who were zealous enough in the Cauſe; or whether it were, that he were even ſuperior to the Glory thereof.——

M. *Leibnitz* and his Friends could not ſhew the ſame Indifference: He was accus'd of a Theft; and the whole *Commercium Epiſtolicum* either expreſſes it in Terms, or inſinuates it.

Soon after the Publication thereof, a looſe Sheet was printed at *Paris*, in behalf of M. *Leibnitz*, then at *Vienna*. It is wrote with a world of Zeal and Spirit, and maintains boldly, that the Method of *Fluxions* had not preceded that of Differences; and even inſinuates, that it might have aroſe from it.

The Detail of the Proofs on each ſide would be too long, and could not be underſtood without a large Comment, which muſt enter into the deepeſt Geometry.

M. *Liebnitz* had begun to work upon a *Commercium Epiſtolicum*, in oppoſition to that of the Royal Society; but he died before it was compleated.

It muſt be own'd, there are ſtrong Preſumptions in favour of M. *Leibnitz*; Preſumptions, we mean, that he was no Plagiary: For that Sir *Iſaac Newton* was the firſt Inventor, is paſt all Diſpute: His Glory is ſecure: The reaſonable Part, even among the Foreigners, allow it; and the Queſtion is only, Whether M. *Liebnitz* took it from him, or fell upon the ſame thing with him: For in his *Theory of abſtract Motions*, which he dedicated to the Royal Academy, in 1671, before he had ſeen any thing of Sir *Iſaac Newton's*, he already ſuppoſed infinitely ſmall Quantities, ſome greater than others; which is one of the great Principles of the Syſtem.

The Doctrine conſiſts of two Parts, viz. *Fluxions properly ſo called*, or the DIRECT METHOD *of Fluxions* call'd alſo *Calculus Differentialis*; and the *Inverſe Method of Fluxions*, or *Calculus Integralis*.

The

The latter is directly oppoſite to the former; and is a Sequel of it. Both of them are adopted into the new Geometry, and make reigning Methods therein.

The firſt deſcends from finite, to infinite; the latter aſcends from infinitely ſmall, to finite: The one decompounds a Magnitude, the other re-eſtabliſhes it.

Direct Method of Fluxions.

All finite Magnitudes are here conceiv'd to be reſolv'd into infinitely ſmall ones; which are the Elements, Moments, or Differences thereof.

The Art of finding theſe infinitely ſmall Quantities, and of working on them, and diſcovering other infinite Quantities by their means, makes the *Direct* Method of *Fluxions*.

What renders the Knowledge of infinitely ſmall Quantities of ſuch infinite Uſe and Extent, is that they have Relations to each other, which the finite Magnitudes, whereof they are the Infiniteſimals, have not.

Thus, *e. gr.* In a Curve of any kind whatever, the infinitely ſmall Differences of the Ordinate and Abſciſſe, have the Ratio to each other, not of the Ordinate, and Abſciſſe; but of the Ordinate and Subtangent; and of conſequence, the Abſciſſe and Ordinate alone being known, give the Subtangent unknown; or which amounts to the ſame, the Tangent it ſelf. See *the inverſe Method of* Fluxions.

The Method of Notation in *Fluxions*, introduc'd by the Inventor Sir *I. Newton*, is thus,

The *Fluxion* of the variable, or flowing Quantity, to be uniformly augmented, as ſuppoſe the Abſciſſe of a Curve, he denotes by 1, or Unite; and the other flowing Quantities he denotes by the Letters $v\ x\ y\ z$; and their *Fluxions* by the ſame Letters, with Dots plac'd over them, thus $\dot{v}\ \dot{x}\ \dot{y}\ \dot{z}$.

Again, as the *Fluxions* themſelves are alſo variable Quantities, and are continually increaſing, or decreaſing; he conſiders the Velocities with which they increaſe, or decreaſe, as the *Fluxions* of the former *Fluxions*, or *ſecond Fluxions*; which are denoted with two Dots over them, thus, $\ddot{y}\ \ddot{x}\ \ddot{z}$.

After the ſame manner one may conſider the Augments, and Diminutions of theſe, as their *Fluxions* alſo; and thus proceed to *third*, *fourth*, *fifth*, &c. *Fluxions*, which will be noted thus, $\dddot{y}\ \dddot{x}\ \dddot{z}$: $\ddddot{y}\ \ddddot{x}\ \ddddot{z}$: $\dot{\dddot{y}}\ \dot{\dddot{x}}\ \dot{\dddot{z}}$ &c.

Laſtly, if the flowing Quantity be a Surd, as $\sqrt{:a-b}$; he notes its *Fluxion* $\dot{\sqrt{}}:a-b$: If a Fraction $\frac{x}{d-y}$ he notes it, $\frac{\dot{x}}{d-y}$:

The chief Scope and Buſineſs of *Fluxions*, is, from the flowing Quantity given, to find the *Fluxion*: For this, we ſhall lay down one general Rule, as ſtated by Dr. *Wallis*; and afterwards apply and exemplify it in the ſeveral Caſes.——

" Multiply each Term of the Equation ſeperately by the " ſeveral Indices of the Powers of all the flowing Quanti- " ties contain'd in that Term: And in each, change one " Root or Letter of the Power into its proper *Fluxion*: " The Aggregate of all the Products connected together " by their proper Signs, will be the *Fluxion* of the Equa- " tion deſired."

The Application of this Rule will be contain'd in the following Caſes.——

I. In the General: To *expreſs the* Fluxions *of ſimple variable Quantities*, as already mentioned, you need only put the Letter, or Letters, which expreſs them, with a Dot over them: Thus, the *Fluxion* of x is $\dot{x}$; and the *Fluxion* of y is $\dot{y}$; and the *Fluxion* of $x+y+v+z$, is $\dot{x}+\dot{y}+\dot{v}+\dot{z}$ &c.

Note. For the *Fluxion* of Permanent Quantities, when any ſuch are in the Equation, you muſt imagine o, or a Cypher; for ſuch Quantities can have no *Fluxion*, properly ſpeaking, becauſe they are without Motion, or invariable.

II. To *find the* Fluxions *of the Products of two or more variable or flowing Quantities*;

Multiply the *Fluxion* of each ſimple Quantity by the Factors of the Products; or the Product of all the reſt; and connect the laſt Products by their proper Signs; the Sum or Aggregate is the *Fluxion* ſought.

Thus, the *Fluxion* of $x\ y$ is $\dot{x}\ y+x\ \dot{y}$; and the *Fluxion* of $x\ y\ z$, is $\dot{x}\ y\ z+x\ \dot{y}\ z+x\ y\ \dot{z}$; and the *Fluxion* of $x\ v\ y\ z$, is $\dot{x}\ v\ y\ z+x\ \dot{v}\ y\ z+x\ v\ \dot{y}\ z+x\ v\ y\ \dot{z}$; and the *Fluxion* of a $\overline{+\ x\ x}$ by $b-y$ (the common Product being $a\ b+b\ x-y\ a-x\ y$) will be $\dot{b}\ \dot{x}-\dot{y}\ a-\dot{x}\ y-x\ \dot{y}$.

III. *To find the* Fluxion *of a Fraction*;

Multiply the *Fluxion* of the Numerator by the Denominator, and after it place (with the Sign —) the *Fluxion* of the Denominator to the Nominator, and divide the whole by the Square of the Denominator.

Thus, the *Fluxion* of $\frac{x}{y}$ is $\frac{\dot{x}\ y-x\ \dot{y}}{y\ y}$;

For ſuppoſe $\frac{x}{y}=z$, then will $x=y\ z$; which equal Quantities will have equal *Fluxions*; therefore $\dot{x}=\dot{y}\ z+z\ \dot{y}$, and $\dot{x}-z\ \dot{y}=z\ \dot{y}$; and dividing all by y $\frac{\dot{x}-x\ \dot{y}}{y}=z=$ (becauſe $\frac{x}{y}=z$) $y\frac{\dot{x}-x\ \dot{y}}{y\ y}$: Wherefore this laſt is the *Fluxion* of the Fraction $\frac{x}{y}$; becauſe z being $=\frac{x}{y}$, $\dot{z}$ will be equal to the *Fluxion* of $\frac{x}{y}$

And the *Fluxion* of $\frac{a}{x}$ will be $\frac{-\dot{x}\ a}{x\ x}$; for the permanent Quantity a having no *Fluxion*, there can be no Product of the *Fluxion* of the Numerator into the Denominator, as there would have been, had a been x, z, or any other variable Quantity.

IV. *To find the* Fluxion *of a Power*;

Multiply the Power (firſt brought one Degree lower) by the Index of that firſt Power; and the Product by the *Fluxion* of the Root.

Thus, the *Fluxion* of $x\ x$ will be $2\ x\ \dot{x}$, for $x\ x=x\times x$; but the *Fluxion* of $x\times z=\dot{x}\ x+x\ \dot{x}=2\ \dot{x}\ x$, &c. and the *Fluxion* of x^3 will be $3\ x\ x\ \dot{x}$. That of x^8 will be $8\ x^7\ \dot{x}$, &c. Or if m expreſs the Index of any Power, as ſuppoſe x^m, its *Fluxion* will be $m\ x^{m-1}\ \dot{x}$, or $m\ \dot{x}\ x^{m-1}$:

For x^m brought one Degree lower (m being a general Index) muſt be x^{m-1}; then that $\times$ by m the Index, makes $m\ x^{m-1}$; and this laſt by the *Fluxion* of the Root, produces $m\ x^{m-1}\ \dot{x}$.

If the Power be produced from a Binomial, &c. as ſuppoſe $x\ x+2\ x\ y+y\ y$, its *Fluxion* will be $2\times\dot{x}+2\ \dot{x}\ x+2\ x\ \dot{y}+2\ y\ \dot{y}$, by the Fourth and Second Rules.

If the Exponent be Negative, as ſuppoſe x^{-m} or $\frac{1}{x^m}$, its *Fluxion* will be $-m\ \dot{x}\ x^{-m-1}$.

Or, if you would do it by way of Fraction, $\frac{-m\ x^{m-1}\ \dot{x}}{x^{2m}}$, (for the Square of x^m is as well x^{2m} as x^{m2}) or according to Sir *I. Newton*'s Method, which is yet ſhorter, $\frac{-m\ \dot{x}}{x^{m+1}}$.

If the Power be imperfect, *i. e.* if its Exponent be a Fraction, as ſuppoſe $\sqrt[n]{:x^m}$; or in the other Notation $x^{\frac{m}{n}}$, ſuppoſe $x^{\frac{m}{n}}=z$: Then if you raiſe up each Member to the Power of n, it will ſtand thus, $x^m=z^n$; the *Fluxion* of which will be, by this general Rule, $m\ x^{m-1}\ \dot{x}=n\ z^{n-1}\ \dot{z}$: Wherefore $\dot{z}$ will be $=\frac{m\ \dot{x}\ x^{m-1}}{n\ z^{n-1}}$ (by dividing both Parties by $n\ z^{n-1}$,) and $\frac{m\ \dot{x}\ x^{m-1}}{n\ z^{n-1}}=\frac{m}{n}\ \dot{x}\ x^{m-1}\ z^{1-n}$; or $\frac{m}{n}\ \dot{x}\ x^{m-n}\ z^{1-n}$, by putting inſtead of $n\ z^{n-1}$, its Value $n\ x^{\frac{m}{n}(n-1)}$.

Hence

Hence to find the *Fluxion* of any kind of Power, proceed thus:

Multiply the Power given by its Index or Exponent, and then that Product by the *Fluxion* of the Root of the Power given; and after that, subtract One, or Unity, from the Index of the Power.

V. *To find the* Fluxions *of Surd Quantities.*

Suppose it requir'd to find the *Fluxion* of $\sqrt{2rx - xx}$, or $\overline{2rx - xx}\,|^{\frac{1}{2}}$. Suppose $2\overline{rx - xx}\,|^{\frac{1}{2}} = z$; then is $2rx - xx = zz$; and consequently $r\dot{x} - x\dot{x} = z\dot{z}$; and by Division, $\frac{r\dot{x} - x\dot{x}}{z} = \dot{z} =$ (by Substitution) $\frac{r\dot{x} - x\dot{x}}{\sqrt{2rx - xx}} =$ to the *Fluxion* of $\sqrt{2rx - xx}$

If it be required to find the *Fluxion* of $a\overline{y - xx}\,|^3$; for $\overline{ay - xx}\,|^3$ put z; then, $ay - xx = z^{\frac{2}{3}}$, and $a\dot{y} - 2x\dot{x} = \frac{2}{3}z^{-\frac{1}{3}}\dot{z}$: And multiplying by 3, $3a\dot{y} - 6x\dot{x} = z^{-\frac{1}{3}}\dot{z}$; and consequently, $3az^{\frac{2}{3}}\dot{y} - 6z^{\frac{2}{3}}x\dot{x} = \dot{z}$ equal (substituting $a\overline{y - xx}\,|^2 = z^{\frac{2}{3}}$) $3a^3y^2\dot{y} - 6a^2x^2y\dot{y} + 3ax^4\dot{y} - 6a^3y^2x\dot{x} + 12ayx^3\dot{x} - 6x^5\dot{x} =$ to the *Fluxion* of $a\overline{y - xx}\,|^3$.

VI. *To find the* Fluxion *of Quantities compounded of Rational and Surd Quantities.*

Let it be requir'd to find the *Fluxion* of $\frac{bx^2 + cax + ea^2}{x\sqrt{xx + aa}} = z$. Put $bx^2 + cax + ea^2 = p$ and $\sqrt{xx + aa} = q$. Then the given Quantity is $\frac{p}{q} = z$, and the *Fluxion* thereof is $\frac{\dot{p}q - q\dot{p}}{qq} = \dot{z}$: But $\dot{q}$ is $\frac{x\dot{x}}{\sqrt{xx + aa}}$, and $\dot{p}$ is $= 2b\dot{x}\dot{x} + ca\dot{x}$; therefore in the Equation $\frac{\dot{p}q - q\dot{p}}{qq} = \dot{z}$, if in the place p, q, $\dot{p}$, $\dot{q}$, we restore the Quantities they represent, we shall have $\frac{bx^3 + cax^2 + ea^2}{\sqrt{xx + aa}} \times \frac{x\dot{x}}{\sqrt{xx + ea}} + 2bx\dot{x}\sqrt{xx + aa} - \frac{cax\dot{x}}{\sqrt{xx + aa}} = z$. Which being reduc'd to one Denomination, gives $\frac{3bx^3 + 2acx^2 + ea^2x}{\sqrt{xx + aa}} + 2ba^2x + xa^3 \times \dot{x} = \dot{z} =$ to the *Fluxion* of the given Quantity.

Inverse Method of Fluxions, or *Calculus Integralis*, consists in finding finite Magnitudes, from the infinitely small Parts thereof.

It proceeds, as already observ'd, from infinitely small Quantities to finite; and recompounds and sums up what the other has resolved; whence it is also call'd the *Summatory Calculus*.

But what that has decompounded, this does not always re-establish; so that the Inverse Method is limited, and imperfect; at least, hitherto. If it were once compleat, Geometry would be arrived at its last Perfection.

To give an Idea of its Nature and Office, take the Instance already proposed in the direct Method: In that the infinitely small Quantities of the Ordinates and Abscis, being known, give the Subtangent required. In this, on the contrary, the Subtangent of an unknown Curve being had, gives the infinitely small Quantities of the Abscis and Ordinate which produc'd it, and of consequence the Abscis and Ordinate themselves; which are finite Magnitudes, in whose Relation the whole Essence of the Curve is founded.

But the distinguishing Province of this Methodis in measuring the Base of a Parallelogram multiplied by the infinitely small Element of its Weight, gives an infinitely small Parallelogram; which is the Element of the finite Parallelogram, and is repeated an Infinity of times therein, *i. e.* as many times as there are Points in the Height of the Parallelogram.

To have the finite Parallelogram, therefore, by means of its Element, the Element must be multiplied by the Height; which is the inverse Method of *Fluxions*, re-ascending from the infinitely small Quantity, to the finite.

Such a Circuit of Infinitesimals, 'tis true, were impertinent in so simple a Case; but when we have to do with Surfaces, terminated by Curves; the Method then becomes necessary, or at least superior to any other.

Suppose, *e. gr.* in a Parabola, the Space included between two infinitely near Ordinates, an infinitely small Portion of the Axis, and an infinitely little Arch of the Curve: 'Tis certain, this infinitely small Surface is no Parallelogram; since the two parallel Ordinates which terminate it on one Side, are not equal; and the Arch of the Curve, opposite to the little Portion of the Axis, is frequently neither equal nor parallel thereto. And yet this Surface, which is no Parallelogram, may be consider'd, in the strictest Geometry, as if it really were one; by reason it is infinitely small, and the Error, of consequence infinitely little, *i. e.* none.

So that, to measure it, there needs nothing but to multiply an Ordinate of the Parabola by the infinitely small Portion of the Axis corresponding thereto. Thus we have the Element of the whole Parabola; which Element being rais'd by the inverse Method to a finite Magnitude, is the whole Surface of the Parabola.

This Advantage is peculiar to the Geometry of Infinites, of being able without any Error to treat little Arches of Curves, as if they were Right-lines; curvilinear Spaces, as if rectilinear ones, &c. enables it not only to go with more Ease and Readiness than the antient Geometry, to the same Truths; but also a great Number of Truths inaccessible to the other.

Its Operations, in effect, are more easy, and its Discoveries more extensive: And Simplicity and Universality are its distinguishing Characters.

To find the flowing Quantity belonging to any Fluxion *given.*

To have the Doctrine of the Inverse Method correspond and keep pace with that of the Direct, we will apply it in the same Cases.

I° Then, in the general: *To express the variable Quantity of a* Fluxion, there needs nothing but to write the Letters without the Dots.

Thus the flowing Quantities of $\dot{x}$ $\dot{y}$ $\dot{z}$, are x y z.

II° *To find the flowing Quantities belonging to the* Fluxion *of the Product of two Quantities*;

Divide each Member of the *Fluxion* by the fluxionary Quantity, or Letter; or change the fluxionary Letter into the proper flowing Quantity of which it is the *Fluxion*: The Quota's connected by their proper Signs will be the flowing Quantities sought.

Only, if the Letters be all exactly the same, the flowing Quantity will be a simple one, whose Parts are not to be connected together by the Signs + and −

III° *To find the flowing Quantity belonging to the* Fluxion *of any Power, either perfect, or imperfect.*

Take the fluxionary Letter or Letters out of the Equation: Then augment the Index of the *Fluxion* by 1, or Unity: Lastly, divide the *Fluxion* by the Index of its Power so increased by Unity.

Thus suppose $3\dot{x}\dot{x}\dot{x}$ proposed; by taking away $\dot{x}$ it will be $3\dot{x}\dot{x}$: and by increasing its Index by Unity, it will be $3\dot{x}\dot{x}\dot{x}$: Then dividing it by 3, its now (augmented) Index, the Quotient will be $\dot{x}\dot{x}\dot{x}$, the flowing Quantity required.

Again, suppose $\frac{n}{m}\dot{x}\,x^{\frac{n-1}{m}}$ a *Fluxion* propos'd: By taking away the fluxionary $\dot{x}$, it will be $\frac{n}{m}x^{\frac{n}{m}-1}$: By augmenting the Index by Unity (*i. e.* taking away −1) it will be $\frac{n}{m}x^{\frac{n}{m}}$: And lastly, by dividing the remaining Part of the *Fluxion* by $\frac{n}{m}$, prefix'd to, or multiplied into x, the Quotient will be $x^{\frac{n}{m}}$; which is the flowing Quantity sought.

The Uses of the direct Method of Fluxions, *see specified under the Articles* Maximis *and Minimis*, Tangents, &c.

Those of the Inverse Method, see under Quadrature *of Curves*; Rectification *of Curves*; Cubature *of Solids*, &c.

FLYBOAT, a large Vessel, with a broad Bow, us'd by Merchants in the coasting Trade.

Some of them will carry 800 Ton of Goods.

To Fly *Gross*, in Falconry, is said of a Hawk when she flies at the great Birds, as Cranes, Geese, Herons, &c.

Fly *on Head*, is when the Hawk missing her Quarry, betakes her self to the next Check, as Crows, &c.

FLYERS, in Architecture, such Stairs, as go strait; and do not wind round, nor its Steps made tapering; but the fore and back part of each Stair and the Ends respectively parallel to one another.

So that if one *Flight* do not carry you to your design'd Height, there is a broad half Space; and then you *fly*

again, with Steps every where of the ſame Breadth and Length as before. See STAIR-CASE.

FLYING, the progreſſive Motion of a Bird, or other winged Animal in the liquid Air. See FLIGHT, and BIRD.

Flying is either *Natural*, or *Artificial*.

Natural FLYING is that perform'd by an Apparatus or Structure of Parts concerted for that end by Nature her ſelf. Such is that of moſt Birds, and Inſects; and ſome Fiſhes.

In *Virginia*, and *New England*, they have alſo *flying Harts*. *Philoſoph. Tranſact.* N° 127. And in *Languedoc*, *flying* Graſhoppers, about an Inch long, wherewith the Ground, in ſeveral Parts, in the Year 1685 was cover'd one third of a Foot deep.——*Ibid.* N° 182.

The Parts of Birds, &c. chiefly concern'd in *Flying*, are the *Wings*, and *Tail*: By the firſt, the Bird ſuſtains and wafts himſelf along; and by the ſecond he is aſſiſted in aſcending, and deſcending; to keep his Body pois'd and upright, and to obviate the Vacillations thereof. See WING and TAIL.

'Tis by the Largeneſs and Strength of the temporal Muſcles, that Birds are ſo well diſpoſed for quick, ſtrong, and continued *Flying*.

Theſe Muſcles, which in Men are ſcarce $\frac{1}{70}$ Part of the Muſcles of the Body, in Birds, exceed and outweigh all the other Muſcles taken together: Upon which Mr. *Willoughby* makes this Reflection, that if it be poſſible for Man to *fly*, his Wings muſt be ſo contrived and adapted, that he may make uſe of his Legs, and not his Arms in managing them. See PECTORAL *Muſcle*.

The *Flying* of Birds is thus effected:

The Bird, firſt, bends his Legs, and ſprings with a violent Leap from the Ground: Then, opens or expands the Jointures of his Wings, ſo as to make a Right-line, perpendicular to the Sides of his Body. Thus, as the Wings, with the Feathers therein, conſtitute one continued Lamina; being now rais'd a little above the Horizon, and vibrating the Wings with great Force and Velocity, perpendicularly, againſt the ſubject Air; the Air, tho' a Fluid, reſiſts thoſe Succuſſions both from its natural Inactivity, and from its Elaſticity, which makes it reſtore it ſelf, after it has been compreſs'd, and react aſmuch as it is acted on: By ſuch means is the whole Body of the Bird protruded.

The Sagacity of Nature is very remarkable in the opening and recovering of the Wing for freſh Strokes.

To do it directly, and perpendicularly, it would needs have a great Reſiſtance to overcome: To avoid which, the bony Part, or Bend of the Wing into which the Feathers are inſerted, moves ſidewiſe with its ſharp End foremoſt; the Feathers following it like a Flag.

The Reſiſtance the Air makes to the withdrawing of the Wings, and conſequently the Progreſs of Bird, will be ſo much the greater, as the Waft, or Stroke of the Fan of the Wing is the longer: But, as the Force of the Wing is continually diminiſh'd by this Reſiſtance; when the two Forces come to be in Equilibrio, the Bird will remain ſuſpended in the ſame Place: For the Bird only aſcends ſo long, as the Arch of Air the Wing deſcribes, makes a Reſiſtance equal to the Exceſs of the ſpecific Gravity of the Bird above the Air. If the Air therefore be ſo rare as to give way with the ſame Velocity as it is ſtruck withal, there will be no Reſiſtance, and conſequently the Bird can never mount on ſuch unſtable Steps.——

Mr. *Ray*, *Willoughby*, &c. have ſuppos'd the Tail to do the Office of a Rudder, in ſteering and turning the Body this way or that: But *Borelli* has ſhewn it unfit for any ſuch Office.

The *Flying* of a Bird, in effect, is quite a different Motion from the Sailing of a Ship: Birds don't vibrate their Wings towards the Tail, as Oars are ſtruck towards the Stern; but waft them downward: Nor does the Tail of the Bird cut the Air at right Angles, as the Rudder does the Water; but is diſpoſed horizontally, and preſerves the ſame Situation what way ſoever the Bird turns.

In effect, as a Veſſel in the Water is turn'd about on its Centre of Gravity to the right, by a briſk Application of the Oars to the left; ſo a Bird, in beating the Air with its right Wing alone, towards its Tail, its Fore-part will be turn'd to the left: As when in ſwimming, by only ſtriking out with the right Arm, and Leg, we are driven to the left.

Thus, we ſee Pidgeons, changing their Courſe to the leftward, labour it with the right Wing; keeping the other almoſt at reſt.

Add, that Birds with long Necks have another way of altering their Courſe: For by only inclining the Head and Neck towards this or that Side; the Centre of Gravity of the whole being ſhifted, the Bird will proceed according to his new Direction.

Birds never fly upwards in a perpendicular Line, but always in a Parabola, the Line deſcribed by Projectiles.

In a direct Aſcent, the Natural and Artificial Tendency would oppoſe and deſtroy each other; ſo that the Progreſs would be very ſlow: In a direct Deſcent, they would aid one another; ſo that the Fall would be too precipitate.

Indeed, the Hawk we frequently find take that Advantage in ſeizing of the Partridge: But ordinarily, Birds keep their Wings expanded, and at reſt, to retard their Deſcent; and at the ſame time ſtretch out their Feet, and Legs.——

Artificial FLYING, is that attempted by Men, by the Aſſiſtance of Mechanicks.

The *Art of Flying* is one of the great Deſiderata of Mechanicks; attempted in divers Ages: The Diſcovery whereof might prove of great Service, and great Diſſervice to Mankind.

No body ſeems to have bid ſo fair for that Invention, as our famous Fryar *R. Bacon*, who liv'd upwards of 500 Years ago. He not only affirms the Art feaſible; but aſſures us he himſelf knew how to make an Engine, in which a Man ſitting might be able to carry himſelf through the Air, like a Bird: And affirms, that there was another Perſon, who had actually tried it with Succeſs.

The Secret conſiſted in a Couple of large thin hollow Copper Globes, exhauſted of Air; which being much lighter than Air, would ſuſtain a Chair, whereon a Perſon might ſit. See AIR-PUMP.

Fa. *Franciſco Lane*, in his *Prodromo*, propoſes the ſame thing, as his own Thought. He computes, that a round Veſſel of Plate Braſs, fourteen Foot in Diameter, weighing three Ounces the ſquare Foot; will only weigh 1848 Ounces; whereas a Quantity of Air of the ſame Bulk, will weigh $3155\frac{2}{3}$ Ounces: So that the Globe will not only be ſuſtain'd in the Air; but will carry with it a Weight of $373\frac{2}{3}$ Ounces; and by increaſing the Bulk of the Globe, without increaſing the Thickneſs of the Metal, he adds, a Veſſel might be made to carry a much greater Weight.

But the Fallacy is obvious: A Globe of the Dimenſions he deſcribes, Dr. *Hook* ſhews, would not ſuſtain the Preſſure of the Air; but be cruſh'd inwards. Beſide, that in whatever Ratio the Bulk of the Globe were increas'd, in the ſame muſt the Thickneſs of the Metal, and conſequently the Weight, be increaſed: So that there would be no Advantage in ſuch Augmentation.

The ſame Author deſcribes an Engine for *Flying*, invented by the Sieur *Beſnier*, a Smith of *Sable*, in the County of *Maine*. *Philoſoph. Collect.* N° 1.——

FLYING *Bridges*, in Fortification, are thoſe made of two ſmall Bridges, laid one upon the other, ſo that the uppermoſt, by means of Ropes and Pullies, is forc'd forwards, till the End of it is joined to the Place deſigned. See BRIDGE.

FLYING *Camp*, a ſmall Body of an Army, conſiſting of 4, 5, or 6000 Men, and ſometimes a greater Number, as well Foot as Horſe, which continually keep the Field, making divers Motions, to prevent the Incurſions of the Enemy, or to fruſtrate their Enterpriſes; to hinder Convoys, to harraſs the adjacent Country, and to be thrown into a beſieged Place, as Occaſion ſhall ſerve.——

FLYING *Pinion*, is a Part of a Clock, having a Fly or Fan, whereby to gather Air, and ſo to bridle the Rapidity of the Clock's Motion, when the Weight deſcends in the ſtriking Part. See PINION, CLOCK, &c.

FOCAGE, or FUAGE, Fire-money, Hearth-money, or Chimney-money. See FUAGE.

FOCILE, FOCIL, in Anatomy, a Name the *Arabs* give to the two Bones of the Arm, reaching from the Elbow, to the Wriſt. See ARM.

The biggeſt, which is what we call the *Cubitus*, and *Ulna*, they call the *greater Focil*, *Focile majus*.

The leſs, which we call *Radius*, they call *Focile minus*. See CUBITUS, and RADIUS.

The like is obſerv'd with regard to the Bones of the Leg. The biggeſt of which, by the *Latins* called *Tibia*, the *Arab* Writers, &c. call the *great Focil*: And the leſs, or *Fibula*, the leſſer *Focil*. See TIBIA, and FIBULA.

FOCUS, in Geometry, and the Conic Sections, is applied to certain Points in the Parabola, Ellipſis, and Hyperbola; wherein the Rays reflected from all Parts of theſe Curves do concur, or meet. See CURVE.

The Focus *of a Parabola* is a Point in its Axis, as F, (*Tab. Conicks*, *Fig.* 18.) wherein the ſemi-ordinate F N, is equal to the Semi-parameter; or a Point in the Axis diſtant from the Vertex, by a fourth Part of the Parameter, or Latus rectum. See PARABOLA.

'Tis demonſtrated in Conicks, 1° That in a Parabola, the Diſtance of the *Focus*, from the Vertex, A F, is to the Parameter, in a ſubquadruple Ratio.

2° That the Square of the ſemi-ordinate is quadruple of the Rectangle of the Diſtance of the *Focus* from the Vertex, and the Abſciſſe.

3° That the Right-line F M drawn from the *Focus* F to the Extremities of the Semi-ordinate of the Parabola is equal to the aggregate of the Abſciſſe A P; and the Diſtance of the *Focus* from the Vertex A F.

The Foci *of an Ellipſis* are two Points, as F f (*Fig.* 19.) in the Axis A B, on which, as Centres, the Figure is deſcribed:

ſcribed: Or, two Points in the longer Axis, whence two Right-lines being drawn to any Point in the Circumference, ſhall be together equal to the Axis it ſelf. Theſe are alſo called *Umbilici*. See UMBILICUS, and CENTRE.

To find the *Foci* of an Ellipſis, from B to L, ſet off half the Parameter: And in the Centre C erect a Perpendicular C K, meeting a Semicircle deſcribed on A L. Then making C F=C K; the Point F will be the *Focus*.

If then the Axis A B be cut in the *Focus* F; the Rectangle of the Segments of the Axis A F, F B, will be ſubquadruple of the Rectangle of the Parameter into the Axis; whence the Square of the Diſtance of the *Focus* from the Centre is equal to the Rectangle of half the Axis into the Difference of the Semi-parameter from half the Axis. See ELLIPSIS.

FOCUS *of the Hyperbola*, ſee HYPERBOLA.

FOCUS, in Opticks, is a Point wherein ſeveral Rays concur, and are collected; either after having undergone Refraction, or Reflection. See RAY.

It is thus called, by reaſon the Rays being here brought together, and united; their Force and Effect is increas'd; ſo that they become able to burn: Accordingly, 'tis in this Point, that Bodies are plac'd to ſuſtain the Force of Burning Glaſſes, or Mirrors. See BURNING *Glaſs*, &c.

It muſt be obſerv'd, that the *Focus* is not ſtrictly ſpeaking a Point; the Rays are not all accurately collected into the ſame Place: *Huygens* demonſtrates, that the *Focus* of a Lens convex on both Sides is $\frac{2}{3}$ of the Thickneſs of the Lens. See LENS.——

FOCUS, in Dioptricks, is the Point wherein the refracted Rays, by Refraction render'd convergent, do concur, or meet, and croſs the Axis. See REFRACTION.

The ſame Point is alſo call'd the *Point of Concourſe*, or *Concurrence*. See POINT *of Concourſe*.

Virtual FOCUS, in Dioptricks, is the Point from which refracted Rays, when by Refraction they are render'd divergent, do begin to diverge, or recede from each other. See VIRTUAL *Focus*.

The ſame Point is alſo call'd *Punctum Diſperſus*. See POINT *of Diſperſion*.

The Effect of convex Glaſſes, or Lenſes, is to render the Rays, tranſmitted thro' them, convergent, and bring them together into a *Focus*, which will be nearer or further off, as the Lens is a Portion of a greater or leſs Sphere. See CONVEX, and CONVERGENT.

The Effect of concave Lenſes is to render the Rays tranſmitted thro' them, *divergent*, or to diſperſe them from a Virtual *Focus*. See CONCAVE, and DIVERGENT.

For the Place, Poſition, Diſtance, &c. *of the* Foci *of Rays refracted thro' Plain, Concave, and Convex Mediums of divers Denſities, as Air, Water, Glaſs*, &c. ſee REFRACTION, &c.

The Laws of the *Foci* of Glaſſes, and the Methods of finding the ſame, being thoſe of moſt Uſe, and Importance; we ſhall here ſubjoin them a-part, as deliver'd and demonſtrated by the ingenious Mr. *Molyneux*, in his *Dioptrica Nova*.

1° then, The *Focus of a convex Glaſs*, i. e. the Point wherein parallel Rays tranſmitted through a convex Glaſs, whoſe Surface is the Segment of a Sphere do unite, is diſtant from the Pole, or Vertex of the Glaſs, almoſt a Diameter and half of the Convexity.

2° In a *Plano-Convex Glaſs*, the *Focus* of parallel Rays, or the Place where they unite with the Axis, is diſtant from the Pole of the Glaſs a Diameter of the Convexity; provided the Segment do not exceed 30 Degrees.

The Rule or Canon in Plano-Convex Glaſſes, is as 107 : 193 : : So is the Radius of the Convexity: to the refracted Ray taken in its Concourſe with the Axis; which in Glaſſes of larger Spheres, is almoſt equal to the Diſtance of the *Focus* taken in the Axis.

3° In *double Convex Glaſſes* of the ſame Sphere, the *Focus* is diſtant from the Pole of the Glaſs about the Radius of the Convexity, if the Segment be but 30 Degrees.

But if the Convexities are unequal, or if the two Sides are Segments of different Spheres, then the Rule is,

As the Sum of the Radii of both Convexities : to the Radius of either Convexity alone : : So is the double Radius of the other Convexity : to the Diſtance of the *Focus*.

Here obſerve, that the Rays which fall nearer the Axis of any Glaſs, are not united with it ſo ſoon as thoſe farther off: Nor will the *Focal Diſtance* be ſo great in a Plano-Convex Glaſs, when the convex ſide is towards the Object, as when the contrary way.

Hence it is truly concluded, that in viewing any object by a Plano Convex Glaſs, the convex Side ſhould be turned outward; as alſo in burning by ſuch a Glaſs.

For the *Virtual Focus* obſerve,

1° That in *Concave Glaſſes*, when a Ray falls from Air parallel to the Axis, the Virtual *Focus*, by its firſt Refraction becomes at the diſtance of a Diameter and an half of the Concavity.

2° In *Plano-Concave Glaſſes*, when the Rays fall parallel to the Axis, the Virtual *Focus* is diſtant from the Glaſs the Diameter of the Concavity.

3° In *Plano-Concave Glaſſes*; as 107 : 193 : : So is the Radius of the Concavity, to the Diſtance of the Virtual *Focus*.

4° In *double Concaves* of the ſame Sphere, the Virtual *Focus* of parallel Rays is at the Diſtance of the Radius of the Concavity.

But whether the Concavities be equal or unequal, the Virtual *Focus*, or Point of Divergency of the parallel Rays is determined by this Rule;

As the Sum of the Radii of both Concavities : is to the Radius of either Concavity : : So is the double Radius of the other Concavity : to the diſtance of the Virtual *Focus*.

5° In *Concave Glaſſes*, if the Point to which the incident Ray converges, be diſtant from the Glaſs farther than the Virtual *Focus* of parallel Rays; the Rule for finding the Virtual *Focus* of this Ray is this;

As the Difference between the Diſtance of this Point from the Glaſs, and the Diſtance of the Virtual *Focus* from the Glaſs : is to the Diſtance of the Virtual *Focus* : : So the Diſtance of this Point of Convergence from the Glaſs : is to the Diſtance of the Virtual *Focus* of this converging Ray.

6° In *Concave Glaſſes*, if the Point to which the incident Ray converges, be nearer to the Glaſs, than the Virtual *Focus* of parallel Rays; the Rule to find where it croſſes the Axis, is this;

As the Exceſs of the Virtual *Focus*, more than this Point of Convergency : is to the Virtual *Focus* : : So the Diſtance of this Point of Convergency from the Glaſs : is to the Diſtance of the Point where this Ray croſſes the Axis.

Practical Rules for finding the FOCI *of Glaſſes.*

To find the *Focus* of a Convex Spherick Glaſs, being of a ſmall Sphere, apply it to the End of a Scale of Inches, and Decimal Parts, and expoſe it before the Sun; upon the Scale you will have the bright Interſection of the Rays meaſur'd out; or, expoſe it in the Hole of a dark Chamber; and where a white Paper receives the diſtinct Repreſentation of diſtinct Objects, there is the *Focus* of the Glaſs.

For a Glaſs of a pretty long *Focus*; obſerve ſome diſtant Objects thro' it, and recede from the Glaſs till the Eye perceives all in Confuſion, or the Objects begin to appear inverted; here the Eye is in the *Focus*.

For a Plano-Convex Glaſs: Make it reflect the Sun againſt a Wall; you will on the Wall perceive two Sorts of Light; one more bright within another more obſcure: Withdraw the Glaſſes from the Wall, till the bright Image is at its ſmalleſt; the Glaſs is then diſtant from the Wall about the fourth Part of its *focal* Length.

For a double Convex: Expoſe each Side to the Sun in like manner; and obſerve both the Diſtances of the Glaſs from the Wall. The firſt Diſtance is about half the Radius of the Convexity turned frrm the Sun; and the ſecond, about half the Radius of the other Convexity.

Thus, we have the Radii of the two Convexities; whence the *Focus* is found by this Rule;

As the Sum of the Radii of both Convexities : is to the Radius of either Convexity : : So is the double Radius of the other Convexity : to the Diſtance of the *Focus*.

FOCUS, in Catoptricks, is a Point wherein the Rays reflected from the Surface of a Mirror, or Speculum; and by Reflection render'd convergent; do concur, or meet. See MIRROR.

The Effect of Concave Mirrors is to collect the Rays falling on their Concave Surface into a *Focus*. See CONCAVE *Mirror*.

The Effect of Convex Mirrors, is to diſperſe the Rays falling on them, or render them more Divergent. See CONVEX *Mirror*.

For the Laws of the Foci *of Rays refracted from Mirrors, or Specula*, ſee REFLECTION, &c.

The *Foci* of Concave Glaſſes are had by Reflection: For as a Concave Mirror burns at the Diſtance of about half the Radius of the Concavity; ſo a Concave Glaſs, being ſuppos'd a reflecting Speculum, unites the Rays of the Sun, at the Diſtance of about half the Radius of the Concavity.

To find the Foci *of all Glaſſes, Geometrically*;

Dr. *Halley* furniſhes us a general Method for finding the *Foci* of ſpherical Glaſſes of all kinds, both concave, and convex; expos'd to any kind of Rays, either parallel, converging, or diverging; under the following Problem.

To find the *Focus* of any Parcel of Rays diverging from, or converging to a given Point in the Axis of a ſpherical Lens, and inclined thereto under the ſame Angle: The Ratio of the Sines of Refraction being given:

Suppoſe G L (*Tab. Opticks, Fig.* 38.) a Lens; P a Point in its Surface; V its Pole; C the Centre of the Sphere whereof it is a Segment; O, the Object, or Point in the Axis, to or from which the Rays do proceed; and O P a given Ray: And ſuppoſe the Ratio of Refraction to be as *r* to *s*.

Then,

Then, making C R to C O, as *s* to *r* for the Immerſion of a Ray; or as *r* to *s* for the Emerſion (*i. e.* as the Sines of the Angles in the Medium which the Ray enters, to their correſponding Sines in the Medium out of which it comes) and laying C R, from C towards O, the Point R will be the ſame for all the Rays of the Point O. Laſtly, drawing the Radius P C, if need be, continued; with the Centre R, and Diſtance O P ſtrike a piece of an Arch, interſecting P C in Q. The Line Q R being drawn, ſhall be parallel to the refracted Ray; and P F being made parallel thereto, ſhall interſect the Axis in the Point F, the *Focus* ſought.

Or, make it, as C Q : C P : : C R : C F. Then will C F be the Diſtance of the *Focus* from the Centre of the Sphere.

This Author gives a Demonſtration of the Method; and adds various Figures, exhibiting the various Caſes of Rays either diverging, or converging, as they enter, or emerge out of the Surface either of a convex or concave Lens.

From this Principle all the Rules for the *Foci* of Rays parallel to the Axis, as likewiſe for the principal *Focus*, where the Rays neareſt the Axis do unite, are deduc'd. As,

Hence 1° If O P be equal to C R; the Points Q and C are coincident, and the Rays O P, after Refraction, run on parallel to the Axis. 2° If the Point Q fall on the ſame Side of the Axis, as is the Point P; then the Beams after Refraction do tend on, either Diverging, or Converging, as before: But if Q fall on the other Side the Axis, the Diverging Rays are made to converge by a Convex, or the Converging to diverge by a Concave Glaſs. 3° If O P do exceed C R, the *Focus* is in all Caſes on the ſame Side of the Glaſs, as is the Centre of the Sphere C. But contrarywiſe, if O P be leſs than C R, the *Focus* falls on the other Side of the Glaſs beyond the Vertex V. 4° An Object may be ſo placed, that the Rays next the Axis of a Convex Glaſs ſhall have an imaginary *Focus* tranſmitting diverging Rays, when the more remote Parts thereof ſhall make them converge to a real *Focus*. 5° If O V, the Diſtance of the Object from the Pole or Vertex of the Glaſs, be taken inſtead of O P, then will C Q be the Difference of O V and C R; and as that Difference is to C R, ſo is the Radius C V, to C F, the Diſtance of the principal *Focus* from the Centre of the Sphere, whereof the Glaſs is a Segment. Or elſe, as C Q : to O P or R Q : : So P C : to V F, the *focal* Diſtance from the Pole of the Glaſs. Whence follows a General Rule for the *Foci* of all Glaſſes; only according to *Cor.* 3. if O V do exeed C R, the *Focus* is on the ſame Side of the Glaſs, as the Center of the Sphere: But if C R be greater, then the *Focus* is on the oppoſite Side of the Glaſs: Whence it will be determined, whether the *Focus* be real, or imaginary.

What has been ſaid of one Surface of the Lens, is eaſily applicable to the other, taking F the *Focus*, for an Object.—

FODDER, any kind of Meat for Horſes, or other Cattle: In ſome Places Hay and Straw mingled together, is accounted *Fodder*:

In the Civil Law it is us'd for a Prerogative that the Prince has, to be provided of Corn, and other Meat, for his Horſes, by the Subjects, in his warlike Expeditions.

FODINA, a Name ſome Authors give to the Labyrinth in the Bone of the Ear. See LABYRINTH.

FOECES, FOECAL, FOECULÆ, } See { FÆCES. FÆCES. FÆCULÆ.

FOETOR, in Medicine, ſtinking, or ſœtid Effluvia, proceeding from the Body, or the Parts thereof. See EFFLUVIA.

Fœtors ariſe from ſtagnant, extravaſated, corrupted, or poiſon'd Humors; as alſo from any thing capable of attenuating and volatilizing the Oil and Salts: As, Abſtinence, Heat, too much Motion, Acrimony of Food, &c.

FOETOR *Narium*, Stench of the Noſtrils, a ſort of Diſeaſe, ariſing from a deep Ulcer, within ſide the Noſe, yielding a fœtid Smell. Its Cauſe, according to *Galen*, is a ſharp Humor, falling from the Brain upon the Mamillary Proceſſes. This is one of the Cauſes that annuls Marriage. See DIVORCE.

FOETUS, in Medicine, denotes the Child, while yet contain'd in the Mother's Womb: but particularly, after it is perfectly form'd: Till which Time it is properly call'd *Embryo*. See EMBRYO.

The manner of the Conception, or Generation of the *Fœtus*, is Matter of great Controverſy.

That all the Parts of the Animal did exiſt, and that its Fluids were in Motion, before Generation, is generally allow'd; but whether the Animalcule was lodg'd in the Male, or Female, is not agreed of.

Many of the Moderns will have the Ova, or Eggs, contain'd in the Ovary of the Female, to be the firſt Matter, or Stamen of the *Fœtus*: Theſe Eggs, they ſuppoſe to contain all the Parts of the *Fœtus* in little; and that being impregnated with the Male Seed, the Parts thereof become enlarg'd, and diſplay'd: From the Ovary they are convey'd by the Fallopian Tubes into the Uterus, where they receive their Impregnation, Accretion, &c. See EGG, and OVARY.

Others will only have the female Ovum to be a proper Nidus for the Animalcule, which, they contend, is in the Male Seed. The Animalcule getting into an Ovum fit to receive it; and this falling thro' one of the Tubæ Fallopianæ into the Womb; the Humors which diſtil thro' the Veſſels of the Womb penetrating the Coats of the Egg, ſwell and dilate it, as the Juice of the Earth does Seed thrown into the Ground. Or elſe, the Branches of the Veins and Arteries, whereby the Egg was tied in the Ovary, being broken, knit with the Veſſels of the Womb. See GENERATION, CONCEPTION, SEED, &c.

The firſt thing that appears of a *Fœtus*, is the *Placenta*, like a little Cloud, on one Side of the external Coat of the Egg: About the ſame time the Spina is grown big enough to be viſible; and a little after, the Cerebrum and Cerebellum appear like two ſmall Bladders: Next, the Eyes ſtand prominent in the Head; Then the Punctum ſaliens, or Pulſation of the Heart is plainly ſeen. The Extremities diſcover themſelves laſt of all.

The *Fœtus*, when form'd, is almoſt of an Oval Figure, while it lies in the Womb: For its Head hangs down, with its Chin upon the Breaſt: Its Back is round; with its Arms it embraces its Knees, which are drawn up to its Belly; and its Heels are cloſe to its Buttocks: Its Head upwards, and its Face towards its Mother's Belly. About the ninth Month, its Head which was hitherto ſpecifically lighter than any other Part, becomes ſpecifically heavier; its Bulk bearing a much ſmaller Proportion to its Subſtance, than it did.

The Conſequence of this Change, is, that it tumbles in the Liquor which contains it: Its Head falls down; its Feet get up; and its Face turns towards its Mother's Back. But being now in an irkſome Poſture, tho' at the ſame time a favourable one for its Exit; the Motion it makes for its Relief, gives frequent Pains to the Mother; which cauſes a Contraction of the Womb, for the Expulſion of the *Fœtus*. See DELIVERY.

Indeed, what ſome Anatomiſts pretend to give of the Poſture of the *Fœtus* in the Womb, in the ſeveral Stages of Geſtation, is very precarious.

In the firſt Month it is of no moment, how it lies in the Womb: In the latter Months, after the *Fœtus* is grown not only quick, but robuſt, it frequently changes its Poſture of it ſelf; as not only the Mothers themſelves feel, but any other Perſon by laying the Hand on their Bellies, frequently may. However, its ordinary Poſture is ſuppoſed to be ſitting: As the Time of Birth draws near, it turns it ſelf, and preſents the Head to the Os Uteri; tho' ſometimes it offers the Feet firſt, and ſometimes lies a-croſs, and offers either a Hand, a Knee, or the like; which are irregular Situations, and without a deal of Adreſs in the Midwife in turning the *Fœtus*, both the Mother and the Infant are in Danger. See PARTURITION, &c.

The *Fœtus* is encloſed in two Membranes, or Coats; the inner, which immediately inveſts the *Fœtus*, and the Liquor wherein it lies, is call'd the *Amnios*: The outward Membrane is called the *Chorion*. See AMNIOS, and CHORION.

In ſome Animals there is a third Membrane, called the *Allantois*, whoſe Place is between the other two; and ſerves for the Diſcharge of the Urine of the *Fœtus*, brought hither by the Urachus.

Dr. *Needham* ſeems to have diſcover'd ſomething analogous hereto in the human *Fœtus*, and calls it the *Membrana Urinaria*: But others chuſe only to make it a Duplicature of the Chorion; tho' the Neceſſity of ſuch third Membrane be the ſame in Men, as in Cows, Sheep, &c. See ALLANTOIS.

There are ſome Differences in the Structure, Mechaniſm, and Proportion of the Parts of a *Fœtus*; from thoſe of an *Adult*: And even ſome additional and extraordinary Parts; by which the Nutrition of this Zoophyte, or Plant Animal; and the Circulation of the Blood therein, are effected.

The principal Variations are about the Liver, Heart, and Lungs. Of theſe the moſt conſiderable are the *Umbilical Veſſels*, which are two Arteries, a Vein, and Urachus, ariſing from the Placenta, and convey'd thro' the Navel to the Liver of the *Fœtus*, near the Navel; which after the Birth drying up, become impervious and uſeleſs. See FUNICULUS, and UMBILICAL *Veſſels*.

In the Liver it ſelf is an extraordinary Communication between the Porta and Cava, call'd *Canalis Venoſus*, which after the Birth gradually dries up. In the Heart, at the Mouth of the Vena Cava, is the *Foramen Ovale*, whereby that Vein has a Communication with the pulmonary Vein: There is alſo a Communication between the Aorta, and Pulmonary Artery, by means of the *Canalis Arterioſus*, which paſſes between the two, at about two Inches diſtance from the Baſe of the Heart. 'Tis by means of theſe two Canals or Paſſages, that the Blood circulates in the *Fœtus* while inclos'd in the Womb; they ſerving to convey and paſs the

Blood

Blood from the Heart into the Arteries; and from the Veins into the Heart again, without paſſing through the Lungs, which are now uſeleſs. See CIRCULATION.

The Lungs of a *Fœtus* are of a darker Colour, and cloſer Conſiſtence, than after they have been breath'd into; as appears from their ſwimming in Water, after Birth, which they will not do before: Which Difference affords an uſeful Experiment, in caſe of the ſuſpected Murther of Children. For if they were ſtill-born, the Lungs ſink in Water; if born alive, they ſwim.

The two Canals above-mentioned ſerve only to prevent the Obſtruction the Blood would otherwiſe have within the Lungs, before they have been open'd. After Reſpiration has open'd the Lungs, the Blood taking its Courſe through them, the Paſſages cloſe up. See FORAMEN *Ovale*, RESPIRATION, &c.

The Head of the *Fœtus* is much bigger in proportion to the Body, than afterwards: The Bones and Brain ſofter: The Sutures open, and leaving a great Space on the Top of the Head, cover'd only with a Membrane; and the Glands, particularly the *Thymus*, and *Renales*, bigger and ſofter. For other Differences in the Proportions, ſee EMBRYO.

Bartholin, in his Treatiſe *De inſolitis partus viis*, relates a great many ſtupendous Caſes of *Fœtus's* Dead and putrified in the Womb; the Parts of which have made their way thro' Apoſtemations; one whereof at the Navel was ſome Years in coming away: And in the *Philoſoph. Tranſactions* we meet with the like Inſtances; particularly, of one voided piece-meal by the Anus, ſeveral Years after Conception.

Authors give Accounts of *Fœtus's* found in the Fallopian Tubes; and others in the Cavity of the Belly.

M. *de S. Maurice*, in the Memoirs of the R. Academy of Sciences, relates the Hiſtory of a *Fœtus* form'd in the Ovary of the Mother; and which at three Months from Impregnation, burſting the Teſticle, forc'd its Way through, into the Epigaſtric Region.

During the Rupture, the Mother felt all the Preludes of an imminent Travel; and calling her Chirurgeon, died in his Arms, crying, I am delivering, I am delivering!

The Story of *Margaret* Counteſs of *Holland*, who is ſaid to have been deliver'd of 364 *Fœtus's*, all alive, and afterwards baptized, commonly paſſes for a Fable: And yet there is a Picture of this notable Delivery ſtill preſerv'd in the Church of *Loſdune*, as a Monument of the Truth thereof. *Albertus Magnus* gives a like Inſtance of a Woman, who brought forth 150 *Fœtus's*, or Embryo's, all form'd, and as big as the little Finger.

FOG, or MIST, a Meteor, conſiſting of groſs Vapours, floating near the Surface of the Earth. See VAPOUR.

If the Vapours, plentifully rais'd from the Earth, and Waters either by the ſolar or ſubterraneous Heat, meet, at their firſt Entrance into the Atmoſphere, with Cold enough to condenſe them conſiderably; their ſpecific Gravity being hereby increas'd, their Aſcent will be ſtop'd, and they will either return back in form of a *Dew*, or drizzling Rain; or remain ſuſpended, for ſome time, in form of a *Fog*. See RAIN, and DEW.

Fogs are only low *Clouds*; or Clouds in the loweſt Region of the Air: And *Clouds* are no other than *Fogs* rais'd on high. See CLOUD.

Objects view'd thro' *Fogs*, appear larger, and more remote than thro' the common Air. See VISION.

The fiſhing for Herring is chiefly practiced in *foggy* Weather. See *Herring* FISHERY.

FOGAGE, in the Foreſt Law, is Rank Graſs, not eaten in the Summer.

FOIBLE, a *French* Term, frequently us'd alſo in our Language.

It literally ſignifies *weak*, and in that Senſe is applied to the Body of Animals, and the Parts thereof: As, *foible* Reins, *foible* Sight, &c. being deriv'd from the *Italian Fievola*, of the Latin *Flebilis*, to be lamented, pitied.

But it is chiefly us'd with us ſubſtantively; to denote the principal Defect, or Flaw in a Perſon, or Thing. Thus we ſay, Every Perſon has his *Foible*; and the great Secret conſiſts in hiding it artfully: Princes are gain'd by Flattery, that is their *Foible*: The *Foible* of young People is Pleaſure: The *Foible* of old Men is Avarice: The *Foible* of the Great and Learned, is Vanity: The *Foible* of Women and Girls, Coquettry, or an Affectation of having Gallants: You ſhould know the Force, and the *Foible* of a Man, before you employ him: We ſhould not let People perceive that we know their *Foible*.

FOIL, a Sheet of Tin, Quickſilver, or the like, laid on the Backſide of a Looking Glaſs, to make it reflect. See FOLIATING.

The Word is form'd of the Latin *Folium*, Leaf.

FOILING, among Hunters, is the footing, and treading of Deer, which is on the Graſs, but ſcarce viſible.

FOLDS, in the Manufactures, ſee PLAITS, CLOTH, PACKING, &c.

FOLDS *of the Drapery*, in Painting. See DRAPERY.

FOLIA, in Botany, is us'd for the *Leaves* of Plants and Flowers; but particularly the former: The Leaves of Flowers being more properly called *Petala*. See LEAVES, and PETALA.

FOLIACEUM *Expanſum*, in Anatomy, is that Extreme of the Fallopian Tube, next the Ovary; and which is expanded like the Mouth of a Trumpet, and inviron'd with a ſort of Fringe. See FALLOPIAN *Tube*.

FOLIAGE, a Cluſter, or Aſſemblage of Flowers, Leaves, Branches, &c.

FOLIAGE is particularly us'd for Repreſentations of ſuch Flowers, Leaves, Branches, Rinds, &c. whether Natural, or Artificial; us'd, as Inrichments on Capitals, Freezes, Pediments, &c. See CAPITAL, FREEZE, &c.

FOLIATING *of Looking Glaſſes*, is the ſpreading a Compoſition of ſomething which will firmly adhere to the Back of the Glaſs, and there reflect the Image. See MIRROR.

This is called the *Foil*, and is uſually made with Quickſilver, mix'd with ſome other Ingredients.

For the Method of *Foliating* Looking Glaſſes, ſee LOOKING GLASS.

In *Philoſ. Tranſact.* N° 245 we have a Method of *foliating* Globe Looking Glaſſes, communicated by Sir *R. Southwell*.

The Mixture is of Quickſilver, and Marchaſite of Silver, of each three Ounces; and Tin, and Lead, of each half an Ounce: To theſe two firſt throw on the Marchaſite; and laſt of all the Quickſilver. Stir them well together over the Fire; but they muſt be taken off, and be towards cooling, before the Quickſilver is put to them.

When you uſe it, the Glaſs ſhould be well heated, and very dry: But it will do alſo when it is cold, tho' beſt when the Glaſs is heated.

FOLIATION, in Botany, &c. is us'd by Dr. *Grew*, to expreſs the Aſſemblage of the *Folia*, or Petala of a Flower. See PETALA.—

The *Foliation* is the moſt conſpicuous Part of Flowers; being that Collection of fugacious, colour'd Leaves, which conſtitute the Compaſs, or Body of the Flower. See FLOWER.

It is of great uſe in the Generation and Preſervation of the young Fruit, or Seed: It filtrates a fine Juice, to nouriſh it in the Uterus, or Piſtil. See GENERATION *of Plants*.

In ſome Species, as Apricocks, Cherries, &c. it likewiſe ſerves to guard the young tender Fruit from the Violence of Wind, Weather, &c. for theſe being of a very tender, and pulpous Body, and coming forth in the colder Parts of the Spring, would be often injured by the Extremities of Weather, if they were not thus protected, and lodged up within their Flowers.

Before the Flower opens, the *Foliation* is curiouſly and artfully folded up in the Calix or Periantheum. See CALIX.

Dr. *Grew* enumerates ſeveral Varieties of theſe Foldings, *viz.* the *Cloſe Couch*, as in Roſes; the *Concave Couch*, as in the Blattaria *flore albo*; the *Single Plait*, as in Peaſe Bloſſoms; the *Couch* and *Plait*, as in Marigolds; the *Rowl*, as Ladies Bower, &c.

FOLIO, ſignifies *Page*. See PAGE.

Thus *Folio* 7, wrote abridgedly F° 7. denotes the ſeventh Page, &c.

Folio Recto, or F° R° expreſſes the firſt Side or Page of a Leaf.

Folio Verſo, or F° V° the ſecond, or back ſide of the Leaf.—

The Word is *Italian*, and literally ſignifies *Leaf*.

FOLIO, among Bookſellers. A *Book in Folio*, or ſimply, a *Folio*, is that where the Sheet is only folded in two, each Leaf making half a Sheet.

Beneath the *Folio* are the *Quarto*, *Octavo*, *Duodecimo*, *Sixteens*, *Twenty fours*, &c. See BOOK.

FOLIUM *Indicum*, or *Indum*, call'd alſo *Thamalapathra*, and *Malabathrum*; a Leaf brought from the *Indies*, growing chiefly about *Cambaya*, produc'd by a Tree not unlike the Lemon Tree; us'd in the Compoſition of *Venice* Treacle. See TREACLE.

FOLIUM *Cariophyllatum*, or Clove Leaf. See CLOVES.

FOLK-LAND, in our antient *Saxon* Cuſtoms, denoted *Copyhold Lands*. See COPYHOLD.

In oppoſition to theſe, *Charter Lands* were called Boc-lands. See BOC-LAND.

Fundus ſine ſcripto poſſeſſus (ſays *Somner*) *cenſum penſitans annuum, & officiorum ſervituti obnoxius: Terra popularis.*

FOLCMOTE, and FOLKESMOTE, omong our *Saxon* Anceſtors, ſignified, according to *Lumbard*, two kinds of Courts.

One, now called the *County Court*: The other, the *Sheriff's Turn*. See COUNTY *Court*, and TURN.

The Word, ſays *Stow*, is ſtill in uſe among the *Londoners*, and ſignifies, *Celebrem ex omni Civitate conventum*. But *Manwood* ſays, it is the Court holden in *London*, wherein all the Folk and People of the City did complain of the Mayor and Alderman for any Miſgovernment.

Mr. *Somner*, in his his *Saxon* Dictionary, makes it a general Aſſembly of the People, for conſidering and ordering Matters of the Commonwealth. *Omnes proceres regni, & milites & liberi homines univerſi totius Regni Britanniæ facere debent in pleno* Falcmote *fidelitatem Domino Regi, coram Epiſcopis Regni. In Leg. Edw. Confeſſ. cap.* 35. *Et amplius non ſit in Huſtinga, Miskenninga*, i. e. ſpeaking amiſs; *neque in* Folkeſmote, *neque in aliis placitis infra Civitatem. Charta H.* 1. *pro London. Du Cange.*

When this great Aſſembly is made in a City, it may be call'd a *Burgemot*; when in the County, a *Shiregemot*. *Cum aliquid vero inopinatum & malum contra regnum vel contra coronam Regis emerſerit, ſtatim debent pulſatis campanis, quod Anglice vocatur* Amotbel, *convocare omnes & univerſos, quod Anglici vocant* Folkmote, *&c.* Leg. Alfred.

FOLLICULUS, among Gardeners, the Seed-Veſſel, Caſe, Coat, Huſk, or Cover, which ſome Seeds and Fruits have over them. See FRUIT, and SEED.

FOLLICULUS *Fellis*, ſee VESICA *Bilaria*.

FOLLY, according to Mr. *Look*, conſiſts in the drawing of falſe Concluſions from juſt Principles; by which it is diſtinguiſh'd from *Madneſs*, which draws juſt Concluſions from falſe Principles. See MADNESS.

FOMAHANT, in Aſtronomy, a Star of the firſt Magnitude, in the Conſtellation *Aquarius*. Its Longitude is 329 Degrees, 17 Minutes, Latitude 21 Degrees, 3 Minutes. See AQUARIUS.

FOMENTATION, a liquid Medicine, applied on any diſeas'd Part.

Fomentations are either Simple, or Compoud.

Simple FOMENTATIONS are thoſe made with luke warm Water, Milk, Oil, Oxicrat, or other the like Liquor.

Compound FOMENTATIONS are Decoctions of Roots, Leaves, Flowers, Seeds, made in common Water, or other proper Liquor; to which are ſometimes added Salts, Axungiæ, Oils, *&c.*

To uſe, or apply them, they dip a hot linen Cloth, or Flannel in the Liquor, and ſpread it on the Part affected.

There are alſo *Fomentations* made another way; *viz.* by boiling certain Drugs in linen Bags, and then applying 'em, Bags and all, on the Part.

There are alſo a ſort of *dry Fomentations*, being Bags fill'd with Medicines, but not boil'd, only ſometimes ſprinkled with a little Wine or Brandy.

The Intention of *Fomentations* is to reſolve, diſcuſs, ſoften, aſſuage, fortify, conſtringe, *&c.* the Parts they are applied on.

Fomentations are alſo called *Local Baths*, or Partial Bathings; becauſe, being applied on a diſeaſed Part, they have much the ſame Effect as a Bath, or Half-bath has on the whole Body. See BATH, and BATHING.

FONT, or *Baptiſmal* FONT, a Stone, or Marble Veſſel, at the lower End of a Pariſh Church, ſerving to hold the Water, to be us'd in adminiſtring the Sacrament of Baptiſm. See BAPTISM.

A Baptiſmal *Font* is the Character of a Pariſh Church. See PARISH.

Its Place, at preſent, is at the Bottom of the Church, or in a little Chapel within the Church. Antiently, it was placed in a little Church, diſtinct from the great one, tho' near to it, called the *Baptiſtery*. See BAPTISTERY.

It was a common thing, during the firſt Ages of the Church, for the Baptiſmal *Fonts* to be fill'd miraculouſly, at the time of Eaſter, which was their great Baptizing Seaſon.

Baronius gives divers Inſtances of theſe miraculous *Fonts*, in the Years 417, 554, and 558.

Poſſevinus B. of *Lilybeum*, who wrote in 443, obſerves, that in the Year Four hundred and ſeventeen, under the Pontificate of *Soſinus*, there was an Error committed in the time of celebrating Eaſter; it being held on the 25th of *March*, in lieu of the 22d of *April*, which was the Time it was held on at *Conſtantinople*. He adds, that GOD was pleas'd to ſhew the Error in a very convincing manner, by the *Fonts* of a certain Village, which always us'd to be miraculouſly fill'd againſt Eaſter; and which, this Year, were not full till the 23d of *April*. See *Tillemont Hiſt. Eccleſ. T. X. p.* 678, and 679. *Gregory de Tours, p.* 320, 516, 746, 950, 1063.

FONTICULUS, or FONTINELLA, in Chirurgery, a general Name for Iſſues, Seatons, Cauteries, and other ſmall artificial Diſcharges. See ISSUE, SEATON, CAUTERY, *&c.*

The Word is a Diminutive of *Fons*, Fountain.——

FONTINALIA, or FONTANALIA, in Antiquity, a religious Feaſt, held among the *Romans*, in honour of the Deities who preſided over Fountains, or Springs.

Varro obſerves, that it was the Cuſtom to viſit the Wells on thoſe Days; and to caſt Crowns into Fountains. *Scaliger* in his Conjectures on *Varro*, takes this not to be the Feaſt of Fountains, as *Feſtus* inſinuates; but of the *Fountain* which had a Temple at *Rome*, near the *Porta Capena*, call'd alſo *Porta Fontinalis*: He adds, that 'tis of this Fountain *Cicero* ſpeaks in his II Book *de Legib.* The *Fontinalia* were held on the 13th of *October*.—

FOOD, or ALIMENT, is whatever Matter is taken in at the Mouth, digeſted in the Stomach, and other Viſcera, and converted into the Matter of the Body, to repair, or ſupply what is ſpent, or wanting. See DIGESTION.

The Changes which the *Food* undergoes, before it become a Part of our Body, are 1° *Maſtication*; 2° *Deglutition*; 3° *Concoction*; 4° *Chylification*; 5° *Sanguification*; 6° *Aſſimilation*. See MASTICATION, CONCOCTION, CHYLIFICATION, NUTRITION, *&c.*

Food is of two Kinds, *viz. Eſculents*, or *Meat*; and *Potulents*, or *Drink*. See ESCULENT, DRINK, WINE, MALT *Liquors*, WATER, *&c.*

The firſt *Foods* of our Great Forefathers, were Water, and the ſpontaneous Productions of the Earth; with which whole Nations ſuſtain themſelves to this Day.

Tulpius, Obſ. 14. 10. notes, That Men antiently fed after the ſame rate as other Animals; and lived of Hay and Corn. By degrees they came to the Humors or Juices of certain Beaſts, as *Milk*; and at length they commenced *Carnivorous*, and devour'd the Parts of the Animals themſelves. See CARNIVOROUS.

The Variety of *Foods*, it ſeems, does not make any Difference in the Subſtance, or Actions of the Bodies ſuſtain'd thereby; the Viſcera having a Power of altering and aſſimulating them, however heterogeneous, into one ſimilar Subſtance, like themſelves. See ASSIMILATION.

The Difference in *Foods* conſiſts principally in this, that ſome are more eaſily digeſted and aſſimilated, than others; and afford more nutritious Juice, than others: To which end it is, that the divers Kinds of dreſſing have been invented; *viz.* to diſpoſe the Matter for a more eaſy and plentiful Aſſimilation. See DRESSING.

The beſt, moſt ſimple, and light of Digeſtion are theſe *Foods* prepar'd of Frumentatious, and Leguminous Seeds; as Wheat, Rye, Barley, Oats, Mays, dried, ground, fermented, baked, *&c.* See BREAD. Peaſe, Beans, Vetches, *&c.* Alſo green Plants, and Pot-herbs, as Lettice, Beet, Parſly, *&c.* See SALLET. Fruits, as Apples, Pears, Berries, Plumbs, Cherries, *&c.* See FRUIT. And the lean Parts of Animals, Birds, Fiſhes, Inſects, *&c.* prepar'd by *Boiling*, *Baking*, *Stewing*, &c.

And yet for different Intentions, different kinds of *Food* are requir'd: Thus hard, dry, thick, heavy, fæculent *Foods* are beſt for thoſe whoſe Viſcera are ſtrong, Digeſtion quick, *&c.* and ſoft, light, humid, ſimple *Foods* to ſuch, are pernicious. Again, to the Weak, valetudinary, ſtudious, and ſedentary, thoſe *Foods* are beſt, which are either by Art, or Nature the neareſt to Chyle, as Milk, Broths, *&c.*

Where the Temperature inclines to Acidity, there alcalious *Foods* are the moſt ſuitable; and Acids, where the Conſtitution inclines to be alcaline.

Some will have it, that Iron, Metals, Minerals, *&c.* may by a proper Preparation become *Food*; on which accounts Decoctions of Gold, Chalybeat's, *&c.* are cried up: But 'tis certain, that no ſuch Matters can ever be aſſimilated, and become Part of our Body. They may act on the Blood, and the Blood Veſſels, by their Weight, Impetus, *&c.* and on that account, may be of uſe in Medicine; but not as *Food*.—

A due Regulation of the Quantity, and Quality of our *Food*; and a nice Adjuſtment thereof to the concoctive Powers, would be of the utmoſt Conſequence to Health and long Life. See HEALTH.

What we expend in Motion, Excretion, Effluvia, *&c.* is but a determinate Quantity; and the Supply ſhould only keep pace with the Expence. A juſt Proportion of the two would probably preſerve us from acute Diſtempers; as it certainly would from chronical ones; Moſt, or all of which proceed from Repletion, as appears from their being cured by Evacuation. See EVACUATION.

The Qualities of *Foods*, as to Eaſineſs, or Difficulty of Digeſtion, Dr. *Cheyne* thinks, may be determin'd in all Caſes from theſe three Principles.

1° That thoſe Subſtances which conſiſt of the groſſeſt Parts, are hardeſt of Digeſtion; by reaſon their conſtituent Parts touch in the moſt Points; or have the greateſt Quantity of Contact, upon which their Coheſion depends. See COHESION.

2° That thoſe Subſtances, whoſe Parts are brought together with the greater Force, cohere proportionably cloſer, and are the more difficultly ſeparated.

3° That Salts are very hard to be digeſted; becauſe united by plain Surfaces, under which they are always comprehended: Hence, in the laſt Stages of the Circulation, where

where it is ſlower, they readily ſhoot into larger Cluſters, and ſo are hard to be driven out of the Habit.—

From theſe Principles that Author infers, That ſuch Vegetables and Animals, as come ſooneſt to their Growth, are eaſier of Digeſtion, than thoſe long in attaining to Maturity: The ſmalleſt of their kind, ſooner than the larger: They of a dry, fleſhy, and fibrous Subſtance, ſooner than the oily, fat, and glutinous: Thoſe of a white Subſtance, ſooner than thoſe of a redder: Thoſe of a ſoft, mild, and ſweet, ſooner than thoſe of a rich, ſtrong, poignant, aromatic Taſte: Land Animals, than Sea Animals; Animals that live on light, vegetable *Food*, than thoſe on hard and heavy *Food*; plain dreſs'd *Food*, than what is pickled, ſalted, bak'd, ſmoak'd, or otherwiſe high ſeaſon'd; boil'd Meat ſooner than roaſt, *&c.*

The ſame Author adds, that Abſtinence, and Exerciſe moſt concur with the due *Food* for the Preſervation of Health; and that where Exerciſe is wanting, as in ſtudious Perſons, the Defect muſt be ſupplied by Abſtinence. See ABSTINENCE, and EXERCISE.

FOOL, according to Mr. *Lock*, is one who makes falſe Concluſions from right Principles; by which he is diſtinguiſh'd from a Madman. See MADNESS.

Dr. *Willis* relates, That upon diſſecting of a *Fool*, the principle Differences found between him and a Man of Senſe, were, that the Brain was ſmaller; and that the Cervical Plexus, form'd of the Intercoſtal Nerve, whereby the Correſpondence between the Brain and Heart is effected, was leſs, and ſent forth fewer Branches to the Heart, *&c.*— *Nervor. Deſcript. & Uſ. c.* 26. See CONSENT *of Parts*.

FOOT, a Part of the Body of moſt Animals, whereon they ſtand, walk, *&c.* See BODY.

Animals are diſtinguiſh'd, with reſpect to the Number of *Feet*, into *Bipedes*, q. d. two-footed; ſuch are Men, and Birds: *Quadrupedes*, q. d. four-footed; ſuch are moſt Land Animals: And *Multipedes*, q. d. *many-footed*; as Inſects. See QUADRUPED, INSECT, *&c.*

The Reptile Kind, as Serpents, *&c.* have no *Feet*. See REPTILE.

The Merchants would perſwade us, that the Bird of Paradice has no *Feet*; that when it ſleeps, it hangs by its Wings; and when it feeds, by its Bill: But the Matter is, they cut them off, that the Bird may be thought the more extraordinary. Others ſay, 'tis for fear they ſhould ſpoil the Feathers, which are very beautiful.

Lobſters have twelve *Feet*; Spiders, Mites, and Polypus's, eight; Flies, Graſhoppers, and Butterflies, ſix *Feet*.

Galen has ſeveral good Obſervations on the wiſe Adjuſtment of the Number of *Feet* in Men, and other Animals, in his Book *De Uſu Part.* L. 3.

The *Fore-feet* of Moles are admirably form'd to dig, and ſcratch up the Earth, and make way for its Head, *&c.* In Water Fowls, the Legs and *Feet* are excellently adapted to their reſpective Occaſions and Manners of living. In ſuch, as are to wade in the Rivers, the Legs are long, and bare of Feathers a good way above the Knee: Their Toes alſo are broad; and in ſuch as bear the Name of Mud-ſuckers, two of the Toes are ſomewhat jointed, that they may not eaſily ſink in walking upon boggy Places.

Others are *whole-footed*, i. e. have their Toes webbed together, as the Gooſe, Duck, *&c.* And 'tis pretty enough to obſerve, how artificially theſe will gather up their Toes and *Feet*, when they withdraw their Legs, or go to take their Stroke in ſwimming; and again expand, or open the whole *Foot*, when they preſs upon, or drive themſelves forward in the Water. See LEG.—

FOOT, in Anatomy, or the great *Foot*, is the whole Extent from the Jointure of the Hip, to the Tip of the Toes; as the *Hand* is the whole, from the Shoulder to the Fingers Ends. See HAND.

The *Pes magnus*, or great *Foot*, is divided into the Thigh, the Leg, and the *Foot*, properly ſo called. See THIGH, LEG, &c.

Its Bones are the *Femur*, or Thigh Bone; the *Tibia* and *Fibula* for the Leg; and thoſe of the *Tarſus*, *Metatarſus*, and *Fingers*. See FEMUR, TIBIA, &c.

Its Arteries are Branches of the Crural Artery; and its Veins terminate in the crural Vein. See CRURAL.

Of theſe there are five principal ones, *viz.* the *Saphæna*, great and little *Iſchiadic*, the *Muſculous*, *Popliteus*, and *Suræus*. See each under its proper Article, SAPHÆNA, *&c.*

The *Leſſer Foot*, or Extremity of the *Foot*, which is the *Foot* properly ſo call'd, conſiſts of three Parts, *viz.* the *Tarſus*, the Space from the Ankle to the Body of the *Foot*; anſwering to the Wriſt in the Hand: The *Metatarſus*, the Body of the *Foot* to the Toes; and the *Digiti*, or Toes.

Each of theſe Parts conſiſts of a great Number of Bones, as the *Calx*, *Talus*, *Cuneiformia*, and *Cuboides*. The Bottom of all is call'd the *Sole*, or *Planta Pedis*. See TARSUS, METATARSUS, CALX, *&c.*

FOOT, in the *Greek*, and *Latin* Poetry, the Metre, or Meaſure of the Verſe. See MEASURE, and VERSE.

Feet are compos'd of a certain Number of long and ſhort Syllables. See QUANTITY.

The *Spondee*, *Jambic*, *Trochee*, and *Pirrhic*, of two Syllables, each.

The *Dactyl*, *Anapeſt*, *Moloſs*, *Tribrach*, &c. of three Syllables. See SPONDEE, JAMBIC, DACTYL, &c.

Hexameter Verſes conſiſt of ſix *Feet*; Pentameters of only five. See HEXAMETER, and PENTAMETER.

Even, and *Odd* FOOT, *Par*, and *Impar*, in Poetry, and particularly in Jambic Verſes. *Feet* are denominated *Odd*, and *Even*, in reſpect of their Situation in the Verſe.

Thus, the firſt, third, and fifth *Foot* of the Verſe are *uneven*, in regard thoſe Numbers are not capable of being divided into two equal Parts.

In the antient Tragedy, the Jambic Verſes, which prevail'd therein, only allow'd the uneven *Feet* to the Spondees; ſo that the ſecond, the fourth, and ſixth *Feet* were to be Jambus's, in regard they were even. This regular Mixture of Spondees in the uneven *Feet*, render'd the Verſe the more ſolemn and noble.

The Comic Poets, the better to diſguiſe their Verſe, and make it more like Proſe, took the contrary Courſe; putting Spondees, where the Tragic Poets would only have allow'd Jambus's.—

FOOT, is alſo a Meaſure, conſiſting of twelve Inches. See MEASURE.

The *Foot-long* is divided into twelve Inches; and the Inch into three Barley Corns. See INCH, *&c.*

Geometricians divide the *Foot* into ten *Digits*; the *Digit* into ten *Lines*, &c. See DIGIT, *&c.*

The *French* divide their *Foot* like us, into twelve Inches; and the Inch, into twelve Lines. See LINE, *&c.*

The *Foot ſquare* is the ſame Meaſure, both in Length, and Breadth; containing 144 ſquare, or ſuperficial Inches. See SQUARE.—

The *Cubic*, or *Solid Foot* is the ſame Meaſure in all the three Dimenſions; containing 1728 Cubic Inches. See CUBE, and CUBIC.

The *Foot* is of different Lengths, in different Countries.

The *Paris Royal Foot* exceeds the *Engliſh* by ſeven Lines and a half: The Antient *Roman Foot* of the Capital, conſiſted of four Palms; equal to eleven Inches, and ſeven Tenths *Engliſh*: The *Rhineland*, or *Leiden Foot*, by which all the Northern Nations go, is to the *Roman Foot*, as 950 to 1000—The Proportions of the principal *Feet* of ſeveral Nations, compar'd with the *Engliſh* and *French*, are as follow.

The *Engliſh Foot* being divided into 1000 Parts; or into 12 Inches; the other *Feet* will be, as follow;

		Thouſ. Parts.	*F.*	*Inch.*	*Li.*
London — —	Foot	1000	0	12	0
Paris — the Royal	Foot	1068	1	00	8
Amſterdam —	Foot	942	0	11	3
Antwerp ——	Foot	946	0	11	2
Dort — —	Foot	1184	0	02	2
Rhinland, or *Leyden* —	Foot	1033	1	00	4
Lorrain — —	Foot	958	0	11	4
Mechlin ———	Foot	919	0	11	0
Middleburg —	Foot	991	0	11	9
Strasbourg ——	Foot	920	0	11	0
Bremen — —	Foot	964	0	11	6
Cologn ———	Foot	954	0	11	4
Francfort on the Mayn	Foot	948	0	11	4
Spaniſh — —	Foot	1001	0	11	0

		Thouſ. Parts.	*F.*	*In.*	*Li.*
Toledo — —	Foot	899	0	10	7
Roman — —	Foot	967	0	11	6
Bononia — —	Foot	1204	1	02	4
Mantua —	Foot	1569	1	06	8
Venice — —	Foot	1162	1	01	9
Dantzick —	Foot	944	0	11	3
Copenhagen — —	Foot	965	0	11	6
Prague — —	Foot	1026	1	00	3
Riga — —	Foot	1831	1	09	9
Turin — —	Foot	1062	1	00	7
The *Greek* —	Foot	1007	1	00	1
Paris Foot, by Dr. *Bernard* —		1066	1	00	1
Old *Roman* ——	Foot	970	0	00	0

The *Paris Foot* being ſuppos'd to contain 1440 Parts; the reſt will be, as follow.

Paris	Foot	1140
Rhinland	Foot	1391$\frac{3}{10}$
Roman	Foot	1320
London	Foot	1350
Swediſh	Foot	1320
Daniſh	Foot	1403
Venetian	Foot	1540$\frac{2}{5}$
Conſtantinopolitan	Foot	3120
Bononian	Foot	1682$\frac{2}{5}$
Strasbourg	Foot	1282$\frac{3}{4}$
Norimberg	Foot	1346$\frac{3}{4}$
Dantzick	Foot	1721$\frac{1}{2}$
Hall	Foot	1320

FOOT *Rule*, ſee RULE.

FOOT *Level*, an Inſtrument, which ſerves to do the Office both of a Level, a Square, and a *Foot* Rule. See LEVEL, SQUARE, &c.

The *Foot Level*, repreſented *Tab. Surveying*, *Fig.* 22. conſiſts of two Branches, about an Inch broad; opening and ſhutting like a two-foot Rule.

Theſe Branches are hollow'd half way up the ſide of each, to receive a kind of Tongue, or thin piece of Braſs, which is faſten'd to one of them, by means whereof the Branches may be ſhut cloſe together. The Uſe of this Tongue is ſuch, that when the End of it is placed in the Branch it is not faſten'd to, where there is a Pin that holds it, the two Branches will ſtand at Right Angles: To the Head of the Inſtrument is likewiſe added a ſquare piece of Braſs; by means whereof it does the Office of a Square. At the Bottom of the Angle of the ſaid Piece of Braſs is a little hole, wherein is faſten'd a Line with a Plummet; which falling on a perpendicular Line, drawn on the Tongue, ſhews whether any thing the Inſtrument is applied to, be level, or not.

FOOT *of the Foreſt*, *Pes Foreſtæ*, in our antient Cuſtoms, contain'd 18 Inches, or 1$\frac{1}{2}$ of the common *Feet*.——

Notandum eſt, quod Pes Foreſtæ *uſitatus tempore Ric. Oyſell, in Arrentatione Vaſtorum, factus eſt, ſignatus & ſculptus in pariete Cancellæ Eccleſiæ de Edwynſtone, & in Eccleſia Beatæ Mariæ de Nottingham: Et dictus* Pes *continet in Longitudine octodecim pollices*, &c. *Ex Regiſt. Abb. de Novo Loco in Com. Nott.*

FOOT *Pace*, *Half Pace*, or *Landing Place*, ſee STAIR *Caſes*.

FOOT *Bank*, or BANQUETTE, in Fortification, is a ſmall Step of Earth, on which the Soldiers ſtand to fire over the Parapet. See BANQUETTE.

FOOT *Gilde*, was an antient Amerciament, for not cutting out the Balls of the *Feet* of great Dogs in the Foreſt; which was done for preventing their running after the King's Deer; and was called *Expeditation*. See EXPEDITATION.

FOOT *Husks*, among Gardners, are ſhort Heads, out of which Flowers grow.——

FORAMEN, in Anatomy, a Name given to certain Holes or Perforations in divers Parts of the Body; as the

FORAMEN *Ovale*, or FORAMEN *Botalli*, an Oval Aperture, or Paſſage thro' the Heart of a Fœtus, which cloſes up after Birth.

It ariſes above the Coronal Vein, near the right Auricle; and paſſes directly into the left Auricle of the Heart. See HEART.

The *Foramen Ovale* is one of the temporary Parts of the Fœtus; wherein it differs from an Adult. It ſerves for the circulating of the Blood in the Fœtus, till ſuch time as the Infant breaths, and the Lungs are open'd. See FOETUS, and LUNGS.

Its Uſe was firſt exactly deſcrib'd by *Leon. Botal* of *Aſſa* in *Piedmont*, in the Year 1562; who tracing the Courſes and Paſſages of the Blood, aſſerted the *Foramen Ovale* to be one, whereby the Blood in Fœtus's was convey'd from the right Ventricle to the left.

The Modern Anatomiſts ſtand to the Diſcovery; and the *Foramen Ovale* is now generally allow'd a part neceſſary in the Syſtem of the Circulation of the Blood in the Fœtus. See CIRCULATION.

At the Aperture of the *Foramen*, there is a kind of floating Membrane, which looks like a Valve; but has nothing of the Office thereof: It does not hinder the Blood from paſſing from either Auricle to the other: All it ſerves for, according to Mr. *Winſlow*, is, to cloſe the *Foramen* after the Birth.

It has generally been thought, that the *Foramen Ovale* might ſometimes remain open, even in Adults: And in effect, divers Authors furniſh us with Inſtances thereof.

Dr. *Connor* aſſures us he found it but half clos'd in a Girl of four or five Years old; and in another Girl which he open'd at *Oxford*, there was Room left to thruſt a Tent thro'. *Diſſert. Med. Phyſ. de Stup. Of. Coat.*

The accurate Mr. *Cowper* adds, that he has often found the *Foramen Ovale* open in Adults. *Anat. Append. Fig.* 3. And the *Paris* Anatomiſts obſerve, that in a Sea Calf the *Foramen Ovale* is always open; by which means it is enabled to ſtay ſo long under Water.

Somewhat of this, too, is ſuppos'd to have been the Caſe in the extraordinary Recoveries of divers Perſons drown'd, hang'd, &c. See HANGING, and DROWNING.

But Mr. *Cheſelden* ventures to ſet aſide all theſe Authorities; and contends, that the *Foramen Ovale* is neither open in any Adult Land Animals, nor in Amphibious Creatures.

When he firſt applied himſelf to Diſſection, he tells us, he had no Diſtruſt of the frequent Accounts in Authors of the *Foramen* being open: But he afterwards found that he miſtook the Oſtium of the Coronary Veins for the *Foramen*; and the like he imagines other Authors to have done; who aſſert, that it is always open in amphibious Animals: For that upon a diligent Enquiry into theſe Animals, he could never find it open in any.

Neither does he think that ſufficient, to enable thoſe Creatures to live under Water, as the Fœtus does in Utero; unleſs the Ductus Arterioſus were open alſo. *Cheſel. ap. Der. Phyſ. Theol. L. IV. c.* 7.

FORAMEN *of the Membrana Tympani*, is a Perforation in the Membrane of the Tympanum, or Drum in the Ear; which admits of the Paſſage of Wind, Smoak, &c. from the *Meatus a palato* to the Drum. See EAR.

This Paſſage is very ſmall, and runs obliquely from the Tympanum thro' the upper Part of its Membrane, near the Proceſs of the Malleus. The Exiſtence of this Perforation is more evident, when Ulcers affect the Palate, by the Egreſs of Wind, upon the Patient's ſtopping his Noſe and Mouth, and forcing the Wind by the Ears, than by any Anatomical Inſpection. See TYMPANUM.

FORAMEN *Lacerum*, ſee DURA *Mater*.

FORCE, VIS, or POWER, in Mechanicks, Philoſophy, &c. See VIS, and POWER.

Attractive FORCE,	See	ATTRACTION.
Repelling FORCE,		REPULSION.
Elaſtic FORCE,		ELASTIC.
FORCE *of Gravity*,		GRAVITY.
FORCE *of Coheſion*,		COHESION.
Central FORCE,		CENTRAL.
Centripetal FORCE,		CENTRIPETAL.
Centrifugal FORCE,		CENTRIFUGAL.
FORCE *of Inactivity*,		*Vis* INERTIÆ.
Reſiſting FORCE,		RESISTANCE.
Retarding FORCE,		RETARDATION.
Accelerating FORCE, &c.		ACCELERATION, &c.

FORCE, in Common Law, ſignifies an Offence, by which Violence is us'd to Perſons, or Things.

Force is either *Simple*, or *Compound*.

Simple *Force* is that which has no other Crime adjoin'd to it: As if one by *Force* do enter into another Man's Poſſeſſion, without doing any other unlawful Act.

Mix'd, or Compound *Force* is that Violence committed with ſuch a Fact as of it ſelf only is criminal: As if any by Force enter into another Man's Poſſeſſion, and there kill a Man, or raviſh a Woman, &c.

Force is alſo divided into *True Force*, and *Force after a ſort*.

There are other Branches; as *forcible Entries*, *forcible Detaining*, or *Holding*; *unlawful Aſſembly*, *Routs*, *Riots*, *Rebellions*, &c. See FORCIBLE *Entry*, FORBIBLE *Detaining*, UNLAWFUL *Aſſembly*, RIOT, &c.

FORCE, in Grammar, and ſome other Arts, is applied to ſomething which ſtands in lieu of, or has the ſame Effect as, another.

In our Language, the *ſ* between two Vowels has the *Force* of a *z*, and is ſometimes put for a *z*: As in Horiſon, Baptiſing, &c.

In *Hebrew*, the *Dageſch*; and in *Arabic*, the *Teſdid*, have the *Force* of a Letter ſuppreſs'd. A Figure before a Cypher, has the *Force* of ten.——

FORCEPS, *Pair of Tongues*, a Chirurgeon's Inſtrument, wherewith dead, and corrupt Parts are ſeiz'd, cut, or pulled off, &c. As alſo foreign Bodies extracted out of Wounds, &c.

They are of divers Forms, long, crooked, with *Teeth*, with *Beaks*, *half-moon'd*, &c. See SPECULUM.

FORCIBLE *Entry*, a violent, actual Entry into a Houſe or Land, &c. or a taking Diſtreſs of any Perſon, weapon'd, whether he offer Violence or Hurt to any Perſon there, or furiouſly drive any out of the Poſſeſſion thereof, or not. See ENTRY.

FORCIBLE *holding*, or *detaining* Poſſeſſion is a violent Act of Reſiſtance, by a ſtrong Hand of Men, weapon'd with Harneſs, or other Action of Fear in the ſame Place, or elſewhere, whereby the lawful Entry of Juſtices, or others, is barr'd, or hindred.

FORDICIDIA, in Antiquity, a religious Feaſt among the *Romans*, held on the thirteenth of *April*.

It was thus call'd from the Latin *Forda*, a Cow big with Calf, and *cædo*, I ſlay, or ſacrifice; by reaſon Cows were herein ſacrificed to the Goddeſs *Tellus*, or the Earth.

Forda, a Cow with Calf, is form'd, according to *Ovid*, from *fero*, I bear; or rather, as *Scaliger* and *Salmaſius* imagine, from the *Greek* φορὰς, φορὰδος, ſignifying the ſame thing. *Varro* writes, that there were ſeveral of theſe Cows ſacrific'd in the *Curiæ*. *Livy*, and *Halicarnaſſæus* relate, that there was one in each Curia; ſo that there were thirty in all; which is confirm'd by *Ovid. Faſtor. L. IV. v.* 635.

The *Fordicidia* were firſt inſtituted by *Numa*, on occaſion of a general Barrenneſs among the Cattle: *Ovid* gives a particular Deſcription of the Ceremony, in the Paſſage firſt quoted: He adds, that part of theſe Cows were ſacrific'd in the Temple of *Jupiter*; that is, in the Capitol.

FORE-*Knight*, in the Sea Language, a piece of Wood, carv'd in the Figure of a Man's Head, and faſt bolted to the Beams upon the ſecond Deck.

FORE *Caſtle* of a Ship, is that Part where the Fore-maſt ſtands: It is divided from the reſt of the Floor by a Bulk-head; that Part of the *Fore Caſtle* which is aloft, and not in the Hold, is called the Prow.

FORE *Maſt* of a Ship, is a round large piece of Timber, ſeated in her *Fore* Part, on which is born the *Fore* Sail, and *Fore*-Top-Sail Yards. See MAST.

Its Length is uſually $\frac{8}{9}$ of the Main Maſt.

The *Fore-Top-Maſt* is half the Length of the *Fore* Maſt, and the *Fore-top-gallant* Maſt is half the Length of the *Fore*-Top-Maſt. See GALLANT.

FORELAND, or FORENESS, in Navigation, a Point of Land jutting out into the Sea. See CAPE.

FORELAND, in Fortification, is a ſmall Space of Ground between the Wall of a Place, and the Moat, call'd alſo *Berme*. See BERME.

FORELOCKS in a Ship, are little flat Wedges like pieces of Iron; us'd at the Ends of Bolts, to keep them from flying out of the Holes. See BOLTS.

FORE *Sail*, the Sail of the *Fore* Maſt. See SAIL.

FORE-*ſhorten*, among Painters, *&c.* See SHORTENING.

FORE *Loin*, among Hunters, is when a Hound going before the reſt of the Cry, meets Chace, and goes away with it.

FORE *Skin*, ſee PREPUCE.

FOREJUDG'D *the Court*, is when an Officer of any Court is baniſh'd or expell'd the ſame for ſome Offence, or, for not appearing to an Action by Bill fil'd againſt him; and in the latter he is not to be admitted to officiate, till he appear to the Bill, Anno 2 *Hen.* 4. *c.* 8.

He ſhall looſe his Office, and be *forejudg'd* the Court, *&c. Forjudicare, interdum eſt male judicare.* Spel.

FOREJUDGER, in Law, ſignifies a Judgment, whereby a Man is depriv'd, or put by the thing in queſtion.

FORECLOS'D, in our antient Law Books, ſignifies barr'd, ſhut out, or excluded for ever.

FOREFOOT, in the Sea Language, is when one Veſſel ſails, or lies a-croſs another's way.

As if two Ships being under Sail, and in Ken of one another, one of them lies in a Courſe with her Stern ſo much a-weather the other, that if both hold on, the windward Ship will run out a-head of the other. Such Ship is ſaid to lie with the others *forefoot*.

Tho', as ſoon as ſhe has paſs'd, they ſay, ſhe is gone out *a-head*.

FOREIGN, ſomething extraneous, or adventitious. *Foreign* Miniſter, *Foreign* Prince, *Foreign* Goods, *&c.* are thoſe belonging to other Nations. *Foreign* to the Purpoſes, *i. e.* remote.

Matter is *foreign* to the Idea of Space, *i. e.* is not inherent therein, but additional thereto. See VACUUM.

Foreign Plants are particularly call'd *Exoticks*. See EXOTIC.——

In ſome Univerſities they give the Appellation *Foreign Doctors*, *Doctores Forenſes*, to ſuch as do not reſide in the Place, or the Univerſity; but take Degrees to go and live elſe where, and in other Countries.

In the Life of St. *Paul*, Biſhop of *Verdun*, written by an anonymous Author, and publiſh'd from a MS. above 400 Years old, by *Bollandus*; we meet with *Forenſis Preſbyter*, for a Prieſt who lives in another Part. The ſame *Bollandus* notes, that St. *Ambroſe* uſes the Word *Forenſis* for *Exterior*.

Foreign, or *Foraine Traitte*, is a Duty belonging to the King of *France*, of $\frac{1}{20}$ of the Value of all Goods imported or exported out of the Kingdom. See DUTY.

The Word *Foreign* is form'd of the Latin *Fores*, Doors; or *foris*, or out of doors; or *Forum*, Market, *&c.*

FOREIGN, is us'd in Law in ſeveral Senſes, and join'd with divers Subſtantives. Thus,

FOREIGN *Anſwer*, is ſuch an Anſwer, as is not triable in the County where it is made. See ANSWER.

FOREIGN *Attachment*, is an Attachment of *Foreigners* Goods found within a Liberty or City, in the Hands of a third Perſon; for the Satisfaction of ſome Citizen, to whom the *Foreigner* oweth Money. See ATTACHMENT.

FOREIGN *Matter*, in Law, is Matter triable in another County; or Matter done in another County. See MATTER.

FOREIGN *Opposer*, or *Appoſer*, is an Officer in the Exchequer, to whom all Sheriffs or Bailiffs do repair to be appos'd by him of their Green-Wax, after they are appos'd of their Sums out of the Pipe Office; and from thence draws down a Charge upon one of them to the Clerk of the Pipe.

His Buſineſs is, to examine the Sheriff's Eſtreats with the Record, and to aſk the Sheriff, what he ſays to every particular Sum therein.

FOREIGN *Plea* is a Refuſal of the Judge as incompetent, becauſe the Matter in hand was not within his Precinct. See PLEA.

FOREIGN *Service*, is ſuch Service whereby a mean Lord holdeth of another, without the Compaſs of his own Fee; or elſe that which a Tenant performeth, either to his own Lord, or to the Lord Paramount out of his own Fee. See SERVICE.

FORELORN *Hope*, in an Army, the *Enfans perdues*. See ENFANS *Perdues*.

FORESCHOKE, *Derelictum*, antiently ſignified as much as *forſaken* in our modern Language.

It is ſpecially us'd in one of our Statutes, for Land or Tenements ſeiz'd by the Lord, for want of Services due from the Tenant; and ſo quietly held and poſſeſs'd beyond the Year and Day.

As if we ſhould ſay, that the Tenant, who ſeeing his Lands or Tenements taken into the Lord's Hand, and poſſeſs'd ſo long, takes not the Courſe appointed by Law to recover them; does in due Preſumption of Law diſavow or forſake all the Right he has to them.

And then ſuch Lands ſhall be call'd *Foreſchoke*, ſays the Stat. 10 *Ed.* 2. *c. unico.*

FOREST, *Silva*, in Geography, a huge Wood: Or, a large Extent of Ground, cover'd with Trees. See WOOD.

The *Calidonian* and *Hercynian Foreſts* are famous in Hiſtory: The firſt was a celebrated Retreat of the antient *Picts*, and *Scots*: The latter, antiently poſſeſs'd the greateſt Part of *Europe*; particularly *Germany*, *Poland*, *Hungary*, &c. In *Cæſar*'s time it extended from the Borders of *Alſatia* and *Switzerland* to *Tranſylvania*; and was computed 60 Days Journey long, and nine broad: Some Parts, or Cantons thereof are ſtill remaining.

The *Foreſt* of *Dean* in *Gloceſterſhire* is famous for the Iron Works therein. See IRON.

The Antients ador'd *Foreſts*, and imagin'd a great Part of their Gods to reſide therein: Temples were frequently built in the thickeſt *Foreſts*; the Gloom and Silence whereof naturally inſpire Sentiments of Devotion, and turn Men's Thoughts within themſelves.

For the like reaſon, the antient *Druids* made *Foreſts* the Place of their Reſidence, perform'd their Sacrifices, inſtructed their Youth, and gave Laws therein. See DRUIDS.

The Word *Foreſt* is form'd of the Latin *Foreſta*, which firſt occurs in the Capitularies of *Charlemaign*, and which it ſelf is deriv'd from the German *Forſt*, ſignifying the ſame thing. *Spelman* derives it from the Latin *foris reſtat*, by reaſon *Foreſts* are out of Towns. Others derive *Foreſta a feris*, q. d. *Fereſta*, *quod ſit tuta ſtatio ferarum*, as being a ſafe Station or Aboad for wild Beaſts.

FOREST, in a Law Senſe, is defined a certain Territory of woody Grounds, and fruitful Paſtures, privileg'd for wild Beaſts, and Fowls of *Foreſt*, Chaſe and Warren, to reſt and abide in the ſafe Protection of the King for his Princely Delight; meer'd and bounded with unremoveable Bounds, Marks, Meers, and Boundaries, either known by Matter of Record, or Preſcription; Repleniſh'd with wild Beaſts of Venery, or Chaſe, and with great Coverts of Vert for Succour of the ſaid Beaſts. For Preſervation and Continuance of which Place with the Vert and Veniſon, there are certain peculiar Laws, Privileges, and Officers.

The Properties or Characters of a *Foreſt*, are,

1° That it cannot be in the Hands of any, but the King; becauſe none elſe hath Power to conſtitute ſuch *Commiſſions* as are neceſſary to the Being of a *Foreſt*, beſide the King; as, particularly that of a Juſtice in Eyre of the *Foreſt*.

And yet the Abbot of *Whitby* had a *Foreſt* by Grant of King *Henry* the Second, and King *John*; with all Officers incident thereto.

The Second Character, is the *Courts* belonging thereto, which are, the *Juſtice Seat*, held every three Years; the *Swainmote*, held trice every Year; and the *Attachment*, once every forty Days. See JUSTICE *Seat*, SWAINMOTE, *&c.*

The Third Characteriſtic is the *Officers* belonging thereto, for Preſervation of the Vert and Veniſon; as the *Juſtices of the Foreſt*, the *Warder*, or Keeper, *Ranger*, *Verderors*, *Foreſters*, *Agiſtors*, *Regardors*, *Bailiffs*, *Beadles*, &c.

See each under its proper Article, JUSTICE *of the Foreſt*, WARDEN, RANGER, VERDER, or REGARDER, *&c.*

But the moſt eſſential Mark of a *Foreſt* is the *Swainmote*, which is no leſs incident thereto, than the Court of Pye-Powder to a Fair. If this fail, it ceaſes to be a *Foreſt*, and commences a *Chace*. See CHACE.

The way of making a *Foreſt*, is thus: Certain Commiſſioners, appointed under the Great Seal, view the Ground intended, and fence it round: This being reported in Chancery, the King cauſes it to be proclaim'd throughout the County where the Land lies, that it is a *Foreſt*; and thenceforth to be govern'd by the Laws of the *Foreſt*; and prohibits all Perſons from hunting therein, without his Leave.

New Foreſt, in *Hampſhire*, Hiſtory tells us, was rais'd by the Deſtruction of 22 Pariſh Churches, and all the Villages, Manors, Chappels, *&c.* for the ſpace of 30 Miles together. Beſide *New Foreſt*, there are now ſubſiſting 68 *Foreſts* in *England*; thirteen *Chaſes*, and more than 781 *Parks*. See PARK.

Our antient *Norman* Kings were the firſt who inclos'd *Foreſts*, and ſettled the Juriſdiction thereof: Their Taſte run mightily that way. In the Courſe of a few Reigns from the Conqueſt, no leſs than ſixty eight *Foreſts* were inclos'd; the ſtricteſt Laws were made to ſecure them; and the ſevereſt Penalties inflicted on all Treſpaſſers thereon.

William the Conqueror decreed, the Eyes of any Perſon to be pull'd out, who took either a Buck, or Boar: *William Rufus* made the Stealing of a Doe a hanging matter: The taking of a Hare was fined at 20 *s.* and a Cony at 10 *s.*

Eadmer adds, that fifty Perſons of Fortune being apprehended by the ſame Prince, for killing his Bucks, were forc'd to purge themſelves by the Fire of Ordeal, *&c.*

Henry the Firſt made no diſtinction between him who kill'd a Man, and a Buck; and puniſh'd thoſe who deſtroy'd the Game, tho' not in the *Foreſt*, either by Forfeiture of their Goods, or Loſs of Limbs; tho' *Henry* the Second remitted it for a temporary Impriſonment.

Richard the Firſt revived the old Diſcipline of gelding and pulling out the Eyes of thoſe convict of hunting in the *Foreſt*: But he afterwards relax'd a little, and was contented to make ſuch Convicts abjure the Realm, or be committed, or pay a Fine.

Charter of the FOREST, ſee CHARTA *de Foreſta*.

FOREST is alſo us'd adjectively. The *Foreſt Cities* of the Empire are four Cities ſituate in the Black *Foreſt*, or *Silva Nigra*, a Part of the antient *Hyrcinian Foreſt*; viz. *Rhinfield*, *Valdſhuſt*, *Seckinghen*, and *Lauffembourg*. But, now that the Bounds of the *Black Foreſt* are contracted, theſe Cities are out of the Limits thereof.

FOREST *Law*. The *Foreſt* Laws are peculiar Laws, different from the common Law of *England*. See LAW.

Before the making of *Charta de Foreſta*, Offences committed therein, were puniſh'd at the Pleaſure of the King, in the ſevereſt manner; and even in the Charter were ſome grievous Articles, which the Clemency of later Princes have ſince by Statute thought fit to alter *Per Aſſiſas Foreſtæ*.

Yet to this Day, in Treſpaſſes relating to the *Foreſt*, *Voluntas reputabitur pro facto*; ſo that if a Man be taken hunting a Deer, he may be arreſted, as if he had taken a Deer. The Foreſter may take, and arreſt a Man, if he be taken either at *Dog-draw*, *Stable-ſtand*, *Back-bear*, or *Bloody-hand*; notwithſtanding that three of theſe be only Preſumptions. See DOG-DRAW, STABLE-STAND, *&c.*

FORE-STAFF, an Inſtrument us'd at Sea, for taking the Altitudes of heavenly Bodies. See ALTITUDE.

The *Fore-ſtaff*, call'd alſo *Croſs-ſtaff*, takes its Denomination hence, that the Obſerver, in uſing it, turns his Face towards the Object; in contradiction to *Back-ſtaff*, where he turns his Back of the Object. See BACK-STAFF.

The *Fore* or *Croſs-ſtaff*, repreſented in *Tab. Navigation. Fig.* 14. conſiſts of a ſtraight, ſquare, graduated Staff, A B, and four Croſſes, or Vanes F F, E E, D D, C C, which ſlide thereon.

The firſt, and ſhorteſt of theſe Vanes F F, is called the Ten-croſs, or Vane, and belongs to that ſide of the Inſtrument, whereon the Diviſions begin at three Degrees, and end at 10. The next longer Vane E E is call'd the thirty Croſs; belonging to that Side of the Staff, wherein the Diviſions begin at 10 Degrees, and end at 30, called the thirty Scale. The next Vane D D is call'd the ſixty Croſs, and belongs to the Side where the Diviſions begin at 20 Degrees, and end at 60. The laſt, and longeſt, C C, call'd the ninety Croſs, belongs to the Side whereon the Diviſions begin at 30 Degrees, and end at 90.

Uſe of the FORESTAFF.

The great Uſe of this Inſtrument, is to take the Heights of the Sun, and Stars, or the Diſtance of two Stars: And the Ten, Thirty, Sixty, or Ninety Croſſes are to be us'd according as the Altitude is greater, or leſſer; that is, if the Altitude be leſs than 10 Degrees, the Ten Croſs to be us'd; if above ten, but leſſer than 30, the Thirty Croſs to be us'd, *&c.*

Note, for Altitudes greater than 60 Degrees, this Inſtrument is not ſo convenient as a Quadrant, or Semi-circle. See QUADRANT.

To obſerve an Altitude by the FORESTAFF; Apply the flat End of the Staff to your Eye, and look at the upper End *b* of the Croſs for the Centre of the Sun or Star, and at the lower End *a* for the Horizon. If you ſee the Sky inſtead of the Horizon, ſlide the Croſs a little nearer the Eye; and if you ſee the Sea, inſtead of the Horizon, ſlide the Croſs further from the Eye: And thus continue moving, till you ſee exactly the Sun or Star's Centre by the Top of the Croſs *b*, and the Horizon by the Bottom thereof, *a*.

Then the Degrees, and Minutes cut by the inner Edge *c* of the Croſs upon the Side of the Staff peculiar to the Croſs you uſe, is the Altitude of the Sun, or Star.

If it be the Meridian Altitude you want, continue your Obſervation as long as you find the Altitude increaſe; ſtill moving the Croſs nearer to the Eye. See MERIDIAN.

By ſubſtracting the Meridian Altitude thus found from 90 Degrees, you will have the Zenith Diſtance.

To work accurately, an Allowance muſt be made for the Height of the Eye above the Surface of the Sea; *viz.* for one *Engliſh* Foot, 1 Minute; for five Foot, $2\frac{1}{2}$; for ten Foot, $3\frac{1}{2}$; for twenty Foot, 5; for forty Foot, 7, *&c.*

Theſe Minutes ſubtracted from the Altitude obſerv'd; and added to the Zenith Diſtance obſerv'd; give the true Altitude, and Zenith Diſtance.

To obſerve the Diſtance of two Stars, or the Moon's Diſtance from a Star, by the FORESTAFF; Apply the Inſtrument to the Eye; and looking to both Ends *a* and *b* of the Croſs, move it nearer, or farther from the Eye, till you ſee the two Stars; the one on the one End, and the other on the other End of the Croſs. Then the Degrees and Minutes cut by the Croſs on the Side proper to the Vane in uſe, give the Star's Diſtance.

FORESTAGE, FORESTAGIUM, in our antient Cuſtoms, an obſolete Duty, or Service, paid by the Foreſters to the King.

In *Britany*, *Lobineau* obſerves, the Office of Foreſters was held by Gentlemen of the firſt Rank, who for their *Foreſtage* were oblig'd to furniſh the Lord, when he kept open Houſe, with Cups and Spoons.——

Foreſtage alſo ſeems to have been us'd for a Duty, payable to the King's *Foreſters*. *Et ſint quieti de Theolonio, & Paſſagio, & de* Foreſtagio, &c. *Chart. Edu.* 1.

It may likewiſe be taken for a Right to uſe the Foreſt; or, a taking of reaſonable Eſtovers. See ESTOVER.

FORESTAL, or FORSTAL, in Domeſday wrote *Foriſtel*, is an intercepting in the Highway; or ſtopping, or even inſulting a Paſſenger therein.

Spelman defines it an Obſtruction, or ſhutting up of the King's Highway.

In the Laws of *Hen.* 1. the Senſe of the Word is thus explain'd: *Foreſtal eſt, ſi quis ex tranſverſo incurrat, vel in viam expectet, & aſſaliet inimicum ſuum.*

The Word is form'd of the *Saxon Fore*, before; and *Stal*, Journey, Road.

FORESTALLER, a Perſon who *foreſtals* the Market, or buys up Goods upon the Road. See FORESTALLING.

FORESTALLING, the buying, or bargaining for Corn, Cattle, or other Merchandize, by the Way, before it reaches the Market, or Fair, to be ſold; or by the Way, as it comes beyond the Sea's, or otherwiſe, toward any City, Port, Haven, or Creek of this Realm; with deſign to take Advantage thereof, and ſell it again at a more advanc'd and dear Rate. See REGRATOR, and ENGROSSER.

Foreſtalling is particularly us'd in *Crompton*, for ſtopping a Deer broken out of the Foreſt, and preventing its returning home again; or, a lying between him and the Foreſt, in the Way he is to return.

Fleta ſays, it ſignifies *Obſtructionem viæ, vel impedimentum tranſitus & Fugæ averiorum.*

FORESTER, a ſworn Officer of the *Foreſt*, appointed by the King's Letters Patent, to walk the Foreſt, and to watch the Vert, and Veniſon; as alſo to attach and preſent all Treſpaſſers againſt both, within his Bailiwick or Walk, to the Foreſt Courts; to be puniſh'd according to their Offences. See FOREST.

Tho' the Letters Patent of a *Foreſter* be ordinarily only granted, *quam diu bene ſe geſſerint*; yet they are granted to ſome, and their Heirs; who are hereby calleſt *Foreſters in Fee*. See FEE.

Sir *William Temple* relates, that the *Franks* having ſubdued all *Gaul*, their Princes reduc'd *Flanders* into a kind of Government; and gave the Quality of *Foreſter*, with part of the Province, to the braveſt of their Captains.

This Quality of *Lord Foreſter* held till the time of *Charlemaign*, or, according to others, of *Charles the Bald*, in whoſe Time *Flanders* being erected into a County, the Title of *Foreſters* was chang'd into that of *Count*. See COUNT.

FORFEITURE, originally ſignifies a Tranſgreſſion, or Offence againſt ſome penal Law.

But with us, it is now more frequently us'd for the Effect of ſuch Tranſgreſſion, or the loſing ſome Right, Privilege, Eſtate, Honour, Office, or Effects, in conſequence thereof; than for the Tranſgreſſion it ſelf.

As, *Forfeiture of Eſcheats*, &c. *Forfeiture of Goods*, &c.

A Fee becomes vacant by the *Forfeiture* or Rebellion of his Vaſſal.

Goods *forfeited*, and Goods confiſcated, differ: Thoſe which have a known Owner who has committed ſome Offence, whereby he loſes his Goods, are ſaid to be *forfeited*. Thoſe which an Offender diſavows, as not his own; and which are not claim'd by any other, are ſaid to be *confiſcate*. Stat. 25 *Edu.* 3.

Forfeiture, or *Forfeit*, again, is rather more general; and Confiſcation more particular, to ſuch as *forfeit* only to the King's Exchequer. See CONFISCATION.

The Word is form'd of the baſe Latin, *Forisfactura*; whence *Forfaitura*, and *Forfaictura*, and the *French Forfait*. *Forisfactura* comes of *forisfacere*, which, according to *Iſidore*, ſignifies to hurt, or offend, *facere contra rationem*; and which is not improbably deriv'd of *foris*, out, and *facere*, to do, q. d. an Action out of Rule, or contrary to the Rules. *Borel* will have *Forfait* deriv'd from the uſing of *Force*, or Violence: *Lobineau* in his Gloſſary will have *Forsfacta* properly to ſignify a Mulct, or Amend; not *a Forfeit*, which latter he derives from the baſs Briton *forfed*, a Penalty.——

Full FORFEITURE, *plena forisfactura*, call'd alſo *plena wita*, is a *Forfeiture* of Life and Member, and all elſe that a Man has.

FORFEITURE *of Marriage*, *Forisfactura Maritagii*, a Writ, which laid againſt him, who, holding by Knight's Service, and being under Age, and unmarried, refus'd her whom the Lord offer'd him, without his Diſparagement, and married another.

FORFEX, an Inſtrument to draw Teeth withal.

FORGE, properly ſignifies a little Furnace, wherein Smiths, and other Artificers in Iron and Steel, &c. heat their Metals red hot, in order to ſoften and render them more malleable and manageable on the Anvil, &c. See FURNACE.

Farriers *Forge*, Silverſmiths *Forge*, Cutlers *Forge*, Lockſmiths *Forge*, &c.

The *Forge* us'd by the ſeveral Operators in Iron, is very ſimple: We ſhall inſtance in that of the Blackſmith, to which all the reſt are reducible.

The *Hearth*, or Fire-place, is a Maſſive of Brick, about two Foot, ſix Inches high: The *Back* of the *Forge* is built upright to the Cieling, and is inclos'd over the Fore-place with a *Hovel*, which leads into a Chimney, to carry away the Smoak. In the Back of the *Forge*, againſt the Fire-place, is a thick iron Plate, with a taper Pipe fix'd therein, about five Inches long, call'd the *Fewel*, into which the Noſe or Pipe of the Bellows is receiv'd: The Uſe of this Plate and Fewel is, to preſerve the Pipe of the Bellows, and the Back of the Hearth from being burnt. Right before the Back, at about two Foot diſtance, is the *Trough*, fill'd with Water, to wet the Coals in, and thereby increaſe their Force; as alſo to quench the Iron in. Behind the Back of the *Forge* is plac'd the *Bellows*, one of whoſe Boards is fix'd ſo, that it move not, either upward, or downward; and to the other is fitted a Rope, Chain, or even Rod; which riſing perpendicularly, is fix'd to a croſs piece, call'd the *Rocker*, which moving on a kind of Fulcrum, near the Middle, ſerves as a Handle.

By drawing down this Handle, the moveable Board of the Bellows riſes, and by a conſiderable Weight a-top of its upper Board ſinks down again; and by this alternate Agitation performs the Office of a pair of Bellows.

Braziers, and *Copperſmiths* FORGE differs but little from that already deſcrib'd; only that it is much leſs, and that nothing is burnt in it but Charcoal; the Metals us'd by theſe Operators not being able to ſuſtain the Violence of Pit Coal.

FORGE is alſo us'd for a large Furnace, wherein iron Oar taken out of the Mine, is melted down. See IRON.

But this is not ſo properly call'd a *Forge*, as a *Furnace*. See FURNACE.

FORGE is more properly us'd for another kind of Furnace, wherein the iron Oar, melted down and ſeparated in a former Furnace, and there caſt into Sows, and Piggs, is heated, and fus'd over again, and beaten with large Hammers; and thus render'd more ſoft, pure, ductile, and fit for uſe. See IRON.

Of theſe *Forges* there are two kind; which the Iron ſucceſſively paſſes through, before it comes to the Smith.

The firſt, call'd the *Finary*, where the Pigs are work'd into Groſs Iron, and prepar'd for the ſecond, which is call'd the *Chafery*, where it is further wrought into Bars, fit for Uſe. See FINARY, &c.

FORGER *of Falſe Deeds*, ſignifies either him, that fraudulently makes, and publiſhes falſe Writings, to the Prejudice of any Man's Right; or elſe the Writ that lies againſt him who commits this Offence.

Fitz. Nat. Br. fol. 96. b. ſays, That a Writ of Deceit lies againſt him, who commits this Offence, and the Penalty of it is declar'd in the Stat. 5 *Eliz. cap.* 14.

FORGING, the Act of beating, or hammering Iron on an Anvil; after having firſt made it red hot in the *Forge*; in order to faſhion, and extend it into various Forms, and Works.

Iron is hammer'd, and *forg'd* two ways: Either by the Force of the Hand; in which there are uſually ſeveral Perſons employ'd, one of them turning the Iron, and hammering likewiſe; and the reſt only hammering.

Or, by the Force of a Water-mill; which raiſes, and works ſeveral huge Hammers, beyond the Force of Man, under the Strokes whereof the Workmen preſent large Lumps, or pieces of Iron, which are ſuſtain'd at one End by the Anvils, and at the other by iron Chains faſten'd to the Ceiling of the Forge.

This laſt way of *forging* is only us'd in the largeſt Works, as Anchors for Ships, &c. which uſually weigh ſeveral thouſand Pounds. See ANCHOR.

For the lighter Works, a ſingle Man ſuffices to hold, heat and turn with one Hand, while he ſtrikes with the other.—

Each Purpoſe the Work is deſign'd for, requires its proper Heat. If it be too cold, it will not *feel the Weight of the Hammer*, as the Smiths call it (*i. e.* will not ſtretch, or give way); and if it be too hot, it will *red-ſear* i. e. break or crackle under the Hammer. See HAMMERING.

The ſeveral Heats the Smiths take of their Iron, are 1° A Blood-red Heat. 2° A white-flame Heat. 3° A ſparkling, or welding Heat. See HEAT.

FORKED *Heads*, among Hunters, all Deers Heads, which bear two Croches on the Top; or which have their Croches doubled.

FORLET *Land*, was ſuch Land in the Biſhoprick of *Hereford*, as was granted or leas'd, *dum Epiſcopus in Epiſcopatu ſteterit*; that the Succeſſor might have it for his preſent Income.

But now that Cuſtom is diſus'd, and the ſame Lands are granted, as others, by Leaſe; yet they ſtill retain the Name. *Butterfield*'s Survey, fol. 56.

FORLINS, or FIELD FORTS, are Sconces, or little Fortreſſes, whoſe flank'd Angles are generally diſtant one from another 120 Fathom; but their Extent and Figure are different, according to the Situation and Nature of the Ground; ſome of them having whole Baſtions, and others only Demi-Baſtions.

They are made uſe of only for a time; either to defend the Lines of Circumvallation, or to guard ſome Paſſage or dangerous Poſt.

FORM, in Philoſophy, is the manner of being peculiar to each Body; or that which conſtitutes it ſuch a particular Body, and diſtinguiſhes it from every other. See BODY.

The Philoſophers generally allow two Principles of Bodies: *Matter*, as the common Baſis, or Subſtratum of all; and *Form*, as that which ſpecifies and diſtinguiſhes each; and which added to a Quantity of common Matter, determines or denominates it this, or that; Wood, or Fire, or Aſhes, &c. See PRINCIPLES; ſee alſo MATTER.

Ariſtotle calls *Form* λόγος τῆς οὐσίας, the *Reaſon*, or Manner of the *Eſſence*, or Being of a thing: But as οὐσία denotes *Subſtance*, as well as *Eſſence*, a mighty Controverſy has aroſe in the Schools, in which ſenſe the Word is here to be us'd; and whether *Forms* are to be accounted *ſubſtantial*, or only *eſſential*: *i. e.* Whether the *Forms* of Bodies be any real Subſtances, and have an Exiſtence diſtinct from that of Matter, or not.

'Tis certain, the moſt antient Philoſophers never dreamt of making *Form* a Subſtance. *Parmenides* and *Teleſius* expreſly aſſert, all natural Things to conſiſt of one and the ſame kind of Subſtance, and only to differ in Accidents. And tho' *Empedocles* allow'd of a ſubſtantial *Form* in mixt Bodies; yet he deny'd it in the Elements, and only held an eſſential one.

Galen allow'd of nothing in Matter more than the Temperature of the primary Elements, in which he was ſeconded by *Alex. Aphrodiſæus*, *Philoponus*, and others.

Subſtantial FORMS ſeem to have been firſt broch'd by the Followers of *Ariſtotle*, who thought Matter, under different Modes or Modifications, not ſufficient to conſtitute different Bodies; but that ſomething ſubſtantial was neceſſary to ſet them at a ſufficient Diſtance: And thus introduc'd ſubſtantial *Forms*; on the footing of Souls, which ſpecify and diſtinguiſh Animals.

The Conſiderations which the Peripateticks principally inſiſt on, in confirmation of this Doctrine, are: 1° That without

out ſubſtantial *Forms*, all natural Things would be of the ſame Species, Nature, and Eſſence; which is ſuppos'd an Abſurdity.

2° That every thing has its peculiar Pow'r, Motion, and Operation; as the Magnet, *e. gr.* has of attracting Iron; but that this Pow'r, does not flow from the Matter of the Body, which is only paſſive; nor from the Accidents: And therefore muſt ariſe from a ſubſtantial *Form*.

3° That without ſubſtantial *Forms* there would be no Generation; for a Production of Accidents is only an Alteration.

4° That without ſuch *Form*, the Nature of a Man and of a Lyon would not differ.

What contributed much to their Error, was the Circumſtances of Life and Death: For, obſerving, that as ſoon as the Soul was departed out of a Man, all Motion, Reſpiration, Nutrition, *&c.* immediately ceas'd; they concluded that all thoſe Functions depended on the Soul; and conſequently that the Soul was the *Form* of the animal Body, or that which conſtituted it ſuch: And that the Soul was a Subſtance, independent of Matter, no body doubted; whence the *Forms* of other Bodies were concluded equally ſubſtantial.

But to this it is anſwer'd, that tho' the Soul be that by which a *Man* is *Man*; and conſequently is the *Form* of the *human* Body, as *human*; yet it does not follow, that it is properly the *Form* of this Body of ours, as it is a Body; nor of the ſeveral Parts thereof, conſider'd as diſtinct from each other.

For thoſe ſeveral Parts have their proper *Forms* ſo cloſely connected with their Matter, that it remains inſeperable therefrom, long after the Soul has quitted the Body: Thus, Fleſh has the *Form* of Fleſh; Bone, of Bone, *&c.* after the Soul is remov'd, as well as before.

The Truth is, the Body does not become incapable of performing its accuſtom'd Functions, by reaſon the Soul has deſerted it; but the Soul takes its leave, by reaſon the Body is not in a Condition to perform its Functions.

The antient and modern corpuſcular Philoſophers therefore, with the *Carteſians*, exclude the Notion of ſubſtantial *Forms*; and ſhew by many Arguments, that the *Form* is only the Modus, or manner of the Body it is inherent in.

And as there are only three primary Modes of Matter, *viz.* Figure, Reſt, and Motion; with two others ariſing therefrom, *viz.* Magnitude, and Situation: The *Forms* of all Bodies they hold to conſiſt therein; and ſuppoſe the Variations theſe Modes are capable of, ſufficient to preſent all the Variety obſervable in Bodies. See MODE.

Many Varieties we actually ſee reſult from changes in theſe Modes; which may very well paſs for Differences of *Form*: Thus an Awl only differs from a Needle in Magnitude; a Globe from a Cube in Figure: Tranſparent Glaſs being pulveriz'd, will reflect the Light, and appear white; and yet all the Alteration conſiſts in the Order and Arrangement of the Parts: When Wheat is ground into Flower, all the Change conſiſts in a Seperation of the contiguous Parts; and when the Flower is bak'd into Bread, what is it but the ſame Particles aſſociated again, in another manner. By agitating Water, a Froth is form'd; if the Agitation be increas'd, the Particles will exhale, and form Clouds; which being congregated again, return in Dew, Snow, Hail, or Rain: And the ſame Water, by the Acceſſion of Cold, might have been form'd into Ice. So many different Bodies, endued with different Qualities, and which the Peripateticks themſelves allow ſpecifically different, ariſe from one and the ſame Body, by mere Motion, and Reſt.

The Philoſophy of ſubſtantial *Forms*, its Riſe, Uſe, and Extent, are ſet in an excellent light by Fa. *Mallebranch*.

The way of thinking, that firſt introduc'd it, is this: Every thing I perceive in taſting, ſeeing, and handling this Honey, and Salt, is in the Honey, and Salt: But it is certain, that the things I perceive in the Honey, *e. gr.* the Colour, Taſte, *&c.* differ eſſentially from thoſe I perceive in the Salt; conſequently, there is an eſſential Difference between the two.

Hence it follows, that they are groſly deceiv'd, who take all the Differences between thoſe Bodies to conſiſt in the different Configurations of the component Parts; ſince the different Figure is not at all eſſential to the different Bodies: For change the Figure of the Parts of the Honey how you will; and even give them thoſe of the Parts of Salt; yet it is Honey ſtill.

There muſt therefore be ſome Subſtance added to the common Matter of all Bodies, to make them eſſentially different. And thus are *ſubſtantial Forms* hook'd in; thoſe fertile Subſtances, which perform every thing that we ſee in all Nature.

Since then in every natural Body there are two Subſtances; the one common to Honey, Salt, and all other Bodies; and the other, that which makes the Honey, Honey; the Salt, Salt; and all other Bodies what they are: It follows, that the firſt, viz. *Matter*, having no contrary, but being indifferent to all *Forms*, muſt remain without Force, and Action; as having no occaſion to defend it ſelf.

But for the others, *viz.* the *ſubſtantial Forms*, there is a Neceſſity of their being accompany'd and inveſted with Faculties and Qualities for their Defence, and Subſiſtence. Theſe muſt be always on their Guard, for fear of being ſurpriz'd: They are in poſſeſſion of a thing, which they are to hold againſt numerous Pretenders; and therefore muſt be continually at work, to fortify themſelves, and extend their Dominion over the neighbouring Matters, and puſh their Conqueſts as far as they can: Were they to remain unactive, and unprepar'd, other *Forms* would lay hold of them, and baniſh and deſtroy them for ever. To guard againſt this, they keep conſtant watch; and entertain mortal Enmities and Antipathies againſt thoſe other *Forms*, which only wait to deſtroy them.

If now it happen, that one *Form* ſeize the Matter, or Receptacle of another; that the *Form* of a Carcaſs, for inſtance, ſeize the Body of a Dog; it is not enough, that this new *Form* annihilate the former; but its Hatred muſt be further gratify'd with the Deſtruction of all the Qualities, that took its Enemy's part.

The Hair of the Carcaſs, then, muſt be turn'd white; by a Creation of a new Colour: Its Blood muſt become red, but of ſuch a red, as is not to be ſuſpected in the Intereſt of the Enemy; and the whole Body to be inveſted with Qualities, truſty to their new Maſter, whom they are to defend with all the Power the Qualities of a Carcaſs can have; till ſuch time as being overpow'rd, this *Form* gives way too, in its turn, to the *Form* of Maggots, Worms, *&c.*

But, as nothing can be in perpetual War; but every thing has its place of Reſt; it follows, that even the Fire muſt likewiſe have its Centre, whither its natural Levity always prompts it, that it may remain at reſt, ceaſe to burn, and even quit its Heat, which it only maintains here below for its Defence.——

Theſe may ſerve as a Taſte of the Conſequences, drawn from that important Principle, *Subſtantial Forms*; which is infinitely fertile, and furniſhes every Philoſopher with all ſorts of Solutions, according to his Ability, Adreſs, Inclination, *&c.*

FORMS are diſtinguiſh'd into *Eſſential*, and *Accidental*.

Eſſential FORMS. Though the five Modes above-mention'd, generally taken, be adventitious; yet, to this, or that Body, *e. gr.* to Fire, or Water, they are eſſential: Thus, it is *accidental* to Iron, to have this, or that Magnitude, Figure, or Situation; ſince it might exiſt in different ones; yet, to a Knife, or Hammer, the Figure, Magnitude, and Poſition of Parts, which conſtitute it a Hammer, or Knife, are *eſſential*; and they cannot exiſt, or be conceiv'd without them.

Hence it is infer'd, that tho' there be no *Subſtantial*, there are *Eſſential Forms*, whereby the ſeveral Species of Bodies become each what they are, and are diſtinguiſh'd from all others. See ESSENTIAL.

Accidental FORMS are thoſe really inherent in Bodies; but in ſuch manner, as that the Body may exiſt in all its Perfection, without them.

Such is Whiteneſs in a Wall; Heat in Water; a Figure of a Man in Wax, *&c.*

Metaphyſical FORM is nothing elſe but ſpecific Difference; as metaphyſical Matter is nothing elſe but Genus.

Thus, *Rational*, is the Metaphyſical *Form* of Man.

Syllogiſtic FORM is a juſt Diſpoſition, both of the Terms, in reſpect of Predicate, and Subject; and of the Propoſitions, in reſpect of Quantity, and Quality.

By juſt Diſpoſition we mean ſuch an one, wherein the Concluſion follows duly and legitimately from the two Premiſſes; there being no *Form*, where there is no Concluſion. See SYLLOGISM.

The Diſpoſition of the ſeveral Terms, being, as it were, ſo many Steps or Degrees of a *Syllogiſtic Form*; is call'd the *Figure* of the Syllogiſm. See FIGURE.

The Diſpoſition of the Premiſſes alone, being as it were another Degree, is call'd the *Mode of the Syllogiſm*. See MODE.

Forms, again, are diſtinguiſh'd into *Simple*, and *Compound*.

Simple FORMS are thoſe of Simple Bodies, *i. e.* of ſuch as have but few Properties.

Compound FORMS are thoſe of more Compounded Bodies; or ſuch, as have more Properties.

Thus, *e. gr.* If the *Form* of a *hard Body* be compar'd with the *Form* of Wood; the former may be accounted *Simple*, and the latter *Complex*; inaſmuch as a hard Body, conſider'd only as *hard*, has fewer Properties than Wood. Abſolutely ſpeaking, however, Simple *Forms* are thoſe of the Elements; and Compound, of mixt Bodies.

Laſtly, ſome diſtinguiſh *Forms* into a *Natural*, and *Artificial*.

Natural, are thoſe inherent in Bodies, without any thing contributed thereto on the part of Man. Such is the *Form* of Marble.

Artificial, are thoſe ariſing from human Induſtry: Such is that of a Statue. But this Diſtinction is uſeleſs; and does not imply any intrinſic Difference in the *Forms* themſelves.—

Form *of Corporeity*, according to *Avicenna*, and the *Scotiſts*, is that which conſtitutes Body in the generical *Eſſe* of Body.

That there is ſuch a thing, they prove thus: The human Body is a natural Body, which cannot be plac'd in the *Eſſe* of Body, but by the *Form* of Corporeity: For it is either ſo plac'd by this, or by the rational Soul; not by the Soul, ſince that is ſpiritual; therefore by the *Form* of Corporeity. And the ſame may be underſtood of other Bodies: But the later Philoſophers ſet this aſide as a Chimæra.

Form, in Theology, is one of the eſſential Parts of the Sacraments; being that which gives them their Sacramental *Eſſe*. See Sacrament.

The *Form* conſiſts in certain Words, which the Prieſt pronounces in adminiſtring them.

In ſome of the *Romiſh* Sacraments the *Form* is deprecative; in ours it is abſolute, or indicative.

The Fathers and antient Divines held, that the Sacraments conſiſted of Things, and Words, *Rebus & Verbis*. *William* of *Auxerre* was the firſt, who, about the Beginning of the XIIIth Century introduc'd the Terms, Matter, and *Form* in lieu thereof.

Form is alſo the external Appearance, or Surface of a Body; or the Diſpoſition of its Parts, as to Length, Breadth and Thickneſs: In which ſenſe it coincides with *Figure*. See Figure.

Form is alſo us'd in the Mechanic Arts, for a kind of Mould, whereon a Thing is faſhion'd, or wrought.

As the Hatters *Form*, the Papermakers *Form*, &c.

Hatters Form, is a large Block, or piece of Wood, of a cylindrical Figure; the Top thereof rounded, and the Bottom quite flat.

Its Uſe is, to mould or faſhion the Crown of the Hat, after the Matter thereof has been beaten, and full'd.——

To *form* a Hat, 'tis neceſſary the Wool, Hair, &c. be very hot, juſt reeking out of the Copper. See Hat.

Papermakers Form is one of the Moulds wherein the Sheets are fram'd. See Paper.

Printers Form, is a Frame, or Board, compos'd of divers Letters, rang'd in Order, and diſpos'd into Pages, by the Compoſitor; from which, by means of Ink, and a Preſs, the Printed Sheets are drawn.——

Every *Form* is inclos'd in an iron Chaſe, wherein it is firmly lock'd by a Number of pieces of Wood; ſome long, and narrow; and others in *form* of Wedges. See Chase.

There are two *Forms* requir'd for every Sheet; one for each ſide; and each *Form* conſiſts of more or fewer Pages, according to the Volume of the Book. See Printing.

Form is alſo us'd in a Moral ſenſe, for a manner of being, or doing a thing according to Rules.

This Republic has frequently chang'd its *Form* of Government; that is, its antient Order, or Conſtitution. Pardons generally expreſs a Remiſſion, or Abolition of a Crime; in what *Form*, or Manner ſoever it were committed. He was admitted Doctor *in Form*: Put your Argument in *Form*.

Form, in Law, is apply'd to certain eſtabliſh'd Rules, to be obſerv'd in Proceſſes, or Judiciary Proceedings; in which ſenſe the Word ſtands oppos'd to the Ground or Matter in diſpute.

'Tis a Maxim in Law, that the *Form* leads, or ſways the Matter: The very contrary Maxim ſhould be true.

Form, in Joinery, &c. is apply'd to the long Seats, or Benches in the Choirs of Churches, for the Prieſts, Canons, Prebends, Religious, &c. to ſit on.

Such a Joiner made the *Forms* of ſuch a Church. *Du Cange* takes the Name to be deriv'd hence, that the Backs of theſe Seats were antiently enrich'd with Figures of Painting and Sculpture; call'd in Latin *Formæ & Typi*.—

In the Life of Sir *William* of *Roſchild* we meet with *Forma*, as ſignifying a Seat for an Eccleſiaſtic, or Religious in a Choir; and in that of St. *Lupicin*, we have *Formula* in the ſame ſenſe. In the Rule of the Monaſtery of St. *Cæſarea*, the Nun, who preſides over the Choir, is call'd *Primiceria, vel Formaria*.

FORMA *Pauperis*, or *In Forma Pauperis*, is when any Perſon has Cauſe of Suit, and is ſo poor that he cannot diſpend the uſual Charges of ſuing at Law, or in Equity.

In this caſe, upon his making Oath that he is not worth 5 *l.* his Debts being paid; and bringing a Certificate from ſome Lawyer, that he has juſt cauſe of Suit; the Judge admits him to ſue *in Forma Pauperis*, that is, without paying Fees to Councellor, Attorney, or Clerk. This Cuſtom has its Beginning from Stat. 11 *H.* 7. *c.* 12.

FORMAL, any thing that regards the *Form*; that gives the Manner, or *Form*.

Thus, we ſay, The *formal* Cauſe joining it ſelf to the material, produces the Body, or Compound.

The Schoolmen alſo apply it to any thing which has a kind of *Form*, either Eſſential, or Accidental; at leaſt, in our Conception.

Thus, we frequently hear the Philoſophers talk of the *formal* Object of Knowlege; the *formal* Reaſon of any thing; *formal* Unity, &c. The *formal* Cauſe.

Formal *Cauſe*, is defin'd by certain Philoſophers to be ſomething implanted in Matter, whereby it is diſtinguiſh'd from other Matter.

For Matter is ſuppos'd common to all Bodies; conſequently, that they are diſtinguiſhable from one another does not ariſe from their Matter, but the Form which is peculiar to each: So that what is produc'd by ſuch Cauſe, is ſaid to be *formed*. See Matter.

Hence it follows, that the Cauſality of Matter, and Form, is not the ſame; or that the Component Pow'r, and the Actual Compoſition are different. Contrary to the Opinion of the Generality of Schoolmen, who maintaining *Form* to be a Subſtance coextended with Matter, make it a real component Part; as much as Matter it ſelf. See Cause, Form, Substance, and Substantial.

Formal is alſo us'd in a Moral ſenſe, importing poſitive, expreſs, and preciſe.

Thus we ſay, A *formal* Agreement; a *formal* Text; *formal* Anſwer, &c.

FORMALITER, or Formally, is variouſly us'd in the Schools.

Sometimes it is underſtood of the Subject, when a Predicate is therein on account of ſome Form: Thus, White *formally* taken, diffuſes the Light; *q. d.* the Form inherent in this Subject, *viz.* Whiteneſs, is the Cauſe why the Subject diſperſes the Light.

Formally has alſo place in Suppoſitions; A Word being *formally* ſuppos'd, when it is taken for the Thing it was intended to ſignify; as *Man is an Animal*.

Formally is alſo us'd in the ſame ſenſe with adequately, and totally: Thus, a Syllogiſm *formally*, i. e. adequately taken, requires three Propoſitions.

Sometimes it is alſo us'd for *Quidditatively*: Thus, Man *formally* taken is a reaſonable Animal.

Formally is alſo us'd for *Really*, in oppoſition to objectively: And a thing is ſaid to be *formally* ſuch, when it is ſuch in the proper Notion of the thing ſpoke of.—

Formally, again, is us'd in ſpeaking of the Manner wherein a Thing is contain'd in another; in oppoſition to *Virtually*, and *Eminently*. See Virtually, and Eminently.

FORMALITY, the Quality of a *Form*, or *Formula*; or that which conſtitutes, and denominates them ſuch. See Form, and Quality.

Formality, as defin'd in the Schools, is any Manner, or Notion, wherein a thing is conceiv'd: Or, a Manner in any Object, importing a Relation to the Underſtanding, whereby it may be diſtinguiſh'd from another Object.

Thus, *Animality*, and *Rationality* are *Formalities*.

The *Scotiſts* make great uſe of *Formalities*; in oppoſition to the *Virtualities* of the *Thomiſts*. See Scotist.

The *Scotiſts* hold, that the Metaphyſical Degrees in Man are ſo many *Formalities*, really diſtinct from each other; as *Man*, *Living*, *Animal*, &c. And the ſame they hold of the Attributes of God: The *Thomiſts*, on the contrary, contend, that they are really and intrinſically the ſame. See Degree.

In Matters of Law, *Formalities* are frequently us'd for the Formula's themſelves; or the Rules preſcrib'd for judiciary Proceedings. In Contracts of ſtrict Law, all the *Formalities* muſt be ſtrictly obſerv'd. An Omiſſion of the leaſt *Formality* may ruin the whole Convention.

The Term is alſo us'd for a certain Order, certain Decencies, and Ceremonies obſerv'd.

This Compoſition of *Formalities*, Decencies, and Circumſpections, may form a political Pedant; but not an Ambaſſador, who muſt be a Gallant Man. *Wicquefort*.

FORMATION, in Philoſophy, &c. the Act of forming, faſhioning, or producing a thing.

The *Formation* of the Chick in the Egg, is admirably explain'd by *Malpighi*, in an expreſs Treatiſe, *De Formatione Pulli in Ovo*. See Egg.

The *Formation* of the Fœtus, the Embryo in the Womb, is a Proceſs of which we have but very dark Conceptions. See Conception, Foetus, &c.

The *Formation* of Metals is effected in the Veins of the Earth, of Fumes or Vapours rais'd by the ſubterraneous Fire, and fix'd, or condens'd as they arrive toward the Surface of the Earth. See Metals, Minerals, &c.

The *Formation* of an Abſceſs in the Body, ſee Abscess.

FORMATRIX, or Formatrice. The antient Philoſophers admitted a *Virtus*, or *Facultas Formatrix*, whereby all Bodies had their *Forms* given them. See Faculty.

FORMé, or FORMY, in Heraldry. A Croſs *Formé*, or *Formy*, is a Croſs narrow in the Centre, and broad at the Extremes; ſo call'd by *Leigh*, and *Morgan*; though moſt other Authors call it *Patee*. See PATEE.

FORMED, or FIGURED *Stones*, among Naturaliſts, are ſuch Bodies, as being either pure Stone, Flint, or Spar, are found in the Earth, ſo *form'd* as that they bear a near Reſemblance to the external Figure of Muſcles, Cockles, Oiſters, and other Shells, or Plants.

Authors are greatly divided as to their Origin: The ſeveral Opinions ſee under FOSSIL, SHELL, *Stone* PLANT, SPAR, &c.

FORMED, in Heraldry, ſee SEATED.

FORMEDON, in Law, a Writ which lies for him who has Right to Lands, or Tenements, by virtue of any Intail, ariſing from the Statute of *Weſtm.* 2. *c.* 1.

There are three Kinds, viz. *Forma Donationis*, or *Formedon, in the Deſcender*; *Formedon in the Reverter*; and *Formedon in the Remainder*.

Formedon in the Deſcender, lies for the Recovery of Lands, &c. given to one and the Heirs of his Body; or to a Man and his Wife, and the Heirs of their two Bodies; or to a Man, and his Wife, being Couſin to the Donor, in Frak Marriage, and afterwards alienated by the Donee.

After his Deceaſe, his Heir ſhall have this Writ againſt the Tenant, or Alienee.

Fitz. Nat. Br. fol. 211. &c. makes three ſorts of *Formedon* in the Deſcender: The firſt is that now expreſs'd: The ſecond, for the Heir of a Coparcenor, that aliens, and dies: The third he calls, *Inſimul tenuit*; which lies for a Coparcenor, or Heir in Gavel-kind, before Partition againſt him, to whom the other Coparcenor or Heir has alienated, and is dead.

Formedon in the Revertor, lies for the Donor, or his Heirs (whoſe Land is entail'd to certain Perſons, and their Iſſue, with condition, for want of ſuch Iſſue to revert to the Donor, and his Heirs) againſt him to whom the Donee alienates after the Iſſue extinct, to which it was entail'd.

Formedon in the Remainder, lies where a Man gives Land in Tail, the Remainder to another in Tail, and afterwards the former Tenant in Tail dies without Iſſue, and a Stranger abates; then he in Remainder ſhall have this Writ.

FORMICA, literally ſignifies an *Ant*, and is us'd to expreſs little Tumours, which appear like the Bites of thoſe Creatures.

FORMING, is us'd for the Act of giving Being, or Birth to any thing: Thus, GOD is ſaid to have *form'd* Man after his own Image. Every thing generated, is form'd of ſomething corrupted.—

The Word is alſo ſimply us'd for giving the Figure to any thing. The Potter *forms* his Veſſels as he pleaſes. Geometry teaches, how to *form* all kinds of Figures.—

Alſo, for the producing of a thing: Thus, Thunder is *form'd* of Exhalations: The Lines of his Face began to be *form'd*.

FORMING *of a Siege*, is the making Lines of Circumvallation, to fortify the Camp, and diſpoſing things for the Attack of a Place, in *form*. See SIEGE.

They alſo ſay, to *form* a Squadron, or Battalion; meaning, to range the Soldiers in form of a Squadron, &c.

The Term is alſo us'd in ſpeaking of a Body of Forces; which being out of any order of Squadrons, Battalions, &c. do halt, range themſelves into Order, and put themſelves in a Condition for the Attack. Aſſoon as the Enemy obſerv'd this Motion, they began to *form* themſelves.

FORMING, is alſo us'd in Grammar, in ſpeaking of certain Tenſes of Verbs, which are made from others, by a Change of certain Letters.

The Preſent Tenſe is *form'd* from the Infinitive. Compound and Derivative Words, and even all that have any Etymology, are alſo ſaid to be *form'd*.

FORMS, in Hunting, the Seat of an Hare; or the Place or Time when and where ſhe ſquats.

FORMULA, a Rule, or Model; or certain Terms preſcrib'd, and decreed by Authority, for the *Form* and Manner of an Act, Inſtrument, Proceeding, &c.

The *Roman* Law was full of *Formula's*. Divorces, Adoptions, Stipulations, &c. were perform'd by certain *Formula's*, or in certain Terms.

Cnejus Flavius publiſh'd a Collection of the *Formulas* of his Time; which were well receiv'd. The leaſt Slip or Failure in any of the Terms of theſe *Formulæ*, render'd the whole Tranſaction Null. The *Formula's* of *Marculphus*, with M. *Bignon's* Comment, are in great Eſteem.

FORMULA, in Church Hiſtory, and Theology, is a Formulary, or Profeſſion of Faith.

The Council of *Seleucia* was diſſolv'd by *Leonas*, the Emperor's Commiſſary, as not able to bring them to ſign the *Formula*.

FORMULA is particularly us'd for a little Form, or Preſcription; ſuch as Phyſicians direct in extemporaneous Practice; in Diſtinction from the greater Forms, which are the Officinal Medicines. See PRESCRIPTION.

FORMULARY, a Writing, containing the Form, or Formula of an Oath, Declaration, Atteſtation, or Abjuration, &c. to be made on certain Occaſions.

There are alſo *Formularies* of Devotion, of Prayers, &c. Liturgies are *Formularies* of the publick Service in moſt Churches. See LITURGY.

FORNACALIA, or FORNICALIA, a Feaſt held among the antient *Romans*, in honour of the Goddeſs *Fornax*, or *Fornix*, Furnace. See FEAST.

It was ſolemniz'd with Sacrifices, perform'd before the Mouth of a Furnace, or Oven, wherein they dry'd their Corn, bak'd their Bread, &c.

The *Fornacalia* were moveable: The Grand Curio proclaim'd the time of Celebration every Year on the twelfth of the Calends of *March*.

They were firſt inſtituted by *Numa*. The Quirinalia were inſtituted for the ſake of ſuch as had not kept the *Fornacalia*. See QUIRINALIA.

FORNICATION, WHOREDOM, the Act, or Crime of Incontinency between ſingle Perſons: For if either of the Parties be married, it becomes *Adultery*.

St. *Thomas* labours to prove ſimple *Fornication*, contrary to the Law of Nature. See CONCUBINE.

By the antient Law of *England*, the firſt Offence herein was puniſh'd with three Months Impriſonment: The ſecond was made Felony, by an Act in the time of the late Uſurpation. See WHOREDOM.

FORNICATION is ſometimes us'd as a Generical Term, including all kinds of Offences againſt Chaſtity.

Its Species are, 1° *Simple Fornication*, which is that committed with a Proſtitute. 2° call'd *Stuprum*, is that committed with Perſons of Reputation and Sobriety. 3° That committed with Relations, call'd *Inceſt*. 4° That committed with married Perſons, *Adultery*. 5° That committed with Perſons conſecrated to God, *Sacrilege*. 6° That committed between Perſons of the ſame Sex, *Sodomy*. 7° That committed by Perſons on themſelves, *Manuſtupration*. 8° That committed with Beaſts, *Beſtiality*. See ADULTERY, INCEST, SODOMY, &c.

FORNIX, in Anatomy, the Extremity of the Corpus Calloſum, next the Cerebellum; which is ſeparated or divaricated into two Legs, forming a kind of *Arch*, or *Fornix*. See CORPUS *Calloſum*.

FORPRISE, in Law, an Exception, or Reſervation: In which Senſe the Word is us'd in the Statute of *Exon*, 14 *Edw.* 1. but there written Horſepriſe.

We ſtill uſe it in Conveyances and Leaſes, wherein *Excepted* and *Forepriſed* are ſynonymous.

FORPRISE is alſo us'd for an *Exaction*: In which Senſe it is the ſame with Forecapium.

Totum pratum, &c. *ſine quacunque* Forpriſa *in excambium pro placea dedit*.

FORRAGE, Proviſion for Cattle, of Hay, Oats, and Straw; particularly in War.

In Marching, Encamping, &c. care muſt be taken, that the Cavalry may find *Forrage*. To go to *forrage:* They were ſent *a-forraging*. A Ration of *Forrage* is the Portion of Hay, Straw and Oats, allow'd each Horſeman, for the Subſiſtance of his Horſe one Day; which is 12 Pounds of Hay, as much Straw, and three Pecks of Oats. See RATION.

Skinner derives the Word from *foras agere*, by reaſon they go abroad to ſeek *Forrage:* Others, from *Far*, which antiently ſignify'd any kind of Corn, or Grains: *Menage*, from *Foderagium*, of *Foderum*, or *Fodrum*, which the *Romans* us'd in the ſame Senſe. *Cujas*, and *du Cange*, derive it from the German *Futter*, Horſe-meat: *Voſſius*, from the German *Foden*, or *voeden*, to feed: *Nicod*, from *Farrago*; which literally ſignifies what we call *Forrage*; and figuratively, a Mixture of divers kinds of Things. *Hicks* derives it from the Saxon *Fodre*, or the Engliſh *Fodder*, or the baſe Latin, *Fodrum*.

FORSTAL, FORSTALLING, } See { FORESTAL. FORESTALLING.

FORT, a little Caſtle, or Fortreſs; or a Place of ſmall Extent, fortify'd by Art, or Nature, or both. See CASTLE, and FORTRESS.

A *Fort* is a Work encompaſs'd round with a Moat, Rampart, and Parapet; to ſecure ſome high Ground, or Paſſage of a River; to make good an advantageous Poſt; to fortify the Lines and Quarters of a Siege, &c.

Royal FORT is a *Fort* whoſe Line of Defence is at leaſt 26 Fathoms long. See DEFENCE.

Star FORT, is a Sconce, or Redoubt, conſtituted by reentering and ſalient Angles; having commonly from five, to eight Points; and the Sides flanking each other. See SCONCE.

Field FORT, ſee FORTIN.

FORTERESSE, or FORTRESSE, a general Name for all fortify'd Places, whether ſo fortify'd by Nature, or Art: Such are fortify'd *Towns*, *Caſtles*, *Cittadels*, *Forts*, *Towers*, *Redoubts*, *Sconces*, &c.

FORTI-

FORTIFICATION, call'd alſo *Military Architecture*, is the Art of *fortifying*, or ſtrengthening a Place; by making Works around the ſame, to render it capable of being defended by a ſmall Force, againſt the Attacks of a more numerous Enemy. See *Military* ARCHITECTURE.

Some Authors go back to the Beginning of the World, for the Author and Origin of Military Architecture.

According to them, GOD himſelf was the firſt Engeneer; and Paradice, or the Garden of *Eden*, the firſt *Forteresſe*. *Cain* improv'd on the Hint, in building the firſt City, *Gen.* iv. 17. After him came *Nimrod*, *Gen.* x. 17. Then *Semiramis*, as *Poliænus* relates, *Stratagem. L. VIII. c.* 27. The *Canaanites*, *Numb.* xiii. 19. *Deut.* i. 28. *David*, 2 *Kings* v. 9. *Solomon*, 2 *Chron.* iii. 5. *Rehoboam* his Son, 2 *Chron.* xi. 5, 10. and the other Kings of *Juda* and *Iſrael*, and at length the *Greeks* and *Romans*. *Vitruvius L. X.* laſt Chap. and *L. I. c.* 5.

Such is the Series of thoſe who fortify'd Places: To which might be added *Pharoah*, the Perſecutor of the *Iſraelites*, who built the Cities of *Pithom* and *Raamſes*. *Exod.* i. 11.

But how antient ſoever the ſurrounding of Cities with Walls, Towers, *&c.* may be; the Name *Fortification*, and the Art now underſtood thereby, are of no very old Standing.——

They had their Riſe ſince the Invention of Cannons; the terrible Effects whereof render'd it neceſſary to change the Structure of the antient Walls, and add ſo many Things thereto, that thoſe Changes were thought enough to conſtitute a new Art, which was called *Fortification*, by reaſon of the Strength it afforded thoſe in Cities, to defend them againſt an Enemy.

The firſt Authors who have wrote of *Fortification*, conſider'd as a particular form'd Art, are *Ramelli*, and *Cataneo*, *Italians*. After them *Errard*, Engineer to *Henry* the Great of *France*; *Stevinus*, Engineer to the Prince of *Orange*, *Marolois*, the Chevalier *de Ville*, *Lorini*, the Count *de Pagan*, and the Mareſhal *de Vauban*: Which two laſt Noble Authors contributed very greatly to the Perfection of the Art.

From the Idea and Office of *Fortification*, ſome General Fundamental Rules or Axioms may be drawn, as

1° That the Manner of fortifying ſhould be accommodated to that of Attacking: So that no one Manner can be aſſured will always hold, unleſs it be aſſured the Manner of Beſieging be incapable of being alter'd; and to judge of the Perfection of a *Fortification*, the Method of Beſieging at the Time when it was built, muſt be conſider'd.

2° All the Parts of a *Fortification* ſhould be able to reſiſt the moſt forcible Machines us'd in Beſieging.

3° A *Fortification* ſhould be ſo contriv'd, as that it may be defended with as few Men as poſſible; which Conſideration, when well attended to, ſaves a world of Expence.

4° That the Defendents may be in the better Condition, they muſt not be expos'd to the Enemy's Guns and Mortars; but the Aggreſſors be expos'd to theirs.

Hence 5° All the Parts of a *Fortification* ſhould be ſo diſpos'd, as that they may defend each other; in order to this, every Part thereof is to be *flank'd*, i. e. capable of being ſeen and defended from ſome other; ſo that there be no Place where an Enemy can lodge himſelf, either unſeen, or under Shelter.

6° All the Campaign around muſt lie open to the Defendents; ſo that no Hills or Eminences muſt be allow'd, behind which the Enemy might ſhelter himſelf from the Guns of the *Fortification*; or from which he might annoy them with his own.

The Fortreſs, then, is to command all the Place round about; conſequently the Outworks muſt all be lower than the Body of the Place.

7° No Line of Defence to be above Point blank Muſket Shot, which is about 120 Fathom.

8° The acuter the Angle at the Centre; the ſtronger is the Place, as conſiſting of the more Sides, and conſequently more defenſible.

Such are the General Laws and Views of *Fortification*: The Particular ones, reſpecting each ſeveral Work or Member thereof, will be deliver'd under their proper Articles.— See FORTIFIED *Place*.

FORTIFICATION is alſo us'd for the *Place fortified*; or the ſeveral Works rais'd to defend and flank it, and keep off the Enemy.

All *Fortifications* conſiſt of Lines and Angles, which have various Names, according to their various Offices. See LINE, and ANGLE.

The principal Angles are thoſe of the CENTRE, the FLANKING *Angle*, FLANK'D *Angle*, *Angle of the* EPAULE.

The principal Lines are, thoſe of CIRCUMVALLATION, of CONTRAVALLATION, of the CAPITAL, &c. See each in its Place.

Fortifications are divided into *Regular*, and *Irregular*; and again into *Durable*, and *Temporary*.

Regular FORTIFICATION, is that wherein the Baſtions are all equal; or that built in a regular Polygon; the Sides and Angles whereof are generally about a Muſket Shot from each other. See POLYGON.

In a Regular *Fortification*, the Parts being all equal, have the Advantage of being equally defenſible; ſo that there are no weak Places.

Irregular FORTIFICATION, is that wherein the Baſtions are unequal, and unlike; or the Sides, and Angles not all equal, and equidiſtant.

In an Irregular *Fortification*, the Defence and Strength being unequal; there is a Neceſſity for reducing the Irregular Figure, as near as may be, to a Regular one.

And, as the Irregularity of a Figure depends on the Quantity of Angles and Sides; the Irregularity of a *Fortification* ariſes either from the Angles being too ſmall, or the Sides being too long, or too ſhort.

Conſequently, an Irregular Figure being propos'd to be fortify'd; all the Angles, with the Quantity of the Sides, muſt be found, to be able to judge how it is to be fortify'd.

Durable FORTIFICATION, is that built with deſign to remain a ſtanding Shelter for Ages. Such are the uſual *Fortifications* of Cities, Frontier Places, &c.

Temporary FORTIFICATION, is that erected on ſome emergent Occaſion, and for little time.

Such are Works caſt up for the ſeizing and maintaining a Poſt, or Paſſage; thoſe about Camps, *&c.* as Circumvallations, Contravallations, Redoubts, Trenches, Batteries, &c.

FORTIFIED *Place*, a *Forteresſ*, or *Fortification*; *i. e.* a Place well flank'd, and ſhelter'd with Works.

Places fortified, after the modern way, conſiſt chiefly of *Baſtions*, and *Curtains*, and ſometimes of *Demi-Baſtions*; according to the Situation of the Ground, of *Cavaliers*, *Ramparts*, *Fauſſe-brayes*, *Ditches*, *Counterſcarps*, *Cover'd Ways*, *Half Moons*, *Ravelins*, *Hornworks*, *Crownworks*, *Outworks*, *Eſplanades*, *Redents*, and *Tenailles*. See each under its proper Article, BASTION, CURTAIN, RAMPART, CAVALIER, FAUSSEBRAYE, DITCH, &c.

There are other moveable and additional Parts, as BERMES, PARAPETS, BANQUETTES, EMBRASURES, CORDONS, BOYAUX, MOULINETS, CHEVAUX *de Friſe*, CHAUSSE-TRAPES, GALLERIES, MANTELETS, BATTERIES, SAPS, MINES, BLINDS, GABIONS, and PALISSADES. See each in its Place.

Several of theſe Works, again, conſiſt of divers Parts, which have different Denominations: Thus a Baſtion conſiſts of FACES, FLANKS, CASEMATES, ORILLONS, GORGE, *&c.* which ſee.

The Methods of *Fortifying*, that have been invented, are various; and new Methods continue ſtill to be propos'd. The principal, and thoſe which chiefly obtain thro' *Europe*, are thoſe of *Coehorn*, *Pagan*, *Vauban*, and *Scheiter*, from which all the reſt are eaſily conceiv'd.——

FORTIFICATION, *according to the* Dutch *Method*, is that, which making the Flank perpendicular to the Curtain, makes the Flank ſubduple of the Face, and ſubtriple of the Curtain; and the Angle of the Baſtion, equal, either to two thirds of the Angle of the Polygon; or to half thereof, with the Addition of 15 or 20 Degrees, to make it equal to a right Angle.

Freitach determines the Quantity of the Flank in a ſquare to be ſix; in a Pentagon, ſeven; in a Hexagon, eight; in a Heptagon, nine; in a Enneagon, ten; in a Decagon, eleven and in all other Figures, twelve *Rhinland* Perches: Conſequently, the Face 24, and the Curtain 36 Perches.

To draw the Profile of a Fortification *after the* Dutch *manner*; Draw the inner Polygon G H *Tab. Fortification. Fig.* 6. into five equal Parts: The Demigorge A B is to contain one of them; and the Capital A B, two. Then divide the Curtain E A into four Parts; and make the Flank A B one.

This is *Freitach*'s Method: But the *French* make both the Demigorge, and Flank a ſixth Part of the Polygon; and in Squares, and Pentagons, ſetting aſide the ſecond Flanks, deſcribe a Semicircle upon B S, that the Angle of the Baſtion C may be a right Angle.

The *Italians* giving the ſame Dimenſions to the Gorge and Flank, make the ſecondary Flank half the Curtain, in Polygons exceeding a Hexagon, and a third of the Curtain in the reſt.

Laſtly, the *Spaniards* giving the ſame Dimenſions to the Flanks, omit the ſecundary Flanks.

But Flanks perpendicular to the Curtain, with ſecundary Flanks, are in Diſrepute, on account of the Obliquity of the Defence; ſo that the *Dutch* Method of fortifying, with the other antient ones, founded on the ſame Principles, are now out of Doors.——

FORTIFICATION, *according to the* COUNT *de* PAGAN'*s Method*; ſuppoſes in the larger Fortifications, the external Polygon A B, *Fig.* 7. to be 100, the Face A G, 30 Perches; in the ſmaller, the firſt, 80, and the ſecond, 25; and in the middle Size, the firſt 90, and the ſecond 27½: The Perpendicular C D, 15, and the Flanks G F and H E perpendicular to the Lines of Defence A F and B E, cover'd with

an

ah Orillon, and tripled; and a Ravelin, Curtain and Baſtions built on the Outſide the Rampart.

This Method was receiv'd with great Applauſe, and muſt be allow'd greatly preferable to the *Dutch* Method.

But it has its Defects; for beſides that the *fortifying* of Places by it is very expenſive; its triple Flanks are too cloſe, ſo as to lie expos'd to the Violence of the Bombs; the Orillon is ſo large as to prejudice the Length of the Flanks; the outer Rampart of the Baſtion is too big, *&c.*

FORTIFICATION, *according to Monſ.* Blondel's *Method*; has a great Affinity with that of the Count *de Pagan*, only that the Quantity of the Lines and Angles are differently determined.

Thus, a Right Angle being ſubtracted from the Angle of the Polygon, and to a third part of the Remainder, 15 added; the Sum gives the diminiſh'd Angle. In the greater Fortifications, the outer Polygon is 100, in the ſmaller 85. The external Polygon being divided into ten parts, ſeven of them give the Lines of Defence; and the Faces are half thoſe of the Tenaille.

This Method is very well calculated for the Purpoſes of Architecture; only, being ſomewhat expenſive, 'tis but little us'd.——

FORTIFICATION, *according to Monſ.* Vauban's *Method*, ſuppoſes the outer Polygon in the larger Fortifications to be 100; in the ſmaller, 80; and in the middle Size 90: The Faces are made $\frac{2}{7}$ of the ſame; the Perpendicular, in a ſquare, $\frac{1}{8}$, in a Pentagon $\frac{1}{7}$, in the other Polygons $\frac{1}{6}$ of the ſame. The Complement of the Face to the Line of Defence, he makes equal to the Diſtance of the Epaule: He uſes re-entering and crooked Flanks; and places a low Tenaille before the Curtain; and the *Dutch* Ravelin with Lunettes.

This Method of *fortifying* pleaſes moſt People; both as it increaſes the Strength, without much Expence; and as it is perfectly well accomodated to the Principles of military Architecture, above laid down.

Yet it ſeems defective in this, that the Faces are too much expos'd to the View of the Enemy; and that the Lunettes are a little too long to be defended.

Monſ. Vauban's *newer Method of* FORTIFYING, is that which builds large Baſtions before ſmall ones, and covers the Courtin with a double Ravelin; drawing a low Tenaille before the ſame Curtain.

Detached Baſtions are perfectly ſuitable to what we have deliver'd in the former Method; excepting that the Flanks are rectilinear, and deſtitute of an Orillon.

FORTIFICATION, *according to the Method of* Scheiter, ſuppoſes the external Polygon, in the larger Fortifications to be 100 Perches; in the leſſer 80; in the middle Size 90: The Flanks perpendicular to the Lines of Defence; and the Lines of Defence in the greater Fortifications 70 Perches, in the leſſer 60, and the middle Size 65.

It detaches Baſtions from the Curtain, and forms a kind of inner Receſs behind the Curtain: It aſſumes the Angle of the Baſtion, in a Square, to be 64 Degrees; to this adding 8, the Product is the Angle in a Pentagon; to which adding ſix Degrees, the Sum is the Angle of the Baſtion in a Hexagon; and adding 5 to this, the Sum is the ſame Angle in a Heptagon.

FORTIN, a Diminutive of the Word *Fort*, importing a little *Fort*, or Sconce, call'd alſo *Field Fort*, built in Haſte, for defence of a Paſs, or Poſt; but particularly to defend a Camp, in the time of a Siege, where the principal Quarters are join'd, or made to communicate with each other by Lines defended by *Fortins* and Redoubts.

Fortins being very ſmall, their flank'd Angles are generally 120 Fathom diſtant from each other; but their Figure and Extent is various, according to the Place and Occaſion; ſome having whole Baſtions, and others only half Baſtions. See REDOUBT.

Star-FORTIN, is that whoſe Sides flank each other, *&c.* See *Star* FORT.

FORTUNA, in our antient Law Books, is the ſame with what we call *Treaſure-Trove*. See TREASURE-*Trove*.

Theſaurum ducente Fortunâ *invenire inquirendum eſt per* 12 *Juratores pro Rege*, &c. *quod fideliter præſentabunt*, &c. *omnes* Fortunas, *abjurationes*, *appella*, &c.

Spelman tells us, it alſo ſignifies *Fortuito occiſos*; but this ſeems to be very fanciful. See SACROBARRA.

FORTUNATE *Iſlands*, in the antient Geography, an Appellation which has given the Criticks and Antiquaries a world of Perplexity; being a Denomination of a Place famous for Golden Apples, which grew therein: Or, as *Varro* ſays, for Sheep, with Golden Fleeces.

The Antients deſcribe them as ſituate without the Straights of *Gibraltar*, in the *Atlantic* Ocean.

The common Opinion of the Moderns takes them for the *Canary* Iſlands; grounded principally on the Situation and Temperature of thoſe Iſlands, which renders the uſe of Cloaths unneceſſary; and the Abundance of Oranges, Lemons, Grapes and other delicious Fruit growing therein. See GOLDEN *Fleece*.

Ol. Rudbecks has found a very different Place for them. That learned Author, who makes his native Country *Sweden* the Scene of all that is great and extraordinary in antient Tradition and Fable; will have the *Fortunate* Iſlands to be *Sweden*.

The delicious Fruits, talk'd off by the Antients, his Imagination ſuggeſts, were nothing but the Virtue, and good Manners, which antiently flouriſh'd in that cold Hyperborean Nation.

FORTUNE, ſee PROVIDENCE, FATE, &c.

The Name *Fortune*, τύχη, was unknown in the earlier Ages; and does not occur either in *Homer*, or *Heſiod*; as not being yet invented.

In After-days, it was introduc'd as a Machine; and made to ſerve divers Purpoſes in Natural Philoſophy, and Theology.

Men obſerving a world of Evils, and Diſorders to fall out; and not daring directly to complain of Providence; and being willing withal to excuſe themſelves from being the Occaſions of their own Misfortunes, had recourſe to the Notion of *Fortune*: Againſt whom they might vent all their Reſentments *impune*.

Plutarch, in an expreſs Treatiſe of *the Fortune of the Romans*, accounts for the Practice of the antient Poets, who ſeem to make *Jupiter* the Author of all the Evils of Life. Mankind, he obſerves, before the Name of *Fortune* had got into the World, perceiving a certain arbitrary Cauſe, diſpoſing of things in an irreſiſtible manner, call'd it *God*; but the ſame Cauſe being often obſerv'd to act at random, and without any Rule or Order at all; the ſupreme Being came to be diveſted of the Attribute; and *Fortune*, or *Deſtiny* acknowledg'd in his ſtead. See DESTINY.

It is not eaſy to unravel, what the Antients meant by the Name *Fortune*.

The *Romans* underſtood by it, I know not what Principle of Fortuity, whereby things came to paſs, without being neceſſitated thereto; but what, and whence that Principle is, they do not ſeem to have ever preciſely thought: Whence their Philoſophers are often intimating, that Men only fram'd the phantom *Fortune* to hide their Ignorance; and that they call *Fortune* whatever befalls a Man, without his knowing why.

Juvenal affirms, it was Men who made a Deity of *Fortune*.

Nullum Numen abeſt ſi ſit prudentia; ſed te, nos facimus, Fortuna, *Deam, Cœloque locamus.*

According to the Sentiment of the Heathens, therefore, *Fortune*, at Bottom, was only the Arrival of Things in a ſudden and unexpected Manner, without any apparent Cauſe, or Reaſon: So that the Philoſophical Senſe of the Word, coincides with what is vulgarly call'd *Chance*. See CHANCE.

But in Religion it had a further Force: Altars and Temples in great Numbers were conſecrated to this *Fortune*, as a Deity.

This intimates, that the Heathens had perſonify'd, and even deify'd their Chance; and conceiv'd her as a ſort of Goddeſs, who diſpos'd of the Fate of Men at her pleaſure. Hence that Invocation of *Horace*, *O Diva gratum quæ regis Antium*; in the 35th Ode of the firſt Book, where he recommends *Auguſtus*, then preparing for a Viſit to *Britain*, to her Protection.——

From theſe different Sentiments it may be infer'd, that the Antients at one time took *Fortune* for a peremptory Cauſe, bent upon doing good to ſome, and perſecuting others: And ſometimes for a blind, inconſtant Cauſe, without any View or Determination at all.

If then the Word *Fortune* had no certain Idea in the Mouth of thoſe who erected Altars to her; much leſs can it be aſcertain'd what it denotes in the Mind of thoſe who uſe the Word in their Writings.

They who would ſubſtitute the Name *Providence* in lieu of that of *Fortune*, cannot give any tolerable Senſe to half the Phraſes wherein the Word occurs.

To theſe, *e. gr.* we muſt always diſtruſt *Fortune*, but eſpecially when ſhe ſeems to flatter us moſt: The Contempt of Riches, in the Philoſophers, is a ſecret Deſire of revenging their Merit againſt the Injuſtice of *Fortune*, by a Contempt of thoſe very Benefits ſhe deprives them off: *Fortune* is ſo blind, that amidſt a Croud, wherein there is but one wiſe Man, we muſt not imagin ſhe will trace him out, to accumulate him with her Favours.——

On theſe and the like Occaſions, the Word *Providence* cannot be ſubſtituted in lieu of *Fortune*: The Idea anſwering to the Expreſſion, is Pagan, as well as the Expreſſion it ſelf. Add, that it is a Fault, even in point of Accuracy, to uſe a Term that ſignifies nothing; as much as it is in point of Religion, to aſſociate *Fortune* with Providence, in the Direction of the Univerſe.

Horace paints the Goddeſs, preceded by Neceſſity, holding Nails and Wedges in her Hands, with a Cramp-iron, and melted Lead to faſten it; rarely accompanied with Fidelity, unleſs when ſhe abandons a Family; for in that caſe Fidelity never fails to depart with her, as well as Friends.

The Painters repreſent her in a Woman's Habit, with a Bandage before her Eyes, to ſhew that ſhe acts without Diſcernment; ſtanding on a Wheel, to expreſs her Inſtability. The *Romans*, ſays *Lactantius*, repreſented her with a Cornucopia, and the Helm of a Ship, to ſhew that ſhe diſtributes Riches, and directs the Affairs of the World. In effect, 'tis with ſuch Characters, that we ſee her repreſented on ſo many Medals, with the Inſcriptions, FORTUNA AUG. FORTUNA REDUX. FORTUNÆ AUG. or REDUCIS, &c. Sometimes ſhe is ſeen pointing at a Globe before her Feet, with a Sceptre in one Hand, holding the Cornucopia in the other.

The *Romans* had a Male, and Female *Fortune* for the Objects of their Adoration: The *Fortuna Virilis*, honour'd by the Men; and the *Fortuna Muliebris*, by the Women.

On the Reverſe of a Medal of *Commodus*, we have a Repreſentation of *Fortune*, under the Quality, or Surname of *Manens*, *i. e.* ſtable, permanent; holding a Horſe by the Reins. On the *Greek* Medals we meet with ΑΓΑΘΗ, or ΚΑΛΗ ΤΥΧΗ, Good *Fortune*. *Conſtantine* gave the Epithet *Anthouſia*, *i. e.* flouriſhing, to the *Fortune* of his new City *Conſtantinople*.

FORUM, in Antiquity, is us'd in divers Acceptations.

Sometimes for a Place of Negotiation, or Merchandizing, anſwering to our *Market Place*; in which ſenſe it has uſually ſome Adjective added to it, as *Forum Boarium*, the Beaſt Market; *Forum Piſcarium*, the Fiſh Market; *Olitorium Forum*, the Herb Market, &c. See MARKET.

FORUM, again, is us'd for any Place, where the Governor of a Province convenes his People, to give Judgment, according to Courſe of Law: Whence a Man is ſaid *Forum agere*, when he keeps the Aſſizes; *Forum indicere*, when he appoints the Place where they are to be kept, &c.

FORUM is alſo a publick Standing Place in the City of *Rome*, where Cauſes were judicially try'd, and Orations deliver'd to the People.

Of theſe *Forums* there were ſeveral; at firſt only three, viz. *Romanum*, *Julianum*, and *Auguſtum*: But that Number was afterwards increas'd to ſix, by the Addition of the *Tranſitorium*, call'd alſo *Palladium*; the *Trojanum*, and *Saluſtii Forum*.

The firſt, and moſt eminent of theſe, was the *Forum Romanum*, call'd alſo *Forum Vetus*; and abſolutely, *Forum*, or *the Forum*.

In this was an Apartment, call'd the *Roſtra*, where the Lawyers pleaded; the Officers harangued; Funeral Orations were deliver'd, &c. See ROSTRA.

In the ſame *Forum* was the *Comitium*, or Hall of Juſtice, with the Sanctuary of *Saturn*, the Temple of *Caſtor*, &c. See COMITIUM.

FORUM is alſo us'd among Caſuiſts, &c. for Juriſdiction.

Thus, they ſay in *Foro Legis*, or the *Outer Forum*, i. e. in the Eye of the Law, or the common Courſe of Juſtice: In *Foro Conſcientiæ*, or the *Inner Forum*, *i. e.* in the Eye of GOD, or a Man's own Conſcience.

There are a great many things not condemn'd in *Foro Legis*, which yet are criminal in *Foro Conſcientiæ*.—

FOSS, in Fortification, &c. a *Ditch*, or *Moat*. See DITCH, &c.

The Word is form'd of the Participle *Foſſum*, of the Verb *fodio*, I dig.——

Foss, in Anatomy, a kind of Cavity in a Bone, with a large Aperture, but no Exit, or Perforation.

When the Aperture is very narrow, it is called a SINUS.

In the Cranium there are ſix internal, and fourteen external *Foſſes*. The Cavity of the Orbit, which contains the Eye, is a *Foſs*.

Foss is particularly us'd for a Cavity, or Denture in the Back Part of the Neck. See NECK.

Foss-*Way*, was antiently one of the four great Highways of *England*; ſo call'd, becauſe in ſome Places it was never perfected, but left as a great Ditch. See WAY, ſee alſo WATLING *Street*.

FOSSA *Magna*, or *Navicularis*, is an oblong Cavity, forming the Inſide of the *Pudendum Muliebre*, and which preſents it ſelf upon opening the *Labia*; and in the Middle whereof are the *Caruncuiæ Myrtiformes*. See PUDENDUM.

FOSSA, in our antient Cuſtoms, was a Ditch, full of Water, where Women; committing Felony, were drowned; but Men hanged.

Nam & ipſi in omnibus tenementis ſuis omnem ab antiquo legalem habuere juſtitiam, videlicet ferrum, foſſam, *furcas*, & *ſimilia*. See FURCA.

In another Senſe 'tis taken for a Grave, as appears by theſe old Verſes;

Hic jacent in Foſsâ BEDÆ *venerabilis oſſa,*
Hic eſt foſſatus, *qui bis erat hic cathedratus.*

FOSSARII, in Antiquity, a kind of Officers in the Eaſtern Church, whoſe Buſineſs was, to inter the Dead.

Ciaconius relates, that *Conſtantine* created 950 *Foſſaries*, whom he took out of the divers Colleges or Companies of Tradeſmen: He adds, that they were exempted from Taxes, Services, onerary Offices, &c.

Fa. *Goar*, in his Notes on the *Greek Euchologos*, inſinuates, that the *Foſſarii* were eſtabliſh'd in the times of the Apoſtles; and that the young Men, who carried off the Body of *Ananias*, and thoſe Perſons full of the Fear of GOD, who interr'd St. *Stephen*, were of the Number.

St. *Jerom* aſſures us that the Rank of *Foſſarius* held the firſt Place among the Clerks: But he is to be underſtood of thoſe who had the Direction and Intendance of the Interment of the Devout.

FOSSIL *Kingdom*. The Chemiſts divide all Bodies into three Claſſes, or Kingdoms; *viz. Foſſil*, or *Mineral*; *Vegetable*; and *Animal*. See each in its Place, FOSSIL, VEGETABLE, &c.

FOSSIL, in Natural Hiſtory, is us'd, in a general Senſe, for any thing dug up, or found under Ground. Such are all *Minerals*, *Metals*, *Rock Salts*, &c.

There are alſo *Foſſil* Salt Petre, *Foſſil* Borax, &c.

FOSSILS may be diſtinguiſh'd into 1° Such as are *Natives* of the Earth; and 2° Such as are *adventitious* and repoſited therein by any extraordinary Means, as Earthquakes, Deluges, &c.

Native FOSSILS, or FOSSILS *properly ſo called*, are ſtrictly defin'd to be ſenſible Bodies generated, and growing in, and of the Earth; whoſe conſtituent Parts are ſo ſimple, and homogeneous, that there is no apparent Diſtinction of Veſſels, and Juices; between the Part, and the Whole.

Native *Foſſils* are either *Simple*, or *Compound*.

Simple FOSSILS are thoſe, whoſe Parts, however divided, are all of the ſame Nature, *i. e.* of the ſame Gravity, Magnitude, Figure, Hardneſs, and Mobility.

Such is Quickſilver, which, however divided, is always found the ſame.

Compound FOSSILS are thoſe which may be divided into different, or diſſimilar Parts.

As Antimony, which may be reſolv'd by Fire into Sulphur, and a Metalline Part.

The Simple *Foſſils* are all *Metals*, *Salts*, *Stones*, both vulgar and pretious, and *Earths*. See METAL, SALT, STONE, and EARTH.

The *Compound* FOSSILS are all Sulphurs, all Semimetals, or what we properly call *Minerals*; and all Bodies combin'd out of any two, or more of the preceding, either Simple, or Compound *Foſſils*. See SULPHUR, and SEMIMETAL.

Adventitious, or *Foreign* FOSSILS, include the ſubterraneous Exuviæ of Sea and Land Animals, and even vegetables; as Shells, Bones, Teeth, Leaves, Stalks, &c. which are found in great Abundance, in divers Parts of the Earth.

Theſe Extraneous *Foſſils* have employ'd the Curioſity of ſeveral of our lateſt and beſt Naturaliſts, who have each their ſeveral Syſtem to account for the ſurprizing Appearances of petrify'd Sea-fiſhes, in Places far remote from the Sea, and on the Tops of Mountains: Shells in the Middle of Quarries of Stones: Elephants Teeth, and Bones of divers Animals, peculiar to the Southern Climates; and Plants only growing in the Eaſt, found in our Northern and Weſtern Parts. See SHELL, &c.

Some will have theſe Shells, &c. to be real Stones, and Stone Plants, form'd after the uſual manner of other figur'd Stones, and Stone Plants: Of which Opinion is our learned Dr. *Liſter*.

That Author, tho' he allows of petrify'd Shells on the Sea Shores, will by no means agree, that there are any ſuch Petrifactions in the Midland Countries. The Shell-like Stones, found in our Quarries, he contends, are *Lapides ſui generis*; and never were any Part of an Animal.

His Reaſons are, that their Matter, and Texture, is perfectly the ſame with that of the Rock, or Quarry, where they are taken; as Iron-ſtone Shells are all Iron-ſtone; Spar, or Cryſtalline, all Sparr, &c. That Quarries of different Stone yield different Sorts of theſe Shells: And that there are no Animals in Nature, which yield any thing exactly like them. See STONE, and STONE *Plant*.

But 1° Theſe Shells found under Ground, are perfectly conformable to thoſe in the Sea in Figure, Subſtance, Magnitude, &c. 2° The Subſtance of theſe *Foſſils* differs eſſentially from the common Subſtance of Stones. 'Tis true, we frequently find them cover'd, or incruſtated with a Mineral, or Stony Matter, which has gradually inſinuated it ſelf into the Pores; but it is eaſy diſtinguiſhing that Matter from the Subſtance of the Shell.

The common Opinion is, that theſe *foſſil* Shells, with all other foreign Bodies, found within the Earth, as Bones, Trees, Plants, &c. were buried therein at the time of the univerſal Deluge; and that having been penetrated either by the Bituminous Matter, abounding chiefly in watery

Places; or by the Salts of the Earth, they have been preſerv'd entire, and ſometimes petrify'd. See DELUGE.

Others think, that thoſe Shells, found at the Tops of the higheſt Mountains, could never have been carried thither by the Waters, even of the Deluge; inaſmuch as moſt of theſe aquatic Animals, by reaſon of the Weight of their Shells, always remain at the Bottom of the Water, and never move but cloſe along the Ground.

They imagine, that a Year's Continuance of the Waters of the Deluge, intermix'd with the ſalt Waters of the Sea, upon the Surface of the Earth, might well give occaſion to the Production of Shells of divers kinds in different Climates; and that the univerſal Saltneſs of the Water was the real Cauſe of their Reſemblance with the Sea Shells. The Lakes form'd dayly by the Retention of Rain, or Spring Water, produce different Kinds.

Others think, that the Waters of the Sea, and the Rivers, with thoſe which fell from Heaven, turn'd the whole Surface of the Earth upſide down; after the ſame manner as the Waters of the *Loire*, and other Rivers, which roll in a Sandy Bottom overturn all their Sands, and even the Earth it ſelf, in their Swellings and Inundations: And that in this General Subverſion, the Shells come to be interr'd here, Fiſhes there, Trees there, *&c.* See the *Journ. des Scavans, M DCC XV. p.* 19. and the *Mem. de Trev.* 1713.

But no body has ſet this Sentiment in a better Light, than Dr. *Woodward*, in his *Nat. Hiſtory of the Earth*. That Ingenious Author maintains the whole Maſs of Earth, with every thing belonging thereto, to have been ſo broke, and diſſolv'd, at the Time of the Deluge, that a new Earth was form'd in the Boſom of the Water, conſiſting of different Strata, or Beds of terreſtrial Matter, ranged over each other nearly, according to the Order of their ſpecifick Gravities. See STRATA. By this means, Plants, Animals, and eſpecially Fiſhes, and Shells, not yet diſſolv'd among the reſt, remain'd mix'd and blended among the Mineral and Foſſil Matters; which preſerv'd them, or at leaſt aſſum'd and retain'd their Figures and Impreſſions, either indentedly, or in Relievo.

Camerarius attacks this Sentiment of Dr. *Woodward*, and goes yet higher. He ſuppoſes 1° That the greateſt Part of the Shells now dug from under Ground, had been plac'd there before the Deluge, that is, at the Time of the Creation, when God ſeparated the Earth from Waters. 2° That without having recourſe to the Diſſolution of the Earth by the Waters, one might ſuppoſe moſt of them to have ſlipp'd in at the Chinks and Crevices naturally happening after the Waters were retir'd, and the Earth ſufficiently drain'd. 3° That particular Inundations might have ſwept moſt of theſe Shells into the Places where we now find them. 4° That the Sea may have wrought, or caſt up moſt of theſe Shells through ſubterraneous Spiracles and Canals. 5° That GOD has created divers Stony and Metalline Bodies, perfectly like the Vegetables and Animals, we ſee on Earth, and in the Sea.——

To all theſe Suppoſitions, Dr. *Woodward* anſwers, 1° That it is no ways probable, God ſhould create ſuch a Number of Shell-fiſh of the ſame Species at once; and that purely with a Deſign to deſtroy them all again ſo ſoon after: That among the *foſſil* Shells of the ſame Species, 'tis eaſy to diſtinguiſh different Ages: That ſome appear preciſely ſuch as we now find them in the Spring, the Seaſon when the Deluge began: That 'tis not only Shells, we find under Ground, but alſo Bones of Quadrupeds, Plants, and Trees of extraordinary Sizes; and which are not of the Number of Aquaticks: And laſtly, that the Waters were ſeparated from the Earth on the third Day; and that none of theſe Things were created, till afterwards. 2° That, on the ſecond Suppoſition, theſe Shells would be diſpos'd perpendicularly, and not horizontally, as they are always found: That we ſhould ſometimes find of them in the Clefts of the Earth, of which there is none but where they are broke. 3° That we have no Acquaintance with any of theſe pretended Inundations: That they could never have brought Shells, Stags Horns, and Elephants from *America*, and the *Eaſt Indies*, to *England* and other Parts of *Europe*; Nor thoſe Pines and Beeches, frequently found far greater than any of our Growth. Add, that theſe particular Inundations muſt have riſen to the Tops of the higheſt Mountains, and of conſequence muſt have been general. 4° On the fourth Suppoſition it muſt be held, that God did not only create all theſe ſeveral Bodies in the Entrails of the Earth; but their ſeveral Parts, and the ſeparate Pieces and Fragments of thoſe Parts; a Piece of a Shell, for Inſtance; a Side of a Shell, which conſiſts of two; a Shell void of the Fiſh it ſhould contain; Beards of Corn, without the Grain; Pieces of Cedar Bark, without Wood; Pieces of Bullocks Hides without Fleſh and Bones; human Skins without Bodies; a Bone without the reſt of the Skeleton; a Tooth without the Jaw, *&c.* Add, that the *foſſil* Shells have not only external, but eſſential Reſemblages to Sea Shells; both, *e. gr.* Yielding, by Analyſis, a Quantity of Sea Salt: That among the *foſſil* Teeth of Fiſhes, we meet with ſome apparently worn: And laſtly, that the Shell Fiſh called *Purple*, has a long ſharp Tongue, by means whereof it pierces other Shells, and picks the Fiſh out of them; and that in digging under Ground we actually meet with divers of theſe Shells thus pierc'd. Can ſuch minute, thoro' paced Reſemblances be the accidental Effect of a *Luſus Naturæ*?

This is the Subſtance of what has hitherto been advanced on the Point.

FOSTERLEAN, antiently ſignify'd Nuptial Gifts: Much the ſame with what we now call Jointure. See JOINTURE.

The Word is originally *Saxon*, and ſignifies *Ciborum exhibitio*, that is, a Stipend which the Wife has for her Maintenance.

Poſtea ſciendum eſt cui Foſterlean *pertineat, vadiet hoc Brigduniæ, & plegient amici ſui.*

FOTUS, in Medicine, the ſame as *Fomentation*. See FOMENTATION.

FOVEA *Cordis*, the Hollow of the Heart. See HEART.

FOUGADE, or FOUGASS, in the Art of War; a kind of little Mine, in manner of a Well, ſcarce exceeding ten Foot in Width, and twelve in Depth; dug under ſome Work, or piece of Fortification, and charg'd with Barrels or Sacks of Gunpowder. 'Tis ſet on fire like other Mines, with a Saucidge. See MINE.

The Word is *French*. M. *Huet* derives it from *focata*, of *focus*, Fire.

FOULE, in the Sea Language, is us'd in various Senſes; *viz.* When a Ship has been long untrimm'd, ſo that Graſs, Weeds, Perriwinkles, Barnacles, or the like ſtick or grow to her Sides under Water, ſhe is ſaid to be *foule*. Again, a Rope is ſaid to be *foule*, when it is either tangled in it ſelf, or hindred by another, ſo that it cannot run, or be haled.—A Ship is ſaid to make *foule Water*, when being under Sail, ſhe comes into ſuch Shole, or low Water, that tho' her Keel do not touch the Ground; yet ſhe comes ſo near it, that the Motion of the Water under her raiſes the Mud from the Bottom, and ſo *fouls* the Water.

FOUNDATION, that Part of a Building under Ground: Or, the Maſs of Stone, *&c.* which ſupports a Building; or upon which the Walls of a Superſtructure are rais'd: Or, it is the Coffer, or Bed, dug below the Level of the Ground, to raiſe a Building upon; in which Senſe the *Foundation* either goes the whole Area and Extent of the Building, as when there are to be Vaults, Cellars, or the like; or it is drawn in Cuts, or Trenches, as when only Walls are to be rais'd. See BUILDING.

The *Foundation* is properly ſo much of the Maſonry, as reaches as high as the Surface of the Ground; and is always to be proportion'd to the Load, or Weight of the Building it is to bear.

Sometimes it is maſſive, and continued under the whole Building; as in the antique Arches, and Aqueducts, and ſome Amphitheatres: More uſually it is only in Spaces, or Intervals; either to avoid Expence, or becauſe the Vacuities are at too great a diſtance, in which latter caſe they make uſe of inſolated Pillars, bound together by Arches.—

That we may found our Habitation firmly, ſays Sir *H. Wotton*, we muſt firſt examine the Bed of Earth, upon which we are to build; and then the Under-cielings, or Subſtruction, as the Antients call'd it. For the former, we have a general Precept in *Vitruvius*, *Subſtructionis* Fundationes *fodiantur, ſi queant inveniri ad ſolidum & in ſolido*: By which he recommends not only a diligent, but even jealous Examination of what the Soil will bear; adviſing us not to reſt upon any appearing Solidity, unleſs the whole Mould thro' which we cut, have likewiſe been ſolid. But how deep we ſhould go in this Search, he has no where determined, as perhaps depending more on Diſcretion, than Regularity, according to the Weight of the Work: Yet *Palladio* has ventur'd to reduce it to a Rule; allowing for the *Cavaſione*, *i. e.* hollowing or underdigging, a ſixth Part of the Height of the whole Fabrick, unleſs there be Cellars under Ground, in which caſe he would have it ſomewhat lower. Sir *H. Wotton*'s *Elem. of Architecture.*——

The *Foundations* of Buildings are either *Natural*, or *Artificial*.

Natural, as when we build on a Rock, or a very ſolid Earth; in which caſe we need not ſeek for any further Strengthening.

But, if the Ground be ſandy, or marſhy, or have lately been dug; in ſuch caſe recourſe muſt be had to *Art*. In the former Caſe, the Architect muſt adjuſt the Depth of the *Foundation* by the Height, Weight, *&c.* of the Building: A ſixth Part of the whole Height is look'd on as a Medium: And as to Thickneſs, double that of the Width of the Wall, is a good Rule.

Where the Natural *Foundation* may not be truſted, they either fortify the Ground by *pallifying* it, *i. e.* driving it full of Piles; ſee PALLIFICATION: Or elſe lay large wooden Planks at the Bottom of the Trenches, dug for the *Foundation.*

In

In ſome Places they *found* the Peers of Bridges, and other Buildings near the Water, on Sacks of Wool, laid like Matraſſes; which being well preſs'd, and greaſy, will never give way, nor rot in Water.

FOUNDATION is alſo us'd for the Eſtabliſhment of a City, or Empire.

The *Romans* reckon'd their Years from the *Foundation* of *Rome*, *Ab Urbe Condita*; which we ſometimes expreſs by *ab U. C.* Chronologers make 479 Years from the paſſing out of *Egypt*, to the *Foundation* of *Rome*. See EPOCHA.

FOUNDATION is alſo a Donation, or Legacy, either in Money, or Lands, for the Maintenance and Support of ſome Community, Hoſpital, School, Lecture, or other work of Piety. See SCHOOL, HOSPITAL, COLLEGE, &c.

Among the Order of *Auguſtins*, there is a *Foundation* for the marrying of poor Maids; and another for the furniſhing of Truſſes to poor People, who have Ruptures, or Hernias.——

FOUNDER, He who lays a *Foundation*; or who *founds* and endows a Church, School, Religious Houſe, or other Work of Charity and Piety. See FOUNDATION.

The *Founders* of Churches may preſerve to themſelves the Right of Patronage, or Preſentation to the Living. See PATRONAGE.

FOUNDER, is alſo an Artiſt that melts, or caſts Metals into various Forms, for divers Uſes; as Guns, Bells, Statues, Bombs, Types or Printing Characters, and other ſmall Works, as Candleſticks, Bitts, Buckles, &c.

The Word is form'd of the *French fondre*, to melt, or fuſe. In the *Roman* Law they are call'd *Flatuarii*.

From the different Productions, or Works of the *Founders*, they are differently denominated, as *Founders of ſmall Works*; *Bell Founders*; *Gun Founders*; *Letter Founders*; and even *Carvers*, or *Statuaries*.

What belongs to each, ſee under the Article FOUNDRY.

FOUNDER, in the Sea Language; A Ship is ſaid to *founder at Sea*, when by an extraordinary Leak, or by a great Sea breaking in upon her, ſhe is ſo filled with Water, that ſhe cannot be freed of it; nor is ſhe able to ſwim under it, but ſinks with the Weight thereof.——

FOUNDERING, in the Manage, a Diſorder in Horſes, whereof there are two Kinds, *viz.* in *the Feet*, and in *the Cheſt*.

Foundering in the Feet, ariſes from hard Riding, ſore Labour, great Heats, ſudden Colds, &c. which inflame the Blood, melt the Greaſe, and make it deſcend downward to the Feet, and there ſettle; which cauſes ſuch a Numbneſs, and pricking in the Hoof, that the Horſe has no Senſe or Feeling thereof, being hardly able to ſtand; or when he does, ſhaking and trembling, as if he had an Ague.

A Horſe may likewiſe be *foundred* by wearing ſtraight Shoes, and travelling upon hard Ground.

It may be known when he is *founder'd* on his Forefeet, and not his Hindfeet, by his treading only on his Hindfeet, and ſparing the other; or his going crouching and crippling on his Buttocks.

Sometimes, tho' rarely, he is *founder'd* on his Hindfeet, and not his Fore; which is known by his ſeeming weak behind, and reſting as much as poſſible on the Forefeet.

The general Methods of curing this Diſtemper, are firſt by paring all the Horſe's Soles, ſo thin that the Quick may be ſeen; then bleeding him well at every Toe; ſtopping the Vein with Tallow and Roſin; and having tack'd hollow Shoes on his Feet, ſtopping them with Bran, Tar, and Tallow, as boiling hot as may be; which is to be renew'd once in two Days, for a Week together; after which he is to have good Exerciſe.

Or, after he is pared thin, and let Blood at the Toes, his Feet are to be ſtop'd with Cows Dung, Kitchen Fee Tar, and Soot boil'd together, and pour'd boiling hot into them.

Foundering in the Body, befals a Horſe by eating too much Provender ſuddenly, when too hot; as alſo by drinking too much upon travelling, when he is hot, and riding him after it.

The Effect of which, is, that his Body is oppreſs'd with ill Humors, which take away his Strength, and put him in ſuch Condition, that he can neither go, nor bow his Joints; and being once laid, cannot riſe again, &c. His Legs ſwell; and ſoon after begin to peel: He has a dry Cough, which makes his Eyes water; his Noſe runs with white phlegmatic Matter, &c.

FOUNDRY, or FOUNDERY, the Art of melting and caſting all ſorts of Metals, particularly Braſs, Iron, Bell Metal, &c. See METAL, FUSION, &c.

The Word is alſo us'd for a Place, or Work-houſe, furniſh'd with Furnaces, or Forges for this Purpoſe. See FURNACE.

FOUNDRY *of Small Works, or the Manner of Caſting in Sand.*

The Sand us'd by the *Founders*, in caſting of Braſs, &c. is yellowiſh, pretty ſoft, and greaſy; but after it has been us'd, becomes quite black, by reaſon of the Charcoal Duſt us'd in the Moulds. Every time they would uſe this Sand, they work and tew it ſeveral times over in a Board about a Foot ſquare, plac'd over a kind of Trunk, or Box, into which it may fall from off the Board. This Tewing is perform'd with a Roller, or Cylinder, about two Foot long, and two Inches in Diameter; and a kind of Knife, made of the Blade of a Sword: With theſe two Inſtruments they alternatively roll and cut the Sand, and at length turn it down into the Box under neath.

Then, taking a wooden Board, or Table, of a Length and Breadth proportional to the Quantity of Things to be caſt; round this they put a Frame, or Ledge, and thus make a ſort of Mould. The Mould they fill with the Sand before prepar'd, and a little moiſten'd. This done, they take wooden, or metalline Models, or Patterns of the Things intended to be caſt; apply them on the Mould, and preſs them down into the Sand, ſo as to leave their Form indented. Along the Middle of the Mould is laid half a little Cylinder of Braſs, which is to be the Maſter Jet, or Canal for running the Metal; being ſo diſpos'd as to touch the Ledge at one Side, and only to reach to the laſt Pattern on the other. From this are plac'd ſeveral leſſer Jets, or Branches, reaching to each Pattern, whereby the Metal is convey'd thro' the whole Frame.

This firſt Frame thus finiſh'd, they turn it upſide down, to take out the Patterns from the Sand: In order to which they firſt looſen them a little all round, with a ſmall cutting Inſtrument.

After the ſame manner they proceed to work the Counter Part, or other Half of the Mould, with the ſame Patterns, in a Frame exactly like the former; excepting that it has Pins, which entring Holes, correſponding thereto in the other, make, that when the two are join'd together, the two Cavities of the Pattern fall exactly on each other.

The Frame thus moulded, is carried to the Founder, or Melter, who after enlarging the principal Jet, or Canal of the Counter Part, with a kind of Knife, and adding the Croſs Jets, or Canals to the ſeveral Patterns in both, and ſprinkling them over with Mill Duſt, ſets them to dry in a Furnace.

When both Parts of the Mould are ſufficiently dry'd, they join them together, by means of the Pins; and to prevent their ſtarting or ſlipping aſide by the Force of the Metal, which is to come in flaming hot thro' a Hole contriv'd at the Maſter Jet, they lock them in a kind of Preſs, either with Screws; or, if the Mould be too big, with Wedges.

The Moulds thus put in Preſs, are rang'd near the Furnace, to be in Readineſs, to receive the Metal as it comes out of the Crucible.

While the Moulds are thus preparing, the Metal is put in Fuſion in an earthen Crucible, about ten Inches high, and four in Diameter.

The Furnace wherein the Fuſion is made, is much like the Smith's Forge; having like that a Chimney, to carry off the Smoak; a pair of Bellows, to blow up the Fire; and a Maſſive, or Hearth, where the Fire is made, and the Crucible plac'd. 'Tis the Uſe of this Maſſive, that chiefly diſtinguiſhes the Furnace from the Forge. See FORGE.

In the Middle thereof is a ſquare Cavity, ten or twelve Inches wide, which goes to the very Bottom. It is divided into two, by an iron Grate: The upper Partition ſerves to hold the Crucible and the Fewel; and the lower, to receive the Aſhes.

When the Fewel, which is to be of dry Wood, is pretty well lighted, they put the Crucible full of Metal in the Middle, and cover it with an earthen Lid: And to increaſe the Force of the Fire, beſide blowing it up with the Bellows, they lay a Tile over part of the Aperture or Cavity of the Furnace.

The Metal being brought to a *Fluor*, they fill the Crucible with pieces of Braſs, beaten in a Mortar. To put them in, they make uſe of a kind of iron Ladle, with a long Shank at the End thereof, form'd into a kind of hollow Cylinder, out of which the Ball is drop'd.

Nothing, now, remains, but for the Founder to take the Crucible out of the Fire, and carry it in a Pair of iron Tongues (whoſe Feet are bent, the better to embrace the Top of the Crucible) to the Mould: Into which he pours it, through the Hole anſwering to the Maſter Jet of each Mould.

Thus he goes ſucceſſively from one to another, till his Crucible is emptied, or there is not Matter enough left for another Mould.

Then, caſting cold Water on the Moulds; they take the Frames out of the Preſſes, and the Caſt-works out of the Sand, which they work again for another Caſting. Laſtly, they cut off the Jets, and ſell, or deliver the Work to thoſe who beſpoke it, without any further repairing.

FOUNDRY *of Statues, Great Guns, and Bells.*

The Art of *Caſting Statues* in Braſs, is very antient; inſomuch that its Origin was too remote and obſcure, even for the Reſearch of *Pliny*, an Author admirably ſkill'd at diſcovering the Inventors of other Arts.

All we can learn for certain, is, that it was practic'd in all its Perfection firſt among the *Greeks*, and afterwards among the *Romans*: And that the Number of Statues conſecrated to the Gods and Hero's, ſurpaſs'd all Belief.

The ſingle Cities of *Athens*, *Delphos*, *Rhodes*, &c. had each 3000 Statues; and *Marcus Scaurus*, tho' only Ædile, adorn'd the *Circus* with no leſs than 3000 Statues of Braſs, for the time of the *Circenſian* Games.

This Taſte for Statues was carried to ſuch a Pitch, that it became a Proverb, That in *Rome* the People of Braſs were not leſs numerous than the *Roman* People.

Among us, the caſting of Statues was but little known, or practic'd before the Seventeenth Century. See STATUE.

As to the *Caſting of Guns*, 'tis quite Modern; and it were perhaps to be wiſh'd, we were as ignorant of it as the Antients.

All the Authors agree, that the firſt Canon were caſt in the fourteenth Century; tho' ſome fix the Event to the Year 1338; and others to 1380. See CANON, ORDNANCE, &c.

The *Caſting of Bells* is of a middle Standing, between the other two.

The Uſe of Bells is certainly very antient in the Weſtern Church; and the ſame were likewiſe us'd in the Church of the Eaſt. But at preſent Father *Vanſleb* aſſures us, in his ſecond Account of *Egypt*, he had found but one Bell in all the Eaſtern Church, and that in a Monaſtery in the upper *Egypt*. See BELL.

The Matter of theſe large Works is rarely any ſimple Metal, but commonly a Mixture of ſeveral, as Braſs, Bell Metal, &c. We ſhall here give the Proceſs in the *Foundry* of each.

Method of caſting Statues, or Figures.

There are three things chiefly requir'd in caſting of Statues, Buſts, Baſſo-Relievo's, Vaſes, and other Works of Sculpture; *viz.* The Mould, Wax, and Shell or Coat.

The *Mould*, or *Core*, (thus call'd from *Cœur*, as being in the *Heart*, or Middle of the Statue) is a rude, lumpiſh Figure, a little reſembling the Statue intended. 'Tis rais'd on an iron Grate, ſtrong enough to ſuſtain it, and is ſtrengthen'd withinſide by ſeveral Bars or Ribs of Iron.

It may be made indifferently of two ſorts of Matter, at the Diſcretion of the Workmen, *viz.* Potters Earth mix'd up with Horſes Dung and Hair; or of Plaiſter of Paris, mix'd with fine Brick Duſt.

The Uſe of the Mould in Statues is to leſſen the Weight, and ſave Metal. In Bells it takes up all the Inſide, and preſerves the vacant Space where the Clapper is hung. In Great Guns it forms the whole Barrel, from the Mouth to the Breech: And in Mortars, the Barrel, and Chamber.

The *Wax* is a Repreſentation of the intended Statue in Wax.

If it be a piece of Sculpture, the Wax muſt be all of the Sculptor's own Hand, who uſually faſhions it on the Mould it ſelf. Tho' it may be wrought a-part in Cavities moulded, or form'd on a Model, and afterwards diſpos'd and arrang'd on the Ribs of Iron over the Grate, as before; filling the vacant Space in the Middle with liquid Plaiſter, and brick Duſt; by which means the Mould, or Core is form'd in Proportion as the Sculptor carries on the Wax.

When the Wax (which is to be the intended Thickneſs of the Metal) is finiſh'd, they fit little waxen Tubes perpendicularly to it, from Top to Bottom; to ſerve both as Jets for the Conveyance of the Metal to all Parts of the Work, and as Vent Holes, to give Paſſage to the Air, which would otherwiſe occaſion great Diſorder, when the hot Metal came to encompaſs it. By the Weight of the Wax us'd herein, is that of the Metal adjuſted; ten Pounds of this laſt being us'd to one Pound of the former.

The Work brought thus far, wants nothing but to be cover'd with its *Shell*; which is a kind of Coat, or Cruſt laid over the Wax; and which being of a ſoft Matter, and even at firſt liquid, eaſily takes and preſerves the Impreſſion of every Part thereof, which it afterwards communicates to the Metal, upon its taking the Place of the Wax between the Shell and the Mould.

The Matter of this outer Cover, or Shell, is varied according as different Lays, or Strata are apply'd. The firſt is a Compoſition of putty and old Crucibles well ground, and ſifted, and mix'd up with Water, to the Conſiſtence of a Colour fit for Painting. Accordingly, they apply it with a Pencil, laying it ſeven or eight times over; letting it dry betwixt whiles. For the ſecond Impreſſion they add Horſe's Dung, and natural Earth to the former Compoſition: The third Impreſſion is only Horſes Dung and Earth. Laſtly, the Shell is finiſh'd by laying on ſeveral more Impreſſions of this laſt Matter made very thick with the Hand.

The Shell thus finiſh'd is ſecur'd and ſtrengthen'd by ſeveral Bands or Girts of Iron wound around it at half a Foot's Diſtance from one another, and faſten'd at Bottom to the Grate under the Statue, and a-top to a Circle of Iron, where they all terminate.

Here it muſt be obſerv'd, that if the Statue be ſo big, that it won't be eaſy to move the Mould when thus provided, it muſt be wrought on the Spot where it is to be caſt.

This is perform'd two ways: In the firſt, a ſquare Hole is dug under Ground, much bigger than the Mould to be made therein; and its Inſides lined with Walls of Free-ſtone or Brick. At the Bottom is made a Hole of the ſame Materials, with a kind of Furnace, having its Aperture outwards. In this is a Fire to be lighted, to dry the Mould, and afterwards melt the Wax. Over this Furnace is plac'd the Grate; and on this the Mould, &c. framed as above explain'd. Laſtly, at one of the Edges of the ſquare Pit is made another large Furnace to melt the Metal, as hereafter mention'd.

In the other way, 'tis ſufficient to work the Mould above Ground; but with the ſame Precaution of a Furnace and Grate underneath. When finiſh'd, four Walls are to be run up around it; and by the Side thereof a Maſſive made for a melting Furnace.

For the reſt, the Method is the ſame in both.

The Mould being finiſh'd and incloſ'd between four Walls, whether under Ground, or above it; a moderate Fire is lighted in the Furnace under it; and the Hole cover'd with Planks, that the Wax may melt gently down, and run out at Pipes contriv'd for the purpoſe at the Foot of the Mould, which are afterwards very exactly cloſ'd with Earth, as ſoon as all the Wax is carried off.

This done, the Hole is fill'd up with Bricks thrown in at random, and the Fire in the Furnace augmented, till ſuch time as both the Bricks and the Mould become red hot; which ordinarily happens in 24 Hours. Then, the Fire being extinguiſh'd, and every thing cold again, they take out the Bricks, and fill up their Place with Earth, moiſten'd, and a little beaten, to the Top of the Mould, in order to make it the more firm and ſteady.

Things in this Condition, there remains nothing but to melt the Metal, and run it into the Mould.

This is the Office of the Furnace above; which is made in manner of an Oven, with three Apertures; one to put in the Wood, another for a Vent, and a third to run the Metal out at. From this laſt Aperture, which is kept very cloſe all the time the Metal is in Fuſion, a little Tube or Canal is laid, whereby the molten Metal is convey'd into a large earthen Baſon over the Mould, into the Bottom of which all the big Branches of the Jets, which are to carry the Metal into all the Parts of the Mould, are inſerted.

It muſt be added, that theſe Jets are all terminated, or ſtop'd with a kind of Plugs, which are kept cloſe, that upon opening the Furnace, the Braſs, which guſhes out like a Torrent of Fire, may not enter any of them, till the Baſon be full enough of Matter to run into them all at once: Upon which occaſion they pull out the Plugs, which are long iron Rods, with a Head at one End capable of filling the whole Diameter of each Tube. The Hole of the Furnace is open'd with a long piece of Iron, fitted at the End of each Pole; and the Mould filled in an Inſtant.

The Work is now finiſh'd; at leaſt ſo much as belongs to the *Caſting*; the reſt being the Sculptor's or Carver's Buſineſs; who, taking the Figure out of the Mould and Earth, it is encompaſs'd withal, ſaws off the Jets wherewith it appears cover'd over, and repairs it with Inſtruments proper to his Art, as Chiſſels, Gravers, Puncheons, &c.

Bell FOUNDRY, *or the Manner of caſting Bells.*

What has been hitherto ſhewn of the Caſting of Statues, holds, in proportion, of the Caſting of Bells: All that there is particular in theſe latter, is as follows.

Firſt, then, the Metal is different; there being no Tin in the Metal of Statues; but no leſs than a Fifth Part in that of Bells. Secondly, the Dimenſions of the Mould, or Core, and the Wax of Bells, eſpecially if it be a Ring of ſeveral Bells that is to be caſt, are not left to Chance, or the Caprice of the Workman; but muſt be meaſur'd on a kind of Scale, or Diapaſon, which gives the Height, Aperture, and Thickneſs neceſſary for the ſeveral Tones required.

It need not be added, that 'tis on the Wax, that the ſeveral Mouldings, and other Ornaments and Inſcriptions to be repreſented in Relievo on the Outſide of the Bell, are form'd.

The Clapper, or Tongue, is not properly a Part of the Bell, but is furniſh'd from other Hands.

In *Europe*, it is uſually of Iron, with a large Head at the Extreme, and is ſuſpended in the Middle of the Bell.

In

In *China* it is only a huge wooden Mallet, ſtruck by Force of Arm againſt the Bell: Whence they can have but little of that Concordancy ſo muchad mir'd in ſome of our Rings of Bells. The *Chineſe* have an extraordinary way of increaſing the Sound of their Bells, *viz.* by leaving a Hole under the Canon; which our *Bell Founders* would reckon a Defect.

The Proportions of our Bells differ very much from thoſe of the *Chineſe*. In ours, the modern Proportions are to make the Diameter fifteen times the Thickneſs of the Ledge, and twelve times the Height.

The Manner of caſting great Guns, or Pieces of Artillery.

The Caſting of Canons, Mortars, and other Pieces of Artillery, is perform'd like that of Statues and Bells: Eſpecially as to what regards the Mould, Wax, Shell, Furnaces, &c.

As to the Metal, it is ſomewhat different from both; as having a Mixture of Tin, which is not in that of Statues; and only having half the Quantity of Tin that is in Bells, *i. e.* at the rate of ten Pound of Tin, to an hundred of Copper. A Canon is always ſhap'd a little Conical, being thickeſt of Metal at the Breech; where the greateſt Effort of the Gunpowder is made, and diminiſhing thence to the Muzzle: So that if the Mouth be two Inches thick of Metal, the Breech is ſix.

Its Length is meaſur'd in Callipers, *i. e.* in Diameters of the Muzzle. Six Inches at the Muzzle require 20 Callippers, or ten Feet in length: There is about $\frac{1}{8}$ of an Inch allow'd Play for the Ball.

Letter FOUNDRY, *or the Manner of caſting Printing Letters.*

The Invention of Printing Letters we ſhall ſpeak of under the Articles PRINTING, and LETTER.

Their Difference, Kind, &c. has already been explain'd under the Articles CHARACTER, &c.

The two Things principally to be regarded in the caſting of Letters, are the *Matter*, and the *Matrices*.

The Matter is a Compound Metal; partly Copper, and partly Lead, mix'd in a certain Proportion, which every *Letter Founder* regulates at his own Diſcretion, and to which he frequently adds a certain Quantity of ſome other Metal or Mineral, as his Experience directs him, to render his Compoſition the harder.—

The moſt uſual Proportion of the two Metals, is a hundred Pound of Lead to twenty or twenty five Pound of Braſs. Some (tho' not the beſt Founders) uſe Iron, inſtead of Braſs; in the Proportion of a hundred Pound of Lead, to thirty, or thirty five of Iron.—

Theſe Metals are melted ſeparately in large Crucibles; the Braſs, or Iron with Antimony, and the Lead by it ſelf. When in Fuſion, they are mix'd together: This Fuſion, and Mixture are the moſt laborious Parts of the Letter Founders Art.

The Matrices of the Letters are Pieces of Copper, whereon the Impreſſion of the intended Character has been cut, or ſtruck in Creux, by means of Punchions, &c. graven in Relievo. See MATRICE, PUNCHION, &c.

Each Letter has its proper Matrix; and there are particular ones for Points, Virgula's, Figures, Rules, Head-pieces and other Ornaments of Printing: Excepting the Quadrats, which being only of Lead, and not intended to leave any Impreſſion, are caſt without Matrices, and only in Moulds: And each Matrice has its Punchion, made of Steel, or Iron, well temper'd. See ENGRAVING *in Steel*.

The Matrices being ſtruck, and touch'd up, or repair'd, where needful, are put each at the End of an iron Mould, inclos'd between two thin pieces of Board, two or three Inches ſquare; the two upper Angles being cut off, ſo as to compoſe an irregular Hexagon.

The principal Parts of theſe Moulds, which, as already mention'd, are hid between the pieces of Wood; are 1° Two Steel Plates, with each its Screw, to keep them faſt, at a diſtance from the Boards. 2° Long Pieces. 3° A Piece call'd the Blank, which is what properly forms the Body of the Character, and at the Extremity whereof the Matrice is put. 4° A Jet; which is a ſort of little Funnel, to receive and convey the melted Matter to the Matrice. 5° A Regiſter, ſerving to rejoin the two Parts of the Mould, after they have been open'd to take out the Letter, when caſt.

On the Outſide of the Moulds are three other Pieces, *viz.* the Bow, at bottom; and two Hooks a-top. The Bow is a thick Steel Wire, two or three Lines in Diameter; and eight or ten Inches long, bent in a manner of a Bow, or Arch; whereof the lower piece of Wood is as it were the Chord, or String. One End is faſten'd to the Board, and the other, which is left at liberty, ſerves, by its Spring, or Elaſticity to preſs and retain the Matrice of the Character againſt the Extremity of the Blank, where the melted Matter running in, makes the Impreſſion.

The Hooks a-top of the Mould are alſo of Wire, about the ſame Size with the Bow, and about an Inch and half long; being faſten'd, one of them to one Board, and the other to the other. Their Uſe is, to open the Mould, and to take out the Character when caſt, ſo as the Workman may not be incommoded with the Heat.

Every thing belonging to the Mould being thus diſpos'd, they begin to prepare the Matter.

The Furnace, whereon the Baſon is plac'd for the Metal to be melted in, is made of the ſame Matter as Crucibles. It is uſually 18 or 20 Inches high, and ten or twelve in Diameter. An iron Grate horizontally plac'd, divides it into two: The lower Part ſerves to hold the Aſhes, and is furniſh'd with a Hole to let in Air. The Wood is put in the upper Part, thro' an Aperture made over the Grate. An earthen Pipe ſerves to carry off the Smoak out at a Window, near which the Furnace is ordinarily plac'd. Laſtly, a Stone, or wooden Stool ſerves to ſupport the Furnace, and raiſe it to a proper Height for the Workman, to work ſtanding.

Over the Furnace is plac'd the Melting Baſon, or Copper. It is about nine Inches in Diameter, and takes up the whole Aperture a-top; being even luted to it all round, with Potters Earth. Its Matter is a kind of Pot Metal; and that it may be fit for melting both hard and ſoft Metals, it is divided into two equal Parts, by a perpendicular Partition.

In this Baſon they melt only the Matter already prepar'd; that is, the Mixture or Compoſition made in the Crucibles above mention'd. A little iron Ladle ſerves to ſkim off the Scoriæ or Impurities from the Surface of the melted Metal. Theſe Scoriæ are not all loſt, but ſerve to melt over again.

Two Workmen are uſually employ'd at each Furnace. Each of them has his Part of the Baſon to empty; and they have a Table or Bench in common, where they lay the Characters as faſt as they are caſt.

To run the Metal into the Mould, the Founder holds it in his left Hand; and in his right a little iron Ladle with a wooden Handle, containing juſt enough for one Letter.

Having now fill'd this Ladle with liquid Metal, he pours it into the Jet, or Funnel, whoſe Aperture is in the Middle of the two Hooks of the Mould; and thruſting his Hand briſkly forward wherewith he holds the Mould, makes the Metal run into the Matrix of the Character; which without ſuch Motion might grow cold before it arrived there.

He then unbends the Bow, opens the Mould, and with one of the Hooks takes out the Character; and without Loſs of Time ſhuts it again, replaces the Matrice, and caſts a new Letter. 'Tis incredible with what Expedition and Addreſs all this is done.

The Letter being caſt, they view it, before they break off the Jet; to ſee whether it be perfect; otherwiſe to throw it among the Refuſe of the Fount.

If it be found compleat, the Jet is broke off; the ſuperfluous Metal occaſion'd by the Mould's not being exactly cloſed, taken off with a Knife; the long-tail'd Letters, as *f* and *ſ* hollow'd at bottom, to give room for the Maſſive of the other Letters to be plac'd underneath.

With the ſame Knife they ſcrape the Letter, to ſmooth its two broadeſt Sides, or Faces, and fit them to be rub'd on the Stone. They take care only to rub thoſe Sides; for fear of damaging a Notch on one of the other Sides, which is to ſhew the Sides to the Compoſitor when he ſets his Forms.

The Stone they grind them on, is a ſort of hard, coarſe-grain'd Free-ſtone, plac'd horizontally; before which the Workman ſits. To ſave his Fingers from the Friction, he has a kind of Finger-ſtalls, made of ſome old piece of Leather; with which he covers the two Fingers next the Thumb: With theſe he works each Side of the Letter backwards and forwards: To ſhift Sides, he makes uſe of the Thumb, but without diſcontinuing the Motion; ſo that the By-ſtander would eaſily be deceiv'd, and be ready to ſwear they had all the while rub'd on the ſame Side.

The Letters thus ground are plac'd on the Compoſitor, to be ſcrap'd and brought to the proper Thickneſs on the two other Sides, *viz.* that of the Notch, and its Oppoſite. This they call *Compoſition*.

The Compoſitor is a wooden Ruler, with a little Ledge at Bottom, againſt which the Letters are rang'd. On the ſame Inſtrument the Quadrats, Rules, Borders, &c. are adjuſted.

When the Letters are compoſed, they remain to be *juſtified*, both as to Thickneſs and Height. In order to this, they uſe a little Copper-plate, which is their Level. The Juſtification, as to Thickneſs, is made on a piece of Marble; and that for the Height, on an iron Compoſitor. The Juſtification of the Height, is guided by the *m* of ſome Body of Characters already juſtified.

Letters are ſaid to be of their *juſt* Height, when the Part of the Plate, or Level bears equally on the ſtandard *m* plac'd on its Foot, in the little Compoſitor, and on the Face of two Letters newly caſt plac'd a-ſide of it to be juſtified: As to the Thickneſs, the Juſtification is perform'd by laying the Standard Letter flat on the little Marble, and two new Letters a-ſide of it; and thus levelling the three, with the Plate.

All that remains, is *to get ready the Letters*, *i. e.* to cut the Foot, or rather hollow it, and make that ſort of Groove which every Letter has at bottom, preciſely oppoſite to the Eye or upper Part, or Face of the Letter.

In order to this they turn a long Line of them upſide down in the Juſtificator; which is an Inſtrument of poliſh'd Iron or Steel, conſiſting of two long Pieces join'd together by Screws. Between theſe two, they encloſe as many Letters as it will hold, all plac'd againſt each other in the ſame Situation, as when compos'd for Books; excepting that the Face in the former caſe is downwards, and the Foot a-top. When the Juſtificator is full of Letters, they ſet it on the Table of the Cutter, between two Cheeks of Wood; which preſſing it very tight, enable the Workman to run his Plane along the Line of the Letters thus inverted.

This Plane conſiſts of three Parts; two of Steel, and the third Wood. Of the Steel ones, that at bottom conſiſts of two moveable Steel Plates, which may be drawn cloſer, or ſet further off, at pleaſure, by means of two Screws. Within the Interval between the two, they paſs the Feet of the Row of Letters; and thus is the Plane kept from deviating.

The ſecond Part of the Plane, anſwering to the Bit of Steel in the common Planes, conſiſts of two Branches, and two Screws, which ſerve to raiſe or let down the Steel, as the Groove is to be cut deeper, or ſhallower. The Poſition of this piece of Steel, which is four or five Inches long, is almoſt perpendicular.

The laſt Part of the Plane, which is Wood, ſerves to join the other two. Its Form is that of an Arch: One End of it is faſten'd to the poſterior Extreme of the Plates, and the other to the Branches, which carry the Bit of Steel: So that the three Parts together make a kind of Triangle, voided in the Middle.

The Cutter is a Steel Inſtrument, with a wooden Handle, in manner of a Chiſſel; ſerving to pare off the rough Wire Edge of the Letters when they are got ready.

The Letters are now fit for the Printer's Uſe. See PRINTING.

The Perfection of Letters thus caſt, *&c.* conſiſts in their being all ſeverally ſquare and ſtrait, on every ſide; and all, generally of the ſame Height, and evenly lined, without ſtooping one way or other; neither too big in the Foot, nor the Head; well groov'd, ſo as the two Extremes of the Foot contain half the Body of the Letter; well ground, barb'd, and ſcrap'd; with a ſenſible Notch, *&c.*

The *Letter Founders* have a kind of Policy or Catalogue to regulate the Number of each kind of Lettes in a Fount. See FOUNT.

FOUNT, or FONT, among Printers, *&c.* a Set, or Quantity of Characters, or Letters of each Kind; caſt by the Letter Founder, and ſorted.

Thus we ſay, A Founder has caſt a *Fount* of *Pica*, of *Engliſh*, of *Pearl*, &c. meaning, he has caſt a Set of Characters of theſe Kinds. See LETTER, *Letter* FOUNDRY, &c.

A Compleat *Fount* does not only include the running *Letter*; but alſo *Majuſcules*, or Large, and Small *Capitals*, *Single* Letters, *Double* Letters, *Points*, *Comma's*, *Lines*, *Borders*, *Head-pieces*, *Tail-pieces*, and *Numeral* Characters.

The Letter Founders have a kind of Liſt, or Tarif, whereby they regulate their *Founts*.

The Occaſion thereof is, that ſome Letters being in much more uſe, and oftener repeated than others; their Cells, or Caſes ſhould be better fill'd and ſtored than thoſe of the Letters which do not return ſo frequently.

Thus the *o* and *i* for inſtance, are always in greater Quantity than the *k* or *z*.

This Difference will be beſt perceiv'd from a proportional Compariſon of thoſe Letters with themſelves, or ſome others.

Suppoſe a *Fount* of a hundred thouſand Characters, which is a common *Fount*: Here the *a* ſhould have five thouſand; the *c* three thouſand; the *e* eleven thouſand; the *i* ſix thouſand; the *m* three thouſand; the *k* only thirty; and the *x*, *y* and *z* not many more.

But this is only to be underſtood of the Letters of the Lower Caſe; thoſe of the Upper having other Proportions, which it would be here too long to inſiſt on. See LETTER, CHARACTER, *Letter* FOUNDRY.

FOUNTAIN, FONS, in Philoſophy, a *Spring*, or Source of living Water, riſing out of the Ground.

For the Phænomena, Theory, Origin, *&c.* of Springs or *Fountains*, ſee SPRING.

Among the Antients, the *Fountains*, or Sources of Rivers were held ſacred, and even worſhip'd as a kind of Divinities.

Seneca obſerves as much in his Forty firſt Epiſtle: And *Cicero* L. III. *de Nat. Deor.* c. 20. mentions, that the *Roman* Prieſts and Augurs us'd in their Prayers and Invocations to call on the Names of the *Tiber*, and other Rivers, Brooks and Springs about *Rome*. The ſeventh Inſcription in *p. XCIV.* of *Gruter* has, *FONTI* DIVINO ET GENIO NUMINIS FONTIS. It was a Point of Religion, not to diſturb or muddy the Waters in Waſhing or Bathing. See FONTINALIA.

Tacitus gives an Inſtance hereof in *Nero Annal.* L. IV. c. 22. And *Struvius Antiq. Rom. Syntag.* c. 1. p. 167.

FOUNTAIN, or *Artificial* FOUNTAIN, in Hydraulicks, a Machine, or Contrivance, whereby the Water is violently ſpouted, or darted up; call'd alſo *Jet d'Eau*. See JET *d'Eau*, FLUID, *&c.*

There are divers kinds of theſe Artificial *Fountains*; ſome founded on the Spring, or Elaſticity of the Air; and others on the Preſſure or Weight of the Water, *&c.*

The Structure of each hereof, being very pretty and curious, and affording a good Illuſtration of the Doctrine of Hydraulicks and Pneumaticks, ſhall be here explain'd.

Conſtruction of an Artificial FOUNTAIN, *playing by the Spring, or Elaſticity of the Air.*

A Veſſel, proper for a Reſervoir, as A B, *Tab. Hydraulicks Fig.* 17. is provided of Metal, Glaſs, or the like; ending in a ſmall Neck *c*, a-top. Thro' this Neck a Tube is put, *c a*, traverſing the Middle of the Veſſel, till its lower Orifice, *d*, nearly, but not abſolutely, reach the Bottom of the Veſſel; the Veſſel being firſt half fill'd with Water. The Neck is ſo contriv'd, as that a Syringe, or condenſing Pipe may be ſcrew'd upon the Tube; by means whereof, a large Quantity of Air may be intruded thro' the Tube into the Water; out of which it will diſengage it ſelf, and emerge into the vacant Part of the Veſſel, and lie over the Surface of the Water, C D.

Now, the Water here contain'd, being thus preſs'd by the Air, which is *e. gr.* twice as denſe as the external Air; and the Elaſtick Force of Air being equal to its gravitating Force: The Effect will be the ſame as if the Weight of the Column of Air over the Surface of the Water, were double that of the Column, preſſing in the Tube; ſo that the Water muſt, of neceſſity, ſpout up, thro' the Tube, with a Force equal to the Exceſs of Preſſure of the included, above that of the external Air. See AIR.

Conſtruction of an Artificial FOUNTAIN, *playing by the Preſſure of the Water.*

Having the Conveniency of a Fund, or Reſervoir of Water, in a Place conſiderably higher than that where the *Fountain* is to be (whether that Fund have been plac'd there by Nature; or whether it have been rais'd for the Purpoſe, by a proper Engine, as a Pump, Syphon, Spiral Screw, or the like) from the Reſervoir lay vertical Tubes for the Water to deſcend thro'; and to theſe vertical Tubes, fit other horizontal ones, under Ground, to carry the Water to the Place where the *Fountain* is to play. Laſtly, from theſe horizontal Tubes erect other vertical ones, by way of Ajutages, Jets, or Spouts; their Altitude being much leſs than that of the Tubes whereby the Water was brought to the horizontal ones.

Then will the Water, by the Preſſure of the ſuperincumbent Column, be ſpouted up at theſe Jets; and that to the Height, or Level of the Water in the Reſervoir; and this, howſoever any of the Tubes be bent or incurvated: *The Demonſtration hereof, ſee under* FLUIDS.

Thus may Water be ſpouted to any given Height at pleaſure: The Tubes may be ſo proportion'd as to yield any given Quantity of Water, in a given Time; or ſeveral Tubes of the ſame *Fountain* may be made to yield Water in any given Ratio: Or, laſtly, different Tubes may project the Water to different Altitudes. Rules, for all which, the Reader will find among the Laws of FLUIDS.

Theſe aerial, or aquatic *Fountains*, may be applied in various manners; ſo as to exhibit various Appearances: And from theſe alone, ariſe the greateſt Part of our artificial Water-works.

An Inſtance or two, will not be diſagreeable.

A FOUNTAIN *that ſhall ſpout the Water in various Directions.*

Suppoſe the Vertical Tube, or Spout in which the Water riſes, to be A B (*Tab. Hydraulicks*, *Fig.* 18.) into this, fit ſeveral other Tubes; ſome Horizontal, others oblique; ſome inclining, others reclining, as O P, M N, F L, &c.

Then, as all Water retains the Direction of the Aperture, thro' which it is ſpouted: That, iſſuing thro' A, will riſe perpendicularly; and that thro' L, H, N, P, E will deſcribe Arches of different Magnitudes, and tending different ways.——

Or

Or thus: Suppoſe the Vertical Tube A B, *Fig.* 19. thro' which the Water ariſes, to be ſtop'd a-top, as in A; and inſtead of Pipes, or Jets, let it be only perforated with little Holes all around, or only half, its Surface. Then will the Water ſpin forth in all Directions thro' the little Apertures, and to a Diſtance proportional to the Height of the Fall of the Water.——

And hence if the Tube A B be ſuppos'd the Height of a Man, and be furniſh'd with an Epiſtomium, or Cock at C: Upon opening the Cock, the Spectators, dreaming of no ſuch Matter, will be cover'd with a Shower.

It muſt be here obſerv'd, that the Diameters of the Apertures, by which the Water is emitted, muſt be conſiderably leſs than thoſe of the Tubes in which the Water is brought; leſt the Reſiſtance of the Air, and other Impediments, ſpecify'd under FLUID, break the Force of the Water.——

A FOUNTAIN *playing by the Draught of the Breath.*

Suppoſe A B, *Fig.* 20. a Glaſs or Metal Sphere; wherein is fitted a Tube, C D, having a little Orifice in C, and reaching almoſt to D, the Bottom of the Sphere. If now the Air be ſuck'd out of the Tube C D, and the Orifice C be immediately immerg'd under cold Water; the Water will aſcend thro' the Tube into the Sphere.

Thus proceeding, by repeated Exſuctions, till the Veſſel be above half full of Water; and then applying the Mouth to C, and blowing Air into the Tube; upon removing the Mouth, the Water will ſpout forth.

Or, if the Sphere be put in hot Water; the Air being thereby rarify'd, will make the Water ſpout as before.

This kind of *Fountain* is call'd *Pila Heronis*, or *Hero*'s Ball, from the Name of its Inventor.

A FOUNTAIN, *the Stream whereof raiſes, and plays a Braſs Ball.*

Provide a hollow Braſs Ball A, *Fig.* 21. made of a thin Plate, that its Weight may not be too great for the Force of the Water. Let the Tube B C, through which the Water riſes, be exactly perpendicular to the Horizon.

Then, the Ball being laid in the Bottom of the Cup, or Baſon B; will be taken up in the Stream, and ſuſtain'd at a conſiderable Height, as A; alternately vibrating, or playing up and down.

Hence, as the Figure of the Ball contributes nothing to its reciprocal Riſe, and Fall: Any other Body, not too heavy, may be ſubſtituted in lieu thereof; *e. gr.* a Bird with its Wings ſtretch'd forth.

But, note, that as 'tis neceſſary the Globe, when on the Deſcent, ſhou'd keep the ſame preciſe Perpendicular, wherein it roſe (ſince otherwiſe it wou'd miſs the Stream, and fall downright); ſuch a *Fountain* ſhou'd only be play'd in a Place free from Wind.

A FOUNTAIN *which ſpouts the Water in manner of a Shower.*

To the Tube wherein the Water is to riſe, fit a Spherical, or Lenticular Head, A B, *Fig.* 22. made of a Plate of Metal, and perforated a-top, with a great Number of little Holes.

The Water riſing with Vehemence towards A B, will be there divided into innumerable little Threads, and afterwards broke, and diſperſed into the fineſt Drops.——

A FOUNTAIN *which ſpreads the Water in form of a Cloth.*

To the Tube A B, *Fig.* 23. ſolder two Spherical Segments C, and D, almoſt touching each other; with a Screw E, to contract, or amplify the Interſtice or Chink at Pleaſure.

Others chuſe to make a ſmooth, even Nitch, in a Spherical, or Lenticular Head, fitted upon the Tube.

The Water ſpouting thro' the Chink, or Nitch, will expand it ſelf in manner of a Cloth.

FOUNTAINS *wherein the Water ſpouts out of the Figures of Men and other Animals.*

Since Water may be deriv'd or convey'd by Tubes in any Situation; and always retains the Direction of the Aperture: All here requir'd, is to incloſe Tubes within the Figures of Men, or other Animals, having their Orifices in thoſe Parts whence the Water is to ſpout forth.

From the Principles hitherto laid down, it will be very eaſy to deduce whatever relates to the Furniture of *Fountains*, and the various Forms Water may be put into by their means: All depending on the Magnitude, Figure, and Direction of the Ajutages, or Apertures.——

A FOUNTAIN, *which when it has done ſpouting, may be turn'd like an Hour-glaſs.*

Provide two Veſſels, L M, and N O, *Fig.* 24. to be ſo much the bigger as the *Fountain* is to play the longer; and plac'd at ſo much the greater Diſtance from each other, P N, as the Water is deſir'd to ſpout the higher. Let B A C be a crooked Tube, furniſh'd in C with a Cock; and F E D an other crooked Tube, furniſh'd with a Cock in D. In I, and K are to be other leſſer Tubes, open at both Ends, and reaching near to the Bottoms of the Veſſels N O, and L M: To which the Tubes Q R, and S T are likewiſe to reach.

If, now, the Veſſel L M be fill'd with Water; it will deſcend thro' the Tube B A, and upon opening the Cock C, will ſpout up near to the Height of K: And, after its Fall again, will ſink thro' the little Tube I, into the Veſſel N O, and expell the Air thro' the Tube Q O. At length, when all the Water is emptied out of the Veſſel L M; by turning the Machine upſide down, the Veſſel N O will be the Reſervoir, and make the Water ſpout up through the Cock D.

Hence, if the Veſſels L M, and N O contain juſt as much Water as will be ſpouted up in an Hour's time; we ſhall have a ſpouting Clepſydra, or Water Clock, which may be graduated or divided into Quarters, Minutes, *&c.* as ſhewn under the Article CLEPSYDRA.

A FOUNTAIN *that begins to play upon the lighting of Candles, and ceaſes as they go out.*

Provide two Cylindrical Veſſels, A B, and C D, *Fig.* 25. Connect them by Tubes, open at both Ends, K L, B F, &c. ſo that the Air may deſcend out of the higher, into the lower. To the Tubes ſolder Candleſticks, H, *&c.* And to the hollow Cover of the lower Veſſel, C F, fit a little Tube, or Jet F E, furniſh'd with a Cock G, and reaching almoſt to the Bottom of the Veſſels. In G let there be an Aperture, furniſh'd with a Screw, whereby Water may be pour'd into C D.

Then, upon lighting the Candles H, *&c.* the Air in the contiguous Tubes becoming rarify'd thereby; the Water will begin to ſpout thro' E F.

By the ſame Contrivance may a Statue be made to ſhed Tears upon the Preſence of the Sun, or the lighting of a Candle, *&c.* All here requir'd, being to lay Tubes from the Cavity wherein the Air is rarify'd, to ſome other Cavities near the Eyes, and full of Water.——

FOUNTAIN, with regard to Architecture, is an Aſſemblage of Maſonry, Sculpture, *&c.* either for the Decoration, or Conveniency of a City, Garden, or the like.

Fountains acquire various Denominations, according to their Form, and Situation; as,

Spring FOUNTAIN, a kind of plain Spout, or Stream of Water, iſſuing out of a Stone, or Hole in a Wall, without any Decoration.

Such is the *Fountain* of *Trevi* at *Rome*.

Coverd FOUNTAIN, a kind of Pavillion, built of Stone; either Inſulate, and ſquare; or round; or Multilateral; or back'd: And that, either with a Projecture, or Indenture: Incloſing a Reſervoir, and ſpouting, or darting forth the Water thereof thro' one or more Cocks; in the Middle of a Street, Square, Garden, Court, or the like. Such is that in *Lincolns-Inn*, *London*.

Open FOUNTAIN, is any ſpouting *Fountain*, with a Baſon, Cup, and other Ornaments; all open: As is frequent in our Gardens, and the Vineyards at *Rome*.

Spouting FOUNTAIN, or *Jet d'Eau*, is any *Fountain*, whoſe Water is darted forth impetuouſly thro' one, or more Jets, or Adjutages, and returns in Rain, Nets, Folds, or the like. See JET *d'Eau*.

Baſon FOUNTAIN, is that with only a ſimple Baſon, of any Figure whatever; in the Middle whereof is a Jet, or Spout, or perhaps a Statue; or even a Group of Figures: As in the Court of *Buckingham* Houſe.

Cup FOUNTAIN, is that which beſide a Baſon, has likewiſe a Cup of one ſingle piece of Stone, or Marble, ſupported on a Shaft, or Pedeſtal, and receiving a Jet, or Spout, riſing out of the Middle thereof. As the *Fountain* in the Court of the *Vatican*; the Cup whereof is of Granate, and antique; being brought from the Baths of *Titus* at *Rome*.

Pyramidal FOUNTAIN, that form'd of ſeveral Baſons, or Cups, rang'd in Stories over each other, and diminiſhing all the way; being ſupported by a hollow Stem, or Shaft.

As the *Fountain* of *Monte-Dragone* at *Freſcati*: Or elſe ſupported by Figures, Fiſhes, or Conſoles; the Water whereof in its Fall makes Nets in divers Stories, and repreſents a kind of Water Pyramid: As that at the Head of the Caſcades at *Verſailles*.

Statuary FOUNTAIN, that which being open and inſu-

lated

lated, or even back'd, is adorn'd with one or more Statues, by way of finiſhing, or crowning: As the *Fountain* of *Latona* at *Verſailles*; and that of the Shepherd at *Caprarola*. There are alſo Statues, which ſpout forth Water at ſome of their Parts; or at Sea Shells, Vaſes, Urns, and other Attributes of the Sea.

Ruſtic FOUNTAIN, is that form'd, or enrich'd with Rock-work, Shell-work, Petrifactions, &c.

Satyric FOUNTAIN, a kind of Ruſtic *Fountain*, in manner of a Grotto; adorn'd with Termini, Maſcaroons, Fauns, Sylvans, Bacchantes, and other Satyrical Figures, ſerving for Ornaments as well as Jets d'Eau.

Marine FOUNTAIN, that compos'd of Aquatic Figures, as Sea Divinities, Naiads, Tritons, Rivers, Dolphins, and other Fiſhes, and Shells. As the *Fountain* of the Place *Paleſtrina* at *Rome*; where a Shell ſupported by four Dolphins, ſerves as a Cup, and ſupports a Triton, that ſpouts Water out of his *Concha Marina*.

Naval FOUNTAIN, is that made in form of a Veſſel. Such is that of the Place *d'Eſpagne* at *Paris*, repreſenting a *Bark*: That at *Monte-Cavallo*, repreſenting a *Galley*; or that before the Vineyard *Mattei* at *Rome*, reſembling a Boat.

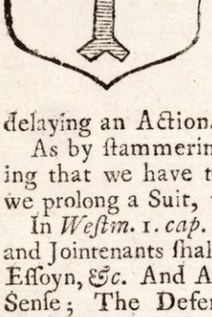
Symbolical FOUNTAIN, that where the principal Ornaments are the Attributes, Arms, or Cognizances of the Perſon who erected it. As the *Fountain* of St. *Peter* in *Montorio*, reſembling a Caſtle flank'd with Towers; and *Doujons*, repreſenting the Arms of *Caſtile*: And ſome other *Fountains* at *Rome*; among which are the *Flower-de-Lis*, and the *Dove*, the Bearings of the Family of Pope *Innocent* X.

Arch'd FOUNTAIN, that whoſe Baſon and Jet are plac'd perpendicularly under an Arch. Such are the *Fountains* of the *Colonnade*, and Triumphal Water Arch at *Verſailles*.—

FOUNTAIN *Pen*, is a ſort of Pen, contriv'd to contain a great Quantity of Ink, and let it flow by gentle Degrees; ſo as to ſupply the Writer a long time, without a Neceſſity of taking freſh Ink.—

The *Fountain* Pen, repreſented *Tab. Miſcellany*, *Fig.* . conſiſts of divers Pieces F G H of Braſs, Silver, &c. whereof the middle Piece F carries the Pen, which is ſcrew'd into the Inſide of a little Pipe; which again is ſolder'd to another Pipe, of the ſame Bigneſs, as the Lid G; in which Lid is ſolder'd a Male Screw, for ſcrewing on the Cover; as alſo for ſtopping a little Hole at the Place, and hindering the Ink from paſſing thro' it. At the other End of the Piece F is a little Pipe, on the Outſide whereof the Top Cover H may be ſcrew'd. In the Cover there goes a Port Crajon, to be ſcrew'd into the laſt mention'd Pipe, in order to ſtop the End of the Pipe, into which the Ink is to be pour'd by a Funnel.

To uſe the Pen, the Cover G muſt be taken off, and the Pen a little ſhaken, to make the Ink run more freely.



FOURCHEE, or FOURCHY, in Heraldry. A Croſs *Fourchee* is that forked at the Ends. See CROSS.

Upton rather repreſents it as *Anchor'd*, the Extremities turning in a circular manner to ſharp Points; whereas the true Croſs *Fourchee*, *i. e.* forked, has its Forks compos'd of ſtrait Lines, and blunt Ends.

FOURCHER, an antient Law Term, ſignifying a putting off, prolonging, or delaying an Action.

As by ſtammering we draw out our Speech, not delivering that we have to ſay, in ordinary time, ſo by *fourching* we prolong a Suit, that might be ended in a ſhorter Space.

In *Weſtm.* 1. *cap.* 42. we have theſe Words: Coparceners and Jointenants ſhall no more *fourch*, but only ſhall have one Eſſoyn, &c. And Anno 6 *Ed.* 1. *cap.* 10. it is us'd in the ſame Senſe; The Defendants ſhall be put to Anſwer without *fourching*, &c. In the *Latin* 'tis called *furcare*, and is us'd, Where a Man, and his Wife, or each of them caſt a Eſſoin. 'Tis called *furcare*, becauſe 'tis twofold. *Caveat vir & mulier implacitati, quod ſemper in Eſſonio alterius alter compareat, quamdiu* furcare *poſſint*; *& cum ultra non poſſint, concurrant coram Eſſonia in ſuis locis: Alter autem earum tantum unum Eſſonium de malo lecti habere poteſt.* Hengham Mag. cap. 9.

FOURTH, in Muſick, one of the Harmonic Intervals, or Concords. See CONCORD.

The *Fourth*, is the Fourth, in order, of the Concords. It conſiſts in the Mixture of two Sounds, which are in the Ratio of 4 to 3; *i. e.* of Sounds produc'd by Chords, whoſe Lengths are to each other as 4:3. See CHORD, and INTERVAL.

'Tis call'd *Fourth*, becauſe containing *four* Terms, or Sounds between its Extremes; and three *Degrees*: Or, as being the *fourth* in the Order of the Natural Scale from the Fundamental. See DEGREE, and FUNDAMENTAL.

The Antients call the *Fourth*, *Diateſſaron*, and ſpeak of it as the firſt and principal of all Concords; and yet the Moderns find it one of the moſt imperfect. 'Tis ſo very barren, and jejune, that it affords nothing good, either by Multiplication, or Diviſion. See DIATESSARON.

The *Redundant* FOURTH is a Diſcord compos'd of the Ratio's of 27 to 20; and of 4 to 5. See DISCORD.

FOUTGELD, or FOOT-GELD, antiently denoted an Amerciament, for not cutting out the Balls of great Dogs Feet, in the Foreſt. See EXPEDITATE.

To be quit of *Foutgeld*, is a Privilege to keep Dogs within the Foreſt, unlawed, without Puniſhment, or Controul.

FOWL, in its general Senſe, is of equal Import with *Bird*. See BIRD.

FOWL, is in a more peculiar manner underſtood of *Poultry*; or the larger ſort of Birds, both Domeſtic, and Wild; either bred up, or hunted for the Table. Such are Turkeys, Geeſe, Cocks, Hens, and Ducks, both wild and tame; Pheaſants, Partridges, Pidgeons, Snipes, &c. See POULTRY.

Tame FOWL, are a neceſſary Part of the Stock of a Country Farm; and yield conſiderable Service and Profit by their *Eggs*, *Brood*, *Feathers*, *Dung*, &c.

They may be kept at a very eaſy Expence near any Highway ſide; as being able to ſhift for themſelves the greateſt Part of the Year, by their feeding on Inſects, Worms, Snails, Gleaning, or almoſt any thing eatable.

The eldeſt Hens are always the beſt for ſitting; and the youngeſt for laying: But no ſort will be good for either, if kept too fat.

The beſt Age to ſet a Hen for Chickens, is from two Years old to five; and the moſt proper Month to ſet them in, is *February*: Tho' it may be done to good purpoſe any time between that and *Michaelmas*. One Cock will ſerve ten Hens: A Hen ſits twenty Days; whereas Geeſe, Ducks, Turkeys, ſit thirty.

Buckwheat, or *French* Wheat, or Hemp-ſeed, 'tis ſaid, make them lay faſter than any other Food: And the ſame Buckwheat, either whole, or ground, and made into a Paſte, fats them apace; tho' the common Food for that purpoſe is Barley-meal, or Wheat-flower, ſoak'd in Milk, or Water, made into a Paſte, and cram'd down their Throats twice a day, till they will hold no more. A Gooſe will will ſcarce ſit on any, but her own Eggs: A Hen, indifferently on all.

The lighteſt colour'd Geeſe are the beſt: And thoſe that begin to lay the ſooneſt; as they have a Chance of hatching twice in one Year. They begin to lay in the Spring; and lay 12 or 16 Eggs. Green Geeſe are begun to be fatten'd at a Month old; and will be fat in a Month more. Old Geeſe are chiefly fatten'd at ſix Months old, in, or after the Harveſt. A wild Gooſe, if red footed, is old, and harry; but if white footed, and not harry, ſhe is young.

When the Eggs are ſet under a Hen, or other *Fowl*, 'tis neceſſary to mark the upper ſides thereof; and when ſhe goes to feed, to note whether ſhe minds to turn them upſide down, or not; that, if ſhe neglect that Office, it may be done for her. See EGG, FEATHER, &c.

FOWLING, the Act, or Art of catching Birds with Nets, Birdlime, Decoys, and other Devices; as alſo of breeding up the ſame. See FOWL, NET, and BIRDLIME.

FOWLING is alſo us'd for the purſuing, and taking of Birds with Hawks, Falkons, and other Birds of Prey; more properly call'd *Falconry*. See FALCONRY.

FOWLING *Piece*, a portable Fire Arm for the ſhooting of Birds. See FIRE ARM.

Of *Fowling* Pieces, thoſe are reputed the beſt, which have the longeſt Barrel, *viz.* from 5½ Foot, to 6; with an indifferent Bore, under Harquebuſs: Tho' for different Occaſions they ſhou'd be of different Sorts, and Sizes. But in all, 'tis eſſential the Barrel be well poliſh'd and ſmooth within; and the Bore all of a Bigneſs, from one End to another; which may be prov'd by thruſting in a piece of Wood, cut exactly to the Bore of the Muzzle, down to the Touch-hole.

FOX *Hunting*, ſee *Fox* HUNTING.

FRACTION, in Arithmetic, a Part, or Diviſion of an Unite, or Integer: Or, a Number which ſtands in the relation to an Unite, a Part to its Whole.

The Word literally imports a *Broken* Number. See NUMBER.

Fractions are uſually divided into *Decimal*, *Sexageſimal*, and *Vulgar*.—

For *Decimal*, and *Sexageſimal* FRACTIONS, ſee DECIMAL, and SEXAGESIMAL *Fractions*.

Vulgar FRACTIONS, called alſo Simple *Fractions*, are always expreſs'd by two Numbers, the one wrote over the other, with a Line between them.

The lower, call'd the *Denominator of the Fraction*, denotes the Unite, or Whole, that is divided into Parts; and the upper, called the *Numerator of the Fraction*, expreſſes the Parts given in the preſent Caſe. See NUMERATOR, &c.

Thus, two third Parts of a Line, or other Thing, are wrote ⅔. Where the Denominator 3 ſhews, that the whole Line is ſuppos'd to be divided into three equal Parts; and the Numerator 2 indicates or aſſigns two of ſuch Parts.

Again,

Again, twenty nine Sixtieths is wrote $\frac{29}{60}$; where the Numerator 29 expreſſes 29 Parts of an Integer divided into Sixty; and the Denominator 60 gives the Denomination to theſe Parts, which are call'd Sixtieths.

The real Deſign of adding the Denominator, is to ſhew what *aliquot* Part the broken Number has in common with Unity. See DENOMINATOR, &c.

In all *Fractions*, as the Numerator is to the Denominator; ſo is the *Fraction* it ſelf; to the Whole, whereof it is a *Fraction*.

Thus, ſuppoſing $\frac{3}{4}$ of a Pound equal to 15 *s.* 'Tis evident, that 3 : 4 : : 15 : 20. Whence it follows 1° That there may be infinite *Fractions* of the ſame Value, one with another; inaſmuch as there may be infinite Numbers found, which ſhall have the Ratio of 3 : 4. See RATIO.

Fractions are either *Proper*, or *Improper*.

A *Proper* FRACTION is that where the Numerator is leſs than the Denominator; and conſequently the *Fraction* leſs than the Whole, or Integer; as $\frac{15}{40}$.

An *Improper* FRACTION is, where the Denominator is either equal to, or bigger than the Denominator; and, of courſe, the *Fraction*, equal to, or greater than the Whole, or Integer, as $\frac{25}{25}$; or $\frac{25}{20}$; or $\frac{90}{32}$.

Fractions, again, are either *Simple*, or *Compound*.

Simple FRACTIONS are ſuch, as conſiſt of only one Numerator, and one Denominator; as $\frac{2}{7}$, or $\frac{14}{365}$, &c.

Compound FRACTIONS, call'd alſo *Fractions of Fractions*, are ſuch as conſiſt of ſeveral Numerators, and Denominators; as $\frac{4}{7}$ of $\frac{11}{12}$ of $\frac{5}{9}$ of $\frac{15}{80}$ &c.——

Of *Fractions* thoſe are *equal* to each other, whoſe Numerators have the ſame Ratio to their Denominators. Thoſe are *greater*, whoſe Numerators have a greater Ratio; and thoſe *leſs*, which have leſs: Thus, $\frac{1}{2} = \frac{4}{8} = \frac{5}{10} = \frac{25}{50} = \frac{50}{100}$. But $\frac{3}{24}$ is greater than $\frac{2}{8}$; and $\frac{4}{8}$ leſs than $\frac{10}{18}$.

Hence, if both the Numerator, and Denominator of a *Fraction*, as $\frac{4}{8}$, be multiply'd, or divided by the ſame Number, 2; the Facta in the former Caſe, $\frac{8}{16}$, and the Quotients in the latter, $\frac{2}{4}$, will conſtitute *Fractions*, equal to the firſt *Fraction* given.——

The Arithmetic of *Fractions* conſiſts in the *Reduction*, *Addition*, *Subtraction*, and *Multiplication* thereof.

I. *Reduction of* FRACTIONS.

1° *To reduce a given whole Number into a* Fraction *of any given Denominator:* Multiply the given Integer, by the given Denominator: The Factum will be the Numerator.

Thus we ſhall find $3 = \frac{72}{24}$; and $5 = \frac{40}{08}$; and $7 = \frac{28}{04}$ &c.

If no Denominator be given, the Number is reduc'd to a *Fraction*, by writing 1 underneath it, as a Denominator. Thus $\frac{2}{1}$ $\frac{4}{1}$ $\frac{55}{01}$.

2° *To reduce a given* Fraction *to its loweſt Terms*; *i. e.* to find a *Fraction*, equivalent to a given *Fraction*, $(\frac{20}{48})$ but expreſs'd in leſs Numbers: Divide both the Numerator 20, and Denominator 48 by ſome one Number, that will divide them both without any Remainder, as here by 4. The Quotients 5 and 12 make a new *Fraction*, $\frac{05}{12}$, equal to $\frac{20}{48}$.

And if the Diviſion be perform'd with the greateſt Number that will divide them both; the *Fraction* is reduc'd to its loweſt Terms.

Now, *To find the greateſt common Diviſor of two Quantities:* Divide the greater by the leſs: Then divide the Diviſor of the Diviſion by the Remainder thereof: Again, divide the Diviſor of the ſecond Diviſion by the Remainder of the ſecond; and ſo on, till there remain nothing. The laſt Diviſor is the greateſt common Meaſure of the given Numbers.

If it happen that Unity is the only common Meaſure of the Numerator and Denominator; then is the *Fraction* incapable of being reduc'd any lower.

3° *To reduce two, or more* Fractions *to the ſame Denomination*; *i. e.* to find *Fractions* equal to the given ones, and with the ſame Denominators: If only two *Fractions* be given, multiply the Numerator, and Denominator of each, by the Denominator of the other: The Products given are the new *Fractions* requir'd.

Thus 5) $\frac{2}{3}$ and 3) $\frac{4}{5}$ make $\frac{10}{15}$ and $\frac{12}{15}$. If more than two be given, multiply both the Numerator and Denominator of each into the Product of the Denominators of the reſt. Thus, 24) $\frac{2}{3}$. 12) $\frac{1}{8}$. 18) $\frac{3}{4} = \frac{48}{72}$. $\frac{12}{72}$. $\frac{54}{72}$.

4° *To find the Value of a* Fraction *in the known Parts of its Integer:* Suppoſe, *e. gr.* It were requir'd to know what is $\frac{09}{16}$ of a Pound; Multiply the Numerator 9 by 20, the Number of known Parts in a Pound, and divide the Product by the Denominator 16. The Quotient gives 11 *s.* Then multiply the Remainder 4 by 12, the Number of known Parts in the next inferior Denomination; and dividing the Product by 16, as before, the Quotient is 3 *d.* So that $\frac{09}{16}$ of a Pound = 11 *s.* 3 *d.*

5° *To reduce a mix'd Number, as* $4\frac{11}{12}$ *into an improper* Fraction *of the ſame Value:* Multiply the Integer, 4, by 12, the Denominator of the *Fraction*: and to the Product 48 add the Numerator: The Sum 59 ſet over the former Denominator, $\frac{59}{12}$, conſtitutes the *Fraction* requir'd.

6° *To reduce an improper* Fraction *into its equivalent mixt Number:* Suppoſe the given *Fraction* $\frac{59}{12}$; divide the Numerator by the Denominator; the Quotient $4\frac{11}{12}$ is the Number ſought.

7° *To reduce a Compound* Fraction *into a Simple one:* Multiply all the Numerators into each other for a new Numerator; and all the Denominators for a new Denominator. Thus $\frac{1}{2}$ of $\frac{3}{4}$ of $\frac{5}{8}$ reduc'd, will be $\frac{15}{48}$.

II. *Addition of Vulgar* FRACTIONS.

1° If the given *Fractions* have different Denominators, reduce them to the ſame. Then, add the Numerators together, and under the Sum write the common Denominator. Thus, *e. gr.* $\frac{2}{3} + \frac{4}{5} = \frac{10}{15} + \frac{12}{15} = 1\frac{07}{15}$. And $\frac{2}{3} + \frac{1}{8} + \frac{3}{4} = \frac{48}{72} + \frac{12}{72} + \frac{54}{72} = \frac{114}{072} = 1\frac{42}{72} = 1\frac{07}{12}$.

2° If Compound *Fractions* are given to be added; they muſt firſt be reduc'd to ſimple ones: And if the *Fractions* be of different Denominations, as $\frac{6}{8}$ of a Pound, and $\frac{2}{3}$ of a Shilling, they muſt firſt be reduc'd to *Fractions* of the ſame Denomination of Pounds.

3° *To add mixt Numbers:* The Integers are firſt to be added; then the fractional Parts: And if their Sum be a proper *Fraction*, only annex it to the Sum of the Integers. If it be an improper *Fraction*, reduce it to a mix'd Number; adding the integral Part thereof to the Sum of the Integers, and the fractional Part after it. Thus, $5\frac{2}{3} + 4\frac{1}{2} = 10\frac{1}{2}$.

III. *Subſtraction of* FRACTIONS.

1° If they have the ſame common Denominator, ſubſtract the leſſer Numerator from the greater, and ſet the Remainder over the common Denominator.

Thus from $\frac{9}{16}$ take $\frac{5}{16}$, and there remains $\frac{4}{16}$.

2° If they have not a common Denominator, they muſt be reduc'd to *Fractions* of the ſame Value, having a common Denominator, and then as in the firſt Rule.

Thus, $\frac{6}{7} - \frac{2}{5} = \frac{30}{35} - \frac{14}{35} = \frac{16}{35}$.

3° *To ſubtract a whole Number from a mix'd Number; or one mix'd Number from another:* Reduce the whole, or mix'd Numbers to improper *Fractions*, and then proceed as in the firſt and ſecond Rule.

IV. *Multiplication of* FRACTIONS.

1° If the *Fractions* propos'd be both ſingle, multiply the Numerators one by another for a new Numerator, and the Denominators for a new Denominator.

Thus $\frac{3}{4}$ into $\frac{5}{8}$ produces $\frac{15}{32}$.

2° If one of them be a mix'd, or whole Number, it muſt be reduc'd to an improper *Fraction*; and then proceed as in the laſt Rule.

Thus $\frac{1}{8}$ into $5\frac{2}{3}$, gives $\frac{11}{24}$; and $\frac{4}{9}$ into $\frac{10}{1} = \frac{40}{09}$.

In Multiplication of *Fractions* obſerve that the Product is leſs in Value, than either the Multiplicand, or Multiplicator; becauſe in all Multiplications, as Unity, is to the Multiplicator; ſo is the Multiplicand, to the Product: Or, as Unity, is to either Factor; ſo is the other Factor, to the Product. But Unity is bigger than either Factor, if the *Fractions* be proper; and therefore either of them muſt be greater than the Product.

Thus in whole Numbers, if 5 be multiply'd by 8, it will be, as 1 : 5 : : 8 : 40; or 1 : 8 : : 5 : 40. Wherefore in *Fractions* alſo, as 1 : $\frac{3}{4}$: : $\frac{5}{8}$: $\frac{15}{32}$; or as 1 : $\frac{5}{8}$: : $\frac{3}{4}$: $\frac{15}{32}$. But 1 is greater than either $\frac{3}{4}$ or $\frac{5}{8}$: Wherefore either of them muſt be bigger than $\frac{15}{32}$.

V. *Diviſion of* FRACTIONS.

1° If the *Fractions* propos'd be both ſimple, multiply the Denominator of the Diviſor, by the Numerator of the Dividend; the Product is the Numerator of the Quotient. Then multiply the Numerator of the Diviſor, by the Denominator of the Dividend, the Product is the Denominator of the Quotient.

Thus $\frac{3}{5}) \frac{4}{9} (\frac{20}{27}$.

2° If either Dividend, Diviſor, or both, be whole or mix'd Numbers, reduce them to improper *Fractions*: And if they be compound *Fractions*, reduce them to ſimple ones; and proceed as in the firſt Rule.

In Diviſion of *Fractions*, obſerve that the Quotient is always greater than the Dividend; becauſe in all Diviſion, as the Diviſor, is to Unity; ſo is the Dividend, to the Quotient; as if 3 divide 12, it will be, as 3 : 1 : : 12 : 4. Now 3 is greater than 1; wherefore 12 muſt be greater than 4: But in *Fractions* as $\frac{3}{5}$: 1 : : $\frac{4}{9}$: $\frac{20}{27}$; where, $\frac{3}{5}$ is leſs than 1; wherefore $\frac{4}{9}$ muſt alſo be leſs than $\frac{20}{27}$.

FRACTIONS *in Species*, or *Algebraic Quantities*.

1° *To reduce* Fractions *in Species to their leaſt Terms*: The Numerators and Denominators are to be divided by the greateſt common Diviſor as in Numbers.

Thus the *Fraction* $\frac{a\,a\,c}{b\,c}$ is reduc'd to a more ſimple one $\frac{a\,a}{b}$ by dividing both $a\,a\,c$, and $b\,c$ by c; and $\frac{203}{667}$ is reduc'd to a more ſimple one $\frac{7}{23}$ by dividing both 203 and 667 by 29; and $\frac{203\,a\,a\,c}{667\,b\,c}$ is reduc'd to $\frac{7\,a\,a}{23\,b}$ by dividing by $29\,c$. And ſo $\frac{6\,a^3-9\,a\,c\,c}{6\,a\,a+3\,a\,c}$ becomes $\frac{2\,a\,a-3\,c\,c}{2\,a+c}$ by dividing by $3\,a$. And $\frac{a^3-a\,a\,b+a\,b\,b-b^3}{a\,a-a\,b}$ becomes $\frac{a\,a+b\,b}{a}$ by dividing by $a-b$.

2° *To reduce* Fractions *in Species to a common Denominator*.

The Terms of each are to be multiplied by the Denominator of the other.

Thus, having $\frac{a}{b}$ and $\frac{c}{d}$, multiply the Terms of one $\frac{a}{b}$ by d, and alſo the Terms of the other $\frac{c}{d}$ by b, and they will become $\frac{a\,d}{b\,d}$ and $\frac{b\,c}{b\,d}$, whereof the common Denominator is $b\,d$. And thus a and $\frac{a\,b}{c}$, or $\frac{a}{1}$ and $\frac{a\,b}{c}$ become $\frac{a\,c}{c}$ and $\frac{a\,b}{c}$.

But where the Denominators have a common Diviſor, it is ſufficient to multiply them alternately by the Quotients.

Thus the *Fraction* $\frac{a^3}{b\,c}$ and $\frac{a^3}{b\,d}$ are reduc'd to theſe $\frac{a^3\,d}{b\,c\,d}$ and $\frac{a^3\,c}{b\,c\,d}$, by multiplying alternately by the Quotients c and d, ariſing by the Diviſion of the Denominators by the common Diviſor b.

Addition and Subſtraction of FRACTIONS *in Species*.

The Proceſs is in all reſpects the ſame in Species, as in Numbers. *E. gr.* Suppoſe it required to add the *Fractions* $\frac{a}{b}$ and $\frac{c}{d}$. Theſe, when reduc'd to the ſame Denomination, will be $\frac{a\,d}{b\,d}$ and $\frac{b\,c}{b\,d}$. Conſequently their Sum is $\frac{a\,d+b\,c}{b\,d}$.

So, if the *Fraction* $\frac{a}{b}$ were to be ſubtracted from $\frac{c}{d}$: Having reduc'd them, they will be $\frac{a\,d}{b\,d}$ and $\frac{b\,c}{b\,d}$, as before. Their Difference, therefore, is $\frac{b\,c-a\,d}{b\,d}$.

Multiplication and Diviſion of FRACTIONS *in Species*.

Here too, the Proceſs is perfectly the ſame as in Vulgar Arithmetic. Thus, *E. gr.* Suppoſe the Factors, or *Fractions* to be multiplied, $\frac{a}{b}$ and $\frac{c}{d}$: The Product will be, $\frac{a\,c}{b\,d}$.

Or, ſuppoſe the *Fractions* required to be divided, $\frac{a\,c}{b\,d}$ and $\frac{a}{b}$; the Quotient will be $\frac{a\,c}{b\,d}\,\frac{b}{a}=\frac{a\,b\,c}{a\,b\,d}=\frac{c}{d}$.

Hence, as $a=\frac{a}{1}$: The Product of a into $\frac{c}{d}$, that is, of an integral Quantity into a *Fraction*, $\frac{c}{d}\,\frac{a}{1}=\frac{a\,c}{d}$. Whence it appears, that the Numerator of the *Fraction* is to be multiplied by the Integer.

Hence alſo, the Quotient of $\frac{c}{d}$ by a, that is, of the broken Quantity, divided by the whole one, $\frac{c}{d}\,\frac{1}{a}=\frac{c}{a\,d}$.

Beſide the common Notion of a *Fraction*, there is another neceſſary to be underſtood. Thus,

Suppoſe $\frac{3}{4}$ or 20 *s.* or a Pound Sterling, were the *Fraction*: This *Fraction* inſtead of three Quarters of one Pound may be conſider'd as a fourth Part of three Pounds; that is, by taking as many of the Integers, as the Numerator expreſſes (*viz.* 3.) and dividing them by 4, the Denominator; for then the Quotient of the ſame Value will ariſe for 4) 60 *s.* 15 *s.* This ſhews the Reaſon of that manner of Expreſſion us'd by Geamaters and Algebraiſts, who read $\frac{a}{b}$, thus, a divided by b.

Logarithm of a FRACTION, ſee LOGARITHM.

Summing of infinite FRACTIONS, ſee SUMMATORY *Calculus*.

FRACTURE, in Medicine, and Chirurgery, a Breach, or Rupture of a Bone: Or, a Solution of Continuity in a Bone, when it is cruſh'd or broken, by ſome external Cauſe. See BONE.

In *Fractures*, the Bone is either broken breadth-wiſe, that is, tranſverſely; or length-wiſe, which laſt is properly call'd a *Fiſſure*. See FISSURE.

Tranſverſe *Fractures* are more eaſy to diſcover, but more difficult to cure than longitudinal ones. A *Fracture* in the Middle of a Bone is leſs dangerous than towards the Articulation. When the *Fracture* is attended with a Wound, Contuſion, &c. or when the Bone is ſhatter'd into ſeveral Pieces, 'tis highly dangerous. A *Fracture* of the Femur in Adults is very rarely, if ever cur'd; but there ſtill remains a Lameneſs. *Fractures* of the leſſer Bones are uſually cur'd in ſeven or fourteen Days; thoſe of the greater, in 20 or 40 Days.

In the Cure of *Fractures*, the Chirurgeon has two Things to attend to: Firſt to reſtore the *fractur'd* Bone into its natural Situation; and to keep it tight with *Ferulæ*, or Splinters, and Bandages: In which caſe Nature takes on her ſelf the Office of healing and conglutinating it, by forming a Callus thereon. See CALLUS.

If there be an Inflammation, it muſt be cur'd before any thing be attempted about the *Fracture*. If the Bone happen to be broke again, it never breaks in the Callus, but at a diſtance from it. After ſetting or replacing the *fractur'd* Bone, Bleeding is requir'd, to prevent any Lodgment of Blood on the Part aggriev'd, by the Violence upon the Fibres.

A *Fracture* of the Cranium is certain Death, without Trepanning. See TREPANNING.

FRÆNUM, BRIDLE, in Anatomy, a Name given to divers Ligaments, from their Office in retaining, and curbing the Motions of the Parts they are fitted to.

The *Frænum Linguæ*, or *Bridle of the Tongue*, is a membranous Ligament, which ties the Tongue to the Os Hyoides, Larynx, Fauces, and lower Part of the Mouth. See TONGUE.

In ſome Subjects, the *Frænum* runs the whole Length of the Tongue, to the very Tip: In which Caſes, if it were not cut, it would take away all Poſſibility of Speech.

The *Frænum of the Penis* is a ſlender Ligament, whereby the Præpuce is tied to the lower Part of the Glans. See PENIS.

Nature varies in the Make of this Part; it being ſo ſhort in ſome, that unleſs divided, it would not admit of perfect Erection. See ERECTION.

There is alſo a kind of little *Frænum*, faſten'd to the lower Part of the Clitoris. See CLITORIS.

FRAIGHT, FREIGHT, or FRET, in Navigation and Commerce, the Hire of a Ship, or of a Part of it; for the Conveyance and Carriage of Goods, from one Part, or Place to another: Or the Sum agreed on between the Maſter and the Merchant, for the Hire and Uſe of a Veſſel.

The *Fraight* of a Veſſel is uſually agreed on at the Rate of ſo much for the Voyage; by the Month, or *per* Tun.

FRAIGHTING, or letting out of Veſſels on *Fraight*, or Hire, is one of the principal Articles in the Trade of the *Hollanders*: They are the Carriers of all the Nations of *Europe*, and their Purveyors; notwithſtanding that their Country produces nothing at all, and that they are forc'd to to have every thing neceſſary for the Building of a Veſſel from other Countries.

The principal Laws and Rules relating to fraighting, are: That if a whole Veſſel be hired, and the Merchant, or Perſon who hires it, don't give it its full Load, or Burthen; the Maſter of the Veſſel cannot without his Conſent take in any other Goods, without accounting to him for *Fraight*.

That, tho' the Merchant don't load the full Quantity of Good, agreed on in the Charter Party; yet he ſhall pay the whole *Freight*; and if he load more, he ſhall pay for the Exceſs.

That, the Maſter may ſet a-ſhore ſuch Goods as he finds in his Veſſel, which were not notify'd to him; or take 'em at a higher Rate, than was agreed on for the reſt.

That, if a Ship be ſtopp'd or detain'd in its Courſe, either thro' the Maſter's, or the Merchant's Default; the Delinquent ſhall be accountable to the other.

That

That if the Master be oblig'd to refit his Vessel during the Voyage, the Merchant shall wait; or else pay the whole *Fraight*: If the Vessel could not be refitted, the Master is oblig'd to hire another immediately; otherwise only to be pay'd his *Fraight* in proportion to the Part of the Voyage perform'd (tho', in case the Merchant prove that the Vessel at the time it set sail, was not capable of the Voyage, the Master must loose his *Fraight*, and account for Damages to the Merchant.

That *Fraight* shall be paid for Merchandizes which the Master was oblig'd to sell for Victuals, or refitting, or other necessary Occasions; paying for the Goods at the Rate the rest were sold at, where they were landed.

That in case of a Prohibition of Commerce with the Country whither the Vessel is bound, so that it is oblig'd to be brought back again; the Master shall only be paid *Fraight* for going.

And if a Ship be stop'd or detain'd in its Voyage, by an Embargo by order of the Prince; there shall neither be any *Fraight* paid for the Time of the Detention, in case it be hired *per* Month: Nor shall the *Fraight* be increas'd, if hired for the Voyage; but the Pay, and Victuals of the Sailors during the Detention, shall be deem'd Average.

That the Master shall take no *Fraight* for any Goods lost by Shipwreck, plunder'd by Pyrates, or taken by the Enemy; unless the Ship and Goods be redeem'd; in which case he shall be paid his *Fraight* to the Place where he was taken; upon contributing to the Redemption.

That the Master shall be paid his *Fraight* for the Goods sav'd from Shipwreck; and in case he can't get a Vessel to carry them unto the Place where they were bound, that he shall be paid in Proportion to the Part of the Voyage already gone.

That the Master may not detain any Merchandize in his Vessel, in default of Payment of *Fraight*; tho' he may order them to be seiz'd any time, or any where afterwards. That if Merchandizes in Casks, as Wines, Oils, *&c.* have so run out in Carriage, that the Vessels are left empty; or almost empty, the Merchant may relinquish them, and the Master be oblig'd to take them for their *Fraight*; though this does not hold of any other Goods damag'd, or diminish'd of themselves, or thro' Accidents.

The Word *Fraight* is form'd of the French *Fret*, signifying the same thing; and *Fret*, of *Fretum*, an Arm of the Sea; tho' others chuse to derive it from the German *Fracht*, or the Flemish *Vracht*, signifying *Carriage*.

FRAIGHT is also a Duty of 50 *Sols per* Tun, paid to the Crown of *France* by the Captains and Masters of all foreign Vessels at their Entrance and coming out of the Ports and Havens of that Kingdom. And note, that all Vessels not built in *France*, however they may belong to the Subjects of *France*, are reputed Foreigners, and subject to this Impost; unless it be made appear, that two Thirds of the Ship's Crew are *French*.

By the 11th Article of the Treaty of Commerce concluded at *Utrecht* between *England* and *France*, this Duty of 50 *Sols per* Tun should be remitted the *English*; and at the same time the Duty of 5 *s.* Sterling should be suppress'd in favour of the *French*: But the Execution of that Article, as well as the Tariff settled between the two Nations, has been suspended. The *Dutch* however and the *Hans Towns* are exempted from the Duty of *Fret*.

FRAIGHT is also the Burthen, or Lading of a Ship; or the Burthen of Goods, *&c.* she has on board. See BURTHEN.

FRAIL, a Basket of Rushes; or such like Materials, to pack up Figs, Raisins, *&c.*

It is also a certain Quantity of Raisins, of about 75 Pounds.

FRAISE, in Fortification, a kind of Defence, consisting of pointed Stakes, driven parallel to the Horizon, into the Retrenchments of a Camp, a Half Moon, or the like; to fend off and prevent any Approach or Scalade.

Fraises differ from Palissades chiefly in this, that the latter stand pependicular to the Horizon; and the former jet out parallel to the Horizon. See PALISSADE.

Fraises are chiefly us'd in Retrenchments, and other Works, thrown up of Earth: Sometimes they are found under the Parapet of a Rampart; serving instead of the Cordon of Stone, us'd in Stone Works.

He fortified all the weak Places of his Camp with *Fraises* and Palissades.——All the Outworks of the Place were *frais'd* and palissaded.

FRAISING *of a Batallion*, is the lining of the Musqueteers all around with Pikes; in case of their being charg'd by a Body of Horse.

FRAME, in Joinery, *&c.* a kind of Case, wherein a thing is set, or inclos'd, or even supported; as a Window *Frame*, *Frame* of a Picture, of a Table, *&c.* See WINDOW, &c.

The *Frame* is also a Machine, us'd in divers Arts. The Printers *Frame* is more usually call'd *Chase*. See CHASE.

The Founders *Frame* is a kind of Ledge, inclosing a Board; which being fill'd with Sand, serves as a Mould to cast their Work in. See FOUNDERY, and MOULD.

FRAME is particularly us'd for a Sort of Loom, whereon they stretch their Linens, Silks, Stuffs, *&c.* to be embroider'd, quilted, *&c.* See EMBROIDERY, TAPESTRY *Work*, &c.

FRAME, among Painters, *&c.* is a kind of a *Chassy*, or Square, compos'd of four long Pieces, or Slips of Wood, join'd together; the intermediate Space whereof is divided by little Strings or Threads into a great Number of little Squares, like the Mashes of a Net; and for that reason sometimes call'd *Reticula*.

Its Use is in the reducing of Figures from great to small; or from small to great. See REDUCTION.

FRAMING *of a House*, is all the Timber Work therein; *viz.* the *Carcase*, *Flooring*, *Partitioning*, *Roofing*, *Cieling Beams*, *Ashlering*, &c. See CARCASE, PARTITION, ROOF, FLOOR, *&c.*

FRAMPOLE *Fences* are such Fences as any Tenant in the Manor of *Writtel* in *Essex* hath against the Lords Demeans; whereby he hath the Wood growing on the Fence; and as many Trees or Poles as he can reach from the Top of the Ditch with the Helve of his Ax; toward the Repair of his Fence. The late Chief Justice *Brampton*, whilst Steward of this Court, acknowledg'd he could not find out the Reason, why these Fences were call'd *Frampole*.

It may come from the *Saxon* Fremful, profitable; or may be a Corruption of *Fran-pole*, because the Poles are free for the Tenant to take.

FRANCHISE, a Privilege, or Exemption from the ordinary Jurisdiction; or an Asylum, or Sanctuary, where People are secure of their Persons, *&c.* See ASYLUM.

Churches and Monasteries in *Spain* are *Franchises* for Criminals: So were they antiently in *England*; till they were abus'd to such a degree, that there was a Necessity for abolishing them. See SANCTUARY.

One of the most remarkable Capitularies made by *Charlemain*, in his Palace of *Heristal*, in 779, was that relating to the *Franchises* of Churches.

The Right of *Franchises* was held so sacred, that even the less religious Kings observ'd it to a degree of Scrupulousness: But to such Excess in time was it carried, that *Charlemaign* resolv'd to bring it down. Accordingly he forbid any Provision being carried to Criminals retir'd into Churches for *Refuge*. See REFUGE.

FRANCHISE is also us'd for an Immunity from the ordinary Tributes and Taxes.

This is either Real, or Personal; that is, either belonging immediately to the Person; or else by means of this or that Place, or Office of Immunity.

FRANCHISE *Royal*, is a Place where the King's Writ runs not; as at *Chester*, and *Durham*: And antiently at *Tyndal* and *Examshire* in *Northumberland*. See SAC.

FRANCHISE *of Quarters*, is a certain Space, or District at *Rome*, wherein are the Houses of the Embassadors of the Princes of *Europe*; and where such as retire, cannot be arrested or seiz'd by the *Sbirri*, or Sergeants, nor prosecuted at Law.

The People of *Rome* look on this as an old Usurpation, and a scandalous Privilege, which Embassadors, out of a Jealousy of their Power, carried to a great length in the XVth Century, by enlarging insensibly the Dependances of their Palaces or Houses, within which the Right of Asylum was antiently confin'd. Several of the Popes, *Julius* III. *Pius* XIV. *Gregory* XIII. and *Sixtus* V. publish'd Bulls and Ordinances against this Abuse; which had rescued so considerable a Part of the City from their Authority, and render'd it a Retreat for the most Abandoned.

At length *Innocent* XI. expresly refused to receive any more Embassadors but such as would make a formal Renunciation of the *Franchise of Quarters*. See PRIVILEDG'D *Place*.

FRANCHISING, see ENFRANCHISING, and MANUMISSION.

FRANCIGENA, or FRENCHMAN, in our antient Customs, was a general Appellation of all Foreigners, *i. e.* all Persons who could not prove themselves *Englishman*. See ENGLECERY.

FRANGIPANE, an exquisite kind of Perfume, frequently given to the Leather whereof Gloves, Purses, Bags, *&c.* are made.

It takes its Name from a *Roman* Nobleman, of the antient Family of *Frangipani*; who was the Inventor thereof.

There is also a kind of perfum'd Liquor of the same Denomination, said to have been invented by a Grandson of *Mutio Frangipani*; and a perfum'd kind of *Ros Solis*, call'd by the same Name. See ROS SOLIS.

FRANK, or FRANC, a Term literally signifying free, open, and sincere, exempt from publick Impositions and Charges: as *Frank* Confession, *Frank* Fair, *Frank* Letter, *&c.* See FREE.

The Term *Frank* is much us'd in our antient Customs and Tenures; where it receives various particular Modifications and Meanings, according to the Words it is combined with, as

FRANK *Alleu*, or *Allodium*, is a Land, Tenement, or Demeasn, that does not hold of any ſuperior Lord. See ALLODIUM, and FREE *Land*.

FRANK *Almoin*, or *Free Alms*, is a Tenure of Lands or Tenements beſtow'd on God; that is, given to ſuch People as devote themſelves to the Service of GOD, in pure and perpetual Alms.

Whence, the Feoffers, or Givers cannot demand any terreſtrial Service, ſo long as the Lands remain in the Hands of the Feoffees. *Briton* mentions another kind of this Land given in Alms, but not *free* Alms; the Tenants being tied in certain Services to the Feoffer. See ALMOIN.

FRANK *Bank*, ſee FREE *Bench*.

FRANK *Fee*, or *Feudum liberum*, is that for which no Service is perform'd to any Lord. See FEE.

According to *Frachin. l.* 7. *c.* 39. Lands held in *Frank* Fee were exempted from all Services, except Homage.

Frank Fee, as defin'd by *Broke*, is that which is in the Hand of the King, or Lord of any Manor; being antient Demeſne of the Crown: In Contradiſtinction to that in the Tenants Hands, which is only *Antient Demeſne*. See DEMESNE.

In the *Reg. of Writs*, *Frank Fee* is ſaid to be that which a Man holds at Common Law to him and his Heirs; and not by ſuch Service as is requir'd in antient Demeſne, according to the Cuſtom of the Manor.

'Tis added, that the Land in the Hands of King *Edward* the Confeſſor, at the making of Domeſday Book is Antient Demeſne; and all the reſt, *Frank* Fee. Upon this footing, all the Lands in the Realm are either Antient Demeſne, or *Frank* Fee.——

Others define *Frank* Fee to be a Tenure in Fee Simple, of Lands pleadable at Common Law; and not in Antient Demeſne.

FRANK *Ferm*, or *Ferma libera*, is Lands or Tenements, wherein the Nature of the Fee is chang'd, by Feoffment, from Knights Services, to certain yearly Services; and whence neither Homage, Wardſhip, Marriage, nor Relief may be demanded: Nor any other Service, not contain'd in the Feoffment. See FEE *Farm*.

FRANK *Fold*, is where the Lord hath the Benefit of *folding* his Tenants Sheep, within his Manor; for the manuring of his Land. See FALDAGE.

FRANK *Law*, is the Benefit of the Free, and Common Law of the Land. See LAW.

He that for any Offence, as Conſpiracy, *&c.* looſeth his *Frank Law*, incurs theſe Inconveniencies. 1° That he may not be impaneld upon any Jury or Aſſize; or otherwiſe us'd as an Evidence, or Witneſs to the Truth. 2° That if he have any thing to do in the King's Court, he muſt not approach it in Perſon, but appoint his Attorney. 3° That his Lands, Goods and Chattels be ſeiz'd into the King's Hands; and his Lands be eſtreated, his Trees rooted up, and his Body committed to Cuſtody. See CONSPIRACY.

FRANK *Marriage*, or *Liberum Maritagium*, is a Tenure in Tail Special, whereby Lands or Tenements are held to a Perſon and his Wife, and the Heirs of their Bodies, on condition of doing Fealty to the Donor from the fourth Degree.

This Tenure ariſes from theſe Words in the Gift: *Sciant*, &c. *me* T. B. *de* O. *dediſſe ac conceſſiſſe, & præſenti charta mea confirmaſſe* A. B. *filio meo, & Mariæ uxori ejus, filiæ veræ* C. D. *in liberum maritagium unum Meſſuagium*, &c. See TAIL.

Glanvil divides Marriage, *Maritagium*, into *liberum*, and *ſervitio obligatum*. See MARRIAGE.

Fleta gives this reaſon, why the Heirs do not Service, till the fourth Degree: *Ne donatores vel eorum hæredes per homagii receptionem a reverſione repellantur*: And why in the fourth Deſcent they ſhall do Service to the Donor, *Quia in quarto gradu vehementer præſumitur quod terra eſt pro defectu hæredum donatariorum reverſura.*

Frank Marriage, or *Liberum Maritagium*, is more clearly expreſs'd by *Bracton*, to be that where the Donor intends that the Land thus beſtow'd, ſhall remain quiet, and free from all ſecular Service that might be affected to the Fee; ſo that he who gave it, ſhall claim no manner of Service from it, untill the third Heir, and the fourth Deſcent, or Degree; reckoning the Donee in the firſt Degree, his Heir in the ſecond, the Heir of him in the third, and his, again, in the fourth: But afterwards the ſame Land to become ſubject to all the former Services; as being then ſuppos'd to revert to the Lord for want of Heirs.

The Lands otherwiſe given in Marriage, viz. *Servitio obligatæ* were with a Reſervation of the Services due to the Lord, which the Donee and his Heirs were bound to perform for ever: Only, Homage was not to commence till the fourth Degree; when both Service and Homage were to be enjoin'd for ever.

FRANK *Pledge*, ſignifies a Pledge, or Surety for a free Man; call'd alſo *Friburgh*. See FRIBURGH.

The antient Cuſtom of *England*, for Preſervation of the publick Peace, was, that every free born Man, at 14 Years of Age (religious Perſons, Clerks, Knights, and their eldeſt Sons excepted) ſhould find Surety for his Truth towards the King and his Subjects, or elſe he kept up in Priſon.

Accordingly, a Number of Neighbours became interchangeably bound for each other, to ſee each Man of their Pledge forthcoming at all times; or to anſwer for the Offence committed by any one gone away: So that when ever one offended, it was preſently enquir'd in what Pledge he was; and then thoſe of the *Pledge* either brought him forth within one and thirty Days to his Anſwer; or ſatisfy'd for his Offence.

This Cuſtom was call'd *Frank Pledge*; and the Circuit it extended to *Decenna*, by reaſon it uſually conſiſted of ten Houſholds; and every Perſon thus bound for himſelf and Neighbours, was call'd *Decennier*. See DECENNA.

This Cuſtom was ſo obſerv'd, that the Sheriffs at every County Court did from time to time take the Oaths of young Perſons, as they arriv'd at the Age of 14; and ſee they were ſettled in one *Decenna*, or *Dozein* or another. Whereupon this Branch of the Sheriffs Office and Authority was call'd *Viſus Franci Plegi*, i. e. *View of Frank Pledge*. See LEET, VIEW *of Frank Pledge*, &c.

Omnis homo, ſive liber, ſive ſervus, aut eſt, vel debet eſſe in Franco Plegio, *aut de alicujus manupaſtu, niſi ſit aliquis itinerans de loco in locum, qui non plus ſe teneat ad unum quam ad alium, vel quid habet quod ſufficiat pro* Franco Plegio, *ſicut dignitatem, vel ordinem, vel liberum tenementum, vel in civitate rem immobilem*, &c. *Bracton L. III. Tract. de Corona, c.* 10.

FRANK *Chace*, is Liberty of Free Chace in a Circuit adjoining to a Foreſt, by which all Men, though they have Land of their own within that Compaſs, are forbidden to cut down Wood, without the View of the Foreſter; though it be their own Demeſn.

FRANKINCENSE, or INCENSE, an odoriferous aromatic Gum, or Reſin, antiently burnt in Temples, and ſtill us'd in Pharmacy. See GUM, and RESIN.

For all the great Uſe of this Gum, both in the antient Religion, and the modern Medicine; the Tree that produces it, or even the Place where the Tree grows, is but little known.

The moſt common Opinion has always been, that it was brought from *Arabia Fælix*, and was found near the City of *Saba*; whence its Epithet *Sabæum*: And yet the Name *Olibanum*, which it ſometimes bears, ſeems to intimate, that there are of theſe thuriferous, or Incenſe bearing Trees in the Holy Land near Mount *Libanon*. And Travellers are poſitive, that there are others in the *Eaſt Indies*.

Nor are we leſs at a loſs as to the Form or Kind of the Tree from which it flows. *Pliny* contents himſelf to ſay, that it at firſt reſembles the Pear Tree; then the Maſtic Tree; then the Laurel; but that in reality it is the Turpentine Tree.

Frankincenſe, is either *Male*, or *Female*.

The *Male Incenſe*, call'd alſo *Olibanum*, is in fair, white Bits, or Tears, a little yellowiſh, of a bitter diſagreeable Taſte; and when chew'd, promotes the Flux of Saliva.

It is call'd *Male*, in reſpect of its Tears, which are larger than the common, or Female. See OLIBANUM.

That brought from the *Indies*, is not near ſo good as that from *Arabia*, or Mount *Libanon*. It is uſually call'd *Incenſe of Mocha*, or Female Incenſe; tho' it be not brought from that City. 'Tis uſually in a Maſs, but ſometimes in Drops or Tears; ſomewhat reddiſh, and bitter to the Taſte.

Some ſell it for the true *Bdellium*. See BDELLIUM.

The Manna of *Frankincenſe* is only little, round, clear, tranſparent Grains of the Incenſe it ſelf.

Soot of Incenſe is the fine Flower, rub'd or ground off the Gum in Carriage, and burnt like Roſin, to make Lamp-black.——

Bark of Incenſe, is the Bark of the Tree that produces it. It has much the ſame Qualities, and the ſame Smell as the Incenſe it ſelf.——

Jewiſh Incenſe is only red Storax. See STORAX.

Male Incenſe, or *Olibanum*, is an Ingredient in divers *Galenical*, and Chymical Preparations. It is alſo us'd to aſſuage the Tooth-each: But it is apt to ſpoil the ſound Teeth. The Female is inferior to it in all reſpects.

FRANKS, FRANCS, FRANKIS, or FRANQUIS, a Name the *Turks*, *Arabs*, *Greeks*, &c. give to all the People of the Weſtern Parts of *Europe*.

The Appellation is commonly ſuppoſed to have had its riſe in *Aſia*, at the time of the *Croiſades*; when the *French* made the moſt conſiderable Figure among the *Croiſees*: From which time the *Turks*, *Sarrazens*, *Greeks*, *Abyſſineans*, &c. us'd it as a common Term for all the Chriſtians of *Europe*; and call'd *Europe* it ſelf, *Frankiſtan*.

The *Arabs* and *Mahometans*, ſays *Monſ. d'Herbelot*, apply the Term *Franks* not only to the *French* (to whom the Name originally belong'd) but to the *Latins* and *Europeans* in general.

Frank,

Frank, or *Frenk*, primarily denotes a *Frenchman*; and by Extenſion, an *European*, or rather a *Latin*, by reaſon, ſay they, the *French* diſtinguiſh'd themſelves above the other Nations, engag'd in the Holy War. See CROISADE.

But Fa. *Goar*, in his Notes on *Codinus*, *c. V. n.* 43. furniſhes another Origin of the Appellation *Franks*, of greater Antiquity than the former.

He obſerves that the *Greeks* at firſt confin'd the Name *Franks* to the *French*, i. e. the *German* Nations, who had ſettled themſelves in *France*, or *Gaul*: But afterwards they gave the ſame Name to the *Apulians* and *Calabrians*, after they had been conquer'd by the *Normans*; and at length the Name was further extended to all the *Latins*.

In this Senſe is the Word us'd by divers *Greek* Writers; as *Commenius*, &c. who, to diſtinguiſh the *French*, call them the *Weſtern Franks*.

Du Cange adds, that about the time of *Charlemaign*, they diſtinguiſh'd Eaſtern *France*; Weſtern *France*; and *Latin*, or *Roman France*, and *German France*, which was the antient *France*, afterwards call'd *Franconia*.

The FRANK *Language*, or *Lingua* FRANCA, is a kind of *Jargon*, ſpoke on the Mediterranean, and particularly thro'-out the Coaſts and Ports of the *Levant*; compos'd of *Italian*, *Spaniſh*, *French*, vulgar *Greek*, and other Languages.

The *Lingua Franca* is the *Trading Language*; and is thus call'd from the *Franks*, a common Appellation given in the *Levant* to all the *European* Merchants and Traders, who come thither to traffick.

In this Language, if it may be ſo call'd, nothing but the Infinitive Mood of each Verb is us'd; this ſerving for all the Tenſes and Moods of the Conjugation: And yet this lame, mutilated Diction, this barbarous Medly, is learnt and underſtood by the Merchants and Mariners of all Nations who repair thither.

FRANK, or FRANC, is alſo an antient Coin, ſtruck, and current in *France*; thus call'd from its Impreſſion, which repreſented a *Frenchman*, ſometimes on horſeback, and ſometimes on foot. See COIN.

The *Frank* was either of Gold, or Silver: The firſt was worth ſomewhat more than the Ecu d'Or, or Gold Crown; See ECU.

The ſecond was a Third of the firſt: But the Money has been long diſus'd.

The Term *Frank*, however, is ſtill retain'd, as the Name of a Money of Account. In this Senſe it is equivalent to a Livre, or 20 Sols, or $\frac{1}{3}$ of a *French* Crown.

Thus they ſay indifferently, a hundred *Franks*, or a hundred Livres. See LIVRE.

FRATERNITY, BROTHERHOOD, the Relation, or Union of Brothers, Friends, Partners, Aſſociates, &c. See BROTHER, and COMPANY.

FRATERNITY, in a Civil Senſe, is particularly us'd for a Gild, Aſſociation, or Society, of Perſons, united into a Body, for ſome common Intereſt, Advantage, &c. For the Origin, Uſe, &c. of *Fraternities*, ſee GILD.

FRATERNITY, in a Religious Senſe, is a Society of Perſons, meeting together to perform ſome Exerciſes of Devotion, or Divine Worſhip. See SOCIETY.

In the *Romiſh* Church, ſuch *Fraternities* are very numerous and conſiderable; being moſt of them eſtabliſh'd by Royal Patents: As the *Fraternity* of the *Scapulary*; of St. *Francis*'s *Cord*. The Biſhop may hinder the Eſtabliſhment of any ſuch *Fraternity* in his Dioceſe. At *Rome* there is a *Fraternity* call'd the *Archi-Fraternity*, or Grand *Fraternity*, under the Title of *Our Lady of the Suffrages*, eſtabliſh'd in favour of the Souls in Purgatory; approv'd and confirm'd by a Bull of Pope *Clement* VIII. in 1584.

There are nine different Sorts of *Fraternities*, or Confraieries in *France*, *viz.* 1° Of *Devotion*. 2° Of *Charity*, or *Mercy*. 3° Of *Penitents*, under divers Names. 4° Of *Pilgrimages*. 5° Of *Merchants*, to procure the Divine Favour on their Endeavours. 6° Of *Officers of Juſtice*. 7° Of *the Sufferings of Chriſt*. 8° Of *Arts* and *Trades* of divers kinds; and 9° Of *Factions*.

Fraternities, in *latin* call'd *Sodalitates*, derive their Origin from the Heathens; as is ſhewn by *Polydore Virgil*, in his Book de *Inventione Rerum*.

The good Uſe made of them by the Chriſtians, has effectually purg'd them of any Impurities, deriv'd from ſo ill a Source.

Numa Pompilius is ſaid to have eſtabliſh'd *Fraternities* of all the Arts and Trades in antient *Rome*; and to have preſcrib'd the Sacrifices each Profeſſion was to perform to the Patrons or Tutelary Gods he had aſſign'd them. See COLLEGE.

FRATERNITY is alſo a Title, or Quality. See QUALITY.

Kings and Emperors gave it each other; ſo do Biſhops, and Monks. We meet with it frequently in Authors under the Eaſtern Empire, both *Greek*, and *Latin*; ἀδελφότης, *Fraternitas*.

FRATERNITY *of Arms*, was an Alliance, or Aſſociation in Arms, antiently concluded between two Knights, who thereby agreed to go together, ſhare their Fortune, and mutually aſſiſt each other againſt all the World.

Bertrand du Gueſclin, and *Oliver Cliſſon* ſwore a *Fraternity* of Arms in the Year 1579. laying their Hands on the Goſpels. *Hiſt. de Bret. T.* 1. *p.* 395.——

FRATICELLI, a Sect of Hereticks, who roſe in the Marquiſate of *Ancona*, about the Year 1294.

The Word is an *Italian* Diminutive, ſignifying *Fratriculi*, or little Brothers; and was here us'd, by reaſon they were moſt of them apoſtate Monks, whom the *Italians* call *Fratelli*.

The Founders were *P. Maurato*, and *P. de Foſſombrone*; who having obtain'd of Pope *Celeſtin* V. a Permiſſion to live in Solitude, after the manner of Hermits, and to obſerve the Rule of St. *Francis* in all its Rigor; ſeveral idle, vagabond Monks join'd them; who living after their own Fancies, and making all Perfection to conſiſt in Poverty, were ſoon condemn'd by Pope *Boniface* VIII. and the Inquiſitors order'd to proceed againſt them as Hereticks. Upon this, retiring into *Sicily*; *Peter John Oliva de Serignan* had no ſooner publiſh'd his Comment on the Apocalypſe, than they adopted his Errors.

They held the *Romiſh* Church to be *Babylon*; and propos'd to eſtabliſh another far more perfect one; maintain'd that the Rule of St. *Francis* was the Evangelical Rule obſerv'd by Jeſus Chriſt and his Apoſtles.

Some ſay they even elected a Pope of their New Church: At leaſt they appointed a General, with Superiors: Built Monaſteries, &c. Beſide the Opinions of *Oliva*, they held that the Sacraments of the Church were uſeleſs; by reaſon thoſe who adminiſter'd them, had no longer any Power or Juriſdiction.

They were condemn'd a-freſh by Pope *John* XXII; but ſeveral of them returning into *Germany*, were ſhelter'd by the Duke of *Bavaria*.

The *Fraticelli* had divers Denominations: They were call'd *Fraticelli*, by reaſon they liv'd in Community, in imitation of the Primitive Chriſtians; *Dulcini*, from one of their Doctors; and *Biſoches*, for what reaſon we don't know.

FRATRAGE, FRATRIAGIUM, or FRERAGE, the Partition among Brothers, or Coheirs, coming to the ſame Inheritance or Succeſſion. See PARTITION.

FRATRAGE is alſo us'd more particularly for that Part of the Inheritance, which comes to the youngeſt Brothers: For whatever the Cadets, or younger Brothers poſſeſs of the Father's Eſtate, they poſſeſs *ratione Fratragii*, and are to do Homage to the older Brother for it; in regard he is to Homage for the Whole to the Superior Lord. See HOMAGE.

FRATRES *Conjurati*, in our antient Law Books, &c. denote ſworn Brothers, or Companions.

Sometimes they are alſo ſo call'd who were ſworn to defend the King againſt his Enemies, *Leg. W.* 1. *cap.* 59. *Præcipimus ut omnes liberi homines ſint* Fratres conjurati *ad Monarchiam noſtram & Regnum noſtrum contra inimicos pro poſſe ſuo defendendum.* Leg. Edu. cap. 35.

FRATRICIDE, the Crime of murthering ones Brother. See PARRICIDE.

Cain committed the firſt *Fratricide*: The Empire of *Rome* begun with a *Fratricide*.

FRAUD, a ſecret, under-hand, Deceit, or Injury, done any one.

To export, or import Goods by *Fraud*, or fraudulently, is to do it by indirect ways; in order to avoid the paying of Duty, &c. if they be permitted Goods; or if they be contraband Goods, to avoid the Penalties adjudg'd by the Laws. See DEFRAUD.

A *Fraudulent* ACTION, *Fraudulent* BANKRUPT, &c. ſee BANKRUPT.

FRAY, literally ſignifies to *fret*; as Cloth or Stuff does by rubbing, or over-much wearing.

Among Hunters a Deer is ſaid to *fray her Head*, when ſhe rubs it againſt a Tree, to cauſe the Pills of her new Horns to come off.

FRECKLES, a kind of little, hard, duſky Bubo's, or Puſtles, ariſing on the Skin of the Face, or Hands; particularly in Perſons of the faireſt, fineſt Skins.

Some pick the *Freckles* out with a Pin; or ſqueeze them out with the Fingers.

Freckles, according to M. *Homberg*, are only the earthy, oily, and ſaline Part of the Sweat; retain'd in the Plexus, or Maſhes of the Skin. While the aqueous Liquor, which was their Vehicle, is evaporated by the Heat of the Body, theſe groſſer Parts are gradually accumulated, till the Maſhes are full.

Some Parts of this Sweat, he obſerves, are continually oozing thro' the Cuticle; and being of a viſcid nature, retain the Dirt, Duſt, &c. that flies about the Face. This viſcid Matter on the Surface of the *Freckles* will ſtick there, notwithſtanding any repeated Wipings, which rather condenſe and preſs it into the Cavities thereof. 'Tis this Duſt, thus incorporated with the glutinous Baſis above-mentioned, that forms thoſe black Specks on the Pores of moſt Peoples Noſes in

Summer, call'd *Freckles*; which, as they may be ſqueez'd out by a dexterous Application of the Fingers, many People have been induc'd to take them for little Worms, generated in the Skin, whoſe Head is the little Speck above-mention'd; whereas, in reality, they are little Pelotoons of Sweat, dried in the Pores of the Skin; the outer Tip, or Extreme whereof is dirty, and blacken'd with the Duſt continually floating in the Air, arreſted by the glutinous Matter of the Sweat it ſelf.——

They are found more about the Noſe and Skin, than any where elſe; by reaſon the Skin is more ſtretch'd there, and conſequently the Pores more patent, to receive the Duſt, &c.

From this Theory it follows, that there can ſcarce be any ſuch thing as an adequate Remedy or Preventive of *Freckles*. Temporary ones there may be, which ſhall draw out and diſſipate, what Matter is already gather'd: But the Spaces will fill up again in time.

Bullocks Gall mix'd with Alum; and after the Alum has precipitated, expos'd three or four Months to the Sun in a cloſe Phial, Monſ. *Homberg* obſerves, is one of the beſt Remedies known for *Freckles*. It acts as a Lixivium; enters the Pores, and dilutes and diſſolves the Coagulum of the *Freckles*. *Mem. de l'Acad. Royal des Scienc. An.* 1709. *p.* 472. &c.

FREE, a Term variouſly us'd; but generally in oppoſition to conſtrain'd, confined, neceſſitated. See FRANK.

Thus, a Man is ſaid to be *free*, who is out of Priſon: And a Bird is *free*, when let out of the Cage: *Free* from Pain, *i. e.* void of Pain: A *free* Air: *Free* Paſſage, &c.

But in ſpeaking of Things endued with Underſtanding, the Word *Free* has a more peculiar relation to the Will, and implies its being at full Liberty. See LIBERTY.

The Stoicks maintain, that their ſage or wiſe Man alone is *Free*. See STOIC.

Free is alſo us'd in oppoſition to *Slave*.

The Moment a Slave ſets foot on *Engliſh* Ground, he becomes *free*. The fineſt Legacy the antient *Romans* could leave their Slaves, was their *Freedom*. See SLAVE, SERVITUDE, and MANUMISSION.

FREE *Will*, ſee WILL.

FREE *Thinker*, ſee DEIST.

FREE *Maſon*, ſee MASON.

FREE *State*, is a Republick govern'd by Magiſtrates elected by the *free* Suffrages of the Inhabitants. See STATE.

Free, or *Imperial* Cities in *Germany*, are thoſe not ſubject to any particular Prince; but govern'd, like Republicks, by their own Magiſtrates. See EMPIRE.

There were *Free Cities*, *Liberæ Civitates*, even under the antient *Roman* Empire: Such were thoſe to whom the Emperor, by the Advice, or Conſent of the Senate, gave the Privilege of appointing their own Magiſtrates, and governing themſelves by their own Laws. See CITY.

FREE *Bench*, or *Franc Banc*, ſignifies that Eſtate in Copyhold Lands, which the Wife hath after the Death of her Husband, for her Dower, according to the Cuſtom of the Manor. See DOWER.

Thus, at *Orleton* in the County of *Hereford*, the Relict of a Copyhold Tenant is admitted to her *Free* Bench, *i. e.* to all her Husband's Copyhold Land, during her Life, at the next Court after her Husband's Death. See BENCH.

Fitzherbert calls *Free* Bench a Cuſtom, whereby, in certain Cities, the Wife ſhall have her Husband's whole Lands, &c. for her Dower.

Of this *Free Bench*, different Manors have different Cuſtoms: Thus, *E. gr.* in the Manors of Eaſt, and Weſt *Emborne* in *Berks*, if a cuſtomary Tenant die, the Widow ſhall have her *Free Bench* in all his Copyhold Lands, *dum ſola & caſta fuerit*; but if ſhe commit Incontinency, ſhe forfeits her Eſtate: But if ſhe will *come into Court riding backwards on a black Ram, with his Tail in her Hand*, rehearſing a certain Form of Words, the Steward is bound by the Cuſtom to reſtore her to her *Free Bench*.

The like Cuſtoms are in the Manor of *Chadleworth* in *Berks*; that of *Tor* in *Devonſhire*, and other Parts of the Weſt.

FREE *Bord*, *Franc Bord*. In ſome Places three Feet, in ſome more, and in others leſs, is claim'd by way of *Free Bord* beyond, or without the Fence.—

Et totum Boſcum, quod vocatur Brendewode, *cum* Franc Bordo *duorum pedum, & dimid. per circuitum illius boſci.* Mon. Ang. 2d Part, fol. 241.

FREE *Chapel*, is a Chapel founded by the King, and by him exempted from the Juriſdiction of the Ordinary. See CHAPEL.

Tho', a Subject may be licenc'd by the King to build ſuch a Chapel; and by his Charter may exempt it from the Viſitation of the Biſhop, &c.

FREE *Stool*, ſee FRIDSTOLL.

FREE *Warren*, the Power of granting or denying Licence to any one to hunt in ſuch and ſuch Ground. See WARREN.

FREE *Fee*, ſee FEE.

FREE *Fair*, ſee FAIR.

FREE *Stone*, a white Stone, dug up in many Parts of *England*, that works like Alabaſter; but more hard, and durable; being of excellent uſe in Building, &c. See STONE.

It is a kind of Greet, but finer ſanded, and a ſmoother Stone.

FREEBOOTER, or FLIBUSTER, a Name given to the *Corſairs*, or Pirates, who ſcour the *American* Seas; particularly ſuch as make War againſt the *Spaniards*. See BUCANEER.

The *French*, &c. call them *Flibuſters*, deducing the Word from the Engliſh *Flibote*, or *Flybote*; by reaſon the firſt Adventurers of this kind were the People of St. *Domingo*, who made their Excurſions with *Flybotes*, which they had taken from the *Engliſh*.

FREEDOM, the Quality, or Habit of being *Free*. See FREE.

FREEDOM *of the Will*, a State, or Faculty of the Mind, wherein all the Motions of our Will are in our Power; and we are enabled to determine on this, or that; to do good, or evil, without any Force, or Conſtraint from any foreign Cauſe whatever. See LIBERTY.

The Schoolmen diſtinguiſh two kinds of *Freedom*.

Viz. FREEDOM *of Contradiction*, whereby we are at our choice to *will*, or *nill*; to love, or not love, &c.

Thus, if I give my Friend a Power to take my Horſe; that Friend has *Freedom* of Contradiction, with reſpect to the Horſe; ſince it is in his own Power, either to uſe him, or let him alone. See CONTRADICTION.

FREEDOM *of Contrariety*, or of *Contraries*, is that whereby we are at our choice to doo good, or evil; be virtuous, or vitious; take a Horſe, or a Lion.

Thus if I offer my Friend a Horſe, or a Lion; and give him his Option of the two, he is ſaid to have a Liberty of Contrariety, over the Horſe and Lion. See CONTRARIETY.

But the Logicians charge this as a faulty, or unartful Diviſion; in regard one Member of the Diviſion is contain'd in the other, as a Species in the Genus: For whatever is *free*, in reſpect of Contradiction, is alſo *free* in reſpect of Contrariety; tho' not *vice verſa*: For if it be *free* for my Friend to take the Horſe, or the Lion; it is alſo *free* for him, to let them both alone: But he may be *free* to take one of them, without a *Freedom* of chuſing which to take.

Yet is the Diſtinction of ſome uſe; as it intimates that the Will is not always poſſeſs'd of both kinds of *Freedom*; and that the Matter, or Subject of the two is different.

The Will, tho' free, has not a Liberty of Contrariety: Thus, any evident Truth being propos'd to the Mind, *e. gr.* That the Whole is greater than a Part, we have a Power of not aſſenting thereto, by diverting our Attention to ſome thing elſe: But we have not a Power of diſſenting from that Propoſition, and judging that the Whole is not greater than the Part.

Hence, the Moraliſts commonly hold, that with reſpect to the Supreme Good, Mankind has a Liberty of Contradiction; inaſmuch as he may abſtain from the Love, or Purſuit thereof: But not a Liberty of Contrariety, whereby to hate Goodneſs.

Add, that tho' the human Mind may have a *Freedom* of Contradiction, with reſpect to all Objects, even the Supreme Good it ſelf; yet the *Freedom* of Contrariety is reſtrain'd to certain Particulars, which either are, or appear to be Good: The Will having ſuch a natural Propenſity to Good, that it cannot deſire evil, but under the Notion and Appearance of Good. See GOOD, and EVIL; ſee alſo NECESSITY.

FREEDOM *of Thinking*, ſee DEISM.

FREEDOM *of Conſcience*, ſee LIBERTY, and TOLERATION.

FREEDOM *of a City, Town*, &c. A Right, or Capacity of exerciſing a certain Trade, or Employment in a City, or Town Corporate; and of being elected to the Dignities and Offices thereof, procur'd regularly by ſerving an Apprenticeſhip; but ſometimes purchas'd with Money; and ſometimes confer'd as a Favour or Complement. See CITY, CORPORATION, APPRENTICESHIP, &c.

FREEHOLD, FRANK TENEMENT, or *Liberum Tenementum*, is Land, or Tenement, which a Man holds in Fee, Fee Tail, or for Term of Life.

Freehold is of two kinds; *in Deed*, and *in Law*.

The firſt is the real Poſſeſſion of Land, or Tenement in Fee, Fee Tail, or for Life: The other is the Right a Man has to ſuch Land or Tenement before his Entry, or Seizure.

Freehold is likewiſe extended to ſuch Offices as a Man holds in Fee, or for Life. See FEE.

Briton defines Franc Tenement to be a Poſſeſſion of the Soil, or Services iſſuing out of the Soil, which a Free-man holds in Fee, or at leaſt for Life, tho' the Soil be charg'd with *free* Services.——

FREEHOLD is alſo ſometimes taken in oppoſition to *Villenage*. See VILLENAGE.

Lambard obſerves, that Land, in the *Saxons* time, was diſtinguiſh'd into *Bockland*, i. e. holden by Book, or Writing; and *Folk-land*, held without Writing.

The former, he ſays, was held on far better Condition, and by the better ſort of Tenants; as Noblemen and Gentlemen; being ſuch as we now call *Freehold:* The latter was moſtly in Poſſeſſion of Peaſants; being the ſame with what we now call *at the Will of the Lord.* See BOCKLAND, and FOLKLAND.

In *Reg. Judicial.* it is expreſs'd, that he who holds Land upon an Execution of a Statute Merchant, until he hath ſatisfy'd the Debt, *tenet ut liberum tenementum ſibi & aſſignatis ſuis*; and the ſame of a Tenant *per Elegit:* The Meaning of which ſeems to be, not that ſuch Tenants are *Freeholders*, but as *Freeholders* for the Time till they have receiv'd Profits to the Value of their Debt.——

In the antient Laws of *Scotland*, *Freeholders* are call'd *Milites*, Knights.——

FREEZE, or FRIZE, in Architecture, that Part of the Entablature of Columns, between the Architrave and Corniche. See ENTABLATURE.

The *Freeze* is properly a large, flat Face, or Member ſeparating the Architrave from the Corniche. See CORNICHE.

The Antients call'd it *Zophoros*, Ζωφορὸς, by reaſon it was uſually enrich'd with Figures of Animals; and our Denomination *Freeze* has a like Origin, being form'd of the Latin *Phrygio*, an Embroiderer, becauſe commonly adorn'd with Sculptures in Baſſo Relievo, imitating Embroidery.

The *Freeze* is ſuppos'd to be intended to repreſent the Heads of the tranſverſe Beams that ſuſtain the Roof or Covering.

In the *Tuſcan* Order it is quite plain: In the *Doric*, enrich'd with Triglyphs: In the *Ionic*, 'tis ſometimes made arch'd, or ſwelling; particularly in which caſe 'tis call'd by *Vitruvius*, *Pulvinatus*, *q. d.* pillow'd: In the *Corinthian*, and *Compoſite*, it is frequently join'd to the Architrave, by a little Sweep; and ſometimes to the Corniche. And in theſe richer Orders it it uſually adorn'd with Sculpture, Figures, Compartiments, Hiſtories, Foliages, Feſtoons, &c. See TUSCAN, DORIC, IONIC, &c.

As to the Height of the *Freeze*, 'tis in the general much the ſame with that of the Architrave.

The *Tuſcan* FREEZE, *Vitruvius* makes 30 Minutes; *Vignola*, 35; *Palladio*, who makes it ſwelling, gives it but 26; and *Scamozzi* 42. The *Doric*, in *Vitruvius* and *Vignola*, is 30 or 40 Min: In *Palladio*, &c. 45. The *Ionic*, *Vitruvius* makes flat, adorned with *Acanthus* Leaves, Lions, &c. and makes it 30 Minutes high: *Vignola*, who alſo makes it flat, gives it 45 Minutes: And *Palladio*, who makes it convex, or ſwelling, 27 Minutes; and *Scammozzi* 28. The *Corinthian*, *Vitruvius* enriches with *Acanthus* Leaves, human Figures, &c. and makes its Height 37 Minutes: *Vignola*, 45; *Palladio* 28; and *Scamozzi* 31¼. Laſtly, the *Compoſite*, which in *Vitruvius* is ſet with Cartouſes, and carv'd between them, is 52½ Min; *Vignola*, who makes it like *Vitruvius*, only gives it 45 Min. *Palladio* who makes it ſwelling, only 30: And *Scamozzi*, 32.

From the Variety of Enrichments practic'd on the *Freezes*, they become variouſly denominated.

Convex, or *Pulvinated* FREEZES, are thoſe whoſe Profile is a Curve; the beſt Proportion whereof, is, when drawn on the Baſe of an equilateral Triangle.

In ſome the Swelling is only a-top, as in a Conſole: In others at Bottom, as in a Balluſter.

Ruſtic FREEZES are thoſe whoſe Courſes are ruſticated, or imboſs'd; as in the *Tuſcan Freeze* of *Palladio.*——

Flouriſh'd FREEZES are thoſe enrich'd with Rinds of imaginary Foliages; as the *Corinthian Freeze* of the Frontiſpiece of *Nero:* Or with Natural Leaves, either in Cluſters; or Garlands: Or Continued, as in the *Ionic* of the Gallery of *Apollo* in the *Louvre.*

Marine FREEZES are thoſe repreſenting Sea Horſes, Tritons, and other Attributes of the Sea; or Shells, Baths, Grotto's, &c.——

Hiſtorical FREEZES are thoſe adorn'd with Baſs-Relievo's, repreſenting Hiſtories, Sacrifices, &c. as the Arch of *Titus* at *Rome.*——

Symbolical FREEZES are thoſe adorn'd with the Attributes of Religion; as the *Corinthian*, of the Temple behind the Capitol at *Rome*, whereon are repreſented the Inſtruments and Apparatus of Sacrifice.

FREEZE *of the Capital*, ſee HYPOTRACHELIUM.

FREEZE, in Commerce, a kind of Cloth, or Stuff; ſee FRIZE.

FREEZING, CONGELATION, in Phyſiology, the Fixing of a Fluid; or depriving it of its natural Mobility, by the Action of Cold: Or the Act of converting a fluid Subſtance into a firm, coherent, rigid one, call'd *Ice.* See ICE, and COLD.

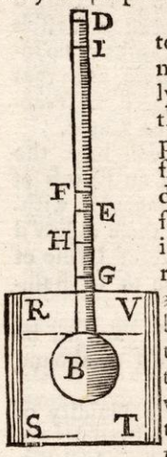
The *Carteſians* define *Freezing* to be the reſting of a fluid Body, harden'd by Cold; which follows naturally enough from their Notion of Fluidity, where the Parts are ſuppos'd to be in a continual Motion. See FLUID.

In effect, one may pretty ſafely ſay with ſome of thoſe Philoſophers, That Water only *freezes*, becauſe its Parts loſe their natural Motion, and adhere cloſe to each other. See FIRMNESS.

The Principal Phænomena of FREEZING are,

1° That Water dilated or rarify'd, and all Fluids, Oil excepted, in *freezing*, *i. e.* take up more Space, and are ſpecifically lighter than before.

That the Bulk, or Dimenſions of Water is increas'd by *freezing*, is Matter of abundant Experiment; and here it may be proper to obſerve the Proceſs of Nature.



A Glaſs Veſſel, then, B D full of Water to D, being immerg'd in a Veſſel of Water, mix'd with Salt, R S T V, the Water preſently riſes from E to F; which ſeems owing to the ſudden Conſtriction of the Veſſel haſtily plung'd into ſo cold a Medium. Soon after, from the Point F it continually deſcends, condenſing, till it arives at the Point G; where, for ſome time, it ſeems to remain at reſt. But it ſoon recovers it ſelf, and begins to expand; riſing from G to H; and from thence, ſoon after, by one violent Leap, mounts to I. And here the Water in B is immediately ſeen all thick, and cloudy; and in the very Inſtant of this Leap, is converted into Ice. Add, that while the Ice is growing harder; and ſome of the Water near the Neck of the Veſſel B is *freezing*, the Flux of Water is continued above I, towards D, and it at length runs out at the Veſſel.

2° That they loſe not only of their Specifick, but alſo of their Abſolute Gravity, by *freezing*; ſo that when thaw'd again, they are found conſiderably lighter than before.

3° That *frozen* Water is not quite ſo tranſparent, as when liquid; and that Bodies don't perſpire ſo freely thro' it.

4° That Water, when froze, evaporates almoſt as much as when fluid.

5° That Water does nor freeze in Vacuo; but requires the Preſence and Contiguity of the Air.

6° That Water which has been boiled, does not freeze quite ſo readily as that which has not.

7° That the Water being cover'd over with a Surface of Oil of Olives, does not freeze ſo readily as without it: And that Nut Oil abſolutely preſerves it under a ſtrong Froſt, when Olive Oil would not.

8° That Spirit of Wine, Nut Oil, and Oil of Turpentine don't freeze at all.

9° That the Surface of the Water, in *freezing*, appears all wrinkled; the *Rugæ*, or Wrinkles being ſometimes in parallel Lines, and ſometimes like Rays, proceeding from a Centre to the Circumference.

The Theories of FREEZING, or the Method of accounting for theſe Phænomena, are very numerous.

The great Principles different Authors have gone upon, are either, That ſome foreign Matter is introduc'd within the Pores of the Fluid, by whoſe means it is fix'd, its Bulk encreas'd, &c.

Or, that ſome Matter naturally contain'd in the Fluid, is now expell'd; by the Abſence whereof the Body becomes fix'd, &c.

Or, that there is ſome Alteration produc'd in the Texture or Form, either of the Particles of the Fluid it ſelf, or of ſomething contain'd within it.

To ſome one of which Principles all the Syſtems of *Freezing* are reducible.

I. The *Carteſians*, *e. gr.* who aſcribe all to the Quietude of the Parts of the Fluid, before in Motion; account for *Freezing* from the Receſs of the ætherial Matter out of the Pores of the Water. The Activity of that Æther, or ſubtle Matter, they hold to be that which gave the Particles of the Fluid their Motion: Conſequently, upon the Abſence of this Matter, the Fluidity muſt ceaſe.

Tho' others of the ſame Sect aſcribe *Freezing* to a Diminution of the uſual Force and Efficacy of the ætherial Matter, occaſion'd by an Alteration in the Temperature of the Air, whereby it is incapacitated for agitating the Parts of the Fluid as uſual.

II. The *Gaſſendiſts*, and other Corpuſcularians, with more Probability aſcribe the *Freezing* of Water to the Ingreſs of Multitudes of cold or frigorifick Particles, which entering the Liquor in Swarms; and diſperſing themſelves every way thro' it, do croud into the Pores of the Water, and hinder the wonted Agitation of its Parts; wedging it up, as it were, into the hard and conſiſtent Body of Ice. And hence its Increaſe of Dimenſions, Coldneſs, &c.

This Intromiſſion of a foreign frigorifick Matter they ſuppoſe eſſential to *Congelation*; as that which characteriſes and diſtinguiſhes it from *Coagulation*: The former being effected indifferently by a hot, or cold Mixture; but the latter only by a cold one. See COAGULATION.

Of what kind theſe frigorific Particles are, or how they produce their Effect, is Matter of Debate; and has given occaſion to various Syſtems.

Hobbs will have it common Air, which intruding into the Water in Congelation, entangles it ſelf with the Particles of the Fluid; prevents their Motion, produces thoſe numerous Bubbles obſerv'd in Ice; thus expanding its Bulk, and rendering it ſpecifically lighter: But this Opinion is overturn'd by Mr. *Boyle*, who ſhews that Water will freeze in Veſſels Hermatically ſeal'd, and into which the Air can have no Ingreſs; yet the Bubbles will be as numerous herein, as in that froze in the open Air. Add, that Oil is condens'd, in *freezing*: Conſequently, the Air cannot there be the Cauſe.

Others, and thoſe the greateſt Number, will have the *freezing Matter* to be a Salt; arguing, that an Exceſs of Cold will render Water torpid; but never congeal it, without Salt. They are ſaline Particles, ſay they, and thoſe diſſolv'd and mix'd in a due Proportion, that are the chief Cauſe of *Freezing*: Congelation bearing a near relation to Cryſtallization. See CRYSTALLIZATION.

This Salt, they ſuppoſe of the Nitrous kind; and to be furniſh'd by the Air, which is generally allow'd to abound in Nitre. See AIR, and NITRE.

How the Particles of Nitre may prevent the Fluidity of Water, is pretty eaſily accounted for: Theſe Particles are ſuppos'd to be ſo many rigid, pointed Spicula, which are eaſily driven into the Stamina, or Globules of the Water; which thus becoming variouſly mingled and entangled therewith, by degrees infeeble and deſtroy the Motion thereof.

The Reaſon this Effect only ariſes in ſevere Winter Weather, is, that 'tis then only, that the retarding Action of the nitrous Spicula, is more than equal to the Power or Principle whereby the Fluid is otherwiſe kept in Motion, or diſpos'd for Motion. See FLUID.

This Opinion is ſupported by the known Experiments of Artificial *Freezing*.

A Quantity of common Salt or Petre being mix'd with Snow, or Ice pulveriz'd; and the Mixture diſſolv'd by the Fire: Upon immerging a Tube full of Water in the Solution; the Water, that Part of it next the Mixture, preſently freezes, even in warm Air. Whence it is argued, that the Spicula of the Salt, by the Gravity of the Mixture, and of the incumbent Air, are driven thro' the Pores of the Glaſs, and mix'd with the Water: For that it is the Salt has the Effect, is evident; inaſmuch as we know aſſuredly that the Particles of Water cannot find their Way thro' the Pores of Glaſs. In theſe *Artificial Freezings* whatever Part the Mixture is applied in, there is preſently produc'd a Skin, or Lamina of Ice; whether at top, or bottom; or on the Sides: By reaſon there is always a Stock of ſaline Corpuſcle, ſufficient to overpower theſe Corpuſcles of Fire: But *Natural Congelations* are confin'd to the Top of the Water, where the Salt moſt abounds.

Againſt this Syſtem the ingenious Author of the *Nouvelle Conjecture pour Expliquer la Nature de la Glace*, objects, That it does not appear, that Nitre always enters the Compoſition of Ice; but that if it did, it would come ſhort of accounting for ſome of the principal Effects. For how, for inſtance, ſhould the Particles of Nitre by entering the Pores of Water, and fixing the Parts, oblige the Water to dilate and render it ſpecifically lighter? Naturally they ſhould augment its Weight. This Difficulty, with ſome others, ſhew the Neceſſity of a new Theory. That Author, therefore, advances the following one, which ſeems to ſolve the Phænomena in a more eaſy, and ſimple manner; as not depending on the precarious Admiſſion or Extruſion of any heterogeneous Matter.

III. Water, then, *freezes* in the Winter only, becauſe its Parts being more cloſely join'd together, mutually embarraſs one another, and loſe all the Motion they had: And the Cauſe of this cloſer Union of the Water, is the Air; or rather an Alteration in the Spring and Force of the Air.

That there are an infinite Number of Particles of groſs Air, interſpers'd among the Globules of Water, is abundantly evident from Experiment: And that each Particle of Air has the Virtue of a Spring, is confeſs'd: Now, this Author argues, that the ſmall Springs of groſs Air mix'd with the Water, have more Force in cold Winter Weather, and unbend themſelves more, than at other times. Hence, thoſe Springs thus unbending themſelves on one Side, and the external Air continuing to preſs the Surface of the Water on the other; the Particles of Water thus conſtring'd and lock'd up together, muſt loſe their Motion and Fluidity, and form a hard conſiſtent Body: Till a Relaxation of the Spring of the Air, from an Increaſe of Heat, reduce the Particles to their old Dimenſions, and leave room for the Globules to flow again.

But this Syſtem has its Foible: The Principle on which it ſtands, may be demonſtrated to be falſe. The Spring, or Elaſticity of the Air is not increas'd by Cold; but diminiſh'd. Air expands it ſelf by Heat; and condenſes by Cold: And 'tis demonſtrated in Pneumaticks, that the elaſtic Force of expanded Air, is to that of the ſame Air condens'd; as its Bulk when rarify'd, to its Bulk, condenſed. See ELASTICITY, and AIR.

We don't know, whether it is worth mentioning, what ſome Authors have advanc'd, to account for the Increaſe of Bulk and Diminution of ſpecific Gravity of frozen Water: *viz.* That the aqueous Particles, in their natural State, were nearly Cubes, and ſo fill'd their Space without the Interpoſition of many Pores: But that by Congelation they are chang'd from Cubes, to Spheres; whence a Neceſſity of a deal of empty Space between them. Cubic Particles are certainly much leſs proper to conſtitute a fluid, than ſpherical ones; and ſpherical Particles leſs diſpoſed to form a fix'd, than cubic ones.

Thus much the Nature of Fluidity and Firmneſs eaſily ſuggeſts.

After all, for a conſiſting Theory of *Freezing*, we muſt recur either to the frigorific Matter of the Corpuſcularians; conſider'd under the Light and Advantages of the *Newtonian* Philoſophy: Or to the ætherial Matter of the *Carteſians*, under the Improvements of Monſ. *Gauteron*, in the *Memoires de l'Academie Royale des Sciences*, *An.* 1709.—

Each of which we ſhall here ſubjoin; and leave the Reader to make his Choice.

For the *firſt*: A Number of cold, ſaline Corpuſcles being introduc'd into the Interſtices between the Globules of Water; may be ſo near each other, as to be within the Spheres of one another's Attractions; the Conſequence of which muſt be, that they will cohere into one ſolid, or firm Body: Till, Heat afterwards ſeparating them, and putting them into various Motions, breaks this Union, and ſeparates the Particles ſo far from one another, that they get out of the Diſtance of the attracting Force, and into the Verge of the repelling Force; and then the Water re-aſſumes its fluid Form.

For, that Cold and *Freezing* do ariſe from ſome Subſtance of a ſaline Nature floating in the Air, ſeems probable hence, that all Salts, and more eminently ſome particular ones, when mix'd with Snow, or Ice, do prodigiouſly increaſe the Force and Effects of Cold: Add, that all ſaline Bodies do produce a Stiffneſs and Rigidity in the Parts of thoſe Bodies, into which they enter.

Microſcopical Obſervations upon Salts manifeſt, that the Figures of ſome Salts, before they ſhoot into Maſſes, are thin, double, wedge-like Particles, which have abundance of Surface with reſpect to their Solidity (the Reaſon why they ſwim in Water, when once rais'd in it, tho' ſpecifically heavier). Theſe ſmall Points of the Salt getting into the Pores of the Water, whereby alſo they are in ſome meaſure ſuſpended in the Winter time (when the Heat of the Sun is not ſtrong enough to diſſolve the Salts into a Fluid, to break their Points, and to keep them in perpetual Motion) being leſs diſturbed; are more at Liberty to approach one another; and by ſhooting into Cryſtals of the Form above mention'd, do, by their Extremities, inſinuate themſelves into the Pores of Water, and by that means *freeze* it into a ſolid Form.

Further, there are many little Volumes or Particles of Air, included at ſeveral Diſtances both in the Pores of the watry Particles, and in the Interſtices made by the ſpherical Figures. By the Inſinuation of theſe Cryſtals, the Volumes of Air are driven out of the watry Particles; and many of them uniting, form larger Volumes, which thereby have a greater Force to expand themſelves, than when diſpers'd; and ſo both enlarge the Dimenſions, and leſſen the ſpecifick Gravity of the Water, thus congealed into Ice.

Hence alſo we may conceive, how Water impregnated with Salts, Sulphurs, or Earths, which are not eaſily diſſolveable, may form itſelf into Metals, Minerals, Gums, and other Foſſils; the Parts of theſe Mixtures becoming a Cement to the Particles of Water, or getting into their Pores, change them into theſe different Subſtances.

For the *ſecond*: As an ætherial Matter or Medium is generally allow'd the Cauſe of the Motion of Fluids; ſee MEDIUM: And as the Air it ſelf has all its Motion from the ſame Principle; it follows, that all Fluids muſt remain in a State of Reſt, or Fixity, when that Matter loſes of its neceſſary Force. Of conſequence, the Air being leſs warm'd in the Winter time, from the Obliquity of the Rays of the Sun; the Air is denſer, and more fix'd in Winter, than any other Seaſon of the Year.

But further, from divers Experiments we have learnt, that the Air contains a Salt, ſuppos'd to be of the Nature of Nitre. This granted, and the Denſity of the Air allow'd, it follows, that the Molecules of this Nitre muſt likewiſe

be

be brought nearer together, and thickn'd by the Condenſation of the Air: As, on the contrary, a Rarefaction of the Air, and an Augmentation of its Fluidity, muſt divide and ſeperate them.

If now the ſame Thing happen to all Liquors that have imbibed, or diſſolv'd any Salt; if the Warmth of the Liquid keep the Salt exactly divided; and if the Coolneſs of a Cellar, or of Ice give occaſion to the Molecules of the diſſolv'd Salt to approach, run into each other, and ſhoot into Cryſtals: Why ſhould the Air, which is allow'd a Fluid, be exempt from the general Law of Fluids?

'Tis true, the Nitre of the Air being groſſer in cold Weather, than hot; muſt have leſs Velocity: But ſtill, the Product of its augmented Maſs, into the Velocity remaining, will give it a greater Momentum, or Quantity of Motion. Nor is any thing further requir'd to make this Salt act with greater Force againſt the Parts of Fluids: And probably, this is the Cauſe of the great Evaporation in froſty Weather.

This aerial Nitre muſt promote the Concretion of Liquids: For 'tis not the Air, nor yet the Nitre it contains, that gives the Motion to Fluids: 'Tis the Etherial Medium. From a Diminution of the Force of that, therefore, ariſes a Diminution of Motion of the reſt.

Now the etherial Matter, weak enough of it ſelf in the Winter time, muſt loſe ſtill more of its Force by its Action againſt Air condens'd and loaded with large Molecules of Salt. It muſt, therefore, loſe of its Force in cold Weather, and become leſs diſpos'd to maintain the Motion of Fluids. In a Word, the Air, during Froſt, may be eſteem'd like the Ice impregnated with Salt, wherewith we ice our Liquors in Summer time. Thoſe Liquors, in all Probability, *freeze* from a Diminution of the Motion of the etherial Medium, by its acting againſt the Ice and Salt together: And the Air, for all its ſcorching Heat, is not able to prevent its Concretion.——

FREEZING *Rain*, or *Raining Ice*, a very uncommon kind of Shower, which fell in the Weſt of *England*, in *December*, *Anno* 1672; whereof we have divers Accounts in the *Philoſophical Tranſactions*.

This Rain, as ſoon as it touch'd any thing above Ground, as a Bough, or the like; immediately ſettled into Ice; and by multiplying and enlarging the Icicles, broke all down with its Weight. The Rain that fell on the Snow, immediately froze into Ice, without ſinking in the Snow at all.

It made an incredible Deſtruction of Trees, beyond any thing in all Hiſtory: "Had it concluded with ſome Guſt of Wind", ſays a Gentleman on the Spot, "it might have been of ſad Importance."

"I weigh'd the Sprig of an Aſh Tree, of juſt three Quarters of a Pound; the Ice on which weigh'd 16 Pound."— "Some were frighted with the Noiſe in the Air; till they "diſcern'd it was the Clatter of icy Boughs, daſh'd againſt "each other."

Dr. *Beale* obſerves, that there was no conſiderable Froſt obſerv'd on the Ground during the whole; whence he concludes, that a Froſt may be very fierce and dangerous on the Tops of ſome Hills, and Plains; while in other Places it keeps at two, three, or four Foot diſtance above the Ground, Rivers, Lakes, *&c.* And may wander about very furious in ſome Places, and remiſs in others, not far off. The Froſt was followed by glowing Heats, and a wonderful Forwardneſs of Flowers and Fruits. See FROST.

FREEZING, in Commerce and Manufactures; ſee FRIZING.

FREEZING *Mixture*, a Preparation for the artificial Congelation of Water, and other Liquors.——

All kinds of Salts, whether alcalizate, or acid; and even all Spirits, as thoſe of Wine, *&c.* as alſo Sugar, and *Saccharum Saturni*, mix'd with Snow, are capable of *freezing* other Bodies: And the ſame Effect is produc'd in a very great Degree by a Mixtion of Oil of Vitriol, or Spirit of Nitre with Snow: Thus Mr. *Boyle*.

Monſ. *Homberg* obſerves the ſame of equal Quantities of corroſive Sublimate, and *Sal* Ammoniac, with four times the Quantity of Vinegar diſtill'd. See WATERS.

FREEZELAND *Horſe*, in War, the ſame with *Cheval de Friſe*. See CHEVAL *de Friſe*.

FRENCH, abſolutely us'd, ſignifies the Language of the People of *France*. See LANGUAGE.

The *French*, as it now ſtands, is no Original, or Mother Language; but a Medley of ſeveral: Scarce any Language, but it has borrowed Words, or perhaps Phraſes, from.

The Languages that prevail moſt, and that are, as it were, the Baſis thereof, are 1° The *Celtic*; whether that were a particular Language it ſelf, or whether it were only a Dialect of the *Gothic*, as ſpoke in the Weſt, and North. 2° The *Latin*, which the *Romans* carried with them into the *Gauls*, when they made the Conqueſt thereof. And 3°, The *Teutonic*, or that Dialect of the *Teutonic* ſpoke by the *Franks*, when they paſs'd the *Rhine*, and eſtabliſh'd themſelves in the *Gauls*.

Of theſe three Languages, in the ſpace of about thirteen hundred Years, was the *French* form'd; ſuch as it is now found.

Its Progreſs was very ſlow; and both the *Italian* and *Spaniſh* were regular Languages long before the *French*.

Paſquier obſerves, it was under *Philip de Valois*, that the *French* Tongue firſt began to be poliſh'd; and that in the Regiſter of the Chamber of Accounts of that Time, there is a Purity ſeen almoſt equal to that of the preſent Age.

However, the *French* was ſtill a very imperfect Language, till the Reign of *Francis* I. The Cuſtom of ſpeaking *Latin* at the Bar, and of writing the publick Acts and Inſtruments of the Courts of Juſtices in that Language, had made them overlook the *French*, their own Language. Add, that the preceding Ages had been remarkable for their Ignorance, owing in good meaſure to the long and calamitous Wars, which *France* had been engag'd in: Whence, the *French* Nobleſſe deem'd it a kind of Merit, not to know any thing; and the Generals regarded little, whether or no they wrote and talk'd politely, provided they could but fight well.

But *Francis* I. who was the Reſtorer of Learning, and the Father of the Learned; chang'd the Face of Things; and after his Time *Henry Stevens* printed his Book *De la Precellence du Langage Francois*.

The Change was become very conſpicuous at the End of the XVIth Century; and under *Henry* IV. *Amyot*, *Coeffeteau*, and *Malherbe* contributed towards bringing it to Perfection: Which the Cardinal *de Richelieu* compleated, by the Eſtabliſhment of the *French* Academy; an Aſſembly, wherein the moſt diſtinguiſh'd Perſons of the Church, the Sword, and the Gown have been Members.

Nor did the long Reign of *Louis* XIV. contribute a little to the Improvement of the Language. The perſonal Qualities of that Prince, and his Taſte for the polite Arts, and that of the Princes of the Blood, render'd his Court the politeſt in the World. Wit and Magnificence ſeem'd to vye; and his Generals might have diſputed with the *Greeks*, *Romans*, &c. the Glory of Writing well, if they could not that of Fighting.

From Court, the Elegance, and Purity of the Language ſpread it ſelf into the Provinces; and now there is no Body but writes and ſpeaks good *French*.

One of the Characters of the *French* Language is to be natural, and eaſy. The Words are rang'd in it much in the ſame Order as the Ideas in our Minds; in which it differs exceedingly from the *Greek* and *Latin*, where the Inverſion of the natural Order of the Words is a Beauty.

Indeed, the *Hebrew* ſurpaſſes even the *French* in this Point; but then it comes ſhort of it in Copiouſneſs and Variety.

It muſt be added, however, that as to the Analogy of Grammar, and the Simplicity wherewith the Moods of Verbs are form'd; the *Engliſh* has the Advantage, not only over the *French*, but over all the known Languages in the World: But then the Turns, the Expreſſions, and the Idioms of the *Engliſh* are ſometimes ſo quaint, and extraordinary, that it loſes a good deal of the Advantage which its grammatical Simplicity gives it over the reſt. See ENGLISH.

The *French* has but few compound Words; wherein it differs widely from the *Greek*, *High Dutch*, and *Engliſh*. This the *French* Authors own a great Diſadvantage in their Language; the *Greek* and *Dutch* deriving a great Part of their Force and Energy from the Compoſition of Words; and frequently expreſſing that in one ſounding Word, which the *French* cannot expreſs but by a Periphraſis. And the Diminutives in the *French* are as few as the Compounds: The greateſt Part of thoſe remaining in uſe having loſt their diminutive Signification. But what diſtinguiſhes the *French* moſt, is its Juſtneſs, Purity, Accuracy, and Flexibility.

French is the moſt univerſal and extenſive Language in *Europe*. The Policy of States and Courts has render'd it neceſſary for the Miniſters of Princes, and their Officers, *&c.* And the Taſte of Arts and Sciences has had the ſame Effect with regard to the Learned.

In *Germany*, and elſewhere, the Princeſſes and Perſons of Diſtinction value themſelves on underſtanding *French*: And in ſeveral Courts of *Europe*, *French* is almoſt as much known as the Language of the Country; tho' the Court of *Vienna* is an Exception from this Rule. *French* is there very little us'd: The Emperor *Leopold* could not bear to hear it ſpoke in his Court: The *Latin* and *Italian* are there cultivated inſtead of it.

This Extenſiveneſs of the *French* Language is no modern Advantage: *William* the Conqueror gave Laws to *England* in the *French* Language; and the antient Cuſtoms of moſt of the Provinces of the *Netherlands* are wrote in the ſame.

Laſtly, the *French* is the ſame Language every where; not only in all the Provinces of *France*, but in all the Places where 'tis ſpoke, out of *France*.

The ſeveral Nations who ſpeak *Sclavonic*, don't ſo much ſpeak the ſame Language, as different Dialects of the ſame Language. In ſeveral Parts of *Europe* there are as many different Languages, as there are States; and in *Italy* there are reckon'd no fewer than ten or twelve Dialects, ſome of which differ as much from the common *Italian* as from the *French*, or *Spaniſh*. In *Holland*, the Seamen of *Rotterdam*, and the Banks of the *Meuſe*, don't underſtand thoſe of *Amſterdam*, and the Coaſts of the *Zuyder Zee*. They who underſtand *Caſtillan*, will not underſtand the Language of *Catalonia* and *Cerdagnia*. The *High Dutch* is not the ſame in *Sweeden*, as in *Jutland*: In the Low Countries, as at *Lubeck*. *Bohemia*, *Hungary*, *Croatia*, &c. are Countries belonging to the Emperor; yet ſpeak a Language different from that ſpoke at *Vienna*. The King of *Sweden*, when he ſpeaks the Language of his Country, will not be underſtood by his Subjects in *Pomerania*, *Lapland*, &c. And the like may be obſerv'd of the King of *Denmark*, with regard to his Subjects of *Norway* and *Iceland*: Whereas, at *Quebec*, the *Louiſiana*, *Martinico*, *St. Domingo*, *Pondicheri*, &c. they ſpeak the ſame Language as at *Paris*, and throughout the reſt of *France*.

For a critical Acquaintance with what regards the *French* Tongue, ſee the *Remarques* of M. *Vangelas*; and the *Obſervations* M. *Corneille* has made on thoſe Remarks: The *Remarques* of Fa. *Bouhours*; and the *Doubts* of a *Bas-Breton* Gentleman by the ſame Father: The *Converſations* of *Ariſte* and *Eugene*: The *Obſervations* of M. *Menage*, and his *Etymologies*; with thoſe of M. *Huet*: Fa. *Buffier*'s *French* Grammar; and that of the Abbe *Regnier*. And the two Diſcourſes of the Abbe *de Dangeau*; one on the Vowels, and the other on the Conſonants.

FRENCH *Bread*, a Sort of Bread, valued for its Delicacy. See BREAD.

It is prepar'd by taking half a Buſhel of fine Flower, to ten Eggs, and a Pound and half of freſh Butter; and into that putting as much Yeſt with a Manchet.

Then, tempering the whole Maſs with new Milk pretty hot, let it lie half an Hour to riſe. Which done, make it into Loaves or Rolls, and waſh it over with an Egg, beaten with Milk. The Oven not to be too hot. See BAKING.

FRENCH-*Man*, ſee FRANCIGENA, and ENGLECERY.

FRENDLES *Man*, was the old *Saxon* Name for him whom we call an *Outlaw*. See OUTLAW.

The Reaſon is, becauſe he was, upon his Excluſion from the King's Peace and Protection, deny'd all Help of Friends after certain Days: *Nam foris fecit amicos*.

FRENZY, and FRENETIC, ſee PHRENZY, and PHRENETIC.

FRESCO, a kind of Painting; perform'd on freſh Plaiſter; or on a Wall laid with Mortar not yet dry; and with Water Colours. See PAINTING.

This ſort of Painting has a great Advantage: By its incorporating with the Mortar, and drying along with it, it is render'd extremely durable; and never fails or falls, but along with it. The *Italians*, from whom we borrow the Term, call it *a Freſco*: *Vitruvius*, *lib.* 7. *c.* 3. calls it *Udo Sectorio*.

Painting in *Freſco* is very antient; having been practiced in the earlieſt Ages of *Greece* and *Rome*.

It is chiefly perform'd on Walls and Vaults, newly plaiſter'd with Lime and Sand: But the Plaiſter is only to be laid, in proportion as the Painting goes on; no more being to be done at once, than the Painter can diſpatch in a Day, while it is dry.

Before he begins to paint, a Cartoon or Deſign is uſually made on Paper; to be calk'd, and transfer'd to the Wall, about half an Hour after the Plaiſter is applied.

The Antients painted on Stuck; and we may remark in *Vitruvius*, what infinite Care they took in making the Incruſtation or Plaiſtering of their Buildings to render them beautiful and laſting: Tho' the modern Painters find a Plaiſter made of Lime and Sand preferable thereto; both as it does not dry ſo haſtily; and as being a little browniſh, it is fitter to lay Colours on, than a Ground ſo white as Stuck.

In this kind of Painting, all the Compound and Artificial Colours, and almoſt all the Minerals are ſet aſide; and ſcarce any thing us'd but Earths; which are capable of preſerving their Colour, defending it from the burning of the Lime, and reſiſting its Salt, which *Vitruvius* calls its Bitterneſs.

For the Work to come out in all its Beauty; the Colours muſt be laid on quick, while the Plaiſter is yet moiſt: Nor muſt they ever be retouch'd, dry, with Colours mix'd up with the White of an Egg, or Size, or Gum, as ſome Workmen do; by reaſon ſuch Colours grow blackiſh: Nor do any preſerve themſelves, but ſuch as were laid on haſtily at firſt.

The Colours us'd, are *White* made of Lime ſlack'd long ago, and white Marble Duſt; *Oker*, both red, and yellow; Violet *Red*; Verditer; *Lapis Lazuli*; Smalt; Earth Black, &c. All which are only ground, and work'd up with Water; and moſt of them grow brighter and brighter, as the *Freſco* dries. See COLOUR, WHITE, BLACK, VERDITER, LAPIS, &c.

FRESH-*Water*, is that not tinctur'd or impregnated with Salt, or ſaline Particles, enough to be diſcoverable by the Senſe. See WATER.

Such generally is that of Springs, Rains, Wells, Lakes, &c. See SPRING, RAIN, WELL, LAKE, &c.

Dr. *Liſter* is of Opinion, that the natural and original State of Water is to be Salt: The *Freſhneſs* he ſuppoſes to be accidental, and to be owing to the Vapours of Plants, and the Breath of Animals therein; and to the Exhalations raiſed by the Sun.

Others will have Water originally *freſh*; and take its Saltneſs to be accidental: To account for which, a great Number of Hypotheſes have been fram'd. See SALTNESS.

The Saltneſs of Water is a foreign, and in moſt Caſes a hurtful Quality. It renders it not only nauſeous to the Taſte, but greatly prejudicial to the Body: And it is generally agreed, that thoſe Waters, *cæteris paribus*, are beſt, not only for drinking, but for œconomical Uſes, as Waſhing, Boiling, Brewing; which are the freeſt from Saltneſs.—

Hence, various Methods have been contrived for examining the *Freſhneſs* of Waters; and of making ſalt Water *freſh*.

Mr. *Boyle* gives us a Method of examining the *Freſhneſs* of Water, by means of a Precipitate, which caſts down any ſaline Particles before floating therein.

Into 1000 Grains of diſtilled Water, he puts one Grain of Salt; and into the Solution lets fall a few Drops of a ſtrong well filtrated Solution of well refin'd Silver, diſſolv'd in clear *Aqua Fortis*; upon which there immediately appears a whitiſh Cloud, which, tho' but ſlowly, deſcends to the Bottom, and there ſettles to the Bottom in a white Precipitate, which is the ſaline Matter of the Fluid.

This Method, if it were requir'd, would examine Water to a greater Nicety, than that here ſpecify'd. It has diſcover'd Salt in Water, where there was but one Grain of the Salt in 2000, nay 3000 times the Weight of Water. in

The Experiment was tried before the Royal Society, in 1692. by Dr. *Sloan*; where it was likewiſe found that a Drop or two, even of Spirit of Salt, mix'd with common Water, would be diſcover'd by the ſame Method.——

Dr. *Hook*, in the ſame Year, read a Lecture before the Royal Society, on a Method of his own, for diſcovering the ſmalleſt Quantity of Salt contain'd in Water, on a Principle of Hydroſtaticks.

The Operation was perform'd by means of a large Poiſe of Glaſs, of the Shape of a Bolt Head; the Ball thereof three Inches in Diameter, and the Neck $\frac{1}{24}$ of a Inch. This being ſo pois'd, with red Lead put in it, as to make it very little heavier than *freſh* Water; and then ſuſpended by the ſmall Stem, which was graduated, to the End of a nice Beam of a Balance; and the Degree or Diviſion of the Neck, contiguous to the Surface of the Water, noted: Upon infuſing a Quantity of Salt, only equal to the two thouſandth Part of the Weight of the Water, the Neck of the Poiſe ſunk near half an Inch lower in the Water.

The Dulcifying, or making of ſalt Water *freſh*, is a Secret, and has been long ſought with great Attention.

Dr. *Liſter* takes the moſt eaſy, ſafe, and natural way of procuring *freſh* Water from the Sea, to be by putting Sea Plants, as *Alga Marina*, or common Sea Weed into a Quantity of the Water, in a Glaſs Body, with a Head, Beak, and Receiver: From which a *freſh*, ſweet, and potable Liquor will continually diſtill.

Monſ. *Hauton* has at length declared his Secret of making Sea Water *freſh*.

It conſiſts firſt, in a Precipitation, made with Oil of Tartar, which he can prepare at a ſmall Expence. Next he diſtills the Sea Water, with a Furnace contriv'd to take up little Room, and which, with a very little Fire, will diſtill 24 *French* Quarts of Water in a Day. For the Cooling thereof, inſtead of making the Worm paſs thro' a Veſſel full of Water, he makes it paſs thro' a Hole made on purpoſe out of the Ship, and enter it again at another; ſo that the Sea Water does the Office of a Refrigeratory. To the two proceeding Operations he joins Filtration, which is performed by a peculiar kind of Earth, mix'd and ſtirred with the diſtilled Water; and at length ſuffer'd to ſettle. This *Filtration* leaves it perfectly ſalubrious. *Phil. Tranſ.* N° 67.

FRESH *Fine*, is that which was levied within a Year paſt. *Weſtm.* 2. *c.* 45. See FINE.

FRESH *Force*, *Friſca Fortia*, in Law, is a Force done within forty Days. See FORCE.

If a Man be diſſeis'd of any Lands or Tenements, within any City or Borough; or deforc'd from them after the Death of his Anceſtors, to whom he is Heir; or after the Death of his Tenant for Life, or in Tail; he may, within forty Days after his Title accrued, have his Remedy by an Aſſize, or Bill of *Freſh Force*.

FRESH *Sute*, *Recens Insecutio*, is such a present and active Prosecution of an Offender, as never ceases, from the Time of the Offence committed, or discover'd, till he be apprehended. See SUTE.

The Benefit of such Persuit of a Felon, is, That the Party persuing shall have his Goods restor'd to him, whereas otherwise they are the King's.

Fresh Sute may continue for seven Years.——

Fresh Sute is either within the View, or without. *Manwood* says, That upon *fresh* Sute within the View, Trespassers in the Forest may be attached by the Officers pursuing them, tho' without the Limits of the Forest.

FRESH *Spell*, in the Sea Language, a *fresh* Gang, to relieve the Rowers in the Longboat. See SPELL.

FRESH *Shot*, in the Sea Phrase, signifies the falling down of any great River, into the Sea; by means whereof the Sea hath *fresh* Water a good way from the Mouth of the River.

As this is more or less, they call it a *great* or *small Fresh Shot*.

FRET, or FRETTE, in Architecture, a kind of Knot, or Ornament, consisting of two Lists, or small Fillets variously interlac'd, or wove; and running at parallel Distances, equal to their Breadth.

A necessary Condition of these *Frets* is, that every Return, and Intersection be at Right Angles. This is so indispensible, that they have no Beauty without it; but become perfectly *Gothic*.

Sometimes the *Fret* consists but of a single Fillet; which, if well managed, may be made to fill its Space exceedingly well.

The Antients made great use of these *Frets*: The Places they were chiefly applied on, were even, flat Members, or Parts of Building; as the Faces of the Corona, and Eves of Cornices; under the Roofs, Soffits, &c. on the Plinths of Bases, &c.

The Appellation was occasion'd hence, that the Word *Frette* literally signify'd the Timber Work of a Roof, which consists chiefly, of Beams, Rafters, &c. laid a-cross each other, and as it were, *fretted*.

FRET-*work*, an Enrichment of *Frets*; or a Place adorn'd with something in manner thereof. See FRET.

Fret-work is sometimes used among us, to fill up, and enrich flat, empty Spaces; but 'tis principally practiced in Roofs, which are *fretted* over with Plaister Work.

The *Italians* also apply it to the Mantlings of Chimneys with great Figures: A cheap Piece of Magnificence, and as durable almost within Doors, as harder Matters in the Weather.



FRET, or FRETTE, in Heraldry, is a Bearing consisting of six *Bars*, cross'd, and interlac'd, *fret*-wise; as in the adjoining Figure.

He bears Diamond a *Fret* Topaz: The Coat Armor formerly of the Lord *Maltrevers*, and now quarter'd by the Duke of *Norfolk*.

When it consists of more than six Pieces, the Number must be specified.

Some call this the true Lovers Knot; others, *Harrington*'s Knot, because 'tis their Arms, and *Nodoformo* the Motto. *Gibbon* is for calling it *Heraldorum Nodus Amatorius*.

FRETTY, or FRETTEE, in Heraldry, is where there are divers Bars laid a-cross each other.

Frettee is of six, eight, or more Pieces. Azure, *Fretty* of eight Pieces Or: The Coat of the Lord *Willoughby*.

Colombiere observes, that *Fretty* absolutely us'd, without any Addition, is suppos'd to be of six Pieces; that is, so many Bars or Pieces crossing each other: Which, therefore, need not be express'd; but if there be more, as much must be mention'd.

And yet *Guillim* has Azure, *Fretty* of six, Argent: The Coat of the antient Lords *Elthingham* of *Sussex*.

Guillim derives the Word from the French *Rets*, Net: But the Reader will easily furnish himself a better Etymology from the Word FRET, *in Architecture*.

FRIABLE, is applied to Bodies, to denote them tender and brittle; easily crumbled, or reduc'd to Powder between the Finger: Their Force of Cohesion being such as easily exposes them to Solution.

Such is Pumice, and all calcin'd Stones, burnt Alum, &c.

Friability is suppos'd to arise hence, that the Body consists wholly of dry Parts, irregularly combined, and which are readily separated, as having nothing unctuous, or glutinous to bind them together. See COHESION.

FRIAR, or FRIER, by the *Latins* call'd *Frater*, the *Italians Fraticello*, and the *French*, *Frere*, that is, *Brother*, is a Term common to the Monks of all Orders; founded on this, that there is a kind of Fraternity, or Broderhood presumed between the several religious Persons of the same Convent, or Monastery. See BROTHER, MONK, &c.

The kinds of *Friars* are very numerous, *Augustin Friars*; *Dominican*, or *Black*, or *Preaching Friars*; *Franciscan*, or *Grey*, or *Minor*, or *Begging Friars*; *Carmelites*, or *White Friars*, &c. See *Religious* ORDERS; see also DOMINICAN, FRANCISCAN, CARMELITE, &c.

FRIAR, in its more peculiar and proper Sense, is restrain'd to such Monks, as are not Priests; for those in Orders, are usually dignify'd with the Appellation of *Father*. See FATHER.

FRIARS, or FRIERS *Observant*, *Fratres Observantes*, were a Branch of the *Franciscans*, which are *Minores tam Observantes*, *quam Conventuales & Capucini*. See MINOR, and OBSERVANT.

They were called *Observants*, because not combined together in any Cloister, Convent, or Corporation, as the Conventuals are; but only agreed among themselves to observe the Rules of their Order, and that more strictly than the Conventuals did; from whom they separated themselves out of a Singularity of Zeal; living in certain Places of their own chusing.

FRIBURGH, or FRITHBORG, among our *Anglo-Saxon* Ancestors, denoted the same as *Frank-pledge* did after the Time of the Conquest. See FRANK-PLEDGE.

Præterea est quædam summa & maxima securitas, per quam omnes statu firmissimo sustinentur, viz. *ut unusquisq; stabiliat se sub fidejussionis securitate, quam Angli vocant* Freoborghes: *soli tamen Eboracenses dicunt eandem* Tienmannatale, *quod sonat latine decem hominum Numerum. II Edu. per Lam.*

Every Man in this Kingdom was antiently associated in some Decennary, or Company of ten Families, who were pledg'd or bound for each other, to keep the Peace, and observe the Law. See DECENNA.

If any Offence was done by one, the other nine were to answer it: That is, if the Criminal fled from Justice, they had thirty Days allow'd to apprehend him: If he was not taken in that time, he who was the *Friburgh*, i. e. the principal Pledge of the ten, should take two of his own Number, and the chief Pledges of three neighbouring *Friburghs*, with two others out of each of the said *Friburghs*; who were to purge themselves and their *Friburgh* of the Forfeiture and Flight of the Criminal. If they could not do this, the principal Pledge, with the other eight, were to make Satisfaction.

Great Men were not combined in any ordinary *Decenna*, or Dozein; as being deem'd a sufficient Assurance for themselves and their menial Servants. See DOZEIN.

FRICASSEE, a Dish, or Mess, hastily dress'd in a Pot, or Frying-pan, and season'd with Butter, Oil, or the like.

Thus we say, a *Fricassee* of Pullets, of Rabbits, of Tenches, of Tripe, of Frogs, of Eggs, of Peas, &c.

The Word is pure *French*, form'd of the Latin *Frixatura*, frying. Others will have *Fricassee* form'd in imitation of the Noise made by Butter, or other Fat, when melted in the Pan.

FRICTION, the Act of rubbing, or grating the Surface of one Body against that of another; called also *Attrition*.

The Phænomena arising upon the *Friction* of divers Bodies under divers Circumstances, are very numerous and considerable.

Mr. *Hawksbee* gives us a Number of Experiments of this Kind: Particularly that of the Attrition, or *Friction* of Glass, under various Circumstances; the Result of which was, that it yielded Light, became Electrical, &c. See ATTRITION, ELECTRICITY, &c.

All Bodies by *Friction* are brought to conceive Heat; many of them to emit Light; particularly a Cats-back, Sugar, beaten Sulphur, Mercury, Sea Water, Gold, Copper, &c. But above all, Diamonds, which when briskly rubb'd against Glass, Gold, or the like, yield a Light, equal to that of a live Coal, when blowed by the Bellows. See FIRE, LIGHT, HEAT, PHOSHORUS, DIAMOND, &c.

FRICTION, in Mechanicks, the Resistance a moving Body meets withal from the Surface whereon it moves. See RESISTANCE.

Friction, arises from the Roughness or Asperity of the Surface of the Body mov'd on, and that of the Body moving. For such Surfaces consisting alternately of Eminences, and Cavities; either the Eminences of the one must be raised over those of the other; or they must be both broke and wore off: But neither can happen without Motion; nor can Motion be produc'd without a Force impress'd. Hence, the Force applied to move the Body, is either wholly, or partly spent on this Effect; and consequently there arises a Resistance, or *Friction*: Which will be greater, *cæteris paribus*, as the Eminences are the greater, and the Substance the harder. And as the Body, by continual *Friction* grows more and more Polite, the *Friction* diminishes.

Hence it follows, that the Surfaces of the Parts of Machines that touch each other, should be as smooth and polish'd as possible. But, as no Body can be so much polish'd, as quite to take away all Inequality; witness those numerous Ridges discover'd by the Microscope on the smoothest Surfaces: Hence arises the Necessity of anointing the Parts that touch, with Oil, or other fatty Matter.

Laws of FRICTION.

1° *As the Weight of a Body moving on another, is increaſed, ſo is the* Friction.

This we ſee experimentally in a Balance; which when only charged with a ſmall Weight, eaſily turns; but with a greater, a greater Force is required.

Hence, if the Line of Direction of a moving Body be oblique to the Surface moved on; the *Friction* is the greater; this having the ſame Effect as an Increaſe of Weight.

And hence, again, as a perpendicular Stroke, or Impreſſion is to an oblique one as the whole Sine, to the Sine of the Angle of Incidence; and the Sine of the greater Angle is greater, and that of the leſſer, leſs: The *Friction* is the greater, as the Line of Direction approaches nearer to a Perpendicular.

This is eaſily obſervable, and eſpecially in the Teeth of Wheels, which are frequently broke on this very account. The *Friction*, therefore, is taken away, if the Line of Direction of the moving Body be parallel to the Surface.

2° *The* Friction *is leſs in a Body that rolls, than it would be were the ſame Body to ſlide*, as is eaſily demonſtrated.

For ſuppoſe a dented Ruler, A B, *Tab. Mechanicks*, *Fig.* 38. and ſuppoſe a Wheel D E to move along it, with its Teeth perpendicular to the Circumference. If now the Body were to ſlide; the Tooth F, when it touch'd the Ruler, would deſcribe a Right Line on the Surface thereof: And, as the Tooth of the Ruler, H, reſiſts the ſame; it could not proceed without removing, or breaking either the Tooth H; or that F. And the ſame will hold in the ſliding of any rough Surface upon another; where all the *Friction* will take place, than can any way ariſe from the Roughneſs of the Surface. But if the Wheel E D roll along the Ruler, then the Tooth H will no longer reſiſt its Motion, only as it is to be hoiſted out of the Cavity F over the Eminence of the Tooth H: And the ſame holds in the robbing of any rough Body over the Surface of another.

Hence, in Machines, leſt the *Friction* ſhould employ a good Part of the Power; Care is to be taken, that no Part of the Machine ſlide along another; if it can be avoided: But rather that they roll, or turn upon each other. With this View it may be proper to lay the Axes of Cylinders, not, as is uſually done, in a Groove, or Concave Matrix; but between little Wheels, A B C D *Fig.* 39. moveable on their reſpective Axes. This was long ago recommended by *P. Caſatus*; and Experience confirms, that we ſave a deal of Force by it. Hence alſo it is that a Pully moveable on its Axis reſiſts leſs than if it were fix'd. And the ſame may be obſerv'd of the Wheels of Coaches, and other Carriages.

From theſe Principles, with a little further Help from the higher Geometry, *Olaus Roemer* determined the Figure of the Teeth of Wheels, that ſhould make the leaſt Reſiſtance poſſible; and which ſhould be epicycloidal. And the ſame was afterwards demonſtrated by *de la Hire*; tho', which is to be lamented, the Thing is not yet taken into Practice.

Hence in Sawing-Mills, the Sides of the wooden Rectangle the Saws are fitted into, ſhould be furniſh'd with *Rotulæ*, or little Wheels; which would greatly leſſen the *Friction*; and the like in other Caſes. Add, that as Winches, or curved Axes prevent all *Friction*; thoſe ſhould be uſed in lieu of Wheels, as often as it is poſſible. See WINCH.

Calculation of the Quantity or Value of FRICTION.

The *Friction* is a Point of the utmoſt Importance in Machines; and by all means to be conſider'd, in calculating the Force thereof: Yet it is generally overlook'd in ſuch Calculations: But this, principally, by reaſon its preciſe Value is not known.

It is not yet reduc'd to certain, and infallible Rules: The common Method is, barely to compute the Advantage, which a moving Power has from the Machine; either on account of its Diſtance from a fix'd Point; or of the Direction in which it acts. And in all the Demonſtrations it is ſuppos'd that the Surfaces of Bodies are perfectly ſmooth and poliſh'd. Indeed the Engineers expect, that in the Practice they ſhould loſe part of the Advantage of their Force, by the *Friction*: But how much, it is ſuppos'd nothing but the Practice can determine. M. *Amontons*, indeed, has made an Attempt to ſettle, by Experiment, a Foundation for a preciſe Calculation of the Quantity of *Friction*; and M. *Parent* has confirm'd it from Reaſoning, and Geometry: But their Theory, however warranted, is not generally, and fully received.

M. *Amonton*'s Principle, is, that the *Friction* of two Bodies depends on the Weight, or Force wherewith they bear on each other; and only increaſes as the Bodies are more ſtrongly preſs'd, or applied againſt each other; or are charged with a greater Weight: And that it is a vulgar Error, that the Quantity of *Friction* has any Dependance on the Bigneſs of the Surfaces rub'd againſt each other; or that the *Friction* increaſes as the Surfaces do.

Upon the firſt Propoſal of this Paradox, M. *de la Hire* had Recourſe to Experiments, which ſucceeded much in favour of the new Syſtem. He laid ſeveral Pieces of rough Wood, on a rough Table: Their Sizes were unequal; but he laid Weights on them, ſo as to render them all equally heavy. And he found, that the ſame preciſe Force, or Weight, applied to them by a little Pully, was requir'd to put each in Motion; notwithſtanding all the Inequality of the Surfaces. The Experiment ſucceeded in the ſame manner in Pieces of Marble, laid on a Marble Table.

Upon this, M. *de la Hire* betook himſelf to the Rationale of the Thing; and has given us a Phyſical Solution of the Effect: And M. *Amontons* ſettled a Calculus of the Value of *Friction*, and the Loſs ſuſtain'd thereby in Machines, on the footing of the New Principle.

In Wood, Iron, Lead, and Braſs, which are the principal Materials us'd in Machines, he finds the Reſiſtance cauſed by *Friction*, to be nearly the ſame; when thoſe Materials are anointed with Oil, or other fatty Matter: And this Reſiſtance, independant of the Quantity of Surface, he makes to be nearly equal to a third Part of the Force wherewith the Bodies are preſs'd againſt each other.

Beſide the Preſſion, the Magnitude whereof determines that of the *Friction*; there is another Circumſtance to be conſider'd, *viz.* the Velocity. The *Friction* is the greater; and the more difficult to ſurmount, as the Parts are rub'd againſt each other with the greater Swiftneſs: So that this Velocity muſt be compared with that of the Power neceſſary to move the Machine, and overcome the *Friction*. If the Velocity of the Power be double that of the Parts rub'd; it acquires, by that means, an Advantage that makes it double; or, which amounts to the ſame, diminiſhes the contrary Force of *Friction* by one half; and reduces it to a ſixth Part of the Weight or Preſſion. But this Velocity M. *Amontons* only conſiders as a Circumſtance that augments or diminiſhes the Effect of the Preſſion, *i. e.* the Difficulty of the Motion: So that the *Friction* ſtill follows the Proportion of the Weight. Only, we are hereby directed to diſpoſe the Parts of Machines that rub againſt each other, in ſuch manner as that they may have the leaſt Velocity poſſible: And thus the Diameter of the Axis of a Wheel ſhould be as ſmall as poſſible, with regard to that of the Wheel; in that the leſſer the Axis, the ſlower will be the Motion of the Surfaces rubbing againſt each other: ſince the Velocity of a circular Motion always goes diminiſhing from the Circumference to the Centre. And for the ſame Reaſon the Teeth of dented Wheels ſhould be as ſmall and thin as poſſible: For a Tooth catching on a Notch, *&c.* rubs one of its Sides againſt a Surface equal to its own; and is to diſengage it ſelf in a certain time by paſſing over a Space equal to the Surface: Conſequently, the leſs the Surface, the leſs Space it has to move; the littleneſs of the Surface diminiſhing the Reſiſtance of the *Friction*; not as it is a leſs Surface that rubs, but as there is a leſs Space to move.

But notwithſtanding all the Confirmations and Illuſtrations of this Theory of *Friction*; the Publick, nor even the Academy it ſelf where it was propoſed, could not be brought fully to acquieſce in it. 'Tis granted, the Preſſion has a great Effect; and is, in many Caſes, the only Thing to be conſider'd in *Frictions*: But 'twill be hard to perſuade us abſolutely to exclude the Conſideration of the Surface. In effect, the Contrary ſeems capable of a Metaphyſical Demonſtration.

If two Bodies with plain Surfaces, ſuppoſed infinitely hard, and poliſh'd, be moved along each other; the *Friction* will be none, or infinitely ſmall: But, if in lieu of ſuch Suppoſition, which has no Place in Nature, we ſuppoſe two Bodies with rough, uneven Surfaces; the Difficulty of moving one of them on the other, muſt either ariſe from this, that the firſt is to be rais'd, in order to diſengage the Parts catch'd or lock'd in the ſecond; or that the Parts muſt be broke and wore off; or both.

In the firſt Caſe, the Difficulty of raiſing one of the Bodies, makes that of the Motion; and of conſequence, the *Friction* ariſes wholly from the Weight, or Preſſion; and the Surface has nothing to do.

In the ſecond Caſe, the Magnitude of the Surface would be all; were it poſſible this ſecond Caſe could be abſolutely abſtracted from the firſt; *i. e.* could the Parts of one Body be rub'd and wore againſt thoſe of the other, without raiſing one of them; it being viſible that a greater Number of Parts to be broke would make a greater Reſiſtance, than a leſs. But as in Practice we never rub, or grind without raiſing the Body; the Reſiſtance ariſing from the Greatneſs of the Surface is always combined in the ſecond Cauſe with that from the Preſſion: Whereas in the former Caſe that ariſing from the Preſſion, may be alone, and uncompounded.

Add, that what is wore off a Body, is ordinarily very little; with regard to the great Number of times the Body muſt have been raiſed during the *Friction*; and all the little Heights added together, which the Body muſt have been raiſed to.

Hence,

Hence, as the Reſiſtance from Preſſion may be ſingle; and as the ſame always accompanies that ariſing from the Magnitude of the Surfaces; and is uſually much the more conſiderable of the two, when it does accompany it: For theſe Reaſons in moſt of the Experiments that are made, it is the only one perceived, and the only one that need to be conſider'd.

But then, as 'tis poſſible, in certain Caſes, for the Preſſion to be very ſlender; and the Number of Parts to be rub'd very great: It muſt be own'd there are Caſes wherein the *Friction* follows very ſenſibly the Proportion of the Surfaces.

For the Friction *of the Parts of Fluids*, ſee RESISTANCE, and RETARDATION *of Fluids*.

FRICTION, in Medicine, and Chirurgery, the Act of rubbing a diſeaſed Part with Oils, Unguents, or other Matters, in order to eaſe, relieve, and cure it. See UNGUENT.

Frictions are much uſed, eſpecially abroad, in Venereal Caſes; where they prefer the applying of Mercury externally, by way of *Friction*; to that of giving it internally to raiſe a Salivation. See SALIVATION, and MERCURY.

There are alſo *Frictions with the Fleſh-bruſh*, a *linen Cloth*, or the *Hand* only: For the Effect of which laſt, ſee STROAKING.

Frictions in the general, and of any kind, are a ſort of Exerciſe that contributes very greatly to Health; as they excite and ſtir up the natural Warmth, divert Defluxions, promote Perſpiration, open the Pores of the Skin, and carry off Humors.

The *Fleſhbruſh*, Dr. *Cheyne* obſerves, is an Exerciſe moſt uſeful for promoting a full and free Perſpiration and Circulation. Every Body knows the Effect of currying of Horſes; that it makes them ſleek, gay, lively, and active; ſo as to be judg'd equivalent to half the Feeding.

This it can no otherwiſe effect, but by aſſiſting Nature to throw off the Recrements of the Juices which ſtop the free Circulation; and by conſtant *Friction*, Irritation and Stimulation, to call the Blood and Spirits to the Parts moſt diſtant from the Seat of Heat, and Motion, and ſo plump up the ſuperficial Muſcles. And the ſame Effects it would have in other Creatures, and Man himſelf, if managed in the ſame manner, and with the ſame Care and Regularity.

Perſons, therefore, of weak Nerves and ſedentary Lives, would do well to ſupply the Want of other Exerciſe with ſpending half an Hour, Morning and Night, in currying and rubbing their whole Body, eſpecially their Limbs, with a Fleſh-bruſh. See EXERCISE.

FRICTION, or FRIXION, in Chymiſtry, is the ſame with what in Cookery we call *Frying*, *viz.* a Preparation of certain Matters in a Pan, with the Addition of ſome unctuous thing, as Oil, Fat, *&c.*

The *Frixion* of Medicines is perform'd over a ſlow, moderate Fire; and that of Foods over a quick one.

FRIDSTOLL, and FRITHSTOW, in our antient Writers, ſignifies a Seat, Chair, or Place of Peace. See SANCTUARY.

In the Charter of Immunities granted to the Church of St. *Peter* in *York*, by *Hen.* 1. and confirmed *An.* 5. *H.* 7. we read thus,—*Quod ſi aliquis veſano ſpiritu agitatus diabolico auſu quemquam capere præſumerit in Cathedra lapidea juxta Altare, quod Anglici vocant* Fridſtol, *i. e.* Cathedra quietudinis *vel* pacis; *hujus tam flagitioſi ſacrilegii emendatio ſub nullo judicio erat, ſub nullo pecuniæ numero claudebatur, ſed apud Anglos* Botelee, *hoc eſt, ſine emenda, vocabatur.*

Of theſe there were many others in *England*; but, the moſt famous was at *Beverly*, which had this Inſcription, *Hæc ſedes lapidea* Freedſtoll *dicitur, i. e.* Pacis Cathedra, *ad quam reus fugiendo perveniens, omnimodam habet ſecuritatem.* Camb.

It ſignifies alſo a Palace, which is uſually a priviledg'd Place.

FRIENDLY *Society*, ſee OFFICE of INSURANCE.

FRIEZE, or FRIZE, or FREEZE, in Architecture, a Member, or Diviſion of the Entablature of Columns, by the Antients call'd *Zophoros*. See FREEZE.

FRIGATOON, a *Venetian* Veſſel, commonly us'd in the *Adriatick*.

It is built with a ſquare Stern, and without any Fore-maſt; having only a Main-maſt, Miſſen-maſt, and Bowſprit.

FRIGID, of the Latin *frigidus*, cold, is variouſly uſed.

A *frigid* Style, is a low, jejune manner of Diction, wanting Force, Warmth of Imagination, Figures of Speech, *&c.* See STYLE.

FRIGID *Zone*, or *Frozen Zone*, in Geography. See ZONE.

FRIGIDITY, is alſo uſed in the ſame Senſe with *Impotency*; ſee IMPOTENCY.

FRIGORIFIC, in Phyſicks; ſomething that occaſions cold. See COLD.

Some Philoſophers, particularly *Gaſſendus*, and other Corpuſcularians, denying Cold to be a mere Privation or Abſence of Heat, contend that there are actual *frigorific* Corpuſcles, or Particles as well as fiery ones: Whence proceed Cold and Heat. But the later Philoſophers allow of no other *frigorific* Particles, beſide thoſe nitrous Salts, which float in the Air in cold Weather, and occaſion Freezing. See FREEZING.

FRIPPERY, a *French* Term, ſometimes uſed in our Language.

Frippery, or *Fripperie*, properly imports the Trade, or Traffick of old ſecond-hand Cloaths, and Goods.

The Word is alſo uſed for the Place, where ſuch ſort of Commerce is carried on, and even for the Commodities themſelves.——

The Company of *Frippiers*, or *Fripperers* at *Paris*, are a regular Corporation, of an antient Standing, and make a conſiderable Figure among the *Communautes* of that City. See BROKER.

FRIT, or FRITT, in the Glaſs Manufacture, is the Matter, or Ingredients, whereof Glaſs is to be made, calcined, or baked in a Furnace. See GLASS.

A Salt drawn from the Aſhes of the Plant Kali, or from Fern, mix'd with Sand, or Flints, and baked together, make an opake Maſs, called by Glaſſmen *Frit*; probably from *frittare*, to fry; or by reaſon the *Frit*, when melted, runs into lumps like *Fritters*, called by the *Italians*, *Fritelli*.

By the Antients it was called *Hammonitrum*, or *Ammonitrum*, of ἄμμος, Sand, and νίτρον, Nitre: Under which Name it is deſcribed by *Pliny* thus: Fine Sand from the *Volturnian* Sea, mix'd with three times the Quantity of Nitre, and melted, makes a Maſs call'd *Ammonitrum*; which being re-boiled, makes pure Glaſs. *Hiſt. Nat. L.* 36. *c.* 26.

Frit, *Neri* obſerves, is only the Calx of the Materials which make Glaſs; which, tho' they might be melted, and Glaſs be made without thus calcining them, yet would it take up much more Time. This Calcining, or making of *Frit*, ſerves to mix and incorporate the Materials together, and to evaporate all the ſuperfluous Humidity. The *Frit* once made, is readily fuſed and turned into Glaſs.——

There are three kinds of *Frits*: The Firſt, *Cryſtal Frit*, or that for Cryſtal Metal, made with Salt of Polverine and Sand.

The Second, and ordinary *Frit* is made of the bare Aſhes of Polverine, or Barillia, without extracting the Salt from them. This makes the ordinary white, or cryſtal Metal.

The Third, is *Frit* for Green Glaſſes, made of common Aſhes, without any Preparation. This laſt *Frit* will require 10 or 12 Hours baking.

The Materials in each, are to be finely powder'd, waſh'd, and ſierced; then equally mix'd; and frequently ſtirr'd together in the Melting Pot. For the reſt ſee GLASS, and CRYSTAL.

FRITHBURGH, ſee FRIBURGH.

FRITHGILD, was antiently the ſame we now call a *Guild*, or a *Fraternity*, or *Company*. See GILD.

FRIZE, or FRIEZE, in Architecture, a Part of the Entablature of Columns, more uſually wrote, and pronounced *Freeze*. See FREEZE.

FRIZE, or FREEZE, in Commerce, a kind of woollen Cloth, or Stuff, for Winter Wear, being *frized* or nap't on one Side; whence, in all Probability, it derives its Name.

Of *Frizes*, ſome are croſs'd; others not croſs'd. The former are chiefly of *Engliſh* Manufacture: The latter of *Iriſh*. See FRIZING.

FRIZING *of Cloth*, a Term in the Woolen Manufactury, applied to the forming of the Nap of a Cloth, or Stuff, into a number of little hard Burs, or Prominences, covering almoſt the whole Ground thereof.

Some Cloths are only *frized* on the Back-ſide; as black Cloths: Others on the right Side, as colour'd and mix'd Cloths, Rateens, Bays, Frizes, *&c.*

Frizing may be perform'd two ways: One *with the Hand*, *i. e.* by means of two Workmen, who conduct a kind of Plank, that ſerves as a *frizing* Inſtrument.

The other *by a Mill*, work'd either by Water, or a Horſe; or ſometimes by Men. This latter is eſteem'd the better way of *frizing*; by reaſon the Motion being uniform, and regular, the little Knobs of the *Frizing* are form'd more equably, and alike. The Structure of this uſeful Machine is as follows.

The three principal Parts are, The *Frizer*, or Criſper; the *Frizing* Table; and the *Drawer*, or Beam.

The two firſt are two equal Planks or Boards, each about ten Foot long, and fifteen Inches broad; differing only in this, that the *Frizing* Table is lined, or cover'd with a kind of coarſe Woolen Stuff, of a rough, ſturdy Nap; and that the Frizer is incruſtated with a kind of Cement, compoſed of

Glue, Gum Arabick, and yellow Sand, with a little *Aqua Vitæ*, or Urine. The *Beam*, or Drawer, is thus called, by reaſon it draws the Stuff from between the *Frizer* and *Frizing* Table, which is a wooden Roller, beſet all over with little, fine, ſhort Points or Ends of Wire, like thoſe of Cards, uſed in carding of Wool.

The Diſpoſition and Uſe of the Machine is thus: The Table ſtands immoveable, and bears, or ſuſtains the Cloth to be frized, which is with that Side uppermoſt, on which the *Frize* is to be raiſed. Over the Table is plac'd the *Frizer* at ſuch Diſtance from it, as to give room for the Stuff to be paſs'd between them: So, that the *Frizer* having a very ſlow ſemicircular Motion, meeting the long Hairs or Nap of the Cloth, twiſts and rolls them into little Knobs, or Buttons; while, at the ſame time, the Drawer, which is continually turning, draws away the Stuff from under the Frizer, and winds it over its own Points.

All that the Workman has to do while the Machine is going, is to ſtretch the Stuff on the Table, as faſt as the Drawer takes it off; and, from time to time, to take off the Stuff from the Points of the Drawer.

It has already been obſerv'd, that the *Frizing* Table is lined with Stuff of a ſhort, ſtiff, ſtubby Nab; the Uſe whereof is to detain the Cloth between the Table, and Frizer long enough for the Grain to be form'd; that the Drawer may not take it away too readily; which muſt otherwiſe be the Caſe, inaſmuch as it is not held by any thing at the other End.

It were needleſs to ſay any thing particular of the manner of *frizing* Stuffs with the Hand; it being the Aim of the Workmen to imitate as near as they can, with their wooden Inſtrument, the ſlow, equable, and circular Motion of the Machine. It needs only be added, that their Frizer is but about two Foot long, and one broad; and that to form the Nap more eaſily, they moiſten the Surface of the Stuff lightly with Water, mingled with Whites of Eggs, or Honey.

FRONT, the *Forehead*, or that Part of the Face above the Eyebrows. See *Os* FRONTIS.

The Word is form'd of the Latin *Frons*, and that from the *Greek* φρενεῖν, to think, perceive; of φρὴν, *mens*, the Mind, Thought. *Martinius*, to make out this Etymology, obſerves, that from the Forehead of a Perſon we perceive what he is, what he is capable of, and what he thinks of. *DuLaurens* chuſes to derive it from *ferre*, by reaſon it *bears* the Marks of what we have in our Head.

FRONT is alſo us'd where ſeveral Perſons, or Things are ranged Side by Side, and ſhew their *Front*.

Thoſe Troops ranged in form of Battel made a large *Front*: The three Legions were here diſpos'd in two Lines, as *Cæſar* us'd to do, when with a few Forces he had occaſion to extend his *Front*. The *Front* of the Army conſiſted of ſo many Battalions, and ſo many Squadrons.

The Military Evolutions teach how to make a *Front* of any Side, *i. e.* How to preſent the Face and Arms to the Enemy, what Side ſoever he attack on. They attack'd the Enemy in *Front*, and in *Flank*. See FLANK,

FRONT, in Architecture, the principal Face, or Side of a Building: Or that preſented to the chief Aſpect, or View. See FACE.

The Palace conſiſts of a large Pile in *Front*, flank'd with two Wings. See FRONTISPIECE.

FRONT, in Perſpective, a Projection, or Repreſentation of the Face or Fore-part of an Object; or of that Part directly oppoſite to the Eye; call'd alſo, and more uſually, *Orthography*. See ORTHOGRAPHY.

FRONTAL, in Architecture, a little *Fronton*, or Pediment, ſometimes placed over a little Door, or Window. See PEDIMENT.

FRONTALE *Os*, in Anatomy, ſee *Os* FRONTIS.

FRONTALE, or FRONTAL, in Medicine, an external Form of Remedy, applied on the Forehead, with a Bandage; for the Cure of the Head Ach, Megrim, Vapours, &c.

Frontals are compoſed of Roſes, Elder Flowers, Betony, Marjoram, Lavender, &c. wrap'd in a Linen Cloth, and applied over the Forehead and Temples.

There are alſo *Frontals* in manner of Linements, made of *Unguentum populeum*, Extract of Opium; or of Paſtes, Powders, Seeds, &c.

In *Frontals* applied to eaſe the Violence of the Head-ach in the height of Fevers, they frequently mix the Kernels of Cherries.

FRONTAL, FRONTLET, or BROW-BAND, is alſo us'd in ſpeaking of the Jewiſh Ceremonies.

The *Frontal* conſiſts of four ſeveral Pieces of Vellum, on each whereof is wrote ſome Text of Scripture. They are all laid on a piece of black Calves Leather, with Thongs to tye it by. The Jews apply the Leather with the Vellum on their Foreheads, in the Synagogue, and tie it round the Head with the Thongs.

FRONTALES, in Anatomy, two Muſcles, one on each Side the Forehead; commonly ſuppoſed to ſpring from the Skull, but now known to ariſe from the Occipital Muſcles; or rather, it appears that the *Frontales* and Occipitales are only one continued Digaſtric Muſcle, on each Side, moving the Scalp and Skin of the Forehead and Eyebrows. See OCCIPITALIS.

The *Frontales* begin to be thus denominated after they have begun to paſs the Coronal Suture, with Fibres paſſing obliquely to the Eyebrows, where they terminate, and in the lower Part of the Skin of the Forehead.

They have each two Appendages; the ſuperior, or external is commonly fix'd to the Bone of the Noſe; the lower is fix'd to the *Os Frontis*, and is by *Volcherus Coiter* made a diſtinct Muſcle, and called *Corrugator*, from its Uſe in drawing the Eyebrows to each other.

FRONTATED, a Term us'd by the Botaniſts, to expreſs that the Petalum or Leaf of a Flower grows broader and broader; and at laſt, perhaps, terminates in a Right Line.

In oppoſition to *cuſpidated*, which expreſſes that the Leaves terminate in a Point. See PETALA.

FRONTIER, the Border, Confine, or Extreme of a Kingdom, or Province; which the Enemies find in *Front*, when they would enter the ſame.

A *Frontier* Town: *Frontier* Province. *Frontiers* were antiently called *Marches*. See MARCHES.

The Word is derived from the French *Frontiere*, and that of the Latin *Frontaria*, as being a kind of Front oppoſed to the Enemy. *Skinner* derives *Frontier* from *Front*; inaſmuch as the *Frontier* is the exterior, and moſt advanced Part of a State, as the Front is that of the Face of a Man.

FRONTIS *Os*, in Anatomy, the Bone of the Forehead. See FRONT.

The *Os Frontis* is a Bone of the Cranium, in form almoſt round: It joins the Bones of the Sinciput and Temples by the Coronal Suture, and the Bones of the upper Jaw by the tranſverſe Suture, and the Os Sphænoides, by the Sphænoidal Suture. See CRANIUM.

It forms the upper Part of the Orbit, and has four Apophyſes, which are at the four Angles of the two Orbits.

It has two Holes above the Orbits, thro' which paſs the Vein, Artery, and ſome Twigs of the firſt Branch of the fifth Pair. It has alſo one in each Orbit, a little above the Planum, thro' which a Twig of the Opthalmick Branch of the fifth Pair of Nerves paſſes to the Noſe.

It has two Sinus's above the Eyebrows, between its two Tables; they are lined with a thin Membrane, in which there are ſeveral Blood Veſſels and Glands, which ſeparate a mucous Seroſity, that falls into the Noſtrils.

The Inſide of this Bone has ſeveral Inequalities, made by the Veſſels of the Dura Mater. It has two large Dimples made by the anterior Lobes of the Brain. Above the Criſta Galli, it has a ſmall blind Hole, into which the End of the Sinus *longitudinalis* is inſerted.

FRONTISPIECE, in Architecture, the *Portail*, or principal Face of a fine Building. See PORTAIL.

The *Frontiſpiece* of the *Louvre* is the fineſt Piece of Architecture in *France*.

The Word is form'd of the Latin *Frontiſpicium*, q. d. *Frontis hominis inſpectio*. Hence, by a Figure, we ſay the *Frontiſpiece* of a Book, meaning an Ornament with an engraven Title on the firſt Page.

FRONTLET, ſee FRONTAL.

FRONTON, in Architecture, an Ornament among us, more uſually called *Pediment*. See PEDIMENT.

FROST, an exceſſive cold State of the Weather, whereby the Motion and Fluidity of Liquors is ſuſpended: Or, it is that State of the Air, &c. whereby Fluids are converted into Ice. See FREEZING, and ICE.

Metals contract, or are ſhorten'd in *Froſt*. Monſ. *Auzout* found by Experience, that an iron Tube twelve Foot long loſt two Lines of its Length, upon being expoſed to the Air, in a froſty Night. But this we ſuppoſe wholly the Effect of the Cold.

Froſt does not contract Fluids, as was formerly imagined: On the contrary, it ſwells or dilates them by nearly $\frac{1}{10}$ of their Bulk.

Scheffer aſſures us, that in *Sweden* the *Froſt* pierces into the Earth two Cubits, or *Sweediſh* Ells; and turns what Moiſture is found therein, into a whitiſh Subſtance, like Ice. He adds, that ſtanding Waters freeze to a greater Depth; even to three Ells, or more: But thoſe that have a Current, leſs; and rapid Waters, and bubbling Springs, never.

Mr. *Boyle* gives us ſeveral Experiments of Veſſels made of Metals, exceeding thick and ſtrong; which being fill'd with Water, cloſe ſtop'd, and expoſed to the Cold: The Water, in freezing, coming to be expanded; and not finding either Room, or Vent, burſt the Veſſels.

A ſtrong Barrel of a Gun, with Water in it, cloſe ſtop'd and *frozen*, was rent the whole Length: And a ſmall Braſs Veſſel, five Inches deep, and two in Diameter, fill'd with Water, &c. liſt up its Lid, which was preſs'd with a Weight of 56 Pounds.

Olearius

Olearius aſſures us, that in the City of *Moſcow* he obſerv'd the Earth to be cleft by the *Froſt* many Yards length, and a Foot broad. *Scheffer* mentions ſudden Cracks or Rifts in the Ice of the Lakes of *Sweden*, nine or ten Foot deep, and many Leagues long; and adds, that the Rupture is made with a Noiſe not leſs terrible than if many Guns were diſcharged together. By ſuch means the Fiſhes are furniſh'd with Air; ſo that they are rarely found dead.

In the great *Froſt* of 1683, Oaks, Aſhes, Walnut Trees, *&c.* Mr. *Bobart* tells us, were miſerably ſplit, and cleft, ſo that one might ſee thro' them; and this frequently with terrible Noiſes, like the Exploſion of Fire Arms. The Clifts were not only in the Bodies, but continued to the larger Boughs, Roots, *&c.* See an Inquiry into the Circumſtances and Cauſes hereof in the *Philoſ. Tranſact.* N° 165. See alſo FREEZING *Rain.*

The Natural Hiſtory's of *Froſts* furniſh very extraordinary Effects thereof. The Trees are frequently ſcorch'd and burnt up as with the moſt exceſſive Heat; of which there are divers Inſtances in ſo warm a Climate as that of *Provence*. *Mezeray*, *Hiſt. de France*, An. 1570.

The Year 1708 was remarkable throughout the greateſt Part of *Europe* for a ſevere *Froſt*. Mr. *Derham* ſays, it was the greateſt in Degree, if not the moſt univerſal in the Memory of Man. It extended throughout *England*, *France*, *Germany*, *Denmark*, *Italy*, &c. But was ſcarce felt in *Scotland* or *Ireland*. All the Orange Trees, and Olives in *Italy*, *Provence*, &c. And all the Walnut Trees throughout *France*, with an Infinity of other Trees, periſh'd by *Froſt*.

They had a kind of Gangrene grew on them; which Monſ. *Gauteron* takes to have been the Effect of a corroſive Salt, corrupting and deſtroying their Texture. He adds, there is ſo much Reſemblance between the Gangrene befalling Plants thro' *Froſt*, and that which the Parts of Animals are liable to, that they muſt have ſome analogous Cauſe. Corroſive Humors burn the Parts of Animals; and the aerial Nitre condenſed, has the ſame Effect on the Parts of Plants. *Penetrabile* Frigus *adurit. Memoires de l'Academie Royale des Sciences*, An. 1709.

In *Germany* the Freſh-water Fiſh were every where killed; and a vaſt Deſtruction befell the ſmaller Birds. The Spittle was no ſooner out of a Man's Mouth, than it was froze. The *Luſatian* Letters add, that many Cows were froze to death in their Stalls; and many Travellers on the Road were ſome quite froze to death, others loſt their Hands, Feet, Noſes, or Ears.

G. Remus, the Author of an Academical Exerciſe on this Subject, publiſh'd at *Hall* in *Saxony*, entitled *Conſideratio Phyſico-Mathematica Hyemis proxime præterlapſi*, gives Inſtances from the News Papers, of two Gentlemen and a Smith in *England*; and above 60 Men, and many Cattle near *Paris*; and the like at *Venice*, and 80 *French* Soldiers near *Namur*; all kill'd on the Road with *Cold*. On the Coaſts of *Italy* many of the Mariners abroad the *Engliſh* Men of War died of the Cold; and ſeveral loſt part of their Fingers and Toes.

In *England*, the greateſt Sufferers in the animal Kingdom, Mr. *Derham* obſerves, were Birds and Inſects; particularly Larks and Robin-red-breaſts: Much the greateſt Part of which periſh'd. But the Vegetables were much the greateſt Sufferers. Few of the tender Sorts eſcaped: Bays, Hollies, Roſemary, Cypreſs, Alaterni, Phyllyrea's, Arbuti, Lauruſtines, and even Furze, with moſt of the fruteſcent Herbs, as Lavenders, Abrotonums, Rue, Thyme, *&c.* Mr. *Bobart* informs us, were generally deſtroyed. The ſame Writer adds, that the Sap of the finer Wall Fruit was ſo congealed, and diſorder'd, that it ſtagnated in the Limbs and Branches, and produced Diſorders like to Chillblains in human Bodies, which in many Parts of Trees would turn to Mortifications: That the very Buds of the finer Trees, both the Leaf Buds, and Bloſſom Buds, were quite killed and dried into a farinaceous Matter.

In *Switzerland*, *Scheuchzer* relates, that not only the Walnut Trees and Vines, but even the Beech, Laryx, *&c.* were undone. And yet in ſome Parts of thoſe Cantons, he adds, there never was a milder Winter Seaſon known.

Mr. *Derham* relates it as a common Obſervation, that Vegetables ſuffer'd more from the Sun, than the *Froſt*; in that the Sun-ſhine melting the Snow, and opening the Ground, left it more expoſed to the Rigours of the enſuing Night. And at a Meeting of the Royal Society, it was obſerved, that the Calamities which befel Trees, aroſe not purely from their being frozen; but principally from the Winds ſhaking and rocking them, when they were ſo; which rent and parted their Fibres. *Philoſoph. Tranſact.* N° 324.

Hoar FROST, or *White* FROST, *Pruina*, is the Dew, *froze* or congealed early in cold Mornings; chiefly in Autumn.

Hoar Froſt, Mr. *Regis* obſerves, conſiſts of an Aſſemblage of little Parcels of Ice, or Cryſtals; which are of various Figures, according to the different Diſpoſition of the Vapours, when met and condenſed by the Cold. See CRYSTALLIZATION.

Dew, is in all appearance the Matter of *Hoar Froſt*: Tho' many of the *Carteſians* will have it form'd of a Cloud, and either congealed in the Cloud, and ſo let fall; or ready to be congealed aſſoon as it arrives at the Earth. See DEW.

FROTH, a white, light Subſtance, form'd on the Surface of Fluids, by vehement Agitation. See BOILING.

Froth conſiſts wholly of little Spherules, or Globules; and accordingly, may be defined an Aſſemblage of *Aqueo-aereal* Bubbles. See BUBBLE; ſee alſo SCUM.

FROZEN, or FRIGID *Zone*, ſee ZONE.

FRUGIVOROUS *Birds*, according to Mr. *Willoughby*, are thoſe of the Parrot kind, which tho' they have a crooked Beek and Talons, and therefore belong in general to the Birds of Prey, as being rapacious, and carnivorous; yet becauſe they eat *Fruit* too, he diſtinguiſhes them from the reſt by the Title of *Frugivorous*. See BIRD.

FRUIT, in its general Senſe, includes whatever the Earth produces, for the Nouriſhment and Support of Men, and other Animals; as Herbs, Grains, Pulſe, Hay, Corn, Flax, and every thing, expreſs'd by the *Latins* under the Name *Fruges*. See HERB, GRAIN, PULSE.

The Devotion and Solemnity of Rogation Week, were inſtituted to procure a Bleſſing on the Fruits of the Earth. See ROGATION.

In the Civil Law, we diſtinguiſh three kinds of *Fruits*: Natural *Fruits*, which the Earth produces ſpontaneouſly, and without any Culture; as thoſe of Trees.

Fruits of Induſtry, which, tho' Natural, require ſome Culture to perfect them.

And Civil *Fruits*, which are only *Fruits* in the Eye of Law, as Rents, Salaries, Wages, *&c.*

In the Canon Law, *Fruits* include every thing whereof the Revenue of a Benefice conſiſts; as Glebe, Tythes, Rents, Offerings, Mills, *&c.* See FIRST *Fruits*.

FRUIT, in Nat. Hiſtory, is the Production of a Tree, or Plant; for the Propagation, or Multiplication of its Kind: In which Senſe *Fruit* includes all kinds of Seeds, with their Furniture, *&c.* See SEED.

FRUIT, in Botany, is properly that Part of a Plant wherein the Seed is contain'd; called by the Latins *Fructus*, and the *Greeks* καρπὸς.

The *Fruit* of a Plant is ſometimes ſingle, as in the Poppy; and ſometimes in great Number, as in the Apple Tree, *&c.* Sometimes dry; and ſometimes ſoft, and fleſhy.

The Word alſo implies an Aſſemblage of Seeds, in a Plant, as in a Ranuncula, Pea, *&c.* And in the general, all kinds of Grains, whether naked, or incloſed in a Cover, Capſula or Pod, whether bony, fleſhy, ſkinny, membranous, or the like. See SEED, GRAIN.

The *Fruit* is the Product, or Reſult of the Flower; or that for whoſe Production, Nutrition, *&c.* the Flower is intended. See FLOWER, and GENERATION *of Plants*.

The Structure and Parts of different *Fruits* are ſomewhat different; but in all the Species, the eſſential Parts of the *Fruit* appear to be only Continuations, or Expanſions of thoſe obſerv'd in the other Parts of the Tree.

Dr. *Beal* ſuggeſts ſome very good Reaſons for a direct Communication between the remoteſt Parts of the Tree and the *Fruit*; ſo that the ſame Fibres or Stamina, which conſtitute the Root, Trunk and Boughs are extended into the very Fruit. See PLANT.

Thus, cutting open an *Apple* tranſverſely, it will be found to conſiſt of four Parts, *viz.* 1° A *Skin*, or Cortex, which is only a Production of the Skin, or outer Bark of the Tree. 2° A *Parenchyma*, or Pulp; which is an Expanſion, and Intumeſcence of the Ble or inner Bark of the Tree. 3° *Fibres* or Ramifications of the woody Part of the Tree, diſperſed throughout the Parenchyma.

Of theſe laſt, Authors generally reckon fifteen principal Branches: Ten whereof penetrate the Parenchyma, and incline to the Baſis of the Flower; the other five aſcend more perpendicularly from the Pedicle, or Stalk, meet with the former at the Baſe of the Flower: To which Branches are faſten'd the Capſulæ or Coats of the Kernels.

Theſe Branches being at firſt extended through the Parenchyma to the Flower, furniſh the neceſſary Matter for the Vegetation thereof; but, the *Fruit* increaſing, it intercepts the Aliment, and thus the Flower is ſtarved, and falls off.

4° The *Core* which is the Produce of the Pith or Medulla of the Plant; indurated and ſtrengthen'd by Twigs of the Wood and Fibres, inoſculated therewith. It ſerves to furniſh a Cell, or Lodge for the Kernels; filtrates the Juice of the Parenchyma, and conveys it thus prepared to the Kernel.——

In a *Pear* we diſtinguiſh five Parts, *viz.* the Skin, Parenchyma, Ramification, Stone, and Acetarium.

The three firſt Parts are common to the Apple. The *Stone*, obſerv'd chiefly in Choak Pears, is a Congeries of ſtony Corpuſcles, diſpers'd throughout the whole Parenchy-

mi,

ma, but in the greateſt Plenty, and cloſeſt together, about the Centre or Acetarium. It is form'd of the ſtony or calculous Parts of the nutritious Juice of the Parenchyma, extravaſated in Maſſes.

The *Acetarium*, is a Subſtance of a tart, acid Taſte, of a globular Figure, inclos'd in an Aſſemblage of ſeveral of the ſtony Parts above-mention'd.

In the *Plumb*, *Cherry*, &c. there are four Parts, *viz.* A *Coat*, *Parenchyma*, *Ramification*, and *Stone*, or *Nucleus*. The Stone conſiſts of two very different Parts; the inner, call'd the *Kernel*, is ſoft, tender, and light; being derived from the Pith or Medulla of the Tree by ſeminal Branches, which penetrate the Baſe of the Stone: The external or harder Part, called the *Stone*, or *Shell*, is a Concretion of the ſtony, or calculous Parts of the nutritious Juice; like the Stone in Pears, and like that, contains a ſoft, parenchymous Matter within it.——

The *Nut*, analogous to which is the *Acorn*, conſiſts of a *Shell*, *Cortex*, and *Medulla*. The *Shell* conſiſts of a Coat and Parenchyma, derived from the Bark and Wood of the Tree. The *Cortex* conſiſts of an inner, and outer Part: The firſt is a Duplicature of the inner Tunic of the Shell; the ſecond is a moſſy Subſtance, derived from the ſame Source as the Parenchyma of the Shell. But whether the Medulla or Pulp of the Kernel ariſe from the Pith of the Tree, or the cortical Part of the *Fruit*, is not agreed.

Laſtly, *Berries*, as Grapes, *&c.* beſide three general Parts, *viz.* Coat, Parenchyma, and Ramification, contain *Grains* of a ſtony Nature, to do the Office of Seeds.

As to the Uſe of *Fruits*, beſide the Pleaſure and Advantage they afford Men, *&c.* they are of ſervice in guarding, preſerving, and feeding the Seed incloſed; in filtrating the coarſer, more earthy and ſtony Parts of the nutritious Juice of the Plant, and retaining it to themſelves; ſending none to the Seed but the pureſt, moſt elaborated and ſpirituous Parts for the Support and Growth of the tender delicate Embryo, or Plantule contain'd therein.

So that the *Fruit* does the ſame Office to the Seed that the Leaves do to the *Fruit*. See PLANT, GENERATION, FLOWER, LEAVES, &c.

FRUIT, in Gardening, is the Production of *Fruit-Trees*; as the *Apple*, *Pear*, *Plumb*, *Peach*, *Apricock*, *Cherry*, *Grape*, *Currant*, *Orange*, *Fig*, *Almond*, &c. See FRUIT-*Tree*.

Fruits are diſtinguiſh'd into *Stone Fruit*, and *Kernel Fruit*; *Summer Fruit*, and *Winter Fruit*; *Wall Fruit*, and *Dwarf Fruit*, &c.

Monſ. *Quintiney* obſerves, that cold, heavy, moiſt Lands produce the faireſt and largeſt *Fruit*; but the hotter, dryer, and lighter, the more delicious and rich taſted.

FRUITS, with regard to Commerce, are diſtinguiſh'd into Recent, or *Freſh*; and *Dry*.

Recent *Fruits* are thoſe ſold juſt as they are gather'd from the Tree, without any further Preparation: As are moſt of the Productions of our Gardens and Orchards, ſold by the *Fruiterers*.

Dry *Fruits* are thoſe dried in the Sun, or by Fire, with other Ingredients, ſometimes added to them, to make them keep; imported chiefly from beyond Sea, and ſold by the *Grocers*. Such are *Raiſins*, *Currants*, *Figs*, *Rice*, *Capers*, *Olives*, *Cloves*, *Nutmegs*, *Pepper*, and other *Spices*: Which ſee under their reſpective Articles, RAISIN, CURRANT, FIG, *&c.* See alſo SPICERY.

Under the Denomination of Dry *Fruits* are alſo frequently included Apples, Pears, Almonds, Filberds, *&c.*

FRUIT *Trees* are diſtinguiſh'd, like the *Fruits* they bear, into Wall *Fruit* Trees, Standard *Fruit* Trees, *&c.* See FRUIT, and TREE.

With regard to *Fruit Trees*, Monſ. *Quintiney* obſerves, 1° That the cutting and trimming of young Trees hinders them from quick bearing; tho' it contributes both to the Beauty of the Tree, and the Richneſs and Flavour of the *Fruit*.

2° That Kernel *Fruit* Trees come later to bear, than Stone *Fruit* Trees; the Time required by the firſt before they arrive at a fit Age for bearing, being, one with another, about four or five Years: But that when they do begin, they bear in greater Plenty than Stone *Fruit*.

3° That *Stone Fruit*, Figs and Grapes commonly bear conſiderably in three or four Years; and bear full Crops the fifth and ſixth Year; and hold it for many Years, if well order'd.

4° That *Fruits* in the ſame Neighbourhood will ripen a fortnight ſooner in ſome Grounds, than others of a different Temperature.

5° That in the ſame Spot, hot or cold Summers ſet conſiderably forward, or put backwards the ſame *Fruit*.

6° That the *Fruits* of Wall Trees generally ripen before thoſe on Standards; and thoſe on Standards before thoſe on Dwarfs.

7° That the *Fruits* of Wall Trees planted in the South and Eaſt Quarters commonly ripen about the ſame time; only thoſe in the South rather earlier than thoſe in the Eaſt: Thoſe in the Weſt are later by eight or ten Days, and thoſe in the North by 15 or 20. See EXPOSURE.

For the *Planting*, *Pruning*, *Engrafting*, &c. of *Fruit Trees*, ſee PLANTING, TRRNSPLANTING, PRUNING, ENGRAFTING, &c. See alſo ORCHARD, GARDEN, SEMINARY, &c.

Monſ. *de Reſſons*, in the *Memoires de l'Academie Royale des Sciences*, An. 1716. gives us a Method of *Grafting Stone Fruit Trees*, without loſing of Time; ſo that a Tree which bore ſorry *Fruit* the preceding Year, ſhall bear the choiceſt the Year following.

It frequently happens, that Perſons are deceiv'd in their *Fruit* Trees; eſpecially thoſe bought of the Nurſery Men: And it is a melancholy thing, after having waited three Years for *Fruit*, to find it naught at laſt; and to be oblig'd to graft the Tree again, and wait four Years more, for the ſecond Hopes. In effect, in the common Methods of grafting, they know nothing better than to cut off the Head of a Tree, and make it put forth new Wood, to graft in: This neceſſarily makes a long Delay; which Monſ. *Reſſons* ſhews how to abridge.

Upon conſidering the Union of the Sap in Grafts, that Author was led to think, that all the Office the Bark has in grafting, is to receive the Scutcheon; ſo that if the Bark be not quite hard, dry, and inflexible, and incapable of yielding without Cracking, or Burſting; it ſhould ſeem indifferent, whether one grafted on new Wood, or old: The Sap paſſing equally into both. Which Reaſoning had the Fortune to be verify'd by a Number of Experiments made with that View.

We are at liberty, then, to graft almoſt at any Age, and in any Wood. Accordingly, a Peach Tree of a worſe Kind or Quality, may be grafted from another of the beſt, in Autumn, in the Height of its *Fruit*, and Sap, without cutting off any Branches; the Graft ſoon cements to the Tree by the Union of the Saps, without ſhooting at all: So that cutting off the Branches above the Grafts the Spring following; the ſame Graft inſerted the preceding Autumn will ſhoot vigorouſly; and being on a Wood of the ſame Kind, the *Fruit* thenceforth produc'd will be much the larger and finer. But this is not the great Point: For the Tree thus ingrafted will not bear till the third Year; and we want *Fruit* the firſt.

In order to this, it is to be obſerv'd, that there are three kinds of Branches: *Wood Branches*, growing immediately from the Stem or Stock of the Tree: *Fruit Branches*, and Branches *half Wood*, *half Fruit*, being ſuch as ariſing from the largeſt Wood Branches, preſerve the Character thereof, but which, in two Years time will produce *Fruit* Branches. Now, 'tis theſe intermediate kind of Branches, that we are to chuſe for Scutcheons or Grafts. They are eaſily known by being bigger than the *Fruit* Branches; and leſs than the Wood Branches: They have each of them two, three, four, or even five Leaves to each Eye; and the Eyes are further diſtant from each other than thoſe of the *Fruit* Branches, but cloſer than thoſe of the Wood Branches. It muſt be added, that the Eyes on ſuch Branch are three; one, intended for a Wood Branch, being ſituate between the two Leaves, and advancing further than the other two, which are intended for *Fruit*, and are plac'd without-ſide the Leaves.

'Tis theſe laſt are the preciſe Subject to be choſen for the Grafting withal. Twelve of theſe Scutcheons, more or leſs, according to the Strength of the Tree to be grafted on, being duly applied; we may depend on a Crop of good *Fruit*, the very next Year, on the ſame Tree which laſt Year produced the worſt.

Stone-FRUIT-*Trees*, ſee STONE *Fruit*, and TREE.
Wall-FRUIT-*Trees*, ſee WALL *Fruit*, and WALL.

FRUITERY, a Place for the laying up and keeping of *Fruit*.

The *Fruitery* ſhould be inacceſſible to any thing of Moiſture, or even Froſt.

FRUITFULNESS, the Quality of bearing plenty of Fruit; call'd alſo Fertility, and *Fecundity*. See FECUNDITY.

FRUMENTACEOUS, a Term applied to all Plants which have a Conformity with Wheat, or *Frumentum*; either in reſpect of their Fruits, Leaves, Ears, or the like.

Thus Barley, Dogs-graſs, *&c.* are *Frumentaceous Plants*.

FRUMENTARII, in Antiquity, a kind of Soldiers, or Archers, under the Weſtern Empire.

St. *Cyprian* relates, in one of his Letters, that ſome of theſe *Frumentarii* were ſent to take him.

The firſt time we read of *Frumentarii*, as Officers, is in the Time of the Emperor *Adrian*. *Spartian*, in his Life of that Prince, aſſures us, that he made uſe of them to inform himſelf of what paſs'd: Before, the Name *Frumentarius* was only given to the Corn Merchants, or Meaſurers of Corn.

Theſe *Frumentarii* did not make any particular Corps, diſtinct from the other Forces: But there were a certain Number of them in each Legion; as, among us, there are a certain Number of Grenadiers in each Battalion. Accordingly, in antient Inſcriptions, we meet with *Frumentarii* of this or that Legion.

'Tis ſuppos'd they were originally a Number of young Perſons diſpos'd by *Auguſtus* throughout the Provinces, particularly on all the grand Roads, to advertiſe the Emperor with all Expedition of every thing that happen'd. In order to this, they had a kind of Intendance of all the Carriages: And on this account came to be employ'd for the Conveyance of Corn, *Frumentum*, to the Armies: Whence their Appellation.

Afterwards they were incorporated into the Troops themſelves; where they ſtill retain'd their antient Name.

Their principal Office was the giving of Intelligence; in which they agreed with thoſe call'd *Curioſi*, with whom they were frequently join'd. See CURIOSI.

FRUMENTY, popularly FURMETY, a kind of Pottage, or Broth, the Baſis whereof is Wheat, boil'd up with Milk, Sugar, and ſometimes Spice.

Pliny tells us, that in his Time they mix'd Chalk among it. *Galen* deſcribes it as a very nutritious ſort of Corn or Pulſe, boil'd with Water, Wine, and Oil.

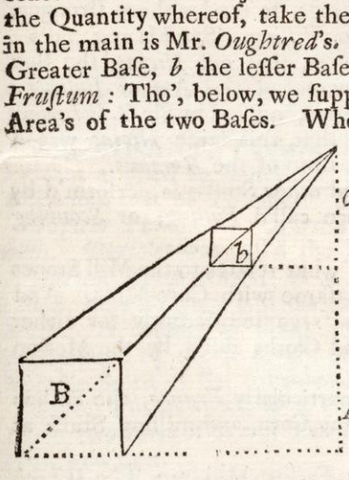
The *Latins* call'd it *Alica*, which *Feſtus* derives *ab alendo*; as being very feeding. But then it muſt be obſerv'd, they made it of any kind of Corn.

Ours being reſtrain'd to Wheat, we have given its Denomination accordingly, from *Frumentum*.——An Emulſion, wherein Wheat were an Ingredient, would be a kind of *Frumenty*.

FRUSTUM, in Mathematicks, a Piece cut off or ſeparated from a Body.

Thus the *Fruſtum of a Pyramid*, or *Cone*, is a Part, or Piece thereof; cut off, uſually, by a Plane, parallel to the Baſe. See PYRAMID, and CONE.

All round, and ſquare Timber that goes tapering, may be conceived as the *Fruſtum* of a Cone, or Pyramid; to find the Quantity whereof, take the following Theorem; which in the main is Mr. *Oughtred's*. Given, B, the Side of the Greater Baſe, *b* the leſſer Baſe's Side, A the Height of the *Fruſtum*: Tho', below, we ſuppoſe B and *b* to repreſent the Area's of the two Baſes. Whole Height $a + A = H$.



Firſt, to find *a*, ſay, as $B - b : b :: A : \frac{bA}{B-b}$, or $\frac{bA}{x}$. Now B H = 3 times the whole Pyramid, becauſe any Priſm is 3 times a Pyramid of the ſame Baſe, and Height with it, by 7 and 10 Euclid, and $ba = 3$ times the upper Pyramid.

Wherefore $\frac{BH - ba}{3}$ equal to the *Fruſtum* of the Pyramid required; which Theorem in Words is this.

Multiply the lower Baſe by the whole Height; and from the Product ſubtract the upper Baſe multiply'd by the Height of the Top-piece wanting; and then one third of the Remainder ſhall give the *Fruſtum*.

And the ſame way you may proceed for the *Fruſtum* of a Cone; only it will be more difficult to find the Circular Baſes.

FRUTEX, SHRUB, a Vegetable, of a Genus between a Tree, and Herb; but of a woody Subſtance. See SHRUB.

FRUTICOSE *Stalks*, of Plants, are thoſe of a hard woody Subſtance. See STALK.

FRYTH, or FRITH, is explain'd by Sir *Edward Coke*, as a Plain between two Woods; a *Lawnd*. *Chaucer* uſes it for a Wood.

Camden, for an Arm of the Sea; or a Streight, between two Lands: from *Fretum*.—Maketh his Iſſue into the Eſtuary or *Frith* of *Thames*.

Smith, in his *England*'s Improvement, makes it ſignify all Hedge-wood, except Thorns.

How to reconcile theſe different Sentiments, we know not; but we are ſure the *Saxon* Word ſignifies *Peace*; and that *Fryth*, in our Records, is often us'd for a Wood: *Lector, tu tibi Oedipus eſto.*

FUAGE, or FOCAGE, a Tax, or Impoſition, laid on Hearths, or Chimnies; *i. e.* Fire-places, or Families, call'd alſo *Hearth Silver*, and *Chimney Money*. See HEARTH *Silver*, and CHIMNEY *Money*.

Edward III, the Black Prince, having *Acquitain* granted him, laid an Impoſition of *Fuage*, or *Focage* upon the Subjects of that Dukedom, *viz.* One Shilling for every Fire. After his Example, *Charles* V. of *France* laid a like Tax of a Franc for each Fire for one Year only. His Succeſſor *Charles* VI. augmented it under the ſame Name: *Charles* VII. render'd it perpetual, and call'd it *Taille*.

By an Ordinance of *Humbert* II. Dauphin of *France*, the Impoſition of *Fouage*, or *Feuage*, was then laid *per Feu*, i. e. *per Fire*, or Family, *ſeu per Lares focum habentes*. In *Latin* it was call'd *Focagium*, q. d. *pro ſingulis focis*.

Sometimes it was alſo call'd *Fournage*, on account of the Oven, or Furnace: In *Greek* καπνικὸν, of καπνὸς, *fumus*, Smoak.

In *Will. Tyr. de Bello Sacro*, it is call'd *Foagium*: For it was alſo impos'd by the Kings of *Jeruſalem*. The Counts, and other Lords likewiſe impos'd it on their Feudataries, or Vaſſals. *Zonaras* aſſures us, that the General *Nicephorus* firſt eſtabliſh'd it among the *Greeks*.

FUCUS, in Natural Hiſtory, a Sea-plant, call'd alſo *Alga*. See *Marine* PLANT.

The Flowers of the *Fucus* grow on the whole Extent of its Leaves; in form of little Tufts, compoſed of a great Number of exceedingly fine Filaments, about the length of a Line. The Seed is inclos'd in a viſcid Matter, at the Extremity of the Leaves. See MUSHROOM, CORAL, GENERATION *of Plants*, SEED, *&c.*

FUCUS is alſo us'd for a *Paint*, or a Compoſition applied on the Face, to beautify it, and heighten the Complexion. See COSMETIC.

Old Women make uſe of *Fucus's* and Pomatums, to appear young. The *Fucus* made with Ceruſs, is corroſive, and pernicious to the Skin.

The Chymiſts abuſe the Ladies in ſelling them Oil of Bricks, as an excellent *Fucus*. *Pliny* ſays, that the *Fucus* of the *Roman* Ladies was a kind of white Earth, or Chalk brought from *Chio*, and *Samos*, diſſolv'd in Water.

The *Fucus Solimanni* is a Compoſition of prepared Sublimate, in great Repute among the *Spaniards* of *Peru*.

FUEL, or FEWEL, the Pabulum of Fire; ſee FEWEL.

FUGA *Vacui*, in the antient School Philoſophy, a Principle, whereby various Effects were produced, ariſing from a ſuppoſed Averſion, in Nature, to a Vacuum. See VACUUM.

The *Fuga Vacui* was a very fertile, and extenſive Principle; and ſolved abundance of Difficulties with a deal of Eaſe. Suppoſe, *e. gr.* a Syringe; immerſe one Extreme of it in Water; and draw up the Embolus, or Sucker: Then hear how the Antients will reaſon upon it. They firſt laid it down for granted, that there can be no Vacuum; then arguing, that there muſt be a Vacuum, unleſs the Water ſhould follow the Embolus; they conclude, that the higher the Embolus is drawn, the higher ſhall the Water aſcend; and this, *Fugâ Vacui*, to keep out a Vacuum.

In after times, the Matter was ſtated in other Terms; and the Water was ſaid to riſe, *Metu Vacui*, for fear of the Vacuum; which muſt otherwiſe enſue. And at length, as if this were not enough, inſtead of *Fuga*, and *Metus*, they ſubſtituted the Word *Horror*; and affirm'd, that the Water roſe out of Natures *Abhorrence* of a Vacuum. Which was juſt as good Senſe, as if a Perſon being aſk'd, Why Coals were brought to *London*? ſhould anſwer, That it was done *fuga*, or *metu*, or *horrore frigoris*; for *fear* of Cold. Which is giving the Final Cauſe, when the Efficient one was required.

Moſt of the Phænomena, which the Antients aſcribed to the *Fuga Vacui*, the Moderns have demonſtrated to ariſe from the Gravity and Preſſure of the Air. This is the Caſe in the Aſcent of Water in Syringes, Pumps, *&c.* See AIR; ſee alſo PUMP, SYRINGE, &c.

FUGALIA, in Antiquity, a Feaſt, celebrated among the *Romans*. See FEAST.

Hoffman, after *Feſtus*, takes the *Fugalia* to be the ſame with the *Regifugium*, a Feaſt held on the 24th of *February*, in Memory of the Expulſion of the Kings, and the aboliſhing of the Monarchical Government. But *Struvius*, *Antiq. Roman. Syntag. c.* 9. diſtinguiſhes the *Fugalia* from the *Regifuge*: And even doubts, whether the *Regifugium* were thus called on account of the Expulſion of the Kings; or, by reaſon the *Rex Sacrorum*, after the Sacrifice was ended, fled haſtily out of the *Forum*, and *Comitia*. See REGIFUGIUM.

Be this as it will, the only antient Author of Note, that makes expreſs mention of the *Fugalia*, is St. *Auguſtin*, *De Civit. Dei*, L. II. c. 6. And his Commentator *Vives*, ſhews a great Inclination to correct the Reading of the Word, were it not, that St. *Auguſtin* adds, that the Feaſt was a true *Fugalia*; all Decency and Modeſty being baniſh'd therefrom.

That learned Perſon conjectures, that the *Fugalia* were the ſame thing with the *Poplifugia*, or the Feaſt of *Fugia*, the Goddeſs of Joy; occaſioned by the Rout of an Enemy; which was the Reaſon why the People abandon'd themſelves to Riot and Debauchery: And that the Feaſt was firſt inſtituted on occaſion of the Victory gain'd over the *Ficulneates*, *Fidenates*, and neighbouring Nations, upon their Attempt to take Poſſeſſion of *Rome*, the Day after

ter the People had withdrawn from it. As related by *Varro L. V. de Ling. Lat.*

But *Varro* relates, that the *Poplifugia*, which fell on the Month of *June*, were held in Memory of the Flight, or Retreat of the People, in a Sedition rais'd among them: 'Tis true, he adds, that the Day followed ſoon after the Retreat of the *Gauls*, and the time when the neighbouring Nations conſpir'd againſt them: But this does not appear to have any relation to the *Poplifugia*, being only meant to mark the *Æra*, or Time when the Sedition and Flight of the *Roman* People happen'd.

After all, tho' the *Poplifugia* might have been originally eſtabliſh'd in Commemoration of the Flight of the People; and not that of the Enemies; this does not hinder, but the *Fugalia* of St. *Auguſtin* may probably be the *Poplifugia* of *Varro*: according to the Conjecture of *Vives*.

FUGITIVE, a Wanderer, or Renegado; a Perſon oblig'd to fly his Country, or remove from a Place where he had ſome Aboad, or Eſtabliſhment; on account of his Crimes, Debts, or other Occaſions.

A Perſon who has broke open, or eſcaped out of Priſon, is oblig'd to be a *Fugitive*. *Cain* became a *Fugitive*, after the Murther of his Brother.

Among the Learned, *fugitive* Pieces are thoſe little Compoſitions, on looſe Sheets, or half Sheets; thus call'd, becauſe eaſily loſt, and ſoon forgot.

In the *Roman* Law, a *Fugitive* Slave was ſuch a one as was apt to run away from his Maſter. In ſelling a Slave, the Maſter was oblig'd to declare, whether or no he were *fugitive*. The Term is alſo apply'd to Deſerters in an Army; or thoſe who fly from the Combat.

FUGITIVES *Goods*, *Bona Fugitivorum*, are the proper Goods of him that flies upon Felony; which after the Flight lawfully found, do belong to the King, or Lord of the Manor. See WAIF.

FUGUE, in Muſic, is when the different Parts of a muſical Compoſition follow each other; each repeating what the firſt had perform'd.

There are three kinds of *Fugues:* The Single *Fugue*; Double *Fugue*, and *Counterfugue*.

The *Single*, or *Simple* FUGUE, is ſome Point conſiſting of 4, 5, 6, or any other Number of Notes, begun by one ſingle Part, and then ſeconded by a third, fourth, fifth, and ſixth Part, if the Compoſition conſiſts of ſo many, repeating the ſame, or ſuch like Notes; ſo that the ſeveral Parts follow, or come in, one after another in the ſame manner, the leading Parts ſtill flying before thoſe which follow.

FUGUE-*Double*, is when two or more different Points move together in a *Fugue*, and are alternately interchanged by ſeveral Parts.

For the Counter FUGE, ſee COUNTER *Fugue*.

The *Italians* ſay, a *Fugue of Rooms*, or *Chambers*, meaning a Series, or Range of Rooms, the Doors whereof anſwer in a Right Line behind each other; ſo as they may be all ſeen at once, from one Extreme to the other.

FULCRUM, PROP, in Mechanicks; ſee LEVER.

FULIGINOUS, an Epithet applied to a thick Smoak, or Vapour, replete with Soot, or other craſs Matter. See SMOAK, SOOT, and VAPOUR.

The Word is form'd from the Latin *Fuligo*, Soot; and is rarely uſed but when join'd with *Vapour*. In the firſt Fuſion of Metals there exhales a great deal of *fuliginous* Vapour; which retain'd and collected, makes what we call *Litharge*. See LITHARGE.

Lampblack is what is gather'd from the *fuliginous* Vapours of Pines, and other reſinous Woods, when burnt. See *Lamp* BLACK.

Some Phyſicians talk of *fuliginous* Vapours, emitted from the Spleen to the Brain; which they will have the Cauſe of the Hypocondriac and Hyſteric Diſorders: Thence called the *Vapours* and *Spleen*. See HYPOCONDRIAC, &c.

FULL, is variouſly us'd, in oppoſition to empty, narrow, confin'd, &c.

The *Carteſians* hold, that the Univerſe is *full*, i. e. every Part, or Point has Matter in it. See PLENUM.

When the Body is *full* of Humors, it ſhould be purged. See PLENITUDE, and PLETHORA.

An Embaſſador has *full* Power given him to act, tranſact, &c.——The Army was in *full* March, *i. e.* the whole Army was in March, with all the Forces it conſiſted of.—

A Man is ſaid to bear the Arms of a Family, *full*, i. e. without any Differences. See DIFFERENCE.

FULL *Moon*, *Plenilunium*, the Phaſis of the Moon, when her whole Diſk, or Face is illumined; which is in the Time of her Oppoſition to the Sun. See PHASIS, MOON, and OPPOSITION.—

Eclipſes of the Moon, happen at the time of *full Moon*, See ECLIPSE.

FULLER, a Workman employ'd in the Manufactories, to *full*, mill, or ſcour Cloths, Rateens, Serges, and other woolen Stuffs, by means of a Mill; to render them thicker, more compact, and durable. See FULLING.

The *Fullers*, among the *Romans*, waſh'd, ſcour'd, and fitted up Cloaths; and their Office was judged of that Importance, that there were formal Laws preſcrib'd them for the manner of performing it.

Such was the *Lex Metella de Fullonibus*. See alſo *Pliny* L. VII. c. 56. *Ulpian* lib. 12. ff. *de Furtis*, l. 13. §. 6. *Locati*, l. 12. §. 6. ff. &c.

The Word is form'd of the Latin *Fullo*, which ſignifies the ſame thing.

FULLERS *Earth*, a fatty, foſſile Earth, abounding in Nitre; of great Uſe in the woolen Manufacture.

It ſerves to ſcour Cloths, Stuffs, &c. and imbibe all the Greaſe, and Oil neceſſarily uſed in the preparing, dreſſing, &c. of the *Wool*. See WOOL, CARDING, WEAVING, CLOTH, &c.

Fullers Earth is only dug out of certain Pitts near *Brickhill* in *Staffordſhire*; no other Country affording any.

It is abſolutely neceſſary to the well dreſſing of Cloth; and hence, Foreigners, who can procure Wool to be clandeſtinely exported out of the Kingdom, can never reach to the Perfection of the *Engliſh* Cloths, &c. without *Fullers* Earth.

For this reaſon, it is made a contraband Commodity; and the Export made equally criminal, with that of exporting Wool. See CONTRABAND.

Abroad they make great uſe of Urine, in lieu of *Fullers* Earth. This Earth abounds much in the vegetative Salt, which promotes the Growth of Plants; and is therefore reckon'd by Sir *H. Plat*, and others, a great Improver of Land. When diſſolv'd in Vinegar, it diſperſes Pimples and Puſhes; checks Inflammations, and cures Burns.

FULLERS *Weed*, *Thiſtle*, or *Teazle*. See TEAZLE.

FULLERY, a Work-houſe, or Place where Cloths, &c. are *fulled*.

The Term is principally underſtood of the Fulling Mill. Thus, when they ſay, Carry that Cloth, Serge, or the like, to the *Fullery*, they mean it is to be ſent to the Mill, to be ſcour'd and fulled. See *Fulling* MILL.

FULLING, the Art, or Act of cleanſing, beating, and preſſing Cloths, Stuffs, Stockings, to render them ſtronger, cloſer, and firmer; call'd alſo *Milling*. See MILL.

Pliny, *lib.* 7. *cap.* 16. aſſures, that one *Nicias*, the Son of *Hermias*, was the firſt Inventor of the Art of *Fulling*: And it appears by an Inſcription, quoted by Sir *G. Wheeler*, in his Travels thro' *Greece*, that this ſame *Nicias* was a Governour in *Greece*, in the time of the *Romans*.

The *Fulling of Cloths*, and other Stuffs, is perform'd by a kind of Water Mill; thence call'd *Fulling*, or *Scouring Mill*.

Theſe Mills, excepting in what relates to the Mill Stones and Hopper, are much the ſame with Corn Mills. And there are even ſome, which ſerve indifferently for either Uſe; Corn being ground, and Cloths full'd by the Motion of the ſame Wheel.

Whence, in ſome Places, particularly *France*, the Fullers are call'd Millers; as grinding Corn, and milling Stuffs at the ſame time.

The principal Parts of the *Fulling* Mill, are, The *Wheel*, with its Trundle; which gives Motion to the *Tree*, or Spindle, whoſe Teeth communicate it to the *Peſtles*, or Stampers, which are hereby raiſed, and fallen alternately according as its Teeth catch on, or quit a kind of Latch in the Middle of each Peſtle. The Peſtles and Troughs are of Wood; each Trough having at leaſt two, ſometimes three Peſtles, at the Diſcretion of the Maſter, or according to the Force of the Stream of Water.

In theſe Troughs are laid the Cloths, Stuffs, &c. intended to be *fulled:* Then, letting the Current of Water fall on the Wheel, the Peſtles are ſucceſſively let fall thereon, and by their Weight and Velocity ſtamp, and preſs the Stuffs very ſtrongly; which by this means become thickned and condenſed.

In the Courſe of the Operation, they ſometimes make uſe of Urine; ſometimes Fullers Earth, and ſometimes Soap.

To prepare the Stuffs, to receive the firſt Impreſſions of the Peſtle, they are uſually laid in Urine; then in Fullers Earth, and Water; and laſtly in Soap, diſſolv'd in hot Water.

Soap alone would do very well; but this is expenſive; though Fullers Earth, in the way of our dreſſing, is ſcarce inferior thereto; but then it muſt be well clear'd of all Stones and Grittineſſes, which are apt to make Holes in the Stuff.

As to Urine, 'tis certainly prejudicial, and ought to be entirely diſcarded; not ſo much on account of its ill Smell, as of its Sharpneſs, and Saltneſs; which is apt to render the Stuffs dry and harſh.

The true Method of *Fulling* with Soap, is deliver'd by Monſ. *Colinet*, in an authentic Memoir on that Subject, ſupported by Experiments made by order of the Marquis *de Louvois*, then Super-Intendent of the Arts and Manufactories of *France*. The Subſtance of which we ſhall here ſubjoin.

Method

Method of Fulling *Cloths and Woolen Stuffs, with Soap.*

A colour'd Cloth, of about 45 Ells, is to be laid, in the uſual manner, in the Trough of a *Fulling* Mill; without firſt ſoaking it in Water, as is commonly practiced in many Places.

To full this Trough of Cloth, 15 Pounds of Soap are requir'd; one half of which is to be melted in two Pails of River or Spring Water, made as hot as the Hand can well bear it. This Solution is to be pour'd by little and little upon the Cloth, in proportion as 'tis laid in the Trough: And thus it is to be fulled for at leaſt two Hours; after which it is to be taken out, and ſtretch'd.

This done, the Cloth is immediately return'd into the ſame Trough; without any new Soap; and there full'd two Hours more. Then taking it out, they wring it well, to expreſs all the Greaſe and Filth.

After this ſecond *Fulling*, the Remainder of the Soap is melted, as the former, and caſt at four different times, on the Cloth; remembring to take out the Cloth every two Hours, to ſtretch it, and undo the Plaits and Wrinkles it has acquired in the Trough. When they perceive it ſufficiently full'd, and brought to the Quality and Thickneſs required, they ſcour it out for good, in hot Water, keeping it in the Trough, till it be quite clean.

As to white Cloths; in regard theſe *full* more eaſily, and in leſs time, than colour'd ones, a third Part of the Soap may be ſpared.—

FULLING *of Stockings, Caps*, &c. ſhould be performed ſomewhat differently; *viz.* either with the Feet, or the Hands; on a kind of Rack, or wooden Machine, either arm'd with Teeth of the ſame Matter, or elſe Horſes, or Bullocks Teeth.

The Ingredients made uſe of herein, are Urine, green Soap, white Soap, and Fullers Earth. But the Urine alſo is reckon'd prejudicial here.

Note, woven Stockings, *&c.* ſhould be full'd with Soap alone: For thoſe that are knit, Earth may be us'd with the Soap.

Indeed, 'tis frequent to full theſe kinds of Works with the Mill, after the uſual manner of Cloths, *&c.* But that is too coarſe and violent a Manner, and apt to damage the Work, unleſs it be very ſtrong. See STOCKINGS.

FULMINANT, FULMINANS, or FULMINATING, an Epithet applied to ſomething that *thunders*, or makes a Noiſe like that of Thunder. See THUNDER.

Jupiter Fulminans: Aurum Fulminans: Pulvis Fulminans. Pericles was call'd the *fulminating* Orator.

Aurum FULMINANS, is a Preparation of Gold, thus called, becauſe when laid on the Fire, it produces a huge Noiſe. It conſiſts of Gold diſſolv'd in *Aqua Regia*, and precipitated by means of Oil of Tartar *per Deliquium*; or Volatile Spirit of Sal Ammoniac. See GOLD.

Pulvis FULMINANS, is a Compoſition of three Parts of Nitre, two Parts of Salt of Tartar, and one of Sulphur. See GUN-POWDER.

Both the *Aurum* and *Pulvis Fulminans* produce their Effect principally downwards: In which they differ from Gunpowder, which acts *in orbem*; but principally upwards. If they be laid in Braſs Ladles, and ſo ſet a fire; after Fulmination, the Ladles will be found perforated.—

FULMINATING *Legion*, was a Legion in the *Roman* Army, conſiſting of Chriſtian Soldiers; who, in the Expedition of the Emperor *Marcus Aurelius* againſt the *Sarmatæ*, *Quadi* and *Marcomanni*, ſaved the whole Army, then ready to periſh of Thirſt; by procuring, with their Prayers, a very plentiful Shower thereon: And, at the ſame time, a furious Hail, mix'd with Lightning and Thunderbolts on the Enemy. See LEGION.

This is the Account commonly given by Eccleſiaſtical Hiſtorians: And the whole Hiſtory is engraven in Baſs-Relivo's, on the *Anthonine* Column. And hence aroſe the Denomination *Fulminants*: Tho' ſome ſay, that the Legion thoſe Chriſtians were of, was called the *Fulminating Legion* before.

FULMINATION, in the *Romiſh* Canon Law, a Sentence of a Biſhop, Official, or other Eccleſiaſtic appointed by the Pope; whereby it is decreed, that ſome Bull ſent from the Pope, ſhall be executed. See BULL.

Fulmination is the ſame thing with the *Verification*, or Recognition of a Letter, or Inſtrument of a Prince in a Lay Court.

FULMINATION is alſo us'd for the Denunciation, or Execution of a Sentence of Anathema, made in publick, with due Solemnity.

In fulminating Anathema's, the Biſhop who pronounces Sentence, is to be cloathed in his Epiſcopalia. See ANATHEMA, EXCOMMUNICATION, &c.

FULMINATION, or FULGURATION, in Chymiſtry, a vehement Noiſe, or Shock made by divers Preparations; as *Aurum fulminans*, &c. when ſet on Fire. See DETONATION.

FUMIGATION, in Medicine, and Chymiſtry, is underſtood of Things taken in *Fume*, or Smoak; or that are turn'd into Smoak: And particularly for the Corroſion of a Metal, by the Fumes, or Steam of Lead, Mercury, Vinegar, or other acrimonious Matter.

'Tis dangerous taking Mercury by *Fumigation*. This *Fumigation* is a kind of potential Calcination; the Vapour of Mercury laid on the Fire, corroding and reducing into a Calx, the little Laminæa of Metals ſuſpended over it. See MERCURY.

Ceruſs is made by the *Fumigation*, or Vapour of Vinegar, gnawing and corroding Plates of Lead. See CERUSS.

Alexander Severus made a very ſevere Decree againſt Phyſicians who ſold Smoak, that is, *Fumigations*. The Decree imported, Fumo *pereat qui* Fumum *vendidit*. A Northern Phyſician has an expreſs Treatiſe to juſtify the Phyſicians in this reſpect.

FUMIGATION is alſo uſed for the Act of making a ſuſpended Body receive the Fumes, or Steam of one or more other Bodies; in order to calcine them, to correct them, or impart to them ſome new Quality.

FUNAMBULUS, among the *Romans*, was what we call a Rope-dancer, and the Greeks, *Scænobates*. See ROPE-DANCER.

The Term is alſo us'd for ſuch as letting themſelves down by a Rope, or Cord; make their Eſcape out of a City, or Place beſieged: as obſerv'd by *Du Cange*.

Julius Capitolinus, and *Horace*, make mention of *Funambuli*. *Acron*, on *Horace*, aſſures us, that it was the Orator *Meſſala*, who firſt introduc'd the Word *Funambulus*, in lieu of *Schænobates*, us'd by the *Greeks*. For the *Greeks* ſeem to have had of theſe Rope Dancers from the firſt Inſtitution of their Scenic Games, which are ſaid to have been invented about the time of *Iſcharius*, Son of *Erigon*; or of *Dionyſius*, ſurnamed *Liber Pater*, whom *Theſeus* firſt introduced into *Athens*.

At *Rome*, the *Funambuli* firſt appear'd under the Conſulate of *Sulpitius Peticus*, and *Licinius Stolo*, who were the firſt Introducers of the Scenic Repreſentations. It is added, that they were firſt exhibited in the Iſland of the *Tiber*: And that the Cenſors *Meſſala* and *Caſſius* afterwards promoted them to the Theatre.

In the *Floralia*, or *Ludi Florales*, held under *Galba*, there were *funambulatory* Elephants, as we are inform'd by *Suetonius*. *Nero* ſhewed the like, in honour of his Mother *Agrippina*. *Vopiſcus* relates the ſame of the Time of *Carinus* and *Numerianus*.

There was a *Funambulus*, it ſeems, of that Mankind, who perform'd at the time when the *Hecyra* of *Terence* was acted; and the Poet complains, that the Spectacle prevented the People from attending to his Comedy. *Ita populus ſtudio ſtupidus in* funambulo *animum occuparat*.

FUNCTION, the Act of doing ſomething, for which the Agent was deſtined, or which he was obliged to. See ACTION.

Thus we ſay, the Stomach performs its *Function*; *i. e.* digeſts, well. The Fumes of Wine diſturb the Brain in the Performance of its *Functions*.

Phyſicians divide the *Functions* of the human Body into *Vital*, *Natural*, and *Animal*.

Vital FUNCTIONS are thoſe neceſſary to Life; and without which it cannot ſubſiſt: As the Actions of the Heart, Brain, Lungs, *&c.* See LIFE.

Natural are thoſe which change the Food, *&c.* ſo as to aſſimilate it to our own Nature: Such are the Actions of the Viſcera, and the Veſſels which receive, retain, ſecern, *&c.* the Humors. See NATURAL.

Animal, are thoſe without which we cannot perceive, will, remember, *&c.* Such are *Feeling*, *Seeing*, *Imagining*, *Judging*, *Paſſions*, *voluntary Motion*, &c.

FUNCTION is alſo us'd figuratively in ſpeaking of the Offices, Duties, or Occupations a Perſon is engaged in.

He acquitted himſelf of all the *Functions* of the Magiſtracy with Applauſe. The Actions of an Embaſſador muſt be diſtinguiſh'd from his *Functions*; the one regard his Character; the other his Perſon.

FUND, FUNDUS, a *Latin* Term, us'd for the *Bottom* of certain Things; and particularly of certain Parts of the Body.

FUND *of the Eye*, is that Part poſſeſs'd by the Choroeides and Retina. See EYE, RETINA, &c.

The Images of Objects are repreſented in an inverted Situation, in the *Fund* of the Eye. See VISION.

FUNDUS *Uteri*, or *Fund of the Womb*, is the Body, or principal Part thereof; in contradiſtinction to the *Cervix*, or Neck; the *Oſculum*, or Mouth; and the *Vagina*. See UTERUS.

FUNDUS *Veſicæ*, or *of the Bladder*, is the Cavity thereof, wherein the Urine is contained. In Men it is placed over the Rectum; and in Women over the Matrix. See BLADDER.

FUND *of the Gall Bladder*, the *Stomach*, &c. See GALL *Bladder*, STOMACH, &c.

FUNDUS *Plantæ*, is that Part of a Plant, where the Stalk juſt meets, and joins the Root.

FUNDUS *Cœli*, is the Point oppoſite to the Point of Culmination; or the Point of the Ecliptick, wherein it is interſected by the Meridian, beneath the Horizon.—

FUND, in Commerce, is uſed for the Capital, or Stock of a Merchant, Company, or Corporation; or the Sum of Money they put into Trade. See STOCK, CAPITAL, &c.

In this Senſe we ſay abſolutely, the *Funds*, the *Publick Funds*; meaning the Stock of the great Companies, or Corporations, as the *Bank*, *South Sea*, *Eaſt India*, &c. See BANK, COMPANY, &c.

FUNDAMENT, the *Anus*, or Aperture, thro' which a Man voids his Excrements. See ANUS.

FUNDAMENTAL, ſomething that ſerves as a Baſe, Reſt, Support, or Foundation for any thing. See FOUNDATION.

The Apoſtles Creed contains the *fundamental* Points of Religion. The *Salic* Law is the *fundamental* Law of the Polity of *France*.

FUNDAMENTAL, in Muſic, the principal Note of a Song, or Compoſition, to which all the reſt are in ſome meaſure adapted, and by which they are ſway'd; call'd alſo the *Key* of the Song. See KEY.

FUNERAL, the Ceremonies perform'd at an Interment; or the laſt Offices paid the Deceaſed. See OBSEQUIES.

The Word is form'd of the Latin *Funus*; and that of *Funalia*, by reaſon of the Torches (which were *Funes*, *cera circumdati*) us'd in the *Funerals* of the *Romans*. Tho' others derive *Funus* from the *Greek* φόνος, Death, or Slaughter.

The *Funeral Rites* among the antient *Romans* were very numerous.

The Deceas'd was kept ſeven Days; and every Day waſh'd with hot Water, and ſometimes anointed with Oil, that in caſe he were only in a Slumber, he might thus be waked; and every now and then his Friends meeting, made a horrible Outcry, or Shout, with the ſame View: Which laſt Action they call'd *Conclamatio*.

The third Conclamation was on the ſeventh Day; when, if no Signs of Life appear'd, the Defunct was dreſs'd and embalmed by the Pollinctores, plac'd in a Bed near the Door, with his Face and Heels outward, toward the Street; and the Outſide of the Gate, if the Deceas'd were of Condition, garniſh'd with Cypreſs Boughs.

In the courſe of theſe ſeven Days an Altar was rais'd near his Bed ſide, call'd *Acerra*; on which his Friends every day offer'd Incenſe; and the *Libitinarii* provided Things for the *Funeral*.

On the ſeventh Day a Crier was ſent about the City to invite the People to the Solemnization of the *Funeral* in theſe Words, *Exequias L. Tito L. Filio, quibus eſt commodum, ires. Jam tempus eſt. Ollus ex ædibus effertur.*

The People being aſſembled, the laſt Conclamation ended, and the Bed cover'd with Purple; a Trumpeter march'd forth, followed by old Women, call'd *Præficæ*, ſinging Songs in praiſe of the Deceas'd: And laſtly, the Bed followed, bore by the next Relations. And if the Perſon were of Quality and Office, the waxen Images of all his Predeceſſors were carried before him on Poles. See IMAGE.

The Bed was followed by his Children, Kindred, *&c. atrati*, or in Mourning: From which Act of following the Corps, theſe *Funeral* Rites were called *Exequiæ*.

The Body thus brought to the *Roſtra*, the next of Kin *laudabat Defunctum pro roſtris*, made a *Funeral* Oration in his Praiſe, and that of his Anceſtors.

This done, the Body was carried to the *Pyra*, or *funeral* Pile, and there burnt: His Friends firſt cutting off a Finger, to be buried with a ſecond Solemnity. See PYRA, and ROGUS.

The Body conſumed, the Aſhes were gather'd; and the Prieſt ſprinkling the Company thrice with clean Water, the eldeſt of the *Præficæ* crying aloud, *Ilicet*, diſmiſs'd the People, who took their leave of the Deceas'd in this Form, *Vale, Vale, Vale: Nos te ordine quo natura permiſerit, ſequemur.*

The Aſhes, inclos'd in an Urn, were laid in the Sepulcher, or Tomb. See URN, SEPULCHER, and TOMB.

The firſt *Romans* did not burn their Dead, but interr'd them, as we do. See BURNING.

Pliny, *lib.* 7. *c.* 54. aſſures us, that the Cuſtom of Burning was not introduced till after they had learnt, that their Enemies dug up, and expos'd the Bodies of their Soldiers buried in remote Countries. And yet *Plutarch*, in his Life of *Numa*, obſerves, that *Numa* was buried; as having expreſly forbid them by his Teſtament to burn him: Which ſhews that the *Romans* had practiced Burning before him.

This Cuſtom of burning the Dead, ſo religiouſly obſerv'd by the *Greeks* and *Romans*, was held in Abhorrence by ſeveral other Nations.

Herodotus relates, that the *Perſians* deteſted it; as holding Fire to be a God. The *Egyptians* declined to burn their Dead; as taking Fire for an inanimate Beaſt; and judging it Impiety to commit the Bodies of the Deceaſed to be devour'd by Beaſts. The Cuſtom of burning among the *Romans* ceas'd under the Empire of the *Anthonines*.

FUNERAL *Oration*, or *Sermon*, a Diſcourſe pronounced in praiſe of a Perſon deceaſed, at the Ceremony of his *Funeral*.

The Cuſtom of making *funeral* Orations is very antient. The *Romans* had it of a long ſtanding; and it was always one of the neareſt Relations that made it. *Auguſtus* did the Office to his Grandmother *Julia*, when only twelve Years of Age. *Suet. Aug. c.* 8. And we have divers parallel Inſtances.

The Cuſtom ſeems to have begun with the Republic; at leaſt, the firſt *funeral* Oration we read of, was that of *Brutus*, who expell'd the Kings, and was the firſt Conſul; who having been kill'd in a Battle againſt the *Hetrurians*, was *laudatus pro roſtris*, prais'd in the *Forum* by *Valerius Publicola* his Collegue.

Indeed, ſome Authors will have the Practice more antient. They maintain it to have been in uſe among the *Greeks*; and that *Solon*, who, according to *Aulus Gellius*, gave Laws to the *Athenians* in the Time when the elder *Tarquin* reign'd at *Rome*, was the firſt Author thereof: Something like which, it ſeems, the Orator *Anaximenes* has left in Writing. See *Polydore Virgil de Invent. Rer. L. III. c.* 10.

FUNERAL *Games*, or *Ludi Funebres*, were a Part of the Ceremony of the antient *Funerals*. See GAMES.

They conſiſted in mortal Combats of Gladiators around the *funeral* Pile. See GLADIATOR.

The Cuſtom was very antient; tho' it had not always been the ſame. At firſt, they cut the Throats of a Number of Captives before the *Pyra*, as Victims to appeaſe the *Manes* of the Deceas'd. This *Achilles* does in *Homer*, *Iliad*, φ, at the *Funeral* of *Patroclus*: And *Æneas*, in *Virgil*, *L. XI.* at that of *Pallas*, Son of *Evander*. *Cæſar*, in his Commentaries *L. VII.* relates, that the *Gauls* did the ſame.

But at length it appear'd barbarous, thus to butcher Men; and therefore to ſave the Horror of the Spectacle, yet without the Dead's loſing any thing thereby; they made the poor Captives fight and kill one another, only ſaving ſome few of ſuch as came off Victors.

This Cuſtom was borrowed of the *Greeks* by the *Romans*; among whom the cruel Diverſion was call'd *Munus*.

The firſt who introduc'd it at *Rome*, was *Junius Brutus*, at the Obſequies of his Father; or, according to others, *Ap. Claudius*, and *M. Fulvius*, during their Conſulate.

The like horrible Combats were alſo occaſionally exhibited by the Magiſtrates; and ſometimes added to the Theatrical Pieces.

The Emperor *Claudius* decreed, that whereas theſe accurſed Games were till then arbitrary; it ſhould be the Practice for the future, to perform them regularly every Year, at the Expences of the State; and that the Ædiles ſhould have the Care and Direction thereof. But he conceiv'd a Horror for them himſelf; and ſoon after aboliſh'd them: Tho' it was ſtill allow'd particular Perſons to have them, provided they were worth forty thouſand Seſterces *per Annum*.

They were not finally aboliſh'd before *Theodoric* King of the *Goths*, at the End of the fifth Century.

FUNERAL *Column*, a Column crown'd with an Urn, wherein the Aſhes of ſome deceas'd Perſon are ſuppos'd to be inclos'd; the Fuſt, or Shaft being ſet with Tears, or Flames; the Symbols of Grief, and Immortality. See COLUMN.

FUNGUS, in Natural Hiſtory; ſee MUSHROOM.

FUNGUS, in Medicine, a fleſhy Tumor, or Excreſcence, very ſpongeous, ſoft, and pale; ariſing on the Membranes, Tendons, and other nervous Parts, in conſequence of Ulcers, Wounds, Contuſions, and Strains.

Fungus's are frequently form'd on the Meninges, or Membranes of the Brain, in Wounds of the Head when not well cover'd, or defended from the external Air: They are alſo frequent about the Joints; which laſt grow very inſenſibly. But where the Skin is open, finding more room, they grow to a prodigious degree in a very little time, aſſuming the Form of a Muſhroom or *Fungus*.

There are alſo *Fungus's* of the *Anus*, and *Uterus*. They are all ſuppos'd to proceed from a Retention and Depravation of the nutritious Juice.

The *Fungus* is a general kind of Excreſcence, whereof there are divers particular Species; as the *Ficus*, *Sarcoma*, *Condyloma*, &c. See FICUS, &c.

FUNGOUS *Fleſh*, is a ſpongeous, excreſcent, or (as we popularly call it) *proud* Fleſh, frequently growing on the Lips of Wounds, Ulcers, *&c.* See FUNGUS.

The *Sarcocele* is ſometimes the Reſult of a *fungous* Fleſh. See SARCOCELE.

In

In Ulcers, *Wiſeman* obſerves, there frequently ariſes a ſpongious, or *fungous* Fleſh, either from the too great Afflux of Humors; or thro' the Surgeon's Unskilfulneſs.

It muſt be ſuppreſs'd, or taken off by drying Medicines, or even Cauſticks: As *Lapis Tutiæ*, burnt Alum, Precipitate of Mercury, *Roman* Vitriol, &c. See ULCER.

There is alſo a malignant kind of *Fungus* rooted in the *Rectum*. See RECTUM.

FUNNEL *of a Chimney*, the Shaft, or ſmalleſt Part of the Chimney, from the Waſt upwards. See CHIMNEY.

Palladio orders, that the *Funnel* be carried three, four, or five Foot at leaſt above the Roof, that it may carry the Smoak clear from the Houſe into the Air.

Care too is to be taken, as to the Width; for that if they be too wide, the Wind will drive back the Smoak into the Room; and if too narrow, the Smoak will not be able to make its way.

Chamber Chimneys therefore are not to be made narrower than ten or eleven Inches; nor broader than fifteen.

FURBISHER, a Perſon who *furbiſhes* or poliſhes Arms, and gives them a Brightneſs and Luſtre. See FURBISHING.

In the general Senſe of the Word, it includes what we now call Armorers and Sword Cutlers: In a more reſtrain'd Senſe, it is appropriated to thoſe who clean, and ſcour up old Swords, Guns, Halberds, and put them in order.

Among the Officers of the Tower is a *Furbiſher of ſmall Arms*, and another *of Swords*. And the like is at moſt of the Palaces and Armories of *England*; as St. *Jame*'s, *Windſor*, *Cheſter*, *Plymouth*, *Hull*, and *Berwick*.

FURBISHING, the Act of cleaning, ſcouring, and poliſhing Arms; as Guns, Piſtols, Swords, &c. See FURBISHER; ſee alſo SWORD, GUN, &c.

Furbiſhing is principally perform'd with Emery. See EMERY.

The Word is form'd of the French *Fourbiſſure*, which *Hicks* derives from *Furben*; which in the Language of the antient *Franks* ſignify'd to clean and poliſh.

M. *Huet* chuſes rather to derive the French *Fourbir* and *Fourbeſſure*, from the Engliſh *Furbiſh*, and *Furbiſhing*.

Skinner obſerves, that ſome Authors derive the Engliſh *Furbiſh* from the Latin *furvus*, and *fervor*; but for his part he rather derives it from the German *Farb*, Colour, and *farben*, to give a colour.

FURCA, FORK, in Antiquity, a kind of Puniſhment, or rather Inſtrument of Puniſhment, among the *Romans*.

The Form of the *Roman Furca* is very obſcurely deſcribed by the Antients, and much controverted by the Moderns.

All we know for certain, is that it was of Wood, and reſembled a Fork; whence it is called in Writers ξύλον δίπαλὲν, δικρὲν, δίδυμον, that is, *lignum duplex*, *bicornutum*, *geminum*, a double fork'd or horned Timber.

Plutarch, treating of the *Furca*, ſays, it is originally a piece of Timber, wherewith the Beam of the Waggon was upheld: He adds, that it is the ſame with what the *Greeks* call *Hypoſtate* and *Sterigma*: And the Sterigma is deſcribed by *Heſychius* as the forked Piece of Timber put under the Yoke of the Waggon.

From the two, *Goodwin* takes the *Furca* to have been the Beam of a Waggon, to which the Yokes were faſten'd.

The Puniſhment of the *Furca* was of three kinds: The firſt, only *Ignominious*, was when a Maſter forc'd his Servant for ſmall Offences to carry a *Furca*, or Fork on his Shoulders, about the City; confeſſing his Fault, and warning others to beware of the like; whence ſuch Servant came to be denominated *Furcifer*.

The ſecond kind was *Penal*; when the Party having the *Furca* on his Neck, was lead about the Circus, or other Place, and whip'd all the way.

The third was *Capital*; the Malefactor having his Head faſten'd to the *Furca*, and ſo whip'd to death.

In After-times of the Empire, when Crucifying became interdicted, the Form of the *Furca* was changed, and made like our Gibets or Gallows. See CROSS, CRUCIFYING, GIBET, &c.

FURCA, in our antient Cuſtoms, was the ſame with *Catifurcia*, or *Foſſa*, *i. e.* Gallows, and Pit; *viz.* a Right or Juriſdiction of puniſhing Felons; that is, Men with hanging; Women with drowning. See GALLOWS.



FURCHE, in Heraldry, a Croſs in the Form here repreſented. See CROSS.

FURCULA, in Anatomy; ſee JUGULUM.

FURFUR, literally ſignifies Huſk, or Chaff; and therefore is uſed for the Scales, Scurf, or Dandriff, which grows upon the Skin with ſome Likeneſs thereto. See CUTICLE. Hence

FURFURATION, the falling off of Furfures in Combing, &c.

FURIES, EUMENIDES, DIRÆ, in the Heathen Theology, and Poetry, were infernal Deities, ſuppoſed to enter, and poſſeſs Men; to torment, and puniſh them. See GOD.

The *Furies* were reputed the Miniſters of *Pluto*; and the Avengers of Crimes. *Strabo* paints them cloathed in long Robes falling to their Heels, but girt about the Breaſt. They were three in Number: *Tyſiphone*, *Megæra*, and *Alecto*.

Patin, *Spanheim*, &c. will have it to be them, which we ſee on a Medal of the Emperor *Philip*, ſtruck at *Antioch*, on whoſe Reverſe are repreſented three Women dreſs'd as above-mentioned, and arm'd with a Key, burning Torches, Poniards, and Serpents.

Struvius, *Antiq. Rom. Synt. C. I. p.* 182. adds, that the three *Furies* may probably be no other than the triple *Hecate*, whom the Antients believ'd to purſue and torment the Wicked in Hell, on Earth, and in Heaven.

Some of the Poets add a fourth *Fury*, call'd *Lyſſa*; a *Greek* Word, ſignifying Madneſs, Rage. They repreſent them with Eyes inflam'd; their Heads twiſted round with Snakes, with Whips and burning Torches in their Hands to puniſh the Guilty.

The Daffodil was ſacred to the *Furies*; and ſuch as offer'd Sacrifices to them, were crown'd therewith. This we learn from *Euſtathius*, on the firſt Book of the Iliad, *p.* 87.

Theſe *Furies* were alſo call'd *Pœnæ*, Ποιναι, by reaſon of the Puniſhments they inflicted on Criminals: As their Denomination *Furies* aroſe from the Rage and Madneſs, which they threw into the Conſcience. *Voſſ. de Idolol. L. VIII. c.* 18.

The *Grecks* call'd them *Eumenides*; the Origin of which Name is much controverted among the Learned: The Etymology that ſeems beſt authorized, derives it from Εὐμενὴς, gentle, mild; which was applied to them on occaſion of *Oreſtes*'s being abſolv'd of the Murther committed by him on the Perſon of his Mother. *Minerva*, it ſeems, appeas'd and pacified the *Furies*; ſo that they ceas'd to purſue him: Upon which the *Athenians* ever after denominated them *Eumenides*.

But it muſt be added, that the *Athenians* called them by the ſame Name, long before *Oreſtes*'s time; as appears from the *Oedipus* of *Sophocles*. There was a Temple in *Athens*, near the *Areopagus*, conſecrated to the *Eumenides*, whom the *Athenians* call'd *Venerable Goddeſſes*. *Ariſtides* and the Scholiaſt of *Thucydides* ſpeak of this Temple as erected in Memory of the Judgment of *Oreſtes*. See EUMENIDES.

FURLING *Lines*, are ſmall Lines made faſt to the Top-ſails, Top-gallant Sails, and to the Miſen-yard Arms, ſerving to *furle* up thoſe Sails.

The Miſen hath but one *Furling Line*, but all the reſt have two, one at each End.

FURLONG, an *Engliſh* long Meaſure, containing the eighth Part of a Mile. See MILE, and MEASURE.

The *Engliſh Furlong* is equal to forty Poles, or Perches; and the Perch to 16½ Feet. See PERCH, FOOT, &c.

Hercules is ſaid to have run a Stadium or *Furlong* at one breath. See STADIUM.

FURLONG is alſo us'd for the eighth Part of an Acre, now called a Rood. See ROOD.

Tho', in an old Law Book, printed in *Henry* the VIII's time, we read, that ſix hundred Foot, of five Score to the Hundred, make a *Furlong*. See ACRE.

In the former Signification the *Romans* call it *Stadium*; in the latter, *Jugerum*.

FURLONG is alſo us'd for a piece of Land, of more, or leſs Acres.

Omnibus Chriſti Fidel. Johannes Blunt de Eyc, Arm. —Dedit Thomæ Croft & Franciſco Lovel, Arm. unum Furlongum *terræ arabilis continen. per æſtimationem quatuor Acras*, &c. *Dat.* 20 *Jan.* 3 *Eliz.*

FURLOUGH, a Licence granted by an Officer to a Soldier, to be abſent for a while.

FURNACE, an Utenſil, or Veſſel, proper to contain Fire; or to raiſe and maintain a vehement Fire in; whether of Coal, or Wood. See FIRE.

There are divers kinds of *Furnaces*, of various Forms, and for various Uſes.

The Domeſtick *Furnace*, us'd in making Confections, &c. is uſually of Iron, or Earth.

Thoſe us'd by the Goldſmiths, Refiners, &c. are much larger, and of a different Structure.

Thoſe wherein Lime, Bricks, &c. are burnt, are called *Kilns*. See LIME, BRICK, &c.

FURNACE is particularly us'd for a kind of Oven, wherein the Ores of Metals, after beating, waſhing, &c. are melted down, by a huge Coal or Wood Fire. See FUSION.

The Structure and Application of theſe *Furnaces* is ſomewhat different in the different Metals. See GOLD, SILVER, COPPER, TIN, &c.

FURNACE is more ſtrictly applied to thoſe us'd in the melting of Iron; which Authors frequently confound with Iron *Forges*; tho' there is a conſiderable Difference between them.

The *Furnace* is a Brick Structure, much in the Shape of an Egg ſet an end, wherein the Iron Ore, after it has been burnt in a Kiln, is put, intermix'd with Cinders and Charcoal; and the whole melted, till it trickle down into a Receiver underneath; where, the Scum and Droſs being taken away, the Metal is thrown into Furrows made in a Bed of Sand, and thus caſt into Sows or Pigs of Iron. See IRON-*work*.

The *Forge* is a Place, where the Pigs are heated and fuſed a ſecond, and even third time, to prepare and fit them further for uſe. See FORGE.

Glaſs-houſe FURNACE, is the Place wherein the Materials of Glaſs are fuſed, and vitrified. See GLASS.

There are three kinds of *Furnaces* us'd in the Glaſs-works.

The firſt called the *Calcar*, ſerves to prepare or calcine the *Frit* in. It is made in faſhion of an Oven, ten Foot long, ſeven broad, and two deep. The Fuel, which is Sea Coal, is put in a Trench, on one Side of the *Furnace*; and the Flame reverberates from the Roof back upon the Frit. The Coals burn in an iron Grate, and the Aſhes fall hence into a Hole underneath. See FRIT.

The ſecond, is the *Working Furnace*, ſerving to melt the Metal in, or make the Glaſs. Its Figure is round, three Yards in Diameter, and two high, being arch'd over. Round the Inſide are eight, or more Pots plac'd, and piling Pots on theſe. The Number of Pots is always double that of the *Boccas* or Mouths, or that of the Workmen; that each may have one Pot refined, to work out of; and another for Metal, to refine in, while he works out the former.

The *Furnace* has two Partitions; the lower, ſeperating the Pots from the Fire Place, has a circular Hole in the Centre, cover'd with a Grate, through which the Flame paſſes from the Fire Place into the *Furnace*; from the arched Sides and Roof whereof it is reverberated into the Melting-pots.

The ſecond Partition divides this from the *Leer*, or *Annealing Furnace*. Thro' the Boccas, or Working-holes the Metal is taken out of the Pots, and the Pots put in the *Furnace*. Theſe Boccas are ſtop'd with moveable Covers, made of Lute and Brick, to ſcreen the Workmens Eyes from the Fire. On each Side the Bocca is a Boccarella, out of which, colour'd Glaſs, or the finer Metal is taken from the Piling-pot. To the *Furnace* likewiſe belong Ovens or Holes near the Leer, for the calcining of Tartar, Iron, &c.

The *Leer*, which ſerves to anneal and cool the Veſſels; and which *Agricola* makes a particular *Furnace*, conſiſts of a *Tower*, and the Leer. The Tower lyes directly over the Melting *Furnace*, with a Partition betwixt the Aperture; having an Aperture, call'd *Occhio*, or *Lumella*, thro' which the Flame or Heat aſcends out of the *Furnace* into the Tower: On the Floor or Bottom of this Tower, the Veſſels faſhion'd by the Maſters, are ſet to anneal. It has alſo two *Boccas* or Mouths, by which the Glaſſes are put in with a Fork, and ſet on the Floor.

The *Leer* is an Avenue, five or ſix Yards long, continued to the Tower: Thro' this the Glaſſes, when anneal'd, are drawn in iron Pans, called *Fraches*; by which they come to cool by degrees; being quite cold, by that time they reach the Mouth of the Leer, which enters the *Saroſel*, or Room where the Glaſſes are to be ſet.

The third, is the *Green Glaſs Furnace*, which is a kind of Compound of all the former. It is made ſquare (the two former being circular) having an Arch, at each Angle thereof, for annealing and cooling the Glaſſes. The Metal is wrought on two oppoſite Sides; and on the other two, they have their Calcars, into which are made *Linnet Holes* for the Fire to come from the *Furnace* to bake the Frit; as alſo to diſcharge the Smoak. Fires are made in the Arches to anneal the Veſſels; ſo that the whole Proceſs is done in one *Furnace*.——

The Stones wherewith the Inſides of theſe *Furnaces* are built, are not Brick (which would ſoon melt down into Glaſs, as alſo all the ſofter Stones); but hard, and ſandy, by *Imperat.* call'd *Pyrachmia*.——

Founders FURNACE, is of divers kinds, according to the different kinds of Work to be caſt.

That us'd by the Founders of Small Work, is much like the Smiths Forge, with this only Difference, that the Fire is made on the Maſſive, built in a Cavity in the Middle of the *Furnace*, to which the Pipe of the Bellows reaches.

This Cavity goes to the Bottom of the Maſſive: A-croſs the Middle of it is plac'd a Grate, which holds the Fire and the Crucible: And below is the Place for the Aſhes, &c. See FOUNDRY.

The Statuaries, or Figure-makers, uſe two kinds of *Furnaces*; which ſee deſcrib'd under the Article FOUNDRY *of Statues*.

Glaſs-Painters FURNACE, is made of Brick, nearly ſquare, and about two Foot and a half each way.

It is cut horizontally in the Middle by a Grate, which ſuſtains the Pan or Shovel the Glaſs is baked in. This *Furnace* has two Apertures; one below the Grate, to put the Fuel in at; the other above it, thro' which the Workman ſpies how the Coction of the Colours goes on. See *Painting on* GLASS.

Letter Founders FURNACE, is very ſmall, not exceeding a Foot and half in Height, and one in Diameter; being plac'd on a wooden Stand, or Bench, to raiſe it to a proper Height for the Artiſt, who works ſtanding. It is made of the ſame Earth with Crucibles. See *Letter* FOUNDRY.

Plumbers FURNACE is of three Kinds: In the firſt, they melt the Lead, whereof Sheets are to be caſt.

This is only a ſort of large Copper, or Receptacle like a Copper, made of Free-ſtone and Potters Earth, well plaiſter'd round with a little iron Pan at bottom.

In the ſecond, they melt the Lead to be caſt in Moulds, for Pipes, &c. which are not to be ſolder'd.

The third, is the Tinning *Furnace*, which is a ſquare Frame of Wood, or ſometimes a Maſſive of Stone-work, with a Brick Hearth, whereon is made a Charcoal Fire, which ſerves them for the applying of thin Tin Leaves on their Works. See PLUMBERY.

Hatters FURNACES are of three Kinds: A little one under the Mould, whereon they form their Hats: A larger, in the Fullery under a little Copper full of Water and Lees: And a very large one under the great Copper they dye their Hats in. See HAT.

Bellows-FURNACE, is one of the two kinds of *Furnaces* us'd in the Mintage, for the fuſing of Metals.

It conſiſts of a flat Hearth at Bottom, into which the Air may be admitted by a Hole contriv'd therein.

On a Level with the Hearth is a ſecond Aperture, which gives Paſſage to the Pipe of the *Bellows*, from which the *Furnace* is denominated. About a Foot over this is a moveable Grate, which may be taken off and put on at pleaſure. Laſtly, over this is the Place where the Crucible is ſet; which is ſquare, and made of the ſame Earth with the Crucible; of Breadth ſufficient to bear a Range of Coals around the Crucible.

To melt a Metal in this *Furnace*, they lay a little Plate of forged Iron over the Grate; and on this they ſet the Crucible, which is likewiſe cover'd with an iron, or earthen Lid. Then they fill the *Furnace* with Charcoal; and when it is well lighted, and the Crucible ſufficiently hot, they ſtop the Vent-hole. Laſtly, throwing on freſh Coals, they ſtop the *Furnace* with an iron Lid: Thus, continuing to work the Bellows, and ſupply freſh Fuel, till the Metal be in Fuſion. See COINING.

Wind-FURNACE is the ſecond *Furnace* us'd in the Fuſion of Metals for Coinage. At Bottom it has a Hearth made hollow, in manner of a Coupel, with a Vent-hole in the Fore-part thereof. Over the Vent-hole, is a Grate ſeal'd in the Maſſive of the *Furnace*. Over the Grate is the Place for the Crucible, which is uſually of forged Iron.

The Fire being lighted, the Crucible is ſet in, with a Cover over it; and a Capital or Cover of Earth or Iron laid likewiſe over the *Furnace*. A-top of this Capital is a Hole five or ſix Inches in Diameter.

It is called *Wind Furnace*, by reaſon the Air entring thro' the Vent-hole at bottom, which is always open, ſerves the ſame purpoſe as the Bellows in other *Furnaces*,

Gold is uſually melted in the *Bellows Furnace*, as requiring an intenſer Heat before it fuſes. See GOLD.

Silver, and Copper, are commonly melted by the *Wind-Furnace*. See COINAGE.

FURNACE, in Chemiſtry, is an earthen Veſſel, wherein the Fire neceſſary for the ſeveral Operations, is contain'd, determined, and directed. See FIRE.

The *Furnace* conſiſts of ſeveral Parts; as, a Place for the Veſſel, or Body to be wrought on; a *Focus* or Hearth fot the Aſhes; a *Chimney*; a *Grate*; a *Door*; a *Dome*, and a *Fan*; or elſe *Regiſters*, whereby to let in Air, to increaſe, or abate the Fire.

The Perfection of a *Furnace* conſiſts in its maintaining a conſtant equable Fire; and this eaſily temper'd; and at an eaſy Expence.

To have the *Expence* eaſy, the whole Action of the Fire or Fuel muſt be employ'd on the Subject or Matter of the Operation.

It muſt be *equable*, ſince different Degrees of Fire have different Effects; ſo that if any given Degree would anſwer any given Intention; an Alteration of that Degree will prevent the Intention from taking place. And on theſe Circumſtances does all the Variety of *Furnaces* depend.

Furnaces are either fix'd and immoveable, call'd *Athanors*; or portable, call'd *Catholic*, or Univerſal, being proper for all Operations, where the Body to be operated on is not too large.

The firſt Species of Athanor, or fix'd *Furnace* is fitted to give a Heat equal to that of a healthy Man.

The ſecond is the *Furnace* of the *Balneum Mariæ*, fit for the Deſtillation of the more ſubtile Spirits. See BALNEUM *Mariæ*.

The third is the *Digeſting Furnace*. See DIGESTING.

The fourth, the Anema, or *Wind Furnace*, call'd alſo Melting *Furnace*, and Metallic *Furnace*; us'd in the Fuſion of Metals, Minerals and Vitrifications.

It is call'd *Wind Furnace*, by reaſon the Air drives forcibly in at the ſame, to blow up the Coals: Its Form is much like that of the Reverberatory *Furnace*, only leſs.

For the Reverberatory Furnace, *ſee* REVERBERATORY.

FURNACE *of a Mine*, in the Art of War; ſee CHAMBER and MINE.

FURNITURE, in Dialling, certain additional Points and Lines, drawn on a Dial, by way of Ornament. See DIAL.

Such are the Signs of the Zodiac, Length of Days, Parallels of Declination, Azimuths, Meridians of the principal Cities, *Babylonick* and *Italian* Hours, Points of the Compaſs, *&c.* See DIALLING.

For drawing *Furniture* on Dials, the *Analemma*, or Trigon of Signs is an Inſtrument of principal Uſe. See ANALEMMA.

FUROR *Uterinus*, a Species of Madneſs, peculiar to Women, exciting them to a vehement Deſire of Venery, and rendering them inſatiate therewith. See UTERINE *Fury*.

It is owing, according to *Sennertus*, to a too great Abundance of Semen, and a præternatural Heat and Pungency thereof.

FURR, the Skin of divers kinds of Wild Beaſts, dreſs'd with the Hair on; to be us'd as a Lining, or Doubling of Garments, Robes, *&c.* either for Warmth, Ornament, or Diſtinction of Rank and Dignity.

The Robes of Kings, Dukes and Peers are lined with divers kinds of *Furrs*, and particularly Ermine, to render them more magnificent. See ERMINE, &c.

The ſame may be obſerv'd of ſeveral chief Magiſtrates; Judges, and Doctors of different Faculties in the Univerſities.

The Kinds of *Furrs*, or the Skins chiefly dreſs'd in Alum, and with the Hair on, are thoſe of the *Ermine*, *Sable*, *Squirrel*, *Cony*, *Caſtor*, *Otter*, *Dog*, *Fox*, *Wolf*, *Tiger*, *Bear*, &c. See SKIN.

The Word is form'd of the French *Fourrure*, a Lining; which *Du Conge* derives from *Furrura*,, us'd, in the barbarous *Latin*, for the ſame thing. We alſo meet with *Forratura*, *foderata*, *fodratum*, and *fodratura*, in the ſame ſenſe.

FURR, in Heraldry, a Repreſentation of the Skins of certain wild Beaſts, ſeen, both in the Doublings of the Mantles of Coat Armour, and in the Armour it ſelf.

The Heralds uſe two Metals, five Colours, and two *Furrs*, or hairy Skins, *Ermin* and *Vaire*.

The Origin of theſe *Furrs*, *Mackenzy* aſcribes to the Shield's being antiently cover'd with Skins; which Skins or Coverings were afterwards repreſented in the Shields: A more probable Derivation, in our Opinion, than to ſay they were plac'd on Shields, becauſe they had been wore in Mantles and Garments.

Furrs either conſiſt of one Colour, which is *white*; or more than one; and theſe either two, or more than two.

Furrs of two Colours are either *Ermine*, being white with black Spots; *Ermines*, black with white Spots; *Erminois*, whoſe Ground is yellow; or *Pean*, which is black, pouder'd with yellow. See ERMINE, PEAN, *&c.*

Furrs of more than two Colours are *Vair*. See VAIR, and VAIRY.

FURRIER, a Perſon who trades, or works in *Furrs*, or lines Robes, *&c.* therewith. See FURR.

FURRING, in Architecture, the making good the Rafters Feet in the Cornice. See RAFTER.

Thus, when Rafters are cut with a Knee, theſe *Furrings* are Pieces which go ſtrait along with the Rafter, from the Top of the Knee, to the Cornice.

Alſo, when Rafters are rotten, or ſunk hollow in the Middle, there are Pieces cut thickeſt in the Middle, and tapering towards each End, which are nailed upon them to make them ſtrait. Such Pieces are called *Furrs*; and the Putting them on, *Furring the Rafters*.

FUSAROLE, in Architecture, a Moulding, or Ornament, placed immediately under the Echinus, in the *Doric*, *Ionic*, and Compoſite Capitals

The *Fuſarole* is a round Member, carved, in manner of a Collar or Chaplet, with oval Beads. The *Fuſarole* ſhould always anſwer exactly under the Eye of the Volute in the *Ionic* Capital.

The *Italians* call it *Fuſciolo*; and the *French*, from whom we borrow it, *Fuſarole*.

FUSEE, or FUSY, in Watch-work, is that conical Part, drawn by the Spring, and about which the Chain, or String is wrapp'd. See WATCH.

The Spring of a Watch is the firſt Mover. It is roll'd up in a Cylindrical Box, againſt which it acts, and which it turns round in unbending itſelf. The String, or little Chain, which at one End is wound about the *Fuſee*, and at the other faſten'd to the Spring-box, diſengages itſelf from the *Fuſee*, in proportion as the Box is turn'd. And hence the Motion of all the other Parts of the Spring Watch. See SPRING.

Now the Effort, or Action of the Spring is continually diminiſhing from firſt to laſt; and of conſequence, unleſs that Inequality was rectify'd, it would draw the String with more Force, and wind a greater Quantity of it upon the Box at one time than another; ſo that the Movement would never keep equal time.

To correct this Irregularity of the Spring; nothing could be more happily contriv'd than to have the Spring applied to the Arms of Levers, which are continually longer as the Force of the Spring is weaker. This foreign Aſſiſtance, always increaſing as 'tis moſt needed, maintains the Action, and Effect of the Spring in an Equality.

'Tis for this reaſon, that the *Fuſy* is made of a conical Figure. Its Axis, which is immoveable, is the Series of the Centres of all the unequal Circumferences, which compoſe the Surface of the *Fuſy*. According as the Part of a String which is untwiſting, is applied to a larger Circumference, it is at a greater Diſtance from the fix'd Point in the Axis, correſponding thereto; and of conſequence the Power which draws by this String, *viz.* the Spring, acts with the more Advantage. The Spring begins to draw by the Top of the Cone; the moſt diſadvantageous Part, by reaſon its own Force is then the greateſt. See LEVER.

If the Action of the Spring diminiſh'd equally, as the Parallel Baſes of a Triangle do; the Cone, which is generated of a Triangle, would be the preciſe Figure required for the *Fuſee*. But 'tis certain the weakening of the Spring is not in that Proportion; and of conſequence the *Fuſy* ſhould not be conical.

In effect, Experience ſhews, that it ſhould not be ſtrictly ſo; but that it be a little hollow toward the Middle, *i. e.* the Arm of the Lever muſt be there a little ſhorten'd; by reaſon the Action of the Spring is not ſufficiently diminiſh'd of it ſelf.——

'Tis a Matter of Inquiry among Geometricians what the preciſe Figure of the *Fuſy* ſhould be; that is, what the Curve is, by whoſe Revolution round its Axis, the Solid, whoſe Figure the *Fuſy* is to have, ſhall be produced.

M. *Varignon* has determ'd this Curve. The Axis of the *Fuſee* is alſo the Axis of the Curve, which is convex on the Side toward the Axis, and of conſequence concave all the way on the other, or outer ſide; and the Ordinates are the different Diſtances wherein the String is to be with regard to all the ſucceſſive fix'd Points of the Axis.

The Force of the Spring multiplied by the Arm of the Lever it is applied to, each Moment, being always to make an equal Product; it follows that when the Solid of the Curve ſhall be form'd, an Ordinate multiplied by the Surface of the Solid comprized between that Ordinate, and the greateſt of all the Ordinates, *viz.* that of the Baſe, will always yield a Product equal to that of any other Ordinates multiplied in the ſame manner. For the Ordinates are only Arms of the Lever; and the Parts of the Surface comprehended between them and the Baſe are equal to the Lengths of the String, which cover them; *i. e.* to the correſpondent Forces of the Spring: Which is what conſtitutes the Equation, and the Eſſence of the Curve.

FUSEE, FUSIL, or FUSE, in War, an Appendage of a Bomb, or Granado-Shell, by which the Powder or Compoſition in the Shell is ſet on Fire, to do the deſign'd Execution. See BOMB, and GRANADO.

The *Fuſee* is a wooden Pipe or Tap, fill'd with Wild-fire, or the like Compoſition; and is deſign'd to burn ſo long, and no longer, as is the time of the Motion of the Bomb from the Mouth of the Mortar, to the Place, where it is to fall; which Time is about 27 Seconds: So that the *Fuſe* muſt be contriv'd, either from the Nature of the Compoſition or the Length of the Pipe which contains it, to burn juſt that time.——

The uſual Compoſition of *Fuſees* is two Ounces of Nitre, to one of Sulphur, and three of Gunpowder Duſt.

The Word is *French*, and literally denotes a *Spindle*.

FUSIBILITY, that Quality in Metals, and Minerals, which diſpoſes them for Fuſion. See FUSION.

Gold is more *fuſible* than Iron, or Copper; but leſs ſo than Silver, Tin, and Lead. See GOLD, SILVER, &c.

Borax is frequently mix'd with Metals, to render them more *fuſible*. See BORAX.



FUSIL, in Heraldry, by the *French* called *Fuſee*, *q. d.* Spindle, is a bearing of a Rhomboidal Figure, more ſlender than the *Lozenge*; its upper and lower Angles being more acute than the two collateral or middle ones: as repreſented in the adjoining Figure.

FUSILIERS, in an Army, are the ſame with Muſqueteers; and are called ſo from the Word Fuſil, a *Fire-arm*, or Muſquet. See MUSQUET.

FUSILLY, or FUSILÉE, is when a Field or Ordinary is entirely cover'd over, or divided into *Fuſils*.—

FUSION, the Solution, or melting of Metals, Minerals, &c. by means of Fire: Or, the Act of changing them from their ſolid State to a Fluor. See SOLUTION, and DISSOLUTION.

To give the Ore its metallic Form, they *fuſe* it: When it is in *Fuſion*, the metalline Subſtance, being the heavieſt, ſinks to the Bottom of the Furnace; the other terreſtrial Matters riſing in Form of Scoria to the Surface. See METAL.

'Tis commonly imagin'd, that the *Fuſion* and metalline Form of *Minerals* is wholly the Effect of Fire; and we have Theories of Fuſibility built on this Principle: But 'tis a miſtaken one. Fire, no doubt, is the principal Agent: But Fire alone is not ſufficient.

A Mineral, or piece of Metal not purify'd, being put alone in a Crucible, melts with a world of Difficulty, and never becomes a perfect Metal: Copper Ore, for inſtance, being thus applied, its impure Part forms a Scoria, and vitrifies; the metalline Part reſiding at Bottom, under the Appearance of a black Regulus.

To promote the *Fuſion* and Separation, they mix Coals, or Stones, or Cinders, or old Scoria along with the Ore; the inflammable Principle in which, by help of the Fire, fuſes them perfectly, ſets the heterogeneous Part at liberty, and attaches it to the Top.

The general reaſon of *Fuſion* is pretty eaſily aſſign'd. The Firmneſs, or Solidity of the Body ariſes from the Force wherewith its Particles cohere. See FIRMNESS. And the Coheſion in all Bodies is as the Quantity of Contact in the component Particles. See COHESION.

Now, the Corpuſcles of Fire entering with Rapidity into the Pores of the Metal agitates, and by degrees, looſens, divides, and diminiſhes their Contact, till at length there is not enough to hinder their rolling over each other; and giving way upon the leaſt Impulſe. See FLUIDITY.

The Dilatation obſervable in all *Fuſions*, is a Proof that their Particles are ſeparated and ſet at a diſtance from each other, and conſequently their Contacts and Coheſions diminiſh'd.

In effect, Rarefaction and Dilatation is the neceſſary Conſequence of Fire and Heat. See FIRE, DILATATION, RAREFACTION.

From the Difference of Coheſion proceeds that Variety we obſerve in the *Fuſion* of Bodies: for ſuch as have leaſt Contact of Parts, ſooneſt give way to the Fire; and ſome will melt away by the Warmth of a Vapour only, when others, which have a ſtronger Contact, are not to be ſeparated, but with Difficulty. Upon this account, Vegetables very eaſily diſunite; Minerals ſlower, and Metals ſloweſt of all: And of the laſt, thoſe wherein the Contact of Parts is leaſt, as in Lead and Tin, moſt readily melt; but thoſe which are more compact as Gold, and Silver, are not to be managed, but by a violent Heat.

If now the Force of Coheſion were proportional to the Quantity of Matter, or to the Weight of Bodies, we might from Staticks account for all the Variety that occurs in *Fuſion*; for by knowing the ſpecifick Gravity of a Body, we ſhould then know, what Force is required to melt it: But becauſe the ſame Quantity of Matter may be ſo variouſly diſpoſed, that in one Body there ſhall be a much greater Contact, than in another, tho' the Gravity be equal, or even leſs at the ſame time; therefore the Force of Coheſion cannot be eſtimated by Gravity: For Lead, tho' more ponderous than all other Metals, except Gold; yet in the Fire is more eaſily melted, than any other: So that it neceſſarily follows, that in this Metal there muſt be a leſs Coheſion, or Contact of Parts, how much ſoever it may exceed others in the Quantity of its Matter. See LEAD.

Bodies after *Fuſion* return again into a ſolid Maſs, upon removing them from the Fire; becauſe their Particles hereupon approach nearer to one another by their attractive Force, and are ſo compelled to unite.

Such as conſiſt of homogeneous and unalterable Parts, as Wax, Gums, and the purer Metals, recover their antient Form: For when the ſame Texture of Parts remains in the whole Body, it muſt of courſe reaſſume the ſame Appearance, when the ſeparating Power ceaſeth to act; but other Bodies, whoſe Parts, with reſpect to Denſity and Surface, are extremely different from one another, while ſome are carried off by the Force of Heat, and others are changed as to Figure and Poſition, muſt be forced to appear in another Form: For they cannot recover their original Phaſes, unleſs every Particle could reinſtate it ſelf in that very Situation it had before, which may be hindered infinite ways; as may be experienced eaſily in heterogeneous Bodies.

The Difference, therefore, obſerv'd even in homogeneous Bodies after Liquefaction, is no ways to be accounted for but from the changeableneſs of Surface in its Parts: For thoſe Bodies whoſe Parts conſtantly retain the ſame Surfaces, never loſe their Form; but others, by having the Surfaces of their Parts altered, have a different Texture, and put on another Appearance.

FUST, in Architecture, the *Shaft* of a Column; or that Part comprehended between the Baſe, and the Capital; called alſo the *Naked*. See SHAFT.

The *Fuſt* is that cylindrical Part, which makes, as it were, the Body, or Trunk of the Column, excluſive of the Head and Foot. See COLUMN.

The Word is *French*, and literally ſignifies a *Caſk*.

FUSTIAN, in Commerce, a kind of Stuff, which ſeems, as it were, croſs'd, on one Side.

Right *Fuſtians* ſhould be made altogether of Cotton Thread, both Woof, and Warp.

There are *Fuſtians* of divers Kinds, wide, narrow, coarſe, fine; with Shag, or Nap, and without it. There are alſo a great many made whereof the Warp is Flax, or even Hemp.

Fuſtian croſs'd, and napp'd on both Sides, is called *Bombaſin*.——

The Plumbers uſe *Fuſtian* to caſt Lead on. See PLUMBERY.

Menage derives the Word from *Fuſtanum*, which in the corrupt *Latin* Writers is uſed in the ſame Senſe; and is ſuppoſed to be form'd from *Fuſtis*, on account of the Tree whereon the Cotton grows. See COTTON.

Bochart derives it from *fuſtat*, which in *Arabic* ſignifies the antient City of *Memphis*, where Cotton is produced in great Abundance.

FUSTICK, or FUSTOCK, a yellow Wood, us'd by the Dyers. See DYING.

The Colour it yields is a fine golden Yellow; but there ſhould be ſome other Ingredients mix'd with it, to make it laſting. See YELLOW.

The Tree that yields it, grows in all the *Antilles* Iſlands; but particularly that of *Tabago*, where it riſes to a great Height.

The Dyers uſe it chiefly for Blacks. See BLACK. But ſome of the ableſt, and honeſteſt among them, who would dye none but the beſt, and moſt laſting Colours, are of Opinion it ſhould be abſolutely excluded out of all Dying.

Beſide this, there is another kind of *Fuſtick* or *Fuſtel*, growing in *Italy*, *Provence*, &c. uſed to dye a Coffee Colour.

F-UT-FA, in Muſick, one of the Cleſs. See CLEF.

FUTURE, ſomething *to come* hereafter. A *future* Contingency. There is none but GOD to whom *future* Things are preſent. A *future* State. See RESURRECTION, and IMMORTALITY.

FUTURE, or FUTURE *Tenſe*, in Grammar, an Inflexion of Verbs, whereby they denote, that a Thing *will be*, in ſome Time yet to come. The laſt Day will come. I ſhall ſee an End. See TENSE.

The *future* Time admits of two Caſes: Either we may have a mind to expreſs a thing that ſhall come to paſs in a ſhort time; or a thing that ſhall happen in any indefinite Time.

Thus the *Greeks* have their *paulo poſt Future*, ὀλίγον μέλλων, which marks a thing about to be done; as ποιήσομαι; beſide the common, indefinite *Future* ποιήσω, I will do it; *amabo*, I will love.

In *Latin*, *Italian*, *French*, and even *Engliſh*, the *Future* of the *Indicative* expreſſes only the Deſign, or Intention of doing a thing, or ſimply that the Thing will be; as, I will praiſe, I will be approved: And the *Future* of the Subjunctive ſhews that the thing will be done under certain Circumſtances; when I ſhall have ſeen *Verſailles*, I will tell you. Sometimes the *Future* is expreſs'd by the Preſent; If I meet your Friend; *ſi offendero*; *ſi incidero*.

G.

G, Is the ſeventh Letter of the Alphabet, and the fifth Conſonant: But in the Alphabets of all the Oriental Languages, the *Hebrew*, *Phœnician*, *Chaldee*, *Syriac*, *Samaritan*, *Arabic*, and even *Greek*, G 'tis the third Letter. See LETTER.

The *Hebrews* call it *Ghimel*, or *Gimel*, *q. d.* Camel; by reaſon it reſembles the Neck of that Animal: And the ſame Appellation it bears in the *Sarmatian*, *Phœnician*, and *Chaldee*: In *Syriac* 'tis pronounced *Gomal*; in *Arabec*, *Giim*, and in *Greek*, *Gamma*.

The Letter *G* is of the mute Kind, and cannot be any way ſounded without the Help of a Vowel. 'Tis form'd by the Reflection of the Air againſt the Palate, made by the Tongue, as the Air paſſes out of the Throat: Which *Martianus Capella* expreſſes thus, *G, ſpiritus, cum palato*; ſo that the *G* is a palatal Letter. See LETTER, MUTE, and PALATAL.

The *Latins* took the Liberty to drop the Letter *G* at the Beginnings of Words, before an *n*; as in *gnatus*, *gnoſco*, *gnobilis*, *gnarrat*, &c. which they ordinarily wrote, *natus*, *noſco*, *nobilis*, &c. They alſo frequently changed it into *C*, as *Gamelus*, into *Camelus*; *Grogulus*, *Graculus*; *Quingentum*, *quincentum*, &c. Sometimes it is put inſtead of *N*, before a *C*, and another *G*; as *Agchiſes*, *Agcora*, *Agguilla*, &c. for *Anchiſes*, *Ancora*, *Anguilla*, &c. Inſtead of *P*; as *Magilia*, for *Mapilia*, &c. *G* is alſo uſed inſtead of *Q*, and *Q* inſtead of *G*, as *Anquina*, *Angina*, *Anguina*, &c. Inſtead of *R*, as *Aquagium*, for *Aquarium*; *Agger*, *Arger*, &c. And inſtead of *S*, as *Spargo*, *ſparſi*, *ſparſum*; or, rather, it is retrench'd from thoſe laſt Words, to avoid the Cacophony of *ſpargſi*, or *ſparcſi*.

G, is alſo put for *C*; as *Cneius*, for *Gneius*; *Caius*, for *Gaius*; *Gaeta*, for *Caieta*: for *V*, as *figere*, for *fivere*.

The Northern People frequently change the *G* into *V*, or *W*; as in *Gallus*, *Wallus*, *Gallia*, *Wallia*, *Vallia*, &c. For in this Inſtance it muſt not be ſaid that the *French* have changed the *W* into *G*; by reaſon they wrote *Gallus* long before *Wallus*, or *Wallia* were known; as appears from all the antient *Roman* and *Greek* Writers.

And yet, 'tis equally true, that the *French* change the *W* of the Northern Nations, and the *V* Conſonant into *G*; as *Willielmus*, *William*, into *Guillaume*,; *Wulphilas*, into *Gulphilas*; *Vaſco*, into *Gaſcon*, &c. It may be added, that the antient *Gauls*, and *Celtæ* changed the ו or *v* of the primitive Language into *G*: Accordingly, in the Bas Breton they ſtill ſay *gouin*, of ויין Wine, from יי", by changing the latter י into ו.

Diomed. L. II. de Litera, calls *G*, a new Letter: His Reaſon was, that the *Romans* had not introduc'd it before the firſt *Punic* War; as appears from the Roſtral Column, erected by *C. Duilius*, on which we every where find a *C* in lieu of *G*. It was *Sp. Carvilius*, who firſt diſtinguiſh'd between thoſe two Letters; and invented the Figure of the *G*: as we are aſſured by *Terentius Scaurus*. The *C* ſerved very well for *G*; it being the third Letter of the *Latin* Alphabet, as the *g* or *γ* was of the *Greek*.

The *G* is found inſtead of *C* in ſeveral Medals: *Vaillant Num. Imperat. T. I. p.* 39. M. *Reger* produces a Medal of the *Familia Ogulnia*, where GAR is read inſtead of CAR, which is on thoſe of M. *Patin*. But the *C* is more frequently ſeen on Medals, in lieu of *G*; as AUCUSTALIS CALLAECIA CARTACINENCES, &c. for AUGUSTALIS, &c. Not that the Pronunciation of thoſe Words was alter'd; but only that the *G* was unartfully or negligently cut by the Workmen. As is the Caſe in divers Inſcriptions of the Eaſtern Empire; where AUC, AUCC, AUCCC, are frequently found for AUG, &c.

The Form of our *G* is taken from that of the *Latins*, who borrowed it from the *Greeks*; the *latin G* being certainly a Corruption of the *Greek* Gamma Γ, as might eaſily be ſhewn, had our Printers all the Characters and Forms of this Letter, which we meet withal in the *Greek* and *Latin MSS.* thro' which the Letter paſs'd from Γ to *G*.

As to the Gamma of the *Greeks*, 'tis manifeſtly the ג Ghimmel of the *Hebrews*, or *Samaritans*. All the Difference between the Gamma and Ghimel conſiſts in this, that the one is turn'd to the Right, and the other to the Left, according to the different manners of writing and reading, which obtain'd among thoſe different Nations: ſo that all the pains *Salmaſius* has taken on *Solinus*, to prove that the *G* was derived from *Greek* Kappa, is loſt.

G has alſo been us'd as a Numeral Letter, ſignifying 400, according to the Verſe,

GAB.

G Quadringentos demonſtrativa tenebit.

When a Daſh was added a-top the $\overline{G}$, it ſignify'd forty thouſand. See A.

G is alſo us'd in Muſic, to ſignify one of the Clefs. See CLEF.

G is the Clef of the higheſt Part, call'd the *Treble*, or *Alt*. See TREBLE.

GABBARA, a Name the *Egyptians* gave the dead Bodies, which they kept by them, inſtead of burying them.

That People, out of a Cuſtom which they had receiv'd from their Anceſtors, and which aroſe in ſome meaſure from the Diſpoſition of their Country, which is expoſed to the Inundations of the *Nile*; us'd to wrap up the Bodies of Perſons of Piety and Eminence, particularly thoſe of Saints, and Martyrs, in a great Number of linen Cloths, with Balms, and Spices; and inſtead of interring them, preſerved them in their Houſes: thinking, that thereby they did them much more Honour. And theſe, St. *Auguſtin* tells us, were what they call'd *Gabaras*. Sermon CXX. *De diverſis*, *c.* 12.

Pliny makes mention of the ſame thing, *L. VII. c.* 16. where he relates, that in the time of *Claudius* a *Gabbara* was brought from *Arabia*, almoſt ten Foot long.

Fa. *Hardouin* imagines, that *Pliny* here took the Word for a proper Name; and accordingly ſearches in *Tacitus*, for one *Abbarus*, a King of *Arabia*: But *Hardouin* himſelf is not of that Opinion; taking the Word to be rather the גבור *Ghibbor*, of the *Hebrews*; or גבאר *Ghabbar*, of the *Arabians*; and to ſignify a *Gyant*.

But the Jeſuite *Roſweyd* has given us a much better Account in his learned Notes, on the Life of St. *Anthony*, *c.* 7; and in his Onomaſticon, under the Word *Gabbara*; where he ſhews that we meet with both *Gabbara*, *Gabbares*, *Gabarus*, and *Gabbarus*; and that they all ſignify a Body embalm'd; which he proves from the Teſtimonies of *Cicero*, *Tuſcul. Queſt.*; of *Pompon. Mela*, *L. I. c.* 9.; of *Sextus Empiricus*, *L. III.*; *Pyrrhon Hypotheſ. c.* 24.; of *Lucian*, *de Luctu*; of *Corippus*, *L. III. De funere Juſtiniani*; of St. *Auguſtin*, *Caſſian*, *Damaſcenus*, &c. See MUMMY.

The Word is *Arabic*, *Syriac*, and *Hebrew*, form'd of גבר Gaber, a Man.

GABEL, or GABELLE, in the *French* Cuſtoms, a Duty or Impoſition on Salt. See SALT.

The *Gabelles* is let out to Farm; and make the ſecond Article in the King's Revenue. See DUTY, FARM, &c.

There are three Farms of *Gabels*; the firſt comprehends the greateſt Part of the Kingdom: The 2d is that of the *Lyonnois* and *Languedoc*; and the 3d that of *Dauphine* and *Provence*. There are ſeveral Provinces exempt from the *Gabel*; having purchaſed the Privilege of *Henry* II.

This Duty is ſaid to have had its Riſe in *France*, in 1286. under *Philip* the Fair. *Philip* the Long took a Double *per* Livre on Salt, by an Edict in 1331; which he promis'd to remit when he was deliver'd from his Enemies; and which he did accordingly in 1345. King *John* reſum'd it in 1355; and it was granted the Dauphin in 1358, to ranſom King *John*. *Charles* V. made it perpetual. *Charles* VII. rais'd it to ſix Deniers: *Louis* XI. to twelve; and *Francis* I. to 24 Livres *per* Muid. And it has been conſiderably augmented ſince. *Philip de Valois* firſt eſtabliſh'd Granaries and Officers of the *Gabelles*, and prohibited any Perſons from ſelling Salt: From which time the whole Commerce of Salt, for the Inland Conſumption, has lain wholly in the King's Hands, who ſells and diſtributes every Grain thereof by his Farmers, and Officers created for the purpoſe.

The Produce of this Impoſt is ſo conſiderable, that it is computed to make one Fourth of the whole Revenue of the Kingdom; and yields the Crown as much as all the Mines of *Peru*, *Chilly Potoſi*, and the reſt of *America* does the *Spaniards*.

Etymologiſts are extremely divided as to the Origin of the Word. Some derive it from the Hebrew *Gab*, a Preſent; others from קבל to deliver; others from קבלה *Kabbalah*, Receipt; others from *Ghauel*, or *Gabe*, unjuſt Law; others from the corrupt latin *Gabella*, or *Gablum*, Tribute.—

GABEL is alſo us'd in ſome of our antient Writers, for any ſort of Tax, or Impoſition: As *Gabel* of Wines, of Silks, *&c.* See DUTY.

GABIONS, in Fortification, &c. large Baſkets, made of Oſier Twigs, wove of a cylindrical Form, ſix Foot high, and four wide; which being fill'd with Earth, ſerve as a Defence, or Shelter from the Enemy's Fire.

They are commonly uſed in Batteries, to ſcreen the Engineers, &c. In order to which one is placed on either Side each Gun, only leaving room for the Muzzle to appear thro'. See BATTERY.

There are alſo a ſmaller ſort of *Gabions*, us'd on Parapets, in Trenches, &c. to cover the Muſqueteers; being placed ſo near as that a Muſquet can but juſt peep thro'.

They alſo ſerve as a Parapet on Lines, Lodgments, &c. where the Ground proves too hard to dig into. See PARAPET.

To render the *Gabions* uſeleſs, they endeavour to ſet them on fire, by throwing pitched Faggots among them.

GABLE, or GABLE-*End* of a Houſe, is the upright triangular End; from the Cornice, or Eaves, to the Top of its Roof. See HOUSE.

GAGE, in our antient Cuſtoms, ſignifies a Pledge, or Pawn, given by way of Security.

The Word is only properly us'd for Moveables; for Immoveables, *Hypotheca* is us'd. If the *Gage* periſh, the Perſon who received it is not to anſwer for it, but only for extreme Negligence, &c. See PLEDGE.

The Word *Gage* is particularly us'd for a Challenge, to Combat; in which Senſe it was a Pledge, which the Accuſer, or Challenger caſt on the Ground, and the other took up, as accepting the Challenge: It was uſually a Glove, Gantlet, Chaperoon, or the like. See COMBAT, and DUEL.

The Grand Cuſtomary mentions *Gages Pleiges de Duel*. Theſe were Gentlemen, of their Relations or Friends: If he who had given the *Gages Pleiges*, was overcome, he was to pay a Mulct agreed on.

The Word *Gage* is only retain'd as a Subſtantive: As a Verb, the G is chang'd into W; and of *Gage* is form'd *Wage*; as, to *wage* Law; to *wage* Deliverance, *q. d.* to give Security a thing ſhall be deliver'd. See WAGE.

Thus, if a Perſon who has diſtrain'd be ſued for not having deliver'd what he had took by Diſtreſs, he ſhall *wage* or *gage* Deliverance; that is, put in Surety that he will deliver them. See LAW; ſee alſo *Mort* GAGE.

Mort-GAGE, it that which is left in the Hands of the Proprietor, ſo that he reaps the Fruits thereof; in oppoſition to *Vif-gage*, where the Fruits or Revenues are reap'd by the Creditor, and reckon'd on the Foot of the Debt, which diminiſhes in proportion thereto.

The ſecond, acquits, or diſcharges it ſelf; the firſt does not.

Pomey alſo uſes *Mort-gage* for the Poſſeſſion of any Effects, on condition of ſurrendring them up at the good pleaſure of the Perſon who gave them. See MORTGAGE.

GAGE, in the Sea Language. When one Ship is to windward of another, ſhe is ſaid to have the *Weather-gage* of her.

The Seamen alſo call trying how much Water a Ship draws, *gaging*, or rather *gauging* of her; and it is done thus:

They drive a Nail into a Pike, near the End, and then put down this Pike by the Rudder, till the Nail catch hold under it; for then as many Feet as the Pike is under Water, is the Ship's *Gage*, or Depth of Water ſhe draws.

GAGE, in Joinery, is an Inſtrument made to ſtrike a Line truly parallel to the ſtreight Side of any Board or Piece of Stuff.

Its chief Uſe is for *gaging* of Tenants true, to fit into Mortiſſes; and for *gaging* Stuff of an equal Thickneſs.

It is made of an oval piece of Wood, fitted on upon a ſquare Stick, to ſlide up and down ſtifly thereon, and with a Tooth in the End of a Staff, to ſcore, or ſtrike a Line upon the Stuff at any Diſtance, according to the Diſtance of the Oval from it.

GAGER *del Ley*; ſee WAGE, and WAGER *of Law*.

GAGER, and GAGING, in Geometry, } ſee { GAUGER. GAUGING.

GAÏANITES, GAÏANITÆ, or GAÏNITES, a Sect of antient Hereticks, ſprung from the *Eutychians*.

This Sect was of an older Standing than *Gaian*, or *Gain*, a Biſhop of *Alexandria*, in the VIth Century, from whom they took their Name. They adhered to the Opinions of *Julian Halicarnaſſæus*, the Chief of the *Incorruptibiles* and *Phantaſtici*; and came at length to be denominated *Gaianites*, upon *Gaian*'s putting himſelf at their Head. They denied that Jeſus Chriſt, after the Hypoſtatical Union was ſubject to any of the Infirmities of human Nature. See PHANTASTICI.

GAIN, the Profit, or Lucre a Perſon reaps from his Trade, Employment, or Induſtry.

There are legal and reputable *Gains*, as well as ſordid and infamous ones. What is *gain'd* by Gaming, is all liable to be reſtored again, if the Loſer will take the Benefit of the Law. *Menage* derives the Word from the German *Gewin*; whereof the *Italians* have made *Guadagno*; the *French*, and *Engliſh*, *Gain*.

GAIN, in Architecture, is the Workmens Term for the Bevelling Shoulder of the Joiſt, or other Timber.

It is us'd alſo for the lapping of the End of the Joiſt, &c. upon a Trimmer, or Girder; and then the Thickneſs of the Shoulder is cut into the Trimmer alſo bevelling upwards, that it may juſt receive the *Gain*; and ſo the Joiſt and Trimmer lie even and level with their Surface. This way of working is us'd in Floors and Hearths.

GAINAGE, in our antient Writers, ſignifies the Draught-oxen, Horſes, Wain, Plough, and Furniture for carrying on the Work of Tillage by the baſer ſort of Sokemen and Villains; and ſometimes the Land it ſelf, or the Profit rais'd by cultivating it.

Bracton, *lib.* 1. *cap.* 9. ſpeaking of Lords and Servants, ſays, *Ut ſi eos deſtruant, quod ſalvum non poſſit eis eſſe* Wainagium *ſuum*. And again, *Lib.* 3. *Tract.* 2. *cap.* 1. *Villanus non amerciabitur, niſi ſalvo* Wainagio *ſuo*. For antiently, as it appears both by *Mag. Char.* and other Books, the Villain, when amerced, had his *Wainage* free; to the end his Plough might not ſtand ſtill: And the Law, for the ſame Reaſon, does ſtill allow a like Privilege to the Husbandman, that is, his Draught-horſes are not, in many Caſes, diſtrainable. See DISTRESS.

GALACTITES, in Natural Hiſtory, a Stone, thus called by reaſon when broke or ground, it reſolves into a white Liquor, like *Milk*, which the *Greeks* call γαλα.

The Stone is of an Aſh Colour, and pretty ſoft, and ſweet to the Taſte. 'Tis found in *Tuſcany*, *Saxony*, and other Parts. Authors recommend it as good in Defluxions of the Eyes, and for Ulcers: It is ſuppoſed to make the Milk more copious in Nurſes; and when hung to the Necks of Children, promotes Salivation.

GALACTOPHAGI, and GALACTOPOTÆ, in Antiquity, Perſons who lived wholly on Milk, without Corn, or the uſe of any other Food.

Certain Nations, in *Scythia Aſiatica*, as the *Getæ*, *Nomades*, &c. are famous in antient Hiſtory, in quality of *Galactophagi*, Milk-eaters. *Homer* makes their Eloge, *Iliad. lib. III.* *Ptolomy*, in his Geography, places the *Galactophagi* between the *Riphæan* Mountains, on one Side; and the *Hircanian* Sea on the other.

The Words are compounded of γαλα, γαλάκτος, Milk; φάγομαι, I eat; and πότης, of πίνω, I drink.—

GALACTOPHEROUS *Ducts*, are ſuch Veſſels as ſerve to convey Milk. See MILK.

Such are the Lacteals, and Mamillary Veſſels. See LACTEALS, and MAMMÆ.

GALACTOSIS, the changing into Milk; or the Production of Milk. See MILK.

The Term properly denotes the Action whereby the Food, or Chyle, is converted into Milk.

GALANGA, or GALANGAL, a Medicinal Root, brought from the *Eaſt Indies*; the Produce of a Tree of the ſame Name.

There are two kinds of *Galanga's*; the ſmall, and the great: The ſmall is a rough, knotty Root, of a ruddy Colour both within, and without, and of a very pungent aromatic Taſte, and Smell. It is brought from *China*, and is uſed with good Succeſs in all Diſorders of the Stomach, Bowels, and Womb, ariſing from the Weakneſs of the Nerves.

The greater *Galanga*, growing chiefly in *Java* and *Malabar* inclines more to an Aſh Colour. Its Qualities are of the ſame kind with thoſe of the other; only leſs efficacious, and much leſs uſed. The Vinegar-makers uſe both. See ACORUS.

GALAXY, in Aſtronomy, That long, white, luminous Track, which ſeems to incompaſs the Heavens like a Swath, Scarf, or Girdle; and which is eaſily perceiveable in a clear Night, eſpecially when the Moon does not appear.

It paſſes between Sagittary, and Gemini, and divides the Sphere into two Parts: It is unequally broad; and in ſome Parts is ſingle, in others double.

The *Greeks* call it Γαλαξίας, *Galaxy*, of Γαλα, γαλάκτος, *Milk*; on account of its Colour, and Appearance: The *Latins*, for the ſame reaſon, call it *Via Lactea*; and we, the *Milky Way*.—

The antient Poets, and even Philoſophers, ſpeak of the *Galaxy*, as the Road, or Way, by which the Hero's went to Heaven.

Ariſtotle makes it a kind of Meteor, form'd of a Croud of Vapours, drawn into that Part by certain large Stars diſpoſed in the Region of the Heavens anſwering hereto.

Others, finding that the *Galaxy* was ſeen all over the Globe; that it always correſponded to the ſame fix'd Stars; and that it tranſcended the Height of the higheſt Planets; ſet aſide *Ariſtotles*'s Opinion, and placed the *Galaxy* in the Firmament, or Region of the fixed Stars, and concluded it to be nothing but an Aſſemblage of an infinite Number of minute Stars.

Since

Since the Invention of the Teleſcope, this Opinion has been abundantly confirmed. By directing a good Teleſcope to any Part of the Milky Way; where, before, we only ſaw a confuſed Whiteneſs, we now deſcry an innumerable Multitude of little Stars. Theſe Stars are ſo remote, that a naked Eye confounds them: The like we obſerve in thoſe other Spots, called Nebuloſe Stars, which when examined with the Teleſcope, are diſtinctly perceived to be Cluſters of little Stars, too faint to affect the Eye ſingly. See STAR.

GALBANETUM, a Compoſition, or Preparation of Galbanum, formerly preſcribed, but now much out of Uſe. See GALBANUM.

GALBANUM, in Pharmacy, A Gum iſſuing from an Inciſion in the Root of a ferulaceous Plant, call'd in Latin, *Ferula Galbanifera*; growing in *Arabia*, *Syria*, &c. See GUM.

There are two kinds of *Galbanum*; the one in Tears; the other in Maſs: The firſt is to be choſe of a golden Yellow without ſide, but much paler within; of a bitter Taſte, and ſtrong, diſagreeable Smell. For the ſecond, take that which is fulleſt of Tears, very dry, clear, and not ſtinking. This laſt is eaſily ſophiſticated with broken Beans, Roſin, and Gum Ammoniac.

Galbanum is of an emollient, and reſolutive Nature; good in all Hyſteric Caſes, and in Aſthma's and inveterate Coughs: It provokes the Menſes, and brings on Delivery: But it is chiefly uſed externally, in Plaſters for the Belly, which it looſens, what way ſoever applied.

The Word is derived, according to *Martinius*, from the *Hebrew* Chelbenah, *Fat*.

GALE, a Sea Phraſe, for the blowing of the Wind at Sea: When the Sea doth not blow ſo hard, but that a Ship can carry her Top-ſails a-trip, that is, hoiſted up to the higheſt, they ſay it is a *Loom Gale*: When it blows very ſtrong, they ſay it is a *Stiff Gale*, or at leaſt a *Freſh Gale*; but when it blows ſo hard, and violently, that a Ship cannot bear any Sail, they ſay, it blows *a Storm*.

When two Ships are near one another at Sea, and there being but little Wind blowing, one feels more of it than the other; they ſay, the Ship *gales* away from the other.

GALEARII, or GALIARII, in Antiquity, a Name the *Romans* gave to the Black Guards or Servants of the Soldiers. *Vegetius III*, 6. *Salmaſius* on the third Chapter of the Life of *Adrian* by *Spartian*.

GALEASSE, or GALEACE, a large, low built, heavy Veſſel; the biggeſt of all Veſſels that go with Ores. See VESSEL.

It may carry twenty Guns; with a Stern, capable of lodging a great Number of Muſqueteers. It uſes both Sails and Oars; and the Rowers are under Cover. It has three Maſts; the Main, Mizzen, and Bowſprit, which are never to be taken down, or lowerd, as they may be in Galleys. It has 32 Benches of Rowers, and to each Bench five or ſix Slaves; tho' *Will. of Tyre* makes mention of *Galeaſſes*, with 100 Benches of Oars.

It has three Tire of Guns, in the Head, one over the other, of two Guns each, bearing Balls of 36, 24, and 10 Pounds. It has but two Tire in the Stern; each containing three Guns, carrying Balls of 18 Pounds. See GALLEY.

The *Venetians* are the only People who have *Galeaſſes*: Antiently, the *French* likewiſe made uſe of them.

GALENIC *Medicine*, is properly the Manner of conſidering and treating Diſeaſes, founded on the Principles of *Galen*; or introduced by *Galen*. See MEDICINE.

Claud. Galen, was of *Pergamus* in *Aſia*, the Son of a famous Architect, and Pupil of *Satyron* and *Pelops*, two able Phyſicians. He firſt diſtinguiſh'd himſelf at *Athens*; then at *Alexandria*, and laſtly at *Rome*; where he wrote a great deal; where he alſo died, in the Year of Chriſt 140.

He is ſaid to have compoſed 200 Treatiſes, whereof there are 170 ſtill extant. There have been 23 ſeveral Editions of this Author: The firſt is that of *Venice*, in Folio, in the Year 1525: The beſt is that of *Paris*, in 13 Volumes in Folio, *Greek* and *Latin*, publiſh'd in 1639.

This Author, collecting and digeſting what the Phyſicians before him had done; and explaining every thing according to the ſtricteſt Doctrines of the Peripateticks, ſet Phyſic on a new Footing; introduced the Doctrine of the four *Elements*; the Cardinal *Qualities*, and their *Degrees*; and the four *Humors* or Temperaments. See ELEMENT, QUALITY, DEGREE, HUMOR, &c.

GALENIC is now more frequently us'd in a wider Signification, *viz.* for that Method of Phyſick, contradiſtinguiſh'd from *Chymical*. See MEDICINE.

In this Senſe, *Galenical Medicine*, *Galenical Pharmacy*, &c. are thoſe which go upon the eaſier Preparations of Herbs, Roots, &c. by Infuſion, Decoction, &c. and attain their Ends, and make their Remedies effectual, by the combining and multiplying of Ingredients: In oppoſition to *Chemical Medicine*, or *Pharmacy*, which torture the *Materia Medica* by Fire, and draw their more intimate and remote Virtues by elaborate Preparations; as Calcination, Digeſtion, Fermentation, &c. See CHEMISTRY, and PHARMACY.——

Medicine was wholly *Galenical*, till the Time of *Paracelſus*. *Geber*, indeed, and after him *Raymund Lully*, *Arnoldus de Villa Nova*, and *Baſil Valentine*, made ſome Attempts to apply Chemiſtry to Medicine; eſpecially the laſt of them; but no great Advance was made. *Paracelſus*, and after him *Van Helmont*, alter'd the whole of Medicine; exploded *Galeniſm*, and the Peripatetic Doctrine, and render'd Medicine wholly *Chemical*. See CHEMISTRY.

The late Improvements in Philoſophy, have reform'd, and retriev'd the *Galenical* Medicine, which has now very little of *Galen*'s in it. 'Tis now all Mechanical and Corpuſcular: Inſtead of Qualities and Degrees, every thing is now reduced to mechanical Affections; to the Figures, Bulks, Gravities, &c. of the component Particles, and to the great Principle of Attraction. See MECHANICAL, and CORPUSCULAR; ſee alſo MEDICINE.

GALENISTS, a Denomination given ſuch Phyſicians, as practice, preſcribe, or write on *Galenical* Principles. See GALENICAL.

The *Galeniſts* ſtand oppoſed to the Chymiſts: The *Materia Medica* of the firſt, is chiefly of the Vegetable Kind; the Virtues of which they procure by the more ſimple and eaſy means; and ſeldom go beyond Decoction. The latter take in Minerals, Salts, Stones, and even Metals, and Semimetals: Theſe, they hold, afford more efficacious Remedies; and their Virtues, procured by long, artful, labour'd Proceſſes, with the Help of Fire, are had more pure, and in a leſſer Compaſs. See CHEMIST.

At preſent, the *Galeniſts* and Chemiſts are pretty well accommodated; and moſt of our Phyſicians uſe the Preparations and Remedies of both. See PHYSICIAN, REMEDY, &c.

GALENISTS, GALENASTS, or GALENITES, are alſo a Branch of the *Mennonites*, or Anabaptiſts, who take in ſeveral of the Opinions of the *Socinians*, or rather *Arians*, touching the Divinity of our Saviour. See MENNONITE.

They are thus call'd from their Leader *Galenas*, a learned, and eloquent Phyſician of *Amſterdam*, who is accuſed of being a thorough *Socinian*. *Jovet T. I. p.* 413. &c.

GALERICULATE *Flowers*; ſee FLOWERS.

GALILÆANS, a Sect among the antient Jews, denominated from *Judas* of *Galilee*, their Chief; who, eſteeming it unworthy, that the Jews ſhould pay Tribute to Strangers, rais'd up his Countrymen againſt the Edict of the Emperor *Auguſtus*, which had order'd a Cenſus and Enumeration to be made of all his Subjects.

Their Pretence was, that God alone ſhould be own'd as Maſter, and called by the Name of *Lord*. In other reſpects, they had much the ſame Doctrines as the *Phariſees*; but as they judg'd it unlawful to pray for infidel Princes, they ſeparated themſelves from the reſt of the Jews, and perform'd their Sacrifices apart. See PHARISEE.

As our Saviour, and his Apoſtles were of *Galilee*, they were ſuſpected to be of the Sect of *Galilæans*; and it was on this Principle, as St. *Jerom* obſerves, that the *Phariſees* laid a Snare for him, aſking, whether it was lawful to give Tribute to *Cæſar*; that in caſe he denied it, they might have an Occaſion of accuſing him. *Joſeph. Ant. Jud. L.* 18.

GALL, a yellow, bitter Juice, or Humor, call'd alſo *Bile*, ſecreted from the Blood, in the Glands of the Liver, and depoſited in a peculiar Reſervoir, call'd the *Gall-bladder*. See LIVER, and GALL-*Bladder*.

The Bile contain'd in the *Gall* Bladder, properly call'd *Gall*, is ſomewhat different from the Bile depoſited in the Porus Biliarius; being of a brighter Yellow, a greater Conſiſtence, and more bitter and acrimonious. For the reſt; the manner of Secretion with the Qualities, Uſe, &c. of the two Juices, are the ſame; which ſee under the Article BILE.

The *Gall* of divers Animals, is found of divers Uſes: That of a Hog is ſaid to make the Hair grow; deterges and heals Ulcers of the Ears: That of a Lamb is recommended for the Epilepſy: That of the Pike, for intermitting Fevers: That of the Carp, clears and ſtrengthens the Sight: That of a Kid, mix'd with the white of an Egg, Bread, and Oil of Laurel, and applied in form of Poultice on the Navel; is an approved Remedy for a quotidian Fever: That of a Cock, and a Bullock, reputed good in Diſeaſes of the Eyes, and to take away Freckles and other Diſfigurements of the Skin. See FRECKLE. That of a Roebuck, or Hare, deterges and carries off Clouds, Specks and Cataracts of the Eyes: That of the Boar, externally applied, is reſolutive, and good in ſcrophulous Tumors: Thoſe of the Sheep and Partridge, ſerve to deterge and cleanſe Ulcers of the Eyes. Fa. *Roger* adds, that the *Mahometans* of *Paleſtine* uſe no other Remedy againſt Poiſons, but ſeven, or eight Drops of the *Gall* of a Bear.

GALL *Bladder*, call'd alſo *Veſicula* and *folliculus fellis*, is a membranous Receptacle, in Figure ſomewhat like a Pear; ſituate at the lower Margin of the Liver, on the concave Side, and about the Bigneſs of a Pullet's Egg. See BLADDER.

The

The *Gall* Bladder adheres to the Liver, both by its Veſſels, which it receives from it; and likewiſe by its Membranes, whereof the external is common with that of the Liver. The lower Part, which hangs out of the Liver, reſts on the Pylorus of the Stomach, which it dies yellow with the *Gall* tranſuding thro' its Membranes.

Its Membranes are reckon'd five: An outer, or common one, from the Peritonæum; an inner one, from the Capſula of the Porta, and Porus Biliarius; and three proper ones: The firſt, *Vaſculous*, conſiſting of white Fibres, interwove with Veſſels; the ſecond, *Muſcular*, conſiſting of a double Row of fleſhy Fibres, the one longitudinal, the other annular; the third, or inner Coat, *Glandulous*, conſiſting of a great Number of Glands, like the Cruſta Villoſa of the Stomach, which ſeperate a Mucus that lines the Inſide of the *Gall* Bladder, and defends it from the Acrimony of the Bile.

The Bladder is uſually divided into two Parts, the *Fundus*, or Bottom; and the *Collum*, or Neck: At the Orifice of which latter is plac'd a Ring, or Circle of muſcular Fibres, which ſerve as a Sphincter to conſtringe the Orifice of the *Gall* Bladder, and hinder the too liberal Diſcharge of the Bile. See CYSTIC, HEPATIC, &c.

There are ſome Animals without *Gall* Bladders; as Deer, Horſes, Aſſes, Mules, Camels; and among Fiſhes, the Sea Calf, and Dolphin. The *Gall* of theſe Animals is inclos'd in Ducts, which terminate in the Inteſtines.

GALLANT, or GALANT, a *French* Term, ſignifying civil, polite, well bred; a Perſon of Wit, and Addreſs; that does every thing with a good Grace. A *galant* Man is a civil Man, ſomewhat brighter, gayer, and more agreeable than ordinary.

'Tis very difficult to define all the Qualities attach'd to the Idea of a *galant* Man: It frequently implies an Air of the World; a Diſpoſition to pleaſe, and particularly the Ladies; and a great Devotion to the Sex. The *French* Authors are very nice on the Point: They diſtinguiſh *galant Homme*, and *Homme galant*.——

Mercure GALANT, is the Title of a Book, which has appear'd Monthly at *Paris* for ſeveral Years. See JOURNAL.

It contains abundance of very pretty, curious Things; tho' ſeveral of the Wits have made it their Buſineſs to decry it. M. *de Vize* was the firſt Projector, and Author, or rather Collector: Since his Death, it has been continued by three other Perſons ſucceſſively.

GALLEATE *Flowers*; ſee FLOWERS.

GALLEON, ſee GALLION.

GALLERY, in Architecture, a cover'd Place in a Houſe, much longer than broad, and which is uſually on the Wings of the Building; ſerving to walk in.

The *Galleries* of the *Louvre* are magnificent: A *Gallery* of Painting: A compleat Apartment is to conſiſt of a Hall, Antichamber, Chamber, Cabinet, and *Gallery*. See APARTMENT.

Savot, in his Architecture, derives the Word *Gallery* from *Gaul*, as ſuppoſing the antient *Gauls* to have been the firſt who us'd them: *Nicod* fetches it from the *French aller*, to *go*, *q. d. Allerie*. Others bring it from *Galere*, Gally, by reaſon it bears ſome Reſemblance thereto in reſpect of Length. In the corrupt *Latin* we meet with *Galilæa*, for the *Gallery* of a Monaſtery.

GALLERY, is alſo a little Iſle, or Walk, ſerving as a common Paſſage to ſeveral Rooms, placed in a Line, or Row.

The *Gallery of a Church* is a kind of continued Tribune, with a Baluſtrade; built along the Sides or lower End of a Church, to hold the more People: And, in the *Greek* Churches, to ſeperate the Women from the Men.—*Gallery of a Theatre*, ſee CHURCH, THEATRE, &c.

GALLERY, in Fortification, is a cover'd Walk, made of Timber; ſerving for the ſafe Paſſage of a Ditch.

The Sides of the *Gallery* are to be Muſket proof, and conſiſt of a double Row of Planks, lined with Plates of Iron; and the Top is ſometimes cover'd with Earth, or Turf, to hinder the Effect of the Stones, artificial Fires, &c. of the Enemy.

Galleries are chiefly uſed to ſecure and facilitate the Miners Approach to the Face of the Baſtion, over the Moat, which is already ſuppoſed fill'd up with Faggots and Bavins, and the Artillery of the oppoſite Flank diſmounted. Sometimes it is called a *Traverſe*. See TRAVERSE.

GALLERY *of a Mine*, is the Paſſage, or Canal of a Mine; or any Branch thereof. See MINE.

The Beſiegers, and Beſieged do each of them carry *Galleries*, or Branches under Ground, in ſearch of each others Mines, which ſometimes meet and deſtroy each other.

GALLERY *in a Ship*, is a kind of Balcony, made upon the Stern, without Board, into which there is a Paſſage out of the Captain's Cabin, called the Great Cabin.

Theſe *Galleries* are indeed for Shew, and the Captain's Pleaſure, rather than any other Benefit; for in Ships of War, all open *Galleries* of this kind are to be avoided; in regard of the Facility of an Enemy's Entrance, and boarding of the Ship that way.

GALLEY, a low built Veſſel, going both with Oars and Sails; chiefly us'd by the States bordering on the Mediterranean. See VESSEL.

Galleys have uſually from 25 to 30 Benches of Oars, on each Side; and four or five *Galley* Slaves, to each Bench.

The *Galley* carries a large Gun, called the *Courſer*; two Baſtard Pieces; and two ſmall Pieces, with two Maſts and two Latin, or ſquare Sails. It it uſually from 20 to 22 Fathoms long; three broad; and one deep.

All the *Galleys*, both antient, and modern, are of a finer, and ſlenderer Make than Ships. Formerly they made divers kinds; at preſent the *Galleys* are all alike: All the Difference between them is as to Size, and nothing as to Figure. They uſually keep towards the Coaſts; tho' ſometimes they croſs the Sea.

The King of *France* keeps up forty *Galleys* for the Uſe of the Mediterranean, the Arſenal thereof being at *Marſeilles*: The General of the *Galleys* bears a double Anchor, placed in Pale, behind the Eſcutcheon of his Arms, as a Mark of his Authority.

Galleys, in *Latin* are called *Biremes*, *Triremes*, and *Quadriremes*; not on account of their having two, three, or four Ranges of Oars before one another, as many learned Men have imagin'd, and particularly *Scaliger* and *Snellius*, tho' this laſt has wrote excellently on the Subject of Navigation; for this were impracticable: Nor yet on account of their having but two, three, or four Oars; for then there would want Strength: But by reaſon there were two, three, or four Rowers faſten'd to each Oar, as in the *Galleys* uſed among us; as is very well ſhewn by the Jeſuite *Dechales*, in his Art of Sailing.

This Error was occaſioned by ſome antient *Galleys*, repreſented on Medals, or in Baſſo-Relievo's, wherein are ſeveral Ranges of Rowers placed over each other: But all the Mathematicians, Pilots, and Ship-builders look on this as a mere Viſion; inaſmuch as *Pliny* makes Mention of *Galleys* of 15, 20, 30, 40, 50 Rows of Rowers; ſo that if they were ranged over each other, tho' we were only to allow four Feet for each Deck, there would be a Diſtance of 160 Feet between the loweſt Rowers, and the higheſt: And yet we are aſſured, that the higheſt Ship ever built, was only 72 Feet high.—

Scaliger affirms, that the firſt *Triremis*, or *Galley* of three Stories, was built at *Corinth*; and is of opinion, that what *Pliny* calls *Long Ships*, were what we call *Galeaſſes*; the firſt whereof was that of the *Argonauts*. *Vegetius* mentions a *Galley* of five Decks; and *Memnon*, another with eight, and only one Man to each Oar.

The *Galley* is called by the *Greek* Authors under the Eaſtern Empire, Γαλαία, and Γαλέα; and by the *Latin* Authors of the ſame Time, *Galea*; whence the modern Denomination.

Some ſay, it was called *Galea*, on account of the Figure of a Caſk, or Helmet, which it bore on its Head, or Prow, as *Ovid.* atteſts, *De Triſtib.* The *French* call it *Galere*, by reaſon, they ſay, that the Top of the Maſts is uſually cut in manner of a Hat, which the *Italians* call *Galero*. Others derive both *Galea* and *Galere* from a Fiſh, by the *Greeks* call'd Γαλεώτης, or ξίφιας; and by us, the *Sword-fiſh*, whoſe Shape this Veſſel reſembles. Laſtly, others derive *Galley*, *Galea*, *Galere*, *Galeaſſe*, &c. from the *Syriac* and *Chaldee Gaul*, and *Gallin*, a Man expoſed on the Water, or in a Veſſel of Wood.

The *Captain*-GALLEY is the principal *Galley* of a State, commanded by the Captain General of the *Galleys*: In *France*, the *Royal Galley* is the firſt.

The *Patroon* GALLEY is the ſecond *Galley*, both of *France*, *Tuſcany*, and *Malta*. The General of the *Gallies* is on Board the Royal *Galley*; and the Lieutenant, on the Patroon.

The Terms peculiar to *Galleys*, are very numerous; and make a new Syſtem of Sea Language, quite different from that uſed in Ships. Monſ. *de Baras*, an antient Officer on Board the King of *France*'s *Galleys*, we hear, is engaged in writing a New Dictionary of the Dialect of the *Galleys*.

Condemnation to the GALLEYS, is a Penalty impoſed on Criminals and Delinquents, particularly in *France*; whereby they are adjudg'd to ſerve the King, or State, as Slaves, on Board the *Galleys*; either for ever; or for a limited Time. See PUNISHMENT, and SLAVE.

Condemnation to the *Galleys* for ever, imports Confiſcation of Lands, Goods, &c. For in *France*, he that confiſcates the Perſon, confiſcates the Goods. A Man *condemn'd to the Galleys* for Perpetuity, is dead in a Civil Senſe. He cannot diſpoſe of any of his Effects; cannot inherit; and if he be married, his Marriage is null: Nor can his Widow have any of her Dower out of his Goods. The Eccleſiaſtical Courts cannot ſentence to the *Galleys*: It is out of their Juriſdiction, and Reſſort. By an Ordinance of *Charles* IX. in 1564, the

Judges

Judges are enjoin'd, not to condemn a Criminal to the *Galleys* for leſs than ten Years: And *Henry* III. by another, of 1579, injoins the Captains, not to detain their *Galley* Slaves, after their Time is expired. But neither of theſe Laws are now obſerv'd.—

GALLEY, in Printing, a wooden Frame, or Inſtrument, into which the Compoſitor empties the Letters out of his Compoſing Stick, as often as it is filled. The *Galley*, when fill'd, contains the Matter of one Page; and when they have compoſed as many Pages, as are required for a Whole Sheet, Half Sheet, *&c.* they impoſe them, *i. e.* take the ſeveral Pages out the *Galleys*; put them into a Chaſe; lock them up with the Furniture; and ſo make Forms, ready for the Preſs. See PRINTING; ſee alſo COMPOSING-STICK, CHASE, and FORM.

GALLI, in Antiquity, a Name given in *Phrygia* to the Eunuch Prieſts of the Goddeſs *Cybele*.

The Principal of them was called *Archi-gallus*. The *Galli* were alſo call'd *Dactyli Idæi*, *Corybantes*, &c. See DACTYLI, CORYBANTES, CURETES, &c.

Authors are not agreed as to the Reaſon of this Denomination. St. *Jerom*, on the fourth Chapter of *Hoſea*, ſays, it was, becauſe they took *Gauls* for the Prieſt of this Goddeſs; and by way of Puniſhment and Deriſion for burning of *Rome*, caſtrated them. *Forcatulus* maintains the ſame Opinion, *L. V. de Gallor. Imp. & Philoſ.* But *Valla*, *Eleg. V. c. 6.* and *Voſſius de Idolol. L. I. c.* 20. reject it, with reaſon; as the *Phrygians* were no ways intereſted in the burning and ſacking of *Rome*.

Others derive the Name from the River *Gallus*; by reaſon they drank of its Waters, which inſpir'd them with, I know not what religious Fury and Enthuſiaſm, and deprived them of their Senſes to ſuch Degree, that they mutilated themſelves. Others hold, that the firſt Prieſt of *Cybele* having been nam'd *Gallus*; the Name became appropriated to all his Succeſſors. *Voſſius*, who propoſes theſe two Opinions, ſeems to incline moſt to the latter; tho' *Ovid*, in the fourth of his *Faſti*, and *Herodian*, *L. I.* favour the former.

Theſe Prieſts threw themſelves into a kind of Phrenzy, when they perform'd the Ceremonies of the Goddeſs; apparently, in imitation of the young *Atys*, her Favourite: whom they likewiſe imitated, by mutilating themſelves.

For Authors relate, that *Cybele* being deſperately in Love with that young *Phrygian*, ſhe gave him the Superintendance of her Sacrifices, on condition he would keep his Virginity; but that ſoon after, forgetting his Promiſe, he had an Affair with the Nymph *Sangaritis:* That *Cybele* provoked hereat, ſtruck him mad: That in a vehement Acceſs of his Phrenzy he was going to kill himſelf; and that the Goddeſs relenting, reſtored him to his Underſtanding: That out of his own Remorſe, he caſtrated himſelf; and that after his Example all the Prieſts of *Cybele* from that Time did the like.

Their Phrenzy, at the time of the Sacrifices, conſiſted in throwing round the Head with great Rapidity, and making violent Contorſions of the whole Body: They had alſo Drums and Flutes, wherewith they play'd, and danced to them; as already obſerv'd under the Articles CORYBANTES, and CURETES.

GALLIAMBIC, in the antient Poetry. A *Galliambic* Poem is a Compoſition in *Galliambic* Verſes.——A *Galliambic* Verſe conſiſts of ſix Feet; 1° An *Anapeſt*, or a Spondee; 2° An *Iambus*, or an Anapeſt, or Tribrach. 3° An *Iambus*. 4° A *Dactyl*. 5° A *Dactyl*; and 6° An *Anapeſt*.

Tho', one might meaſure the *Galliambic* Verſe in another manner; and make a different Arrangement and Combination of Syllables; which would give different Feet.——'Tis certain, the Antients regarded little more in the *Galliambic* Verſe, beſide the Number of Meaſures, or Intervals; without troubling themſelves about the Number of Syllables, or the Kinds of *Feet*, whereof it was compoſed.

GALLIAMBUS, in Poetry, a pleaſant kind of Verſe, us'd to be ſung by the Prieſts, in honour of the Goddeſs *Cybele*.——

Galliambus is alſo a Piece, or Compoſure in *Galliambic* Verſes. See GALLIAMBIC.

The Word is a Compound of *Gallus*, a Prieſt of *Cybele*; and *Jambus*, a Foot in the *Greek* and *Latin* Verſe.

GALLIARD, or GAILLARDE, in Muſic, and Dancing, a ſort of Dance, antiently in great Requeſt; conſiſting of very different Motions, and Actions, ſometimes proceeding *terra a terra*, or ſmoothly along; ſometimes capering; ſometimes along the Room, and ſometimes a-croſs.

It was alſo called *Romaneſque*, becauſe brought from *Rome*.

Thoinot Arbeau, in his Orcheſography, deſcribes it as conſiſting of five Steps, and five Poſitions of the Feet, which the Dancers perform'd before each other, and whereof he gives us the Score, or Tablature, which is of ſix Minims, and two triple Times.—

The Word is *French*, and literally ſignifies gay, merry, ſprightly.—

GALLICAN, a Term chiefly us'd in the Phraſe *Gallican Church*, *q. d.* the *French* Church; or the Aſſembly, or Convocation of the Prelates of *France*. M. *du Puy* has an expreſs Treatiſe of the Liberties of the *Gallican* Church.

The *Gallican* Breviary is the Breviary us'd by the Church of *Agrigentum*, in *Sicily*; which the modern Writers call *Breviarium Gallicanum*.

The Reaſon, no doubt, is its having been introduced by St. *Gerlan*, who was made Biſhop of *Agrigentum*, after Earl *Roger* had been driven out of *Sicily* by the *Sarazens*; and by the other *French* Biſhops, which the *Norman* Princes brought thither. See BREVIARY.

The *Gallican* Liturgy is the manner of performing the divine Offices antiently obſerved in the *Gauls*. Fa. *Mabillon* ſhews wherein it differ'd from the *Roman* Liturgy. *I. Liturg. Gall. c.* 5. &c.

GALLICISM, a Phraſe, or Conſtruction, peculiar to the *French* Language; or which has ſomething contrary to the ordinary Rules of Grammer of the other Languages. See PHRASE, and IDIOTISM.

Thus, *Cet homme eſt ſur ſa Bouche*, is a *Galliciſm*, having no regular Conſtruction: And the ſame may be ſaid of *Faire de la terre le foſſé*; which no Grammar could never find out. See ANGLICISM.

GALLIMATHIAS, a dark, perplex'd Diſcourſe, where Words, and Things are huddled together ſo as to make an inconcivable Jargon,

The Word is *French*, form'd, as ſome will have it, from *Polymathia*, which ſignifies Diverſity of Sciences; by reaſon ſuch as have their Memory charged with ſeveral kind of Sciences, are uſually confuſed, and expreſs themſelves ill.

M. *Huet* takes the Word *Gallimathias* to have had the ſame Origin with *Aliborum*; and to have firſt aroſe at the time when all the Pleadings at the Bar were in *Latin*. There was a Cauſe, it ſeems, upon the Carpet, about a Cock, belonging to the Plaintiff *Matthias*. The Council in the Heat of his Harangue, by often repeating the Words *Gallus*, and *Matthias*, happen'd to blunder; and inſtead of ſaying *Gallus Matthiæ*, ſaid *Galli Matthias*; which at length became a general Name for all confuſed, imbroil'd Diction, and Diſcourſe.

GALLIMAUFRY, a Ragout, Hache, or Hotch-potch, made of the Remains of ſeveral kinds of Meats. See RAGOUT.

Hence the Word is uſed in a figurative Senſe for a Piece, or Compoſition, of ſeveral different Parts, ill digeſted, and embaraſs'd.——

The Word is French, *Galimafree*.

GALLION, or GALLEON, a large Veſſel or Ship of War, of three, or four Decks. See VESSEL.

The Term is now only uſed in ſpeaking of the *Spaniſh* Fleet; the *Gallions* being a Part of the Ships employ'd in the Commerce of the Weſt Indies.

The *Spaniards* ſend every Year two Fleets; the one for *Mexico*, which they call the *Flota*; and the other for *Peru*, which they call the *Gallions*. The firſt, we have already given an Account of under the Article FLOTA.

The *Gallions* are eight in Number, the principal whereof are the *Capitane*, the *Amirante*, *il Governo*, the *Patach*, and *Marguarita*, of fifty Pieces of Braſs Canon: Beſide which there is a Patache of Advice. Theſe are all Ships of War, and go on the King's account; but are ſo loaden and embarraſs'd with Merchandices, that in caſe of an Attack, they would find it difficult to defend themſelves.

Beſide the King's *Gallions*, there are uſually twelve, or ſixteen Merchant Ships, call'd *Regiſter Ships*, belonging to private Perſons, who obtain leave for the ſame, or rather buy it; there being no Weſt India Company in *Spain*. See REGISTER.

The *Gallions* are loaded at *Cadix*, from whence they may put out at any time: They are about two Years in the whole Voyage. Their Departure is uſually ſome Months before that of the Flota; which cannot put out before *Auguſt*, by reaſon of the Winds. When they put out together, they ſeperate about the *Antilles* Iſlands; the *Gallions* for *Carthagena*, and *Porto Bello*; and the Flota for *Vera Crux*. At their Return, they rejoin at the *Havana*, in the Iſle of *Cuba*.

The Loading of the *Gallions* is always the richeſt: An Eſtimate of the yearly Returns or Cargo's, both of the Flota and *Gallions*, is as follows.

Of *Gold*, the *Gallions* bring yearly about two or three Millions of Crowns; and the *Flota* about one. Of *Silver*, the *Gallions* bring 18 or 20 thouſand Crowns; and the *Flota* 10 or 12. Of precious Stones, the *Gallions* bring as follow; two hundred thouſand Crowns worth of Pearls; two or three hundred thouſand Crowns of Emeralds; and twenty or thirty thouſand Crowns worth of Bezoards, Amethyſts, and other Stones of leſs Value: The *Flota* brings none at all. Of Wools, the *Gallions* bring forty or fifty thouſand Crowns: The *Flota*, none. Of Quinquina, the *Gallions* bring for twenty thouſand Crowns: The *Flota*, none. Of Skins and

Leathers, the *Gallions* bring for ſeventy thouſand Crowns: The *Flota* as much. Of Campeche Wood, the *Gallions* bring for ſixty thouſand Crowns: The *Flota* none. Of Skins and Leathers from *Buenos Ayres*, the Regiſter Ships may bring for about two hundred thouſand Crowns: Of Cochineel, about a Million of Crowns: And of Indigo, about ſix hundred thouſand Crowns. See COMMERCE.

GALLIOT, a ſmall Galley; or a ſort of Brigantine, built very ſlightly, and deſign'd for Chace. See BRIGANTINE.

She hath but one Maſt, and can both ſail, and row. She uſually carries two or three Pedrero's, and hath ſixteen or twenty Oars.

Some call the Bomb-ketches, *Galliots*.

GALLOGLASSES, a kind of Militia, or Soldiery in *Ireland*. *Cambden*, in his Annals of *Ireland*, p. 792. relates that the *Iriſh* Militia conſiſts of Cavalry, or Horſemen, call'd *Galloglaſſes*, or *Galloglaſſii*, who uſe a very ſharp ſort of Hatchet; and Infantry, call'd *Kernes*.

GALLON, an *Engliſh* Meaſure, for things both liquid and dry. See MEASURE.

The *Gallon* always contains eight *Pints*, or four *Quarts*; but thoſe Pints, and Quarts, and conſequently the *Gallon* it ſelf, are different, according to the Quality of the Things meaſur'd: The Wine *Gallon*, for inſtance, contains 231 Cubic Inches, and holds eight Pound, Averdupois, of pure Water: The Beer, and Ale *Gallon*, contain 282 ſolid Inches: And the *Gallon* for Grains, Meals, &c. 272 Inches, and hold nine Pound, 130 Ounces of pure Water.——See ALE *Meaſure*, WINE *Meaſure*, and DRY *Meaſure*.

GALLOON, in Commerce, a thick, narrow kind of Ferret, Ribband, or Lace, us'd to edge, or border Clothes.

The Term is ordinarily underſtood of that made of Woolen; ſometimes, that of Thread; or even Gold, or Silver.

GALLOP, in the Manage, is the ſwifteſt natural Pace of a Horſe, perform'd by Reaches, or Leaps; the two Forefeet being rais'd almoſt at the ſame time; and the Hindfeet, the like.——

In *Galloping*, the Horſe may lead with which Foreleg he pleaſes; the moſt uſual way is that with the Right: But which ſoever it be, the Hindleg of the ſame Side muſt follow it next; otherwiſe the Legs are ſaid to be *diſunited*. To remedy which Diſorder, the Rider muſt ſtay the Horſe a little on the Hand, and help him with the Spur on the contrary Side to that on which he is diſunited.

In a Circle, the Horſe is confined always to lead with his Foreleg, within the *Turn*; otherwiſe he is ſaid to *gallop falſe*. But here, too, the Hindleg of the ſame Side muſt follow.

We ſay, a *Hand Gallop*, a *Canterbury Gallop*, a *School Gallop*, &c. A ſmooth *Gallop* cloſe to the Ground, the *French* call, the *Engliſh Gallop*, *Gallop a l'Angloiſe*.

The Word is borrowed from the Barbarous Latin *caluparе*, or *calpare*, to run. Some derive it from *caballicare*: Others from the *Greek* καλπάζειν, or καλπὰν, to ſpur a Horſe.

GALLOWS, an Inſtrument of Puniſhment, whereon Perſons convicted capitally of Felony, &c. are executed by *Hanging*. See PUNISHMENT, FELONY, HANGING, &c.

Among our Anceſtors it was called *Furca*, Fork; a Name by which it is ſtill denominated abroad, particularly in *France* and *Italy*. In this latter Country, the Reaſon of the Name ſtill ſubſiſts; the *Gallows* being a real Fork drove into the Ground, a-croſs the Legs whereof is laid a Beam, to which the Rope is tied. See FURCA.

GALLS, or GALL *Nuts*, in Natural Hiſtory, &c. a kind of morbid Tumors or Excreſcencies, found on divers Vegetables; as the Oak, Willow, &c. in form of Balls, Cones, or little Apples.

The manner of the Production of *Galls*, is well deſcribed by *Malpighi*, in an expreſs Treatiſe, *de Gallis*.

The Proceſs, as obſerv'd, in the *Galls*, or Apples on the Gems of Oaks, is alſo given us by Mr. *Derham*.

Theſe Cones, ſays that Author, are in outward Appearance perfectly like the Gems, or Buds themſelves, only vaſtly bigger; and, in effect, they are no other than the Gems ſwell'd out in Bulk, which naturally ought to be puſh'd out in length. The Cauſe of which Obſtruction of Vegetation is this: Into the very Heart of the young, tender Bud, which begins to be turgid in *June*, and ſhoots out in a Month more, an Inſect of the Ichneumon Fly-kind, thruſts one, or more Eggs; and in all Probability, ſome venomous Ichor therewith. This Egg ſoon becomes a Maggot; which eats it ſelf a little Cell in the very Heart or Pith of the Gem; which ſhould be the Rudiment of the Branch, Leaves, and Fruit.

The Branch thus deſtroy'd, or at leaſt, its Vegetation obſtructed; the Sap that was to nouriſh it, is diverted into the remaining Parts of the Bud, which are only the Scaly Teguments; and which by this means grow large and flouriſhing, and become a Covering to the Inſect Caſe, as before they were to the tender Branch, &c. The Caſe lying within this Cone, is, at firſt, but ſmall; but, by degrees, as the included Maggot increaſes, ſo does the Caſe; till it comes to the Size of a large white Pea, ſhaped like an Acorn.

It may be added, that even Nettles, Ground-ivy, &c. have a kind of Balls or Caſes produced on their Leaves, by the Injection of the Eggs of a Fly of the ſame Kind. Theſe Caſes always grow in, or adjoining to ſome Rib of the Leaf; and their Production, *Malpighi*, and Mr. *Derham* deſcribe thus:

The parent Inſect, with its ſtiff ſetaceous Tail, terebrates the Rib of the Leaf, when tender, and makes way for its Eggs into the very Pith, or Heart thereof; emitting along with it a proper Juice to pervert the regular Vegetation.

From this Wound riſes a ſmall Excreſcence; which, when the Maggot is hatch'd, increaſes, and ſwells on each Side the Leaf, between the two Membranes; extending it ſelf into the parenchymous Parts thereof: till it be grown as big as two Grains of Wheat. In this Caſe lies a ſmall white, rough Maggot; which turns to an Aurelia, and afterwards to an Ichnemon Fly.

GALLS, or *Aleppo* GALLS, are a particular kind of vegetable Tumors, or Excreſcences; uſed in Dying, making Ink, &c.

Theſe *Galls* are produced on the hardeſt Species of Oak, called *Rouvre*, from the Latin *Robur*. Thoſe on other Oaks are leſs fit for the Purpoſes. They are hard as Shells; and yet are no other than the Caſes of Inſects, which are bred in them after the manner above deſcribed; and which, when come to Maturity, gnaw their Way out: Which is the Cauſe of thoſe little Holes obſervable in them.

Of the Inſects bred in them, we have a particular Account in *Philoſ. Tranſact.* N° 245.

There are three Sorts of theſe *Galls*: The firſt, Blackiſh; the ſecond, bordering on Green; the third, Whitiſh. The Dyers uſe them all, according to their reſpective Qualities: The Green and Black, ſerve to dye in Black; and the White, for Linnens. 'Tis the Black, and Green, that are uſed in the making of Ink. See INK.

The *Engliſh* and *Dutch* import yearly from *Aleppo*, ten thouſand Quintals of *Galls*. The *Turks* have likewiſe a kind of ruddy *Gall*, of the Size of a ſmall Nut; which they mix with Cochineel, and Tartar, to dye in Scarlet withal. See DYING.

GAMBEZON, GAMBESO, or GAMBA, in the antient Military Language, was a kind of Coat, or Doublet, wore under the Cuiraſs, to make it ſit eaſy, and prevent its hurting the Body. It was made of Wool, or Cotton, quilted between two Stuffs; and was likewiſe called *Counter-Point*.

Others define the *Gambeſon* a kind of ſoft, quilted Waſtcoat, wore under the Coat of Mail, and hanging down over the Thighs.

Pectora tot Coriis, tot Gambeſonibus *ornant.*

——Ego Johannes Becondo Teſtamentum——Je done m'alme a Deo & mon Corps a enſeveli al Abby de Kirkſtede en le Chapel St. Maurice, oue mon meleur Chival pris de xl Marks, mon Haubert de Guerre, mes Chancons, mes Couvertures de Fer, mon Gambeyſon, *ma Targe, et tout mon Harneys de Guerre q' a mon Corps appent*, &c.

The Word is form'd of the German *Wambon*, or *Saxon Wambes*, the Belly; *quaſi Wambaſium*, a Covering of the Belly and Breaſt.

GAME, PLAY, LUDUS, a regular Diverſion; or a Sport preſcribed, and limited by Rules. See GAMING.

Games may be diſtinguiſh'd into thoſe of *Exerciſe*, and *Addreſs*; and thoſe, of *Chance*, or *Hazard*. See EXERCISE, and HAZARD.

To the *firſt*, belong *Tennis*, *Billiards*, *Cheſs*, *Bowls*, *Cudgels*, *Wreſtling*, *Quoits*, *Shooting with Bows*, &c. See TENNIS, BILLIARDS, &c.

To this alſo belong'd the antient *Jouſts* and *Tournaments*. See JOUST, and TOURNAMENTS.

Under the *ſecond*, come *Cards*, and *Dice*, &c. See CARDS, DICE, &c.

Under Cards, again, come ſeveral ſubordinate *Games*; the principal whereof are, *Ombre*, *Picquet*, *Baſſet*, *Whiſt*, &c. See OMBRE, and PICQUET.

GAMES, *Ludi*, in the Plural, were Shews, or publick Repreſentations, uſed among the Antients, on Religious, Funerary, and other ſolemn Occaſions. See SPECTACLE.

Such, among the *Greeks*, were the *Olympic*, *Pythian*, *Iſthmæan*, and *Iſelaſtic Games*. See OLYMPIC, PYTHIAN, ISELASTIC, and ISTHMÆAN.

Among the *Romans*, there were three Sorts of *Games*; *Sacred*, *Honorary*, and *Ludicrous*: And *Auſonius* obſerves a Difference, ſomewhat of the ſame Kind, among thoſe of the *Greeks*; two of their celebrated *Games* being dedicated to *Gods*; and two to *Hero's*. See GOD, and HERO.

The Sacred *Games* were inſtituted immediately in honour of ſome Deity; of which kind were the *Cerealia*, or *Ludi Cereales*, *Florales*, *Martiales*, *Apollinares*, *Megalenſes*, *Romani*,

mani, or *Conſuales*, or *Circenſes*, *Capitolini*, *Sæculares*, *Plebeii*, *Compitalitii*, *Auguſtales*, *Palatini*, *Votivi*. See each deſcribed in its Place.

To this Claſs may alſo be refer'd thoſe, celebrated in Memory of ſome Illuſtrious Perſon, or Action; as the *Ludi Nerodiani* and *Actiaci*, &c. See ACTIACI, &c.

Authors mention a Decree of the *Roman* Senate, by which it was enacted, that the Publick *Games* ſhould be conſecrated, and united with the Worſhip of the Gods, as a Part thereof; and accordingly, Feaſts, Sacrifices, and *Games* appear to have made up the greateſt Part, or rather the whole, of the external Worſhip, or Service, offer'd to the Deities of the *Romans*. See FEAST, SACRIFICE, &c.

The Honorary *Games*, *Ludi Honorarii*, were thoſe exhibited by private Perſons, out of their own Purſe; in order to gratify the People, or ingratiate themſelves with them, to make way for their own Preferment. Such were the Combats of *Gladiators*, *Scenic Games*, *Tragedies*, *Comedies*, and other Theatrical and Amphitheatrical Sports. See GLADIATOR, SCENIC, TRAGEDY, COMEDY, &c.

The Ludicrous *Games* were of the ſame Kind with the *Games* of Exerciſe and Hazard among us. Such were the *Ludus Trojanus*, or *Pyrrhicus*; the *Teſſaræ*, and *Tali*, *Sortes*, or Dice; and the *Latrunculi*, or Cheſs; the *Diſcus*, or Quoit; the *Pila*, Ball; *Trochus*, Top; *Nuces*, odd, and even with Nuts; *Harpaſtum*, Foot-ball; *Capita vel Navim*, Croſs and Pile, &c. See TROJANUS, LATRUNCULI, &c.

Others, diſtinguiſh the antient *Games* into three Claſſes, viz. *Races*, *Combats*, and *Spectacles*.

The firſt were called *Equeſtrian*, or *Curule*, *Ludi Equeſtres*, or *Curules*; being Races of Horſes, and Chariots, perform'd in the Circus, in honour of the Sun and Neptune. See CIRCENSES.

The ſecond were called *Agonales*, or *Gymnici*; being Combats of Men, or Beaſts, in the Amphitheatre, dedicated to *Mars* and *Minerva*. See AMPHITHEATRE.

The laſt, called *Scenici*, *Poetici*, and *Muſici*, were Tragedies, Comedies, Balls, &c. repreſented on the Theatres, ſacred to *Venus*, *Bacchus*, *Apollo*, and *Minerva*. See THEATRE, &c.

Homer gives us a fine Deſcription of the *Games* which *Achilles* inſtituted at the Funeral of his Friend *Patroclus*, in his *Iliad*; and others of the different *Games* held among the *Pheaci*, *Ithacans*, and at the Court of *Alcinous*, in his *Odyſſee*. *Virgil*'s Deſcription of the *Games* celebrated by *Æneas*, at the Funeral of old *Anchiſes*, is nothing inferior to any of them. See FUNERAL.

GAME is alſo uſed for all kinds of wild Beaſts and Birds, fit for eating; and which are ſought after on that account. See BEAST.

Game includes Wild Beaſts of Venery, and Chaſe; and alſo Beaſts and Fowls of Warren. See VENERY, CHASE, and WARREN.

Some Authors divide *Game* into *Large*; which includes Red, and Fallow Deer: And *Small*; to which belong Hares, Rabbets, Pheaſants, and Partridges.

A Foreſt is a Place ſet apart for the preſerving, feeding, breeding, &c. of all ſorts of *Game*; and conſiſts of divers Things, *viz.* Soil, Covert, Laws, Courts, Judges, Officers, *Game*, Bounds. A Chaſe differs from a Foreſt, in this, among other Things, that it has not ſuch Variety of *Game*. See FOREST, &c.

Ways of catching *Game*, are by *Hunting*, *Hawking*, *Fowling*, &c. See HUNTING, CHASING, HAWKING, &c.

Laws for the Preſervation of the GAME.

There are abundance of Laws made for the Security and Preſervation of the *Game*: The Foreſt Laws of King *Canutus*, and the *Charta de Foreſta* of King *Henry* III. we have elſewhere mentioned. See FOREST *Law*, and CHARTA *de Foreſta*; ſee alſo PURLIEU, and POURALLEE.

By a Stat. in 33 *Hen.* 8. it is enacted, That no Perſon ſhoot with, or keep in his Houſe any Croſs-bow, or Stone-bow, Hand-gun, or Hagbut, under the Length of one Yard; unleſs he have Lands of the yearly Value of 100 *l.* on Pain of a Forfeiture of 10 *l.* for every Offence: Nor ſhall any Perſon travel with a Croſs-bow, bent; or Gun, charged; or ſhoot within a Quarter of a Mile of a Citty or Town, except at a dead Mark, or in defence of his Houſe; under the like Forfeiture; to be divided between the King and the Proſecutor.—None, under the Degree of a Baron, ſhall ſhoot with any Hand-gun, within a City, or Town; or ſhoot at any Fowl whatever with Hail-ſhot; on the ſame Forfeiture. *Id. Stat.*

Any Perſon ſhooting in the Night-time, or diſguiſed, ſhall be deem'd a Felon, if he deny; if he confeſs, he is fineable at the next General Seſſions. 1 *Hen.* 7.

None ſhall kill or take Pheaſants or Partridges, with any Net, or Engine, in the Night-time; on Forfeiture of 20 *s.* for every Pheaſant; and 10 *s.* for every Partridge. 33 *Eliz.*

None ſhall hawk or hunt with Spaniels in ſtanding Corn, or before it be ſhock'd, unleſs on his own Ground; on the Penalty of 40 *s.* half to the King; and the other Half to the Proprietor of the Ground.

He that is convicted of killing or taking a Pheaſant, Partridge, Duck, Heron, Hare, or other *Game*; or of taking and deſtroying the Eggs of Swans, Pheaſants, or Partridges, ſhall pay 20 *s.* for every ſuch Fowl, Hare, &c. to the uſe of the Poor. 1 *Jac.* 1.

Every Perſon convicted to have kept a Greyhound, Dog, or Net, to kill, or take Deer, Hare, Pheaſant, or Partridge, unleſs he have Inheritance of 10 *l. per Annum*; a Leaſe for Life of 31 *l. per Annum*; or be worth 200 *l.* in Goods; or be the Son of a Knight, or Heir apparent of an Eſquire, ſhall pay 40 *s.* for the Uſe aforeſaid.—Nor ſhall any ſell, or buy to ſell again any Deer, Hare, Pheaſant, or Partridge, on pain of 40 *s.* *Id. Stat.*

The Lord of a Manor, or one having Inheritance of 40 *l. per Annum* Freehold of 80 *l.* or Goods worth 400 *l.* or their Servants licens'd by them, may take Pheaſants, or Partridges within their own Lands or Precincts, in the Day-time, between *Michaelmas* and *Chriſtmas*. 7 *Jac.* 1.

No Lay-man, who hath not Lands of 40 *s. per Annum*; nor Clerk, who hath not 10 *l.* Revenue, ſhall keep any Greyhound, Hound, Ferret, Net, or Engine, to deſtroy Deer, Hares, Conies, or other Gentlemans *Game*; on pain of a Years Impriſonment. 13 *Jac.* 1.

They that kill and take away Red, or Fallow Deer, without Conſent of the Owner, ſhall forfeit 20 *l.* to be taken by Diſtreſs; one half to the Owner, and the other to the Informer; or for Want of ſuch Diſtreſs ſuffer a Years Impriſonment. 13 *Car.* 2.

Lords of Manors, or other Royalties, not under the Degree of Eſquire, may commiſſion one or more *Game-keepers*, who may ſeize all Guns, Dogs, Bows, &c. of Perſons not having Eſtates of 100 *l. per Ann.* Freehold; or 150 *l. per Ann.* Leaſehold; or are not Sons and Heirs of Eſquires; and deſtroy, or convert ſuch Guns, &c. to the Uſe of the Lord. 22 *Car.* 2.

If any enter a Coney-warren, tho' not incloſed, and chaſe or kill Conies, he ſhall forfeit treble Damages, and be impriſon'd three Months: And they that kill Conies in the Night-time upon the Borders of Warrens, or Grounds uſed for keeping Conies, ſhall be amerced at the Diſcretion of the Juſtice of Peace, in any Sum not exceeding 10 *s.* *Id. Stat.*

He who unlawfully hunts, takes in Toyles, kills, or takes away any Deer, in any Foreſt, Chaſe, Park, Purlieu, or other incloſed Ground; or ſhall be aiding and aſſiſting therein, ſhall forfeit 30 *l.* for every Deer killed, taken, or even wounded; and 20 *l.* tho' none ſhall be wounded or taken: To be levied by Diſtreſs. 3 *Will.* and *Mar.*——And if the Keeper of a Foreſt, &c. be an Offender herein, or be aiding thereto, he ſhall forfeit 50 *l.* 5 *Georg.* Levied as above.

In caſe any Hare, Partridge, Pheaſant, Fiſh, Fowl, or other *Game* ſhall be found in any Offender's Houſe, he ſhall forfeit a Sum not leſs than 5 *s.* nor more than 20. to be levied by Diſtreſs; or in Want thereof be committed to the Houſe of Correction for a ſpace of Time not greater than a Month; nor leſs than 10 Days. And if any Perſon, not qualified by Law, ſhall keep or uſe any Bows, Greyhounds, Setting Dogs, Ferrets, Tumblers, Snares, &c. he ſhall be ſubject to the ſame Penalties.

If any Higler, Chapman, Carrier, Innkeeper or Victualler ſhall have in his keeping any Hare, Pheaſant, Partridge, Heath *Game*, or Growſe, not put in his Hands by a Perſon qualified by Law, he ſhall forfeit 5 *l.* for every ſuch Hare, &c. half to the Informer, and half to the Poor, levied by Diſtreſs; or for want thereof be ſent to the Houſe of Correction for three Months. 5 *Annæ.*

Perſons not qualified keeping Greyhounds, Lurchers, Setting Dogs, or Engines to deſtroy *Game*; and *Game-keepers* who under colour of Office kill and ſell *Game*, without their Maſters Knowledge, are liable to the like Penalty. *Id. Stat.*

No Lord of a Manor to appoint more than one *Game-keeper*, and his Name to be enter'd with the Clerk of the Peace, who is to give a Certificate thereof; otherwiſe he is liable to the Penalties againſt Higlers. 5 *Annæ.*

If any Hare, Pheaſant, &c. be found in the Poſſeſſion of a Perſon not qualified; or be entitled to it by ſome Perſon that is qualified; the ſame ſhall be adjudg'd an Expoſing it to Sale. Perſons deſtroying a Hare in the Night, ſhall incur the Forfeiture of 5 *l.* 5 *Ann.*

No Lord of a Manor ſhall appoint a *Game-keeper*, with Power to kill or deſtroy *Game*, unleſs he be truly a Servant of ſuch Lord; or be immediately employ'd to kill *Game* for the ſole Uſe of ſuch Lord: Nor ſhall any Lord authorize a Perſon not qualified to keep or uſe Gun, Greyhounds, &c. And ſuch Perſons as ſhall be found offending in either of theſe Points, ſhall for every Offence forfeit 5 *l.* 3 *Geo.*

Laſtly, if any Perſon enter a Park, Paddock, or other incloſed Ground, where Deer are uſually kept, and wilfully wound or kill any Red, or Fallow Deer, he ſhall be tranſported to the Plantations for ſeven Years. 5 *Georg.*

GAMELIA, Nuptial Feasts, held among the Antient *Greeks*, in the Month *Gamelion*.

They were thus called from γάμος, Marriage; whence Γαμηλιος, an Epithet, or Surname, given to *Jupiter* and *Juno*, consider'd as presiding over Marriages.

GAMELION, or GAMELIUM, is a Poem, or Composition in Verse, on the Subject of a Marriage; more usually call'd *Epithalamium*. See EPITHALAMIUM.

GAMING, the Art, or Act of performing, or practising a *Game*; particularly a *Game* of Hazard. See GAME.

All publick *Gaming* is severily prohibited; and what Money is thus lost, is recoverable again by Law. See PLAY.

In *China*, *Gaming* is equally prohibited the common People, and the Mandarins; and yet this does not hinder their Playing, and frequently losing all they have; their Lands, Houses, Children, and even Wife, which are all sometimes, laid on a single Card. *F. le Comte.*

The Business of Chance, or Hazard, is of Mathematical Consideration; inasmuch as it admits more, and less. It is, or is suppos'd to be, an Equality of Chance; upon which the Gamesters set out: This Equality is to be broke in upon in the Course of the Game by the greater good Fortune, or Adress of one of the Parties; upon which he comes to have a better Chance; so that his Share in the Deposit, or Stakes, is now proportionably more, or better than at first: This more and less is continually varying, and runs thro' all the Ratio's between Equality, and infinite Difference; or from an infinitely little Difference till it arrives at an infinitely great one, upon which the Game is ended. The whole Game, therefore, with respect to the Event or Issue thereof, is only a Change of the Quantity of each Person's Share, or Chance; or of the Proportion their two Shares bear to each other; which Mathematicks alone can measure. See CHANCE.

Hence several Authors have computed the Variety of the Chance in several Cases and Circumstances that occur in *Gaming*; particularly M. *de Moivre*, in a Treatise, *De Mensura Sortis*: Which, as it may either be of service to the practical *Gamester*, or the *Better*, in teaching them on what Side the Advantage lies; and whether they may lay on the square; or to the speculative one, in letting him into the way of thinking and determining in such cases, we shall here give the Reader an Abstract thereof.

Laws of Chance applied to GAMING.

Suppose p the Number of Cases wherein an Event may happen, and q the Number of Cases wherein it may not happen; both Sides, the contingent and non-contingent, have their Degree of Probability: And if all the Cases wherein the Event may, and may not happen, be equally easy; the Probability of the happening, to that of the not-happening, will be as p to q.

If two *Gamesters*, A and B, engage on this footing, that if the Cases p, happen, A shall win; but if q happen, B shall win; and the Stake be a: The Chance, or Expectancy of A will be $\frac{p\,a}{p+q}$; and that of B $\frac{q\,a}{p+q}$; consequently if A or B sell their Expectancies, they should have for them $\frac{p\,a}{p+q}$ and $\frac{q\,a}{p+q}$ respectively.

If there be two independent Events; and p be the Number of Cases wherein the first may happen; and q the Number of those wherein it may not happen; and r the Number of Cases wherein the second Event may happen, and s the Number of those wherein it may not happen; multiply $p+q$ by $r+s$; the Product, *viz.* $pr+qr+ps+qs$ will be the Number of Cases wherein the Contingency or non-Contingency of the Events may be varied.

Hence, if A lay with B, that both Events shall happen, the Ratio of the Chances will be as pr to $qr+ps+qs$. Or if he lay that the first shall happen, but not the second; the Ratio of the Chances will be as ps to $pr+qr+qs$. And if there were three, or more Events; the Ratio of the Chances would be found by Multiplication alone.—

If all the Events have a given Number of Cases wherein they may happen, and also a given Number of Cases wherein they may not; and a be the Number of Cases wherein any one may happen, and b the Number of Cases wherein it may not; and n be the Number of all the Events: Raise $a+b$ to the Power of n.

If now A and B agree, that if one or more of the Events happen, A shall win; if none, B: The Ratio of the Chances will be as $\overline{a+b}^n - b^n$ to b^n; for the only Term where a is not found, is b^n.

Prob. I. *If A and B play with a single Die, on this condition, that if A throw two or more Aces at eight Throws, he shall win; otherwise B shall win: What is the Ratio of their Chances?*

Sol. Since there is but one Case wherein an Ace may turn up; and 5 wherein it may not; let $a=1$, and $b=5$. And again, since there are eight Throws of the Die, let $n=8$; and you will have $\overline{a+b}^n - b^n - n\,a\,b^{n-1}$ to $b^n + n\,a\,b^{n-1}$. That is, *The Chance of A, will be to that of B, as* 663991, *to* 1015625; *or nearly as* 2, *to* 3.

Prob. II. *A and B are engaged at single Quoits, and after playing some Time, A wants* 4 *of being up, and B,* 6; *but B is so much the better Gamester, that his Chance against A upon a single Throw, would be as* 3 *to* 2: *What is the Ratio of their Chances?*

Sol. Since A wants 4, and B, 6, the Game will be ended in 9 Throws at the most; therefore raise $a+b$ to the ninth Power, and it will be $a^9 + 9a^8b + 36a^7b^2 + 84a^6b^3 + 126a^5b^4 + 126a^4b^5 + 84a^3b^6 + 36a^2b^7 + 9ab^8 + b^9$: And take all the Terms wherein a has 4 or more Dimensions, for A; and all those wherein it has 6 or more, for B: And the Ratio of the Chances will be as $a^9 + 9a^8b + 36a^7b^2 + 84a^6b^3 + 126a^5b^4 + 126a^4b^5$, to $84a^3b^6 + 36a^2b^7 + 9ab^8 + b^9$. Call a, 3; and b, 2; and you will have *the Ratio of the Chances in Numbers* 1759077 *to* 194048.

Prob. III. *A and B are to play with single Quoits; and A is the best Gamester; so that he can give B,* 2 *in* 3: *What is the Ratio of their Chances, then, in a single Throw?*

Sol. Suppose the Chances as z to 1; and raise $z+1$ to its Cube; it will be $z^3 + 3zz + 3z + 1$. Now since A could give B 2 out of 3; A might undertake to win three Throws running; and consequently the Chances in this Case will be as z^3 to $3zz + 3z + 1$. Consequently, $z^3 = 3zz + 3z + 1$. Or, $2z^3 = z^3 + 3zz + 3z + 1$. And therefore $z\sqrt[3]{2} = z + 1$; and consequently $z = \frac{1}{\sqrt[3]{2}-1}$. *The Chances therefore are* $\frac{1}{\sqrt[3]{2}-1}$ and 1 respectively.

Prob. IV. *To find at how many Trials it is probable any Event will happen; so that A and B may lay a Wager upon even Terms.*

Sol. Let the Number of Cases, wherein the thing may happen at the first Trial, be a, those wherein it may not, b; and x the Number of Trials, wherein it is an even Chance, whether the Thing happen or not. By what is above shewn $\overline{a+b}^x - b^x = b^x$: Or, $\overline{a+b}^x = 2b^x$. Therefore, $x = \frac{Log.\ 2.}{Log.\ a+b - Log.\ b}$. Again, resume the Equation $\overline{a+b}^x = 2b^x$, and let $a : b :: 1 : q$, and the Equation will change into this $\overline{1+\frac{1}{q}}^x = 2$. Raise $1+\frac{1}{q}$ to the Power of x, by Sir *I. Newton*'s Theorem, and let $1 + \frac{x}{1}\cdot\frac{1}{q} + \frac{x}{1}\cdot\frac{x-1}{2}\cdot\frac{1}{qq} + \frac{x}{1}\cdot\frac{x-1}{2}\cdot\frac{x-2}{3}\cdot\frac{1}{q^3}$, &c. $= 2$.

In this Equation, therefore, if $q=1$, then $x=1$: If q be infinite, x will also be infinite. Supposing x, to be infinite, the Equation above will be $1 + \frac{x}{q} + \frac{xx}{2qq} + \frac{x^3}{6q^3}$, &c. $= 2$. Again, let $\frac{x}{q} = z$, and we shall have $1 + z + \frac{1}{2}zz + \frac{1}{6}z^3$ &c. $= 2$. But $1 + z + \frac{1}{2}zz + \frac{1}{6}z^3$, &c. &c. is a Number whose hyperbolical Logarith. is z; consequently $z = $ Log. 2. But the hyperbolical Logarithm of 2 is 7 very nearly; and therefore $z=7$ nearly.

Hence where q is 1, there $x=1\,q$; and where q is infinite, $x=7\,q$ nearly. Thus are the Limits of the Ratio of x to q fix'd; for that Ratio begins with Equality, and when rais'd to Infinity, ends at length in the Ratio of 7 to 1 nearly.

Examp. 1. *To find in how many Throws A may undertake to throw two Aces with two Dice?*

Sol. Since A has but one Case wherein he may throw two Aces with two Dice; and 35 wherein he may not, $q=35$: Therefore multiply 35 by .7; the Product 24. 5. shews that *the Number of Throws required is between* 24 *and* 25.

Lem. *To find the Number of Cases, wherein any given Number of Points may be thrown with a given Number of Dice?*

Sol. Let $p+1$ be the given Number of Points; n the Number of Dice; and f the Number of Sides or Faces of each Die: Let $p-f=q$, $q-f=r$, $r-f=s$, $s-f=t$, &c. The Number of Cases requir'd will be,

$$\frac{p}{1} + \frac{p-1}{1}\cdot\frac{p-2}{2}\cdot\frac{p-3}{3}, \&c.$$

$$\frac{q}{1}\times\frac{q-1}{2}\times\frac{q-2}{3},\ \&c.\times\frac{n}{1}.$$

$$+\frac{r}{1}\times\frac{r-1}{2}\times\frac{r-2}{3}\ \&c.\times\frac{n}{1}\times\frac{n-1}{2}$$

$$\frac{s}{1}\times\frac{s-1}{2}\times\frac{s-2}{3}\ \&c.\times\frac{n}{1}\times\frac{n-1}{2}\times\frac{n-2}{3}$$

Which Series is to be continued, till ſome of the Factors either become equal to nothing, or negative. And note, ſo many Factors of the ſeveral Products $\frac{q}{1}\times\frac{p-1}{2}\times\frac{p-2}{3}$ &c. $\frac{r}{1}\times\frac{r-1}{2}\times\frac{r-2}{3}$ &c. $\frac{s}{1}\times\frac{s-1}{2}$ &c. are to be taken as there are Units in $n-1$.

Prax. Suppoſe the *Number of Caſes required wherein 16 Points may be thrown with four Dice*?

$$+\tfrac{15}{1}\times\tfrac{14}{2}\times\tfrac{13}{3} = 455$$
$$-\tfrac{9}{1}\times\tfrac{8}{2}\times\tfrac{7}{3}\times\tfrac{4}{1} = -336$$
$$+\tfrac{3}{1}\times\tfrac{2}{2}\times\tfrac{1}{3}\times\tfrac{4}{1}\times\tfrac{3}{2} = +6$$

Now, $455-336+6=125$; ſo that 125 *is the Number required.*

Examp. 2. *To find at how many Caſts A may undertake to throw 15 Points with ſix Dice*?

Sol. Since A has 1666 Caſes, wherein he may turn up 15 Points, and 44990 againſt him; divide 44990 by 1666; and the Quotient 27 will be $=q$. Therefore, multiply 27 by 7; the Product 18, 9 *ſhews the Number of Throws required to be nearly* 19.

Prob. V. *To find the Number of Trials wherein it is probable any Event may happen twice; ſo that A and B may lay a Wager thereon with an equal Chance*?

Sol. Suppoſe the Number of Caſes wherein the Event may happen the firſt Trial, to be a; and thoſe wherein it may not, b; and call the Number of Trials required, x: It appears from what is above ſhewn, that $\overline{a+b}^{x}=2b^{x}+2axb^{x-1}$. Or, making $a:b::1:q$, $1+\frac{1}{q}\Big|^{x}=2+\frac{2x}{q}$ 1° Let $q=1$, and then $x=3$. 2° Let q be infinite, and x will alſo be infinite: Suppoſe x infinite, and $\frac{x}{q}=z$, and then $1+z+\frac{1}{2}z^{2}+\frac{1}{2}z^{3}$, &c. $=2+2z$; and therefore $z=Log.\ 2+Log.\ \overline{1+z}$: If then *Log.* 2 be called y; the Equation will be transform'd into the following fluctional one $\frac{zz}{1+z}=y$. And inveſtigating the Value of z by the Powers of y, we ſhall find $z=1.678$, nearly; and therefore x will always be between the Limits $3q$ and $1.678q$; but x will ſoon converge to $1.678q$; and therefore if q have not a very ſmall Ratio to 1, we may take $x=1.678q$. Or if there be any Suſpicion of x being too ſmall, ſubſtitute its Value in the Equation $1+\frac{1}{q}\Big|^{x}=2+\frac{2x}{q}$, and note the Error, if it be worth regarding: Thus will x be a little increaſed; ſubſtitute the thus increas'd Value for x in the foreſaid Equation, and note the new Error: Thus, from the two Errors, may the Value of x be corrected with ſufficient Accuracy.

Here we ſhall add a *Table of Limits*, that will carry the Intent of this Problem much further.—

If the Wager be upon happening once, the Number of Trials will be between

	1 q and 0.693 q
If upon twice, between	3 q and 1.678 q
If upon trice, between	5 q and 2.675 q
If upon four times, between	7 q and 3.671 q
If upon five times, between	9 q and 4.673 q
If upon ſix times, between	11 q and 5.668 q

Examp. *To find at how many Throws A may undertake to throw three Aces, twice, with three Dice*?

Sol. Since A has but one Caſe, wherein he may throw three Aces; and 215, wherein he may not; $q=215$. Therefore multiply 215 by 1.678. The Product 360, 7 will ſhew the Number of Throws required to be between 360 and 361.

Prob. VI. *A, and B depoſit each 12 pieces of Money, and play with three Dice, on this footing, that every time 11 Points are thrown, A ſhall give B one Piece; and every time 14 Points are thrown, B ſhall give A a Piece; and that he ſhall win the whole, that firſt gets all the Money in his Hands: We demand the Ratio of the Chances of A to that of B.*

Sol. Let p be the Number of Pieces each ſeverally takes; and a and b the Number of Caſes wherein A and B may reſpectively gain each a piece; the Ratio of their Chances will be as a^{p} to b^{p}: In this caſe, $p=12$, $a=27$, $b=15$; or if when $27:15::9:5$. you make $a=9$, $b=5$; and therefore the *Ratio of the Expectancies will be as* 9^{12} *to* 5^{12}, *or as* 24414062 5 *to* 282429536481.

NB. Great Care muſt be taken to avoid the confounding of different Problems together, from ſome Appearance of Affinity between them. The following one ſeems very like the former.

Prob. VII. *C having 24 Pieces, or Counters, throws three Dice; and every time 27 Points turn up, gives one Counter to A; and every time 14 turn up, gives one to B; and A and B engage on this footing, that he who firſt gets 12 Counters, ſhall win the Stake: We require the Ratio of their Expectancies*?

This Problem differs from the preceding one, in that the Game muſt neceſſarily end in 23 Throws; whereas, in the former, it might hold out to Eternity, by reaſon of the Reciprocations of Loſs and Gain, which deſtroy one another.

Sol. Raiſe $a+b$ to the 23d Power, and the 12 former Terms will be to the 12 latter as the Expectancy of A to that of B.

Prob. VIII. *Three Gameſters, A B and C, have each twelve Balls, 4 of them white, and 8 black; and being hoodwink'd, play on this condition, that the firſt who chuſes a white Ball, ſhall win the Stake; and that A ſhall have the firſt Choice, then B, then C; and ſo round again: What, then, is the Ratio of the Chances of A, B, C*?

Sol. Let n be the Number of Balls, a the Number of white ones, b of black ones, and n the Stake. Here

1° A, has the Caſes a, wherein he may chuſe a white Ball; and the Caſes b for a black one: Conſequently, his Expectancy, from the firſt Choice, is $\frac{a}{n}$, or $\frac{a}{a+b}$. Wherefore, ſubtracting $\frac{a}{n}$ from 1; the Value of the remaining Expectancies will be $1-\frac{a}{n}=\frac{n-a}{n}=\frac{b}{n}$.

2° B, has the Caſes a for a white, and the Caſes $b-1$ for a black one; but the firſt Election is in A; and 'tis uncertain, whether or no he may have won the Stake; and therefore the Stake, in reſpect of B, is not 1, but only $\frac{b}{n}$; ſo that his Expectancy from the firſt Choice is $\frac{a}{a+b-1}\times\frac{b}{n}=\frac{ab}{n\times n-1}$. Subtract $\frac{ab}{n\times n-1}$ from $\frac{b}{n}$ and the Value of remaining Expectancies will be $\frac{nb-b-ab}{n\times n-1}=\frac{b\times\overline{n-1}}{n\times n-1}$.

3° C, has the Caſes a for a white; f the Caſes $b-2$ for a black one; and therefore his Expectancy from the third Choice is $\frac{a\times b\times b-1}{n\times n-1\times n-2}$.

4° After the like manner, A has the Caſes a for a white, and $b-3$ for a black; ſo that at the fourth Choice, the Expectancy will be $\frac{a\times b\times b-1\times b-2}{n\times n-1\times n-2\times n-3}$. And ſo of the reſt.

Write down, therefore, the Series $\frac{a}{n}+\frac{b}{n-1}P+\frac{b-1}{n-2}Q+\frac{b-2}{n-3}R+\frac{b-3}{n-4}S$, &c. Where P, Q, R, S, &c. denote the preceding Terms, with their Characters; and take as many Terms of this Series, as there are Units in $b+1$ (for there cannot be more Choices than there are Units in $b+1$) and the Sum of all the third Terms, ſkipping the two Intermediates, beginning from $\frac{a}{n}$, will be the whole Expectancy of A; the Sum likewiſe of all the third Terms, commencing from $\frac{b}{n-1}$ P, will be the whole Expectancy of B; and the Sum of the Thirds, commencing from $\frac{b-1}{n-2}$ Q, the whole Expectancy of C.

Laſtly, making $a=4$, $b=8$, $n=12$; and the General Series will change into the following one $\frac{4}{12}+\frac{8}{11}P+\frac{7}{10}Q+\frac{6}{9}R+\frac{5}{8}S+\frac{4}{7}T+\frac{3}{6}V+\frac{2}{5}X+\frac{1}{4}Y$.

Or into this other (by multiplying all the Terms by ſome common Number judg'd moſt expedient for the throwing out of Fractions, *viz.* in the preſent Caſe, by 495)

$$165+120+84+56+35+20+10+4+1$$

And therefore A will have $165+56+10=231$; B will have $120+35+4=159$; and C will have $84+20+1=105$. *So that their ſeveral Expectancies will be as* 231, 159, 105; or as 77, 53, 35.

Prob. IX. *A and B having* 12 *Counters, four of them white, and eight black; A wagers with B, that taking out ſeven Counters, blindfold, three of them ſhall be white: What is the Ratio of their Expectancies?*

Sol. 1° Seek how many Caſes there is for ſeven Counters, to be taken out of 12; they will be found from the Doctrine of Combinations, to be 792.

$$\frac{12}{1}\times\frac{11}{2}\times\frac{10}{3}\times\frac{9}{4}\times\frac{8}{5}\times\frac{7}{6}\times\frac{6}{7}=792.$$

2° Set aſide three white ones, and find all the Caſes wherein 4 of the eight black ones may be combined therewith; they will be found to be 70.

$$\frac{8}{1}\times\frac{7}{2}\times\frac{6}{3}\times\frac{5}{4}=70.$$

And ſince there are four Caſes, in which three white may be taken out of four; multiply 70 by 4: Thus, the Caſes, wherein 3 Whites may come out with 4 Blacks, are found to be 280.

3° By the common Laws of *Gaming*, he is reputed Conqueror, who produces an Effect oftener than he undertook to do, unleſs the Contrary be expreſly agreed on; and therefore, if A take out 4 Whites with 3 Blacks, he wins. Set aſide 4 Whites, then, and find all the Caſes wherein 3 of the 8 Blacks may be combined with four Whites: Theſe Caſes will appear to be 56.

$$\frac{8}{1}\times\frac{7}{2}\times\frac{6}{3}=56$$

4° A, therefore, has $280+56=336$ Caſes, wherein he may win; which ſubtracted from the whole Number of Caſes 792, leaves 456 the Number of Caſes wherein he may loſe. The *Ratio of the Chance of A, therefore, to that of B, is as* 336 *to* 456; *or as* 14 *to* 19.

To avoid too much Prolixity in this Article, we muſt deſiſt from further Inveſtigations, which in the following Problems grow very long, and more perplex'd. In the reſt, therefore, we ſhall content ourſelves to give the Anſwer, or Reſult, without the Proceſs of arriving at it; which may be of uſe, as it furniſhes ſo many Data, from whence, as Standards, we may be enabled occaſionally to judge of the Probability of Events of the like Kinds: Tho', without letting the Mind into the preciſe Manner, and Reaſon thereof.

Prob. X. *A and B play with two Dice on this Condition, that A ſhall win, if he throw ſix; and B, if he throw ſeven: A to have the firſt Throw, in lieu of which B to have two Throws; and both to continue with two Throws each turn, till one of them wins: What is the Ratio of the Chance of A to that of B?*

Anſ. As 10355 to 12276.

Prob. XI. *If any Number of Gameſters, A, B, C, D, E, &c. equal in point of Dexterity, depoſit each one piece of Money, and engage on theſe Conditions, that two of them, A and B, beginning the Game; which ever of them ſhall be overcome, ſhall give place to the third, C, who is to play with the Conqueror; and the Conqueror here, to be taken up by the fourth Man, D, and thus on; till ſome one, having conquer'd them all round, draws the Stake: What is the Ratio of their Expectancies?*

Sol. This Problem, M. *Bernoulli* ſolves analytically. Here, calling the Number of Gameſters $n+1$, he finds that the Probabilities of any two immediately following each other in the Courſe of playing, are in the Ratio $1+2^n$ to 2^n; and therefore the Expectancies of the ſeveral Gameſters A B C D E *&c.* are in a Geometrical Progreſſion $1+2^n : 2^n :: a : c :: c : d :: d : e$ &c.

Hence it is eaſy to determine the State of the Probabilities of any two Gameſters, either before the Game, or in the Courſe thereof. If *e. gr.* there be three Gameſters, A, B, C, then $n=2$ and $1+2^n : 2^n :: 5 : 4 :: a : c$: That is, *Their ſeveral Probabilities of winning, before A have overcome B, or B, C; are as the Numbers* 5, 5, 4; and therefore their Expectancies are $\frac{5}{14}, \frac{5}{14}, \frac{4}{14}$: For all of them taken together, muſt make 1, or abſolute Certainty. *After A has overcome B, the Probabilities of A, B and C will be* $\frac{5}{7}, \frac{2}{7}, \frac{4}{7}$, as in the Anſwer above. If there be four Gameſters, A B C D, their Probabilities from the Beginning will be as 81, 81, 72, 64. After A has beat B, the ſeveral Probabilities of B D C A, will be as 25, 32, 36, 56, reſpectively. After A has beat B and C, the Probabilities of C B D A will be as 16, 18, 28, 87.—

Prob. XII. *Three Gameſters, A, B and C, whoſe Dexterities are equal, depoſit each one Piece, and engage upon theſe Terms, That two of them ſhall begin to play, and that the vanquiſh'd Party ſhall give place to the third, who is to take up the Conqueror; and the ſame Condition to go round; each Perſon when vanquiſh'd, forfeiting a certain Sum to the main Stake; which ſhall be all ſwept by the Perſon who firſt beats the other two ſucceſſively. How much, now, is the Chance of A and B better or worſe, than that of C?*

Anſ. 1° If the Forfeiture be to the Sum each Perſon firſt depoſited, as 7 to 6, the Gameſters are upon an equal footing. 2° If the Forfeiture be in a leſs Ratio to the Depoſit, A and B are on a better footing than C: If in a greater Ratio, the Advantage is on the Side of C. 3° After A has overcome B once, the Probabilities are as $\frac{12}{7}, \frac{6}{7}, \frac{3}{7}$; or as 4, 2, 1; *viz.* that of A the greateſt, and of B the leaſt.

M. *Bernoulli* gives an analytical Solution of the ſame Problem, only made more general; as not being confined to three Gameſters, but extending to any Number at pleaſure.

Prob. XIII. *A and B, two Gameſters of equal Dexterity, play with a given Number of Balls; and after ſome time A wants* 1 *of being up, and B,* 3: *What is the Ratio of their Chances?*

Anſ. A's Expectancy is worth $\frac{7}{8}$ of the Stake, and B's only $\frac{1}{8}$; ſo that their Chances are as 7 to 1.

Prob. XIV. *Two Gameſters, A and B, of equal Dexterity, are engaged in play, on this Condition, that as often as A exceeds B, he ſhall give him one Piece of Money; and that B ſhall do the like, as oft as A exceeds him; and that they ſhall not leave off, till one has won all the other's Money: Each now having four Pieces; two Byſtanders, R and S, lay a wager on the Number of Turns, in which the Game ſhall be finiſh'd; viz. R, that it ſhall be over in* 10 *Turns: What is the Value of the Expectancy of S.*

Anſ. $\frac{560}{1024}$ or $\frac{35}{64}$ of the Wager; or it is to that of R as 560 to 464.—

If each Player had 5 Pieces, and the Wager were, that the Game ſhould end in ten Turns, and the Dexterity of A were double that of B; the Expectancy of S would be $\frac{3800}{8581}$.

If each Gameſter have 4 Pieces; and the Ratio of the Dexterities be required to make it an even Wager that the Game ſhall end in 4 Turns: It will be found that the one muſt be to the other as 5.274 to 1.

If each Gameſter have 4 Pieces, and the Ratio of their Dexterities be requir'd to make it an even Lay that the Game ſhall be ended in 6 Turns; the Anſwer will be found to be, as 2.576 to 1.

Prob. XV. *Two Gameſters, A and B, of equal Dexterity, being agreed not to leave off playing till ten Games are over; a Spectator, R, lays a Wager with another, S, that by that time, or before, A ſhall have beat B by three Games: What is the Value of the Expectancy of R?*

Anſ. $\frac{352}{1024}$ of the Wager; or it is to that of S as 352 to 672.

GAMM, GAMMUT, GAMUT, or GAM-*ut*, in Muſic, a Scale, whereon we learn to ſound the Muſical Notes, *Ut, re, mi, fa, ſol, la*, in their ſeveral Orders, and Diſpoſitions. See NOTE, and SCALE.

The Invention of this Scale is owing to *Guido Aretin*, a Monk of *Aretium*, in *Tuſcany*; tho' it is not properly an Invention, as an Improvement on the Diagramma or Scale of the Antients. See DIAGRAM.

The *Gammut* is alſo call'd the *Harmonical Hand*; by reaſon *Guido* firſt made uſe of the Figure of the Hand, to arrange his Notes on.

Finding the *Greek* Diagramma of too ſmall Extent, *Guido* added five more Chords, or Notes to it: One, below the Proſlambanomenos, or graveſt Note of the Antients; and four, above the Nete, or Acuteſt. The firſt, he call'd Hypo-proſlambanomenos; and denoted it by the Letter G, or rather the *Greek* Γ, *Gamma*: Which Note being at the head of

of the Scale, occaſion'd the whole Scale to be call'd by the barbarous Name *Gamm*, or *Gammut*.

Some ſay, *Guido*'s Intention in calling his firſt Note Γ, *Gamm*, was to ſhew, that the *Greeks* were the Inventors of Muſick: Others, that he meant hereby to record himſelf; this being the firſt Letter of his own Name.—

Guido's Scale is divided into three Series, or Columns; the firſt call'd *Molle*, or flat; the ſecond *Natural*; and the third *Durum*, or Sharp, as repreſented in the Scheme, *Tab. Muſick, Fig.* 3. But ſince his Time, ſome Alterations have been made there.

The Uſe of this Scale, is to make the Paſſages, and Tranſitions from B Molle, to B Durum, by means of the Tones and Semitones. The Series of B Natural ſtanding betwixt the other two, communicates with both; ſo that to name the Chords of the Scale by theſe Syllables, if we would have the Semitones in their natural Places, *viz. b c* and *e f*, then we apply *ut* to *g*; and after *la* we go into the Series of *b* natural at *fa*; and after *la* of this, we return to the former at *mi*, and ſo on: Or, we may begin at *ut* in *c*, and paſs into the firſt Series at *mi*, and then back to the other at *fa:* By which means the one Tranſition is a Semitone, *viz. la, fa*; and the other a Tone, *la, mi*. To follow the Order of *b* Molle, we may begin with *ut* in *c*, or *f*, and make Tranſitions after the ſame manner. See TONE, and SEMITONE.

Hence came the barbarous Names of *Gammut, Are, Bmi*, &c. But what a perplex'd Work is here, with ſo many different Syllables applied to every Chord; and all to mark the Places of the Semitones, which the ſimple Letters *a b c* &c. do as well, and with more Eaſe?

Several Alterations have ſince been made in the *Gamut*. M. *le Maire*, particularly, has added a ſeventh Note, *viz. ſi*; and the *Engliſh* uſually throw out both *ut* and *ſi*, and make the other five ſerve for all: As will be ſhewn under the Article SOL-FA-ING.

GAMM, GAMMA, or GAMMUT, is alſo the firſt, or graveſt Note in the modern Scale of Muſic; the Reaſon whereof is ſhewn under the preceding Article.—

GANG, in the Sea Language: To man a Boat, is call'd to *put a Gang of Men* (which is a Company) into her: They are commonly called the *Coxſwain*'s *Gang*, who has the Charge of her.

GANG-*way*, ſignifies all the ſeveral Entrances, Ways, or Paſſages, from one Part of the Ship to the other; and whatſoever is put in one of theſe Paſſages, is ſaid to be laid, or put in the *Gang-way*.

GANGLION, or GANGLIUM, in Medicine, a ſmall, hard, knotty Tumor, form'd on the nervous and tendinous Parts, without any diſcolouring of the Skin, or Senſe of Pain. See TUMOR.

The Cauſe of the *Ganglion* is a too great Diſtention of the Pores of the Part; or the too great Compreſſion, or a Laceration, thereof: Any of theſe occaſion the nutritious Juice to be there ſtop'd and retain'd; and even to exſude, condenſe, and harden into a Tumor. The ſame Effect is ſometimes produced by a Bruiſe, hard Labour, or the like. Moſt Authors fix the next Cauſe of the *Ganglion* to be a heavy, viſcid Pituita.

The *Ganglion* is ſometimes removed, and reſolved by mere dry Friction, long continued; and ſometimes by Friction with Saliva. Some chuſe to apply a Plate of Lead, anointed with Mercury: Others uſe Gum Ammoniac; or Emplaſter of Vigo, with Mercury. If theſe don't ſucceed, Recourſe is had to Section.

The Word is *Greek*, γάγγλιον, ſignifying the ſame thing. The Tumor, when on the Nerves, Tendons, Articulations, or any of the membranous Parts, retains its Name, *Ganglion*; every where elſe, it is call'd *Nodus*. See NODE.

GANGRENE, GANGRÆNA, in Medicine, is a Mortification in its firſt, or beginning State; while yet the Part retains ſome Senſe of Pain, and a Share of natural Heat: By which this Diſeaſe is diſtinguiſh'd from a *Sphacelus*, or thorough Mortification; where there is no Senſe or Warmth left at all. See MORTIFICATION, and SPHACELUS.

The *Gangrene* is a Diſeaſe in the Fleſh of the Part, which it corrupts, conſumes, and turns black; ſpreading, and ſeizing itſelf of the adjoining Parts: And is rarely cured without Amputation.

It ariſes from a Stoppage, or Interception of the circulatory Motion of the Blood; which by this means, fails to furniſh the Part with the nutritious and ſpirituous Juices, neceſſary to preſerve its Warmth, and Life.

This Interception of Circulation, which is the next Cauſe of the *Gangrene*, is it ſelf occaſion'd divers ways; as, by large Tumors, Eriſypela's, great Inflammations, violent Cold, tight Bandages or Compreſſions, ſudden Fluxions of ſome malignant Humor, Bites of venomous Beaſts, Fractures, Wounds, and Ulcers ill managed, &c.

It is diſtinguiſh'd by the Colour of the Fleſh, which now turns pale, duſky, or ſublivid; and by its growing looſe, and flabby of vehemently Tenſe which it was before. In the Progreſs of the Diſeaſe, the Part diſtils a fetid, diſcolour'd Water; and emits a cadaverous Smell.

Upon the firſt Seizure, the Skin turns pale, afterwards livid; Veſications ariſe, and the Colour at length changes to black; the Fleſh becomes fetid, ſanious, and moiſt; then withers, and ſoon becomes inſenſible: The Heat and Pulſation of the Part being likewiſe diminiſh'd. *Shaw.*

If in a large Wound, the Tumor of the Lips do not ſuppurate, nor any Flux of Matter, or Inflammation ariſe; if the Lips do not ſwell, or after Swelling grow lank and flaccid again on a ſudden: 'Tis reckon'd a ſure Sign of an approaching *Gangrene*. See WOUND.

When a *Gangrene* proceeds from extreme Cold, the Part affected is firſt benumbed, or ſeiz'd with a pricking Pain, followed by a Redneſs, which gradually changes to a Black. See COLD.

When a tight Bandage is the Cauſe, a Flaccidity of the Part is join'd to the Inſenſibility thereof: When the Scurvy, it often begins in the great Toe, and appears in form of a blackiſh Spot, which turns to a dry Cruſt, ſucceeded by a Stupor of the Part, &c.—When the Bite of any venomous Creature is the Cauſe, a continual Fever attends, &c. Pain is felt in the Part; which uſually brings on a Syncope, or Delirium: Puſtles ariſe about the Bite, &c.

By the Microſcope, the *Gangrene* has been diſcover'd to conſiſt of an infinite Number of little Worms, ingender'd in the morbid Fleſh; and which continually producing new Broods, they ſwarm, and over-run the adjacent Parts.

To ſtop the Progreſs of the *Gangrene*, the Phyſicians preſcribe, internally, Sudorificks, and Alexipharmicks; externally, Decoctions of Quick-lime, either ſimple, or with the Addition of Sulphur, Mercurius dulcis, and Spirit of Wine camphorated.

In a ſevere Stage of the Diſtemper, they ſcarify deep, to the very Quick; and afterwards apply hot Liquors, Cataplaſms, &c. Some recommend Horſes Dung, boil'd in Wine, or Urine. The Unguent Ægyptiacum alſo comes into Uſe.

Belloſte preſcribes the following, as the moſt efficacious Remedy, known for *Gangrenes*; *viz.* Quickſilver diſſolved in double the Quantity of Spirit of Nitre, or Aqua fortis; a linen Cloth dipt therein, and applied to the *gangrenous* Part. This alone, he aſſures us, is ſufficient.—If the *Gangrene* be occaſion'd by an intenſe Froſt; Snow Water, or a linen Cloth dipt in cold Water, and applied to the Part affected, *Boerhave* directs as the beſt Cure.

If the *Gangrene* proceed to an utter Sphacelation, and be ſeated in any of the Limbs, or extreme Parts, recourſe muſt be had to the Operation of *Amputation*. See AMPUTATION.

The Word *Gangræna*, *Gangrene*, is derived by ſome Authors from the *Paphlagonean Gangra*, a Goat; it being the Character of a Goat to brooze the Graſs all around, without ſhifting its Place. It is juſter, perhaps, to derive it from the *Greek* Verb γεύω, γεύνω, *manduco, abſumo*, I eat, I conſume: But 'tis yet ſafer, to bring it from the Word γάγγραινα, which ſignifies the ſame thing.

GANTLET, or GAUNTLET, a large, ſtronge Glove, made to cover the Arm, or Hands of a Cavalier, when arm'd at all Points. The *Gauntlet* is of Iron; and the Fingers, plated.

The Caſk, and *Gauntlets* were always bore in the antient Marches in Ceremony. *Gauntlets* were not introduc'd, till about the 13th Century.

The *Gauntlet* was frequently thrown, like the Glove, by way of Challenge. See GLOVE, CHALLENGE, CHAMPION, COMBAT, &c.

The Word is derived of the French *Gantelet*; and that of *Gand*, or *Gant*, Glove.—

GANTLET, in Chirurgery, is a kind of Bandage for the Hand.

'Tis a ſort of Swathe, four or five Yards long; wherewith they wrap up the Hand, and all the Fingers, one after another.

GANYMEDE, a Term lately come into Uſe, to expreſs a Catamite, or Bardachio. See CATAMITE, SODOMY, &c.

The Expreſſion takes its riſe from a young, beautiful *Trojan* Shepherd, thus called; whom *Jupiter* raviſh'd, or carried off by his Eagle, or rather by himſelf under the Figure of an Eagle, as he was hunting on Mount *Ida*; and made him his Cup-bearer, in the place of *Hebe*; who, having made a falſe Step, and ſpilt her Liquor, was turn'd out of Office.

Some ſay, that the *Jupiter*, who raviſh'd *Ganymede*, was *Tantalus*, King of *Phrygia:* The Eagle expreſs'd the Swiftneſs, wherewith he was carried off. *Voſſius, De Idolol. L. I. c.* 14, &c. And *Barthius*, on the *Thebaid. L. I. v.* 548.—

GARBE, in Heraldry, a Repreſentation of a Sheaf of Corn, or other Grain; ſometimes bore in Coat Armour, to ſignify Summer, or the Month of *Auguſt*; as the Bunch of Grapes does Autumn.

He bears Azure, a *Garbe*, or; the Arms of the *Grosvenors* of *Eaton*, in *Cheshire*.

GARBLER *of Spices*, is an Officer of great Antiquity, in the City of *London*, who is empower'd to enter any Shop, Ware-house, &c. to view, and search Drugs, &c. and to *garble* and cleanse them.

GARBLES, the Dust, Soil, or Uncleanness that is severed from good Spice, Drugs, &c.

GARBLING of Spice, Drugs, &c. is the purifying it from the Dross and Dust mix'd therewith; and severing the good from the bad.

GARBLING *of Bow Staves*, is the sorting, or culling out the good from the bad.

The Word may come from the *Italian Garbo*, Finery, or Neatness.

GARCON, or, as we pronounce it, GARSOON, a *French* Term, literally signifying *Boy*, or a Male Child, any time before his Marriage.—The *Italians* use *Garsone* in the same Sense.

Pontanus remarks, that they antiently wrote it *warçon*: But the Etymologists can't agree as to its Origin.—To say nothing of all the rest, *Martinius* alone proposes seven Derivations; without pitching upon any, *viz.* the Latin *garrire*, to prattle; the *Chaldee* גרס, Student, Learner; the French *Garder*, to guard; the German *warten*, to tarry, or wait; the Greek κεροὸς, Young-man; the Arabic גריה, Young-man; and the Hebrew גור, the young of any Brute.

GARÇON is also applied to divers inferior Officers: Thus, all the People in the King's Chamber, Wardrobe, &c. who do the lesser Offices thereof under the proper Officers, are called *Garçons de la Chambre*, *de la Garderobbe*, &c.

GARD, GARDS, GARDIAN, GARDEROBE, &c. } see { GUARD. GUARDS. GUARDIAN. WARD-ROBE.

GARDANT, in Heraldry. See GUARDANT.

GARDEN, an Inclosure, or Plot of Ground, curiously cultivated, and furnish'd with Variety of Plants, Flowers, Fruits, &c. See GARDENING; see also ORCHARD.

Gardens are distinguish'd into *Flower Gardens*, *Fruit Gardens*, and *Kitchen Gardens*: The first for Pleasure, and Ornament; and therefore placed in the most conspicuous Parts: The two latter, for Service; and therefore made in By-places. See FLOWER, FRUIT, &c.

In a *Garden*, the principal Things to be consider'd, are, the *Form*, *Soil*, *Situation*, and *Aspect* or *Exposure*.

For the *first* Point, the *Form*: A Square, or rather Oblong, is most eligible; leading from the Middle of the House, with a Gravel Walk in the Midst; narrow Grass-borders on each Side; and on either Side of these, Rows of Variety of Winter Greens. If the Ground be irregular, it may be made uniform so as to afford a Prospect nothing inferior to the most regular; strait Lines will reduce any Figure to Order. A Triangle has its Beauty, as well as a Square; and the most irregular Spots may be brought by Borders, and Walks to those two Figures.

Indeed, an Irregularity is easily hid in a large *Garden*, by long Walks, and tall Hedges, interrupting a distant View: And the little Corners, and Triangular Spaces, may be agreeably fill'd up with Borders of Flowers, Dwarf Trees, flowring Shrubs, or Ever-Greens. Nor is it prudent, to be solicitous to throw the whole *Garden* into a single View; as Irregularities, and Unevennesses, afford many uncommon, pretty Devices, &c. See WALKS, and BORDERS.

For the *second* Point, or the *Soil*: A deep, rich, black Mould is best for Plants; sandy Land is warm and forward, and good for Flowers; chalky Land is cold and backward. But both are easily corrected by Compost's, or Materials of opposite Kinds. See SOIL, and COMPOST.

For the *Situation*: If the *Garden* be too high, it will be expos'd to the Winds, which are highly prejudicial to Trees; if too low, the Dampness will be injurious, beside the breeding of Vermine: A Flat, therefore, or the Side of a Hill, are the happiest Situation; especially the latter, as it is usually well water'd, and shelter'd from the Extremes of Weather; beside that the Water descending from on high, will supply Fountains, Cascades, and other Ornaments of a *Garden*. See FOUNTAIN, &c.

For the *Aspect*, or *Exposure*, we have already consider'd what relates thereto, under the Article *Exposure*: See EXPOSURE.

Of all things, the Ground, or Soil of the Garden is the most important: Unless this be rich, and fertile, all the other Advantages will be vain. To judge of the Quality of the Soil, some direct us to look, whether there be any Heath, Thistles, or other Weeds growing spontaneously therein, as a certain Sign of a poor Ground: The Growth of the Trees, too, thereabout, is to be consider'd; if they grow cooked, ill shap'd, and grubby, of a faded Green, and full of Moss; the Place is to be immediately rejected. If the Contrary be found; you must proceed to examine the Depth of the Soil, by digging Holes under Ground. The Soil should be three Foot deep; but less than two, is not sufficient.

The chief Furniture of Pleasure Gardens are, *Parterres*, *Vista's*, *Glades*, *Groves*, *Compartiments*, *Quincunces*, *Verdant Halls*, *Arbour Work*, *Mazes*, *Labyrinths*, *Fountains*, *Cabinets*, *Cascades*, *Canals*, *Terrasses*, &c. See each under its proper Article, TERRASS, CASCADE, FOUNTAIN, &c.

In the *planting of a Fruit or Kitchen Garden*, if the Soil be a hungry Gravel, or Sand, Mr. *Switzer* directs the Holes where the Trees are to be planted, to be dug two Foot deep, and three or four over, and filled with rotten Horses or Cows Dung, mix'd with rich Mould: If it be Marle or stiff Clay, a Compost of Rubbish, Lime, Pieces of Brick, Ashes, Sand, &c. will be best to mix with Dung and Mould; tho' he is of opinion, that untried Earth, dug from a Waste or Common where Cattle has been fed, would prove the best Soil for young Trees. See FRUIT *Tree*.

The Trees being now taken out of the Nursery, the biggest Roots are to be shorten'd to about six Inches; all the small Fibres taken off; and the Head to be pruned, so as not to leave above two Branches; and those not above six Inches long. See PLANTING.

The *Wall Trees*, to be placed as far from the Wall, as possible; that there may be the more Room for the Roots to spread. Then, filling up the Hole with Mould, there remains nothing but to secure the Roots from the Winter's Frost, by covering the Spot with Straw, Fern, Dung, &c. And in Summer, from the Sun; by Sand, and Pebble Stone. See WALL *Fruit*.

For Trees planted in Borders, the common Practice is to make a Trench by the Wall-side, two Foot broad, and as many deep. This Trench they fill with old Dung, mix'd with Earth, lightly laid, near as high as the Borders are intended to be; and then trodden down to half the Height in the Places where the Trees are intended to be. 'Tis prudent, to plant the Trees shallow, and to raise the Earth about them; especially in a wet, clayey Soil.—See PLANTING, SEMINARY, &c.

'Tis an Observation of some Importance, that Wall Trees, and Fruit thrive best, when the Walks that run parallel to them, are Gravel; more of the Rays of the Sun being thereby reflected to them, than if they were Grass. Add, that no sort of tall Trees are to be suffer'd to grow in any of the opposite Borders, or intermediate Spaces, so, as their Shade might reach to the South East, or South West Walls. The Places near the Walls are most advantageously filled with Dwarfs.—See DWARF, ESPALIER, &c.

GARDENING, HORTICULTURE, the Art of cultivating a *Garden*. See GARDEN.

Gardening has in all Ages been esteem'd an Employment, worthy the greatest Hero's, and Philosophers: The Emperor *Diocletian*, at *Salona*; and *Epicurus*, and *Metrodorus*, at *Athens*, have ennobled the Art beyond all Encomium.

Goetzius, Superintendant of *Lubeck*, printed a Dissertation in 1706, entitled Κηποφιλία, *seu De Eruditis Hortorum Cultoribus*, Of the Learned Men who have loved, and cultivated Gardens; among which Number he ranks *Adam*, *Gregory Nazianzen*, St. *Augustin*, *Pliny*, and *Cicero*: Nor should he have forgot the elder *Cato*, *Democritus*, *Plato*, and his Academy.

The Sieur *le Nostre* first carried *Gardening* to any thing of Perfection: M. *la Quintinie* has gone yet further; nor have our own Countrymen of late been wanting to its Improvement; as *London*, and *Wise*, *Bradley*, *Laurence*, *Fairchild*, &c.

M. *Fatio* has lately applied Mathematical Reasoning to *Gardening*, and shewn how to make the best use of the Sun's Rays in Gardens. See WALL.

The principal Operations in *Gardening*, are *Planting*, *Transplanting*, *Engrafting*, *Inoculating*, *Pruning*, *Sowing*, &c. Which see under their proper Articles, PLANTING, TRANSPLANTING, ENGRAFTING, PRUNING, &c.

Other Particulars, relating to the Art of *Gardening*, see under PINCHING, VARIEGATING, NURSERY, SEED, GREEN-HOUSE, HOT-BED, &c. See also PLANT, TREE, FRUIT-TREE, WALL-TREE, DWARF, &c. See also SALLADE, &c.

GARDENING, in Falconry. To *garden a Hawk*, is to put her on a Turf of Grass to chear her.—Some also use the same Phrase for the giving her an Airing, or letting her fly at large.

GARDEVISURE, in Heraldry; see VIZOR.

GARGARISM, GARGLE, in Medicine, a liquid Form of Remedy, for Disorders of the Mouth, Gums, Throat, &c.

Gargarisms are composed of Honey, Salts, Syrups, Spirits, Vinegar, Waters, and Decoctions; and produce their Effect by cleansing, lubricating, &c, the Parts.

An Astringent *Gargarism*, Detergent *Gargarism*, Refrigerent *Gargarism*, &c.

The Word is form'd of the *Greek* γαργαλίζειν, *colluere*, to wash.—Or of the Hebrew *Garghera*, the Throat.—

GAR-

GARLAND, an Ornament for the Head, in manner of a Crown. See CROWN.

Garlands are a ſort of Chaplets, made of Flowers, Feathers, or even of pretious Stones; but eſpecially Flowers: To which the Word in our Language is more immediately affected.

Janus paſſes, in Antiquity, for the Inventor of *Garlands*. *Athen. Dipnoſ. L. XV.*

The Word is form'd of the Barbarous Latin *Ghirlanda*; which is ſtill retain'd in the *Italian*. *Menage* traces its Origin from *Girus*, thro' *girulus*, to *girulare*, *girlare*, *ghirlandus*, *ghirlanda*, and at length *guirlande*, and *Garland*; ſo that *Guirland*, or *Garland* are deſcended in the eighth Degree from *Gyrus*.—

Hicks rejects this Derivation, and brings the Word from *Gardel handa*, which in the Northern Languages ſignify, a *Noſegay artfully wrought with the Hand*.—

GARLAND, in a Ship, a Collar of Rope, which is wound about the Head of the Main-maſt, to keep the Shrouds from galling.

GARNISH. In ſome antient Writings and Statutes, to *garniſh the Heir*, ſignifies to warn the Heir.

GARNISHEE, in Law, the Party, in whoſe Hands Money is attach'd within the Liberties of the City of *London*; ſo call'd in the Sheriff of *London*'s Court, becauſe he has had *Garniſhment*, or Warning, not to pay the Money, but to appear and anſwer to the Plaintiff-Creditor's Sute. See ATTACHMENT.

GARNISHING, or GARNISHMENT, is popularly uſed for the Furniture of any thing; or an Aſſemblage, or Sortment neceſſary for the uſing, or adorning of any thing. See FURNITURE.

The GARNISHING *of a Diſh*, conſiſts of certain Things which accompany it; either as a Part, and Ingredient thereof; In which Senſe Pickles, Muſhrooms, Oyſters, &c. are *Garniſhing*: Or as a Circumſtance, or Ornament; as when Leaves, Flowers, Roots, &c. are laid about a Service, to amuſe the Eye.

The ſame Word is us'd for the finer Herbs, Fruits, &c. laid about a Sallad: *Garniſhing* of Lemon, Piſtacho's, Pomgranate, Yolks of hard Eggs, Artichoak Bottoms, Capers, Truffles, Sweat-bread, &c.

The Word is *French*, form'd of the Verb *Garnir*, to furniſh, or fit out.

GARNISHMENT, in Law, a *Warning* given any one to appear; and that for the better furniſhing the Cauſe, and Court. Suppoſe, *e. gr.* one is ſued for the Detinue of certain Charters, and ſays, they were deliver'd to him, not only by the Plaintiff, but *J. S.* alſo; and therefore prays, that *J. S.* may be warn'd to plead with the Plaintiff, whether the Conditions are perform'd, or no.

In this Petition he is ſaid to pray *Garniſhment*; which may be interpreted, a Warning to *J. S.* to provide himſelf of a Defence; or elſe a furniſhing the Court with all Parties to the Action, whereby it may throughly determine the Cauſe.—

GARRISON, a Body of Forces, diſpoſed in a Fortreſs, to defend it againſt the Enemy; or to keep the Inhabitants in Subjection; or even to be ſubſiſted during the Winter Seaſon. See FORTRESS,

The Words *Garriſon*, and *Winter Quarters*, are ſometimes uſed indifferently for the ſame thing; and ſometimes they denote different Things.

In the latter Caſe, a *Garriſon* is a Place wherein Forces are maintain'd, to ſecure it; where they keep regular Guard: As, a *Frontier Town*, a *Cittadel*, *Caſtle*, *Tower*, &c. The *Garriſon* ſhould always be ſtronger than the Towns-men.

Winter Quarters, ſignify a Place where a Number of Forces are laid up in the Winter Seaſon, without keeping the regular Guard. The Soldiers like better to be in Winter Quarters, than in *Garriſon*. See FORTIFIED *Place*, *Winter* QUARTERS, &c.

Du Cange derives the Word from the corrupt Latin *garnicio*, which the later Writers uſe to ſignify all manner of Munition, Arms, Victuals, &c. neceſſary for the Defence of a Place, and the ſuſtaining of a Siege.

GARTER, literally ſignifies the ſame with the *Greek* Περίσκελις, Periſcelis, a Ligature, to keep up the Stockings; and is particularly uſed for the Badge, or Cognizance of a Noble Order of Knights, hence denominated the *Order of the Garter*. See the following Article.

GARTER, or *Order of the* GARTER, is a Military Order, inſtituted by King *Edward* III. in 1350; under the Title of the *Sovereign*, and *Knights-Companions of the moſt Noble Order of the Garter*. See ORDER.

This Order conſiſts of 26 Knights, or Companions; generally, all Peers, or Princes; whereof the King of *England* is the Sovereign, or Chief.

They wear a blue *Garter* on the left Leg, with this Motto, or Device, *Honi ſoit qui mal y penſe*; *q. d.* Shame to him, that thinks evil hereof. See MOTTO.

They are a College, or Corporation; having a Great, and Little Seal: Their Officers are, a *Prelate*, *Chancellor*, *Regiſter*, *Dean*, *King at Arms*, and *Uſher*. See PRELATE, CHANCELLOR, &c.

Beſide which, they have a *Dean*, and twelve *Canons*, with *Petty Canons*, *Vergers*, and 26 *Penſioners*, or *poor Knights*. See CANON, &c.

The Order is under the Patronage, or Protection of St. *George*, the Tutelary Saint of this Kingdom. See PATRON.

Their College is held in the Caſtle of *Windſor*, within the Chapel of St. *George*, and the Chapter-houſe, erected by the Founder for that Purpoſe. Their Robes, &c. are the *Garter*, deck'd with Gold, Pearl, and precious Stones; and a Buckle of Gold, to be worn daily on the left Leg; and, at Feaſts and Solemnities, a *Sur-coat*, *Mantle*, *high Velvet Cap*, *Collar of SS's*, compoſed of Roſes enamel'd, &c. See SURCOAT, COLLAR, &c.

When they wear not their Robes, they are to have a ſilver Star on the left Side; and they commonly bear the Picture of St. *George*, enamel'd on Gold, and beſet with Diamonds, at the End of a blue Ribbon, croſſing the Body from the left Shoulder. They are not to appear abroad without the *Garter*, on Penalty of 6 *s.* 8 *d.* paid to the Regiſter.

The Order of the *Garter* appears the moſt antient and noble Lay Order in the World. 'Tis prior to the *French* Order of St. *Michael*, by 50 Years: To that of the *Golden Fleece*, by 80 Years: To that of St. *Andrew*, by 190 Years; and to that of the *Elephant*, by 209 Years. See *Order of* St. MICHAEL, GOLDEN *Fleece*, St. ANDREW, ELEPHANT, &c.

Since its Inſtitution, there have been eight Emperors; and 27 or 28 foreign Kings; beſide numerous Sovereign Princes enroll'd as Companions thereof.

Its Origin is ſomewhat differently related: The common Account is, that it was erected in Honour of a *Garter* of the Counteſs of *Salisbury*, which ſhe dropt in Dancing, and the King pick'd up: But our beſt Antiquaries ſet this aſide as fabulous.

Cambden, *Fern*, &c. take it to have been inſtituted on occaſion of the Victory obtain'd over the *French*, at the Battle of *Creſſy*: That Prince, ſay ſome Hiſtorians, order'd his *Garter* to be diſplay'd, as a Signal of Battle; in commemoration whereof, he made a *Garter* the Principal Ornament of the Order, erected in memory of this Signal Victory; and a Symbol of the indiſſoluble Union of the Knights.—

Fa. *Papebroch*, in his *Analecta* on St. *George*, in the third Tome of the *Acta Sanctorum*, publiſh'd by the *Bollandiſts*, has a Diſſertation on the *Order of the Garter*. This Order, he obſerves, is not leſs known under the Name *of St. George*; than under that *of Garter*; and that, tho' it was only inſtituted by K. *Edward* III; yet it had been projected before him, by K. *Richard* I. in his Expedition to the Holy Land; if we may credit an Author, who wrote under *Henry* VIII. *Papebroch* adds, however, that he does not ſee what that Author grounds his Opinion on; and that tho' the Generality of Writers fix the Epocha of this Inſtitution to the Year 1350, he chuſes, with *Froiſſard*, to refer it to the Year 1344; which agrees better with the Hiſtory of that Prince; where we read, that he call'd an Extraordinary Aſſembly of Knights that Year.

In 1551 *Edward* VI. made ſome Alterations in the Ritual of this Order: That Prince compos'd it in Latin; the Original whereof is ſtill extant in his own Hand Writing. He there ordain'd, that the Order ſhould no longer be call'd the Order of St. *George*; but that of the *Garter*; and inſtead of the *George*, hung at the Collar, he ſubſtituted a Cavalier, bearing a Book on the Point of his Sword, with the Word *Protectio* graven on the Sword; and *Verbum Dei* on the Book; with a Buckle in the left Hand, and the Word *Fides* thereon.— *Larrey*.

Authors on this Order are, *Cambden*, *Aſhmole*, *Leland*, *Polydore Virgil*, *Heylin*, *Legar*, *Glover*, and *Favyn*.

Erhard, *Cellius*, and the Prince of *Orange*, adds *Papebroch*, have given Deſcriptions of the Ceremonies uſed at the Inſtallment of Knights; and a *Ciſtercian* Monk, named *Mendocius Bealetus*, has a Treatiſe, intitled *la Garretiere*, or *Speculum Anglicanum*, ſince printed under the Title of the *Catechiſm of the Order of the Garter*: Wherein he explains all the Allegories, real, or pretended of thoſe Ceremonies, with the Moral Significations thereof.

GARTER, *Principal King at Arms*; ſee KING *at Arms*.

Garter, and *Principal King at Arms*, are two diſtinct Offices, united in one Perſon: *Garter's* Employment is to attend the Service of the *Garter*; for which he is allowed a Mantle and Badge, a Houſe in *Windſor* Caſtle, and Penſions both from the Sovereign, and Knights, and laſtly, Fees. He alſo carries the Rod and Sceptre at every Feaſt of St. *George*, when the Sovereign is preſent: Notifies the Election of ſuch as are new choſen: Attends the Solemnity of their Inſtallations, and takes care of placing their Arms over their Seats: Carries the *Garter* to foreign Kings and Princes;

for which Service, it has been uſual to join him in Commiſſion with ſome Peer of the Realm.

Garter's Oath relates only to Services to be perform'd within the Order; and is taken in Chapter before the Sovereign and Knights. His Oath, as King at Arms, is taken before the Earl Marſhal.

GARTER is alſo a Term in Heraldry, ſignifying the Moiety, or half of a *Bend*. See BEND.

GAS, in Chemiſtry, a Term us'd by *Van Helmont*, to expreſs the Seeds, or Fermentations, or firſt Principles of Things: But he applies it ſo obſcurely, and precariouſly, that 'tis hard reducing it to any one Senſe.

Thus, he calls the vital Principle in Man, *Gas Vitale*; and the ſame Denomination *Gas* he gives to the ſulphurous Steams, which occaſion Damps: Add, that he calls the Air, *Gas Ventoſum*; and Water, the *Gas of Salts*.

Some would fix his Meaning to the Spirit, or ſubtle and moſt volatile Part of a Body: And thus, *Gas Cereviſiæ*, is the ſpirituous Steam, which flies off from Ale, while in working; but this does not take in the whole Idea of *Gas*.

GASCOIN, or GASKOIN, the hinder Thigh of a Horſe; commencing from the Stifle, and reaching to the Ply, or bending of the Ham.

GASCONADE, a boaſting or vaunting of ſomething very improbable. He pretended he had fought ſingly againſt three Men; a downright *Gaſconade*.

The Term has its Riſe from the *Gaſcoons*, or People in *Gaſcony*, in *France*, who are diſtinguiſh'd for Bragging, and Rhodomontado.—

GASTALDUS, or CASTALDUS, an Officer, antiently entertain'd in the Courts of divers Princes; wrote alſo *Gaſtaldius*, *Gaſtaldio*, *Gaſtaldatus*, *Guaſtaldus*, &c.

The *Gaſtaldus* was what in *Italy* and *Spain* is now call'd *Majordomo*, *viz.* the Maſter, or Steward of a Houſhold. The *Gaſtaldus* was a *Comes*, or Count, which ſhews his Office to have been very conſiderable.—

In the Laws of *Italy* we ſometimes meet with *Gaſtaldus*, in the Senſe of a Courier; and ſometimes as an Eccleſiaſtical Officer, ſo that it is ſomewhere expreſs'd to be Simony, to buy the Function of *Gaſtaldus*.

Macri derives the Word from the Arabic *Chaſendar*, Purveyor of a Houſe: Others, from the German *Gaſt*, and *halten*, to retain Travellers.—

GASTEREPIPLOICA, in Anatomy, a Vein, which opens into the Trunk of the Vena Porta; form'd of ſeveral Branches; derived from the Stomach, and Epiploon; whence its Name, γαστὴρ, and ἐπίπλοον. See VEIN.

GASTEROCNEMIUS, in Anatomy, a Name common to two Muſcles, conſtituting the Sura, or Calf of the Leg; the one called *Externus*, the other *Internus*.

GASTEROCNEMIUS *Externus*, call'd alſo *Suralis Externus*, and *Gemellus*, has two diſtinct, fleſhy Originations, from the ſuperior, and hindermoſt Part of each Tubercle of the lower Appendage of the Thigh-bone; which in their Deſcent are each dilated into two ſmall fleſhy Bellies, the innermoſt of which is thickeſt and largeſt; having each a different Series of fleſhy Fibres, which at length uniting, make a broad, ſtrong Tendon; which narrowing itſelf, joins the great Tendon of the Solæus, four Fingers breadth above its Inſertion into the Os Calcis.

When this Muſcle acts, the Foot is ſaid to be extended or pulled backwards; which Motion is very neceſſary in walking, running, leaping, or ſtanding on tip-toe, &c. whence it is, that thoſe who walk much, or carry heavy Burdens; and who wear low-heel'd Shoes, have theſe Muſcles larger than others.

GASTEROCNEMIUS, or *Suralis Internus*, call'd alſo *Solæus*, from its Figure, reſembling a Sole-Fiſh, is placed under the external. Its external fleſhy Part is cover'd with a tranſparent tendinous Expanſion, which makes it appear of a livid Colour.

It begins partly tendinous, chiefly from the hindermoſt Part of the upper Appendix of the Fibula, and back-part of the Tibia, that is, below the Inſertion of the Subpoplitæus; and increaſing to a large fleſhy Belly, compoſed of various Orders of fleſhy Fibres, ſome of them underneath aptly expreſſing the Figure of the Top of a Feather, whoſe Stamina, being here tendinous, join with the great Tendon, which is about a Finger's Breadth long; and inſerted into the ſuperior and hindermoſt Part of the Os Calcis.

The Foot, together with the Toes, being, as it were, a Lever to the whole Body, ought therefore to be attended with Muſcles of great Strength to extend it; which is the Reaſon that theſe Muſcles ſo much exceed their Antagoniſts.

GASTRIC, GASTRICUS, in Anatomy, is applied to divers Veins, on account of their proceeding from the Stomach, or Ventricle, which the *Greeks* call γαστὴρ. See STOMACH.

The *Gaſtricus major*, or greater *Gaſtric* Vein is inſerted into the Splenic Vein; and the *minor*, or leſſer *Gaſtric*, into the Trunk of the Vena Porta.

GASTRILOQUUS, or GASTRILOQOUS, a Perſon who ſpeaks inwardly, or within his Stomach; and whoſe Voice ſeems to come a-far off; more uſually call.ed *Ventriloquus*. See VENTRILOQUUS.

The Word is form'd of the Greek γαστὴρ, Belly; and the Latin *loqui*, to ſpeak.

GASTROLATER, a Glutton, or Belly-god: *Cujus Deus venter eſt*. See IDOLATER.

GASTROMANCY, or GASTROMANTIA, a kind of Divination, practiced among the Antients, by means of Words, coming, or ſeeming to come, out of the Belly. See DIVINATION.

The Word is form'd of γαστρομαντεία, compoſed of γαστὴρ, Belly, and μαντεία, Divination.

There is another kind of Divination, call'd by the ſame Name, *Gaſtromancy*, which is perform'd by means of Glaſſes, or other round, tranſparent Veſſels; at the Bottom whereof certain Figures appear, by Magic Art. 'Tis thus called, by reaſon the Figures appear as in the Belly of the Veſſels.—

GASTROTOMY, the Operation of cutting open the Belly; the ſame with what is otherwiſe called the *Cæſarian Section*. See CÆSARIAN *Section*.

GATE, a large Door, leading, or giving Entrance, into a City, Town, Caſtle, Palace, or other conſiderable Building. See DOOR.

Thebes, in *Egypt*, was antiently known by the Appellation, *With an hundred Gates*. *Fez*, in *Africa*, has 31 *Gates*. In Antient *Rome* there was a *Triumphal Gate*, *Porta Triumphalis*. See TRIUMPH. In the Modern *Rome* there is the *Jubilee Gate*, which is only open'd the Year of a Grand Jubilee. See JUBILEE.

The *Gates* of *London* are many of them converted into Goals, or Priſons; as *Ludgate*, *Newgate*, &c. See PRISON. The leſſer, or By-gates, are call'd *Poſterns*. See POSTERN.

Gates thro' which Coaches, &c. are to paſs, ſhould not be leſs than ſeven Foot broad; nor more than twelve: The Height to be $1\frac{1}{2}$ the Breadth.

GAVEL, in Law, ſignifies Tribute, Toll, Cuſtom, yearly Rent, Payment, or Revenue; of which there are ſeveral Kinds, as *Gavel-Corn*, *Gavel-Malt*, *Out-Gavel*, *Gavel-Fodder*, &c.

GAVEL, is ſometimes us'd for what we more uſually call the *Gable*. See GABLE.

GAVEL-KIND, a Tenure, or Cuſtom, whereby the Lands of the Father are equally divided, at his Death, among all his Sons; or the Land of the Brother among all the Brethren, if he have no Iſſue of his own. See CUSTOM, and TENURE, DESCENT, &c.

Teutonicis priſcis patrios ſuccedit in agros
Maſcula ſtirps omnis, ne foret ulla potens.

This Cuſtom, which antiently obtain'd throughout *England*, is ſtill of Force in the greateſt Part of *Kent*, *Urchenfeild* in *Herefordſhire*, and elſewhere; tho' with ſome Difference: But by the Stat. 34 and 35 *Hen.* 8. all *Gavelkind* Lands in *Wales* are made deſcendible to the Heir, according to the Courſe of common Law. See HEIR, &c.

Cambden in his *Britan.* gives the Origin and Nature of *Gavelkind* thus: 'The People of *Kent*, upon the *Norman* 'Invaſion, could not be reduced to ſurrender to the Con-'queror, but on theſe Conditions, that they ſhould retain 'their antient Country-cuſtoms without any Infringement 'or Diminution; and eſpecially that call'd *Gavelkind*. The 'Lands held under this Denomination, deſcend equally, and 'are divided, ſhare and ſhare alike, among all the Male 'Children; and in defect of theſe, among the Females.' He adds, 'That they are of Age, or qualified to take the 'Lands upon them, at Fifteen; and may then give, vend, 'or alienate the ſame to any Perſon, without the Conſent of 'any Lord: And Children here inherit their Fathers Land, 'tho' convicted of Felony, Murther, &c. The Tenants in '*Gavelkind* are to do Fealty; and to be in the Tuition of 'the next a-kin, who is not next Heir after them, till 15 'Years of Age; to pay Acknowledgment to the Lord for 'the Lands', &c.

In an antient Book of Records in *Chriſt-Church*, *Canterbury*, of the time of *Henry* VIII. our *Saxon* Anceſtors are ſaid to have either held their Lands by Writing, or without: The firſt were called *Bockland*; whoſe Owners were Men, whom we now call *Freeholders*: The ſecond was called *Folkland*; the Owners whereof were of ſervile Condition, and poſſeſs'd *ad voluntatem Domini*. See BOCKLAND, FREEHOLD, FOLKLAND, &c.

Now, the Inheritance, or Freehold, did not, in thoſe Days, deſcend to the eldeſt Son, but to all alike; which in *Saxon* was called Lande Scyptan, and in *Kent*, *To ſhift Land*; whence came the Cuſtom *Gavelkind*. And the Reaſon why it was retained in *Kent* more than other Places, was that the *Kentiſhmen* were not conquer'd by the *Normans*: For, ſay our Hiſtorians, *Stigand*, the Arch-Biſhop of *Canterbury*;

terbury, and one *Egelsine*, an Abbot, who commanded the Forces in that County; ordering every Man, fit to bear Arms, to march and cover themselves, with green Boughs in their Hands: In this Disguise they met the Conqueror unaware at *Swainscomb*; where, discovering themselves, the Archbishop and Abbot acquainted him with their Resolution of standing and falling in defence of the Law of their Country. Upon this the Conqueror, imagining himself encompass'd in a Wood, granted, that they, and their Posterity, should enjoy their Rights, Liberties, and Laws: Some of which, as particularly that of *Gavelkind*, continues to their Descendents to this Day.

GAVELMAN, a Tenant, who is liable to Tribute.— *Villani de Terring, qui vocantur* Gavelmanni. *Somner*, Gavelkind.

GAVELET, in Law, a special, and antient kind of *Cessavit*, us'd in *Kent*, where the Custom of Gavel-kind continues; whereby the Tenant shall forfeit his Lands and Tenements to the Lord, if he withdraw from him his due Rents and Services. See FEE, SERVICE, and GAVELKIND.

The Process of the *Gavelet* is thus: The Lord is first to seek by the Steward of his Court, from three Weeks to three Weeks, to find some Distress upon the Tenement; till the fourth Court; and if in that time he find none, at this fourth Court, it is awarded, that he take the Tenement into his hand in name of a Distress, and keep it a Year and a Day without manuring; within which time, if the Tenant pay his Arrears, and make reasonable Amends for the Withholding, he shall have and enjoy his Tenement as before: If he come not before the Year and Day be past, the Lord is to go to the next County Court, with Witnesses of what pass'd at his own Court, and pronounce there his Process, to have further Witnesses; and then by the Award of his own Court, he shall enter and manure the Tenement as his own: So that if the Tenant desire afterwards to have and hold it as before, he must agree with the Lord, according to this old Saying:

Has he not since any thing given, or any thing paid,
Then let him pay five Pound for his Were, e're he become Healder again.

Other Copies have the first Part with some Variation;

Let him nine times pay, and nine times repay.

GAUGE-*Point, of a solid Measure*, is the Diameter of a Circle, whose Area is equal to the solid Content of the same Measure. See MEASURE, and CONTENT.

Thus, the Solidity of a Wine Gallon being 231 Cubic Inches; if you conceive a Circle to contain so many Inches, the Diameter of it will be 17. 15; and that will be the *Gauge* Point of Wine Measure.

And an Ale Gallon containing 288 Cubic Inches; by the same Rule, the *Gauge* Point for Ale-measure will be found to be 19. 15: And after the same manner may the *Gauge*-Point of any other Measure be determined.

Hence we deduce, that when the Diameter of a Cylinder in Inches is equal to the *Gauge*-Point in any Measure, (given likewise in Inches) every Inch in length thereof will contain an Integer of the same Measure. In a Cylinder, whose Diameter is 17. 15 Inches, every Inch in Height contains one intire Gallon in Wine-measure; and in another, whose Diameter is 19. 15, every Inch in length contains one Ale Gallon.

GAUGE *Line*, a Line on the common Gauging Rod, whose Description and Use see under the Article GAUGING.

GAUGER, an Officer of the King's Excise, whose Business it is to *gauge*, *i. e.* to examine, survey, or measure all Casks of Beer, Wine, Oil, *&c.* and to give them a Mark of Allowance (which is a Circle burnt with an Iron, before they be sold in any Place within the Extent of this Office. See EXCISE, and GAUGING.

GAUGING, the Art, or Act of measuring the Capacities, or Contents of all kinds of Vessels; and determining the Quantity of Fluids, or other Matters, contain'd therein. See MEASURING, CONTENT, *&c.*

Or, *Gauging* is the Art of reducing the unknown Capacity of Vessels of divers Forms; cubical, parallelipipedal, cylindrical, spheroidal, conical, *&c.* to some known cubic Measure; and of computing, for instance, how many Gallons, Quarts, Pints, or the like, of any Liquor, *e. gr.* Ale, Beer, Wine, Brandy, *&c.* are contain'd therein. See CUBE, PARALLELIPIPED, &c.

Gauging is a Branch of *Stereometry*. See STEREOMETRY.

The principal Vessels that come under its Operation, are *Pipes*, *Barrels*, *Rundlets*, and other *Casks*; *Backs*, *Coolers*, *Fats*, &c. See BARREL, &c.

The solid Content of cubical, parallelipipedal and prismatical Vessels, we have already observ'd, is easily found in Cubic Inches, or the like, by multiplying the Area of the Base by the perpendicular Altitude. See SOLID, PRISM, *&c.*

And for cylindrical Vessels, the same is found by multiplying the Area of the circular Base, by the perpendicular Altitude, as before. See CYLINDER.

Casks of the usual Form of Hogsheads, Kilderkins, *&c.* may be consider'd as Segments of a Spheroid cut off by two Planes, perpendicular to the Axis; which brings them to *Oughtred*'s Theorem, for measuring Ale and Wine Casks; which is thus: Add twice the Area of the Circle at the Bung, to the Area of the Circle of the Head. Multiply the Sum by one third of the Length of the Cask: The Product is the Content of the Vessel in Cubic Inches.

But, for Accuracy, Dr. *Wallis*, Mr. *Caswel*, &c. think, that most of our Casks had better be consider'd as Frusta of parabolic Spindles; which are less than the Frusta of Spheroids of the same Base, and Height; and give the Capacity of Vessels nearer the Truth, than either *Oughtred*'s Method, which supposes them Spheroids; or than that of multiplying the Circles at the Bung and Head, into half the Length of the Cask, which supposes them parabolic Conoids; or than that of *Clavius*, &c. who takes them for two truncated Cones; which is furthest off of all.

The common Rule for all Wine or Ale Casks, is to take the Diameters at the Bung, and at the Head; by which you may find the Areas of the Circle there: Then taking two Thirds of the Area of the Circle at the Bung, and one Third of the Area of the Circle at the Head; and adding them together into one Sum; this Sum multiplied by the internal Length of the Cask, gives the Content in solid Inches: Which are converted into Gallons, by dividing by 282 for Ale, and by 231 for Wine Gallons.

But *Gauging*, as now practised, is chiefly done by means of Instruments, call'd *Gauging Rods*, or *Rules*, which do the Business at once, and answer the Question without so much Calculation; which is no inconsiderable Addition, both to the Ease and Dispatch of the Work. This Instrumental way of *Gauging*, therefore, we shall here chiefly insist upon.—

Construction of a Gauging Rod, *whereby the Content of any Cylindrical, or other common Vessel is easily had.*

Take the Diameter A B of a Cylindrical Vessel, A B D A, *Tab. Surveying, Fig.* 26. that holds one of the Measures wherein the Fluid is estimated, *e. gr.* Gallons; and at the Extremity A, erect an indefinite Perpendicular, A 7. From A to 1, set off a Right Line, equal to A B; then will B 1 be the Diameter of a Vessel, that holds two Measures, or Gallons, of the same Height as the former.

Again, let A 2=B 2; then, B 3 will be the Diameter of a Vessel that holds three Measures, but of the same Height as that which only holds one: And, after the same manner, find the Diameters of other larger Vessels, A 4, A 5, A 6, A 7, &c.

Lastly, set off the several Divisions thus found, A 1, A 2, A 3, &c. upon one Side of a Rod, or Rule; and on the other the Height, or Depth of a Cylinder, that holds one Measure or Gallon, repeated, as oft as it will go. *Thus is the* Gauging Rod *compleat.*

Demonstration. For Cylinders, that have the same Altitude, are to each other as the Squares of their Diameters; consequently the Square of the Diameter that holds 2, 3, or 4 Gallons, must be double, triple, or quadruple of that which only holds one. And since in the first, A B= A 1, the Square of B 1 is double, that of B 2 triple, that of B 3 quadruple, *&c*; it is evident, that the Right Lines A 2, A 3, A 4, &c. are the Diameters of the Vessels required.

These Divisions, therefore, being applied to the Side of a cylindrical Vessel, it will immediately appear how many Measures, *e. gr.* Gallons, a cylindrical Vessel of that Base and of the Height of that which holds one Gallon, will contain.

Wherefore, finding by the Divisions on the other Side of the Rod, how often the Height of one Gallon is contained in the Height of the given Vessel; and multiplying the Diameter before found by this Number: The Product will be the Number of Gallons the Vessel contains.

Thus, *v. gr.* if the Diameter of the cylindrical Vessel be 8, and its Height 12, its Content will be 96 Gallons.

Note, 1° The less you take the Height of the Cylinder, containing one Gallon, the greater will the Diameter of the Base be: Whence both that, and the Diameters of the Cylinders, containing several Gallons, will be the more easily divisible into lesser Parts. *Bayer* directs such Height to be only one Digit, or Tenth of an Inch.

2° The Diameters of Vessels holding one or more decimal Parts of a Gallon, will be had by dividing one or more decimal Parts of the Vessel holding a whole Gallon, by its Height; which gives us the Area of the circular Base; from whence the Diameter is easily found by the Rules deliver'd

livered under DIAMETER, CIRCLE, &c. And after the same manner the Diameters are found for the Divisions of Vessels that hold two or more Gallons.

Use of the *Gauging Rod.*

To find the Content of a Cask; that is, to determine the Number of Measures *e. gr.* Gallons, it will hold: Apply the *Gauging Rod* to the Vessels, as directed in the preceding Article; and find both the Length of the Cask A C, *Fig.* 27. and both Diameters G H, and A B. Now, as we find by Experiment, how far soever it may be from Geometrical Exactness, that a common Cask of this Form, may safely enough be reputed as a Cylinder, whose Base is a Medium between the Head and the Belly; find such Medium, which call the *equated Diameter.*

Then, multiplying the Number thus found by the Length of the Cask A C; the Product will be the Number of Measures the Vessel contains.

Suppose *e. gr.* A B=8, and G H=12, and A C=15; the equi-different Mean will be 10; which multiplied by 15, gives the Capacity of the Cask, 150 Measures.

If it happen that the Diameters of the two Ends be not equal; measure them both, and take half their Sum for the Diameter to work by.

There is another Method, whereby the Content of a Vessel is had even without any Calculation at all, which obtains in divers Parts of *Germany* and the Low Countries: But as this supposes all Vessels to be similar to each other; and their Length double of the equated Diameter, that is, of half the Sum of the Diameters A B, and G H; it is not safe to use it in all places. *Kepler*, however, prefers it so much before all others, as including all the Precautions possible; that he recommends it to the Publick, to enact it by Law, that all Casks be made in this Proportion.

The Methods of *Gauging*, which chiefly obtain among us, are by the *Four Foot Gauging Rod*, and *Everard's Sliding Rule.*

Description and Use of the Four Foot *Gauging Rod.*

The Four Foot *Gauging* Rod, represented in *Tab. Surveying*, *Fig.* 28. is usually made of Box, and consists of four Rules, each a Foot long, and about three Eighths of an Inch square, join'd together by three brass Joints; by which means the Rod is render'd four Foot long, when the four Rules are quite open'd; and but one Foot, when they are folded together.

On the first Face of this Rod, mark'd 4. are plac'd two Diagonal Lines; one for Beer, and the other for Wine: By means of which the Content of any common Vessel in Beer or Wine Gallons may be readily found, by putting the Rod in at the Bung-hole of the Vessel, till it meets the Intersection of the Head of the Vessel with the Staves opposite to the Bung-hole. For distinction of this Line, there is writ thereon, *Beer and Wine Gallons.*

On the second Face, 5, are, a Line of Inches, and the *Gauge Line*; which is a Line expressing the Areas of Circles, whose Diameters are the correspondent Inches in Ale Gallons. At the Beginning is writ, *Ale Area.*

On the third Face, 6, are three Scales of Lines; the first, at the End of which is write *Hogshead*, is for finding how many Gallons there is in a Hogshead, when it is not full, lying with its Axis parallel to the Horizon. The second Line, at the End of which is wrote B. L, signifying a *Butt lying*, is for the same Use as that for the Hogshead. The third Line is to find how much Liquor is wanting to fill up a Butt when it is standing: At the Ends of it is wrote B. S. signifying a *Butt standing.* Half way the fourth Face of the *Gauging* Rod, 7, are three Scales of Lines, to find the Wants in a Firkin, Kilderkin, and Barrel, lying with their Areas parallel to the Horizon. They are distinguish'd by Letters F. K. B. signifying a *Firkin*, *Kilderkin*, and *Barrel.*

Use of the Diagonal Lines on the *Gauging Rod.*

To find the Content of a Vessel in Beer or Wine Gallons. Put the Brass End of the *Gauging Rod* into the Bung-hole of the Cask, with the Diagonal Lines upwards; and thrust the Brass End to the Meeting of the Head and Staves: Then, with Chalk, make a Mark on the Middle of the Bung-hole of the Vessel; and also on the Diagonal Lines of the Rod, right against, or over one another, when the brased End is thrust home to the Head and Staves. Then turn the *Gauging* Rod to the other End of the Vessel, and thrust the brased End home to the End as before.

Lastly, see if the Mark made on the *Gauging* Rod come even with the Mark made on the Bung-hole, when the Rod was thrust to the other End; which if it be, the Mark made on the Diagonal Lines, will, on the same Lines, shew the whole Content of the Cask in Beer or Wine Gallons.—

If the Mark made on the Bung-hole, be not right against that made on the Rod, when you put it the other way; then, right against the Mark made on the Bung-hole, make another on the Diagonal Lines: And the Division on the Diagonal Line, between the two Chalks, will shew the Vessel's whole Content in Beer or Wine Gallons.

Thus, *e. gr.* if the Diagonal Line of a Vessel be 28 Inches four Tenths, its Content in Beer Gallons will be near 51, and in Wine Gallons 62.

If a Vessel be open, as a Half-barrel, Tun, or Copper, and the Measure from the Middle on one Side, to the Head and Staves, be 38 Inches; the Diagonal Line gives 122 Beer Gallons; half of which, *viz.* 61, is the Content of the open half Tub.

If you have a large Vessel, as a Tun, or Copper, and the Diagonal Line taken by a long Rule, prove 70 Inches: The Content of that Vessel may be found thus:

Every Inch at the Beginning-end of the Diagonal Line, call ten Inches. Thus, ten Inches become 100 Inches; and every Tenth of a Gallon call 100 Gallons; and every whole Gallon, call 100 Gallons.

Exam. at 44. 8 Inches, on the Diagonal Beer-Line, is 200 Gallons; so also 4 Inches 48 Parts, now called 44 Inches 8 Tenths, is just two Tenths of a Gallon, now called 200 Gallons: So also, if the Diagonal Line be 76 Inches and 7 Tenths, a close Cask, of such Diagonal, will hold 1000 Beer Gallons: But an open Cask, but half so much, *viz.* 500 Beer Gallons.

Use of the *Gauge Line.*

To find the Content of any Cylindrical Vessel in Ale-Gallons: Seek the Diameter of the Vessel in the Inches, and just against it, on the *Gauge Line*, is the Quantity of Ale Gallons contained in one Inch deep: This multiplied by the Length of the Cylinder, will give its Content in Ale Gallons.

For Example: *Suppose the Length of the Vessel* 32. 06, *and the Diameter of its Base* 25 *Inches*; *what is the Content in Ale Gallons?*

Right against 25 Inches, on the *Gauge Line*, is one Gallon, and .745 of a Gallon; which multiplied by 32. 06, the Length, gives 55 .9447 Gallons for the Content of the Vessel.

The Bung *Diameter of a Hogshead being* 25 *Inches, the Head Diameter* 22 *Inches, and the Length* 32. 06 *Inches; to find the Quantity of Ale Gallons contain'd in it.*

Seek 25, the Bung Diameter, on the Line of Inches; and right against it on the Gauge Line you will find 1.745: Take one Third of it, which is .580, and set it down twice: Seek 22 Inches the Head Diameter, and against it you will find on the Gauge Line, 1.356; one Third of which added to twice .580, gives 1.6096; which multiplied by the Length 32.06, the Product will be 51.603776, the Content in Ale Gallons.

Note, This Operation supposes, that the aforesaid Hogshead is in the Figure of the middle Frustum of a Spheroid.

The Use of the Lines on the two other Faces of the Rod, is very easy; you need only put it down right into the Bung-hole (if the Vessel you desire to know the Quantity of Ale Gallons contained therein be lying) to the opposite Staves; and then, where the Surface of the Liquor cuts any one of the Lines appropriated for that Vessel, will be the Number of Gallons contained in that Vessel.

The Description and Use of Everard's *Sliding Rule for* GAUGING, *see under the Article* SLIDING *Rule.*

GAUGING *Rod*; see GAUGING.

GAULISH *Language*; see ROMAN, and FRENCH.

GAUNT, an old Word for *lean*, or lank: Thus we say, a *gaunt*-belly'd or light-belly'd Horse, when his Belly shrinks up towards his Flanks.

GAURES, GAVRES, a religious Sect in *Turkey*, *Persia*, &c. The Turks call the Christians, *Gaures*; *q. d.* Infidels, or People of a false Religion; or rather, as *Leunclavius* observes, *Heathens*, or *Gentiles:* The Word *Gaure* among the *Turks* having the same Signification, as *Pagan*, or *Infidel*, among the Christians; and denoting any thing not *Mahometan.*

In *Persia*, the Word has a like general Signification; and beside a more peculiar one, wherein it is applied to a Sect dispersed thro' the Country, and said to be Remains of the antient *Persians*, Worshipers of Fire: Tho', upon the whole, they rather appear to have been *Persians* converted; who being afterwards left to themselves, mingled their antient Superstitions with the Truths and Practices of Christianity; and so form'd themselves a Religion a-part.

The *Gaures* pretend they derive their Religion from one *Azer*, a *Frank* by Nation, and by Profession a Sculptor: This Man coming to *Babylon*, where they then dwelt, married a Maid of the Country, named *Dogdon*; who, after a Visit which she received from an Angel, was fill'd with a Divine Light;

Light; and ſoon afterwards found herſelf with Child. The Aſtrologers, at the ſame time, perceiving that the Child wou'd be a great Prophet, and the Founder of a new Religion; *Neubrout*, the Prince then reigning, was advertis'd hereof; who gave immediate Orders for all the Women with Child to be put to death, throughout his Empire.

The Order was executed accordingly; but the Mother of the future Prophet, ſhewing no Tokens of Pregnancy, eſcaped; and was at length happily deliver'd of a Son, call'd *Ebrahim Zer-Ateucht*.

After his Birth, new Dangers aroſe: The King, being inform'd thereof, had him brought before him; and drawing his Sabre, would have ſlain him with his own Hand; but his Arm grew motion-leſs upon the Spot: Upon this, a huge Fire was lighted, and the Child caſt into the ſame; but he reſted therein, as on a Bed of Roſes. He was afterwards deliver'd from other kinds of Death, by a ſort of Flies, which infeſted the Kingdom; one whereof, entring the King's Ear, render'd him frantic, and at length killed him.

Cha Glochtes, his Succeſſor, made the like Attempts on the Child; but was ſo ſtruck with the Miracles which he ſaw him work, that he began to adore him, as all the reſt of the People already did.

At length, after a great Number of Miracles, the Prophet diſappear'd.—Some held he was tranſlated into Heaven, Body, and Soul: Others, that he found an iron Coffin near *Bagdat*, where ſhutting himſelf up, he was carried away by the Angels.

After he was in Poſſeſſion of Paradiſe, God ſent them, thro' his means, ſeven Books; which contain'd all the Matters of Religion; and afterwards, ſeven more, of the Explication of Dreams; and laſtly, ſeven of Medicine. *Alexander* the Great burnt the firſt ſeven, by reaſon no body underſtood the Language, and kept the other fourteen for his own Uſe.

After his Death, ſome of the Prieſts and Doctors among the *Gaures*, retriev'd as much as their Memory would allow them, of the loſt Books; and compoſed a large Volume, ſtill extant among the modern *Gaures*; tho' they underſtand nothing, either of the Words, or the Character.

Throughout the whole, we ſee the Marks, and Traces of Chriſtianity; tho' grivouſly defaced: The *Annunciation*; the *Magi*; the *Maſſacre of the Infants*; Our Saviour's *Miracles*; his *Perſecutions*, *Aſcenſion*, &c.

GAWZE, in Commerce; a very thin, ſlight, tranſparent kind of Stuff, wove ſometimes of Silk, and ſometimes only of Thread. See STUFF.

To warp the Silk for making of *Gawze*, they uſe a kind of Mill, upon which the Silk is wound: This Mill is a wooden Machine, about ſix Feet high; having an Axis perpendicularly placed in the Middle thereof, with ſix large Wings, on which the Silk is wound from off the Bobbins, by the Axis turning round.

When all the Silk is on the Mill, they uſe another Inſtrument, to wind it off again on to two Beams: This done, the Silk is paſs'd thro' as many little Beads as there are Threads of Silk; and thus rolled on another Beam, to ſupply the Loom.

The *Gawze Loom* is much like that of the common Weavers, tho' it has ſeveral Appendages peculiar thereto. See LOOM.

There are *Figur'd Gawze's*; ſome with Flowers of Gold and Silver, on a Silk Ground: Theſe laſt are chiefly brought from *China*.

GAYAC, GAYACUM, or GAYACAN, a Medicinal Wood, brought from the *Indies*; much uſed in Venereal Diſorders; called alſo *Lignum Sanctum*; and by the *Spaniards*, *Ligno Santo*. See WOOD.

Gayac grows equally in the Eaſt and Weſt *Indies*: That of the latter is brought in large Pieces, ſome of them weighing four or five hundred Pound; by which it is diſtinguiſh'd from the former.

The *Gayac* Tree, is the Heigth of our Walnut Tree; and is diſtinguiſh'd into two Kinds, Male and Female; only differing, as their Leaves are more or leſs round; being all equally green, the Flowers blue, and of a ſtarry Form; having a little Orange-colour'd Fruit, about the Size of a ſmall Nut, at the Tip thereof.

The Wood *Gayac* is extreamly hard and heavy, and on that account uſed as Ebony, in Moſaic Work, &c. as alſo for the making of Button Moulds. See EBONY.

But its principal Uſe is in Medicine, being found to warm, rarify, attenuate, attract and promote Sweats and Urine. The uſual way of applying it, is in Decoction.

The beſt is that in large Pieces, of a duſky Colour, freſh, gummy, heavy, of an agreeable Smell, and a briſk pungent Taſte; the Bark ſticking cloſe to the Wood.

The Bark of *Gayac* is held of as much Virtue, as the Wood it ſelf: The Rind is of no Efficacy; ſo that to make a Sudorific Decoction or Piſan of the Wood, they firſt pare off all the white Part, which in Reality is the Rind; and only chip or raſp the hard, ſolid Part, which is black, heavy and reſinous.

The Chirurgeons frequently ſubſtitute Box-wood, inſtead of *Gayac*, and, 'tis ſaid, with equal Succeſs.

The Reſin drawn from *Gayac*, is held much more effectual in Venereal Caſes, than either the Wood, or Bark. 'Tis brought us in large Pieces, not unlike common Rozin; but very different in reſpect of Smell: The former, when caſt on the Coals, yielding a very agreeable balſamick Fume.

GAZETTE, a *News Paper*, or printed Account of the Tranſactions of divers Countries, in a looſe Sheet.

Thus we ſay, the *London Gazette*, *Paris Gazette*, *Gazette a la main*, &c.

Gazettes, which moſt People look on as Triffles, are really the moſt difficult kind of Compoſitions that have appear'd. They require a very extenſive Acquaintance with the Languages, and all the Terms thereof; a great Eaſineſs and Command of writing, and relating, Things cleanly, and in a few Words.

To write a *Gazette*, a Man ſhould be able to ſpeak of War both by Land and Sea; be thoroughly acquainted with every thing relating to Geography, the Hiſtory of the Time, and that of the Noble Families; with the ſeveral Intereſts of Princes, the Secrets of Courts, and the Manners and Cuſtoms of all Nations.

Vigneul de Marville recommends a Set of *Gazettes* well wrote, as the fitteſt Books for the Inſtruction of young Perſons, coming into the World.

The Word is form'd of *Gazetta*, a kind of Coin, formerly currant at *Venice*; which was the ordinary Price of the firſt News Papers printed there: Tho' others derive it by corruption from the Hebrew *Izgad*, which ſignifies *Nuntius*, a Meſſenger; but this Etymology is too much forced, and the former ought to be preferred.

The firſt *Gazette* publiſh'd in theſe Parts, is ſaid to be that of *Paris*, begun in the Year 1631 by *Theophraſt Renaudot*, a Phyſician of *Montpelier*, in his Office of Intelligence. See INTELLIGENCE.

GAZONS, in Fortification, Pieces of freſh Earth cover'd with Graſs, cut in form of a Wedge, about a Foot long, and half a Foot thick; to line Parapets, and the Traverſes of Galleries. See PARAPET, GALLERY, &c.

GEERS, a general Term for Trappings, Harneſs, and all other Things, that belong to Draught-horſes or Oxen.

GEHENNA, a Scripture Term, which has given ſome pain to the Criticks. It occurs in St. *Matthew* v. 22, 29, 30. x. 28. xviii. 9. xxiii. 14. 33. *Mark* ix. 42. 44. 46. *Luke* xii 5. *James* iii. 6.

The Authors of the *Lovain*, and *Geneva* Verſions, retain the Word *Gehenna*, as it ſtands in the *Greek*; the like does Monſ. *Simon*: The *Engliſh* Tranſlators render it by *Hell*, and *Hell-Fire*; and the like do the Tranſlators of *Mons*, and Father *Bouhours*.

The Word is form'd from the Hebrew *Gehinnom*, *i. e.* Valley of *Hinnom*. In that Valley, which was near *Jeruſalem*, there was a Place named *Topheth*, where ſome Jews ſacrificed their Children to *Moloch*, by making them paſs through the Fire. King *Joſias*, to render this Place for ever abominable, made a Cloaca, or common Shore thereof, where all the Filth, and Carcaſſes in the City were caſt. The *Jews* obſerve further, that there was a continual Fire kept up, to burn and conſume thoſe Carcaſſes; for which reaſon, as they had no proper Term in their Language, to ſignify *Hell*, they made uſe of that of *Gehenna*, or *Gehinnom*, to denote a Fire unextinguiſhable.—

GELATINOUS, among Phyſicians, is applied to any thing approaching the glutinous Conſiſtence of a Jelly.

GELD, in our antient Cuſtoms, a Mulct, or Compenſation for a Crime, or Delinquency. See MULCT.

Hence, *Wergild* was antiently uſed for the Value or Price of a Man ſlain; and *Ortgild* of a Beaſt.

Et ſint quieti de Geldis, *& Danegeldis*, *Horngeldis*, *& Fortgeldis*, *& de Blodwita & Flitwita*, *& Leirwita*, *& Heingwita*, *& Fremineſeuda*, *& Werdpeni*, *& Averpeni*, *& Hundredpeni*, *& Tolingpeni*. Charta Ric. 2. Priorat. de Hatland in Devon.

GELDABLE, ſee GILDABLE.

GELDING, the Operation of Caſtrating, and particularly Horſes. See CASTRATION.

The ſame Term is alſo applied to a Horſe thus caſtrated; or whoſe Teſticles are cut out; to diſable him from being a Stallion.

In *gelding* of Horſes, regard is had to their Age, the Seaſon of the Year, and the State of the Moon.

For the Firſt, If it be a Colt, the Operation may be perform'd at nine, or fifteen Days old, if the Teſticles be come down; in regard the ſooner he is *gelt*, the better it will be for his Growth, Shape, and Courage; tho' a Horſe may be *gelded* at any Age, if care be taken in the Cure.

As for the Second, The beſt Time is about *April*, or *May*; or elſe about the latter End of *September*.

For the Third, The Wane of the Moon is prefer'd as the fitteſt Time.

The manner of gelding is thus: The Beaſt being caſt on ſome ſoft Place, the Operator takes the Teſticles between his fore and great Finger; ſlits the Cod, and preſſes out the Stones; then with a pair of Nippers made very ſmooth, either of Steel, Box, or Brazil, claps the Strings of the Stones between them, very near to where the Stones are ſet on; and preſſes them ſo hard, that there may be no Flux of the Blood; then ſears away the Stone with a thin drawing cauterizing Iron, made red hot.

This done, he takes a hard Plaſter, made of Wax, Roſin, and waſh'd Turpentine melted together, and melts it on the Head of the Strings with the hot Iron; and afterwards ſears the Strings, and melts more of the Salve, till there is a good Thickneſs of the Salve laid on the Strings.

This being done to one Stone, the Nippers are looſen'd, and the like done to the other; and the two Slits of the Cod fill'd with white Salt; and the Out-ſide of the Cod anointed with Hogs Greaſe: And thus they let him riſe, and keep him in a warm Stable, without tying him up.

If he ſwells much in his Cod, or Sheath, they chafe him up and down, and make him trot an Hour in a Day; and he ſoon recovers.

GELOSCOPY, Geloscopia, a kind of Divination, perform'd by the means of Laughter: Or, a Knowledge of any Perſon's Character and Qualities, acquired from the Conſideration of his Laughter. See Physiognomy.

Metapoſcopy, Chiromancy, *Galoſcopy*, Ophthalmoſcopy, Idemgraphy; *Maſcurat.* p. 607.

GEM, Gemma, a common Name for all precious Stones, or Jewels. See Precious *Stones*.

Among *Gems*, the principal are the *Diamond*, *Ruby*, *Saphir*, *Emerald*, *Turcoiſe*, *Opal*, *Agat*, *Cryſtal*, &c. See each under its proper Article, Diamond, Ruby, Saphir, Emerald, &c.

Pearls are alſo ranked among *Gems*; tho' not Stones. See Pearl.

Several Authors, both Antient and Modern, relate Wonders of the Virtues and Medicinal Properties of *Gems*: But their Reputation, in this reſpect, is now not a little fallen; and many even deny them any Virtue at all. Yet are the Fragments of ſuch Stones ſtill preſerv'd by the Phyſicians, in ſome of the moſt celebrated Compoſitions; and there are ſeveral Chemical Preparations made of them.

In effect, as ſeveral Perſons of the greateſt Candour and Experience, have related ſome conſiderable Effects of certain *Gems*, on their own particular Obſervations; and, as it is no ways improbable that ſome of the ſofter Stones may have conſiderable Operations on the human Body; it might be imprudent indiſcriminately to exclude them from any Medicinal Vertue at all.

When much the greateſt Part of their traditionary Qualities are ſet aſide as fabulous; there will ſtill remain ſome, on as real, and well warranted a footing, as many of our other Medicines.

On ſuch Conſiderations, Mr. *Boyle* was induced to give us a Treatiſe of the *Origin and Virtue of Gems*; the Purport whereof is to make appear, that ſuch Stones were originally in a fluid State; or made up of ſuch Subſtances as were formerly fluid; and that many of their general Virtues are probably derived from the Mixture of Metalline, and other Mineral Subſtances uſually incorporated with them; while the great Variety, and the particular Efficacy of their Virtues ariſe from ſome happy concurrent Circumſtances of that Commixture; *e. gr.* the peculiar Nature of the impregnating Liquor, the Proportion wherein it is mix'd, with the petreſcent Juice, and the like.

To ſupport this Hypotheſis of the Virtues of *Gems*, he ſhews that ſeveral of them are not ſimple Concretions of any petreſcent Liquors, but conſiſt alſo of other mineral adventitious Parts; which he argues from the Separableneſs of ſuch Subſtances in ſome Stones; the ſpecific Gravity in others; and the different Waters or Tinctures to be met with in *Gems* of the ſame Species, as Rubies, Saphires, Granates, and even Diamonds; of which ſome are yellow; ſome of other Colours; and ſome green, almoſt like Emeralds.

There may therefore be in ſome *Gems* numberleſs adventitious Corpuſcles: But there is great reaſon to think that ſome of theſe Corpuſcles may be endued with ſeveral Properties and Medicinal Virtues: There is a great Difference among theſe impregnating Particles; and probably a greater Variety than is known by us: And laſtly, many *Gems* are very richly impregnated with theſe Particles; why, then, may not they exert ſome Power? This is the Subſtance of what is directly alledg'd, in behalf of *Gems*.

The Streſs of what is objected againſt them, is, that the Mineral Subſtances they contain, are ſo cloſely locked up, that they can communicate nothing to the Body, and ſo can have no medicinal Operation, being unconquerable by ſo ſmall a Heat, as that of the Stomach, and other Parts of the Body. See Digestion.

Which Objection might be plauſible enough to prevent one's aſcribing any Medicinal Virtues to them *a priori*; but can conclude nothing againſt what is warranted by ſo many Facts, and Obſervations; eſpecially, when there are ſeveral Particulars, that obviate this Objection.

For, a vigorous Loadſtone, tho' frequently harder than many *Gems*, is known to emit copious Effluvia: And there are many which have been found to have a manifeſt and inconvenient Operation on the human Body, by being wore in the Pocket, or long held in the Hand. Mr. *Boyle* has found many tranſparent Pebbles, which, when cut, would reſemble Diamonds, that might be immediately brought to emit copious, and ſtrong-ſcented Steams. And if electrical Attractions be owing to the Effluvia of Bodies excited by rubbing; very ſlight Alterations may ſuffice to procure Expirations from tranſparent *Gems*, many of which are electrical, and even the hardeſt of all, *viz.* Diamonds; one of which Mr. *Boyle* kept by him, which upon a little Friction would attract very vigorouſly. See Magnet, Effluvia, Electricity, Diamond, &c.

To that Part of the Objection, which pretends *Gems* not to be digeſtable by the Heat of the Stomach, it may be replied, that we do not know how far the Digeſtion of Things in the Stomach is owing to Heat: Nor is it proved, that ſuch Materials can have no Operation on the Body, without being digeſted, *i. e.* in paſſing thro' it, without undergoing any ſenſible Change of Bulk, Figure, *&c.* as *Gems*, when ſwallow'd, are ſuppoſed to do.

For ſome Chemiſts make a kind of Bullets of Regulus of Antimony, which they call *Pillulæ perpetuæ*, becauſe when they have perform'd their Operation in the Body, and are caſt forth with the Excrements, they may be applied again and again to the ſame purpoſe. Nor do we know, what Analogy there may be between ſome Juices in the Body, and thoſe mineral Parts which impregnate *Gems*: For tho' *Oculus Mundi* be reckon'd among the rare *Gems*; yet if one of the beſt ſort, be, for a while, kept in common Water, it will receive an Alteration, obvious to the Eye.

Add that Mr. *Boyle* has, without Heat, obtain'd a manifeſt Tincture from ſeveral hard Bodies, and even from a tranſparent ſort of *Gems*, by means of a faint Liquor, diſtilled from a Vegetable Subſtance; as harmleſs, and as plentifully eaten as Bread. And whether ſome Juices of the Body, aſſiſted by the natural Heat thereof, may not ſerve for Menſtrua to ſome *Gems*, we will not ſay; but even the natural Heat of a human Stomach, nay perhaps of the external Parts of the Body, may be able, tho' not to digeſt precious Stones, yet to fetch out ſome of their Virtues: For 'tis certain, it makes a ſenſible Alteration in the hardeſt Sort of them: Witneſs a Diamond of Mr. *Boyle*'s; which might have its electrick Faculty excited without rubbing, only by a languid Degree of adventitious Heat: And another, which, by means of Water, made a little more than luke warm, might be brought to ſhine in the dark. See Phosphorus.

Laſtly, if it be yet objected, that 'tis not likely *Gems* ſhould part with any Effluvia, or Portions of themſelves, inaſmuch as they loſe none of their Weight: It may be anſwer'd, that the Antimonial Glaſs and Cup imbue Wine and other Liquors, with a ſtrong emetic Quality, without undergoing any ſenſible Diminution of Weight. Add, that though common Water be not allow'd a Menſtruum fit to draw any thing from Mercury; yet, both *Helmont*, and others inform us, that a large Quantity of it being kept a Day or two upon a ſmall Proportion of that Drug, will acquire a Virtue of killing Worms; tho' the Mercury retains its former Weight. See Mercury.

Gem, or Germen, in Botany, a Shoot, or Bud of a Plant. See Plant, Germen, Bud, Germination, *&c.*

GEMARA, or Ghemara, the ſecond Part of the *Talmud* of *Babylon*. See Talmud.

The Word גמרה *Gemara*, is commonly ſuppos'd to denote a *Supplement*; but, in Strictneſs, it rather ſignifies *Complement*, Perfection; as being form'd of the *Chaldee* גמר *Gemar*, or *Ghemar*, to finiſh, perfect, or compleat any thing: In which Senſe it is that the Rabbins uſe the Word.

For, the Pentateuch, they call ſimply the *Law*; the firſt Part of the *Talmud*, which is only an Explication of that Law, or an Application thereof to particular Caſes, with the Deciſions of the antient Rabbins thereon, they call the *Miſchna*, *i. e.* Second Law; and the ſecond Part, which is a more extenſive and ample Explication of the ſame Law, and a Collection of Deciſions of the Rabbins, poſterior to the Miſchna, they call *Gemara*, *i. e.* Perfection, Completion, Finiſhing; by reaſon they eſteem it the Finiſhing of the Law, or an Explication, beyond which there is nothing further to be deſired. See Mischna.

The *Gemara* is uſually call'd *Talmud*, the common Name of the whole Work. In this Senſe we ſay, there are two

Gama-

Gemara's, or Talmuds; that of *Jeruſalem*, and that of *Babylon*: Tho' in Strictneſs, the *Gemara* is no more than an Explication of the Miſchna, made by the Jewiſh Doctors in their Schools: Much as the Commentaries of our School Divines on St. *Thomas*, or the Maſter of the Sentences, are an Explication of the Writings of thoſe Authors.

A Commentary, Monſ. *Tillemont* obſerves, was wrote on the *Miſchna*, by one *Johanan*, whom the *Jews* place about the End of the ſecond Century: But Fa. *Morin* proves from the Work it ſelf, wherein mention is made of the *Turks*, that it was not wrote till the time of *Heraclius*, about the Year 620: And this is what is called the *Gemara*, or *Talmud of Jeruſalem*, which the *Jews* do not uſe or eſteem much, by reaſon of its Obſcurity.

They ſet a much greater Value of the *Gemara*, or *Talmud of Babylon*, begun by one *Aſa*; diſcontinued for 73 Years, on occaſion of the Wars with the *Saracens* and *Perſians*; and finiſh'd by one *Joſa*, about the Cloſe of the ſeventh Century.

Tho' the Name *Talmud*, in its Latitude, include both the *Miſchna*, and the two *Gemara's*; yet is it properly that of *Aſa* and *Joſa* alone which is meant under that Name.

This the *Jews* priſe above all their other Writings; and even ſet it on a Level with Scripture itſelf: In effect, they conceive it as the Word of God, derived by Tradition from *Moſes*, and preſerved without Interruption to their time. See TRADITION.

Ra. *Jehuda*, and afterwards R. *Jehanan*, R. *Aſa*, and R. *Joſa*, fearing the Traditions ſhould be loſt in the Diſperſion of the *Jews*, collected them into the *Miſchna* and *Gemara*.

GEMATRIA, or GAMETRIA, the firſt kind of arithmetical Cabbala, uſed by the Cabbaliſtick *Jews*. See CABBALA.

Gematria is a Geometrical, or Arithmetical manner of explaining Words; whereof there are two Kinds: The firſt bearing a more immediate Relation to *Arithmetick*; and the latter, to *Geometry*.

The *firſt* conſiſts, in taking the Numerical Value of each Letter in a Word, or Phraſe; and giving it the Senſe of ſome other Word, whoſe numerical Letters, taken after the ſame manner, make the ſame Sum.

For it is to be obſerv'd, that neither the *Hebrews*, nor *Greeks*, have any other Numeral Figures, beſide the Letters of the Alphabet. See LETTER, and CHARACTER.

Thus, a Cabbaliſt, taking the two firſt Words in *Geneſis*, בראשית ברא, and by Addition getting the Sum total of all the Numbers, ſignify'd by thoſe Letters; finds that theſe two Words ſignify the ſame as thoſe other three, נראש השנה נברא: For, as to the firſt; ב, is 2; ר, 200; א, 1; ש, 300; י, 10; ת, 400; ב, 2; ר, 200; and א, 1: Which, together make 1116. And as to the latter; ב, ſignifies 2; ר, 200; א, 1; ש, 300; ה, 5; נ, 50; ש, 300; ה, 5; נ, 50; ב, 2; ר, 200; and א, 1: Which, ſumm'd up, yield the ſame ber 1116.

Whence the Cabbaliſt concludes, בראשית ברא, *in the Beginning he created*; ſignifies the ſame thing as נראש השנה נברא, *it was created at the beginning of the Year*; and accordingly, the received Opinion of the Cabbaliſts, is, that the World was created at the beginning of the Month *Thiſri*, which was antiently the firſt Month in the Year, and anſwers to our firſt Month in Autumn, *viz. September*.

So, again, in the Prophecy of *Jacob*, *Gen.* xl. 9, the Words יבא שילה are underſtood of the *Meſſiah*; by reaſon they make the ſame Number with משיה, which ſignifies the Meſſiah.—

The *ſecond* kind of *Gematria* is much more obſcure, and difficult; and accordingly leſs uſed: 'Tis employ'd in ſeeking for abſtruſe, and hidden Interpretations in the Dimenſions and Parts of the Buildings mention'd in Scripture, by dividing, multiplying, &c. thoſe Magnitudes by each other. Of this we ſhall give an Example from ſome Chriſtian Cabbaliſts.

The Scripture ſays, that *Noah*'s Arch was 300 Cubits long, 50 wide, and 30 high: Now, the Cabbaliſt takes the Length for the Baſis of his Operations: 300, in the *Hebrew*, is expreſs'd by the Letter ש; which Length, divided by the Height 30, gives the Quotient 10: The *Hebrew* Character whereof is י, to be placed on the right Side of ש. He then divides the ſame Length by the Width, 50; the Quotient whereof, 6, is expreſs'd by a ו; which being placed on the left Side of ש, makes, together with the other two Letters, the Name JESUS, ישו. Thus, by the Rules of Cabbala, it appears, that there is no Salvation, but in Jeſus Chriſt; as, at the Deluge, no Perſon was ſaved but thoſe in the Ark.

After the ſame manner, is the ſame Name ישו found in the Dimenſions of *Solomon*'s Temple. But it is rather an Injury, than an Advantage to the chriſtian Religion, to ſupport it by ſuch frivolous Evidences.

The Word *Gematria* is derived from the Rabbinical *Hebrew* גימטריא, form'd by Corruption of the *Greek* Γεωμετρία *Geometry*.

GEMELLES, in Heraldry, a bearing of Bars by Pairs, or Couples, in a Coat of Arms: As, he beareth Gules on a Chevron Argent, three Bars *Gemelles* Sable, by the Name of *Throgmorton*.

GEMELLUS, in Anatomy, a Muſcle of the Arm, call'd alſo *Biceps externus*, as having two Heads. See BICEPS.

One of the Heads of this Muſcle riſes tendinous from the upper Part of the inferior Coſta of the Scapula, whence paſſing between the Muſcles to the back Part of the Humerus, it joins the other Head; and both run together to their Inſertion at the Anco or Tip of the Elbow.

The *Gemellus* is the firſt Extenſor of the Cubit; and is by many reckon'd two diſtinct Muſcles; the firſt called *Longus*; the latter, *Brevis*.

GEMINI, in Aſtronomy, *the Twins*; a Conſtellation, or Sign of the Zodiac: The third in Order; repreſenting *Caſtor* and *Pollux*. See SIGN, and CONSTELLATION.

The Stars in the Sign *Gemini*, in *Ptolomy*'s Catalogue are 24; in *Tycho*'s 29; in the *Britannic Catalogue* 79. The Order, Names, Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow.

Stars in the Conſtellation GEMINI.

Names and Situations of the Stars.	Signs.	Longitude ° ′ ″	Latitude. ° ′ ″		Magn.
That preced. *Caſtor*'s Foot *πεσπὲς*	♊	26 37 24	0 12 19	A	4
		27 13 25	0 9 50	B	8
		27 54 29	0 21 05	A	8
		28 5 24	0 28 05	A	7
		28 18 11	0 57 59	B	7
5					
		28 30 25	0 32 35	A	7
In preced. Foot of *Caſtor*		29 6 43	0 56 00	A	4
		29 23 55	0 32 20	B	7 8
		29 33 5	0 18 48	B	7
		00 0 9	0 11 25	B	8
10					
	♋	0 5 39	0 3 40	B	8
		0 6 35	0 8 05	A	8
Subſeq. in the ſame Foot		0 58 10	0 51 22	A	3
		1 38 30	1 42 18	A	7 8
		1 54 12	0 32 25	A	7
15					
		2 9 43	2 32 13	A	7
		2 13 30	2 50 09	A	7
In Extrem. of *Caſtor*'s hind Foot		2 28 20	3 06 03	A	4
		3 19 16	7 22 33	A	7
		3 23 4	5 29 15	A	7 8
20					
		3 38 19	5 28 26	A	7
		3 27 46	4 46 30	B	6
		3 50 57	3 48 39	A	7
		4 20 7	6 14 57	A	7
		4 6 16	5 47 05	B	6
25					
Lucid Foot of *Pollux*		4 46 18	6 47 19	A	2 3
		4 24 39	5 4 50	B	6
		4 48 34	5 2 43	B	7
In *Caſtor*'s upper Knee		5 48 02	5 27 34	A	5
		5 36 37	2 1 30	B	3
30					
		5 30 22	5 52 00	B	6
		5 35 25	5 51 40	B	6 7
		6 31 48	9 50 24	A	7
In Extrem. of *Pollux*'s hind foot		6 52 53	10 07 57	A	5 4
		7 2 57	10 20 13	A	7
35					
		7 41 5	6 45 50	A	6 7
In *Caſtor*'s Fore-arm		6 47 30	10 58 25	B	4 3
		8 5 48	9 31 38	A	7
That preced. *Pollux*'s Knee		7 37 39	1 11 15	A	6
		8 9 46	2 29 09	B	6
40					
In the Heel of *Pollux*'s hind-foot		9 8 19	9 40 15	A	6
		8 53 7	3 15 36	B	6 7
		9 2 13	3 7 12	B	6
In *Caſtor*'s Thigh		9 52 20	1 30 14	B	6
In Hind-knee of *Pollux*		10 39 40	2 5 27	A	3
45					
In *Caſtor*'s Groin		10 42 25	0 0 11	B	6 7
		12 11 13	6 34 25	A	6 5
In Fore-arm of *Caſtor*		11 9 53	7 43 03	B	5
		11 34 30	4 21 25	B	6
Loweſt in *Caſtor's* Loins		12 9 12	1 41 05	B	6
50					
		12 3 8	3 17 36	B	7
		13 13 35	7 13 25	A	7
		13 21 51	6 13 13	A	6 7
Upper in *Caſtor*'s Loins		12 33 46	2 29 56	B	5
That againſt *Pollux*'s Leg.	♊	14 27 14	5 40 37	A	5

Names

Names and Situations of the Stars.	Sig.	Longitude. °	′	″	Latitude. °	′	″		Magn.
	♊	14	11	20	0	13	07	A	3
In *Pollux*'s Belly		14	49	35	1	40	58	A	6 7
That againſt *Pollux*'s Side		14	32	05	2	55	41	B	5 6
		14	49	33	0	50	57	B	7 8
		14	23	25	5	31	06	B	7
50									
In hind Shoulder of *Caſtor*		14	38	10	5	43	35	B	4 5
South againſt *Pollux*'s Side		16	00	45	1	41	55	A	6
Againſt *Caſtor*'s Ear		14	44	46	9	45	10	B	5
North againſt *Pollux*'s Side		16	01	29	0	29	28	A	6
Againſt *Caſtor*'s hind Shoulder		15	22	58	6	09	23	B	6
55									
Contiguous thereto, but more S.		15	30	51	5	58	20	B	7
In the preced. Head of *Caſtor*		15	55	20	10	03	48	B	1 2
		18	13	58	6	02	17	A	7 8
Preced. of 4 under *Pollux*'s Side		18	15	24	5	50	21	A	6
Subſeq. in *Caſtor*'s Shoulder		17	01	34	5	11	01	B	5
60									
		16	10	28	13	18	13	B	6
Over *Caſtor*'s Head		16	23	22	12	52	49	B	5
		17	35	36	6	26	15	B	6
		17	43	29	6	14	26	B	7
Second under *Pollux*'s Side		19	20	32	3	47	19	A	6
65									
Between the two Heads		18	17	56	7	25	46	B	5
Over *Pollux*'s hind Shoulder		19	01	13	4	24	00	B	6
In the hind Shoulder of *Pollux*		19	20	18	3	02	23	B	4 5
In the Head of the 2d of *Pollux*		18	56	09	6	39	27	B	2
		20	12	59	0	57	03	A	7
70									
Over *Pollux*'s Head		18	20	47	12	01	41	B	6
Third under *Pollux*'s Side		20	45	53	2	40	59	A	6
(lux		20	29	59	1	57	19	B	6
Preced. of thoſe that follow *Pol*-		20	55	12	5	44	38	B	6
		21	40	57	1	21	33	B	5
75									
Laſt of 4 under *Pollux*'s Side		22	43	34	0	54	41	A	7
Middle of thoſe yt follow *Pollux*		22	54	28	7	11	26	B	5
		24	07	46	7	08	01	B	6
North of thoſe yt follow *Pollux*		24	35	27	9	27	22	B	6

GEMINI, in Anatomy, two Muſcles of the Thigh, which ariſe from the Protuberance of the Iſchium, and are inſerted with the Pyriformis into the Dent at the Root of the great Trochanter.

GEMMA, or *Sal* GEMMÆ, is peculiarly uſed for Rock Salt, or Salt dug out of Mines.—See SALT.

The Name *Gemma* is applied hereto, on occaſion of its Luſtre, and Brillant; which is not unlike that of Cryſtal.

The principal Mines of this Salt are thoſe of *Wiliſca*, in *Poland*; of *Eperie*, in *Upper Hungary*; and of *Cardonna*, in *Catalonia*.——The principal Uſe of this Salt is for the powdering, or pickling of Meats, in Places deſtitute of Salt-Springs, &c.

GEMMA, among Botaniſts, the turgid Bud of any Tree, when it is beginning to bear; call'd alſo *Oculus*, or Eye. See BUD, EYE, &c.

GEMONIÆ, call'd alſo *Scalæ* GEMONIÆ, and *Gradus* GEMONII, among the *Romans*, were much the ſame as *Gallows*, or *Gibbets* in *England*. See GALLOWS, and GIBBET.

The *Gradus Gemonii*, according to *Publius Victor*, or *Sextus Rufus*, was a Place rais'd on ſeveral Steps, from whence they precipitated their Criminals. Others repreſent it as the Place whereon they were executed, and afterwards expoſed to publick View.

The *Gemoniæ* were in the tenth Region of the City, near the Temple of *Juno*. *Camillus* firſt appropriated the Place to this Uſe, in the Year of *Rome* 358.

Some ſay, they were thus denominated from the Perſon who rais'd them: Others, from the firſt Criminals, that ſuffer'd on them: Others, from the Verb *gemo*, I ſigh, or groan.

GEMOTE, *Conventus*, a *Saxon* Word, denoting a *Meeting*. *Omnis homo pacem habeat eundo ad* Gemotum *& rediens de* Gemoto, *niſi probatus fur fuerit*. LL. Ed. Conf.

GENDARMES, or GENS D'ARMES, *q. d. Men of Arms*, a Term uſed among the *French*, for the King's Horſe Guards; by reaſon they ſucceeded the antient *Men of Arms*, who were arm'd at all Points, and thence call'd *Gendarmes*. See GUARDS.

At preſent, the Companies of the King's *Gard de Corps*, the Muſqueteers, and Light Horſe, are reputed to belong to the *Gendarmerie*. See GENDARMERIE.

The *Grand Gendarmes*, ſometimes call'd ſimply the *Gendarmes*, are a Company of Gentlemen, to the Number of about 250, who guard the King's Perſon. The King himſelf is their Captain; and one of the prime Peers, the Lieutenant Captain. When the King marches with all his Houſhold Troops, the *Gens d'Armes* cloſe the March.

Their Device is, a Thunderbolt, falling from Heaven, with the Motto, *Quo jubet iratus Jupiter*. There are alſo *Gens d'Arms* of the Queen, the Dauphin, &c.

GENDARMERIE, or GENS D'ARMERIE, the *French* Cavalry, and particularly that of the King's Houſhold. See GENDARMES.

The *Gendarmerie*, at preſent, is a Body of Horſe, conſiſting of 16 Companies, *viz.* the *Scotch* Gendarmes; the *Engliſh* Gendarmes; the *Burgundy* Gendarmes; and the *Flemiſh Gend'Armes*: Which four Companies compoſe the King's *Gens d'Armes*, or Life Guard.

The other Companies take their Names from the Princes who command them, as Captains; *viz.* the Queen's *Gens d'Armes*; the Queen's Light Horſe: The Dauphins *Gens d'Armes*; the Dauphins Light Horſe: The Duke of *Burgundy*'s *Gens d'Armes*; the Duke of *Burgundy*'s Light Horſe: The Duke of *Orlean*'s *Gens d'Armes*, &c. Each Company, at a Medium, conſiſts of 76 *Gens d'Armes*, or Light Horſe.

GENDER, GENUS, in Metaphyſicks; ſee GENUS, and KIND.

GENDER, in Grammar, a Diviſion, or Diſtinction of Nouns or Names, according to the different Sexes of the Things they denote. See NOUN.

It has been thought proper, in order to render Diſcourſe more expreſs, and diſtinct, as alſo to embelliſh it by a Variety of Terminations; to contrive certain Diverſities in Adjectives, accommodated to the Subſtantives they are applied to: Whence, from a Regard to that notable Difference there is between the two Sexes, all Nouns Subſtantives have been diſtinguiſh'd into Maſculine, and Feminine; and the Nouns Adjectives alſo varied to correſpende therewith. See ADJECTIVE.

But as there was an Infinity of Words, which had no proper Relation, either to the one Sex, or the other; they had *Genders* aſſigned them, rather out of Caprice, than Reaſon: And hence it is that the *Gender* of a Noun is frequently dubious and fluctuating. See MASCULINE, and FEMININE.

It ſhould here however be obſerved, that this Inſtitution of *Genders* was not made with Deſign and Deliberation, by the Maſters of Language; but was introduced by Cuſtom and Uſage. At firſt, there was only a Difference between the Names of Animals, when ſpoke of Males, and Females; by degrees, the ſame Regulation was extended to other Things: The Grammarians have only obſerved and followed, what Uſage had eſtabliſh'd.

The Oriental Languages frequently neglect the Uſe of *Genders*; and the *Perſian* Language has none at all, which is no Diſadvantage; the Diſtinction of *Genders* being intirely uſeleſs.

The *Latins*, *Greeks*, &c. generally content themſelves to expreſs the different *Genders* by different Terminations, as *Bonus equus*, a good Horſe; *bona equa*, a good Mare, &c. But in *Engliſh*, we frequently go further, and expreſs the Difference of Sex by different Words; as Boar, Sow; Boy, Girl; Buck, Doe; Bull, Cow; Cock, Hen; Dog, Bitch, &c.

We have only about 24 Feminines, diſtinguiſh'd from the Males, by the Variation of the Termination of the Male into *eſs*; of which Number are Abbot, Abbeſs; Count, Counteſs; Actor, Actreſs; Heir, Heireſs; Prince, Princeſs, &c. which is all that our Language knows of any thing like *Genders*.

The Eaſtern Languages, as well as the vulgar Languages of the Weſt, have only two *Genders*; the *Maſculine Gender*, and *Feminine Gender*. The *Greek* and *Latin* have likewiſe the *Neuter*, *Common*, and the *Doubtful Gender*; and beſide theſe, they have the *Epicene*, or Promiſcuous, which under one ſingle *Gender* and Termination includes both the Kinds. See MASCULINE, FEMININE, NEUTER, EPICENE, &c.

GENDER, in Geometry. Geometrical Lines are diſtinguiſh'd into *Genders*, Claſſes, or Orders, according to the Number of the Dimenſions of an Equation, expreſſing the Relation between the Ordinates, and the Abſciſſæ. See GEOMETRICAL *Line*.

GENDER, in Botany, GENDER, in Muſick, &c. } ſee } GENUS.

GENEALOGY, a Series, or Succeſſion of Anceſtors, or Progenitors: Or, a ſummary Account of the Relations and Alliances of a Perſon, or Family, both in the Direct, and Collateral Lines. See LINE, COLLATERAL, DIRECT, DEGREE, &c.

In divers Chapters, and Military Orders, 'tis required that the Candidates produce their *Genealogy*; to ſhew that they are Noble by ſo many Deſcents. See DESCENT.

The Word is *Greek*, γενεαλογία, which is form'd of γενὸς, *Genus*, *Proſapia*, Race, Lineage; and λόγ&, *Sermo*, Diſcourſe.

Genealogical Tables, *Genealogical Tree*, *Genealogical Column*: The *Genealogical* Degrees are repreſented in Circles, ranged over, under, and aſide of each other. The Antients had the like; which they called *Stemmata*, from a *Greek* Word, ſignifying *Crown*.—

GENERAL,

GENERAL, ſomething that comprehends all, or extends to a whole Genus. See GENUS; ſee alſo UNIVERSAL.

Thus we ſay, a *General* Rule, *q. d.* an univerſal Rule, A *general* Loſs, *&c.* 'Tis diſputed, whether *Noah*'s Flood was *general*, or no. See DELUGE.

All the Sciences have ſome *general* Principles, or Maxims. See MAXIM. A *general* Court: *General* Councils are particularly called *Oecumenical*. See OECUMENICAL.

GENERAL *Iſſue*, in Law; ſee ISSUE.

General is particularly applied to divers Officers and Dignitaries.

States GENERAL,	ſee	STATES.
GENERAL *Council*,		OECUMENICAL.
GENERAL *Aſſembly*,		ASSEMBLY.
Vicar GENERAL, *&c.*		VICAR.

GENERAL *Officers*, in an Army, are thoſe who do not only command over a ſingle Company, or Regiment; but whoſe Office and Authority extends over a Body of ſeveral Regiments of Horſe, and Foot.

Such are *Lieutenant Generals*, *Major Generals*, *Generals* of the Horſe, of the Foot; *Paymaſter General*, *Commiſſary General*, *Chirurgeon General*, &c.

The Word is alſo now uſed in a more extenſive Senſe; and comprehends ſuch as may command, by virtue of their Rank, over ſeveral Bodies of Forces, tho' all of the ſame Kind; in which Senſe Brigadiers are *General Officers*; notwithſtanding that they are attach'd to one kind of Forces, either Infantry, or Cavalry, See BRIGADIER.

The Pay of a *Lieutenant General*, when in Service, is 4 *l. per* Day: Of a *Major General*, 2 *l.* Of a *Brigadier General*, 1 *l.* 10 *s.* Of a *Captain General*, 10 *l.* See LIEUTENANT *General*, MAJOR *General*, &c.

We have alſo Officers in the Law, in the Revenues, *&c.* diſtinguiſh'd by the Appellation of *General*: As, Attorney *General*, Solicitor *General*, &c. See ATTORNEY, and SOLICITOR.

Receiver *General*, Controller *General*, &c. See RECEIVER, and CONTROLLER.

GENERAL is alſo uſed in a *Monaſtic* Senſe, for the Chief of an Order; or of all the Houſes, or Congregations eſtabliſh'd under the ſame Rule. Thus we ſay, the *General* of the *Ciſtercians*, the *Franciſcans*, &c. See ORDER.

Fa. *Thomaſſin* derives the Origin of *Generals* of Orders, from the Privileges granted by the antient Patriarchs to the Monaſteries ſituate in their capital Cities. By ſuch means they were exempted from the Juriſdiction of the Biſhop, and immediately ſubjected to that of the Patriarch alone.

GENERAL is alſo uſed in the *Military* Art for a particular March, or Beat of Drum.

To beat the *General*, is to give Notice to the Infantry to march. See DRUM.

GENERAL *Terms*, or *Words*, are ſuch as expreſs, or denote *general* Ideas. See WORD.

Ideas become *general*, by ſeparating from them, the Circumſtances of Time, Place, or any other Ideas that may determine them to this or that particular Exiſtence. See IDEA.

By this way of Abſtraction they become capable of repreſenting more Individuals, than one; each of which having a Conformity to that abſtract Idea, is of that Sort. See ABSTRACTION, INDIVIDUAL, &c.

All Things, Mr. *Lock* obſerves, that exiſt, being Particulars, it might be expected, that Words ſhould be ſo too in their Signification: But we find it quite contrary; for moſt of the Words, that make all Languages, are *general* Terms.

This is the Effect of Reaſon and Neceſſity: For, 1° It is impoſſible that every particular Thing ſhould have a diſtinct, peculiar Name; becauſe it is impoſſible to have diſtinct Ideas of every particular Thing, to retain its Name with its peculiar Appropriation to that Idea. 2° It would be uſeleſs, unleſs all could be ſuppoſed to have theſe ſame Ideas in their Minds: For Names, applied to particular Things, whereof one alone has the Ideas in his Mind, could not be ſignificant or intelligible to another, who is not acquainted with all thoſe particular Things which had fallen under his Notice. 3° It would be of no great uſe for the Improvement of Knowledge; which, tho' founded in particular Things, enlarges itſelf by *general* Views, to which Things, reduced into Sorts under general Names, are properly ſubſervient.

In Things, where we have occaſion to conſider and diſcourſe of Individuals, and Particulars, we uſe proper Names: As in Perſons, Countries, Cities, Rivers, Mountains, *&c.* Thus wee ſee that Jockeys have particular Names for their Horſes, becauſe they have often occaſion to mention this or that Horſe particularly, when he is out of ſight.

The firſt Ideas Children get, are only particular, as of the Nurſe, or Mother; and the Names they give them, are confined to theſe Individuals: Afterwards, obſerving, that there are a great many other Things in the World that reſemble them in Shape, and other Qualities, they frame an Idea, which they find thoſe many Particulars do partake in; to that they give, with others, the Name, Man, for Example. In this they make nothing new, but only leave out of the complex Idea they had of *Peter*, *James*, *Mary*, &c. that which is peculiar to each, and retain only what is common to all. And thus they come to have a *general* Name, and a *general* Idea.

By the ſame Method they advance to more *general* Names and Notions: For, obſerving ſeveral Things that differ from their Idea of Man, and which cannot, therefore, be comprehended under that Name, to agree with Man in ſome certain Qualities; by retaining only thoſe Qualities, and uniting them into one Idea, they have another, more *general* Idea; to which, giving a Name, they make a Term of a more comprehenſive Extenſion.

Thus, by leaving out the Shape, and ſome other Properties ſignified by the Name, Man; and retaining only Body, with Life, Senſe, and ſpontaneous Motion; we form the Idea ſignified by the Name Animal. After the ſame manner, the Mind proceeds to Body, Subſtance, and at laſt to Being, Thing, and ſuch univerſal Terms, which ſtand for any Ideas whatſoever, See ENS, ESSE, &c.

Hence we ſee the whole Myſtery of Genus and Species, is nothing but abſtract Ideas, more or leſs comprehenſive, with Names annexed to them: This ſhews us the Reaſon, why in defining Words, we make uſe of the Genus; namely, to ſave the Labour of enumerating the ſeveral ſimple Ideas, which the next general Term ſtands for.

From what has been ſaid, it is plain, that *General* and Univerſal belong not to the real Exiſtence of Things; but are the Inventions of the Underſtanding, made by it for its own Uſe, and concerns only Signs, either Words, or Ideas. See UNIVERSAL.

General Words do not barely ſignify one particular Thing; for then they would not be *general* Terms; but proper Names: Neither do they ſignify a Plurality; for then Man and Men would ſignify the ſame thing; but what they ſignify, is a ſort of Things: And this they do, by being made a Sign of an abſtract Idea in the Mind, to which Idea, as Things exiſting are found to agree, ſo they come to be ranked under that Name, or to be of that ſort.

The Eſſences then of the Sorts, or Species of Things, are nothing but theſe abſtract Ideas. See ABSTRACT.

It is not denied here, that Nature makes Things alike; and ſo lays the Foundation of this ſorting and claſſing: But the Sorts or Species themſelves are the Workmanſhip of human Underſtanding; ſo that every diſtinct abſtract Idea, is a diſtinct Eſſence; and the Names that ſtand for ſuch diſtinct Ideas, are the Names of Things eſſentially different. Thus Oval, Circle, Rain and Snow are eſſentially different. See this further illuſtrated under ESSENCE, SUBSTANCE, *&c.*

GENERALISSIMO, call'd alſo *Captain* GENERAL, and ſimply, the GENERAL; is an Officer, who commands all the military Powers of the Nation; who gives Orders to all the other General Officers; and receives no Orders himſelf but from the King.

Monſ. *Balzac* obſerves, that the Cardinal *de Richelieu* firſt made this Word, of his own abſolute Authority, upon his going to command the *French* Army in *Italy*.

GENERATED, or GENITED, is uſed in Mathematicks, for whatever is produced, either in Arithmetick, by the Multiplication, Diviſion, or Extraction of Roots; or in Geometry, by the Invention of the Contents, Areas, and Sides; or of extreme and mean Proportionals, without arithmetical Addition, and Subſtraction.

GENERATING *Line*, or *Figure*, in Geometry, is that which by its Motion or Revolution produces any other Figure, Plane, or Solid. See GENESIS.

GENERATION, in Phyſicks, the Act of procreating, or producing a thing, which before was not: Or, as the Schoolmen define it, the total Change, or Converſion of a Body, into a new one, which retains no ſenſible Part or Mark of its former State. See BODY.

Thus, Fire is ſaid to be *generated*, when we perceive it to be, where before was only Wood, or other Fuel; or, when the Wood is ſo changed, as to retain no ſenſible Character of Wood: Thus alſo, A Chick is ſaid to be *generated*, when we perceive the Chick, where before was only an Egg; or the Egg is changed into the Form of the Chick.

In *Generation*, there is not properly any Production of new Parts, but only a new Modification or manner of Exiſtence of the old ones; by which *Generation* is diſtinguiſh'd from *Creation*. See CREATION.

It is diſtinguiſh'd from *Alteration*, in that the Subject, in this latter, remains apparently the ſame; and only the Accidents, or Affections are changed: As when the ſame Body is to day well, and to morrow ſick; or Braſs, which before was round, is now ſquare. See ALTERATION.

Laſtly, *Generation* ſtands oppoſed to *Corruption*, which is the utter Extinction of a former Thing: As, when that which before was Wood, or an Egg, is no longer the one or the other: Whence it appears, that the *Generation* of one Thing is the Corruption of another. See CORRUPTION.

The Peripateticks explain *Generation* by a Change or

Paſſage from a Privation, or Want of a ſubſtantial Form, to the having of ſuch a Form. See *Subſtantial* FORM.

The Moderns allow of no other Change in *Generation*, than what is *local*: According to them, 'tis only a Tranſpoſition, or new Arrangement of Parts; and thus, the ſame Matter ſhall ſucceſſively undergo an Infinity of *Generations*.

A Grain of *Wheat*, *e. gr.* is committed to the Ground; this imbibing the Humidity of the Soil, becomes turgid, and dilates to ſuch Degree, that it becomes a *Plant*, and, by a continual Acceſſion of Matter, ripens by degrees into an Ear; and at length into new *Seed*. This Seed, ground in the Mill, appears in form of *Flower*; which, mix'd up with Water, makes a *Paſte*; whereof, with the Addition of Yeſt, Fire *&c. Bread* is *generated*: And this Bread, broke with the Teeth, digeſted in the Stomach, and convey'd thro' the Canals of the Body, becomes *Fleſh*.

Now, in all this Series of *Generations*, the only thing effected, is a local Motion of the Parts of the Matter, and their ſettling again in a different Order; ſo that, in Reality, wherever there is a new Arrangement, or Compoſition of Elements, there is a new *Generation*; and therefore *Generation* is reduced to Motion. See ELEMENT, and MOTION.

GENERATION is more immediately underſtood of the Production of Animal and Vegetable Bodies, from Seed, or the Coition of others of different *Sexes*, but the ſame Genus, or *Kind*. See ANIMAL, and VEGETABLE; ſee alſo SEX, &c.

Some of the modern Naturaliſts maintain, after Monſ. *Perrault*, that there is not properly any new *Generation*: That God created all Things at firſt: And that what we call *Generation*, is only an Augmentation and Expanſion of the minute Parts of the Body of the Seed; ſo that the whole Species to be afterwards produced, were really all form'd in the firſt, and incloſed therein; to be brought forth and excloſed to view in a certain Time; and according to a certain Order and Oeconomy. See SEED.

Thus, Dr. *Garden*: 'It is moſt probable, that the Stamina of all the Plants and Animals that have been, or ever ſhall be in the World, have been form'd *ab origine Mundi*, by the Almighty Creator, within the firſt of each reſpective Kind. And he who conſiders the Nature of Viſion, that it does not give us the true Magnitude, but only the Proportion of Things; and that what ſeems to our naked Eye but a Point, may truly be made up of as many Parts as ſeem to be in the whole Univerſe, will not think this an abſurd or impoſſible Thing." *Mod. Theor. of Generat.*

The Manner, wherein the Seed of the Male Animal acts on that of the Female, to impregnate, and render it prolifick, has long been inquir'd after; and yet remains ſtill a Myſtery. Some, with *Ariſtotle*, hold the Male Semen to do the Office of a Coagulum; and the Female that of Milk: Which ſome later Authors have improved on, by ſuppoſing the Male Seed an Acid; and the Female an Alcali. Others, conſider the thicker Seed of the Male, as the Flower; and the thinner Seed of the Female, as Water, out of which two an animal Paſte is wrought, and baked by the Heat of the Womb. But the Moderns are generally agreed, that what Effect ſoever the Male Seed produces on the Female, 'tis by Motion and Mechanicks that it produces it.

GENERATION *of Animals*, or *Animal* GENERATION, is a Proceſs in the Oeconomy of Nature, very difficult to be traced. The Parts concurring hereto, are numerous; and their Functions moſtly diſcharg'd in the Dark.

The Antients diſtinguiſh'd two kinds of *Generation*: *Regular*, called *Univocal*; and *Anomalous*, called alſo *Equivocal*, or *Spontaneous*.

The firſt was effected by Parent Animals of the ſame kind; as that of Men, Birds, Beaſts, *&c.* The ſecond was ſuppoſed effected by Corruption, the Sun, *&c.* as that of Inſects, Frogs, *&c.* But this latter Kind is now generally exploded. See EQUIVOCAL, SPONTANEOUS, UNIVOCAL, &c.

There are two principal Theories, or Methods of accounting for the *Generation* of Animals: The one ſuppoſes the Embryo, or Fœtus to be originally in the *Seed* of the Male; the other, in the *Ovum*, or Egg of the Female.

The firſt ſuppoſes Animalcules in the Male Seed, to be the firſt Rudiments of the Fœtus; and that the Female only furniſhes a proper Nidus, and Nutriment to bring them forwards. See SEED, and ANIMALCULA.

The ſecond ſuppoſes the firſt Rudiments of the Animal to be in the Ova; and that the Male Seed only ſerves to warm, cheriſh and ripen the Ova, till they fall off out of the Ovary into the Womb. See EGG, OVARY, &c.

The firſt Syſtem is well illuſtrated by Dr. *Geo. Garden*: That Author, upon comparing the Obſervations, and Diſcoveries of *Harvey*, *Malpighi*, *De Graaf*, and *Leewenhoeck* together, concludes it moſt probable, "That all Animals are "*ex animalculo*: That theſe Animalcules are originally in "*Semine Marium*, and not in that of the Female; but "that they can never come forward, nor be form'd into A-"nimals, without the Ova in the Female."

The Iſt of theſe Points he argues from the three following Obſervations:

1° That ſomething has often been obſerved by *Malpighi*, in the Cicatricula of an Egg before Incubation, like the Rudiments of an Animal, in form of a Tadpole. See CICATRICULA.

2° From the ſudden Appearance and Diſplaying of all the Parts, after Incubation, it ſeems probable, that they are not then actually formed out of a Fluid; but that the Stamina of them have been formerly there exiſtent, and are now expanded—The firſt Part of the Chick, which is diſcover'd with the naked Eye, is the *Punctum Saliens*, and that not till three Days and Nights of Incubation are paſt; on the fifth Day the Rudiments of the Head and Body appear. This made Dr. *Harvey* conclude, that the Blood had a Being before any other Part of the Body, and that from it all the Organs of the Fœtus were both formed and nouriſh'd; but by *Malpighi*'s Obſervations it appears that the Parts are then only ſo far extended, as to be made viſible to the naked Eye; and that they were actually exiſtent before, and diſcernable by Glaſſes. After an Incubation of 30 Hours, we ſee the Head, the Eyes, and the Carina, with the Vertebræ, diſtinct, and the Heart. After 40 Hours, its Pulſe is viſible, and all the other Parts more diſtinct, which cannot be diſcerned by the naked Eye, before the Beginning of the fifth Day: From whence it ſeems very probable, that even the ſo early Diſcovery of thoſe Parts of the Fœtus by the Microſcope, is not the diſcerning of thoſe Parts newly form'd; but only more dilated and extended by receiving of Nutriment from the Colliquamentum; ſo that they ſeem all to have been actually exiſtent before the Incubation of the Hen. And what *Swammardam* has diſcover'd in the Tranſmutation of Inſects, gives no ſmall Light to this; ſince he makes appear, that in thoſe large Eruca's which feed upon Cabage, if they be taken about the Time they retire to be transformed into Aurelias, and plunged often in warm Water to make a Rupture of the outer Skin; you will diſcern, thro' the Tranſparency of their ſecond Membrane, all the Parts of the Butterfly, the Trunk, Wing, Feelers, *&c.* folded up: But, that after the Eruca is chang'd into an Aurelia, none of theſe Parts can be diſcerned; being ſo much drench'd with Moiſture; tho' they be there actually form'd. See FŒTUS, AURELIA, &c.

3° As to the Analogy between Plants and Animals: All Vegetables, we ſee, do proceed *ex Plantula*; the Seeds of Vegetables being no other but little Plants of the ſame kind, folded up in Coats and Membranes: Whence we may infer, that ſo curiouſly an organiz'd Creature, as an Animal, is not the ſudden Product of a Fluid, or Colliquamentum, but does much rather proceed from an Animalcule of the ſame kind, and has all its little Members folded up according to their ſeveral Joints and Plicatures, which are afterwards enlarged and diſtended, as we ſee in Plants.

The IId Point, which our late Diſcoveries have made probable, is, that theſe Animalcules are originally in the Seed of the Male, and not in the Female: For 1° There are obſerv'd innumerable Animalcula in *ſemine maſculino*, of all Animals. *Leewenhoeck* has made this ſo evident, that there ſeems little room to doubt thereof.

2° We obſerve the Rudiments of a Fœtus in Eggs which have been fœcundated by the Male; tho' no ſuch Thing is viſible, in thoſe not fœcundated. *Malpighi*, in his Obſervations, makes it very probable, that theſe Rudiments proceed originally from the Male, and not from the Female.

3° The Reſemblance between the Rudiments of the Fœtus in Ovo, both before and after Incubation, and the Animalcule, makes it very probable that they are one and the ſame. The ſame Shape and Figure, which M. *Leewenhoeck* gives us of the Animalcule, *Malpighi* gives of the Rudiments of the Fœtus, both before and after Incubation; yea, and even the Fœtus's of viviparous Animals appear ſo at firſt to the naked Eye; whence Dr. *Harvey* acknowledges, that all Animals, even the moſt perfect, are begotten of a Worm.

4° This gives a rational Account of many Fœtus's at one Birth, eſpecially that of the Counteſs of *Holland*: And how, at leaſt, a whole Cluſter of Eggs in a Hen are fœcundated by one Coition of the Male. See FŒTUS.

5° This gives a new Light, as it were, to the firſt Prophecy concerning the *Meſſiah*, that *the Seed of the Woman ſhall bruiſe the Head of the Serpent*; all the reſt of Mankind being thus moſt properly and truly the Seed of the Man.

6° The Analogy already mention'd, which we may rationally ſuppoſe between the manner of the Propagation of Plants and Animals, does likewiſe make this probable. Every Herb and Tree bears its Seed after its Kind; which Seed is nothing elſe but a little Plant of that Kind; which being thrown into the Earth, as into its Uterus, ſpreads forth its Roots, and receives thence its Nouriſhment; but has its Form within it ſelf: And we may rationally conjecture ſome

ſuch

ſuch Analogy in the Propagation of Animals. See VEGETATION.

The III^d Thing, which our Diſcoveries make probable, is, That Animals cannot be form'd of theſe Animalcula without the *Ova in Feminis*, which are neceſſary for ſupplying them with proper Nutriment; and this is evinced from the following Conſiderations.

1° It appears, that an Animalcule cannot come forward, if it do not fall into a proper Nidus: This we ſee in the Cicatricula in Eggs; and tho' a Million of them ſhould fall into one Egg, none of them would come forward, but what were in the Center of the Cicatricula; and perhaps the Nidus, neceſſary for their Formation, is ſo proportioned to their Bulk, that it can hardly contain more than one Animalcule; which may be the Reaſon why there are ſo few Monſters. This, we ſee, is abſolutely neceſſary in the Oviparous Kinds; and the only Difference which lies between them and the Viviparous, ſeems to be this, that in the latter the Ova are properly nothing but the Cicatricula, with its Colliquamentum, ſo that the Fœtus muſt ſpread forth its Roots into the Uterus, to receive its Nouriſhment; but the Egg in Oviparous Animals may be properly termed an Uterus, in relation to the Fœtus; as it contains not only the Cicatricula, with its Amnion and Colliquamentum, which is the immediate Nouriſhment of the Fœtus, but alſo the Materials which are to be converted into that Colliquamentum; ſo that the Fœtus ſpreads forth its Roots no farther than into the White and Yolk of the Egg, from whence it derives all its Nouriſhment. Now, that an Animalcule cannot come forward without ſome ſuch proper Nidus, will not be deny'd; for if there were nothing needful but their being thrown into the Uterus, we do not ſee why many hundreds of them ſhould not come forward at once, at leaſt while ſcatter'd in ſo large a Field.

2° That this Cicatricula is not originally *in Utero*, ſeems evident from the frequent Conceptions which have been found *extra Uterum*: Such as the Child which continued 26 Years in the Woman of *Tholouſe's* Belly: And the little Fœtus found in the Abdomen of Mad. *de St. Mere*, together with the Teſticle torn, and full of clotted Blood: Such alſo ſeem to be the Fœtus in the Abdomen of the Woman of *Copenhagen*, mention'd in the *Nouvelles des Lettres*, for *Sept.* 85. All the Members of which were eaſily to be felt thro' the Skin of the Belly, and which ſhe had carried in her Belly for four Years: And the ſeven Years Gravidation related by Dr. *Cole*. Now, granting once the Neceſſity of a proper Nidus for the Formation of an Animalcule into an Animal, theſe Obſervations make it probable, that the Teſtes are the Ovaria appropriated for this Uſe: For tho' the Animalcule's coming thither in ſuch Caſes, may ſeem to be extraordinary, and that uſually the Impregnation is in Utero; yet it may be collected from hence, that the Cicatricula or Ova to be impregnated, are in *Teſtibus fœmineis*; for if they were not ſo, the Accidental coming of Animalcules thither, could not make them come forward more than in any other Part of the Body; ſince they cannot be form'd and nouriſh'd without a proper Nidus.

3° It is acknowledg'd, that the Fœtus *in Utero*, for ſome conſiderable Time after Conception, has no Connexion with the Womb; that it ſits wholly looſe to it, and is perfectly a little round Egg, with the Fœtus in the midſt; which ſends forth its umbilical Veſſels by degrees, and at laſt lays hold on the Uterus. Now, from hence it ſeems evident, that the Cicatricula, which is the Fountain of the Animalcules Nouriſhment, does not ſprout from the Uterus, but has its Origin elſewhere; and falls in thither as into a fit Soil: from whence it may draw Nutriment for the Growth of the Fœtus; elſe it cannot be eaſily imagin'd how it ſhould not have an immediate Connexion with the Uterus, from the Time of Conception.

It is indeed difficult to conceive, how theſe Eggs ſhould be impregnated *per ſemen maris*, both becauſe there is no Connexion between the Fallopian Tubes, and the Ovary, for its Tranſmiſſion; and for that Dr. *Harvey* could never diſcover any thing of it *in Utero*: But as to the laſt, M. *Leewenhoeck* has cleared that Difficulty by the Diſcovery of innumerable Animalcula in the Tubæ, or Cornua Uteri, and thoſe living a conſiderable Time after Coition. And as to the former, we may either ſuppoſe that there is ſuch an Inflation of the Tubæ, at the Time of Coition, as makes them embrace the Ovaries; and ſuch an Approach of the Uterus and its Cornua, as that it may eaſily tranſmit the Seed into the Ovary: Or elſe, that the Ova are impregnated by the Animalcules after they deſcend into the Uterus, and not in the Ovary. The former ſeems probable for this Reaſon, that at leaſt a whole Cluſter of Eggs in a Hen will be fœcundated by one Tread of the Cock: Now this Fœcundation ſeems to be in the Vitellary, and not in the Uterus, as the Eggs paſs along from day to day: For it can hardly be ſuppoſed, that the Animalcules ſhould ſubſiſt ſo long, being ſcatter'd looſely in the Uterus, as to wait there, for many Days, for the Fœcundation of the Eggs as they paſs along. The latter Conjecture has this to ſtrengthen it: That the Animalcules are found to live a conſiderable Time in the Uterus, and that if they ſhould impregnate the Ova in the Ovary it ſelf, the Fœtus would encreaſe ſo faſt, that the Ova could not paſs thro' the Tubæ Uteri; but would either burſt the Ovary, or fall down into the Abdomen from the Orifices of the Tuba: And from hence probably proceed thoſe extrrordinary Conceptions in the Abdomen, out of the Uterus. See FALLOPIAN *Tube*.

Thus much is urged for the *Syſtem ab Animalculo*.

The Retainers to the *Syſtem of* Generation *ab Ovo*, contend that the Rudiments of the Fœtus are laid in the Ovary, and that the Female furniſhes the whole Matter of the Body; which they chiefly ſupport from the Conformation in Rabbits, Sheep, Cows, *&c.* where the Vagina of the Womb is ſo long, and ſinuous, that it is ſcarce poſſible the Male Seed ſhould ever arrive within the Body of the Uterus; eſpecially in Cows, whoſe Vagina is fill'd with a thick, viſcid Ichor, and the inner Orifice of the Womb exactly cloſed: Beſide that, the Thickneſs of the Membranes of the Ova ſhould ſeem inpenetrable to ſo craſs a Matter as the Male Seed. Add, that if Animalcula be found in the Male Seed, which, however, will admit of ſome Diſpute (that inteſtine Motion and Agitation of the groſſer Particles thereof, which give riſe to the Opinion being accountable for from the common Laws of warm Fluids) yet are the ſame obſerv'd in Vinegar, Pepper, Water, *&c.* Add, that it is highly improbable, thoſe Animalcules ſhould contain the Rudiments of a future Body; ſince their large Numbers would produce too plentiful an Offspring; inſomuch that it would be neceſſary for 9999 Parts of them to be in vain, and periſh: Which is contrary to the Oeconomy of Nature in other Things.

Analogy is likewiſe urged in favour of this Syſtem: Thus, all Plants are maintained to ariſe from Eggs; Seeds being no other than Eggs under another Denomination. All Oviparous Animals do unexceptionably ariſe from Eggs, which the Female caſts forth; and 'tis highly probable, that the Viviparous only differ from Oviparous, in that the Females lay and hatch their Eggs within themſelves. See VIVIPAROUS, and OVIPAROUS.

Againſt this Hypotheſis it is urged, that what are uſually called Ova, or Eggs, in Women, are no other than little Cells, or Bladders, full of a certain Liquor: And how can a Drop of Liquor paſs for an Egg? Add, that theſe imaginary Eggs have no proper Membrane belonging to them, nor any Covering but that of the Cell; which ſeems ſo inſeparable therefrom, that when they are diſcharged, it is hard to conceive how they ſhould take it with them. And beſide, how ſhould they make themſelves a Paſſage through the commom Membrane wherewith the Ovary is inveſted, which is of ſo cloſe a Texture, that it muſt ſeem abſolutely impenetrable by a round Body of ſo ſoft a Conſiſtence, as one of theſe Veſicles. Laſtly, Veſiculæ, in all reſpects perfectly like Ova, have been found in other Parts of the Body, where it is apparent they could not ſerve for any purpoſes of *Generation*. *Mem. del Acad. Royal des Scien, An.* 1708, 1709.

To this it is anſwer'd, that Ova or Veſiculæ have been actually found in Diſſections, detach'd and ſeparated from the Ovary, and the Ruptures in the Membrane of the Ovary, thro' which they had paſs'd, ſtill viſible. M. *Littre* even obſerved ſome of theſe ſeparated Ova ſpread with Blood Veſſels, like thoſe in the Yolks of Birds Eggs. Nay more, the ſame Author is poſitive, that he ſaw an Embryo in one of the Ova not yet ſeparated; could diſcern its Head, Mouth, Noſe, Trunk, and Funiculus Umbilicalis, whereby it adhered to the Membranes of the Ovary. See EMBRYO. But this will come to be further conſider'd under GENERATION *of Man*.

Sir *John Floyer* ſtarts a Difficulty, which ſeems to preſs equally againſt each Syſtem, taken ſingly: 'Tis fetch'd from Monſters: In a Mule, for inſtance, which is the Production of a Venereal Copula between an Aſs, and a Mare, the Bulk of the Body partakes of the Form of the Dam; and the Feet, Tail, and Ears of that of the Sire: Hence it is argued, that the Rudiments of the greater Part of the Fœtus are laid in the Ovum; and that the Inpregnation either conveys, or changes the Extremities. If the Male ſupplied the Animalcula, the Fœtus ſhould always be of the ſame Species as the Male: If the Female ſupply it, it ſhould be of her kind; whereas Monſters are of both. See MONSTER.

GENERATION *of Man*. As 'tis in human Subjects, that the gradual Proceſs of *Generation* has been principally inquired into; and the Structure, and Office of the Organs ſubſervient thereto, chiefly examined: What the lateſt Naturaliſts, and Anatomiſts have ſettled with regard thereto, is reſerved for this Head.

The *Parts of Generation*, then, are different in the different Sexes.

Thoſe, *proper to the Male*, are the *Penis*; the *Teſticles*; the *Veſiculæ Seminales*; the *Vaſa deferentia*; the *Paraſta-*

tæ;

tæ, and the *Vaſa præparantia*; which ſee deſcribed each under its proper Article, PENIS, TESTICLES, &c.

The *Parts of* Generation *proper to the Female*, are the *Pudendum*, the *Clitoris*, *Nymphæ*, *Hymen*, *Uterus*, *Fallopian Tubes*, and *Ovaries* or *Teſtes*. See PUDENDUM, CLITORIS, NYMPHÆ, HYMEN, UTERUS, FALLOPIAN *Tubes*, and OVARIES.

The Proceſs of *Generation*, ſo far as the Male contributes to it, is as follows: The Penis being erected by an Affuſion of Blood; as ſhewn under ERECTION; the Glans, at the ſame time tumified; and the nervous Papillæ in the Glans much rubbed, and highly excited in Coitu; an ejaculatory Contraction follows, by which the Seed is preſs'd out of the Seminal Veſicles, and expell'd with ſome Force. See PAPILLÆ, EJACULATION, &c.

The Proceſs of *Generation* on the part of the Female, is thus: The Clitoris being erected, after the like manner as the Penis in Man; and the neighbouring Parts all diſtended with Blood, they more adequately embrace the Penis in Coitu; and by their Intumeſcence preſs out a Liquor from the Glands about the Neck of the Womb, to facilitate the Paſſage of the Penis.

At the ſame time, the Fibres of the Womb contracting, open its Mouth (which at other times is extremely cloſe) for the Reception of the finer Part of the Seed.

Thus, the Seed, pregnant with Animalcules, is convey'd, with ſome Impetus, into the Uterus; where being retain'd by the convulſive Conſtriction of the inner Membrane thereof, and further heated and agitated therein; it is prepared to impregnate the Ovum.

During the Act of Coition, the Fallopian Tubes growing ſtiff, embrace the Ovaries with their ſtrong muſculous Edges, like Fingers; and compreſs them; till, their Mouths being dilated, and expanded by this Embrace, force the Egg, now ripen'd, into their Cavities, and gradually drive it forwards by their Vermicular Motion, till at laſt they protrude it into the Cavity of the Womb, to meet the Seed, ſome of the Animalculas whereof entering the dilated Pores of the glandulous Membrane of the Egg, are there retain'd, nouriſh'd, grow to its Navel, and ſuffocate the reſt of the leſs lively Animalcula. And thus is *Conception* perform'd. See CONCEPTION.

Others rather ſuppoſe the Seed convey'd from the Uterus thro' the Fallopian Tubes to the Ova; and thus take the Inpregnation to be firſt perform'd in the Ovaries; or even the Tubæ themſelves, the Ova and Seed meeting by the way.

Others, conſidering the Cloſeneſs of the Mouth of the Womb, and the Thickneſs of the Membranes of the Ovaries, judge it impoſſible for the Seed to paſs that way; and therefore ſuppoſe it taken up by the Veins, which open into the Cavity of the Vagina, or even Womb; where circulating, it ferments with the Maſs of Blood; and hence all the Symptoms which appear in Conception. At length it enters and impregnates the Egg by the ſmall Twigs of Arteries, which are upon its Membranes. This Fermentation ſwelling the Membranes of the Tubæ, they open their Cavity, and make room for the Ova, to paſs into the Womb.

The Egg inpregnated, and cloſe ſhut up in the Womb, ſwims in the Humors thereof; which growing more and more ſubtil, enter the patent Pores found on one Side the Ovum, diſtend, fill, and augment it; and there being ſtill further attenuated, nouriſh the Embryo; thicken and expand the Membranes of the Ovum, eſpecially in that Part by which it grew to the Ovary, and thus form the Rudiments of a *Placenta*. See PLACENTA.

The ſame Cauſes ſtill continuing, and the Pores both of the Placenta, and the Membranes being enlarged; the Egg begins to fill the Capacity of the Womb; and at length its Stem or Calyx grows to the concave Surface thereof: And thus is the Navel-ſtring, or Funiculus form'd. See *Funiculus* UMBILICALIS, &c. See alſo FŒTUS.

This Syſtem is founded on the Suppoſition of the *Animalcula* in the Male Seed.

They who ſet them aſide as unconcern'd in *Generation*, account for it thus: The Seed, containing volatile, oily, and ſaline Parts, as appears from its fetid Smell, oleaginous Subſtance, &c. being lodg'd in the Womb, and there further digeſted and exalted; grows yet more volatile, fetid, pungent, and ſtimulating; and thus, adding to the Heat occaſioned by Coition, vellicates the nervous Fibres of that Part, and occaſions a Fermentation, and gentle Inflammation; and by that means an extraordinary Flux of Humors to that, and the adjacent Parts.

By this means the Tubæ become rigid, and fit to graſp the Ovaries, which are alſo heated by the Effluvia of the Semen, and the Warmth of the Parts ſurrounding. Upon this, a greater Flux into the Ovaries; till at length, the Ova, ſome of them at leaſt, by ſuch greater Supply of Nouriſhment, increaſe in Bulk; and as thoſe graſp'd by the Edges of the Tubæ, will be kept warmeſt, and the greateſt Flux be made thereto, they will ſooneſt be ripen'd, fall off, and be received by the Tubæ, and convey'd to the Womb: Where, growing, after the manner of the Seeds of Plants, the Placenta at length takes hold of, and adheres to the Uterus; from which time the Embryo begins to be nouriſh'd after a different manner. See GESTATION; ſee alſo NUTRITION, CIRCULATION, &c.

GENERATION *of Inſects*; ſee INSECT.

GENERATION *of Plants* bears an admirable Analogy to that of Animals: See the Proceſs deliver'd at length under the Article *Generation of* PLANTS.

The *Parts of* Generation *of Plants*, are the *Flowers*; and particularly the *Stamina*, *Apices*, *Farina fœcundans*, and *Piſtils* thereof. See FLOWER; ſee alſo STAMINA, FARINA, and PISTIL.

GENERATION *of Muſhrooms*, ſee MUSHROOM.

GENERATION *of Minerals*, or *Foſſils*, ſee MINERAL, and FOSSIL.

GENERATION *of Stones*, ſee STONE; ſee alſo SPAR, TROCHITES, and CRYSTAL.

GENERATION *of Shells*, ſee SHELL.

GENERATION, in Theology. The Father is ſaid to have produc'd his *Word*, or *Son*, from all Eternity, by way of *Generation*; on which occaſion the Word *Generation* raiſes a peculiar Idea: That Proceſſion, which is really effected in the way of Underſtanding, is called *Generation*, by reaſon the *Word*, in virtue thereof, becomes like to him from whom he takes his Original; or as St. *Paul* expreſſes it, the Figure, or Image of his Subſtance, *i. e.* of his Being and Nature. See TRINITY, PERSON, PROCESSION, &c.

And hence it is, that the Second Perſon in the Trinity is called the *Son*. See SON, &c.

GENERATION is alſo us'd, tho' ſomewhat improperly, for *Genealogy*; or the Series of Children, iſſued from the ſame Stock: Thus, the Goſpel of St. *Matthew* commences with *the Book of the* Generation *of Jeſus Chriſt*, &c.

The later, and more accurate Tranſlators, inſtead of *Generation*, uſe the Word *Genealogy*. See GENEALOGY.

GENERATION is alſo us'd to ſignify a People, Race, or Nation; eſpecially in the literal Tranſlations of the Scripture: Where the Word generally occurs, wherever the *Latin* has *Generatio*; and the *Greek*, γένεα, or γένεσις.

Thus, *A wicked and perverſe* Generation *ſeeketh a Sign*, &c. *One* Generation *paſſes away, and another cometh*, &c.

GENERATION is alſo us'd in the Senſe of an Age, or the ordinary Period of Man's Life.

Thus, we ſay, To the third and fourth *Generation*: In this Senſe, Hiſtorians uſually reckon a *Generation* the Space of thirty Years, or there abouts. See SECULUM.

Herodotus makes three *Generations* in an hundred Years; which Computation appears from the later Authors of political Arithmetic, to be pretty *juſt*. See ANNUITY, and POLITICAL *Arithmetick*.

GENEROSA, Gentlewoman; ſee GENTLEMAN.

Generoſa is a good Addition; and if a Gentlewoman be named *Spinſter*, in any original Writ, Appeal, or Indictment, ſhe may abate and quaſh the ſame. 2 *Inſt. fol.* 668.

GENESIS, the firſt Book of Holy Scripture, or the Bible; containing the Hiſtory of the Creation; and the Lives of the firſt Patriarchs. See BIBLE, and SCRIPTURE.

The Book of *Geneſis* makes the Head of the *Pentateuch*. See PENTATEUCH.

Its Author is *Moſes*: It contains the Relation of 2367 Years; *viz.* from the Beginning of the World, to the Death of *Joſeph*.

The *Jews* are forbid to read the Beginning of *Geneſis*, and the Beginning of *Ezekiel*, before 30 Years of Age.

The *Hebrews* call this Book *Bereſith*, in regard it begins with that Word, which in their Language ſignifies *in principio*, in the Beginning. 'Twas the *Greeks* gave it the Name *Geneſis*, Γένεσις, *q. d.* Production, Generation; by reaſon it begins with the Hiſtory of the Production, or *Generation* of all Beings.—

Cedrenus makes mention of an Apocryphal Book, entitled *little Geneſis*, *Geneſis parva*, containing ſeveral Incidents, not in the other: Some of which he has preſerv'd; particularly, that *Cain* was buried under the Ruins of a Houſe: That an Angel taught *Abraham* the *Hebrew* Tongue: That *Maſtiphal*, Prince of the Devils, adviſed God to order *Adam* to ſacrifice his Son, for a Trial of his Obedience: That the Children were only caſt into the *Nile* for ten Months, &c.

GENESIS, in Geometry, the Formation of a Line, Plane, or Solid, by the Motion, or Flux of a Point, Line, or Surface. See LINE, and SURFACE; ſee alſo POINT, and FLUXION.

The *Geneſis*, or Formation, *e. gr.* of a Globe, or Sphere, is conceived by ſuppoſing a Semi-circle to revolve upon a Right Line, drawn from one Extreme thereof to the other; call'd its *Axis*, or the Axis of Circumvolution: The Motion, or Revolution of that Semi-circle, is the *Geneſis* of the Sphere, &c. See AXIS; ſee alſo SPHERE, GLOBE, &c.

In the *Geneſis* of Figures, &c. the Line, or Surface that moves, is called the *Deſcribent*; and the Line around which, or according to which the Revolution, or Motion is made, the *Dirigent*. See DESCRIBENT, and DIRIGENT.

GENET, in the Manage, &c. a ſmall ſized, well proportioned *Spaniſh* Horſe.

Some alſo give the Term *Geneta* to well made *Italian* Horſes.

To *ride a la Genette*, is to ride in the *Spaniſh* Faſhion; *i. e.* with the Stirrups ſo ſhort, that the Spurs bear upon the Flanks of the Horſe. This is deem'd a Piece of Gallantry in *Spain*, but not among us.

GENETHLIACI, in Aſtrology, Perſons who erect Horoſcopes; or foretel what ſhall befal Men, by means of the Stars which preſided at their Nativity. See HOROSCOPE, and NATIVITY.

The Antients call'd them *Chaldæi*, and by the general Name *Mathematici*: Accordingly, the ſeveral Civil, and Canon Laws, which we find made againſt the Mathematicians, only reſpect the *Genethliaci*, or Aſtrologers.

They were expell'd *Rome* by a formal Decree of the Senate; and yet found ſo much Protection from the Credulity of the People, that they remain'd therein unmoleſted.

Hence an antient Author ſpeaks of them as *Hominum genus quod in civitate noſtra ſemper & vetabitur, & retinebitur.* See ASTROLOGY.

Antipater, and *Achinapolus* have ſhewn that *Genethliology* ſhould rather be founded on the Time of Conception, than that of the Birth. *Vitruvius.*

The Word is form'd of the *Greek* γενέθλη, Origin, Generation.

GENETHLIACUM, GENETHLIAC *Poem*, GENETHLIACUM *Carmen*, is a Compoſition in Verſe, on the Birth of ſome Prince, or other Illuſtrious Perſon; wherein the Poet promiſes him great Honours, Advantages, Succeſſes, Victories, &c. by a kind of Propheſy or Prediction.

Such is the *Eclogue* of *Virgil* to *Pollio*, beginning,

Sicelides Muſæ paulo majora canamus.

There are alſo *Genethliac Speeches*, or *Orations*; made to celebrate a Perſon's Birth-day.

GENEVA, a popular Name for a diſtill'd Water; procur'd from the Seeds, or Berries of the Juniper Tree; which the *French* call *Genevrier*, and the Berry *Genevre*: Whence the *Engliſh* Appellation *Geneva*.—See WATER, and JUNIPER.

GENEVIEVE, St. GENEVIEVE, or St. GENEVIEFVE. The *Fathers* or *Religious* of St. *Genevieve*, is a Congregation of Regular Canons of the Order of St. *Auguſtin*; eſtabliſh'd in *France*.

The Congregation of St. *Genevieve* is a Reform of the *Auguſtin* Canons, begun by St. *Charles Faure*, in the Abby of St. *Vincent de Senlis*, whereof he was a Member, in the Year 1618. See AUGUSTINES.

The Reform ſoon ſpread into other Houſes; particularly that of *Notre Dame d'Eu*, and the Abby of St. *Genevieve* at *Paris*, chiefly by the Intereſt of the Cardinal *de la Rochefoucaud*, who was choſe Abbot thereof in 1619; and in 1621 propoſed the Reform to the Religious of his Abby.

In the Year 1634 the Abby was made elective; and a General Chapter, compoſed of the Superiors of 15 Houſes who had now receiv'd the Reform, choſe F. *Faure* Co-adjutor of the Abby of St. *Genevieve*, and General of the whole Congregation. Such were its Beginnings.

It has ſince increas'd very much, and now conſiſts of above an hundred Monaſteries; in ſome whereof the Religious are employ'd in the Adminiſtration of the Pariſhes, and Hoſpitals; and in others, in the Celebration of Divine Service, and the Inſtruction of Eccleſiaſticks in Seminaries for the purpoſe.

The Congregation takes its Name from the Abby of St. *Genevieve*, which is the Chief of the Order; and whoſe Abbot is the General thereof. The Abby it ſelf took its Name from St. *Genevieve*, the Patroneſs of the City of *Paris*; who died in the Year 512. Five Years after her Death, *Clouis* erected the Church of St. *Genevieve*, under the Name and Invocation of St. *Peter*; where her Relicks are ſtill preſerv'd; her Shrine viſited, and her Image carried with great Proceſſions and Ceremonies, upon extraordinary Occaſions, as when ſome great Favour is to be intreated of Heaven.

GENIAL, GENIALIS, an Epithet, applied by the Antients to certain Deities, whom they ſuppos'd to preſide over the Affair of *Generation*. See GOD.

Among the *Genial* Gods, *Dii Geneales*, ſays *Feſtus*, were Water, Earth, Fire, and Air, which the Greeks call'd *Elements*.

The twelve Signs were alſo rank'd in the Number; as alſo the Sun and Moon.

They were thus called *a Gerendo*, from Bearing: Or, according to the Correction of *Scaliger* and *Voſſius*, *a genendo*, to yean, produce.—

Yet *Feſtus* ſays, they were alſo call'd *Gerules*, or *Gerulos*; which ſeems to require the former Reading. M. *Dacier*, in a Note, ſhews that *gerere* has the Senſe of φορτίζειν.—

GENICULI, in Botany, the Knots, which appear on Herbs: Whence Botaniſts call thoſe mark'd therewith *Geniculate Plants*. See PLANT.

GENIOGLOSSI, in Anatomy, a Pair of Muſcles, proceeding inwardly from the Fore-part of the lower Jaw, under another called *Geniohyoides*; and which, enlarging themſelves, are faſten'd into the Baſis of the Tongue. See TONGUE.

They ſerve to pull the Tongue forward; and to thruſt it out of the Mouth; being thus called from γένυς, *Mentum*, the Chin, and γλῶσσα, *Lingua*, the Tongue.

GENIOHYOIDÆUS, in Anatomy, a Muſcle of the Os Hyoides, which, with its Partner, is ſhort, thick, and fleſhy; ariſing from the internal Parts of the lower Jaw-bone, called the Chin; and dilating themſelves, are ſoon leſſen'd again, and inſerted into the ſuperior Part of the Fore-bone of the Os Hyoides. See MUSCLE.

Theſe pull upwards and forwards the Os Hyoides, and aſſiſt the Geniogloſſi in thruſting the Tongue out of the Mouth. See HYOIDES.

They take their Name from γένυς, *Mentum*, the Chin, and ὑοειδὲς, Hyoides.

GENITAL, GENITALIS, in Medicine, ſomething that relates to Generation. Thus we ſay, the *Genital* Parts, *q. d.* the Parts imploy'd in the Affair of Generation. See PARTS and GENERATION.

The *Genital* Gods, *Dii Genitales*, are ſometimes uſed in the antient *Roman* Poets for thoſe we otherwiſe call *Indigetes*. See INDIGETES.

Auſonius, in the Argument of the fourth Book of the *Eneid*, takes the Word in a different manner: The *Dii Genitales*, he obſerves, were not ſuch as were born of human Parents, were not thus called *quaſi geniti ex hominibus*; but rather becauſe they themſelves had begot human Children.

GENITALIA, or GENITORIES, in Anatomy, a Name ſometimes given the Teſtes, or Teſticles of Man; on account of their Office in Generation. See TESTICLE.

GENITES, or GENITEI, among the *Hebrews*, were thoſe who deſcended from *Abraham*, without any Mixture of foreign Blood.

The *Greeks* diſtinguiſh'd by the Name of *Genites* ſuch of the *Jews*, as were iſſued from Parents, who, during the *Babyloniſh* Captivity, had not allied with any Gentile Family.

The Word is form'd of the *Greek* γενέτες.—

GENITIVE, the ſecond Caſe of the Declenſion of Nouns. See CASE.

The Relation of one thing conſider'd as belonging in ſome manner to another, has occaſion'd a new Termination of Nouns, call'd the *Genitive* Caſe. See NOUN.

In *Engliſh*, the *Genitive* Caſe is made by prefixing the Particle *of*; in *French*, *de*, or *du*, &c. though, in Strictneſs, there are no Caſes at all in either of thoſe Languages, inaſmuch as they do not expreſs the different Relations of Things by different Terminations, but by additional Prepoſitions.

In the *Latin*, this Relation is expreſs'd in divers manners: Thus we ſay, *Caput Hominis*, the Head of a Man; *Color Roſæ*, the Colour of a Roſe; *Opus Dei*, the Work of God, &c.

As the *Genitive* Caſe ſerves to expreſs very different, and even oppoſite Relations, there ſometimes ariſes an Ambiguity therefrom: Thus in the Phraſe *Vulnus Achillis*, the Wound of *Achillis*, the *Genitive Achillis* may either ſignify the Relation of Subject, in which Senſe it is taken paſſively for the Wound *Achilles* has receiv'd; or the Relation of a Cauſe, in which Senſe it is taken actively for the Wound *Achilles* has given: Thus in that Paſſage of St. *Paul*, *Certus ſum quod neque mors, neque vita*, &c. *nos poterit ſeparare a charitate Dei in Chriſto*, &c. The *Genitive DEI*, has been taken by Interpreters in two different Senſes; ſome giving it the Relation of Object, and underſtanding the Paſſage of the Love which the Elect bear to God in Jeſus Chriſt, whereas others give it the Relation of Subject, and explain it of the Love which God bears the Elect in Jeſus Chriſt.

In the *Hebrew* Tongue, the *Genitive* Caſe is marked after a manner very different from that of the *Greek*, and *Latin*; for whereas in thoſe Languages the Noun Govern'd is varied; in *Hebrew* they change the Noun Governing.

GENITURA, or GENITURE, a Name ſome Authors give to the Seed; both that of the Male, and Female. See SEED.

GENIUS, a good, or evil Spirit; or a Dæmon, whom the Antients ſuppos'd ſet over each Perſon, to direct his Birth, accompany him in Life, and to be his Guard. See DÆMON.—

Among the *Romans*, *Feſtus* obſerves, the Name *Genius* was given to the God who had the Power of doing all things, *Deum qui vim obtineret rerum omnium gerendarum*; which *Voſſius*, *de Idolol.* rather chuſes to read *genendarum*, who has the Power of producing all Things; by reaſon *Cenſorinus* frequently uſes *genere* for *gignere*.

Accordingly, St. *Auguſtin de Civitat. Dei*, relates, from *Varro*, that the *Genius* was a God who had the Power of generating all things; and preſided over them when produced.

Feſtus adds, that *Aufuſtius* ſpake of the *Genius* as the Son of God, and the Father of Men, who gave them Life; others, however, repreſented the *Genius* as the peculiar or tutelary God of each Place: And 'tis certain, this laſt is the moſt uſual Meaning of the Word.

They had their *Genii* of Nations, of Cities, of Provinces, *&c.* Nothing is more common than the following Inſcription on Medals, *GENIUS* POPULI ROM. the *Genius* of the *Roman* People: Or, *GENIO* POP. ROM. *to the* Genius *of the* Roman *People.*—

In this Senſe, *Genius* and *Lar* were the ſame thing; as, in effect, *Cenſorinus* and *Apuleius* affirm they were. See LARES, and PENATES.

The *Platoniſts*, and other Eaſtern Philoſophers, ſuppoſed the *Genii* to inhabit the vaſt Region, or Extent of Air, between Earth and Heaven. They were a ſort of intermediate Powers, who did the Office of Mediators between Gods and Men. They were the Interpreters, and Agents of the Gods; communicated the Wills of the Deities to Men; and the Prayers, and Vows of Men, to the Gods. As it was unbecoming the Majeſty of the Gods to enter into ſuch trifling Concerns; this became the Lot of the *Genii*, whoſe Nature was a Mean between the two; who derived Immortality from the one, and Paſſions from the other; and who had a Body framed of an aerial Matter.

Moſt of the Philoſophers, however, held that the *Genii* were born, and died; and *Plutarch* attributes the ceaſing of Oracles partly to the Death of the *Genii*. See ORACLE.

The Heathens who conſider'd the *Genii* as the Guardian Spirits of particular Perſons, believed that they rejoyc'd, and were afflicted at all the good, and ill Fortune that befel their Wards. They never, or very rarely appear'd to them; and then only in favour of ſome Perſon of extraordinary Virtue or Dignity.

They likewiſe held a great Difference between the *Genii* of different Men; and that ſome were much more powerful than others; on which Principle it was, that a Wizzard in *Appian* bids *Anthony* keep at a diſtance from *Octavius*, by reaſon *Anthony*'s *Genius* was inferior to, and ſtood in Awe of that of *Octavius*.

There were alſo *Evil Genii*, who took a pleaſure in perſecuting Men, and bringing them evil Tidings: Such was that in *Paterculus*, &c. which appear'd to *Brutus* the Night before the Battle of *Philippi*. Theſe were alſo call'd *Larvæ*, and *Lemures*. See LARVÆ, and LEMURES.

GENIUS is more frequently us'd for the Force or Faculty of the Soul, conſider'd as it thinks, or judges.

Thus we ſay, A happy *Genius*, a ſuperior *Genius*, an elevated *Genius*, a narrow confin'd *Genius*, &c. In the like Senſe we ſay, A Work of *Genius*; a Want of *Genius*, &c.

GENIUS is alſo us'd in a more reſtrain'd Senſe for a natural Talent, or Diſpoſition to one Thing more than another. In this Senſe we ſay, A *Genius* for Verſe; for the Sciences, *&c.*

GENS D'ARMES, ſee GEND'ARMES.

GENTIAN, a Medicinal Root, the Product of a Plant of the ſame Name; which the Antients, to render it the more conſiderable, denominated from *Gentius*, King of *Illyria*, who is ſuppos'd to have been the firſt that diſcover'd the admirable Virtues thereof.

The Root *Gentian* is of a yelloviſh Colour, and intolerably bitter; is ſometimes as thick as the Arm, but more commonly divided into Branches no bigger than the Thumb: Its Stem is ſeveral Feet high, being very ſmooth and poliſh'd, tho' divided by Knots from Space to Space, out of which ariſe the Leaves, which reſemble thoſe of *Plantain*. Its Flowers, which likewiſe accompany the Knots, are yellow; and its Seed, flat, round, ſmooth, and light.

This Root is held excellent againſt Poiſons, and even againſt the Plague. It ſtands at the Head of the Stomachicks, warming and ſtrengthning the Stomach, and helping Digeſtion. It is ſudorifick, and us'd with Succeſs in intermitting Fevers, whence ſome call it the *European Quinaquina*; and is alſo an Ingredient in Treacle. Externally, it is uſed for Wounds.

The Plant affects moiſt Places, and is found commonly enough in ſome Parts of *England*, *Burgundy*, the *Alps*, and *Pyrenæans*: The Root is to be choſe dry, new, of a moderate Thickneſs, free from Earth, and furniſh'd with five little Branches or Fibres; and, if poſſible, that which is dry'd by the Air, which is diſtinguiſhable by the Colour, it being blackiſh within Side, when dry'd in the Oven, and of a golden Yellow, when in the Air.

GENTILE, GENTILIS, a *Pagan*, or Perſon who adores Idols. See IDOL, PAGAN, &c.

This Name the *Jews* gave to all who were not of their Religion; as the Chriſtians give that of *Infidel*. St. *Paul* is called the *Doctor*, or *Apoſtle of the Gentiles*, which Appellation he firſt gave himſelf. *Rom.* xi. 13. *As I am the Apoſtle of the* Gentiles, *I magnify mine Office.*

The Calling of the *Gentiles* to Chriſtianity, had been predicted in the Old Teſtament, as it was accompliſh'd in the New. See *Pſal.* ii. 8. xix. 48. *Iſ.* ii. 2. lxvi. 18. *Joel* ii. 29. *Matth.* viii. 11. xii. 17. *Acts* xi. 40. xiii. 47, 48. xxviii. 8. *Rom.* i. 5. iii. 29. xi. 12, 13, 25. *Eph.* ii. 11. *Revel.* xi. 2. xxii. 2.

In the *Roman* Law, and Hiſtory, the Name *Gentile*, *Gentilis*, ſometimes expreſſes thoſe whom the *Romans* otherwiſe called *Barbarians*; whether they were Allies of *Rome*, or not: In this Senſe the Word occurs in *Ammianus*, *Auſonius*, and the *Notitia Imperii*.

The ſame People us'd the Word *Gentilis* in a more peculiar Senſe, for all Strangers, or Foreigners, not ſubject to their Empire; as we ſee in the *Theodoſian* Code, in the Title *De Nuptiis Gentilium*, where the Word *Gentiles* ſtands oppoſed to *Provinciales*, or the Inhabitants of the Provinces of the Empire.

The Word is likewiſe us'd in the *Greek*; but was not introduced either into that, or the *Latin* Tongue, till after Chriſtianity was eſtabliſh'd; it being taken from Scripture.

The *Hebrews* apply the Name גוים, *Gentes*, to all the other People of the Earth, who were not *Iſraelites*, or *Hebrews*. Some will have it, that the *Gentiles* were thus called in Contradiſtinction to the *Jews*, and *Chriſtians*, by reaſon theſe latter have a poſitive Law to obſerve in Matters of Religion, whereas the *Gentiles* have only the natural Law; hence they are called *Gentiles*, *quia ſunt uti geniti fuerunt*.

GENTLEMAN, a Perſon of noble Birth, or deſcended of an antient Family, which has long bore Arms. See NOBLE, and ARMS.

In Strictneſs, *Chamberlain* obſerves, a *Gentleman* is one whoſe Anceſtors have been Freemen, and have owed Obedience to none but their Prince: So that in Propriety of Speech, no Man is a *Gentleman* who is not born ſo.

But, in *England*, the King, being the Fountain of Honour, can make a *Gentleman* by Charter, or by beſtowing an honourable Employment on him.—*Guillim* is even of Opinion, that if a *Gentleman* be bound Apprentice to a Merchant, or other Trade, he does not loſe his Degree of *Gentility*.

By the Cuſtom of *England*, Nobility is either *greater*, or *leſs*: The greater contains all from Barons upwards, inclusive: The leſſer, all from Baronets downwards, conſiſting of Baronets, Knights, Eſquires, and *Gentlemen*. See NOBILITY; ſee alſo KNIGHT, &c.

The Word is form'd of the French *Gentilhomme*, or rather of *Gentil*, fine, faſhionable, or becoming; and the *Saxon*, *Man*, *q. d. honeſtus*, or *honeſto loco natus*.

The ſame Signification has the Italian *Gentil huomini*, and the Spaniſh *Hidalgo*, or *Hijo d'Algo*, that is, the Son of a Perſon of Note.

Among us, the Term is applicable to all above Yeomen; ſo that Noblemen may be properly called *Gentlemen*. See YEOMAN.

If we go further back, we ſhall find *Gentleman* originally derived from the Latin *Gentilis homo*, which was uſed among the *Romans* for a Race of noble Perſons of the ſame Name, born of free or ingenuous Parents, and whoſe Anceſtors had never been Slaves, or put to death by Law.

Thus, *Cicero*, in his *Topicks*; Gentiles *ſunt*, *qui inter ſe eodem ſunt nomine ab Ingenuis oriundi*, *quorum majorum nemo ſervitutem ſervivit*, *qui capite non ſunt diminuti*, &c.

Some hold, that it was formed from *Gentile*, *i. e.* Pagan, and that the antient *Franks*, who conquer'd *Gaul* which was then converted to Chriſtianity, were called *Gentiles* by the Natives, as being yet Heathens.

Others relate, that towards the Declenſion of the *Roman* Empire, as recorded by *Ammianus Marcellinus*, there were two Companies of Brave Soldiers, the one called *Gentilium*, and the other *Scutariorum*; and that it was hence we derived the Names *Gentleman*, and *Eſquire*. See ESQUIRE.

This Sentiment is confirmed by *Paſquier*, who ſuppoſes the Appellations *Gentils* and *Ecuyers* to have been tranſmitted to us from the *Roman* Soldiery; it being to the *Gentiles* and *Scutarii*, who were the braveſt of the Soldiery, that the principal Benefices and Portions of Lands were aſſigned. See BENEFICE.

The *Gauls* obſerving, that during the Empire of the *Romans*, the *Scutarii* and *Gentiles* had the beſt Tenements,

or

or Appointments of all the Soldiers on the Frontiers of the Provinces, became inſenſibly accuſtomed to apply the ſame Names *Gentilhommes*, and *Ecuyers*, to ſuch as they found their Kings gave the beſt Proviſions or Appointments to. *Paſq. Rech. L. II. C.* 15.

In our Statutes, *Gentilis homo* was adjudg'd a good Addition for a *Gentleman.* 27 *Edw.* 3. The Addition of Knights is very antient, but that of Eſquire or *Gentleman*, rare, before 1 *Hen.* 5. See ADDITION.

GENTLEMEN *of the Chapel*, are Officers, whoſe Duty and Attendance is in the Royal Chapel; being in Number 32: Twelve whereof are Prieſts, and the other twenty called *Clerks of the Chapel*, who aſſiſt in the Performance of Divine Service. See CHAPEL.

One of the firſt twelve is choſen for Confeſſor of the Houſhold, whoſe Office it is to read Prayers every Morning to the Houſhold Servants; to viſit the Sick; examine, and prepare Communicants, and adminiſter the Sacraments.

Another, well verſed in Muſick, is choſen firſt Organiſt; who is Maſter of the Children to inſtruct them in Muſick, and what is neceſſary for the Service of the Chapel: A ſecond is likewiſe an Organiſt: A third a Lutaniſt; and a fourth a Violiſt.

There are likewiſe three *Vergers*, ſo called from the Silver Rods they uſually carry in their Hands, being a Serjeant, Yeoman, and Groom of the Veſtry: The firſt attends the Dean, and Sub-Dean, finds Surplices, and other Neceſſaries for the Chapel: The ſecond has the whole Care of the Chapel, keeps the Pews, and ſeats the Nobility and Gentry: The Groom has his Attendance within the Chapel Door, and looks after it.

GENUFLEXION, the Act of bowing, or bending the Knee; or rather, of kneeling down. See KNEELING.

The Jeſuit *Roſweyd*, in his Onomaſticon, ſhews that *Genuflexion*, or Kneeling, was a very antient Cuſtom in the Church; and even under the Old Teſtament Diſpenſation: And that this Practice was obſerv'd throughout all the Year, excepting on Sundays, and during the time from Eaſter to Whitſuntide, when kneeling was forbid by the Council of *Nice*.

Others have ſhewn, that the Cuſtom of not kneeling on Sundays had obtain'd from the Time of the Apoſtles; as appears from St. *Irenæus* and *Tertullian*: And the *Æthiopic* Church, ſcrupulouſly attach'd to the antient Ceremonies, ſtill retains that of not kneeling at Divine Service. The *Ruſſians* eſteem it an indecent Poſture, to worſhip God on the Knees. Add, that the *Jews* uſually pray'd ſtanding.

Roſweyd gives the Reaſons of the Prohibition of *Genuflexion* on Sundays, &c. from St. *Baſil*, *Anaſtaſius*, St. *Juſtin*, &c.

Baronius is of opinion that *Genuflexion* was not eſtabliſh'd before the Year of Chriſt 58, from that Paſſage in *Acts*, chap. xx. 36. where St. *Paul* is expreſly mention'd to kneel down at Prayer; but *Saurin* ſhews that nothing can be thence concluded.

The ſame Father remarks, that the primitive Chriſtians carried the Practice of *Genuflexion* ſo far, that ſome of them had wore Cavities in the Floor where they pray'd: And St. *Jerom* relates of St. *James*, that he had contracted a Hardneſs of his Knees, equal to that of Camels.

GENUS, *Kind*, in Logicks, and Metaphyſicks, is that which has Species under it: Or, it is the Origin, and Radix of divers Species, join'd together by ſome Affinity or common Relation betwen them. See SPECIES.

Or, *Genus* is a Nature, or Idea, ſo common and univerſal, that it extends to other general Ideas, and includes them under it. See GENERAL.

Thus, *Animal* is ſaid to be a *Genus*, in reſpect of *Man*, and *Brute*; in regard Man and Brute agree in the common Nature and Character of Animal: So, a *right lined Figure of four Sides*, is a *Genus*, in reſpect of a *Parallelogram*, and a *Trapezium*; and ſo likewiſe is *Subſtance*, in reſpect of *Subſtance extended*, which is a *Body*; and *thinking Subſtance*, which is *Mind*. See SPECIES.

In the general, *Genus* may be ſaid to be a Claſs of a greater Extent than *Species*; and which is not convertible therewith. For though we may ſay, that *all Body is Subſtance*; yet it cannot be ſaid *all Subſtance is Body*.

Add, that whatever may be ſaid of the *Genus*, may likewiſe be ſaid of the Species under it; *e. gr.* whatever is ſaid of *Ens*, Being, will equally hold of Body.

The Schoolmen define the *Genus Logicum* to be an Univerſal which is predicable of ſeveral Things of different Species; and divide it into two kinds: The one, *ſummum*, which is the higheſt or moſt general; and has nothing above it to reſpect as a *Genus*: The other *ſubaltern*, which they likewiſe call *Medium*.

The *Genus ſummum* is that which holds the uppermoſt Place in its Claſs, or Predicament; or it is that which may be divided into ſeveral Species, each whereof is a *Genus* in reſpect of other Species plac'd below it. See PREDICAMENT.

Thus in the Predicament of things ſubſiſting of themſelves, *Subſtance* has the Place and Effect of *Genus ſummum*, and is predicated of all the Things contain'd in that Claſs; for both *Plato*, and *Man*, and *Animal*, and even *Spirit*, are properly call'd Subſtance.

Accordingly there are ſo many *ſumma genera*, as there are Claſſes of Predicaments or Categories. See CATEGORY.

A *Subaltern Genus* is that which being a Medium between the higheſt *Genus*, and the loweſt Species; is ſometimes conſider'd as a *Genus*, and ſometimes as a Species.

Thus Bird, when compar'd with Animal, is a Species; when to a Crow, an Eagle, or the like, a *Genus*.

Genus, again, is divided into *Remotum*, remote, where, between it and its Species, there is another *Genus*; and *Proximum*, or next, where the Species is immediately under it; as Man, under Animal.

A good Definition, ſay the Schoolmen, conſiſts of *Genus*, and Difference. See DEFINITION, and DIFFERENCE.

GENUS is alſo us'd for a Character or Manner, applicable to every thing of a certain Nature: In which Senſe it ſerves to make capital Diviſions in divers Sciences; as Muſick, Rhetorick, Botany, Anatomy, &c. See ART, and SCIENCE.

GENUS, GENDER, in Botany, a Syſtem, or Aſſemblage of ſeveral Plants, agreeing in ſome one common Character, in reſpect of the Structure of certain Parts; whereby they are diſtinguiſh'd from all other Plants. See PLANT.

The Diſtribution of Plants into *Genera*, and Species, is abſolutely neceſſary to eaſe the Memory, and prevent its being oppreſs'd, and overburthen'd with an Infinity of different Names.

The Knowledge of a *Genus*, comprehends, in a kind of Miniature, that of all the Plants belonging thereto; each being denominated from ſome Circumſtance, common to the whole Kind, to ſave the Embarraſs of ſo many particular Names.

Something like this, even the common People do, eſpecially in the inſtance of *Ranunculas*; but in moſt other Plants the Difficulty is infinitely greater, as 'tis hard to find any thing in common among them, whereon to found their *Genus*.

Hence Botaniſts differ as to the Manner of regulating theſe *Genera*, and the Characters whereon they are to be eſtabliſh'd: Mr. *Ray*'s Diſtribution, ſee under the Article PLANT.

One of the lateſt, and beſt Writers, Monſ. *Tournefort*, after a long and accurate Diſcuſſion, has choſe in Imitation of *Geſner*, and *Columna*, to regulate them by the Flowers, and Fruit conſider'd together; ſo that all Plants, which bear a Reſemblance in thoſe two reſpects, are of the ſame *Genus*: After which the reſpective Differences as to Root, Stem, or Leaves, make the different Species, or Sub-diviſions. See SPECIES.

Mr. *Ray* made ſome Objections to this Diſtribution; which grew into a conſiderable Controverſy between the two Authors. The Queſtion was, Whether the Flowers and Fruits were ſufficient to eſtabliſh *Genera*, and to determine whether a Plant was of this *Genus*, or that?

The ſame M. *Tournefort* introduces another higher kind of *Genus*, or Claſs, which is only regulated by the Flowers: He obſerves, that he has never hitherto met with above fourteen different Figures of Flowers; which, therefore, are all that are to be retain'd in the Memory; ſo that a Perſon who has a Plant in Flower, whoſe Name he does not know, will immediately ſee what Claſs it belongs to in the *Elements of Botany*: The Fruit appearing ſome Days afterwards, determines its *Genus*, in the ſame Book; and the other Parts give its Species.

It is a wonderful Eaſe to the Memory, to have only fourteen Figures of Flowers to retain, and by means hereof to be inabled to deſcend to 673 *Genera*, which comprehend 8846 Species of Plants; which is the Number of thoſe yet known by Land and Sea.

GENUS, in Muſick, by the Antients called *Genus Melodiæ*, is a certain manner of ſubdividing the Principles of Melody, *i. e.* the conſonant Intervals, into their concinnous Parts. See INTERVAL, CONCORD, and CONCINNOUS.

The Moderns, conſidering the Octave, as the moſt perfect Interval, and that whereon all the other Concords depend in the preſent Theory of Muſick; the Diviſion of that Interval is conſider'd as containing the true Diviſion of the whole Scale. See OCTAVE, and SCALE.

But the Antients went to work ſomewhat differently: The Diateſſaron, or Fourth, was the leaſt Interval which they admitted as Concord; and therefore they ſought firſt how that might be moſt concinnouſly divided; from which they conſtituted the Diapente, or Fifth; and Diapaſon, or Octave.

The Diateſſaron being thus, as it were, the Root or Foundation of the Scale; what they call the *Genera*, Kinds, aroſe from its various Diviſions; and hence they defined the *Genus modulandi*, the manner of dividing the Tetrachord, and

diſpoſing

diſpoſing its four Sounds as to Succeſſion. See TETRACHORD.

The *Genera* of Muſick were three, *viz.* the *Enharmonick*, *Chromatick*, and *Diatonick:* The two laſt whereof were variouſly ſubdivided; and even the firſt, though 'tis commonly reckon'd to be without any Species, yet different Authors have propos'd different Diviſions under that Name, tho' without giving particular Names to the Species as was done to the other two. See SPECIES.

For the Character, &c. *of the ſeveral* Genera, *ſee* ENHARMONICK, CHROMATICK, and DIATONICK.

The Parts, or Diviſions of the Diateſſaron they call'd the *Diaſtems* of the ſeveral *Genera*, upon which their Differences depend; and which in the Enharmonick are particularly call'd the *Dieſis*, and *Ditonum*; in the Chromatic, the *Hemitonium*, and *Triemitonium*; and in the Diatonic, the *Hemitonium*, or *Limma*, and the *Tonus*.

But under theſe general Names, which diſtinguiſh the *Genera*, there are other different Intervals, or Ratio's which conſtitute the *Colores Generum*, or Species of Enharmonic, Chromatic, and Diatonic. Add, that what is a Diaſtem in one *Genus*, is a Syſtem in another. See DIASTEM, SYSTEM, CHROAI; ſee alſo DIAGRAMMA.

GENUS, in Rhetorick. Authors diſtinguiſh the Art of Rhetorick, as alſo Orations, or Diſcourſes produced thereby, into three *Genera*, or Kinds, *Demonſtrative*, *Deliberative*, and *Judiciary*.

To the *Demonſtrative* Kind belong *Panegyricks*, *Genethliacons*, *Epithalamiums*, *Funeral* Harangues, &c. See each under its Head, PANEGYRIC, EPITHALAMIUM, *&c.*

To the *Deliberative* Kind belong *Perſuaſions*, *Diſſuaſions*, *Commendations*, &c. See PERSUASION, *&c.*

To the *Judiciary* Kind belong *Defences*, and *Accuſations*. See RHETORIC, ORATION, *&c.*

GENUS, in Algebra. The antient Algebraiſts diſtributed that Art into two *Genera*, or Kinds; the *Logiſtic*, and *Specious*. See LOGISTIC, and SPECIOUS.

GENUS, in Anatomy. The *Genus nervoſum*, or *nervous kind*, call'd alſo the *nervous Syſtem*, is an Expreſſion, pretty frequent among Authors; ſignifying the Nerves, conſider'd as an Aſſemblage or Syſtem of ſimilar Parts, diſtributed throughout the Body. See NERVE, and SIMILAR *Part*.

Tobacco contains a deal of ſharp, cauſtic Salt, proper to cauſe Irritations in the nervous Kind: Vinegar, taken in too great Quantity, incommodes the nervous Kind.

GEOCENTRIC, in Aſtronomy, is applied to a Planet, or its Orbit, to denote it concentric with the Earth; or, as having the Earth for its Centre, or the ſame Centre with the Earth.

Thus we ſay, that all the Planets are not *geocentric*. See PLANET.

GEOCENTRIC *Place* of a Planet, is the Place wherein it appears to us, from the Earth; ſuppoſing the Eye there fix'd: Or, it is a Point in the Ecliptick, to which a Planet, ſeen from the Earth, is referr'd. See PLACE, and HELIOCENTRIC.

GEOCENTRIC *Latitude* of a Planet, is its Latitude ſeen from the Earth; or the Inclination of a Line connecting the Planet and the Earth, to the Plane of the Earth's (or true) Ecliptick.

Otherwiſe, it is the Angle, which the aforeſaid Line (connecting the Planet, and the Earth) makes with the Line which is drawn perpendicular to the Plane of the Ecliptick. See LATITUDE.

Thus, in *Tab. Aſtronomy, Fig.* 40. the Angle ☿ *T e* is the Meaſure of that Planet's *Geocentric* Latitude, when the Earth is in *T*, and the Angle *e T* ☿, the Meaſure of it when the Earth is in *t*. See LATITUDE.

GEODÆSIA, that Part of Geometry, which contains the Doctrine, or Art of meaſuring Surfaces; and finding the Contents of all kinds of plain Figures. See SURFACE; ſee alſo MEASURING.

It is uſually called *Surveying*, when employ'd in meaſuring of Lands, Grounds, Roads, Countries, Provinces, *&c.* See SURVEYING.

The Word is *Greek*, γεωδαισία, form'd of γῆ, *terra*, Earth, and δαίω, *divido*, I divide.—

GEOGRAPHICAL *Mile*, is the Minute, or ſixtieth Part of a Degree of a great Circle. See MILE, and DEGREE.

GEOGRAPHICAL *Table*, ſee MAP.

GEOGRAPHY, the Doctrine or Knowledge of the *Earth*, both as in it ſelf, and as to its Affections; or a Deſcription of the Terreſtrial Globe, and particularly of the known inhabitable Part thereof, with all its Parts.

The Word is form'd of the *Greek* γῆ, *terra*, Earth, and γράφω, *ſcribo*, I write.

Geography makes a Branch of Mathematicks, of the mix'd kind; in that it conſiders the Earth, and its Affections, as depending on Quantity, and conſequently meaſurable, *viz.* its Figure, Place, Magnitude, Motion, cœleſtial Appearances, *&c* with the ſeveral Circles imagin'd on its Surface. See MATHEMATICKS.

Geography is diſtinguiſh'd from *Coſmography*, as a Part from the Whole: This latter conſidering the whole viſible World, both Heaven, and Earth. See COSMOGRAPHY.

From *Topography*, and *Chorography*, it is diſtinguiſh'd as the whole from a Part. See TOPOGRAPHY, and CHOROGRAPHY.

Golnitzius conſiders *Geography* as either *Exterior*, or *Interior:* But *Varenius* more juſtly divides it into *General*, and *Special*; or, *Univerſal*, and *Particular*.

General, or *Univerſal* GEOGRAPHY is that which conſiders the Earth in General, without any Regard to particular Countries; or the Affections, common to the whole Globe, as its Figure, Magnitude, Motion, Land, Sea, *&c.* See GLOBE.

Special, or *Particular* GEOGRAPHY, is that which conſiders the Conſtitution of the ſeveral *Regions*, or *Countries*; their Bounds, Figure, *&c.* with the *Mountains*, *Foreſts*, *Mines*, *Waters*, *Plants*, *Animals*, &c. therein: As alſo their *Climates*, *Seaſons*, *Heat*, *Weather*, *Diſtance from the Equator*, &c. And their *Inhabitants*, *Arts*, *Foods*, *Commodities*, *Cuſtoms*, *Language*, *Religion*, *Policy*, *Cities*, &c.

Geography is very antient; at leaſt the Special Part thereof: For the antient Writers ſcarce went beyond the Deſcription of Countries.

It was a Cuſtom among the *Romans*, after they had conquer'd and ſubdued any Province, to have a Map, or painted Repreſentation thereof carried in Triumph, and expoſed to the View of the Spectators. See MAP.

Hiſtorians relate that the *Roman* Senate, about a hundred Years before Chriſt, ſent Geographers into divers Parts, to make an accurate Survey and Menſuration of the whole Globe; but they ſcarce ever ſaw the twentieth Part thereof.

Before them, *Neco*, King of *Egypt*, order'd the *Phœnicians* to make a Survey of the whole Coaſt of *Africa*, which they accompliſh'd in three Years: *Darius* procured the *Ethiopic* Sea, and the Mouth of the *Indus* to be examin'd: And *Pliny* relates, that *Alexander*, in his Expedition into *Aſia*, took two Geographers, *Diognetus*, and *Beto*, to meaſure and deſcribe the Roads; and that from their Itineraries the Writers of the following Ages took many Particulars. Indeed, this may be obſerved, that whereas moſt other Arts are Sufferers by War, *Geography* and Fortification alone are improved thereby.

The Art, however, muſt need have been exceedingly defective; as a great Part of the Globe was then unknown; particularly all *America*, the *Northern* Parts of *Europe*, and *Aſia*; with the *Terra Auſtralis*, and *Magellanica:* And as they were ignorant of the Earth's being capable of being ſail'd round, of the Torrid Zone's being habitable, *&c.*

The principal Writings on this Art, among the Antients, are *Ptolomy*'s eight Books: Among the Moderns, *Johannes de ſacro Boſco*, *De Sphæra*, with *Clavius*'s *Comment*; *Riciolus*'s *Geographia*, and *Hydrographia Reformata*; *Weigelius*'s *Speculum Terræ*; *De Chales*'s *Geography*, in his *Mundus Mathematicus*; and above all, *Varenius*'s *Geographia Generalis*, with *Jurin*'s Additions: To which may be added *Liebknecht*'s *Elementa Geographiæ Generalis*; *Sturmius*'s *Compendium Geographicum*; and *Wolfius*'s *Geographia*, in his *Elementa Matheſeos.*—

GEOMANCY, GEOMANTIA, a kind of Divination, perform'd by means of a Number of little Points, or Dots, made on Paper, at random; and conſidering the various Lines and Figures, which thoſe Points preſent; and thence forming a Judgment of Futurity and deciding any Queſtion propoſed. See DIVINATION.

The Word is form'd of the *Greek* γῆ, *terra*, Earth; and μαντεία, Divination; it being the antient Cuſtom to caſt little Pebbles on the Ground, and thence to form their Conjectures; inſtead of the Points now made uſe of.

Polydore Virgil defines *Geomancy* a kind of Divination perform'd by means of Clefts or Chinks made in the Ground; and takes the *Perſian* Magi to have been the Inventors thereof. *De Invent. Rer. L.* 1. *c.* 23.

GEOMETRY, the Science, or Doctrine of Extention, or extended things; that is, Lines, Surfaces, and Solids. See LINE, SURFACE, and SOLID.

The Word is form'd of the *Greek* γῆ, *terra*, Earth, and μετρεῖν, *metiri*, to meaſure; it being the Neceſſity of meaſuring the Earth, and the Parts and Places thereof that gave the firſt occaſion to the Invention of the Principles and Rules of this Art, which has ſince been extended and applied to numerous other Things; inſomuch that *Geometry* with Arithmetick, are now the general Foundation of all Mathematicks. See MATHEMATICKS.

Geometry is commonly divided into four Parts, or Branches, *Planimetry*, *Altimetry*, *Longimetry*, and *Stereometry*. See each under its proper Article, PLANIMETRY, ALTIMETRY, LONGIMETRY, and STEREOMETRY.

Geometry, again, is diſtinguiſh'd into *Theoretical*, or *Speculative*, and *Practical*.

The firſt contemplates the Property of Continuity; and demonſtrates the Truths of General Propoſitions, call'd *Theorems*. See THEOREM.

The

TAB. GEOGRAPHY & HYDROGRAPHY.

Fig. 2. Map.

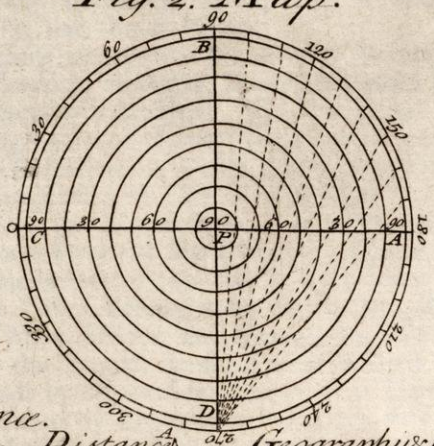


Fig. 3. Map.

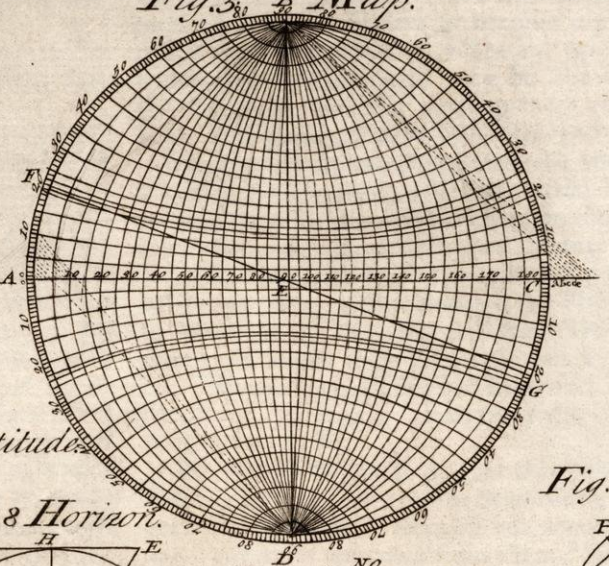


Fig. 4. Map.

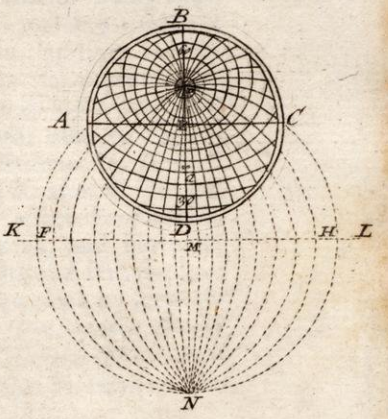


Fig. 4. Distance.

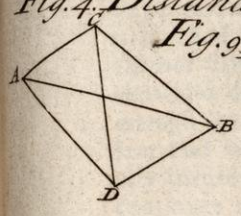


Fig. 9. Distance & Altitude.

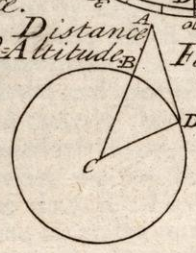


Fig. 5. Geography & Latitudes.

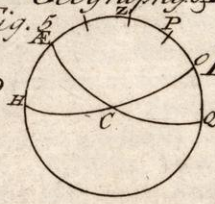


Fig. 8. Horizon.

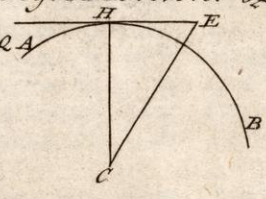


Fig. 6. Tides.

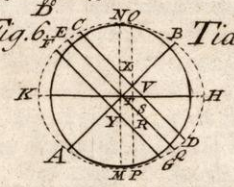
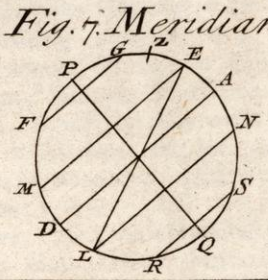


Fig. 7. Meridian.



NAVIGATION.

Fig. 1. Compass.



Fig. 2. Azimuth Compass.

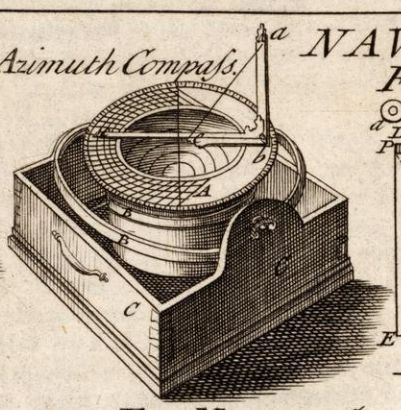


Fig. 3. Sailing.

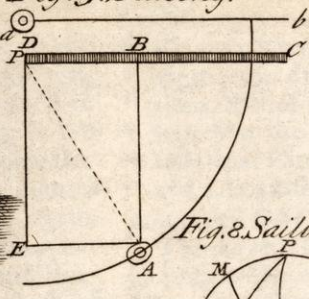


Fig. 5. Sailing.

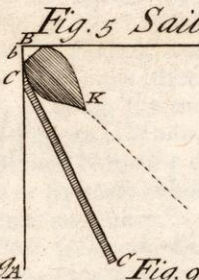


Fig. 4. Sailing.

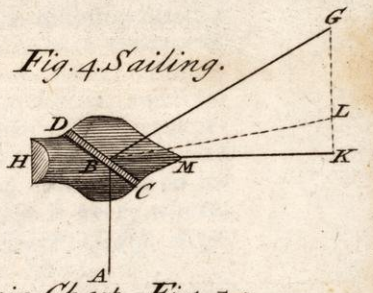


Fig. 6. Backstaff.



Fig. 7. Mercators Chart & Sailing.

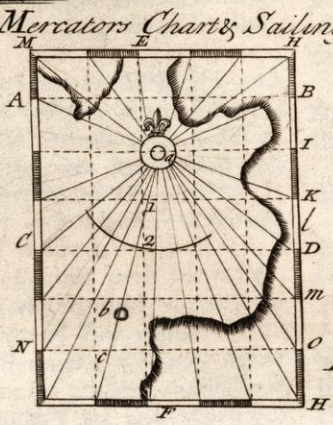


Fig. 8. Sailing.

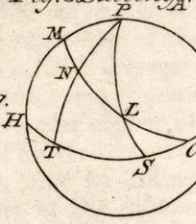


Fig. 9. Plain Chart.

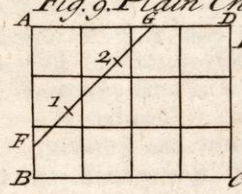


Fig. 10. Plain Chart



Fig. 11. Dipping Needle.



Fig. 11. Mercators

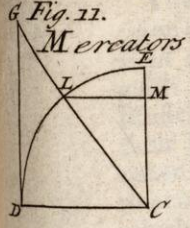


Fig. 13. Nocturnal.

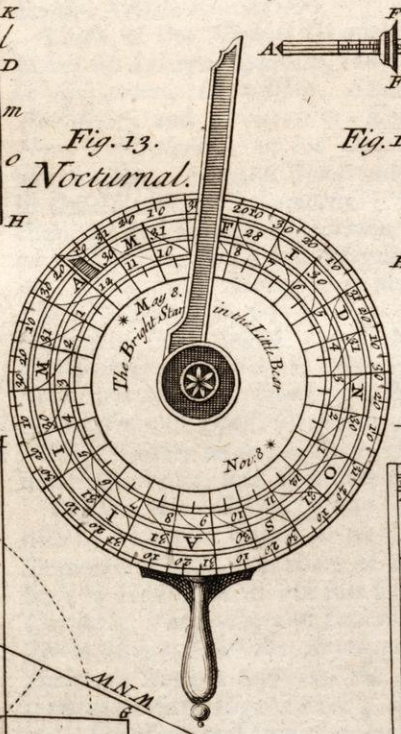


Fig. 14. Forestaff

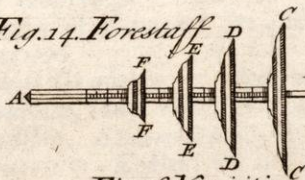


Fig. 15. Current.

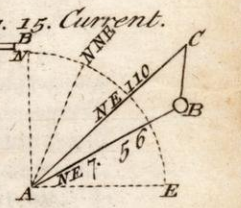


Fig. 16. Variation

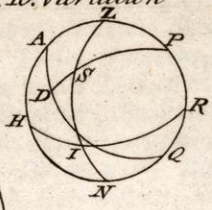


Fig. 17. Traverse

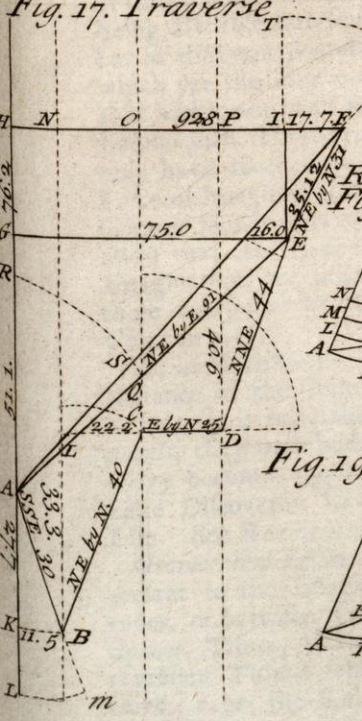


Fig. 17. Traverse

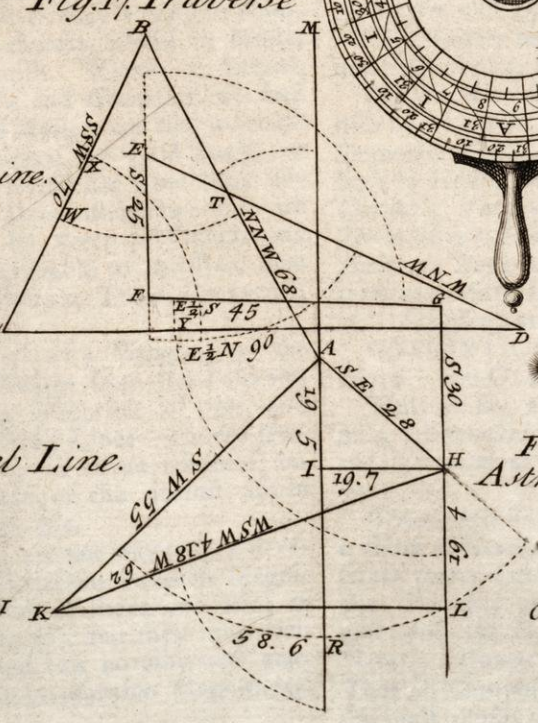
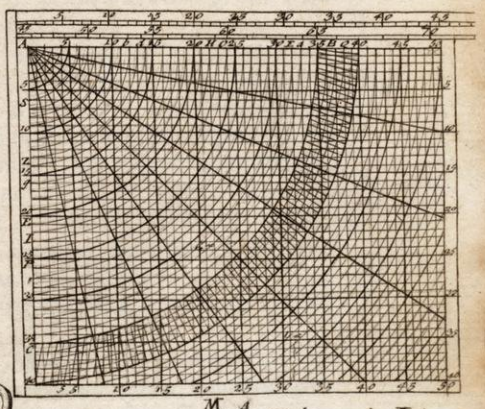


Fig. 18. Sinecal Quadrant.



Rhumb Line. Fig. 19.



Fig. 19. Rhumb Line.

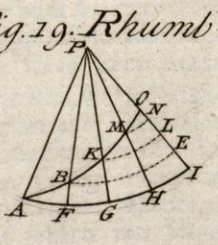


Fig. 22 Astrolabe.

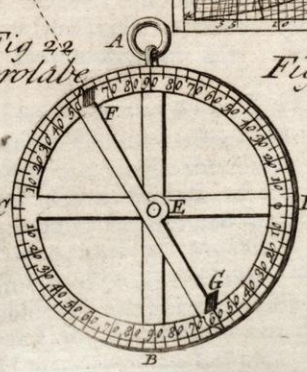


Fig. 20. Rhumb Line.

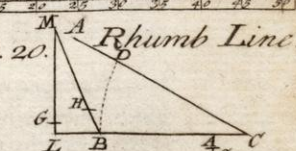
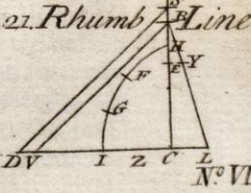
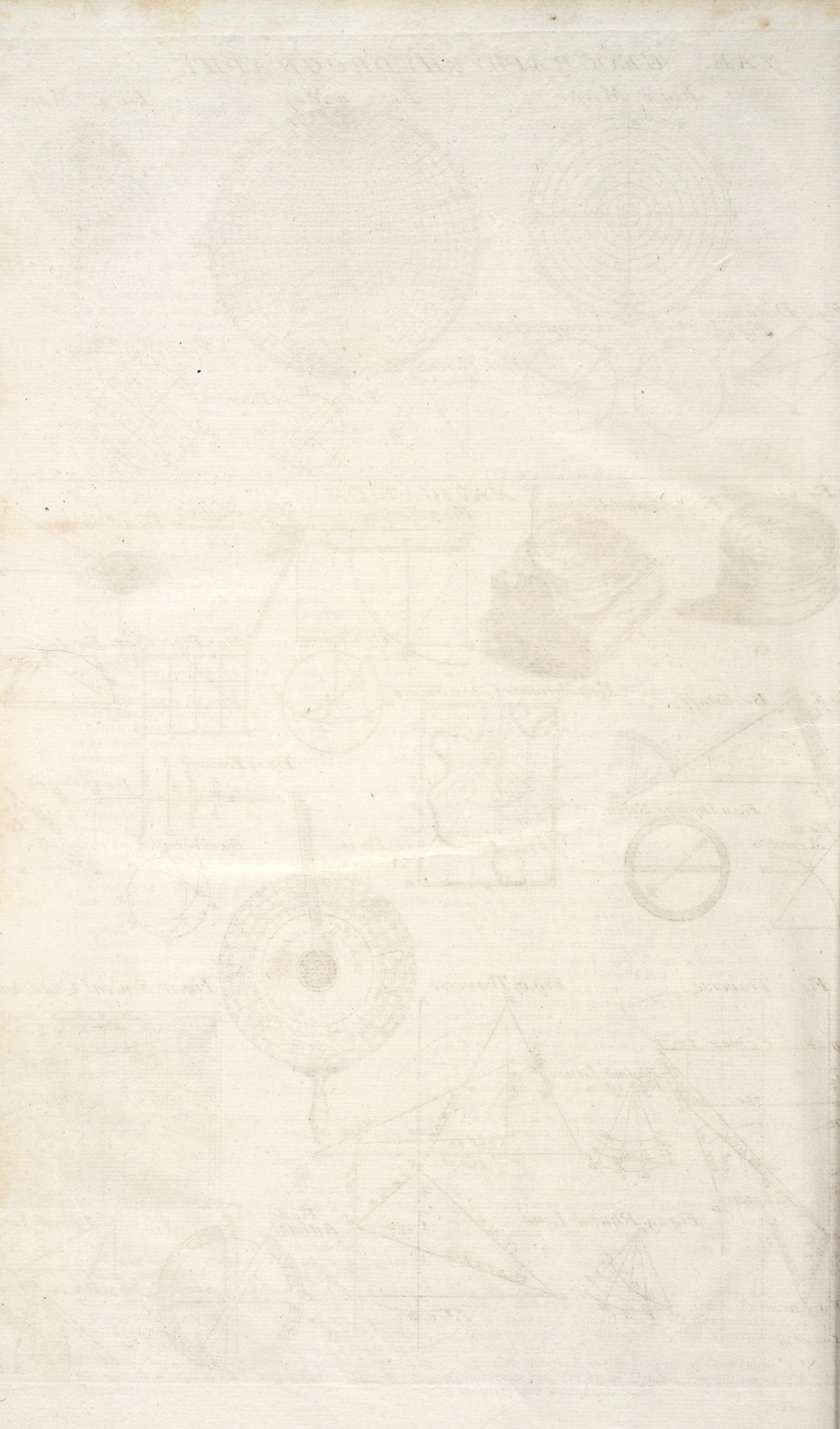


Fig. 21. Rhumb Line





The second applies those Speculations and Theorems to particular Uses in the Solution of Problems. See PROBLEM.

Speculative Geometry, again, may be distinguish'd into *Elementary*, and the *Sublimer*.

Elementary, or *Common* GEOMETRY, is that employed in the consideration of Right Lines, and plain Surfaces, and Solids generated therefrom. See PLAIN, &c.

The *Higher*, or *Sublimer* GEOMETRY is that employ'd in the consideration of Curve Lines, Conic Sections, and Bodies form'd thereof. See CURVE, &c.

Herodotus, *lib. II.* and *Strabo*, *lib. XVII.* assert the *Egyptians* to have been the first Inventors of *Geometry*; and the annual Inundations of the *Nile* to have been the Occasion: For that River bearing away all the Bounds and Landmarks of Mens Estates, and covering the whole Face of the Country, the People, say they, were obliged to distinguish their Lands by the consideration of their Figure, and Quantity; and thus by Experience and Habit, form'd themselves a Method, or Art, which was the Origin of *Geometry*.—A farther Contemplation of the Draughts or Figures of Fields thus laid down and plotted in Proportion, might naturally enough lead them to the Discovery of some of their excellent and wonderful Properties; which Speculation continually improving, the Art became gradually improved, as it continues to do to this Day. *Josephus*, however, seems to attribute the Invention to the *Hebrews*: And others among the Antients make *Mercury* the Inventor. *Polid. Virgil. de Invent. Rer. L. I. C.* 18.

The Province of *Geometry* is almost infinite: Few of our Ideas, but may be represented to the Imagination by Lines, upon which they straight become of *Geometrical* Consideration; it being *Geometry* alone that makes Comparisons, and finds the Relations, of Lines. See LINE.

Astronomy, Music, Mechanicks, and, in a Word, all the Sciences which consider Things susceptible of more, and less; *i. e.* all the precise and accurate Sciences, may be refer'd to *Geometry*: For all Speculative Truths only consisting in the Relations of Things, and in the Relations between those Relations, they may be all referred to Lines. Consequences may be drawn from them; and these Consequences, again, being render'd sensible by Lines, they become permanent Objects, constantly exposed to a rigorous Attention and Examination: And thus we have infinite Opportunities both of enquiring into their Certainty, and pursuing them further. See ART, and SCIENCE.

The Reason, for instance, why we know so distinctly, and mark so precisely, the Concords call'd Octave, Fifth, Fourth, &c. is, that we have learnt to express Sounds by Lines, *i. e.* by Chords accurately divided; and that we know that the Chord, which sounds Octave, is double of that which it makes Octave withal; that the Fifth is in the sesquialterate Ratio, or as three to two; and so of the rest.

The Ear it self cannot judge of Sounds with such Precision; its Judgments are too faint, vague, and variable to form a Science. The finest, best tuned Ear, cannot distinguish many of the Differences of Sounds; whence many Musicians deny any such Differences; as making their Sense their Judge. Some, for instance, admit no Difference between an Octave and Three Ditones: And others, none between the greater and lesser Tone; so that the Comma, which is the real Difference, is insensible to them; and much more the Schisma, which is only half the Comma.

'Tis only by Reason, then, that we learn, that the Length of Chord which makes the Difference between certain Sounds, being divisible into several Parts, there may be a great Number of different Sounds contained therein, useful in Music, which yet the Ear cannot distinguish. Whence it follows, that had it not been for Arithmetic and *Geometry*, we had had no such thing as regular, fix'd Music; and that we could only have succeeded in that Science by good Luck, or Force of Imagination, *i. e.* Music would not have been any Science founded on inconteſtable Demonstrations: Tho' we allow that the Tunes composed by Force of Genius and Imagination, are usually more agreeable to the Ear, than those composed by Rule. See SOUND, TUNE, GRAVITY, CONCORD, &c.

So, in Mechanicks, the Heaviness of a Weight, and the Distance of the Centre of that Weight from the Fulcrum, or Point it is sustained by, being susceptible of *plus*, and *minus*, they may both be express'd by Lines; whence *Geometry* becomes applicable hereto; in virtue whereof, infinite Discoveries have been made, of the utmost use in Life. See BALANCE, STILYARD, &c.

Geometrical Lines and Figures, are not only proper to represent to the Imagination the Relations between Magnitudes, or between Things susceptible of more and less; as Spaces, Times, Weights, Motions, &c. but they may even represent Things which the Mind can no otherwise conceive; *e. gr.* the Relations of incomensurable Magnitudes. See INCOMMENSURABLE.

We do not, however, pretend, that all Subjects Men may have occasion to inquire into, can be express'd by Lines. There are many not reducible to any such Rule: Thus, the Knowlege of an infinitely powerful, infinitely just GOD, on whom all Things depend, and who would have all his Creatures execute his Orders to become capable of being happy, is the Principle of all Morality, from which a thousand undeniable Consequences may be drawn, and yet neither the Principle, nor the Consequences can be express'd by Lines, or Figures. *Mallebranche Recherche de la Verite, T. II.*

Indeed, the antient *Egyptians*, we read, used to express all their Philosophical, and Theological Notions by *Geometrical* Lines. In their Researches into the Reason of Things, they observ'd, that GOD, and Nature affect Perpendiculars, Parallels, Circles, Triangles, Squares, and harmonical Proportions; which engaged the Priests and Philosophers to represent the Divine and Natural Operations by such Figures: In which they were followed by *Pythagoras*, *Plato*, &c. Whence that Saying of *Boethius*, *Nullum Divinorum Scientiam ἀγεωμέτρητον attingere posse*. See PLATONIC, PYTHAGOREAN, &c.

But it must be observ'd, that this Use of *Geometry* among the Antients was not strictly Scientifical, as among us; but rather Symbolical: They did not argue, or deduce Things and Properties unknown from them; but represented or delineated Things that were known. In effect, they were not used as Means or Instruments of discovering, but Images or Characters, to preserve, or communicate the Discoveries made. See SYMBOL, and HIEROGLYPHIC.

" The *Egyptians*, (*Gale* observes) used Geometrical Figures, not only to express the Generations, Mutations, " and Destructions of Bodies; but the Manner, Attributes, " &c. of the Spirit of the Universe, who diffusing himself " from the Centre of his Unity, thro' infinite concentric " Circles, pervades all Bodies, and fills all Space. But of " all other Figures they most affected the Circle, and Tri- " angle; the first, as being the most perfect, simple, capacious, &c. of all Figures: Whence *Hermes* borrowed it to " represent the Divine Nature; defining GOD to be an in- " tellectual Circle or Sphere, whose Centre is every where, " and Circumference no where." See *Kirch. Oedip. Ægyptiac.* and *Gale Phil. General. Lib. I. c. II.*

The Antient *Geometry* was confined to very narrow Bounds, in comparison of the Modern. It only extended to Right Lines and Curves of the first Order, or Conic Sections; whereas into the modern *Geometry* new Lines of infinitely more and higher Orders are introduced. See CURVE.

The Writers, who have cultivated and improved *Geometry*, may be distinguish'd into *Elementary*, *Practical*, and those of the *Sublimer Geometry*.

The principal Writers of *Elements*, see enumerated under the Article ELEMENTS.

Those of the *Higher Geometry* are *Archimedes*, in his Books *de Sphæra*, *Cylindro*, and *Circuli Dimensione*; as also *de Spiralibus*, *Conoidibus*, *Sphæroidibus*, *de Quadratura Parabolæ*; and *Arenarius*: *Kepler*, in his *Stereometria Nova*; *Cavalerius*, in his *Geometria Indivisibilium*; and *Torricellius*, *de Solidis Sphæralibus*; *Pappus Alexandrinus*, in *Collectionibus Mathematicis*; *Paulus Guldinus*, in his Mechanicks and Staticks; *Barrow*, in his *Lectiones Geometricæ*; *Huygens*, *de Circuli Magnitudine*; *Bullialdus*, *de Lineis Spiralibus*; *Schooten*, in his *Exercitationes Mathematicæ*; *de Billy*, *de Proportione Harmonica*; *Lalovera*, *de Cycloide*; *Fer. Ernest. Com. ab Herbenstein*, in *Diatome Circulorum*; *Viviani*, in *Exercit. Mathemat. de Formatione*, and *Mensura Fornicum*; *Bap. Palma*, in *Geomet. Exercitation.* and *Apoll. Pergæus*, *de Sectione Rationis*.

The Writers on the *Sections of the Cone*, and *Sphere*; see under CONICKS, and SPHERICKS.

For *Practical Geometry*, the fullest and compleatest Treatises are those of *Mallet*, written in *French*; but without the Demonstrations: And those of *Schwenter*, and *Cantzlerus*, both in *High-Dutch*.—In this Class are likewise to be rank'd *Clavius*'s, *Tacquet*'s, and *Ozanam*'s *Practical Geometries*; *De la Hire*'s *Ecole des Arpenteurs*; *Reinholdus*'s *Geodesia*; *Hartman Beyer*'s *Stereometria*; *Voigtel*'s *Geometria Subterranea*, all in *High-Dutch*; *Hulsius*, *Gallileus*, *Goldmannus*, *Scheffelt*, and *Ozanam*, on the *Sector*.—

GEOMETRICAL, something that has a relation to *Geometry*. See GEOMETRY.

Thus we say, a *Geometrical* Method, a *Geometrical* Genius, a *Geometrical* Strictness, a *Geometrical* Construction, and *Geometrical* Demonstration, &c. See DEMONSTRATION, &c.

Geometry it self leads us into Errors: After once reducing a thing to *Geometrical* Consideration, and finding that it answers pretty exactly, we pursue the View, are pleas'd with the Certainty and Agreeableness of the Demonstrations; and apply the Geometry further and further, till we outrun Nature. Hence it is, that all Machines do not succeed: That all Compositions of Music, wherein the Concords are the most rigidly observ'd, are not agreeable: That the most exact Astronomical Computations do not always foretel the precise Time and Quantity of an Eclipse.

The Reason is, that Nature is not abstracted; Mechanical Levers and Wheels are not *Geometrical* Lines and Circles, as they are supposed to be: Our Taste for Tunes is not the same in all Men; nor at all times in the same Man: And as to Astronomy, there is no perfect Regularity in the Motions of the Planets; their Orbits do not seem reducible to any fix'd known Law, *&c.*

The Errors, therefore, we fall into in Astronomy, Music, Mechanicks, and the other Sciences to which Geometry is applied, do not properly arise from Geometry, which is an infallible Science; but from the false Misapplication of it. *Mallebranch, Recherche de la Ver.*

Geométircal *Line*, or *Curve*, call'd also *Algebraic Line*, or *Curve*, is that wherein the Relation of the Abscisses to the Semi-ordinates may be express'd by an Algebraick Equation. See *Algebraic* Curve.

Thus, suppose in a Circle, *Tab. Geometry*, *Fig.* 51. AB=*a* AP=*x* PM=*y*; then will PB=*a*—*x*, and consequently, since $PM^2 = AP \times PB$; $y^2 = ax - x^2$.— Again, suppose in *Fig.* 52. PC=*x*, AC=*a* PM=*y*; then will $MC^2 = PM^2$, that is $a^2 - x^2 = y^2$. See Equation.

Geometrical Lines are distinguish'd into Classes, Orders, or Genders, according to the Number of the Dimensions of the Equation that expresses the Relation between the Ordinates and the Abscissæ; or which amounts to the same, according to the Number of Points in which they may be cut by a Right Line.

Thus, a *Line of the first Order* will be only a Right Line: Those of the *second*, or *Quadratick Order*, will be the *Circle*, and the *Conick Sections*; and those of the *third*, or *Cubick Order*, will be the *Cubical* and *Nelian Parabolas*, the *Cissoid* of the Antients, *&c.* See Circle, Conic *Section*, Parabola, Cissoid, *&c.*

But a Curve of the first Gender (because a Right Line can't be reckon'd among the Curves) is the same with a Line of the second Order; and a Curve of the second Gender, the same with a Line of the third Order; and a Line of an infinitesimal Order is that, which a Right Line may cut in infinite Points; as the Spiral, Cycloid, the Quadratrix, and every Line generated by the infinite Revolutions of a Radius. See Line.

However, it is not the Equation, but the Description, that makes the Curve a *Geometrical* one: The Circle is a *Geometrical* Line, not because it may be expressed by an Equation, but because its Description is a Postulate: And it is not the Simplicity of the Equation, but the Easiness of the Description, which is to determine the Choice of the Lines for the Construction of a Problem. The Equation, that expresses a Parabola, is more simple than that which expresses a Circle; and yet the Circle, by reason of its more simple Construction, is admitted before it.

The Circle, and the Conick Sections, if you regard the Dimension of the Equations, are of the same Order; and yet the Circle is not numbered with them in the Construction of Problems, but by reason of its simple Description is depress'd to a lower Order, *viz.* that of a Right Line; so that it is not improper to express that by a Circle, which may be express'd by a Right Line: But it is a Fault to construct that by the Conic Sections, which may be constructed by a Circle.

Either, therefore the Law must be taken from the Dimensions of Equations, as observed in a Circle, and so the Distinction be taken away between plane and solid Problems: Or the Law must be allow'd not to be strictly observed in Lines of superior Kinds; but that some, by reason of their more simple Description, may be preferr'd to others of the same Order, and be numbered with Lines of inferior Orders.

In Constructions that are equally *Geometrical*, the most simple are always to be preferr'd: This Law is so universal as to be without Exception. But Algebraick Expressions add nothing to the Simplicity of the Construction; the bare Description of the Lines here are only to be consider'd; and these alone were consider'd by those Geometricians, who joined a Circle with a Right Line. And as these are easy or hard, the Construction becomes easy, or hard: And therefore it is foreign to the Nature of the Thing, from any thing else to establish Laws about Constructions. See Construction.

Either, therefore with the Antients, we must exclude all Lines besides the Circle, and perhaps the Conic Sections, out of Geometry; or admit all according to the Simplicity of the Description: If the Trochoid were admitted into Geometry, we might, by its means, divide an Angle in any given Ratio: Would you therefore blame those, who would make use of this Line to divide an Angle in the Ratio of one Number to another, and contend that this Line was not defin'd by an Equation, but that you must make use of such Lines as are defin'd by Equations? See Transcendental.

If, when an Angle were to be divided, for instance, into 1001 Parts, we should be oblig'd to bring a Curve defin'd by an Equation of above an hundred Dimensions to do the Business; which no body could describe, much less understand; and should prefer this to the Trochoid, which is a Line well known, and described easily by the Motion of a Wheel, or Circle. Who would not see the Absurdity?

Either therefore the Trochoid is not to be admitted at all in Geometry, or else in the Construction of Problems, it is to be preferr'd to all Lines of a more difficult Description: And the Reason is the same for other Curves.

Hence, the Trisections of an Angle by a Conchoid, which *Archimedes* in his Lemma's, and *Pappus* in his Collections have preferr'd to the Invention of all others in this Case, must be allow'd good, since we must either exclude all Lines, beside the Circle, and Right Line, out of Geometry, or admit them according to the Simplicity of their Descriptions; in which Case, the Conchoid yields to none, except the Circle.

Equations are Expressions of arithmetical Computation, and properly have no Place in Geometry, except as far as Quantities truly Geometrical (that is, Lines, Surfaces, Solids, and Proportions) may be said, to be some equal to others: Multiplications, Divisions, and such sort of Computations are newly received into Geometry, and that apparently contrary to the first Design of this Science; for whoever considers the Construction of Problems by a Right Line, and a Circle found by the first Geometricians, will easily perceive, that Geometry was invented, that we might expeditiously avoid by drawing Lines the Tediousness of Computation.

It should seem therefore, that the two Sciences ought not to be confounded: The Antients so industriously distinguish'd them, that they never introduced arithmetical Terms into Geometry; and the Moderns by confounding both, have lost a deal of that Simplicity, in which the Elegancy of Geometry principally consists. Upon the whole, that is arithmetically more simple which is determined by more simple Equations; but that is geometrically more simple which is determined by the more simple drawing of Lines; and in Geometry, that ought to be reckon'd best, which is geometrically most simple.

Geometrical *Plane*, see Plane.

Geometrical *Solution* of a Problem, is when the Problem is directly solved, according to the strict Principles and Rules of Geometry; and by Lines that are truly *Geometrical*. See Problem, and Solution.

In this Sense we say, *Geometrical* Solution, in Contradistinction to a *Mechanical*, or *Instrumental Solution*, where the Problem is only solved by Rules and Compasses. See Mechanical.

The same Term we likewise use in opposition to all indirect, and inadequate Solutions, as by infinite Series's, *&c.* See Series.

We have no *Geometrical* Way, of finding the Quadrature of the Circle; the Duplicature of the Cube, or finding of two mean Proportionals: Mechanical ways, and others, by infinite Series's, we have. See Quadrature, Duplicature, and Proportional.

The Antients, *Pappus* informs us, in vain endeavour'd at the Trisection of an Angle, and the finding out of two mean Proportionals by a Right Line, and a Circle. Afterwards they began to consider the Properties of several other Lines, as the Conchoid, the Cissoid, and the Conic Sections, and by some of these endeavour'd to solve those Problems. At length, having more throughly examined the Matter, and the Conic Sections being received into Geometry, they distinguish'd *Geometrical* Problems into three Kinds, *viz.*

1° Into *Plane* ones, which deriving their Original from Lines on a Plane, may be solved by a Right Line, and a Circle. See Plane.

2° *Solid* ones, which were solved by Lines deriving their Original from the Consideration of a Solid, that is, of a Cone. See Solid.

3° *Linear* ones, to the Solution of which were required Lines more compounded. See Linear.

According to this Distinction, we are not to solve solid Problems by other Lines than the Conic Sections; especially if no other Lines but Right ones, a Circle, and the Conic Sections must be received into Geometry.

But the Moderns advancing much farther, have received into Geometry all Lines that can be express'd by Equations; and have distinguish'd according to the Dimensions of the Equations, those Lines into Kinds; and have made it a Law, not to construct a Problem by a Line of a Superior kind, that may be constructed by one of an inferior one. See Geometrical *Line*.

Geometrical *Proportion*, call'd also absolutely and simply, *Proportion*; is a Similitude or Identity of Ratio's. See Ratio.

Thus, if A be to B, as C to D, they are in *Geometrical* Proportion: So 8, 4, 30 and 15 are *Geometrical* Proportionals. See Proportion.

Geome-

TAB. GEOMETRY.

1 Line

2 Elliptick Compasses

3 Proportional Compasses

4 Proportional compasses

5 Gnomon

6 Chord

7 & Circle

8 Lune

9 Multiplication

10 Multiplication

5 Complement

12 Secant

13 Sector

14 Sector

15 Sector

16 Prism

17 Division

18 Vertical Angle

19 Vertex, Base &c.

Rhomboides

21 Evolute

20 Evolute

23 Segment of a circle

23 Diacaustic

24 Diagonal

25 Diagonal

25 Catenaria

26 Diagonal

27 Diameter

29 Circle

29 Circumscribing

31 Circumscribing

32 Solidity

33 Dirigent

34 Sphere

35 Divisibility

36 Parallels

37 Parallel

38 Paralleliped

39 Spiral

40 Spiral

41 Parallellogram & Triangle

42 Square

43 Contact

44 Subcontrary Position

45 Pelicoides

46 Opposite Angles

47 Pentagon

48 Oval

49 Cube

50 Tangent

51 Curve

52 Curve

53 Curve

54 Curve

56 Cylinder

55 Cycloid

57 Perpendicular

58 Epicycloid

59 Tetraedron

60 Rectangle

61 Rectangle

62 Proportional

63 Proportional

64 Extreme Proportion

65 Reduction

66 Reduction

67 Reduction

Fig. 64. Reduction

Fig. 68. Triangle.

Fig. 69. Triangle

Fig 70 Triangle

Fig. 71. Triangle

Fig. 72. Triangle

Fig. 73 Triangle

Fig. 74. Triangle

Fig. 75. Triangle

Fig. 77 Triangle

Fig 78 Triangle

Fig. 78 Pyramid

Fig. 79. Pyramid.

Fig. 76. Triangle

Fig. 80. Quality

Fig. 81. Regular body

Fig. 82. Retrogradation of Curves

Fig. 83. Rhombus

Fig. 84. Hexagon

Fig. 86 Acute Angle

Fig. 87. Similar Arch

Fig 88 Altitude

Fig 89 Altitude

Fig 91 Angle

Fig 92 Angle

Fig 93 Angle

Fig. 97 Angle

Fig 94 Angle

Fig. 95. Angle

Fig. 96. Angle

Fig. 97. Angle

Nº. IX.

Fletcher. Sculp.

GEOMETRICAL *Progreſſion* is a Series of Quantities, in continued *Geometrical* Proportion, *i. e.* increaſing or decreaſing in the ſame Ratio. See RATIO.

Thus, *e. gr.* 1, 2, 4, 8, 16, 32, 64, and 128 : And 729, 243, 81, 27, 9, 3, 1, are *Geometrical Progreſſions*. See *Geometrical* PROGRESSION.

GEOMETRICAL *Locus*, or *Place*, called alſo ſimply *Locus*, is a Line whereby an indeterminate Problem is conſtructed. See LOCUS.

GEOMETRICAL *Conſtruction* of an Equation, is the contriving and drawing of Lines and Figures, whereby to demonſtrate the Equation, Theorem, or Canon to be geometrically true. See CONSTRUCTION *of Equations*.

GEOMETRICAL *Oſculum*, ſee EVOLUTA, and OSCULUM.

GEOMETRICAL *Scale*, ſee DIAGONAL *Scale*.

GEOMETRICAL *Table*, ſee PLAIN *Table*.

GEOMETRICAL *Pace*, is a Meaſure conſiſting of five Feet. See PACE, and FOOT.

GEOMETRICALLY *Proportionals*, are Quantities in continual Proportion; or which proceed in the ſame conſtant Ratio; as 6, 12, 24, 48, 96, 192, &c. See PROPORTIONALS.

They are thus called, in Contradiſtinction to equidifferent Quantities; which are called, tho' ſomewhat improperly, *Arithmetically Proportionals*. See *Arithmetically* PROPORTIONAL.

GEOPONIC, ſomething relating to *Agriculture*.—Thus *Cato*, *Varro*, *Columella*, *Palladius*, and *Pliny* are ſometimes called *Geoponic* Writers. See GEORGIC.

St. GEORGE, a Name whereby ſeveral Orders, both Military and Religious, are denominated. It has its Riſe from a Saint, famous throughout all the Eaſt; and called by the *Greeks* Μεγαλομάρτυς, *q. d. Great Martyr*.

On ſome Medals of the Emperors *John*, and *Manuel Commenii*, we have the Figure of St. *George* arm'd, holding a Sword, or Javelin in one Hand, and in the other, a Buckler, with this Inſcription, an O, and therein a little A, and P
ΓΕ—ΓΙΟC, making Ο ΑΓΙΟΣ ΓΕΟΡΓΙΟΣ, *O Holy George*.
O
He is generally repreſented on Horſeback, as being ſuppoſed to have frequently engaged in Combats in that manner.

He is adored throughout *Armenia*, *Muſcovy*, and all the Countries which adhere to the *Greek* Rite: From the *Greek*, his Worſhip has long ago been received into the *Latin* Church; and *England* and *Portugal* have both choſe him for their Patron Saint. See PATRON.

St. GEORGE is particularly uſed for an *Engliſh* Order of Knights; more uſually now called the *Order of the Garter*. See *Order of the* GARTER.

Our King *Edward* VI. out of a Spirit of Reformation, made ſome Alterations in the Ceremonial, Laws, and Habit of the Order, that the *Romiſh* Saint might have leſs Share therein. 'Twas he firſt commanded that the Order ſhould no longer be called the *Order of* St. *George*, but that of the Garter.

Knights of St. GEORGE. There have been various Orders under this Denomination, moſt of which are now extinct; particularly, one founded by the Emperor *Frideric* III. in the Year 1470, to guard the Frontiers of *Bohemia* and *Hungary* againſt the *Turks*.—Another, called St. *George* of *Alfalma*, founded by the Kings of *Arragon*.—Another in *Auſtria* and *Carinthia*.—And another in the Republic of *Genoa*, ſtill ſubſiſting, &c.

Religious of the Order of *St.* GEORGE. Of theſe there are divers Orders, and Congregations; particularly Canons Regular of St. *George in Alga*, at *Venice*, eſtabliſh'd by two Noble *Venetians*, in the Year 1404.—Another Congregation of the ſame Inſtitute in *Sicily*, &c.

GEORGICK; ſomething that relates to the Culture or Tilling of the Ground. See AGRICULTURE.

The *Georgicks* of *Virgil*, are the 4 Books compoſed by that Poet on the Subject of Agriculture.

The Word is borrowed from the Latin *Georgicus*; and that of the *Greek* γεωργικὸς, of γῆ, *terra*, Earth, and ἔργάζομαι, *opero*, I work, labour; of ἔργον, *opus*, Work.—

GEOSCOPY, a kind of Knowledge of the Nature, and Qualities of the Earth, or Soil, gain'd by viewing and conſidering it. See SOIL.

Geoſcopy is only conjectural; but its Conjectures are very well grounded.

The Word is form'd of the *Greek* γῆ, Earth, and σκόπεω, I ſee, view.

GERESOL, in Muſic, one of the Cleſs. See CLEF.

GERFALCON, or GYRFALCON, a Bird of Prey, of a Size between a Vultur and an Hawk; and of the greateſt Strength next the Eagle. See FALCON, and HAWK.

GERMAN. A *Brother German* is a Brother both by the Father's and Mother's ſide; in Contradiſtinction to *Uterine Brothers*, &c. who are only ſo, by the Mother's ſide. See BROTHER.

So, likewiſe, *Couſins German* are thoſe in the firſt, or neareſt Degree; being the Children of Brothers or Siſters-*German*. See COUSIN, &c.

Among the *Romans* we have no Inſtance of Marriage between Couſins *German*, before the Time of the Emperor *Claudius*; when, they were very frequent. See MARRIAGE.

Theodoſius prohibited them under very ſevere Penalties, even Fine, and Proſcription. See CONSANGUINITY.

GERMAN *Language*, ſee TEUTONIC, and LANGUAGE.

GERMAN *Empire*, &c. ſee EMPIRE, &c.

GERMANICUS, an antient Title of Honour, given to ſeveral Emperors, on account of the Victories obtain'd by them over the *Germans*, or in *Germany*.

Gallian bears this Title on Medals; and the Argument for its being on occaſion of a Victory in *Germany*, is, that on the Reverſe we find the Words, VICTORIA GERMANICA. VICTORIA GER. VICTORIA. G. M. that is, *Germanica maxima*.

Claudius Gothicus bore the ſame Title, *Germanicus*, and accordingly on the Reverſe of his Medals we find *Victoria Germanica*; as on others of his Medals we read, *Victoria Gothica*.

GERMEN, or GERM, or GEM, that Part of a Seed which germinates, *i. e.* ſprouts or ſhoots out the firſt, for the Production of a new Plant. See SEED.

Botaniſts call it the *Plume*, ſee PLUME; ſee alſo PLANT, and SEED; ſee alſo GERMINATION.

GERMINATION, the Act of *Germinating*; that is, of a Plant's ſprouting, or ſhooting in the Ground. See PLANT, and GERMEN.

Some uſe the Word in a more extenſive Senſe; ſo as likewiſe to include the ſhooting of Leaves, Bloſſoms, Branches, Flowers, Fruits, and Seeds. See SEED, LEAF, FLOWER, BRANCH, &c.

The Modern Philoſophers have been very attentive to the *Germinations* of Plants, as well of the Formation of the Chick in the Egg. See PLANT.

The Progreſs of *Germination* has been very accurately obſerv'd by the Curious *Malpighi*, in the Seed of a Gourd. The Day after it was committed to the Ground, he found the Outer-coat or Integument a little tumid, and in its Tip there appear'd a ſmall Gap or Aperture, thro' which the Plume or Gem was ſeen.

The ſecond Day, the outward Coat, or Secundine was much ſofter, the inner torn and corrupted, the Plume, or Plantule ſomewhat longer and more tumid, and the Beginning of the Roots ſhew'd themſelves.

The third Day, the outer Secundine was become duſky, and the Leaves of the Plantule inflated, and the Root or Radicle had made itſelf a Paſſage thro' the Secundines, near the former Aperture; the Plume, or Stem, as alſo the Seed Leaves being now grown much bigger.

On the ſixth Day, more of the Seed Leaves had broke thro' the Secundines, and were found thicker and harder; the Root having now emitted a great Number of Fibres, and the Stem grown a Finger's Length.

The following Days, the Roots ſtill ſhot further, other Roots ariſing from them, and others from theſe; and the Stem, in its Progreſs, grew hollow, or fiſtulous, and the Seed Leaves broader and greener.

About the twenty firſt Day, the Plant ſeemed compleat; from which time the Seed Leaves began to droop, and at length died away. See PLANT.

GERON, GERONTES, in Antiquity, a kind of Magiſtracy in antient *Greece*.

The *Gerontes* were at *Sparta*, what the *Areopagites* were at *Athens*. See AREOPAGITE.

The *Gerontes* were inſtituted by *Lycurgus*: Their Number, according to ſome, was twenty eight; and according to others, thirty two. They govern'd in Conjunction with the King, whoſe Authority they were intended to ballance, and to watch over the Intereſts of the People.

None were to be admitted into this Office under ſixty Years of Age, and they held it for Life.

They were ſucceeded by the *Ephori*. See EPHORI.

The Word is formed of the *Greek* γέρον, which ſignifies old Man.

Whence alſo the Words GERONTIC, ſomething belonging to an old Man; and GERONTICON, a famous Book among the Modern *Greeks*, containing the Lives of the antient Monks.

The Senate of *Gerontes* was called *Geruſia*, that is Aſſembly or Council of old Men.

GERUND, in Grammar, a Tenſe, or Time of the Infinitive Mood; like to the Participle, but indeclinable. See MOOD, and INFINITIVE.

The *Gerund* expreſſes not only the Time, but alſo the Manner of an Action; as, He fell *in running Poſt*.

It differs from the Participle, in that it expreſſes the Time which the Participle does not. See PARTICIPLE.

And from the Tenſe properly ſo called, in that it expreſſes the Manner which the Tenſe does not. See TENSE.

The

The Grammarians are very much imbarraſs'd to ſettle the Nature and Character of the *Gerunds*: 'Tis certain, they are no Verbs, nor diſtinct Moods of Verbs, in regard they do not mark any Judgment, or Affirmation of the Mind, which is the Nature of a Verb.—And beſide, they have Caſes, which Verbs have not. See VERB.

Some therefore will have them to be Adjectives paſſive, whoſe Subſtantive is the Infinitive of the Verb: On this footing they denominate them Verbal Nouns, or Names formed of Verbs and retaining the ordinary Regimen thereof. See NOUN.

Thus, ſay they, *tempus eſt legendi libros*, or *librorum*, is as much as to ſay, *tempus eſt τὸ legere libros, vel librorum.* But others ſtand up againſt this Deciſion.

The Word is form'd of the Latin *Gerundivus*, and that from the Verb *gerere*, to bear.

GESSES, in the Furniture belonging to an Hawk. See JESSES.

GESTATION, the Time of a Woman's going with Child; or the Interval between Conception, and Delivery. See DELIVERY; ſee alſo FŒTUS, and CONCEPTION.

GESTATION is alſo a Term in the antient Medicine, uſed for a ſort of Exerciſe. See EXERCISE.

Aſclepiades firſt brought Frictions, and *Geſtation* into Practice.—The Deſign of *Geſtation* was to recover Strength after a Feaver, *&c.* was gone.

It conſiſted in making the Patient walk, or ride in a Chariot, or in a Boat; or even in rocking him in his Bed, if he could not indure a more violent Agitation.

GESTICULATION, the Act of making indecent or unſuitable Geſtures, or in too great Number. See GESTURE.

Geſticulation is a grievous Fault in an Orator.

GESTURE, a Motion of the Body, intended to ſignify ſome Idea, or Paſſion of the Mind.

Quintilian defines *Geſture, totius corporis motus & conformatio. Geſtures* are a kind of Natural Language which ſupplies the Uſe of Speech in thoſe naturally dumb. The *Mimes* and *Pantomimes* were great Proficients in the Style of *Geſture*. See MIME, and PANTOMIME.

Geſture conſiſts principally in the Actions of the Hands, and Face. See ACTION, and PRONUNCIATION.

GIAGH, or JEHAGH, a Cycle of twelve Years, in uſe among the *Turks* and *Cathayans*. See CYCLE.

Each Year of the *Giagh* bears the Name of ſome Animal: The firſt, that of a Mouſe; the ſecond, that of a Bullock; the third, of a Lynx, or Leopard; the fourth, of a Hare; the fifth, of a Crocodile; the ſixth, of a Serpent; the ſeventh, of a Horſe; the eighth, of a Sheep; the ninth, of a Monkey; the tenth, of a Hen; the eleventh, of a Dog; and the twelfth, of a Hog.

They alſo divide the Day into twelve Parts, which they call *Giagh's*; and diſtinguiſh them by the Names of the ſame Animals.

Each *Giagh* contains two of our Hours, and is divided into eight *Keh*, as many there are Quarters of Hours in our Day.

GIANT, or GYANT, a Man of extraordinary, enormous Stature and Bulk. See STATURE.

The Reality of *Giants*, and of Nations of *Giants*, is much controverted among the Learned. Travellers, Hiſtorians, and Relations both ſacred and profane furniſh various Inſtances thereof; a great Part of which, Naturaliſts and Antiquaries ſet aſide.

Thoſe among the Antients who ſpeak of *Giants*, as Hiſtorians, and affirm there were ſuch Things, are *Cæſar, de Bello Gallico, L. I. Tacitus, de Morib. Germanor. & Annal. L. II. Florus, L. III. c.* 3. St. *Auguſtin de Civit. Dei L. XV. c.* 9. and *Saxo Grammaticus*, at the End of his Preface: And among the Moderns, *Hieron. Magius, Miſcellan. de Gigantibus; Chaſſagnonus, de Gigantibus; Kircher Mund. Subterran. L. VIII. S. II. c.* 4. and ſo many others; that *Stephanius* in his Notes on *Saxo Grammaticus*, affirms nothing can be more extravagant than to deny, or allegorize the Authorities we have thereof.—

Mr. *Derham* obſerves that though we read of *Giants* before the Flood, *Gen.* vi. 4. and more plainly after it, *Numb.* xiii. 33; yet 'tis highly probable, the Size of Man has always been the ſame from the Creation; for as to the *Nephilim, Gen.* vi. the Antients vary about them; ſome taking them for Monſters of Impiety, Atheiſm, Rapine, Tyranny: And as to thoſe *Num.* xiii. which were evidently ſpoke of as Men of a *Gigantic* Size, 'tis probable the Fears of the Spies might add thereto.

But be this as it will, 'tis manifeſt that in both theſe Places *Giants* are ſpoken off as Rarities and Wonders of the Age, not of the common Stature: And ſuch Inſtances we have had in all Ages; excepting ſome fabulous Relations; ſuch as we take to be that of *Theutobocchus*, who is ſaid to be dug up Anno 1613, and to have been higher than the Trophies, and 26 Foot long: And no better we ſuppoſe the *Giants* to have been, which *Ol. Magnus* gives an Account of in his 5th Book, ſuch as *Harthen* and *Starchater* among the Men; and among the Women, *Reperta eſt* (ſaith he) *Puella—in capite vulnerata, mortua induta chlamyde purpurea, longitudinis cubitorum* 50, *latitudinis inter humeros quatuor.* Ol. Mag. *Hiſt. L.* 5. *c.* 2.

But, as for the more credible Relations of *Goliath* (whoſe Height was ſix Cubits, and a Span, 1 *Sam.* xvii. 4. which, according to Biſhop *Cumberland*, is ſomewhat above eleven Feet *Engliſh*); of *Maximinus* the Emperor (who was nine Foot high), and others in *Auguſtus* and other Reigns, of about the ſame Hight: To which might be added the Dimenſions of a Skeleton, dug up lately in the Palace of a *Roman* Camp near St. *Albans* by an Urn inſcribed *Marcus Antoninus*; of which an Account is given by Mr. *Cheſeldon*, who judg'd by the Dimenſions of the Bones, that the Perſon was eight Foot high. *Philoſ. Tranſact* N° 333. For theſe antique Examples and Relations, we ſay, they may be match'd, nay outdone, with modern Examples; of which we have divers in *J. Ludolph. Comment. in Hiſt. Æthiop. L.* 1. *c.* 2. §. 22. *Magus, Conringius*, D. *Hackewill*, and others; which laſt relates from *Nannez*, of Porters and Archers belonging to the Emperor of *China*, of Fifteen Foot high; and others from *Purchas*, of ten and twelve Foot high, and more. See the Learned Author's *Apolog. p.* 208.

GIBBOUS, in Medicine, is uſed to denote a Perſon bunch'd or hump-back'd. See VERTEBRA.

That Part of the Liver out of which the Vena Cava ariſes, is alſo called the *gibbous* Part. See LIVER.

GIBBOUS is alſo uſed in reference to the enlightened Parts of the Moon, while ſhe is moving from Full to the firſt Quarter, and from the laſt Quarter to Full again; for all that time the dark Part appears horned, and falcated, and the light one bunch'd out, Convex, or *Gibbous*. See PHASES, and MOON.

GIBELINS, GIBELLINS, or GIBELLING, a famous Faction in *Italy*, oppoſite to the *Guelphs*. See GUELPH.

The *Guelphs*, and *Gibellins* ravaged, and laid waſte *Italy* for a long Series of Years; ſo that the Hiſtory of the Country, for the ſpace of two Centuries, is only a Detail of their mutual Violences, and mortal Wars.

We have but a very obſcure Accunt, of their Origin, and the Reaſon of their Names: The Generality of Authors affirm, that they aroſe about the Year 1240, upon the Emperor *Frideric* the Second's being excommunicated by Pope *Gregory* the Ninth.

That Prince, ſay they, making a Tour among the Cities of *Italy*, gave the Name *Gibelins* to ſuch as he found well affected to him; and that of *Guelphs* to thoſe who adhered to the Pope.

But as to the Reaſon, and Signification of thoſe Words, there is a deep Silence: *Gibelin* might poſſibly be form'd of *Ghebieder, Imperator*; whence *guabiedolijken, imperioſe.* Of *Ghebiedelin*, the *Italians* might make, by Corruption, *Gibelin*; ſo that *Gibelins*, in this Light, ſhould be the ſame with Imperialiſts, or ſuch as follow'd the Emperor's Party.

By the way, ſome Writers maintain, that the two Factions aroſe ten Years before; tho' ſtill under the ſame Pope, and Emperor.

Other Hiſtorians relate, that *Conrad* IIId marching into *Italy*, in the Year 1139, againſt the *Neapolitans, Roger*, Count of *Naples* and *Sicily*, in order to defend his States, called to his Aſſiſtance *Guelph*, Duke of *Bavaria*; and that one Day when the two Armies were ready to join Battle, the *Bavarians* cried out in *High-Dutch, Hie Guelph*; or as others ſay in *Flemiſh, Hier Guelph*, that is, *Here Guelph*: And that the Imperialiſts anſwer'd, on their Side, with the Words *Hie*, or *Hier, Gibelin, here Gibelin*; calling the Emperor by the Name of the Place where he had been bred.

Hornius refers the Names to the War in 1140, between *Henry* the Proud, Duke of *Bavaria*, and *Saxony*; and *Conrad* the Third, Duke of *Suabia:* The two Princes being preparing to engage near the Town of *Winsberg*, the *Bavarians* began to cry out, *Guelph*, which was the Name of Duke *Henry*'s Brother, and the Partiſans of the Emperor, *Weiblingen*, the Name of the Place where that Prince was born and bred in the Dutchy of *Wirtenberg*, whoſe Surname he bore: From which *Weiblingen*, the *Italians* at length form'd *Gibelin.*

This Account is confirm'd by *Martin Cruſius: Initium* Gibelinæ *(Weibelinæ a Patria Conradi Regis)* & Welfiæ *concertationis. Conrad* being of *Weiblingen*, that Word, ſays *Cruſius*, gave riſe to *Gibellingue*, and that to *Gibelling, Gibelins, Gibellini.*

Platina, on the other Hand, aſſures us, that the Name *Gibelins* aroſe from that of a *German* at *Piſtoya*; whoſe Brother, named *Guelph*, gave likewiſe his Name to the oppoſite Faction; the two Brethren, it ſeems, bearing an irreconcilable Hatred.

Others maintain, that the Emperor gave the Appellation *Gibelins* to thoſe of his Party, from the *German* Word *Gipfel*, ſignifying Ridge, or Top; by reaſon the Empire reſted on them, as the Rafters of a Houſe lean on the Ridge, which joins them a-top.

Kraus, a learned Canon of *Strasbourg*, in the Lives of the Emperor of the Houſe of *Brunſwick*, is of the ſecond Sentiment above related: In a Battle, ſays he, between *Welff*, or *Guelff*, and *Friderick*, the Army of the firſt crying out, *Hie Welff! Hie, Welff!* the ſecond commanded his, to cry out *Hie, Gibeling! Hie, Gibeling*, the Name of his Birth Place; and the *French* and *Lombards* aſking the Signification of thoſe Words, they were anſwer'd, that by *Welff* was meant the Pope's Party; and by *Gibeling*, the Emperor's.

Yet others contend, that the Word *Gibelin* is only a ſoftning of the Word *Gibertin*, or *Guibertin*; and that it aroſe from *Guibert*, an Anti-Pope, ſet up by the Emperor *Henry* III^d, in the Year 1080, *Acta Sanct. Propyl. Maii, p.* 198.

Maimbourg, in his *Hiſt. de la Decad. de l'Emp.* advances another Opinion: The two Factions, and their Names, ſays he, aroſe from a Quarrel between two Antient and Illuſtrious Houſes, on the Confines of *Germany*, that of the *Henry's* of *Gibeling*, and that of the *Guelfes* of *Adorf*: Which Account appears the moſt probable of them all.

GIBET, a Machine, in manner of a Gallows, whereon notorious Criminals after Execution, are hung in Irons, or Chains; as Spectacles, *in terrorem*. See GALLOWS.

The Word in French, *Gibet*, properly denotes what we call *Gallows*: It is ſuppoſed to come originally from the Arabic *Gibel*, Mount, Elevation of Ground; by reaſon they are uſually made on Hills, or Eminences.

GIBLETS, the Offalls or Entrails of a Gooſe; including the Heart, and Liver, with the Feet, Gizzard, *&c.*

The Word is ſuppos'd to be form'd of *Goblets*, from the French *Gobeau*, mouth-full.

Giblets make a conſiderable Article in Cookery: They boil *Giblets*, ſtew *Giblets*, make Ragoos of *Giblets*, *Giblet* Pies, *&c.*

GIGANTIC, ſee GIANT.

F. *Bouhours* relates, that one of the Artifices of the *Indian Bramans* conſiſts in perſuading the ſimple People, that the Gods eat like us; and, that they may bring them Store of Victuals, they repreſent thoſe Gods of a *Gigantic* Size, and above all, give them a huge Tun Belly.

GIGANTOMACHIA, the Battle of the Giants againſt the fabulous Gods of the antient Heathens.

Several of the Poets have compoſed *Gigantomachia's*: That of *Scarron* is the fineſt of all his Pieces.

The Word is *Greek*, γιγαντομαχία, form'd of γίγας, γίγαντος, Giant, and μάχη, Combat, of μάχομαι, *pugno*, I fight.

GIGG, GIGUE, or JIG, in Muſic and Dancing, a gay, briſk, ſprightly Compoſition, and yet in full Meaſure, as well as the *Allemand*, which is more ſerious. See DANCE.

Menage takes the Word to ariſe from the Italian *Giga*, a muſical Inſtrument mentioned by *Dante*.

GILBERTINES, an Order of Religious, thus call'd from St. *Gilbert*, of *Simpringham*, in the County of *Lincoln*, who founded the ſame, about the Year 1148.

Antiently, none were received into it but married People: The Monks obſerved the Rule of St. *Auguſtin*; and were accounted Canons; and the Nuns that of St. *Benedict*.

The Founder erected a double Monaſtery, or rather, two different ones, contiguous to each other, the one for Men, the other for Women, but parted by a very high Wall.

The Order, afterwards, conſiſted of ten ſuch Monaſteries: All which were ſuppreſs'd at the general Diſſolution of Monaſtic Orders under King *Henry* VIII.

GILD, or GUILD, originally ſignify's a Fraternity, or Company; form'd from the *Saxon Gildan*, to pay, becauſe every Man was *gildare*, *i. e.* to pay ſomething towards the Charge and Support of the Company. See COMPANY, and FRATERNITY.

Thence comes our *Guild-hall*, *q. d.* the Hall of the Society or Fraternity, where they meet and make Orders and Laws among themſelves. See GUILD-*Hall*.

The Original of *Gilds* is thus related: It being a Law amongſt the *Saxons*, that every Freeman of fourteen Years old ſhould find Sureties to keep the Peace, or be committed; certain Neighbours entred into an Aſſociation, and became bound for each other, either to produce him who committed an Offence, or to make Satisfaction to the injur'd Party: This, that they might the better do, they rais'd a Sum of Money among themſelves, which they put into a common Stock; and when one of their Pledges had committed an Offence, and was fled, then the other nine made Satisfaction out of this Stock, by Payment of Money, according to the Offence. See FRANK-*Pledge*.

Becauſe this Aſſociation conſiſted of ten Families, it was called a *Decennary*: And from hence came our Fraternities. See DECENNA.

But, as to the direct Time when theſe *Gilds* had their Origin in *England*, there is nothing of Certainty to be found; ſince they were in uſe long before any formal Licence was granted to them for ſuch Meetings.

Edward the third, in the fourteenth Year of his Reign, granted Licence to the Men of *Coventry*, to erect a Merchants *Gild* and Fraternity, of Brethren and Siſters, with a Maſter, or Warden; and that they might make Chantries, beſtow Alms, do other Works of Piety, and conſtitute Ordinances touching the ſame, *&c.*

So *Henry* the fourth, in his Reign, granted a Licence to found a *Gild* of the *Holy Croſs*, at *Stratford* upon *Avon*.

In the Royal Boroughs of *Scotland*, a *Gild* is ſtill uſed for a Company of Merchants, who are Freemen of the Borough. See BOROUGH.

Every Royal Borough has a *Dean of Gild*, who is the next Magiſtrate below the Bailiff. He judges of Controverſies among Men concerning Trade; diſputes between Inhabitants touching Buildings, Lights, Water-courſes, and other Nuſance; calls Courts, at which his Brethren of the *Gild* are bound to attend; manages the common Stock of the *Gild*, and amerces and collects Fines.

GILD, or GELD, according to *Cambden*, does alſo ſignify a Tribute, or Tax; and the Statutes of 27 *Edw.* 3. Stat. 2. cap. 13; and 11 *Hen.* 7. cap. 9. uſe *Gildable* in the ſame Senſe with *Taxable*. See GELD.

GILD, according to *Crompton*, does alſo ſignify an Amercement: As in *Footgeld*, which he interpretes a Preſtation within the Foreſt, in theſe Words,—To be quit of all manner of Preſtations to be made for gathering Sheafs of Corn, Lamb, and Wool, to the uſe of Foreſters.

GILD, or GELD, is alſo uſed among our antient Writers for a Compenſation, or Mulct for a Fault committed.—— *Quicquid in amore in alterum furatum habent in duos* Geldos *componere faciat*.

Hence, *Weregeld*, is the Price of a Man; *Orpgeld*, is the Price of Cattle; *Angild*, the ſingle Value of a thing; *Twigeld*, the double Value. See WERGILD, *&c.*

There are likewiſe many Words, which end with *Geld*, and that ſhew the ſeveral kinds of Payments; as *Danegeld*, *Vadegeld*, *Seregeld*, *Hornegeld*, *Sotgeld*, *Penigeld*, &c. See DANEGELD, &c.

GILD, or GUILT *Rents*, are Rents payable to the Crown by any *Gild*, or Fraternity; or ſuch Rents as formerly belonged to Religious *Gilds*, and came to the Crown at the general Diſſolution, order'd for Sale by the Stat. 22 *Car.* 2.

GILDABLE, or GELDABLE, denotes *Tributary*, that is, liable to Pay, Tax, or Tribute.

Cambden, dividing *Suffolk* into three Parts, calls the firſt *Gildable*, becauſe liable to Tax; from which the other two Parts were exempt, becauſe *Eccleſiæ Donatæ*.

Guildable is alſo explained in an antient MS. to be that Land or Lordſhip which is *ſub diſtrictione Curiæ Vice-Com.*

GILGUL *Hammethin*, a *Hebrew* Phraſe, literally ſignifying the *Rolling of the Dead*.

To conceive the Uſe of this Diction, it is to be obſerv'd that the *Jews* have a Tradition, that at the coming of the *Meſſiah*, no *Iſraelite* ſhall riſe any where but in the Holy Land. What, then, ſhall become of all the Faithful inter'd in other Parts? Shall they periſh, and remain in the State of Death?

No, ſay the Jewiſh Doctors: But GOD will dig them ſubterraneous Canals, or Cavities, thro' which they ſhall *roll* from their Tombs to the Holy Land; and when arrived there, GOD will blow on them, and raiſe them again.

This imaginary Paſſage of the Carcaſſes, or Aſhes of the *Jews*, from their Tombs, to the Holy Land, by *rolling* under Ground, is what they call *Gilgul Hammethin*, the rolling of the Dead.

GILHALDA *Teutonicorum*, was us'd for the Fraternity of Eaſterling Merchants in *London*; called the *Stillyard*. See STILLYARD.

GILD-*Hall*, *q. d. Gildæ Aula*, the chief Hall in the City of *London*. See GUILD-*Hall*.

—Gildarum *nomine continentur non ſolum minores Fraternitates, & ſodalitia, ſed ipſæ etiam civitatum Communitates*, ſays the learned *Spelman*. See GILD.

GILD-*Merchant*, *Gilda Mercatoria*, was a certain Privilege, or Liberty, granted to Merchants, whereby they were enabled among other Things to hold certain Pleas of Land within their own Precincts.

King *John* granted *Gildam Mercatoriam* to the Burgeſſes of *Nottingham*.

GILDING, or GUILDING, the Art, or Act of ſpreading or covering a Thing over with Gold, either in Leaf or Liquid. See GOLD.

The Art of *gilding* was not unknown among the Antients, tho' it never arrived among them at the Perfection to which the Moderns have carried it.

Pliny aſſures us, that the firſt *gilding*, ſeen at *Rome*, was after the Deſtruction of *Carthage*, under the Cenſorſhip of *Lucius Mummius*; when they began to *gild* the Ceilings of their Temples, and Palaces; the Capitol being the firſt Place on which the Enrichment was beſtow'd. But he adds, that Luxury advanced on them ſo haſtily, that in a little time you might ſee all, even private and poor Perſons, *gild* the very Walls, Vaults, *&c.* of their Houſes.

We need not doubt but they had the ſame Method with us, of beating Gold, and reducing it into Leaves; though it ſhould ſeem they did not carry it to the ſame Height; if it is true which *Pliny* relates, that they only made five-hundred Leaves four Fingers ſquare of a whole Ounce. Indeed he adds that they could make more; that the thickeſt were called *Bracteæ Prænestinæ*, by reaſon of a Statue of that Goddeſs at *Præneste* gilt with ſuch Leaves; and that the thinner ſort were called *Bracteæ Queſtoriæ*.

The modern Gilders do alſo make uſe of Gold Leaves of divers Thickneſſes; but there are ſome ſo fine, that a thouſand don't weigh above four or five Drachms. The thickeſt are uſed for *gilding* on Iron, and other Metals; and the thinneſt, on Wood.—

But we have another Advantage over the Antients, in the manner of uſing, or applying the Gold: The Secret of painting in Oil, lately diſcover'd, furniſhes us with means of *gilding* Works that ſhall endure all the Injuries of Time and Weather, which to the Antients was impracticable. They had no way to lay the Gold on Bodies that would not endure the Fire but with Whites of Eggs, or Size; neither of which will endure the Water: So that they could only *gild* ſuch Places as were ſhelter'd from the Moiſture of the Weather.—

The *Greeks* called the Compoſition which they uſed for *gilding* on Wood, *Leucopheum*, or *Leucophorum*; which is deſcribed as a ſort of glutinous, compound Earth, ſerving, in all Probability, to make the Gold ſtick, and bear poliſhing. But the Particulars of this Earth, its Colour, Ingredients, &c. the Antiquaries and Naturaliſts are not agreed upon.

There are ſeveral Methods of *Gilding* in uſe among us; *viz. Gilding in Oil*; *Water Gilding*; *Gilding by the Fire*, which is peculiar to Metals; *Gilding of Books*, &c.

Method of GILDING *in Oil.*

The Baſis, or Matter whereon the Gold is applied, in this Method, is the Remains of Colours found ſettled to the Bottom of the Pots wherein the Painters waſh their Pencils. This Matter, which is very viſcid, they firſt grind; then paſs it thro' a linen Cloth; and thus lay it with a Pencil on the Matter to be gilt, after having firſt waſh'd it once or twice over with Size; and if it be Wood, with ſome white Paint.

When almoſt dry, but while yet unctuous enough to catch and retain the Gold, they ſpread their Gold Leaves thereon, either whole, or cut in pieces: To take up and apply the Leaves, they make uſe of a Piece of fine, ſoft, well carded Cotton; or of a Palet for the purpoſe; or barely the Knife, wherewith the Leaves were cut, according to the Parts of the Work they are to *gild*, or the Breadth of the Gold to be applied.

In proportion as the Gold is laid, they paſs over it a coarſe, ſtiff Pencil or Bruſh, to make it ſtick, and, as it were, incorporate, with the Ground: With the ſame Pencil, or a ſmaller one, they mend any Cracks that may happen therein, after the ſame manner as will be hereafter ſhewn in *Water* GILDING.

This ſort of *Gilding* is chiefly uſed for Domes, and Roofs of Churches, Courts, Banquetting Houſes, &c. and for Figures of Plaſter, Lead, &c. that are to ſtand expoſed to the Weather.

Method of GILDING *in Water.*

Water *Gilding* is not perform'd without more Apparatus; nor can it be uſed ſo ordinarily, nor on ſuch large Works, as the former: WoodenWorks, and thoſe of Stuc, are almoſt the only ones *gilt* in this way: which, beſide, muſt be ſhelter'd from the Weather.

The Size made uſe of for *gilding*, is to be made of Shreds, &c. of Parchment, or Gloves, boil'd in Water, to the Conſiſtence of a Gelly. See GLUE.

If it be Wood that is to be *gilt*, they firſt give it a *Waſh* of this Size, boiling hot; and when this is dry, another of white Paint, mix'd up with the ſame Size. For this White, ſome uſe Plaſter of Paris, well beaten and ſifted; others Spaniſh White, &c. It is laid on with a ſtiff Bruſh, and oftener, or ſeldomer repeated, according to the Nature of the Work: For Pieces of Sculpture, ſeven or eight Lays ſuffice; for flat, or ſmooth Works, ten, or twelve. In the latter Caſe they are applied by drawing the Bruſh over the Work; in the former by dabbing it.

When the whole is dry, they moiſten it with fair Water, and rub it over with ſeveral Pieces of coarſe Linen, if it be on flat; otherwiſe, they beat or ſwitch it with ſeveral Slips of the ſame Linen tied to little Sticks, to make it follow and enter all the Cavities and Depreſſures thereof.

The White thus finiſh'd, they proceed to yellow it; obſerving, that if it be a Piece of Sculpture in Relievo, they firſt touch up, and repare the ſeveral Parts which the white Ground may have disfigur'd, with little iron Inſtruments, as Gouges, Chiſſels, &c.

The Yellow, which they uſe, is only common Oker well ground and ſifted, and thus mix'd up with the Size us'd for the White, only weaker by one half. This Colour is laid on hot; and in Works of Sculpture ſupplies the Place of Gold, which frequently cannot be carried into all the Cavities and Dentings of Foliages and other Ornaments.

Over this yellow is applied a Lay, which is to ſerve for the Ground whereon the Gold is to be immediately laid: It is uſually compoſed of the *Armenian* Bole, Blood-ſtone, Black Lead, and a little Fat, to which ſome add Soap and Oil of Olives; others, burnt Bread, Biſtre, Antimony, Glaſs of Tin, Butter and SugarCandy. Theſe Ingredients being all ground together, with hot Size, they apply three Lays of the Compoſition upon the Yellow, each after the other is dried; taking Care not to put any in the ſmall Cavities of the Work, to hide the yellow. The Bruſh uſed in this Application, is to be ſoft; and when the Matter is well dried, they go over it with a ſtronger Bruſh, to rub it down, and take off the little prominent Grains, and thus facilitate the burniſhing of the Gold.

In order to proceed to *gild*, they muſt have three ſorts of Pencils; one, to wet; another to touch up, and amend; and a third to flatten: There is alſo required a Cuſhion, to ſpread the Gold Leaves on, when taken out of the Book; a Knife to cut them; and a Squirrel's Tail fitted with a Handle; or elſe a piece of fine Stuff on a Stick, to take them up, direct, and apply them.—

They begin with the wetting Pencils, by which they moiſten the Lay laſt laid on with Water, that it may the better receive and retain the Gold: The Leaves are then laid on the Cuſhion; and taken up, if whole, with the Squirrel's Tail; if in pieces, with the other Inſtrument, or even the Knife they are cut withal, and laid, and ſpread gently on the Parts of the Work before moiſten'd.

When the Leaves happen to crack, or break in laying on, they make up the Breaches with little Pieces of Leaf taken up on the repairing Pencil; and with the ſame Pencil, or another ſomewhat bigger, they ſmooth the whole; preſſing the Gold into the Dents, where it could not ſo well be carried with the Squirrel's Tail.

The Work thus far *gilt*, when dry, remains either to be burniſh'd, or flatted.—

To *burniſh* it, is to ſmooth, and poliſh with a Burniſher, which is uſually a Dog's, or Wolf's Tooth, or a Blood-ſtone fitted in a Handle for the purpoſe. See BURNISHING.

To *flat*, is to give it a light Lick in the Places not burniſh'd, with a Pencil dipt in Size, wherein a little Vermillion ſometimes has been mix'd. This helps to preſerve and prevent its flawing, when handled.

The laſt thing is to apply the Vermeil in all the little Lines, and Cavities; and to ſtop and amend any little Faults with Shell Gold.

The Compoſition here call'd *Vermeil*, is made of Gum Gutta, Vermillion, and a little of ſome ruddy, brown Colour, ground together, with *Venice* Varniſh, and Oil of Turpentine. Some *Gilders*, in lieu hereof, content themſelves with fine Lacca, or Dragons Blood, with Gum Water.

Sometimes, inſtead of burniſhing the Gold, they burniſh the Ground or Compoſition laid on laſt before it; and content themſelves afterwards to waſh the Part over with the Size. This Method is chiefly practiced for the Hands, Face, and other Nudities in Relievo; which, by this means, don't appear ſo very brillant as the Parts burniſh'd; though much more ſo than the Parts perfectly flat.

To *gild* a Work, and yet preſerve white Grounds; they uſe to apply a Lay of Spaniſh White mix'd with a weak Fiſh Glue, on all the Parts of the Ground whereon the yellow, or the laſt Lay might run.—

Method of GILDING *by the Fire.*

There are two ways of *Gilding by Fire*, *viz.* that with Liquid Gold, and that with Leaf Gold.

The firſt is perform'd with Gold, reduc'd to a Calx, and amalgamated with Mercury, in the Proportion of about an Ounce of Mercury to a Drachm of Gold.

In order to the Operation, they heat a Crucible red hot, then put the Gold and Mercury in it, and ſtir them gently about, till the Gold be found melted and incorporated into a Maſs with the Mercury. This done, they caſt them into Water, to waſh and purify; and thence into other Waters, where the Amalgama which is almoſt as liquid as if there were nothing but Quickſilver in it, may be preſerved a long time for Uſe.

Before they proceed to apply this amalgamated Gold, they firſt *roughen* the Metal it is to be applied on; which is done by waſhing it over with *Aqua fortis*, or *Aqua ſecunda*: Then rincing the Metal in fair Water, and ſcouring it a little with ſmall Sand, it is ready for the Gold.—

They now cover over the Metal with the Mixture of Gold, and Mercury, taking it up with a Slip of Copper, or a Bruſh made of braſs Wire, and ſpreading it as equably thereon as poſſible; in order to which they wet the Bruſh from time to time in fair Water.—

Thus

Thus far advanc'd, the Metal is ſet to the Fire, upon a Grate, or in a ſort of a Cage, under which is a Pan of Coals: In proportion as the Mercury evaporating and flying off diſcovers Places where Gold is wanting, they take Care to ſupply them, by adding new Pieces of Amalgama.—

The Work is then rubb'd over, with the Wire Bruſh dipt in Beer, or Vinegar, which leaves it in a Condition to be brought to Colour, which is the laſt Part of the Proceſs, and which the Gilders keep to themſelves as a mighty Secret; tho' we know it cannot differ much from what we ſhall hereafter ſhew of the manner of giving Gold Species their Colour, under the Article COINING.

GILDING *by the Fire with Gold Leaves.*

To prepare the Metal for this *Gilding*, it muſt be firſt well ſcratch'd, or raked; then poliſh'd, with a Poliſher; and then ſet to the Fire to *blue*, *i. e.* to heat, till it appear of a blue Colour. This done, the firſt Lay of Gold is clap'd thereon, and lightly rubb'd down with a Poliſher; and thus expoſed to a gentle Fire.

They uſually only give it three ſuch Lays, or four at moſt; each Lay conſiſting of a ſingle Leaf for the common Works, and of two for the extraordinary ones: After each Lay they ſet it a-freſh to the Fire. After the laſt Lay, the Gold is in a Condition to be burniſh'd.

GILDING *of Books*; ſee BOOK-*binding*.

GILL, or *Ground-Ivy*, a Medicinal Plant, which gives the Denomination to a ſort of medicated Ale, or Drink, called *Gill*, or *Gill Ale*, made by infuſing the dried Leaves of the Plant therein. See ALE.

Gill is held very abſterſive and vulnerary, and is preſcribed in all Diſorders of the Lungs, and Breaſt; and is alſo eſteem'd good in Obſtructions of the Viſcera: Whence it alſo paſſes for Hepatic, Diuretic, Splenetic, and Nephritic. It is ſaid to do Wonders in Tubercles and tartarous Indurations of the Lungs. *Willis* commends its Powder in obſtinate Coughs; and *Etmuller* gives the Hiſtory of a Scorbutic Conſumption cured by a ſtrong Decoction of this Herb after a Vomit.

GILLA, in Chymiſtry and Pharmacy, is an *Arabic* Term for *Salt*; peculiarly uſed among us for the Emetic Salt of Vitriol. See VITRIOL.

This Salt is prepared from that Mineral, by three, or four repeated Operations, *viz.* Diſſolution, in *May* Dew; Filtration; and Cryſtallization. In default of *May* Dew, Rain Water may ſerve.

Gilla is uſed in Tertian Agues, and all Fevers ariſing from a Corruption of the Humors of the firſt Region. It deſtroys Worms, and prevents Putrefaction. The Doſe is from 20 Grains to half a Drachm, taken in Broth, or in Cordial Waters.—

GILLS, BRANCHIÆ, in Natural Hiſtory, thoſe membranous, cartilaginous Parts in Fiſhes, whereby they reſpire, hear, *&c.* See FISH; ſee alſo BRANCHIA.

What we call *Gills* in Fiſhes, are properly their Lungs: Reſpiration of Air is as neceſſary to Fiſhes, as to terreſtrial Animals: There is always a deal of Air incloſed among Water; and 'tis this Air that Fiſhes reſpire. The whole Mechaniſm of their *Gills* is contrived with this View, *viz.* to ſeparate and imbibe this Air from the Water, and preſent it to the Blood, after the ſame manner as it is preſented to the Lungs of other Animals. See LUNGS.

M. *du Verney* has unravel'd this infinitely complicated Piece of Mechaniſm, in the *Gills* of a Carp: The firſt thing that offers, is a ſort of Timber-work, conſiſting of a great Number of bony Laminæ, each ſubdivided into an Infinity of bony Fibres, whoſe Office is to ſuſtain the innumerable Ramifications of an Artery diſpatch'd hither from the Heart. The Uſe of theſe Ramifications is to preſent the Blood extremely ſubdivided, and, as it were, each Globule of Blood by it ſelf, to the Water. Between theſe Laminæ, and throughout the whole Contexture of the *Gills*, are an infinite Number of very narrow Paſſages, deſtined to receive and ſubdivide the Water which the Fiſh takes in by the Mouth, into little Parcels. In this State the Air, its Priſon Doors being now in ſome meaſure open'd, makes its Eſcape, and joins it ſelf with the Blood of all the little Arteries.—

Theſe *Gills* have neceſſarily an alternate Motion of Dilatation and Compreſſion, which is effected by another very curious Piece of Mechaniſm; when they dilate, the Water is taken in, and when they contract, it is expell'd again. Hence 'tis probable that it is in the very Inſtant of Contraction, that the Air expreſs'd from the Water is forc'd to enter the Pores of the little Blood Veſſels, by reaſon the Force is then greater than at any other time; and this Action requires a conſiderable Force. The ſame Reaſon holds with reſpect to the Lungs of Men; accordingly M. *du Verney* maintains, that tho' the Air enter the Lungs in the time of Inſpiration, it is only received into the Blood in that of Expiration, when the ſuperfluous Air is carried off by the Trachea; ſo that the real Inſpiration, *i. e.* the Entrance of the Air into the Blood, ſhould be the Expiration. See RESPIRATION.

The Water is taken in by the Mouth, and carried off again, ſtrip'd of its Air, by the *Gills*; and the Air gain'd from it, is diſtributed firſt to the Arteriolæ of the *Gills*, and thence by the Law of Circulation to all the little Veins inoſculated therewith. See CIRCULATION, &c.

GINGER, GINGIBER, an Aromatic Root, of conſiderable Uſe both as a Spice, and a Medicine.—

It is brought chiefly from *Calicut*, in the Eaſt Indies; tho' of late it has been cultivated with good Succeſs in the *Antilles* Iſlands.

The Plant which affords it, reſembles our Ruſh, both in reſpect of Stem, and Flower.—The Root goes no depth under Ground, but ſpreads itſelf near the Surface, in form not unlike a Man's Hand; but very knotty.

When arrived at Maturity, they dig it up, and dry it in Hurdles, either in the Sun, or Oven: The beſt is that which is new, dry, well fed, hard to break, of a ruddy, brown Colour without, reſinous within, and of a hot, pungent Taſte.

They uſe to comfit the Root, when green, with Sugar, and Honey; having firſt ſteep'd it ſome time in Water, to take away part of its Acrimony, and diſpoſe it to part with the Outer-ſkin. They alſo make a Marmelade of it, and dry Cakes.

The Northern People make great uſe of this Confection, as holding it ſoveraign againſt the Scurvy. The *Indians* eat the Root, when green, by way of Salade, firſt chipping it ſmall, mixing it with other Herbs, and ſeaſoning it with Oil and Vinegar.

As to its Medicinal Uſe, it is held good to ſtrengthen the Stomach, and awaken Appetite. It promotes Digeſtion, prevents Putrefaction, *&c.*

GINGER-*Bread*, a richer kind of Bread, the Flavour and Taſte whereof are heighten'd and improv'd with Spices, and particularly *Ginger*; whence the Name. See BREAD.

There are various Forms and Preparations of *Ginger*-Bread: We ſhall content ourſelves with the following one, which is well recommended.

Into a Pound of Almonds, grate a penny white Loaf, ſift, and beat them together: To the Mixture add an Ounce of *Ginger*, ſcraped fine, and Liquorice and Annis Seed in Powder, of each a quarter of an Ounce: Pour in two or three Spoonfuls of Roſe-water, and make the whole into a Paſte, with half a Pound of Sugar: Mould, and roll it, print it, and dry it in a Stove.

Others make it of Treacle, Citron, Lemon, and Orange Peel, with candied *Ginger*, Coriander, and Carroway Seeds, mix'd up with as much Flower as will make it into a Paſte.

GINGIVA, in Anatomy, the *Gums*; a hard ſort of Fleſh, inveſting the Alveoli, or Sockets of the Teeth. See FLESH, and TEETH.

The *Gingivæ* are form'd by the Union of two Membranes; one of which is a Production of the Perioſteum, and the other of the internal Membrane of the Mouth. See MOUTH.

GINGLYMUS, in Medicine, one of the Species of Articulation. See ARTICULATION.

The *Ginglymus* is that Jointure of the Bones, where each Bone mutually receives the other; ſo that each both receives, and is recived. See BONE.

There are three Species of *Ginglymus*: The firſt, when the ſame Bone, at the ſame Extremity, receives and is reciprocally received by another Bone; after the manner of a Hinge: Such is that of the Cubitus and Humerus. See CUBITUS, and HUMERUS.

The ſecond, when a Bone receives another at one of its Extremes, and is received into another, at the other: As the Vetebræ do. See VERTEBRÆ.

The third is that where a Bone is received into another, after the manner of a Wheel, or Axis of a Wheel in a Box: Such is that of the ſecond Vertebra of the Neck in the firſt. See AXIS.

GIN-SENG, or GIN-SEM, in Natural Hiſtory, a very extraordinary and wonderful Plant, hitherto only found in *Tartary*.

The *Gin-ſeng* is one of the principal Curioſities of the *Chineſe*, and *Tartars*: Their moſt eminent Phyſicians have wrote many a Volume of its Virtues.

It is known among them by divers other Names, as the *only ſpirituous*; the *pure Spirit of the Earth*; the *Plant that gives Immortality*, &c. It makes, in effect, the whole *Materia Medica*, for the People of Condition; being too pretious for the Populace.

All the Writers of the *Chineſe* Affairs make mention of the *Gin-ſeng*: As *Martinius*, in his *Atlas*; F. *Kircher*, in his *China Illuſtrata*; F. *Tachard*, in his *Voyages*; and F. *le Comte*, in his *Memoirs*.

And yet we knew but very little of this Plant, before F. *Jartoux*, a Jeſuit, and Miſſionary in *China*; who being employ'd by Order of the Emperor, in making a Map of *Tartary*, in the Year 1709, had an Opportunity of ſeeing it growing

growing in a Village about four Leagues from the Kingdom of *Corea*, inhabited by *Tartars*, call'd *Calca-Tatze*.

That Father took the occaſion to deſign the Plant, and give an accurate Deſcription thereof, with its Virtues, and the manner of preparing it; which, being a great Curioſity, we ſhall here gratify the Reader withal.

The *Gin-ſeng*, repreſented *Tab. Nat. Hiſtory*, *Fig.* 10. has a white Root, ſomewhat knotty, about thrice the Thickneſs of the Stem, and which goes tapering to the End: At a few Inches from the Head, it frequently parts into two Branches, which gives it ſome Reſemblance of a Man, whoſe Thighs the Branches repreſent: And 'tis hence it takes the Denomination *Gin-ſeng*.

From the Root riſes a perfectly ſmooth, and tolerable round Stem: Its Colour is a pretty deep Red, except toward the Foot, where, by the Neigbourhood of the Earth, it is turn'd ſomewhat whiter. At the Top of the Stem is a ſort of Joint, or Knot, form'd by the ſhooting out of four Branches, which ſpread as from a Centre: The under Side of each Branch is green, mix'd with white; and the upper Part, much like the Stalk, of a deep Red: The two Colours gradually decreaſe, and at length unite on the Sides.

Each Branch has five Leaves, well enough repreſented in the Figure; and 'tis obſervable that the Branches divide equally from each other, both in reſpect of themſelves, and of the Horizon; and with the Leaves make a circular Figure, nearly parallel to the Surface of the Ground.

The Fibres of the Leaves are very diſtinguiſhable, and on the upper Side are ſet with ſmall whitiſh Hairs: The Membrane, or Pellicle between the Fibres, riſes a little in the Middle, above the Level of the Fibres.

The Colour of the Leaf is a dark Green, above, and a ſhining, whitiſh Green underneath; and all the Leaves are finely jagged or indented.

On the Edges, from the Centre of the Branches, ariſes a ſecond Stalk, D E, very ſtraight, ſmooth, and whitiſh, from Bottom to Top, bearing a Bunch of round Fruit, of a beautiful red Colour. This Bunch, in the Plant viewed by our Miſſionary, was compoſed of twenty four Berries; two of which are here repreſented 9, 9.

The Red Skin, that covers the Berry, is very thin, and ſmooth, and contains within it a white Pulp: As theſe Berries were double (for they are ſometimes ſingle) each had two rough Stones, of the Size and Figure of our Lentils. The Pedicles, whereon the Berries were ſupported, all aroſe from the ſame Center; and ſpreading exactly like the Radii of a Sphere, made the Bunch of Berries of a circular Form. The Fruit is not good to eat; and the Stone includes a Kernel: It has alſo a ſmall Beard at the Top, diametrically oppoſite to the Pedicle.

The Plant dies away every Year; the Number of its Years may be known by the Number of Stalks it has ſhot forth; of which there always remains ſome Mark, as is ſhewn in the Figure, by the Letters *b b b*, &c. From whence it appears, that the Root A was ſeven Years old; and the Root H fifteen.

As to the Flowr, F. *Jartoux* owns he had never ſeen it; and therefore could not deſcribe it: Some have aſſured him, that it is white, and very ſmall; others, that there is no Flower at all, and that no body had ever ſeen it. He rather inclines to think it ſo ſmall as to have eſcap'd Notice; and, what confirms him in the Opinion, is, that thoſe who ſeek the *Gin-ſeng*, having nothing in view but its Root, overlook and deſpiſe the reſt as uſeleſs.

As they have ſowed the Seed in vain, without any Plant ever ariſing therefrom; 'tis probable this might give occaſion to the Fable which is current among the *Tartars*:—They ſay, that a Bird eats it, as ſoon as in the Earth; and not being able to digeſt it, it purifies in its Stomach, and afterwards ſprings up in the Place where it was caſt by the Bird with its Dung.—The Miſſionary rather believes that the Stone remains a long time in the Ground, before it takes root; which Opinion appears the more probable, as there are ſome Roots no longer or bigger than ones little Finger, which yet have ſhot forth at leaſt ten Stalks.

Tho' the Plant, here deſcribed, had four Branches; yet there are ſome which have but two; others, three; and others, five, ſix, or ſeven: But each Branch has always five Leaves.

The Heighth of the Plant is proportionable to its Bigneſs, and the Number of Branches the Root has: The larger and more uniform it is, and the fewer ſmall Strings or Fibres it has, the better it is accounted.

'Tis hard, to ſay, why the *Chineſe* ſhould call it *Gin-ſeng*, a Word which ſignifies *Form*, or *Repreſentation*: Neither that Father, nor any he inquir'd of, could ever find that it bore more Reſemblance to the Figure of a Man, than is ordinarily ſeen among other Roots. The *Tartars*, with more Reaſon, call it *Orhota*, that is, the *firſt of Plants*.

Thoſe who gather the *Gin-ſeng*, preſerve only the Root; and all they can get of it in ten, or fifteen Days time, they bury together in ſome Place under Ground. Then they take care to waſh it well, and ſcour it with a Bruſh: Then dip it in ſcalding Water, and prepare it in the Fume of a ſort of yellow Milet, which gives it Part of its Colour.

The Milet is put in a Veſſel, with a little Water, and boil'd over a gentle Fire; the Roots being laid over the Veſſel upon ſmall, tranſverſe Pieces of Wood, being firſt cover'd with a linen Cloath, or ſome other Veſſel, plac'd over them.

They may alſo be dried in the Sun, or by the Fire; but then, tho' they retain their Virtue well enough, they have not that yellow Colour, which the *Chineſe* ſo much admire. When the Roots are dried, they muſt be kept cloſe in ſome very dry Place; otherwiſe they are in danger of corrupting, or being eaten by Worms.

As to the Place where this Root grows, it is between the thirty ninth and forty ſeventh Degree of North Latitude, and between the tenth and twentieth Degree of Eaſt Longitude, reckoning from the Meridian of *Peking*. Here is found a long Tract of Mountains, which the thick Forreſts that cover and encompaſs them, render almoſt unpaſſable. It is upon the Declivities of theſe Mountains, and in theſe thick Forreſts, upon the Banks of Torrents, or about the Roots of Trees, and amidſt a thouſand other different Sorts of Plants, that the *Gin-ſeng* is found. It is not to be met with in Plains, Vallies, Marſhes, the Bottoms of Rivulets, or in Places too much expoſed and open.

If the Foreſt take fire, and be conſumed, this Plant does not appear till two or three Years after: It alſo lies hid from the Sun as much as poſſible, which ſhews that Heat is an Enemy to it.

The Places where the *Gin-ſeng* grows, are on every Side ſeparated from the Province of *Quan-tong*, by a Barrier of wooden Stakes, which incompaſſes this whole Province, and about which Guards continually patroll, to hinder the *Chineſe* from going out, and looking after this Root.

Yet, how vigilant ſoever they are, their Greedineſs after Gain incites the *Chineſe* to lurk about privately in theſe Deſerts, ſometimes to the Number of two or three thouſand; at the hazard of looſing their Liberty, and all the Fruit of their Labour, if they are taken, either as they go out of, or come into the Province.

The Emperor having a mind that the *Tartars* ſhould reap all the Advantage that is to be made of this Plant, rather than the *Chineſe*, gave Orders, in 1709, to ten thouſand *Tartars*, to go and gather all that they could of the *Gin-ſeng*, upon Condition that each Perſon ſhould give him two Ounces of the beſt, and that the reſt ſhould be paid for Weight for Weight, in pure Silver.

It was computed that by this means the Emperor would get this Year about twenty thouſand *Chineſe* Pounds of it, which would not coſt him above one fourth Part of its Value.

We met, by chance, with ſome of theſe *Tartars*, in the Midſt of thoſe frightful Deſerts; and their Mandarins, who were not far out of our Way, came one after another, and offer'd us Oxen for our Subſiſtance, according to the Commands they had received from the Emperor.

This Army of Herbariſts obſerved the following Order: After they had divided a certain Tract of Land among their ſeveral Companies, each to the Number of an hundred Perſons, ſpread itſelf out in a Right Line, to a certain fix'd Place, every ten of them keeping at a diſtance from the reſt.

Then they ſearch'd carefully for the Plant, going on leiſurely in the ſame Order; and in this manner, in a certain Number of Days, they run over the whole ſpace of Ground appointed them.

When the Time is expired, the Mandarins, who are encamp'd with their Tents in ſuch Places as are proper for the Subſiſtance of their Horſes, ſend to view each Troop, to give them freſh Orders, and to inform themſelves if their Number is compleat.

If any one of them is wanting, as it often happens, either by wandring out of the way, or being attack'd by wild Beaſts, they look for him a Day or two, and then return again to their Labour, as before.

The *Gin-ſeng*, we have obſerv'd, is an Ingredient in moſt of the Medicines which the *Chineſe* Phyſicians preſcribe to the better ſort of Patients: They affirm that it is a ſovereign Remedy for all Weakneſſes occaſion'd by exceſſive Fatigues, either of Body, or Mind; that it attenuates and carries off pituitous Humours; cures Weakneſs of the Lungs, and the Pleuriſy; ſtops Vomitings; ſtrengthens the Stomach, and helps the Appetite; diſperſes Fumes, or Vapours; fortifies the Breaſt; is a Remedy for ſhort and weak Breathing; ſtrengthens the vital Spirits, and is good againſt Dizzineſs of the Head, and Dimneſs of Sight, and that it prolongs Life to extreme old Age.

No body can imagine, that the *Chineſe* and *Tartars* would ſet ſo high a Value upon this Root, if it did not conſtantly produce a good Effect: Thoſe that are in Health, often make uſe of it to render themſelves more vigorous and ſtrong; and I am perſuaded it would prove an excellent Medicine

Medicine in the Hands of any *European* who underſtands Pharmacy, if he had but a ſufficient Quantity of it to make ſuch Trials as are neceſſary to examine the Nature of it chymically, and to apply it in a proper Quantity, according to the Nature of the Diſeaſe for which it may be beneficial.

It is certain that it ſubtiliſes, increaſes the Motion of, and warms, the Blood; that it helps Digeſtion, and invigorates in a very ſenſible manner.

After I had deſigned the Root, I obſerved the State of my Pulſe, and then took half of the Root, raw as it was, and unprepar'd; in an Hour after, I found my Pulſe much fuller and quicker: I had an Appetite, and found myſelf much more vigorous, and could bear Labour better and eaſier than before. Four Days after, finding myſelf ſo fatigued and weary, that I could ſcarce ſit on Horſeback, a Mandarin who was in Company with us, perceiving it, gave me one of theſe Roots: I took half of it immediately, and an Hour after I was not in the leaſt ſenſible of any Wearineſs. I have often made uſe of it ſince, and always with the ſame Succeſs: I have obſerv'd alſo, that the green Leaves, and eſpecially the fibrous Part of them, chewed, would produce nearly the ſame Effect. The *Tartars* often bring us the Leaves of *Gin-ſeng*, inſtead of Tea; and I always find myſelf ſo well afterwards, that I ſhould readily prefer them before the beſt Tea. Their Decoction is of a grateful Colour; and when one has taken it twice, or thrice, its Taſte and Smell become very agreeable.

As for the Root, it is neceſſary to boil it a little more than Tea, to allow time for extracting its Virtue; as is practis'd by the *Chineſe*, when they give it to ſick Perſons; on which occaſion they ſeldom uſe more than the fifth Part of an Ounce of the dried Root.

To prepare the Root for Exhibition, cut it into thin Slices, and put it into an earthen Pot well glazed, with about half a Pint of Water; the Pot to be well cover'd, and ſet to boil over a gentle Fire; and when the Water is conſumed to the Quantity of a Cup full, a little Sugar to be mix'd with it, and to be drank: Immediately after this as much more Water to be put on the Remainder, and to be boiled as before, to extract all the Juice, and what remains of the ſpirituous Part of the Root. Theſe two Doſes to be taken, the one in the Morning, and the other in the Evening.

GIRDERS, in Architecture, the largeſt Pieces of Timber in a Floor—Their Ends are uſually faſten'd into the Summers, or Breſt-Summers, and the Joiſts are framed in at one End to the *Girders*. See JOIST.

By the Statute *for rebuilding London*, no *Girder* is to lie leſs than ten Inches into the Wall; and their Ends to be always laid in Lome, *&c.*

Girders and *Summers* in Length.	*From*		*to*		*muſt be in*			
	F.	In.	F.	In.	Breadth	Inches.	Depth	Inches.
	10	0	15	0	11		8	
	15	0	18	0	13		9	
	18	0	21	0	14		10	
	21	0	24	0	16		12	
	24	0	26	0	17		14	

GIRDING-*Beams*, in Building, the ſame as *Girders*. See GIRDER.

GIRDLE, CINGULUS, or ZONA, a Belt, or Band, of Leather, or other Matter, tied about the Reins; to keep the Part more firm, and tight.

It was antiently the Cuſtom for Bankrupts, and other Ceſſionaries, to put off, and ſurrender their *Girdle*, in open Court—The Reaſon hereof, was, that our Anceſtors uſed to carry all their neceſſary Utenſils, as Purſe, Keys, *&c.* tied to the *Girdle*; whence the *Girdle* became a Symbol of the Eſtate. Hiſtory relates, that the Widow of *Philip* I. Duke of *Burgundy*, renounced her Right of Succeſſion, and put off her *Girdle* on the Duke's Tomb. See INVESTITURE.

The *Romans* always wore a *Girdle*, to tuck up the Gown when they had occaſion to do any thing. This Cuſtom was ſo general, that ſuch as went without *Girdles*, and let their Gowns hang looſe, were reputed idle, diſſolute Perſons.

Maidens or *Virgins* GIRDLE—It was the Cuſtom among the *Greeks*, and *Romans*, for the Husband to untie his Bride's *Girdle*.

Homer, *lib.* 11. of the *Odyſſey*, calls this *Girdle* παρθένιον ζωνον, Maid's *Girdle*. *Feſtus* relates, that this *Girdle* was made of Sheep's Wool; and that the Husband untied it in Bed. He adds, that it was tied in the *Herculian* Knot; and that the Husband untied it, as a happy Preſage of his having as many Children as *Hercules*, who at his Death left ſeventy behind him.

The Poets attribute to *Venus* a particular kind of *Girdle*, called *Ceſtus*; to which they annex a Faculty of inſpiring the Paſſion of Love. See CESTUS.

Quickſilver GIRDLE, in Medicine, is a ſort of *Girdle* ſmeered over with Mercury, or having Mercury incloſed within it. See MERCURY.

It is made of Leather, Linen, Cloth, Cotton, Stuff, or the like, and the Mercury prepared or killed various ways; as with faſting Spittle, Fat, or the like.

It is applied as a Topical Medicine about the Waſte, ſometimes with good Effect, but frequently proves dangerous, principally in weak Conſtitutions, and thoſe ſubject to Convulſions.

Its Intention is, the Cure of the Itch, driving away Vermin, killing Lice, *&c.*

Queens GIRDLE, is an antient Duty, or Tax, rais'd at *Paris* every three Years, at the rate of three Deniers upon each Muid of Wine, and ſix for each Queue. It was intended for the Maintenance of the Queen's Houſhold: Afterwards they augmented and extended it to other Commodities, as Coals, *&c.*

Vigenere ſuppoſes it to have been originally thus called, by reaſon the *Girdle* antiently ſerved for a Purſe; but he adds, that a like Tax had been raiſed in *Perſia*, and under the ſame Name, above two thouſand Years ago; as appears from *Plato*, in his *Alcibiades*, *Cicero*, *Atheneus*, &c.

Chriſtians of the GIRDLE. *Motavackkel*, tenth Calif of the Family of the *Abaſſides*, enjoin'd the Chriſtians, and *Jews* in the Year of the Hegira, 235; of Jeſus Chriſt, 856, to wear a large leathern *Girdle*, as a Badge of their Profeſſion; which they bear to this Day throughout the Eaſt: From which time the Chriſtians of *Aſia*, and particularly thoſe of *Syria* and *Meſopotamia*, who are almoſt all *Neſtorians*, or *Jacobites*, have been called *Chriſtians of the Girdle*.

Order of the GIRDLE, the Order of *Cordeliers*; ſee CORD, and CORDELIER.

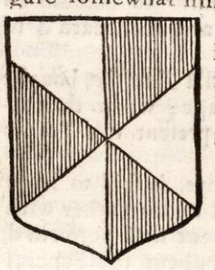
GIRDLE, in Architecture; ſee CINCTURE.

GIRLE, among Hunters, is a Roe-buck of two Years.

GIRON, or GUIRON, in Heraldry, a Gore, or triangular Figure, having a long, ſharp Point, like the Step of a ſpiral Stair Caſe, and ending in the Centre of the Eſcutcheon.

When a Coat has ſix, eight, or ten of theſe *Girons*, meeting or centring in the Middle of the Coat, it is ſaid to be *Gironne*, or *Gironny*. See GIRONNE.

The Word is *French*, and literally ſignifies the *Gremium*, or Lap; by reaſon, in ſitting, the Knees being ſuppoſed ſomewhat aſunder, the two Thighs, together with a Line imagin'd to paſs from one Knee to the other, forms a Figure ſomewhat ſimular hereto.



GIRONNE, GIRONNY, in Heraldry, is when a Shield or Coat is divided into ſeveral *Girons*, which are alternately Colour and Metal; as in the adjoining Figure, which we Blazon, *Gironne* of ſix Argent and Sable.

When there are eight pieces or *Girons*, it is abſolutely ſaid to be *Gironne*; when there are more, or fewer, the Number is to be expreſs'd—*Gironne* of four, of fourteen, *&c.*

Some, inſtead of *Gironne*, ſay, *Parti*, *Couppé Trenché*, and *Faillé*, by reaſon the *Girons* are form'd by ſuch Diviſions of the Field.

Four *Girons* form a *Salteer*, and eight, a *Croſs*, See SALTEER, &c.

GIVEN, *Datus*, a Term frequently uſed in Mathematicks, ſignifying ſomething which is ſuppoſed to be known. See DATA.

Thus, if a Magnitude be known, or we can find another equal to it, we ſay, it is a *given Magnitude*, or that ſuch a Thing is *given* in Magnitude. See MAGNITUDE.

If the Poſition of any thing be ſuppoſed as known, we ſay, *Given in Poſition*. See POSITION.

Thus, if a Circle be actually deſcribed on a Plain, its Centre is *Given in Poſition*; its Circumference *Given in Magnitude*; and the Circle is *Given* both *in Poſition*, and *Magnitude*.

A Circle may be *given* in Magnitude only, as when only its Diameter is *given*, and the Circle not actually deſcribed.

If the Kind, or Species of any Figure be *given*, they ſay, *given in Specie*.—If the Ratio between any two Quantities is known, they are ſaid to be *given in Proportion*.

GLACIALIS, ICY, ſomething relating to Ice; and particularly, a Place that abounds in Ice.

Thus, we ſay, the *Mare Glaciale*, or *Congelatum*, that is, the Icy, or Frozen Sea; call'd alſo *Chronian* Sea, or *Sarmatian* Sea. See SEA.

The Word is form'd of the Latin *Glacies*, Ice. See ICE.

GLACIS, in Building, *&c.* is an eaſy, inſenſible Slope, or Declivity. See DECLIVITY.

The Deſcent, or Inclination of the *Glacis* is leſs ſteep than that of the *Talut*. See TALUT.

In Gardening, a Deſcent ſometimes begins in *Talut*, and ends in *Glacis*.

The GLACIS *of the Cornich* is an eaſy, imperceptible Slope in the Cymaiſe of a Cornich, to promote the Deſcent and draining off of the Rain-Water. See CYMAISE.

GLACIS, in Fortification, is particularly uſed for that of the Counterſcarp.

The *Glacis* of the Counterſcarp, or cover'd Way, is the Sloping Bank that reaches from the Parapet of the Corridor, or Counterſcarp, to the level Side of the Field. See COUNTERSCARP.

The *Glacis* is about ſix Foot high, and loſes itſelf by an inſenſible Diminution in the ſpace of ten Fathoms. See ESPLANADE.

GLADE, in Agriculture, Gardening, *&c.* a *Viſta*, or open, and light Paſſage, made thro' a thick Wood, Grove, or the like, by lopping off the Branches of Trees along the Way. See VISTA, *&c.*

GLADIATOR, in Antiquity, a Perſon who fought with naked Swords on the *Arena*, at *Rome*, to entertain the People. See ARENA, SPECTACLE, &c.

The *Gladiators* were uſually Slaves, and fought out of Neceſſity; tho', ſometimes, Freemen made Profeſſion thereof, like our Prize-fighters, for a Livelihood.

After a Slave had ſerv'd on the Arena three Years, he was diſmiſs'd. See SLAVE.

The *Romans* borrow'd this cruel Diverſion from the *Aſiaticks:* Some ſuppoſe that there was Policy herein; the frequent Combates of *Gladiators* tending to accuſtom the People to deſpiſe Dangers, and Death.

The Origin of ſuch Combats ſeems to be as follows: From the earlieſt Times, we have any Acquaintance withal in profane Hiſtory, it had been the Cuſtom to ſacrifice Captives, or Priſoners of War, to the Manes of the Great Men who had died in the Engagement: Thus *Achilles*, in the Iliad, *L. XXIII.* ſacrifices twelve young *Trojans*, to the Manes of *Patroclus*; and in *Virgil*, *L. XI. v.* 81. *Æneas* ſends Captives to *Evander*, to be ſacrificed at the Funeral of his Son *Pallas*.

In length of Time they came to ſacrifice Slaves at the Funerals of all Perſons of Condition: This was even eſteemed a neceſſary Part of the Ceremony; but as it would have appeared barbarous to have maſſacred them like Beaſts, they were appointed to fight with each other, and do their beſt to ſave their own Lives, by killing their Adverſary. This ſeem'd ſomewhat leſs inhuman, by reaſon there was a Poſſibility of avoiding Death; and it only lay on themſelves, if they did not do it. See FUNERAL.

This occaſion'd the Profeſſion of *Gladiator* to become an Art: Hence aroſe Maſters of Arms; and Men learn'd to fight, and exerciſe therein.

Theſe Maſters, whom the *Latins* call'd *Laniſtæ*, bought them Slaves, to train up to this cruel Trade; whom they afterwards ſold to ſuch as had occaſion to preſent the People with ſo horrible a Shew.

Junius Brutus, who expell'd the Kings, is ſaid to have been the firſt who honour'd the Funeral of his Father with theſe inhuman Diverſions—They were at firſt perform'd near the Sepulchre of the Deceaſed, or about the Funeral Pile; but were afterwards removed to the Circus and Amphitheatres, and became ordinary Amuſements. See CIRCUS, AMPHITHEATRE, *&c.*

The Emperor *Claudius* reſtrain'd them to certain times, but he ſoon afterwards annull'd what he decreed, and private Perſons began to exhibit them at Pleaſure, as uſual; and ſome carried the brutal Satisfaction ſo far as to have them at their ordinary Feaſts. See FEAST.

And not Slaves only, but other Perſons would hire themſelves to this infamous Office.

The Maſter of the *Gladiators* made them all firſt ſwear, that they would fight to death; and if they fail'd therein, they were put to death, either by Fire, or Swords, Clubs, Whips, or the like.

It was a Crime for the Wretches to complain when they were wounded; or to aſk for Death; or ſeek to avoid it, when overcome: But it was uſual for the Prince, or the People to grant them Life, when they gave no Signs of Fear, but waited the fatal Stroke with Courage and Intrepidity. *Auguſtus* even decreed, that it ſhould always be granted them.

From Slaves, and free'd Men, the wanton Sport ſpread to People of Rank and Condition; and *Nero* is related to have brought upwards of 400 Senators, and 600 *Roman* Knights upon the Scene; yet *Domitian*, that other Monſter of Cruelty, refined upon him, exhibiting Combats of Women in the night-time.

Conſtantine the Great is ſaid to have firſt prohibited the Combats of *Gladiators*, in the Eaſt; at leaſt, he forbad thoſe condemn'd to death for their Crimes, to be employ'd herein: There being an Order ſtill extant to the *Præfectus Prætorii*, rather to ſend them to work in the Mines in lieu thereof: It is dated at *Beryta* in *Phœnicia*, the firſt of *October* 325.

The Emperor *Honorius* firſt forbad them at *Rome*, on occaſion of the Death of St. *Telemachus*, who, coming out of the Eaſt into *Rome*, at the time of one of theſe Spectacles, went down into the Arena, and us'd all his Endeavours to prevent the *Gladiators* from continuing the Sport: Upon which the Spectators of that Carnage, fired with Anger, ſtoned him to death. *Theodoret. Hiſt. Eccleſ. L. V. C. 26.*

It muſt be obſerv'd, however, that the Practice was not entirely aboliſh'd in the Weſt before *Theodoric*, King of the *Oſtrogoths.—Honorius*, on the occaſion firſt mentioned, had prohibited them; but the Prohibition does not ſeem to have been executed. *Theodoric*, in the Year 1500 aboliſh'd them finally.

Some time before the Day of Battle, the Perſon who preſented the People with the Shews, gave them Notice thereof, by Programma's, or Bills, containing the Names of the *Gladiators*, and the Marks whereby they were to be diſtinguiſh'd; for each had his ſeveral Badge, which was moſt commonly a Peacock's Feather, as appears from the *Scholiaſt* of *Juvenal*, on the 158th Verſe of the IIId *Satyr*; and *Turnebius Adverſ. L. III. c.* 8.

They alſo gave notice what time the Shews would laſt, and how many Couples of *Gladiators* there were: And it even appears from the 52d Verſe of the 7th *Satyr* of the IId Book of *Horace*, that they ſometimes made Repreſentations of theſe Things in Painting; as is practic'd among us, by thoſe who have any thing to ſhew at Fairs.

The Day being come, they began the Entertainment by bringing two kinds of Weapons; the firſt were Staves, or wooden Files, call'd *Rudes*; and the ſecond, effective Weapons, as Swords, Poniards, *&c.*

The firſt were call'd *Arma luſoria*, or *Exercitoria*; the ſecond, *Decretoria*, as being given by Decree, or Sentence of the *Prætor*; or of him at whoſe Expence the Spectacle was given.

They began to fence, or ſkirmiſh with the firſt, which was to be the Prelude to the Battle: From theſe, when well warm'd, they advanc'd to the ſecond, with which they fought naked.

The firſt Part of the Engagement was called *ventilare, præludere*; and the ſecond, *dimicare ad certum*, or *verſis armis pugnare:* And ſome Authors think with much Probability, that it is to theſe two kinds of Combat that St. *Paul* alludes in the Paſſage 1 *Cor.* ix. 26, 27. *I fight, not as one that beateth the Air; but I keep under my Body, and bring it into Subjection.*

If the Vanquiſh'd gave up his Arms, it was not in the Victor's Power, to grant him Life: It was the People, during the time of the Republic; and the Prince, or People, during the time of the Empire, that were alone impower'd to grant the Boon.

The Reward of the Conqueror was a Crown, or a Branch of the *Lentisk* Tree: Sometimes they gave them his Conge, or diſmiſs'd him, by putting one of the wooden Files, or *Rudes* in his Hand; and ſometimes they even gave him his Freedom.

The Sign, or Indication whereby the Spectators ſhew'd that they granted the Favour, was, to fall the Thumb; or clench it between the other Fingers: And when they would have the Combat finiſh'd, and the Vainquiſh'd ſlain, they rais'd the Thumb, and directed it towards the Combatants: Which we learn from *Juvenal*, *Sat. III. v.* 36.

The *Gladiators* challeng'd, or defied each other, by ſhewing the little Finger; which ſame, during the Combat, was to own themſelves overcome. *Pliny*, L. XXVIII. c. 2. *Prudentius*, L. II. contra Symm. v. 1098. *Horace*, L. I. Ep. 18. v. 66. *Politian.* Miſcell. c. 42. *Turneb.* Adverſ. L. XI. c. 6. *Lipſ.* Saturn. L. II. c. 22.

There were divers kinds of *Gladiators*, diſtinguiſh'd by their Weapons, Manner, and Time of fighting, *&c.* as,

The *Andabatæ*, of whom we have already given an account under the Article ANDABATÆ.

The *Catervarii*, who fought in Troops, or Companies; Number, againſt Number. *Lipſ.* Lib. II. c. 16.

The *Conſummati*, whom Authors mention as a Species of *Gladiators*, the ſame with the *Rudiarii* and *Veterani*; founding the Opinion on a Paſſage in *Pliny*, L. VIII. c. 7. But *Lipſius* ſhews, that they have miſtaken *Pliny*. *Saturn.* Lib. II. c. 16. and *Turneb. Adverſ.* L. XXX. c. 6.

The *Cubicularii*, which are a little precarious, being chiefly founded on a Paſſage in *Lampridius*, in the Life of the Emperor *Commodus: Inter hæc habitu Victimarii, victimas immolavit, in arena rudibus, inter* Cubicularios *Gladiatores pugnavit lucentibus aliquando mucronibus.*

Turnebius reads *Rudiarios*, in lieu of *Cubicularios*, and underſtands it of thoſe who had been diſmiſs'd, and could no longer be oblig'd to fight, except with Files.

Salmaſius reads *Gladiator*, and refers it to the Emperor, who fought not only on the Arena, and with Files, or blunted Inſtruments; but at home, with his Servants, and Valets de Chambre, and with Sharps.

Lipſius will have nothing alter'd in the Text: The *Gladiatores Cubicularii*, he obſerves, were thoſe who fought at private Houſes, during Feaſts, &c. Accordingly, *Dion* ſays expreſly, that *Commodus* ſometimes fought at home, and even kill'd ſome Perſon on ſuch a Rencounter; but that in publick he only fought with blunted Weapons.

The *Dimachæ*, or *Dimacheres*, who fought arm'd with two Poniards, or Swords; or with Sword and Dagger. *Lipſ. Saturn.* L. II. c. 13.

The *Eſſedarii*, who fought in Carrs; call'd alſo, in an Inſcription lately diſcover'd at *Lyons*, *Aſſedarii*. *Saturn. Serm.* L. II. c. 13.

The *Fiſcales*, or *Cæſariani*, who belong'd to the Emperor's Company, and who being more robuſt and dexterous than the reſt, were frequently call'd for; and therefore named *Poſtulatitii*. *Saturn.* L. II. c. 16.

The other Kinds were, the *Heptomachi*, *Meridiani*, *Mermillones*, *Ordinarii*, *Provocatores*, *Retiarii*, *Rudiarii*, *Secutores*, *Spectatores*, and *Thraces*: Which ſee deſcribed under their ſeveral Articles MERIDIANI, RETIARII, SECUTORES, &c.

Some Authors, and particularly *Vigenere* on *Livy*, rank the *Obſequentes*, mention'd by *Spartan* in his Life of *Marcus Aurelius*, among the Number of *Gladiators*. *Lipſius* laughs at him, *Saturn.* L. II. c. 16. and with ſome Reaſon: The *Obſequentes* properly were the Troops which that Emperor rais'd among the *Gladiators*, or whom of *Gladiators* he made Soldiers.

The War of the GLADIATORS, *Bellum Gladiatorium*, or *Spartacium*, call'd alſo the *Servile War*, was a War which the *Romans* ſuſtained about the Year of their City 680.

Spartacus, *Crinus*, and *Oenomaus*, having eſcaped with thirty *Gladiators* more, out of the Place where they had been kept, at *Capua*, gather'd together a Body of Slaves, put themſelves at their Head, render'd themſelves Maſters of all *Campania*, and gain'd ſeveral Victories over the *Roman* Prætors.

At length they were defeated, in the Year 682, at the Extremity of *Italy*, having in vain attempted to paſs over into *Sicily*.

This War proved very formidable to the *Romans*. *Craſſus* was not able to finiſh it: The Great *Pompey* was forc'd to be ſent as General.—

GLADIUS, SWORD; or *Jus* GLADII, *q. d. Right of the Sword*, is uſed in our antient *Latin* Authors, and in the *Norman* Laws, for a ſupreme Juriſdiction.

Cambden, in *Britannia*, writes, *Comitatus Flint pertinet ad* Gladium *Ceſtriæ*. And in *Selden*, *Tit.* of *Honour*, p. 640. *Curiam ſuam liberam de omnibus placitis*, &c. *exceptis ad* Gladium *ejus pertinentibus*.

And it is probably from hence, that at the Creation of an Earl, he is *Gladio ſuccinctus*, to ſignify that he had a Juriſdiction over the County. See EARL, COUNT, &c.

GLAND, GLANDULA, in Anatomy, a ſoft, ſpungy, lax kind of Body; ſerving to ſeparate ſome particular Humor from the Maſs of Blood. See BLOOD, and HUMOR.

The Antients took the *Glands* to be nothing more than a kind of *Pillows*, or *Cuſhions*, for the neighbouring Parts to reſt on—Some of them, at length, began to fancy them *Sponges*; to receive and imbibe the ſuperfluous Moiſture of the other Parts.

Later Phyſicians came to aſſign them nobler, and more important Uſes—They conſider'd them as *Ciſterns*, which contain'd proper Ferments, whereby the Blood, upon its mixing therewith, was put into a Fermentation, in the Progreſs whereof it work'd, or threw off certain of its Parts, and ſent them away by their excretory Ducts.

The Moderns, who allow'd them the Organs whereby the vital Fluids are ſeparated for the Uſes of the Body, conſider'd them as *Filtres*, the Pores whereof being all of different Figures, would only admit of ſimilarly figur'd Particles, to paſs thro' them.

But the lateſt Authors rather conceive the *Glands* as *Sieves*, whoſe Perforations being of different Sizes, tho' of the ſame Figure, only ſeparate ſuch Particles whoſe Diameters are leſs than their own.

The *Glands*, to the Eye, appear a ſort of whitiſh, membranous Maſſes, compoſed of an outer Cover, or Integument, within which a vaſcular plexus Matter is contain'd. They are denominated from their Reſemblance in form, to *Acorns*, which the *Latins* call *Glandes*.

By Diſſection, and the Microſcope, they are found to be real Plexus's, or Pelotoons of Veſſels, variouſly wound, and implicated among themſelves. But the modern Anatomiſts, *Malpighi*, *Bellini*, *Wharton*, *Nuck*, *Peyer*, &c. have gone further, and diſcover'd them to be no more than continued Convolutions of the capillary Arteries. See ARTERY.

Their Formation appears to be thus—An Artery arriving at a certain Part, is divided into an infinite Number of exceedingly fine Branches, or Ramifications: Theſe capillary Branches are laid in various Bends and Circumvolutions; and from the Returns thereof, ariſe new Branches, or Veſicles, for Veins; which, a little further, unite, or terminate in ſome larger Branch.

All theſe Ramifications, both Veins and Arteries, are rolled up in a Bundle; making numerous Gyres, and Circumvolutions: And from the various Bends and Angles form'd by both Kinds, ariſe numerous other minute Veſſels, which make the principal and moſt eſſential Part of the *Gland*.

The Blood brought from the heart-ward, by the Artery, into the *glandular* Plexus, purſues all the Turns, and meanders in the arterial Part thereof, till arriving at the venal Part, it is brought back again to the Heart. In the mean time, during its Progreſs thro' the Arterial and Venal Folds, ſome Part of it is abſorbed, or drain'd off, at the Orifices of the Tubules ariſing from the Flexures thereof.

What is thus received into theſe, which we may call the *Secretory Ducts*, is commonly taken up by other Tubules, ſpringing out of them: Theſe, joining together, form a ſingle Canal, call'd the *Excretory Duct*; which, paſſing out of the Body of the *Gland*, carries off the ſecreted Matter into ſome proper Receptacle deſtined to retain, or receive it.

Tho', ſometimes, the Secretory Veſſels themſelves terminate in a Baſon, or Reſervoir; and depoſite their Contents therein.

Such is the general Structure, and Office of the *Glands*; which we ſhall further illuſtrate under the Article SECRETION.

A *Gland*, then, is a Compoſition of divers kinds of Veſſels; *viz.* an *Artery*, and a *Vein*; *Secretory*, and *Excretory Ducts*: To which may be added a *Nerve*, which is found in every *Gland*, diffuſed thro' the whole Subſtance thereof, to furniſh Spirits for the promoting the Secretion; and a *Membrane*, which ſupports the Convolutions of the Vein and Artery, accompanying them thro' all their minuteſt Diviſions; and *Lymphaticks*, which have been diſcover'd in ſeveral *Glands*. See VEIN, ARTERY, NERVE, SECRETORY, EXCRETORY, and LYMPHATIC.

The Secretory Tubes, however, are what we principally conſider as the Organ of the *Gland*. Theſe alone do ſometimes form the greateſt Part of what is called a *Gland*, or *glandulous* Body.

M. *Winſlow* has diſcover'd a kind of *Tomentum*, or Down within their Cavity; which he ſuppoſes to do the Office of a Philtre, and to be that whereby ſuch a certain Humor is ſeparated from the common Maſs of Blood.—His Syſtem will be explained when we come to treat of SECRETION.

The *Down-Veſſel* being the grand Organ of Secretions, its Structure and Application is diverſified according to the different Purpoſes Nature has in view. Sometimes the Liquor filtrated thro' it, trickles out, Drop by Drop, upon a Membrane, to which one Extremity of the Veſſel is faſten'd; as where the Filtration is only intended for moiſtening and lubricating the Part, with that Liquor: In which caſe the Down-Veſſel is both Secretory, and Excretory; which is the moſt ſimple Caſe.—Such are thoſe innumerable *Glands* ſpread thro' the greateſt Part of the Viſcera.—

Sometimes a great Number of theſe Down-Veſſels is ſpread over the inner Surface of a little, membranous Cell, into which they pour their Liquor, which is diſcharged hence at a little Aperture in the Cell: Such are the ſolitary *Glands* of the Inteſtines, which appear like ſo many little ſeparate Grains.

Sometimes a Veſſel is bent, and has only Down in the firſt Part thereof, which alone is Secretory, and the reſt excretory, pouring the Liquor into ſome other common Cavity—Such are the *Glands* that compoſe a Calves Kidney.

The Secretory Veſſels are ſometimes of a very great Length, notwithſtanding that they take up but little room, being wound over themſelves again and again; ſometimes in a ſingle Pelotoon, or Knot, and ſometimes in ſeveral, incloſed in a common Membrane—Whence the Diſtinction of *Glands* into *Conglobate*, and *Conglomerate*.

The *Glands* are of ſeveral Kinds, in reſpect of their Form, Structure, Office, and Uſe: Authors uſually divide them into *Conglobate*, and *Conglomerate*.

Conglobate, or *Simple* GLANDS, are thoſe conſiſting of one continuous Maſs, with an uniform Surface—Such are the *Subcutaneous Glands*.

A Conglobate *Gland*, is, more ſtrictly, a little, ſmooth Body, wrap'd up in a fine, double Skin, by which it is ſeparated from all the other Parts; only admitting an Artery and Nerve to paſs in, and a Vein and excretory Duct to go out.—Theſe *Glands* either diſcharge their ſecreted Humor into the Chyle, or venous Blood; or elſe it tranſpires thro' the Pores of the Skir, or the Coats of the looſer Membranes found in moſt Parts of the Body.

Of the Conglobate Kind are the *Glands* in the cortical Part of the Brain, where the animal Spirits are ſuppoſed to be ſecreted. See CORTEX, BRAIN, and SPIRITS.

Such alſo are the *Labial Glands*, and the *Teſtes*. See TESTICLE.

Conglomerate, or *Compound* GLAND, is an irregular Aſſemblage of ſeveral ſimple *Glands*, tied together, and wrap'd

wrap'd up under one common Membrane—Such are the *Maxillary Glands*, &c.

The Humors ſecreted in theſe *Glands*, are ſometimes diſcharged at a common excretory Duct, form'd of an Union of the excretory Ducts of all the particular ones; as the *Panchreas* and *Carotides* do. See PANCHREAS and CAROTIDES.

Sometimes, the Ducts uniting form ſeveral Tubes, only communicating with each other by croſs Canals; as in thoſe of the Breaſts. See MAMMÆ.

Some, again, have ſeveral excretory Tubes, without any Communication together; as the *Glandulæ lachrymales*, and *proſtatæ*. See PROSTATÆ, &c.

Others, have their ſeveral excretory Ducts inſerted into a common Canal, which opens at laſt into ſome of the greater Cavities; as the *Salival Glands*, *Inteſtinal Glands*, &c. See SALIVA, INTESTINES, &c.

Laſtly, in others, each *Gland* has its own excretory Duct, thro' which it tranſmits its Liquor to a common Baſon; ſuch are thoſe of the Kidneys. See KIDNEY, PELVIS, &c.

The *Glands* are again divided into *Vaſcular*, and *Veſicular*.

Vaſcular GLANDS are only Cluſters of little Veſſels, which uniting together, form the Canal or excretory Duct through which their ſecreted Juice is diſcharged.

Veſicular GLANDS are Aſſemblages of Veſiculæ communicating with each other, and all terminating in two or three larger Veſſels; by a Prolongation whereof the excretory Duct is form'd.

The *Glands*, again, are divided into *Adventitious*; and *Perpetual*, or *Natural*.

Adventitious GLANDS are thoſe Kernels ariſing occaſionally under the Arm-pits, on the Neck, &c. Such are the *Strumæ*, and the Tumors ſometimes found on the Larynx, and Middle of the Trachea.

Perpetual, or *Natural* GLANDS are of two Kinds, *Conglobate*, and *Conglomerate*. See CONGLOBATE, and CONGLOMERATE.

A Liſt of the divers Sorts of Glands *in the human Body; each whereof filtrates a different Humor.*

1 Cerebri.
2 Plexus Choroidæi.
3 Sebaceæ.
4 Meatus Auditorii.
5 Ciliares.
6 Lachrymales.
7 Humorem aqueum
8 Cryſtallinum
9 Vitreum
10 Atrum Choroidis
} ſecernentes.
11 Naſales.
12 Buccales, Labiales, Palatinæ.
13 Parotides, Maxillares, Sublinguales.
14 Tonſillarum.
15 Oeſophagi.
16 Aſperæ Arteriæ.
17 Pericardii.
18 Mammarum.
19 Ventriculi.
20 Inteſtinorum.
21 Pancreatis.
22 Hepatis.
23 Veſicæ Fellis.
24 Renum.
25 Renales.
26 Ureterum.
27 Veſicæ Urinariæ.
28 Urethræ.
29 Teſticulorum.
30 Proſtatarum.
31 Uteri.
32 Vaginæ.
33 Lymphaticæ.
34 Pinguedinales.
35 Medullares.
36 Artuum.
37 Cutis Milliares.

Lumbal GLANDS, or GLANDULÆ *Lumbares*, are three *Glands*, thus called by *Bartholine*, as lying on the Loins. See LOINS.

The two largeſt lie upon one another betwixt the deſcending Cava and Aorta, in the Angle made by the Emulgents with the Cava: The third and ſmalleſt ſtands over the former under the Appendices of the Diaphragm. They communicate, and are connected together by ſmall lacteal Veſſels. *Bartholine* had concluded them to ſerve as a common Receptacle of the Chyle; but Dr. *Wharton*'s Opinion is more probable, *viz.* that they ſupply the Place of thoſe larger *Glands* found in the Meſenteries of Brutes.

Miliary GLANDS, GLANDULÆ *Miliares*. See MILIARY *Glands*.

Mucilaginous GLANDS are a kind of *Glands* firſt deſcribed by Dr. *Havers*. See MUCILAGINOUS *Glands*.

Mucous GLANDS, GLANDULÆ *Mucoſæ*; ſee MUCOUS *Glands*.

Myrtiform GLANDS, are Contractions of the Hymen, broke by the firſt Act of Venery. See MYRTIFORMES *Glandulæ*; ſee alſo HYMEN.

Odoriferous GLANDS, GLANDULÆ *Odoriferæ*, are certain ſmall *Glands* diſcover'd by Dr. *Tyſon*, in that Part of the Penis, where the Præpuce is contiguous to the Balanus. See PRÆPUTIUM.

He gave them this Name from the briſk Scent which their ſeparated Liquor emits. In ſuch Perſons as have the Prepuce longer than ordinary, they are not only more in Number, but larger, and ſeparate a greater Quantity of Juice; which, lodging there, often grows rancid, and corrupts the *Glands*. Theſe *Glands* are very conſpicuous in moſt Quadrupeds, eſpecially Dogs, and Boars.

Pineal GLAND, GLANDULA *Pinealis*. See PINEAL *Gland*, and CONARIUM.

Pituitary GLAND, GLANDULA *Pituitaria*. See PITUITARY *Gland*.

Renal GLANDS, GLANDULÆ *Renales*; call'd alſo *Capſulæ atrabilares*, are two *Glands*, firſt diſcover'd by *Euſtachius*, between the Aorta, and the Kidneys, a little above the emulgent Veſſels; tho' their Situation and Figure is varied: In ſome they are round; in others ſquare, triangular, &c. The right is uſually bigger than the left, and each about the Size of a *Nux Vomica*: They are incloſ'd in Fat.

Their Uſe is not certainly known: 'Tis ſuppos'd to be to ſeparate a Liquor from the Arterial Blood, before it go to the Kidneys.—See ATRABILARES.

GLANDERS, a filthy Diſeaſe in a Horſe, conſiſting in a running of corrupt Matter from the Noſe, of a different Colour, according to the Degree of the Malignity, or as the Infection has been of ſhorter or longer Continuance; being white, yellow, green, or black.—

Authors aſcribe it to various Cauſes; ſome to Infection; ſome, to a Diſorder of the Lungs; others, to the Spleen; ſome, to the Liver; and others, to the Brain—After it has been of ſo long ſtanding, that the Matter is become of a blackiſh Colour, which is uſually in its laſt Stage, they ſuppoſe it to come from the Spine; and hence call it the *Mourning of the Chine*.

Kernels and Knots are uſually felt under the Caul in this Diſorder: And as theſe grow bigger and more inflamed, ſo the *Glanders* increaſe more under the Horſe's Body.

A late Author is of opinion, that the chief Seat of this Diſtemper is in a little, ſoft, ſpungy Fleſh, which is eaſily dilated by the leaſt Influx of the Blood: And thence it is that ſome Horſes have a running at the Noſe from a very ſlight Cold; but when this ſpungy Subſtance happens to be very much relaxed, the Running is increaſed in Proportion.

GLANDULA, in Anatomy, the ſame as *Gland*. See GLAND.

The Word is a Diminutive of the Latin *Glans*, Acorn; and is here us'd on account of ſome external Reſemblance between the Glands of the Body, and the Fruit of the Oak.

GLANDULÆ *Sebaceæ*, are a Number of *Glands* under the Skin of the Auricle of the Ear, firſt diſcover'd by *Valſalva*, and thus denominated, by reaſon they ſeparate a greaſy Matter, like *Sebum*, or Tallow. See AURICLE.

This *Sebum*, he aſſerts, being carried to the Surface of the Skin, turns into a ſcaly Subſtance, not unlike that of Bran.

GLANDULA *Guidonis*, among Surgeons, is a Tumor reſembling a *Gland*, ſoft, ſingle, moveable, without Roots, and ſeparated from the adjacent Parts.—

GLANDULE, in Anatomy, &c. a Diminutive of the Word *Gland*; ſignifying a little *Gland*.

Thus, the *Amygdalæ*, or Almonds of the Ears are called *Glandules*. See TONSIL.

GLANDULOUS, or GLANDULAR, ſomething compoſed of *Glands*; or that abounds with *Glands*. See GLAND.

Thus, the Breaſts are ſaid to be *Glandulous* Bodies. See BREASTS.

The Cortical Subſtance of the Brain is commonly reputed to be *glandulous*: Tho' the Excellent *Ruyſch*, from the Diſcoveries made by his admirable Injections, holds that there is no ſuch thing therein. See BRAIN.

The Antients diſtinguiſh'd a particular kind of Fleſh, which they call'd *Caro glanduloſa*, or *glandulous* Fleſh. See FLESH.

GLANDULOUS *Body*, GLANDULOSUM *Corpus*, the ſame with *Proſtata*. See PROSTATA.

GLANS, *Acorn*, in Natural Hiſtory, a Fruit contain'd within a ſmooth, but hard Bark, including a ſingle Seed; its Hind-part being cover'd with a kind of Cup, and the Fore-part bare. See FRUIT, and SEED; ſee alſo TIMBER, &c.

GLANS, in Anatomy, is the Tip, or Button of the Penis; or that Part cover'd with the Præpuce; call'd alſo *Balanus*. See BALANUS, and PENIS.

The *Glans* is only a Dilatation of the Extremity of the ſpongeous Subſtance of the Urethra, bunch'd and turn'd back on the two conical Tips of the *Corpora cavernoſa*, which terminate therein. See URETHRA, and CAVERNOSA *Corpora*.

The Extremity of the Præpuce is apt to grow ſo ſtraight in old Men, that it cannot bear the *Glans*; perhaps thro' the Defect of frequent Erections. See PRÆPUCE; ſee alſo ERECTION.

GLANS is alſo uſed for the Tip, or Extremity of the Clitoris, from its Reſemblance both in Form and Uſe, to that of the Penis. See CLITORIS.

The principal Difference conſiſts in this, that it is not perforated: This *Glans* is alſo cover'd with a Præputium, form'd of the inner Membrane of the Labia. See PRÆPUTIUM.

GLASS,

GLASS, *Vitrum*, a tranſparent, brittle, factitious Body, produc'd of Salt and Sand, by the Action of Fire. See VITRIFICATION.

The Word *Glaſs* is form'd of the Latin *Glaſtum*, a Plant call'd by the Greeks *Iſatis*, by others, *Aogigneme*, by the *Romans*, frequently, *Aroſion*, ſometimes *Vitrum*, by the antient Britains, *Guadum*, and the Engliſh, *Woad*.

We find frequent Mention of this Plant in antient Writers, particularly *Cæſar*, *Vitruvius*, *Pliny*, &c. who relate, that the antient *Britains* painted, or died their Bodies with *Glaſs*, *Glaſtum*, *Guadum*, *Vitrum*, &c. *i. e.* with the *Blue* Colour procured from this Plant.

And hence, the factitious Matter we are ſpeaking of, came to be call'd *Glaſs*; as having always ſomewhat of this Blueiſhneſs in it. See WOAD.

The Chymiſts hold that there is no Body but may be *vitrified*, *i. e.* converted into *Glaſs*—By intenſe Heat even Gold it ſelf gives way to the Sun's Rays collected in a Burning-Glaſs, and becomes *Glaſs*. See GOLD, and BURNING-*Glaſs*.

Add, that as *Glaſs* is the Effect, or Fruit of Fire, ſo 'tis the laſt Effect: All the Chymiſts Art, and all the Force of Fire not being able to carry the Change of any natural Body beyond its Vitrification. Whence Dr. *Merret* mentions it as a merry Saying of a very great Artiſt in the Buſineſs of *Glaſs*, That their Profeſſion would be the laſt in the World: For that when God ſhould conſume the Univerſe with Fire, all things therein ſhould be turn'd to *Glaſs*. See VITRIFICATION.

Nature, Character, and Properties of GLASS.

Naturaliſts are divided, in what Claſs of Bodies to rank *Glaſs*—*Agricola* makes it a concrete *Juice*: *Belvacenſis*, a *Stone*: *Fallopius* ranks it among the Media *mineralia*; and the Workmen, when in Fuſion, call it *Metal*. But Dr. *Merret* with Reaſon ſets aſide all theſe Opinions, from this Conſideration, that all the forementioned Bodies are natural Concretes; whereas *Glaſs* is a Compound made by Art, and never found in the Earth, as the others are.

Fallopius, indeed, contends, that *Glaſs* is no more artificial than a Metal; and that they are both equally extracted, or educed from other Bodies: The one from Sand; the other from its Ore.—He adds, that tho' Aſhes be added to Sand, for the making of *Glaſs*, yet it is falſe that they contribute to the Compoſition of *Glaſs*; their Uſe, according to him, being only for the better extracting of the *Glaſs* from the mineral Stone.

This, Dr. *Merret* eaſily confutes: For if *Glaſs* were extracted from the Stones, or Sand only, the Weight of the Metal muſt be much leſs than that of the Stones alone; whereas, it is much greater, an hundred Weight of Sand, ſufficing for 150 of *Glaſs*.

In effect, the Aſhes contribute a deal of Salt to the Compoſition of *Glaſs*—Accordingly, in Pieces of old *Glaſs*, one may ſometimes pick out Grains of Salt, eaſily diſcoverable to the Taſte; beſide that the fineſt *Glaſs*, ſtanding long in a ſubterraneous Place, will moulder or reſolve into its firſt Ingredients, Salt and Sand, by the Decay of the Union thereof. Whence it appears that the Salt remains in the *Glaſs*, *in Specie*: To which may be added that Experiment of *Van Helmont*. "Melt *Glaſs*-Duſt with Sandever, and "ſet them in a moiſt Place; and the *Glaſs* will reſolve into "Water. Pour on *Aqua regia*, enough to ſaturate the "Sandever; and the Sand will precipitate to the Bottom "in the ſame Quantity, and Weight, as was firſt uſed." *Helm. Cap. De Terra.*

Here, then, is a true Analyſis of *Glaſs*; or a Solution into its firſt Principles, or Ingredients: The Salt being imbibed by the Sandever, and *Aqua Regia*. *Merret. in Ant. Neri De Art. Vitrar.*

The learned, and curious Author juſt mentioned, gives us the following Characters, or Properties of *Glaſs*; whereby it is diſtinguiſh'd from all other Bodies; *viz.* 1° That it is an *Artificial Concrete* of Salt, and Sand, or Stones: 2° *Fuſible*, by a ſtrong Fire. 3° When fuſed, *tenacious*, and coherent. 4° It does not waſte, or *conſume* in the Fire. 5° When melted, it *cleaves* to Iron. 6° *Ductile*, when red hot, and faſhionable into any Form; but not malleable: And capable of being *blown* into a Hollowneſs; which no Mineral is. 7° *Frangible*, when thin, without annealing. 8° *Friable*, when cold. 9° Always *diaphanous*, whether hot, or cold. 10° *Flexible*, and *Elaſtic*. 11° *Diſſoluble by Cold* and *Moiſture*. 12° Only capable of being *graven*, or *cut with Diamond*, and Emery. 13° Receives any *Colour*, or *Dye*, both externally, and internally. 14° Not diſſoluble by *Aqua fortis*, *Aqua regia*, or *Mercury*. 15° Neither *Acid Juices*, nor any other Matter *extract either Colour*, *Taſte*, nor any other Quality from it. 16° It admits of *poliſhing*. 17° *Neither loſes of Weight*, *nor Subſtance* by the longeſt, and moſt frequent Uſe. 18° Gives *Fuſion to other Metals*, and ſoftens them. 19° The moſt *plyable thing in the World*, and that which beſt retains the Faſhion given it. 20° Not *capable of being calcined*. 21° An open *Glaſs*, fill'd with Water in the Summer-time, will *gather Drops of Water* on the Out-ſide ſo far as the Water on the Inſide reaches; and a Man's Breath blown upon it will manifeſtly moiſten it. 22° Little Glaſs Balls fill'd with Water, Mercury, or other Liquor, and thrown into the Fire; as alſo Drops of Green *Glaſs* broken, *fly aſunder* with a loud Noiſe. 23° Neither Wine, Beer, nor any other *Liquor will make it muſty*, nor *change its Colour*, nor *ruſt it*. 24° It may be *cemented* as Stones, and Metals. 25° A Drinking *Glaſs*, partly fill'd with Water, and rubb'd on the Brim with a wet Finger, *yields muſical Notes*, higher, or lower, as the *Glaſs* is more or leſs full, and makes the Liquor friſk and leap.—

For the Flexibility of GLASS, ſee further under FLEXIBILITY *of Glaſs*.

For the Malleability of GLASS, ſee MALLEABILITY, &c.

Hiſtory, and Antiquity of GLASS.

De Neri will have *Glaſs* as antient as *Job*: For that Writer, *c. XXVIII. v.* 17. ſpeaking of Wiſdom, ſays, *Gold and Glaſs ſhall not be equall'd to it.*

This, we are to obſerve, is the Reading of the *Septuagint*, Vulgate *Latin*, St. *Jerom*, *Pineda*, &c. For in the *Engliſh* Verſion, inſtead of *Glaſs*, we read *Cryſtal*; and the ſame is done in the *Chaldee*, *Arias Montanus*, and the King of *Spain*'s Edition: In other Verſions, &c. it is read a *Stone*; in others, a *Beryl*: In the *Italian*, *Spaniſh*, *French*, *High* and *Low Dutch*, &c. a *Diamond*; in others, a *Carbuncle*; and in the *Thargum*, a *Looking Glaſs*.

In effect, the Original Word is *Zechuchih*, from the Root *Zacac*, to purify, cleanſe, ſhine, be white, tranſparent: And the ſame Word, *Exod. XXX.* 34. is applied to *Frankincenſe*, and render'd in the Septuagint, *pellucid*.—Hence the Reaſon of ſo many different Rendrings: For the Word ſignifying *beautiful*, and *tranſparent* in the general, the Tranſlators were at liberty to apply it to whatever was valuable and tranſparent.

Moſt Authors will have *Ariſtophanes* to be the firſt Author who mentions *Glaſs*: That Poet, in his Comedy call'd *the Clouds*, *Scen. I. Act* 2. uſes the Word *Hyalus*, ὕαλος, which is now ordinarily render'd *Glaſs*. He there introduces *Sthrepſiades*, teaching *Socrates* a new way to pay old Debts, *viz.* "by placing a fair tranſparent Stone ſold by the Druggiſts, "from which Fire is ſtruck, between the Sun and the Writ-"ing; and ſo melting away the Letters thereof." This Stone *Socrates* calls ὕαλος; which the *Scholiaſt* on *Ariſtophanes* derives from ὗειν, to *rain*, from the Likeneſs it bears to Ice, which is Rain, or Water congeal'd; tho' it muſt be own'd the Word ὕαλος is ambiguous, and ſignifies Cryſtal as well as *Glaſs*: And *Gorræus* relates that they had a kind of yellow Amber, tranſparent as *Glaſs*, call'd by ſome, ὕαλος.

Ariſtotle has two Problems upon *Glaſs*; the firſt, Why we ſee through it? The ſecond, Why it cannot be beaten? If theſe Problems be *Ariſtotle*'s, which the Learned doubt very much; this would probably be the earlieſt Piece of Antiquity of *Glaſs*: But the firſt Author, who makes unqueſtion'd Mention of this Matter, is *Alexander Aphrodiſæus*, who uſes it in a Simile: "As the Floridneſs of a Colour is ſeen thro' "*Glaſs*," &c.

After him the Word occurs commonly enough: *Lucian* mentions large Drinking *Glaſſes*; and *Plutarch*, in his *Sympoſiacon*, ſays that the Fire of *Tamariſk* Wood is fitteſt for the making of *Glaſs*.

Among the *Latin* Writers, *Lucretius* is the firſt that takes notice of *Glaſs*. —*Niſi recta foramina tranant*—*Qualia ſunt Vitri.*—

Dr. *Merret*, however, adds, that *Glaſs* could not be unknown to the Antients; but that it muſt needs be as antient as Pottery it ſelf, or the Art of making Bricks: For ſcarcely can a Kiln of Bricks be burnt; or a Batch of Pottery Ware be made, but ſome of the Bricks, and Ware, will be at leaſt ſuperficially turn'd to *Glaſs*: And therefore, without doubt it was known at the Building of *Babel*.

Hence, *Ferrant Imperatus*, *lib.* 25. *c.* 7. "*Glaſs*, like the "artificial Kind, is found under Ground, in Places where "great Fires have been.—Other *Glaſſes* are found in round "Clods, like Fireſtone, ſome brittle, others firm, &c. This "Foſſil *Glaſs* is wrought by the *Americans*, and uſed in-"ſtead of Iron." *lib. XXV. c.* 7. And no doubt, but Vitrifications were more common in the antient Bricks than ours: as they temper'd their Earth two Years together, and burnt them better. See BRICK.

Pliny relates the manner of the Diſcovery of *Glaſs*—It was found, according to that Author, by accident, in *Syria*, at the Mouth of the River *Belus*, by certain Merchants driven thither by the Fortune of the Sea. Being obliged to live there, and dreſs their Victuals, by making a Fire on the Ground; and there being Store of the Plant Kali upon the Spot; this Herb being burnt to Aſhes, and the Sand or

Stones of the Place, accidentally mix'd with it, a Vitrification was undeſignedly made. From whence the Hint was taken, and eaſily improved.

Indeed, how old ſoever *Glaſs* may be; the Art of making, and working it, appears of no great Antiquity—The firſt Place mention'd for the making hereof, is *Sidon* in *Syria*, which was famous for *Glaſs* and *Glaſs-houſes*, as obſerv'd by *Pliny*, *L. XXXVI. c. 26.*—The firſt Time we hear of *Glaſs* made among the *Romans*, was in the Time of *Tiberius*; when *Pliny* relates that an Artiſt was put to death for making *Glaſs* Malleable. See MALLEABILITY.—

Venice, for many Years, excell'd all *Europe* for the Fineneſs of its *Glaſſes*. The great *Glaſs-works* were at *Muran*, or *Mouran*, a Village near the City; which furniſh'd all *Europe* with the fineſt and largeſt *Glaſſes*. But within this fifty Years the *French* and *Engliſh*, have not only come up to, but even ſurpaſs'd the *Venetians*; ſo that we are now no longer ſupplied from abroad.

The *French* made a conſiderable Improvement in the Art of *Glaſs*, by the Invention of a Method to caſt very large Plates; till then unknown; and ſcarce practic'd yet, by any but themſelves, and the *Engliſh*.

That Court applied itſelf with a laudable Induſtry to cultivate and improve the *Glaſs* Manufacture.—A Company of Glaſs-men was eſtabliſh'd by Letters Patents; and it was provided by an Arret, not only that the working in *Glaſs* ſhould not derogate any thing from Nobility, but even, that none but Nobles ſhould be allowed to work therein.

Ingredients of GLASS, *with the Method of preparing them.*

The Materials uſed in the Compoſition of *Glaſs*, we have obſerv'd, are *Salt*; and *Sand*, or Stone. See SALT, and SAND.

The Salt is of the fix'd Kind; ſuch as will not evaporate with the moſt intenſe Heat.—The Sand, or Stone muſt be ſuch as will melt eaſily: This is what gives Firmneſs and Conſiſtence to the *Glaſs*.

1° This Salt is procured chiefly from a kind of Aſhes, call'd *Polverine*, or *Rochetta*, brought from the *Levant*, and particularly from *Alexandria* and *Tripoli*—The Aſhes are thoſe of a Vegetable, frequent in the Country, commonly call'd *Kali*; ſometimes *Kalli*; *Kallu*; *Cali*; by *Geſner*, *Alkali*; by *Lobel*, *Soda*; by *Dodonæus*, *Salſola*; and by *Camer. Cordus*, *Fuchſius*, &c. *Anthyllis*. Dr. *Merret* calls it Engliſh *Salt-wurt*, from its Saline Taſte; and *Glaſs-weed*, from the Uſe made of its Aſhes in making of *Glaſs*. See KALI and POLVERINE.

Bauhin mentions ten Species of this Plant; whereof there are four uſed by the *Alexandrians*, &c. for the making of *Polverine*, and Soap; *viz. Kali geniculatum*; *Kali ſecunda ſpecies*; *Kali Ægyptiacum*; and *Kali Spinoſum*.

The firſt and laſt, our own Coaſts affords, where they are call'd by the People *Frog-graſs*, and *Sea-graſs*; but they are of no uſe for making of *Glaſs*: Being laid on a hot Iron, they fly off almoſt wholly in Fumes, leaving no Aſhes at all; whereas the Kalies brought from the *Levant*, applied on the ſame Iron, are ſoon converted almoſt wholly into *Polverine*, *i. e.* very ſaline Aſhes, of a dark Colour. See SOAP.

To get the Salt from this *Polverine*, they pulverize, and ſift it very fine; then boil it in a Braſs Copper, with fair Water and Tartar, till a third Part of the Water is conſumed; taking care to ſtir it from time to time. Then, filling up the Copper with freſh Water, they boil it a ſecond time, till half be conſumed: This done, they have a Lee impregnated with Salt. To get the Salt from the Lees, they boil them, till the Salt ſhoots at the Top; which they ſcum off as it riſes. An hundred Pounds of Aſhes, this way, uſually yields eighty or ninety of Salt.

When the Salt is dry, they beat it groſly, and put it into a Furnace, to dry it further with a gentle Heat. When ſufficiently dry, they pound and ſift it very fine, and lay it by to make *Frit*. See FRIT.

Note. Inſtead of the Aſhes of the Plant *Kali*, thoſe of *Fern* will alſo yield a Salt, which makes excellent *Glaſs*; nothing inferior to that of Polverine. The Method of Preparation is the ſame. Add, that the Aſhes of the Cods, and Stalks of Beans; as alſo thoſe of Coleworts, Bramble Buſh, Millet Stalks, Ruſhes, Fern Ruſhes, and many other Plants may be us'd for the like Purpoſe, and after the ſame manner.

2° For *Stone*, the ſecond Ingredient in *Glaſs*.—The beſt, we have obſerv'd, is that which will melt, is white, and tranſparent. This is found principally in *Italy*, being a ſort of Marble, call'd *Tarſo*: The next is *Quocoli*, or *Cuogele*, a ſort of Pebbles found at the Bottoms of Rivers.

Indeed, nothing makes finer and clearer *Glaſs* than Flint, but the Charge of preparing it, deters the Glaſs-men from uſing it. The Preparation neceſſary for Stone, is to calcine, powder, and fierce it.

Ant. Neri obſerves, that all white, tranſparent Stones, which will not burn to Lime, are fit to make *Glaſs*; and that all Stones which will ſtrike Fire with Steel, are capable of being employ'd in making of *Glaſs*. But this latter Rule, Dr. *Merret* obſerves, does not hold univerſally.

Where proper Stone cannot be had, *Sand* is us'd: The beſt for the purpoſe is that which is white and ſmall; for green *Glaſs*, that which is harder, and more gritty: It is to be well waſh'd; which is all the Preparation it needs—Our Glaſs-houſes are furniſh'd with white Sand for their Cryſtal *Glaſſes* from *Maidſtone*; and with the coarſer, for green *Glaſs*, from *Maidſtone*.

Some mention a third Ingredient in *Glaſs*, *viz. Manganeſe*, or *Sydera*, a kind of *Pſeudo* Loadſtone, dug up in *Germany*, *Italy*, and even in *Mendip* Hills in *Somerſetſhire*. But the Proportion hereof to the reſt, is very inconſiderable; beſide, that it is not uſed in all *Glaſs*. Its Office is to purge off the natural greeniſh Colour, and give it ſome other Tincture requir'd.

Method of making White, and Cryſtal GLASS.

There are three ſorts of Furnaces us'd in the *Glaſs-works*: One to prepare the *Frit*, call'd the *Calcar*: A ſecond to work the *Glaſs*; and a third, call'd the *Leer*, to anneal it. See them all deſcribed under the Article FURNACE.

To make Cryſtal *Glaſs*, take of the whiteſt *Tarſo* pounded ſmall, and ſierced as fine as Flower, two hundred Pounds; and Salt of *Polverine*, an hundred and thirty Pounds. Mix them together, and put them into the Furnace call'd *Calcar*, firſt heating it. For an Hour keep a moderate Fire, and keep ſtirring the Materials, that they may incorporate and calcine together. Then increaſe the Fire for five Hours: After which take out the Matter; which being now ſufficiently calcined, is called *Frit*.—From the Calcar put the Frit in a dry Place, and cover it up from the Duſt, for three or four Months. See FRIT.

Now, *to make* the *Glaſs*, or Cryſtal: Take of this Cryſtal Frit, call'd alſo *Bollito*; ſet it in Pots in the Furnace, adding to it a due Quantity of Manganeſe: When the two are fuſed, caſt the Fluor into fair Water, to clear it of the Salt, call'd *Sandever*; which would otherwiſe make the Cryſtal obſcure, and cloudy. This Lotion muſt be repeated again, and again, as oft as needful, till the Cryſtal be fully purged. Then ſet it to boil four, five, or ſix Days; which done, ſee whether it have Manganeſe enough; and if it be yet greeniſh, add more Manganeſe, at Diſcretion, by little and little at a time; taking care not to overdoſe it, by reaſon the Manganeſe inclines it to a blackiſh Hue. Then let the Metal clarify, till it become of a clear, and ſhining Colour: Which done, it is fit to be blown, or form'd into Veſſels at pleaſure.

There are three principal Kinds of *Glaſſes*, diſtinguiſh'd by the Form, or manner of working them; *viz. Round Glaſs*, as theſe of our Veſſels, Phials, Drinking *Glaſſes*, &c. *Table* or *Window Glaſs*, of which there are divers Kinds, *viz. Crown Glaſs*, *Jealous Glaſs*, &c. and *Plate Glaſs*, or *Looking Glaſs*.

Method of Working or Blowing Round GLASS.

The Working Furnace, we have obſerv'd, is round, and has ſix *Boccas*, or Apertures: At one of theſe, call'd the *great Bocca*, the Furnace is heated, and the Pots of Frit ſet in the Furnace: Two other, ſmaller Holes, call'd *Boccacellas*, ſerve to lade or take out the melted Metal, at the End of an Iron, to work the *Glaſs*. At the other Holes, they put in Pots of other fuſible Ingredients, to be prepared, and at laſt emptied into the Lading Pot.

There are ſix Pots in each Furnace, all made of Tobacco-Pipe Clay, proper to ſuſtain not only the Heat of the Fire, but alſo the Effect of the Polverine, which penetrates every thing elſe. There are only two of theſe Pots that work: The reſt ſerve to prepare the Matter for them. The Fire of the Furnace is made and kept up with dry, hard Wood, caſt in, without Intermiſſion, at the ſix Apertures. This they never omit, not even on the moſt ſolemn Feſtivals.

When the Matter contain'd in the two Pots is ſufficiently vitrified, they proceed to blow, or faſhion it: The Proceſs whereof we ſhall here deliver from *Agricola*, Dr. *Merret*, the French *Diction. de Commerce*, &c,

The Operator, or *Servitor* (the Metal being now ſufficiently refined) takes his Blowing Iron, which is a hollow Tube, about two Foot and a half long; and dipping it in the Melting-pot, there turns it about: The Metal ſticks to the Iron, like ſome glutinous, or clammy Juice, much like but more firmly, than Turpentine, or *Venice* Treacle.

For each *Glaſs* he dips four times, and at each Dip rolls the End of his Inſtrument, with the *Glaſs* thereon, on a piece of Iron, over which is a Veſſel of Water; the Coolneſs whereof helps to conſolidate the *Glaſs* more readily, and diſpoſes it the better to bind with the next to be taken out of the Pot.

After

After they have dipp'd the fourth time, and there is now Matter enough on the Inſtrument, the Operator begins to blow gently thro' the Iron; by which he raiſes or lenghtens it nearly a Foot; much as we do by blowing in a Bladder, or Globe: And to give it a Poliſh, he rolls it to and fro on a Stone, or Marble.

This done, he blows a ſecond time, and thus forms the Bunch, or Belly of the *Glaſs*. The Matter by this ſecond Blaſt aſſumes the Figure of a Gourd, or Callebaſs, eighteen or twenty Inches in Diameter. As often as the Operator blows into the Iron (which muſt be very often) he removes it haſtily from his Mouth to his Cheek, leſt he ſhould draw the Flame into his Mouth, when he re-applies it to the Iron.

The Operator whirls his Iron many times round his Head, to lengthen and cool the *Glaſs*; ſometimes the *Glaſs* thus blown round, is return'd to the Fire, where it flattens a little of itſelf: When flatted, it is taken out, and cooled; and if needful for the Deſign, the Workman flats its Bottom, by preſſing it on the Marble; or moulds it in the *Stamp-irons*: And thus delivers it to the Maſter Workman, to break off the Collet.

The Collet, or Neck, is the narrow Part which clove to the Iron: To ſet the *Glaſs* at liberty, they lay a Drop of cold Water on the Collet; which by its Coldneſs, cuts, or cracks about a Quarter of an Inch: After which, giving it a ſlight Blow, the Fracture is communicated all around the Collet. The waſt Piece to be thrown by to make green *Glaſs*.

This done, they dip an Iron Rod, or *Ponteglo* in the Melting Pots, and with the Matter that ſticks thereto, they apply and faſten it to the Bottom of the Veſſel, oppoſite to the Collet.—The Veſſel thus ſuſtained by the Iron Rod, is carried to the great Bocca to be heated, and ſcalded; and while another Perſon takes care thereof, the former Operator reſts and prepares himſelf for the *Branching*.

To *branch*, or make the Bowl, they thruſt in an Iron Inſtrument, call'd *Paſſago*; and the Aperture, open'd thereby, they further augment, and widen with the *Procello*: In turning this Inſtrument about, to form the Bowl, the Edge becomes thickned; the *Glaſs* being, as it were, doubled in that Part: Whence the Hem obſerved on the Circumference of our *Glaſſes*.—What is ſuperfluous, they cut off with the Shears.

The Veſſel thus open'd, is return'd to the great Bocca; where, being ſufficiently heated a ſecond time, the Workman gives the Bowl its finiſhing, by turning it about with a circular Motion; which it increaſes, in proportion as the Bowl opens, and enlarges by means of the Heat and Agitation.

The *Glaſs* thus finiſh'd, they carry it from the Bocca, ſtill turning it round, to a kind of earthen Bench, cover'd with Brands, or Coals extinguiſh'd: Here they let it cool a little, and come to its Conſiſtence, having firſt detach'd it from the Iron Rod, by a Stroak or two with the Hand.

Thus, with *blowing*, *preſſing*, *ſcalding*, *amplifying*, and *cutting*, the *Glaſs* is framed into the Shape preconceived in the Workman's Mind. If need be, he proceeds to put on a *Foot* and *Handle*; and with the *Spici* puts on *Rigarines*, and *Marblings*.

When the Maſter has finiſh'd a Number of them, another Servitor takes them with an Iron Fork, and ſpeedily places them in the Tower, or *Leer* to anneal and harden. See FURNACE, ANNEALING, *&c.*

What has been here ſaid of White, or Cryſtal *Glaſs*, holds equally of common, or Green *Glaſs*; the working being the ſame in all; and the Difference only in the Salt, or Polverine made uſe of.

So many Maſters as there are, ſo many Pots, at the leaſt, and ſo many Bocca's there muſt be; each Man having his proper Station; where, ſays Dr. *Merret*, they receive thoſe ſcorching Heats ſallying directly into their Faces, Mouths, and Lungs; whence they are forc'd to work in their Shirts, like the *Cyclopes*, and *Nudi-membra Pyrracmones*, with a Straw broad-brimm'd Hat on their Heads, to defend their Eyes from the exceſſive Heat and Light.—They ſit in large, wide, wooden Chairs, with two long Elbows, to which their Inſtruments are hung. They work ſix Hours at a time, meaſur'd by a ſingle Glaſs; after which they are relieved by others, for the like Time: So that the Furnaces are never idle.

Method of working, or blowing WINDOW, or TABLE GLASS.

The Method of making Crown Window *Glaſs*, now practis'd in *England*, is ſaid to have been borrowed from the *French*.—An *Engliſh* Glaſs-maker went over, to work in *France*, on purpoſe to get into the Secret; which, when he had attain'd to, he return'd, and ſet up a Glaſs-work, wherein he far outdid the *French*, his Teachers.

This *Glaſs* is blown much after the manner of Looking *Glaſs*. Some Writers, from wrong Intelligence, have ſaid that it was run, or caſt in Sand: But the real Proceſs is as follows.—

The Furnace, Melting-pots, Materials, and Fire are the ſame for Window, or Table *Glaſs*, as for Round *Glaſs*; and the Difference in the Operation only commences after the Servitor has dip'd his Blowing-iron the fourth time in the melted Metal.

The *Glaſs*, then, being in this Condition, they blow it; but inſtead of rounding, or forming it into a Bunch; the particular Motion the Workman gives it in the directing and managing the Wind, and the way of rolling it on the Iron; make it extend in length two or three Foot, and form a Cylinder, which at firſt is but two Inches in Diameter; but which, by being recommitted to the Fire, and blown a-freſh when taken out, becomes of the Extent required for the Table of *Glaſs* to be form'd. With this Circumſtance however, that the Side which is faſten'd to the Iron, goes gradually diminiſhing, and ends in a kind of Cone, or Pyramid.

To render the two Ends nearly of the ſame Diameter, after adding a little *Glaſs* to that oppoſite to the Iron, they draw it out with a Pair of Iron Pinchers. Then they incide, or cut off the ſame End with a little Water; and carrying the Cylinder back to the Bocca, they incide it likewiſe with Water in two other Places; one, eight, or ten Inches from the Iron; and the other, the whole Length.

The *Glaſs* Cylinder thus abridg'd of both its Extremities, is, next, heated on a kind of earthen Table, ſomewhat rais'd in the Middle, in order to promote its Opening at the Place incided longitudinally. The Workman, here, makes uſe of an Iron, wherewith he alternately lowers and raiſes the two Sides, or Halves of the Cylinder, which now begin to open, and unfold like a Sheet of Paper, and at length grow perfectly flat.—The Table of *Glaſs* is now in its laſt Perfection, and needs nothing farther but to be heated over again. When taken out, they lay it on a Table of Copper; whence, after it has cool'd and come to its Conſiſtence, they carry it on Forks to the Tower of the Furnace, where they leave it to anneal for 24 Hours.

The Number of Tables anneal'd at a time, which ſometimes amount to an hundred, with the perpendicular Situation they are ſet in, occaſion'd, antiently, that thoſe ſet in firſt, ſuſtaining in ſome meaſure, the Preſſure of all the laſt, were bent; and thus render'd inconvenient for Uſe: But this Inconvenience is now remedied, by ſeparating them into Tens, with an Iron Shiver; which diminiſhing the Weight, by dividing it, keeps the Tables as flat, and even as they were put in.

Kinds of Table, *or* Window GLASS.

There are divers Sorts of this *Glaſs*, made in divers Places, for the uſe of Building: Thoſe moſt known among us, are given us, by the Author of the *Builders* Dictionary, as follows:

Crown-GLASS, of which, ſays that Author, there are two Kinds; diſtinguiſh'd by the Places where they are wrought, *viz.* 1° *Ratcliff Crown Glaſs*, which is the beſt and cleareſt; and was firſt made at the Bear Garden, on the Bank-ſide, *Southwark*; but ſince at *Ratcliff*: Of this there are 24 *Tables* to the *Caſe*, the Tables being of a circular Form, about three Foot ſix Inches in Diameter. See TABLE, and CASE.

2° *Lambeth Crown Glaſs*, which is of a darker Colour than the former, and more inclining to green.

French GLASS, alſo call'd *Normandy Glaſs*, and formerly *Lorrain Glaſs*, becauſe made in thoſe Provinces. At preſent it is made wholly in the *Nine Glaſs Works*; five whereof are in the Foreſt of *Lyons*; four in the County of *Eu*; the laſt, at *Beaumont*, near *Rouen*.—It is of a thinner Kind than our Crown *Glaſs*; and when laid on a Piece of white Paper, appears of a dirtyiſh green Colour. There are but 25 Tables to the Caſe.

German GLASS, is of two Kinds, White, and Green: The firſt is of a whitiſh Colour, but ſubject to thoſe ſmall, curved Streaks, obſerved in our *New-Caſtle Glaſs*; tho' free from the Spots and Blemiſhes thereof. The *Green*, beſide its Colour, is liable to the ſame Streaks as the White: But both of them are ſtraighter, and leſs warped than our *New-Caſtle Glaſs*.—

Dutch GLASS, is not much unlike our *New-Caſtle Glaſs*, either in Colour, or Price. 'Tis frequently much warped, like that, and the Tables are but ſmall.—

New-Caſtle GLASS, is that moſt uſed in *England*. 'Tis of an Aſh Colour, and ſubject to Specks, Streaks, and other Blemiſhes; and beſide is frequently warp'd. *Leybourn* ſays, there are 45 Tables to the Caſe, each containing five ſuperficial Feet: Some ſay there are but 35 Tables, and ſix Foot in each Table.

Method of working PLATE-*or* LOOKING GLASS.

The Materials whereof *Looking Glaſs* is made, are much the ſame as thoſe of other Works of *Glaſs*; *viz.* an Alkali Salt, and Sand.

The

The Salt, however, it is to be obſerv'd, ſhould not be that extracted from *Polverine*, or the Aſhes of the *Syrian* Kali; but that from *Barillia*, or the Aſhes of a Plant of that Name, of the Genus of Kalies, but growing about *Alicant* in *Spain*.—'Tis very rare that we can have the Barillia pure; the *Spaniards*, in burning the Herb, make a Practice of mixing another Herb along with it, which alters its Quality; or of adding Sand to it, to increaſe the Weight: Which is eaſily diſcover'd, if the Addition be only made after the boiling of the Aſhes, but next to impoſſible, if made in the boiling. It is from this Adulteration that thoſe Threads and other Defects in *Plate Glaſs* ariſe.—To prepare the Salt, they clean it well of all foreign Matters; pound or grind it with a kind of Mill, and ſift it pretty fine.

As to the Sand, 'tis to be ſifted, and waſh'd, till ſuch time as the Water come off very clear; and when it is well dried again, they mix it with the Salt, paſſing the Mixture thro' another Sieve. This done, they lay them in the annealing Furnace for about two Hours; in which time the Matter becomes very light, and white: In which State they are called *Frit*, or *Fritta*, and are to be laid up in a dry, clean Place, to give them time to incorporate, for at leaſt a Year. See FRIT.

When they would employ this *Frit*, they lay it for ſome Hours in the Furnace, adding to ſome, the Fragments, or Shards of old, and ill made *Glaſſes*; taking care firſt to calcine the Shards, by heating them red hot in the Furnace, and thus caſting them into cold Water. To the Mixture muſt likewiſe be added Manganeſe, to promote the Fuſion, and Purification.

The Matter thus far prepared, is equally fit for Plate-*Glaſs* to be form'd either by Blowing, or Caſting.—

Method of blowing LOOKING-GLASS-PLATES.

The Work-houſes, Furnaces, *&c.* uſed in the making of this kind of *Plate Glaſs*, are the ſame as thoſe in the following Article, to which the Reader is refer'd.

The Melting-pots, wherein the Materials to be blown, are fuſed, are 38 Inches in Diameter, and 35 high. After thoſe Materials are vitrified by the Heat of the Fire; and the *Glaſs* is ſufficiently refined; the Maſter Workman dips in his Blowing-iron, once, and again, till he has got Matter enough thereon.

This done, he mounts on a kind of Block, or Stool, five Foot high, to be more at liberty to ballance it, as it lengthens in the blowing. If the Work be too heavy for the Workman to ſuſtain on his Blowing-iron, two or more Attendants aſſiſt him, by holding Pieces of Wood under the *Glaſs*, in proportion as it ſtretches, for fear it ſhould fall off the Iron by its own Weight.

When, after ſeveral repeated Heatings, and Blowings, the *Glaſs* is at length brought to the Compaſs, proper for its Thickneſs, and the Quantity of Metal taken out; they cut it off with Forces, at the Extremity oppoſite to the Iron, in order to *point* it with the *Pointil*.

The Pointil is a long, firm Piece of Iron, having a Piece going a-croſs one of its Ends, in manner of a T: To point the *Glaſs*, they plunge the Head of the T into the Melting-pot; and with the Liquid *Glaſs* ſticking thereto, they faſten it to the Extremity of the *Glaſs* before cut off. When it is ſufficiently faſten'd, they ſeparate the other Extremity of the *Glaſs* from the Blowing-iron; and inſtead thereof, make uſe of the Pointil to carry it to the Furnaces appointed for that end; where, by ſeveral repeated Heatings, they continue to enlarge it, till it be equally thick in every Part.

This done, they cut it open with the Forces; not only on the Side by which it ſtuck to the Blowing-iron, but likewiſe the whole Length of the Cylinder: After which, giving it a ſufficient Heating, it is in a condition to be entirely open'd, extended, and flatten'd. The manner of doing which is much the ſame as for *Table Glaſs*, and need not be here repeated.

Laſtly, the *Glaſs* being ſufficiently flatted, is laid to anneal, for ten, or fifteen Days, according to the Size and Thickneſs.

It may be obſerv'd, that *Looking Glaſſes* thus blown, ſhould never be above 45, or at moſt 50 Inches long, and of a Breadth proportionable. Thoſe exceeding theſe Dimenſions, as we frequently find among the *Venice Glaſſes*, cannot have the Thickneſs ſufficient to bear the Grinding; and beſide are ſubject to warp, which prevents them from regularly reflecting Objects.

Method of caſting, or running large LOOKING-GLASS-PLATES.

This Art is of *French* Invention; and not above fifty Years old. 'Tis owing to the Sieur *Abraham Thevart*, who firſt propoſed it to the Court of *France*, in 1688.

It is perform'd much like the caſting of Sheet Lead, among the Plumbers: By means hereof we are not only enabled to make *Glaſſes* of more than double the Dimenſions of any made the *Venetian* way of blowing; but alſo to caſt all kinds of Borders, Mouldings, *&c.*

The Furnaces for melting the Materials of this Manufacture, are of enormous Size; and thoſe for annealing the *Glaſſes* when form'd, are much more ſo. Round a Melting-Furnace, there are at leaſt twenty four Annealing Furnaces; each from 20 to 25 Foot long: They are called *Carquaſſes*: Each Carquaſſe has two *Tiffarts*, or Apertures, to put in Wood, and two Chimnies. Add, that beſide the Annealing Furnaces, *&c.* there are others for the making of *Frit*, and calcining old Pieces of *Glaſs*.

All theſe Furnaces are cover'd over with a large Shed; under which are likewiſe Forges, and Work-houſes for Smiths, Carpenters, *&c.* continually employ'd in repairing, and keeping up the Machines, Furnaces, *&c.* As alſo Lodges, and Apartments, for theſe, and the other Workmen employ'd about the *Glaſs*; and in keeping up a perpetual Fire in the great Furnace: So that the Glaſs-houſe, as that in the Caſtle of St. *Gooen*, in the Foreſt of *Fere*, in the *Sbiſſonois*, appears more like a little City, than a Manufactory.

The Inſide of the Furnaces are form'd of a ſort of Earth, proper to ſuſtain the Action of the Fire; and the ſame Earth ſerves for Melting-pots, Ciſterns, *&c.* The Furnaces ſeldom laſt above three Years; after which they are to be rebuilt, from Bottom to Top: And to keep them good even for that Time, the Inſide muſt be refitted every ſix Months. The Melting-pots are as big as Hogſheads, and contain above two thouſand Weight of Metal. The Ciſterns are much ſmaller, and ſerve for the Conveyance of the liquid *Glaſs*, which is drawn out of the Pots, to the Caſting Tables.

When the Furnace is in a condition to receive the Pots, and Ciſterns, they heat it red hot: This done, they fill the Pots with Materials; which is done at three times, to facilitate the Fuſion. When the Matter is ſufficiently vitrified, refined, and ſettled, which uſually happens in twenty four Hours; they fill the Ciſterns, which are in the ſame Furnace, and which are left there about ſix Hours longer, till ſuch time as they appear all white, through the exceſſive Heat.

To get the Ciſterns with the Metal out of the Furnace; they make uſe of a large Iron Chain, which opens and ſhuts with Hooks, and Eyes. From the Middle hereof, on each Side, ariſe two maſſive iron Pins, whereby, with the Aſſiſtance of Pullies, the Ciſterns are rais'd on a kind of Carriage of a proper Height; and thus conducted to the Table where the Glaſs is to be run. Here, ſlipping off the Bottom of the Ciſtern, there ruſhes out a Torrent of Matter, all in Fire, wherewith the Table, prepared for that purpoſe, is preſently cover'd.

The Table, whereon the *Glaſs* is to be run, is of Pot Metal, about nine Foot long, and broad in proportion. It is ſupported on a wooden Frame, with Truckles, for the Convenience of removing from one Carquaſſe, or Annealing Furnace to another, in proportion as they are fill'd.—

To form the Thickneſs of a *Glaſs*, there are two iron Rulers, or Rims, placed a-round the Edge of the Table; and on theſe, reſt the two Extremes of a kind of Roller, which ſerves to drive the liquid Matter before it to the End of the Table, or Mould. The iron Rulers, being moveable, and capable of being ſet cloſer, or further a-part at pleaſure, determine the Width of the *Glaſſes*, and retain the Matter, that it does not run off at the Edges.

As ſoon as the Matter is arrived at the End of the Table, and the *Glaſs* is come to a Conſiſtence, which is in about a Minute; they ſhove it off into the Annealing Furnace, where it ſlides with eaſe enough, by reaſon of the Sand ſtrew'd thereon.

What is moſt ſurpriſing throughout the whole Operation, is the Quickneſs, and Adreſs, wherewith ſuch maſſy Ciſterns, fill'd with ſo flaming a Matter, are taken out of the Furnace, convey'd to the Table, pour'd therein, the *Glaſs* ſpread, *&c.* The whole is inconceivable to ſuch as have not been Eye witneſſes of that ſurprizing Manufacture.

As faſt as the Ciſterns are emptied, they carry them back to the Furnace, and take freſh ones, which they empty as before. This they continue to do, ſo long as there are any full Ciſterns; laying as many Plates in each Carquaſſe as it will hold, and ſtopping them up as ſoon as they are full; to let them anneal, and cool again, which requires at leaſt ten Days.

The firſt Running being diſpatch'd, they prepare another, by filling the Ciſterns a-new, from the Matter in the Pots: And after the ſecond, a third; and even a fourth time, till the Melting-pots are quite empty.

The Ciſterns, at each Running, ſhould remain at leaſt ſix Hours in the Furnace, to whiten; and when the firſt Annealing Furnace is full, the Caſting-table is to be carried to another. It need not here be obſerv'd, that the Carquaſſes, or Annealing Furnaces muſt firſt have been heated to the Degree proper for them. When the Pots are emptied, they take them out, as well as the Ciſterns, to ſcrape off what

what *Glaſs* remains, which otherwiſe would grow green by Continuance of Fire, and ſpoil the *Glaſſes*.

The manner of heating the large Furnaces, is ſingular enough: The *Tiſor*, or Perſon employ'd for that purpoſe, quite naked to his Shirt, runs round the Furnace without making the leaſt Stop, with a Speed ſcarce inferior to that of the lighteſt Courier: As he goes along, he takes two Billets, or pieces of Wood, cut for the purpoſe; which he throws into the firſt Tiſſart; and continuing his Courſe, does the ſame for the ſecond. This he holds on without Interruption for ſix Hours, ſucceſſively; after which he is reliev'd by another, *&c.* It is ſurprizing that two ſuch ſmall pieces of Wood, and which are conſumed in an inſtant, ſhould keep the Furnace to the proper degree of Heat; which is ſuch, that a large Bar of Iron, laid at one of the Mouths of the Furnace, becomes red hot in leſs than half a Minute.

'Tis computed that a Furnace, before it be fit to run *Glaſs*, coſts above three thouſand five hundred Pounds: That at leaſt ſix Months are requir'd for the building it a-new; and three Months for the refitting it: And that when a Pot of Matter burſts in the Furnace, the Loſs of Matter and Time amounts to above 250 Pounds.

The *Glaſs*, when taken out of the Melting Furnace, needs nothing further but to be *ground*, *poliſh'd*, and *foliated*.

For the Grinding of GLASS, ſee GRINDING *of Glaſs*.
For the Poliſhing of GLASS, ſee POLISHING *of Glaſs*.
For the Foliating of GLASS, ſee FOLIATING.

Painting on GLASS.

The primitive manner of painting on *Glaſs* was very ſimple, and of conſequence very eaſy: It conſiſted in the mere Arrangement of pieces of *Glaſs* of different Colours, in ſome ſort of Symmetry; and conſtituted a kind of what we call *Moſaic Work*. See MOSAIC *Work*.

Afterwards, when they came to attempt more regular Deſigns, and even to repreſent Figures rais'd with all their Shades, their whole Adreſs went no further than to the drawing the Contours of the Figures in Black, with Water-colours, and hatching the Draperies, after the ſame manner, on *Glaſſes* of the Colour of the Object intended to be painted. For the Carnations, they choſe *Glaſs* of a bright Red; upon which they deſign'd the principal Lineaments of the Face, *&c.* with Black.

At laſt, the Taſte for this ſort of Painting being conſiderably improv'd, and the Art being found applicable to the adorning of Churches, Baſilicks, *&c.* they found means of incorporating the Colours with the *Glaſs* itſelf, by expoſing them to a proper Degree of Fire, after the Colours had been laid on.

A *French* Painter of *Marſeilles* is ſaid to have given the firſt Notion hereof, upon going to *Rome*, under the Pontificate of *Julius* II. *Albert Durer*, and *Lucas* of *Leyden* were the firſt that carried it to any Height.

The Colours uſed in *painting on Glaſs*, are very different from thoſe uſed either in painting in Oil, or Water. See PAINTING.

The *Black* is made of two Thirds of Flakes, or Scales of Iron, beaten up, and mix'd with another Third of Rocaille, or little Glaſs-beads.—*White*, with Sand, or little white Pebbles, calcined, pounded in a Mortar, and afterwards ground on a Marble; with one fourth Part of Salt-peter added thereto, and the Mixture calcined and pulveris'd over again: To which, when they are ready to uſe it, is added a little *Gypſum*, or Plaiſter of Paris well ground, *&c.*—For *Yellow*, they uſe Leaf-ſilver-ground, mix'd up in a Crucible with Sulphur, or Salt-peter; then, well beaten and ground on a Porphyry Stone; and, at length, ground over again with nine times as much red Oker.—*Red* is made of Litharge of Silver, and Scales of Iron, Gum Arabic, Harderia, Glaſs-beads, and Blood-ſtone, nearly in equal Quantities. This is one of the moſt difficult Colours; and the Preparation only to be learnt by Experience.—*Green*, is made of Æs Uſtum, one Ounce; as much black Lead, and four Ounces of white Sand, incorporated by the Fire. After Calcination, they add a fourth Part of Salt-peter; after a ſecond Calcination, a ſixth Part more: After which they make a third Coction before it is uſed.—*Azure*, *Purple*, and *Violet*, are prepared like Green, only leaving out the Æs Uſtum, and in lieu thereof uſing Sulphur, for Azure; Perigueux, for Purple; and both thoſe Drugs for Violet.—*Carnations* are made of Ferretta and Rocaille: And laſtly, Colours for the *Hair*, *Trunks of Trees*, &c. are made of Ferretta, Rocaille, *&c.*

This Account of the Colours we have from Monſ. *Felibien*'s Excellent Work *des Principes d'Architecture*, &c. Tho' it muſt be own'd that all the Painters on *Glaſs* don't uſe them; there being few Artiſts of that kind but have invented their own particular ones, whereof they make great Secrets. But this is certain, that theſe above deſcribed are ſufficient for the beſt Paintings of all ſorts; provided a Perſon has but the Skill to manage them.

In the Windows of divers antient Churches, Chapels, Colleges, *&c.* we meet with the moſt beautiful, and vivid Colours imaginable; ſuch as far exceed any uſed among us: Not that the Secret of making thoſe Colours is loſt; but that the Moderns won't go to the Expence of them; nor take all the neceſſary Pains; by reaſon this ſort of Painting is not now ſo much eſteem'd as formerly.

Thoſe beautiful Works, which were made in the Glaſs-houſes, were of two kinds: In ſome, the Colour was diffuſed thro' the whole Body of *Glaſs*; in others, which were the more common, the Colour was only on one Side, ſcarce penetrating within the Subſtance above one third of a Line; tho' more, or leſs, according to the Nature of the Colour; the Yellow being always found to enter the deepeſt.

Theſe laſt, tho' not ſo ſtrong and beautiful as the former, were of more Advantage to the Workmen; by reaſon, on the ſame *Glaſs*, tho' already colour'd, they could ſhew other kind of Colours, where there was occaſion to embroider Draperies, enrich them with Foliages, or repreſent other Ornaments of Gold, Silver, *&c.*

In order to this they made uſe of Emery; grinding, or wearing down the Surface of the *Glaſs*, till ſuch time as they were got thro' the Colour, to the clear *Glaſs*: This done, they applied the proper Colours on the other Side of the *Glaſs*.—By this means the new Colours were prevented from running, and mixing among the former, when the *Glaſſes* came to be expoſed to the Fire, as will be hereafter ſhewn.

When the intended Ornaments were to appear white, or ſilver'd, they contented themſelves to bare the *Glaſs* of its Colour with Emery, without applying any new Colour at all; and it was in this manner, that they wrought their Lights and Heightenings on all kinds of Colours.—

The firſt thing to be done, in order to *paint on Glaſs*, in the modern way, is to deſign, and even colour the whole Subject on Paper. Then they make choice of pieces of *Glaſs* proper to receive the ſeveral Parts; and proceed to divide, or diſtribute the Deſign itſelf, or the Paper it is drawn on, into Pieces ſuitable to thoſe of *Glaſs*: Having always a view that the *Glaſſes* may join in the Contours of the Figures, and the Folds of the Draperies; that the Carnations, and other finer Parts may not be damaged by the Lead wherewith the Pieces are to be join'd together.

The Diſtribution made, they mark all the *Glaſſes*, as well as Papers, with Letters, or Numbers; that they may be known again.

This done, applying each Part of the Deſign on a *Glaſs* intended for it, they copy, or transfer the Deſign upon this *Glaſs*, with the black Colour, diluted in Gum-water; by tracing and following all the Lines, and Stroaks, as they appear thro' the *Glaſs*, with the Point of a Pencil.

When theſe firſt Stroaks are well dried, which happens in about two Days, the Work being only in black and white, they give it a ſlight Waſh over, with Urine, Gum Arabic, and a little black; and this ſeveral times repeated, according as the Shades are deſir'd to be heighten'd: With this Precaution, never to apply a new Waſh, till the former is ſufficiently dried. This done, the Lights, and Riſings are given, by rubbing off the Colour in the reſpective Places, with a wooden Point, or the Handle of the Pencil.

As to the other Colours above-mention'd, they are uſed with Gum-water, much as in Painting in Miniature; taking care to apply them lightly, for fear of effacing the Out-lines of the Deſign; or even for the greater Security, to apply them on the other Side, eſpecially the yellow, which is very pernicious to the other Colours, by blending therewith.

And here, too, as in pieces of black and white, particular regard muſt be had, not to lay Colour on Colour, or Lay on Lay, till ſuch time as the former are well dried. It may be added, that the Yellow is the only Colour that penetrates thro' the *Glaſs*, and incorporates therewith by the Fire: The reſt, and particularly the Blue, which is very difficult to uſe, remaining on the Surface, or at leaſt entring very little.

When the Painting of all the Pieces is finiſh'd, they are carried to the Furnace, to *anneal*, or bake the Colours.

The Furnace, here us'd, is ſmall, built of Brick, from 18 to 30 Inches ſquare: At ſix Inches from the Bottom is an Aperture, to put in the Fuel, and maintain the Fire. Over this Aperture is a Grate, made of three ſquare Bars of Iron, which traverſe the Furnace, and divide it into two Parts. Two Inches above this Partition, is another little Aperture, thro' which they take out Pieces, to examine how the Coction goes forwards.

On the Grate is plac'd a ſquare earthen Pan, ſix or ſeven Inches deep; and five or ſix Inches leſs, each way, than the Perimeter of the Furnace. On one Side hereof is a little Aperture, thro' which to make the Trials, plac'd directly oppoſite to that of the Furnaces deſtined for the ſame end.

In this Pan are the Pieces of *Glaſs* to be placed, in the following manner: Firſt, the Bottom of the Pan is cover'd with three Strata, or Layers of Plaiſter, or Lime, pulverized; thoſe Strata being ſeparated by two others, of old, broken *Glaſs*: The Deſign whereof is to ſecure the painted *Glaſs* from the too intenſe Heat of the Fire. This done, the

Glaſſes are laid horizontally on the laſt, or uppermoſt Layer of Plaiſter, or Lime.

This firſt Row of *Glaſs* they cover over with a Lay of the ſame Powder, an Inch deep; and over this lay another Range of *Glaſſes*: And thus alternately, till the Pan is quite full; taking care that the whole Heap always end with a Layer of Plaiſter.

The Pan thus prepared, they cover up the Furnace with Tiles, or a ſquare Table of earthen Ware, cloſely luted all round; only having five little Apertures, one at each Corner, and another in the Middle, to ſerve as Chimnies.

Things thus diſpoſed, there remains nothing but to give the Fire to the Work.—The Fire for the two firſt Hours, muſt be very moderate; and to be increas'd, in proportion as the Coction advances, for the ſpace of ten, or twelve Hours; in which Time it is uſually compleated. At laſt, the Fire, which at firſt was only of Charcoal, is of dry Wood: So that the Flame covers the whole Pan, and even iſſues out at the Chimnies.

During the laſt Hours, they make Eſſays from time to time; by taking out Pieces laid for the purpoſe, thro' the little Aperture of the Furnace, and Pan, to ſee whether the Yellow be perfect, and the other Colours in good Order. When the Annealing is thought ſufficient, they proceed with great Haſte to extinguiſh the Fire, which otherwiſe would ſoon burn the Colours, and break the *Glaſſes*.—

Glasses are diſtinguiſh'd with regard to their Form, Uſe, &c. into various Kinds; as,

Drinking Glaſſes, *Optic Glaſſes*, *Looking Glaſſes*, *Burning Glaſſes*, &c.

Drinking Glasses are ſimple Veſſels, of common *Glaſs* or Cryſtal, uſually in form of an inverted Cone.—

Each *Glaſs* conſiſts of three Parts, *viz.* the Calix, or Bowl; the Bottom; and Foot; which are all wrought, or blown ſeparately.

Nothing can be more dexterous, and expeditious than the manner wherein theſe Parts are all blown; two of them open'd, and all three join'd together. An Idea is only to be had thereof, by ſeeing them actually at work.

The *Glaſſes* chiefly uſed in *England*, are made of the Aſhes of *Fern*; Cryſtal *Glaſſes*, being grown into Diſeſteem. The exceeding Brittleneſs of this Commodity, notwithſtanding the eaſy Rate of each *Glaſs*, renders the Conſumption hereof very conſiderable.

Optic Glasses, are thoſe made of uſe to ſtrengthen, improve, or preſerve the Sight. See Optic *Glaſs*.

To this Claſs belong,

Convex Glasses	ſee	Convex.
Concave Glasses	ſee	Concave.
Lenticular Glasses	ſee	Lens.
Meniſcus Glasses, &c.	ſee	Meniscus, &c.
Plain Glasses	ſee	Plain *Glaſs*.

To find the Foci of Optic Glasses, ſee Focus.

Teleſcope Glasses	ſee	Telescope.
Object Glass	ſee	Object *Glaſs*.
Eye Glass	ſee	Eye-*Glaſs*.
Magnifying Glass	ſee	Magnifying.
Multiplying Glass	ſee	Multiplying.
Perſpective Glass	ſee	Perspective.
Looking Glass	ſee	Looking *Glaſs*; ſee alſo Mirror.
Burning Glass	ſee	Burning *Glaſs*; ſee alſo Mirror.
Weather Glass	ſee	Weather *Glaſs*.
Cupping Glass	ſee	Cupping *Glaſs*.
Glass *Window*	ſee	Window.
Glass *Drop*	ſee	Drop.
Glass *Body*	ſee	Body.

GLAUCOMA, in Medicine, a Diſeaſe of the Eye, wherein the cryſtalline Humour is turn'd of a greeniſh, or Azure Colour, and its Tranſparency thus diminiſh'd. See Eye, and Crystalline.

Thoſe in whom this Diſorder is forming, diſcover it hence that all Objects appear to them as thro' a Cloud or Miſt: When entirely form'd, the viſual Rays are all intercepted, and they ſee nothing at all.

It is reckon'd incurable, when inveterate, and in aged Perſons: And even under other Circumſtances, is very difficult of Cure; Externals proving of little Service.

The Internals beſt ſuited to it, are thoſe uſed in the Gutta Serena. See Gutta *ſerena*.

Jul. Cæſar Claudinus, *Conſul.* 74. gives a Remedy for the *Glaucoma*.

The Word comes from the *Greek* γλαυκὸς, *glaucus*, *cæſius*, ſea-green.

The *Glaucoma* is uſually diſtinguiſh'd from the Cataract or Suffuſion, in this, that in the Cataract the Whiteneſs appears in the Pupil, very near the Cornea, but ſhews deeper in the *Glaucoma*.

Some late *French* Authors, however, maintain the Cataract and *Glaucoma* to be one and the ſame Diſeaſe.—According to them, the Cataract is not a Film, or Pellicle form'd before the Pupil, as had always been imagin'd; but an Alteration of the Humor itſelf, whereby its tranſparency is prevented; which brings the Cataract to the *Glaucoma*. See Cataract.

GLEAM, is popularly uſed for a Ray, or Beam of Light. See Ray.

Among Falconers, a Hawk is ſaid to *gleam*, when ſhe caſts or throws up Filth from her Gorge.

GLEANING, or Glaning, the Act of gathering, or picking up the Ears of Corn, left behind after the Field has been reap'd, and the Crop carried home.

By the Cuſtoms of ſome Countries, particularly thoſe of *Melun*, and *Eſſampes*, all Farmers, and others, are forbid either by themſelves, or Servants to put any Cattle into the Fields, or prevent the *gleaning* in any manner whatever, for the ſpace of 24 Hours, after the carrying off of the Corn; on Penalty of Confiſcation, &c.

GLEBE, Gleba, in Natural Hiſtory, Chymiſtry, &c. a Clod, or Piece of Earth, containing ſome Metal, or Mineral. See Ore; ſee alſo Marchasite, Metal, &c.

The *Glebes* are carried to the Forges to be waſh'd, purify'd, melted, &c. See Gold, Silver, Iron, &c.

Glebe, or Gleab-*land*, is properly us'd for Church-land. *Dos vel Terra ad Eccleſiam pertinens.*— See Church.

Glebe-land is moſt commonly uſed for that Land belonging to the Pariſh Church, beſide the Tithes; tho' in the more general, and extenſive Uſe of the Word, *Glebe* is applicable to any Land, or Ground belonging to a Benefice, Fee, Manor, Inheritance, or the like.

Thus, *Lindwode*, Gleba *eſt terra in qua conſiſtit dos Eccleſiæ; generaliter tamen ſumitur pro ſolo, vel pro terra culta.*—

Thus, in the Civil Law, Slaves were ſaid to be affected to the *Glebe*, *i. e.* went with it, were ſold with it, &c. The Right of Patronage ſhould be annex'd to a *Glebe*. See Patronage.

GLEET, in Medicine, a Flux of thin Humor from the Urethra. See Flux, Urethra, &c.

This, or a *Gonorrhæa Simplex*, often ſucceed the Cure of a *Gonorrhæa Virulenta*, and ſometimes remain obſtinate, even after the Uſe of a Salivation. See Gonorrhæa.

The *Gleet* may happen either from too great Relaxation of the Glands in the Urethra, or from a Corroſion or Exulceration of them. It appears moſt frequently after a Gonorrhæa has been of long ſtanding, or ill managed in the Cure; as by the Uſe of acrid or corroding Injections, and the like.

The Glands may here alſo happen to be ulcerated by the Matter of the Running, which is often ſharp enough for that purpoſe.

A *Gleet* is diſtinguiſh'd from a *Gonorrhæa ſimplex*, not only by the Colour, and Conſiſtence of the Matter evacuated, but alſo by the manner wherein it comes away: The Matter of a *Gleet* comes away as well at one time as at another; but that of a *Gonorrhæa ſimplex* chiefly in Erections, and when the Patient goes to ſtool. The Matter of a *Gleet* is commonly browniſh, but that of a *Gonorrhæa ſimplex* white. And the Continuance of a true *Gleet* is unattended with Weakneſs, or other ill Conſequences, and dangerous Symptoms; nor does it unfit Men for Procreation, as *Gonorrhæa ſimplex* will.

An aſtringent Regimen is the moſt proper in both; Coffee and Claret are ſuppoſed proper Liquors in theſe Caſes: So are thoſe made acid with Juice of Lemmons, Vinegar, &c.

GLENE, Glena, Glenoides, in Anatomy, a Name given to thoſe Cavities in Bones, which are of a middle kind, that is, neither of the deepeſt, nor ſhalloweſt, but in a mean between the two. See Bone.

Thus, the Cavity of the Omoplate, wherein the Humerus is received, is a *Glene*, or *Glenoides*. See Omoplate.

Glenoides, or Glene, according to *Blanchard*, &c. is peculiarly attributed to two Cavities in the lower Part of the firſt Vertebra of the Neck.

The Word is *Greek*, compoſed of γλήνη, Eyelid; and εἶδος, Form.

GLICYRRHIZZA, or Glycyrrhiza, call'd alſo *Radix dulcis*, *Liquiritia*, and *Liquorice*, a ſweet-taſted Root, of conſiderable Uſe in Medicine, againſt Coughs, and other Diſorders of the Breaſt and Lungs.

The Shrub which bears it, is cultivated in divers Parts of *England*, particularly about *Pontefract* in *Yorkſhire*; in ſome Provinces of *France*, *Spain*, *Germany*, and *Muſcovy*; and eſpecially in *Perſia*, where it thrives better than any where elſe; there being ſome on the Banks of the *Caraſu*, *Kenki*, and *Kerni-arpa*, whoſe Roots are thicker than the Arm; and whoſe Juice, in reſpect of Strength, Virtue, &c. are preferable to others.

The Root of the *Liquorice* Plant runs, or ſpreads a great way in the Ground, and emerging into Air from Place to Place, produces ſo many new Stems, or Plants, few of which riſe above five Foot high. Its Leaves are thick, green, ſhining, half-round, and glutinous: Its Flower red, like the Hyacinth; and its Seed contain'd in roundiſh Pods.

In

In the Culture, care muſt be taken to have a warm, light, rich Soil, or to amend it with Manure: They plant it in Trenches, three Spits deep, in *February* and *March*; uſually in Rows, at a Foot diſtance from each other. The Parts choſe for this purpoſe, are Sets from the Top of the Plant, or the very Top of the Root; or elſe the Runners that ſpread from the Maſter-root—In moiſt Weather, the Branches may alſo be ſlip'd and planted.

They are taken about *November*, or *December*, after they have ſtood three Summers in the Ground; for then the *Liquorice* weighs moſt, and will keep with leaſt Loſs: Not but that there is a continual Diminution in this reſpect from the firſt taking it.

New, green *Liquorice* ſhould be choſe ſmooth and even, about the Thickneſs of the middle Finger, ruddy without, yellowiſh within, eaſy to cut, and of an agreeable Smell.

This Root being boil'd a long time in Water, till the Fluid has got a deep, yellow Tincture; and the Water, at length evaporated over a moderate Fire; there remains a black, ſolid Sediment, which is what we call *Liquorice*, or *Liquorice Juice*, or ſometimes *Spaniſh Juice*.

Chuſe it black without ſide, and of a ſhining Black within, eaſy to break, and of an agreeable Taſte. The whitiſh, and yellowiſh Liquorice Juices are good for nought; being uſually no other than Compoſitions of Sugar, Starch, a little Gum Tragacanth, and *Liquorice* Powder.

The native *Liquorice* Juice is very ſweet upon the Palate, even more than Sugar, or Honey; and is yet accounted a great Quencher of thirſt; on which account *Galen* preſcribes it in Dropſies. It is very balſamic, and detergent; inſomuch that there is ſcarce any medicinal Compoſition for Diſeaſes of the Breaſt, but it is an Ingredient in.—

GLOBE, in Geometry, a round or ſpherical Body; more uſually called a *Sphere*. See SPHERE.—

The Earth, and Water, together, are ſuppoſed to form a *Globe*, hence call'd the *Terraqueous Globe*, See TERRAQUEOUS.

The Planets, both Primary, and Secundary, are ſuppoſed, as well as our Earth, to be ſolid *Globes*. See PLANET.

The Earth, is, in a peculiar Senſe call'd the *Globe*, or *Globe of the Earth*. See EARTH.

GLOBE is particularly uſed for an artificial Sphere of Metal, Plaiſter, Paper, or other Matter; on whoſe convex Surface is drawn a Map, or Repreſentation, either of the Earth, or Heavens, with the ſeveral Circles conceived thereon. See MAP.

In this Senſe, *Globes* are of two kinds, *Terreſtrial*, and *Celeſtial*; each of very conſiderable Uſe: The one, in Aſtronomy, and the other in Geography; to perform many of the Operations thereof, in an eaſy, ſenſible manner, ſo as to be conceived without any Knowlege of the mathematical Grounds of thoſe Arts.

The fundamental Parts, common to both *Globes*, are an *Axis*, repreſenting that of the World; and a ſpherical Shell, or Cover, which makes the Body of the *Globe*, on whoſe external Surface the Repreſentation is made. See AXIS, POLE, &c.

Globes, we have obſerved, are made of divers Materials, *viz.* Silver, Braſs, Paper, Plaiſter, *&c.* Thoſe commonly uſed, are of Plaiſter, and Paper: The Conſtruction whereof is as follows:

Conſtruction of GLOBES.

A wooden Axis is provided, ſomewhat leſs than the intended Diameter of the *Globe*; and into the Extremes hereof two Iron Wires are driven, for Poles: This Axis is to be the Beam, or Baſis of the whole Structure.

On the Axis are applied two ſpherical, or rather hemiſpherical Caps, form'd on a kind of wooden Mould, or Block.—Theſe Caps conſiſt of Paſteboard, or Paper, laid, one Lay after another, on the Mould, to the Thickneſs of a Crown-piece; after which, having ſtood to dry, and imbody; making an Inciſion along the Middle, the two Caps thus parted, are ſlip'd off the Mould.

They remain now to be applied on the Poles of the Axis, as before they were on thoſe of the Mould: And to fix them in their new Place, the two Edges are ſown together with Packthread, *&c.*

The Rudiments of the *Globe* thus laid, they proceed to ſtrengthen, and make it ſmooth and regular—In order to this, the two Poles are haſp'd in a metalline Semicircle, of the Size intended; and a kind of Plaſter, made of Whiting, Water, and Glue heated, melted, and incorporated together, is daub'd all over the Paper-Surface. In proportion as the Plaiſter is applied, the Ball is turn'd round in the Semicircle, the Edge whereof, pares off whatever is ſuperfluous, and beyond the due Dimenſion; leaving the reſt adhering in Places that are ſhort of it.

After ſuch Application of Plaiſter, the Ball ſtands to dry; which done, it is put again in the Semicircle, and freſh Matter applied: Thus they continue alternately to apply the Compoſition, and dry it, till ſuch time as the Ball every where accurately touches the Semicircle; in which State it is perfectly ſmooth, regular, firm, *&c.*

The Ball thus finiſh'd, it remains to paſte the Map, or Deſcription thereon: In order to this, that Map is projected in ſeveral Gores, or Guſſets; all which join accurately on the ſpherical Surface, and cover the whole Ball. To direct the Application of theſe Gores, Lines are drawn by a Semicircle on the Surface of the Ball, dividing it into a Number of equal Parts correſponding to thoſe of the Gores, and ſubdividing thoſe again anſwerably to the Lines and Diviſions of the Gores.

The Papers thus paſted on, there remains nothing but to colour and illuminate the *Globe*; and to varniſh it, the better to reſiſt Duſt, Moiſture, *&c.*

The *Globe* itſelf, thus finiſh'd, they hang it in a Braſs Meridian, with an Hour Circle, and Quadrant of Altitude; and thus fit it into a wooden Horizon.

Deſcription of the GLOBES.

The Things common to both *Globes*, are either delineated on the Surface; or added as Appendages, without it.

Without the Surface, are 1° The two *Poles*, whereon the *Globe* is turn'd, repreſenting thoſe of the World.—See POLE. 2° The *Brazen Meridian*, which is divided into Degrees, and paſſes thro' the Poles. See MERIDIAN.—3° The *Wooden Horizon*, whoſe Upper-ſide repreſents the Horizon; and is divided into ſeveral Circles: The innermoſt whereof contains the twelve Signs of the Zodiac, ſubdivided into their Degrees; the next, the *Julian*; and the third, the *Gregorian* Calendars: Without-ſide of all theſe, are drawn the Points of the Winds. See COMPASS, and WIND.—4° A Braſs *Quadrant of Altitude*, divided into 90 Degrees, to be faſten'd on the Meridian at the Diſtance of 90 Degrees from the Horizon. See QUADRANT *of Altitude*.—5° The *Hour Circle*, divided into twice twelve Hours, and fitted on the Meridian, round the Pole, which carries an Index pointing to the Hour—A Mariner's *Compaſs* is ſometimes added on the Bottom of the Frame; and ſometimes, a *Semicircle of Poſition*. See COMPASS, and POSITION.

On the Surface are delineated, 1° The *Equinoctial Line*, divided into 360 Degrees; commencing from the Vernal Interſection. See EQUINOCTIAL.—2° The *Ecliptic*, divided into 12 Signs, and theſe ſubdivided into Degrees. See ECLIPTIC.—3° The *Zodiac*. See ZODIAC.—4° The two *Tropics*. See TROPIC; and 5° The *Polar Circles*. See POLAR *Circle*.

What elſe belongs to *Globes*, either as to Conſtruction, or Deſcription, is different, as the *Globe* is either Celeſtial, or Terreſtrial. See *Celeſtial*, and *Terreſtrial* GLOBE.

Celeſtial GLOBE, is an artificial Sphere, on whoſe convex Surface the fix'd Stars are laid down, at proportionable Diſtances, together with the principal Circles of the Sphere. See STAR, CONSTELLATION, CIRCLE, &c.

The Uſe of theſe *Globes*, is to exhibit the Phænomena of the Motions of the Sun, and Stars, in an eaſy, and obvious manner; which, tho' ſomewhat unaccurate, is yet exact enough for the common Uſes of Life, and may ſave the Trouble of Trigonometrical Calculation.—See ASTRONOMY.

To exhibit the Stars, Circles, &c. on the Surface of a given Sphere, or Ball, and fit it for the Uſes of Aſtronomy.

1° Aſſume any two Points diametrically oppoſite to each other, as P, and Q: (*Tab. Aſtronomy, Fig.* 58.) And in theſe, fix up Axes, P A, and Q C, for the Ball to turn round on. The Points P and Q; or A and C, will exhibit the *Poles* of the World. 2° Divide a Brazen Circle A B C D into four Quadrants, A E, E C, C F, and F D; and ſubdivide each Quadrant into 90 Degrees, number'd from the Points E, and F towards the Poles A, and C. 3° Cloſe the *Globe* in this Circle, as in a *Meridian*, at the Points A, and C, ſo as it may freely turn therein.

4° Apply a Style, or Pin to the Surface of the *Globe* in the firſt Degree of the Meridian, and turn the Ball round; by this means will a Circle be deſcribed on the Surface, repreſenting the *Æquator*, to be divided into Degrees. 5° From the Pole of the World P, towards M; and from the other Pole C, towards N. Number $23\frac{1}{2}$ Degree; the Points M and N will be the *Poles of the Ecliptic*.

6° Apply a Style to the Meridian, in the Point M, and turn the *Globe* round; by this Rotation will the Arctic Polar Circle be deſcribed: And after the ſame manner is the Antarctic Polar to be deſcribed about the Point O.

7° Number $23\frac{1}{2}$ Deg. from the Æquator towards the Poles P, and Q; and note the Points H, and I. Then, applying a Style to the Meridian, as before, two Circles will be deſcribed parallel to the Equator; whereof that drawn thro' H, will be the Tropic of Cancer, and the other thro' I, the Tropic of Capricorn.

8° Hang

8° Hang the *Globe* within the Meridian, in the Poles of the Ecliptic, as before in the Poles of the World; and applying a Style to E, turn it round: By this means will the *Ecliptic* be delineated; which remains to be divided into 12 Signs; and each of these into 30 Degrees.

9° While the *Globe* remains thus suspended, bring the Degree of Longitude of any Star under the Meridian; and in the Meridian, number as many Degrees towards the Pole as is the Degree of Latitude of the Place: The Point of Intersection is the Place of that Star on the Surface of the *Globe*. After the like manner is the Place of the *Star* determined from the right Ascension and Declination given; the *Globe* being supposed suspended from the Poles of the World, or the Æquator.

10° All the Stars of a Constellation thus laid down; the Figure of the Constellation is to be design'd; after which it may either be colour'd, or engraven.

11° Place the *Globe* with the Meridian, in a wooden Frame or Horizon D B L, supported on four Feet; in such manner, as to be divided thereby into two Hemispheres; and that the Pole A may be rais'd or depress'd at pleasure.

12° On the Limb, or Edge of the Horizon describe a Circle, which divide into 360 Degrees, and insert the Calendars, and Winds.—

13° Lastly, to the Pole A, fit a Brazen Semicircle, divided into 24 horary Parts, and number'd twice twelve, so that the Lines or Divisions of XII, may be in the Plane of the Meridian, on either Side the Pole. And on the Pole itself apply an Index, to turn round with the *Globe*.—Thus is the *Globe* compleat.

It may be here observ'd, that as the Longitude of the Stars is continually growing, a *Globe* does not remain of perpetual Use: But the Increase in 72 Years only amounting to a Degree, it will make no considerable Error in an hundred Years; the Design of a *Globe* being only to represent things something near the Truth.

To make a Celestial Globe *the usual way.*

This Method is that the most frequently used; and we only premis'd the former as being the most easily conceived; and leading more naturally to this.—

1° From the given Diameter of the *Globe*, find a Right Line A B, *Fig.* 59. equal to the Circumference of a great Circle; and divide it into twelve equal Parts.

2° Thro' the several Points of Division, 1, 2, 3, 4, &c. with the Interval of 10 of them, describe Arches mutually, intersecting each other in D and E.—These Figures, or Pieces duly pasted or join'd together, will make the whole Surface of the *Globe*.

3° Divide each Part of the Right Line A B, into 30 equal Parts; so that the whole Line A B, representing the Periphery of the Equator, may be divided into 360 Degrees.

4° From the Poles D, and E, with the Interval of $23\frac{1}{2}$ Deg. describe Arches *a b*; these will be twelfth Parts of the Polar Circles.

5° After the like manner, from the same Poles D, and E, Fig. 59, 60. with the Interval of $66\frac{1}{2}$ Deg. reckon'd from the Æquator, describe Arches *c d*; these will be twelfth Parts of the Tropicks.

6° Thro' the Degree of the Æquator *c* corresponding to the right Ascension of any given Star, and the Poles D and E, draw an Arch of a Circle; and taking in the Compasses the Complement of the Declination from the Pole D, describe an Arch, intersecting it in *i*; this Point *i* will be the Place of the Star.

7° All the Stars of a Constellation thus laid down, the Figure of the Constellation is to be drawn according to *Bayer*, *Hevelius*, or *Flamsteed*.

8° Lastly, after the same manner, are the Declinations, and Right Ascensions of each Degree of the Ecliptic *d g* determined.

9° The Surface of the *Globe* thus projected on a Plane, is to be engraven on Copper, to save the Trouble of doing this over again for each *Globe*.

10° A Ball, in the mean time, is to be prepar'd of Paper, Plaster, &c. after the manner above directed, and of the intended Diameter of the *Globe*. On this, by means of a Semicircle, and Style, is the Æquator to be drawn; and thro' every 30th Degree, a Meridian. The Ball thus divided into twelve Parts, corresponding to the Segments before projected; they are to be cut out from the printed Paper, and pasted on the Ball.

11° Nothing now remains but to hang the *Globe* as before in a Brazen Meridian, and Wooden Horizon. To which may be added a Quadrant of Altitude H I, *Fig.* 61. made of Brass, and divided in the same manner, as the Ecliptic and Æquator,—

If the Declinations, and Right Ascensions of the Stars be not given; but their Longitudes, and Latitudes, in lieu thereof; the Surface of the *Globe* is to be projected after the same manner as before; except that in this case D, and E, *Fig.* 59. are the Poles of the Ecliptic, and *f h* the Ecliptic itself; and that the Polar Circles, and Tropicks, with the Equator *q d*, and the Parallels thereof, are to be determin'd from their Declinations.

The latest Catalogue of the Stars is that of Mr. *Flamsteed*, wherein the Right Ascensions and Declinations, as well as the Longitudes, Latitudes, &c. are every where express'd. See Catalogue.

Use of the Celestial Globe.

The Use of this Instrument is very extensive: Scarce any thing in the spherical Astronomy but may be exhibited thereby. See Astronomy.

The principal Points are contain'd in the following Problems, with their Solutions; which will let the Reader enough into the Nature and Reason of this noble Instrument to apply it, of his own Accord, in any other Cases.—

Problem I. *To find the Right Ascension, and Declination of a Star, represented on the Surface of the* Globe.

Bring the Star to the graduated Side of the Brazen Meridian: Then, the Number of Degrees intercepted between the Æquator, and the Point of the Meridian cut by the Star, gives its *Declination*; and the Degree of the Æquator, which comes under the Meridian together with the Star, is its *Right Ascension*. See Ascension, and Declination.

II. *To find the Longitude and Latitude of a Star.*

Apply the Centre of the Quadrant of Altitude over the Pole of the Ecliptic in the same Hemisphere with the Star; and bring its graduated Edge to the Star: The Degree on the Quadrant cut by the Star is its *Latitude*, reckon'd from the Ecliptic; and the Degree of the Ecliptic cut by the Quadrant, its *Longitude*. See Longitude, and Latitude.

III. *To find the Sun's Place in the Ecliptic.*

Seek the Day of the Month in the proper Calendar on the Horizon; and against the Day in the Circle of Signs is the Sign and Degree the Sun is in for that Day. This done, find the same Sign upon the Ecliptic, on the Surface of the *Globe*: This is the Sun's *Place* for that Day.—See Place.

IV. *To find the Declination of the Sun.*

The Sun's Place for the Day given being brought to the Meridian; the Degrees of the Meridian intercepted between the Equinoctial and that Place, is the Sun's *Declination* for that Day, at Noon.

V. *To find the Place of a Planet, with its Right Ascension and Declination; its Longitude, and Latitude, for the Time being given.*

Apply the Centre of the Quadrant of Altitudes on the Pole of the Ecliptic (the Pole, we mean, of the same Denomination with the Latitude); and bring it to the given Longitude, in the Ecliptic: This Point is the Planet's *Place*: And bringing it to the Meridian, its *Right Ascension*, and *Declination* will be found as already shewn of a Star.

VI. *To* rectify the Globe, *or adjust it to the Place*, &c. *so as it may represent the present State, or Situation of the Heavens.*

1° If the Place be in North Latitude, raise the North Pole above the Horizon, if in South, the South Pole; till the Arch intercepted between the Pole and Horizon be equal to the given Elevation of the Pole. 2° Fix the Quadrant of Altitude on the Zenith, *i. e.* on the Latitude of the Place. 3° By means of a Compass or Meridian Line place the *Globe* in such manner as that the Brazen Meridian may be in the Plane of the Meridian. 4° Bring the Degree of the Ecliptic the Sun is in, to the Meridian, and set the horary Index to XII: Thus will the *Globe* exhibit the Face of the Heavens for the Noon of that Day. 5° Turn the *Globe* till the Index come to any other given Hour: Thus will the *Globe* shew the Face of the Heaven for that time. See Rectifying.

VII. *To know all the Stars and Planets by means of the* Globe.

1° Adjust the *Globe* to the State of the Heavens, for that Time. 2° Look on the *Globe* for some one Star, which you know; *e. gr.* the middlemost Star in the Tail of the Great Bear. 3° Observe the Positions of the other more conspicuous Stars in the same Constellation; and by transferring the Eye from the *Globe* to the Heavens, you will easily

eaſily note the ſame, there. 4° After the ſame manner may you proceed from this to the neighbouring Conſtellations; till you have learnt them all. See STAR.

If the Planets be repreſented on the *Globe*, after the manner above deſcribed, by comparing them with the neighbouring Stars, you will likewiſe know the *Planets*. See PLANET.

VIII. *To find the Sun's oblique Aſcenſion, his Eaſtern Amplitude, and Azimuth, with the Time of Riſing.*—

1° Rectify the *Globe* for the Hour of XII; and bring the Sun's Place to the Eaſtern Side of the Horizon: Then, the Number of Degrees intercepted between that Degree of the Æquator now come to the Horizon, and the Beginning of Aries, is the Sun's *Oblique Aſcenſion*. 2° The Degrees on the Horizon intercepted between the Eaſt Point thereof, and the Point wherein the Sun is, is the *Ortive*, or *riſing Amplitude*. 3° The Hour pointed to by the Index, is the Time of *the Sun's* Riſing. 4° Turning the *Globe*, till the Index points to the preſent Hour; lay the Quadrant to the Sun's Place; the Degree cut by the Quadrant, in the Horizon, is the Sun's *Azimuth*. See AZIMUTH, OBLIQUE, &c.

IX. *To find the Sun's Oblique Deſcenſion, Weſtern Amplitude, and Azimuth, with the Time of Setting.*

The Solution of this Problem is the ſame as that of the former; excepting that the Sun's Place muſt be here brought to the Weſtern Side of the Horizon; as, in the former, it was to the Eaſtern. See DESCENSION.

X. *To find the Length of Day and Night.*

1° Find the Time of the Sun's riſing; which being numb'er'd from Midnight, the Double thereof gives the *Length of the Night*. 2° Subſtract the Length of the Night from the whole Day, or 24 Hours; the Remainder is the *Length of the Day*. See DAY, and NIGHT.

XI. *To find the Riſing, Setting, and Culminating of a Star, its Continuance above the Horizon, for any Place and Day; together with its oblique Aſcenſion, and Deſcenſion; and its Eaſtern and Weſtern Amplitude and Azimuth.*

1° Adjuſt the *Globe* to the State of the Heavens, at 12 a-Clock, that Day. 2° Bring the Star to the Eaſtern Side of the Horizon: Thus will its *Eaſtern Amplitude*, and *Azimuth*, and the Time of *riſing* be found; as already taught of the Sun. 3° Bring the ſame Star to the Weſtern Side of the Horizon: Thus will the *Weſtern Amplitude* and *Azimuth*, and the Time of *ſetting* be found. 4° The Time of Riſing ſubtracted from that of Setting, leaves the *Continuance* of the Star above the Horizon.—5° This Continuance above the Horizon ſubtracted from 24 Hours, leaves the Time of its Continuance below the Horizon. 6° Laſtly, the Hour to which the Index points, when the Star is brought to the Meridian; gives the Time of *Culmination*. See RISING, SETTING, CULMINATING, &c.

XII. *To find the Altitude of the Sun, or a Star, for any given Hour of the Day or Night.*

1° Adjuſt the *Globe* to the Poſition of the Heavens; and turn it till the Index point at the given Hour. 2° Fix on the Quadrant of Altitude, at 90 Degrees from the Horizon, and bring it to the Sun's or Star's Place. The Degrees of the Quadrant intercepted between the Horizon, and the Sun or Star is the *Altitude* required. See ALTITUDE.

XIII. *The Altitude of the Sun by Day, or of a Star by Night being given, to find the Time of that Day, or Night.*

1° Rectify the *Globe* as in the preceeding Problem. 2° Turn the *Globe*, and Quadrant till ſuch Time as the Star, or Degree of the Ecliptic the Sun is in; cut the Quadrant in the given Degree of Altitude; then does the Index point at the Hour ſought. See TIME, HOUR, &c.

XIV. *The Azimuth of the Sun, or a Star, given; to find the Time of Day, or Night.*

Rectify the *Globe*; and bring the Quadrant to the given Azimuth in the Horizon: Turn the *Globe*, till the Star come to the ſame: Then will the Index ſhew the Time.

XV. *To find the Interval of Time between the Riſings of two Stars; or their Culminations.*

1° Raiſe the Pole of the *Globe* ſo many Degrees above the Horizon, as is the Elevation of the Pole of the Place. 2° Bring the firſt Star to the Horizon; and obſerve the Time the Index points to. 3° The ſame do by the other Star. Then ſubtracting the former Time from the latter; the Remainder is the Interval between the Riſings.

After the like manner is the Interval between two Culminations found; by bringing both Stars to the Meridian.

XVI. *To find the Beginning and Ending of the Crepuſculum, or Twi-light.*

1° Rectify the *Globe*; and ſet the Index to the XIIth Hour; the Sun's Place being in the Meridian. 2° Take the Sun's Place, and turn the *Globe* Weſtward, as alſo the Quadrant of Altitude, till the Point oppoſite to the Sun's Place cut the Quadrant of Altitude in the 18th Degree above the Horizon. The Index will ſhew the Time when the Twi-light commences in the Morning. 3° Taking the Point oppoſite to the Sun; bring it to the Eaſtern Hemiſphere, and turn it, till it meet with the Quadrant of Altitude in the 18th Degree: Then will the Index ſhew the Time when Twi-light ends. See CREPUSCULUM.

Terreſtrial GLOBE, is an artificial Sphere, on whoſe Surface are delineated the principal Places of the Earth, in their proper Situations, Diſtances, &c. together with the Circles imagin'd on the Surface of the terreſtrial Sphere. See EARTH.

The Uſe of the *Terreſtrial Globe*, is to exhibit the ſeveral Affections, and Phænomena of the different Places of the Earth, depending on Magnitude, &c. in an eaſy, obvious manner, without the Trouble of Trigonometrical Calculation. See GEOGRAPHY.

To conſtruct a Terreſtrial GLOBE.

The Conſtruction of a Terreſtrial *Globe*, whether of Metal, or Plaiſter, Paper, &c. is the ſame as that of a Celeſtial. The ſame *Circles* are delineated on both: And as for the *Places*, *viz.* Cities, Towns, &c. they are laid down from the Longitudes, and Latitudes given; as the Stars are from their right Aſcenſions and Declinations.

Hence, all Problems depending on the Circles, may be equally wrought on either *Globe*; as the Aſcenſions, Deſcenſions, Amplitudes, Azimuths, Riſings, Settings, Altitudes, &c. of the Sun; the Lengths of Day and Night; Hours of the Day and Night; Crepuſcula, &c.

We ſhall here, therefore, only give what is peculiar to the Terreſtrial *Globe*.

Uſe of the Terreſtrial GLOBE.

Problem. I. *To find the Longitude and Latitude of any Place delineated on the* Globe.

Bring the Place to the graduated Side of the Braſs Meridian: The Degree of the Meridian it cuts, is the *Latitude* required; and the Degree of the Æquator at the ſame time under the Meridian, is the *Longitude* required.

II. *The Longitude and Latitude given, to find the Place on the* GLOBE.

Seek, in the Æquator, the given Degree of Longitude, and bring it to the Meridian: Then count from the Æquator on the Meridian the Degree of Latitude given towards this or that Pole, as the Latitude is either North, or South. The Point under this is the *Place* requir'd.

III. *To find the Antoeci, Periœci, and Antipodes of any Place.*

1° The given Place being brought to the Meridian; count as many Degrees on the Meridian from the Æquator towards the other Pole. The Point thus arrived at, is the Place of the *Antoeci*. See ANTOECI. 2° Note the Degrees of the Meridian over the given Place and its *Antoeci*; and turn the *Globe* till the oppoſite Degree of the Equator, come under the Meridian; or, which amounts to the ſame, till the Index, which before ſtood at XII, come to the other XII: Then will the Place correſponding to the former Degree, be the *Periœci*; and the latter, that of *Antipodes*. See PERIŒCI, and ANTIPODES.

IV. *To find what Place of the Earth the Sun is Vertical to at any Time aſſigned.*

1° Bring the Sun's Place found in the Ecliptic to the Meridian; and the Index to the Hour of XII: Noting what Point of the Meridian correſponds thereto. 2° If the given Hour be before Noon; ſubtract it from twelve Hours; and turn the *Globe* towards the Weſt, till the Index point at the Hours remaining. Thus will the Place requir'd be under the Point of the Meridian before noted. 2° If the Hour be Afternoon, turn the *Globe* in the ſame manner towards the

Weſt, till the Index point at the given Hour: Thus again will the Place requir'd be found under the Point of the Meridian before noted.—

If, at the ſame time, you note all the Places which are under the ſame Half of the Meridian with the Place found; you will have all the Places to which the Sun is then in the Meridian: And the oppoſite Half of the Meridian will ſhew all the Places, in which it is then Midnight.

V. *A Place being given in the torrid Zone, to find the two Days in the Year wherein the Sun is vertical to the ſame.*

1° Bring the given Place to the Meridian; and note the Degree of the Meridian correſponding thereto. 2° Turn the *Globe* about, and note the two Points of the Ecliptic paſſing thro' that Degree. 3° Find what Days the Sun is in thoſe Points of the Ecliptic: For on thoſe Days he is vertical to the given Place.

VI. *To find thoſe Places in the Torrid Zone to which the Sun is Vertical on a given Day.*—

Bring the Sun's Place in the Ecliptic to the Meridian: Then turning the *Globe* round, note all the Places which paſs thro' that Point of the Meridian. Thoſe are the Places required.

After the ſame manner are found what People are *Aſcii*, for any given Day. See Ascii.

VII. *A Place being given in the Frigid Zone, to find on what Days of the Year the Sun does not riſe; and on what Days he does not ſet to the ſame.*

1° Count as many Degrees in the Meridian from the Æquator towards the Pole, as is the Diſtance of the given Place from the Pole. 2° Turning the *Globe* round, note all the Points of the Ecliptic paſſing thro' each Point noted in the Ecliptic: By this means you will have the Arches which the Sun deſcribes while he neither riſes, nor ſets; and the Points themſelves give the Places of the Sun, when he neither riſes nor ſets, at the Beginning and Ending. 3° Find what Days of the Year the Sun is in thoſe Places: Theſe are the Anſwer to the Queſtion.

VIII. *To find the Latitude of the Places wherein any given Day is of any given Length.*

1° Bring the Sun's Place for the given Day to the Ecliptic, and ſet the Index to the Hour of twelve. 2° Turn the *Globe*, till the Index point at the Hour of riſing or ſetting. 4° Raiſe and depreſs the Pole till the Sun's Place appear in the Eaſtern or Weſtern Side of the Horizon. Then will the Pole be duly elevated, and conſequently the Latitude given.

IX. *To find the Latitude of thoſe Places in the Frigid Zone, where the Sun does not ſet for a given Number of Days.*

1° Count ſo many Degrees from the next Tropic, towards the Equinoctial Point, as there are Units in half the Number of the given Days; by reaſon, the Sun in his proper Motion, goes nearly a Degree every Day. 2° Bring the Point of the Ecliptic, thus found, to the Meridian: Its Diſtance from the Pole will be equal to the Elevation of the Pole, or Latitude of the Places requir'd.

X. *Any Hour of the Day, or Night being given, to ſhew all thoſe Places to which the Sun riſes, and ſets; where it is Noon, or Midnight; and where Day, or Night.*

1° Find what Place the Sun is at that time vertical to, as already taught. 2° Let this Place be brought to the Zenith of the wooden Horizon, *i. e.* elevate the Pole as the Latitude of that Place requires. Then, will the Places on the Eaſtern Side of the Horizon, be thoſe the Sun is ſetting to; and on the Weſtern Side, thoſe he riſes to: Thoſe under the upper Semicircle of the Meridian, have it Noon; and thoſe under the lower, Midnight. Laſtly, to thoſe in the upper Hemiſphere it is Day; and to thoſe in the lower, Night.—

Hence, as, in the Middle of an Eclipſe, the Moon is in the Degree of the Ecliptic oppoſite to the Sun's Place; by the preſent Problem it may be ſhewn what Places of the Earth then ſee the Middle of the Eclipſe; and what, the Beginning, or Ending.—

XI. *To find what Places of the Earth a Planet*, e. gr. *the Moon, is vertical to, any day of the Year.*

1° Mark the Planet's Place on the *Globe*, as above taught. 2° Bring this Place to the Meridian; and note the Degree over it. 3° Turn the *Globe* round; the Places which paſs under the Point, are thoſe required.—

XII. *The Declination of a Star, or any other Phænomenon given; to find what Parts of the Earth the ſame is vertical to.*

Count as many Degrees in the Meridian, from the Æquator towards one Pole, as are equal to the given Declination; *viz.* towards the North, if the Declination be Northward; and towards the South, if the Declination be South. Then, turning it round, the Places that paſs thro' the Extremity of this Arch in the Meridian, are the Places required.—

XIII. *To determine the Place of the Earth where any Star, or other Celeſtial Phænomenon will be Vertical at a given Hour.*

1° Elevate the Pole according to the Latitude of the Place, from whoſe Noon or Midnight the Hours are number'd. 2° Bring the Sun's Place for that Day to the Meridian, and ſet the Index to Twelve a-Clock. 3° Determine the Place of the Star on the Surface of the *Globe*, and bring it to the Meridian: The Index will ſhew the Difference of Time between the Appulſe of the Sun and Star to the Meridian of the Place: Note the Point of the Meridian over the Place of the Star. 4° Find in what Places of the Earth it is then Noon, and ſet the Index to Twelve a-Clock. 5° Turn the *Globe* towards the Weſt, till the Index have paſs'd over the Interval of Time between the Culmination of the Sun and Star. Then, under the Point of the Meridian before obſerved, will the Place required be found.

And hence may be found what Place a Star, or other Phænomenon riſes or ſets to at any given time.—

XIV. *To place the* Globe *in ſuch manner, under any given Latitude, as that the Sun ſhall illumine all thoſe Regions, which he actually illumines on Earth.*

1° Rectify the *Globe*, *i. e.* Elevate the Pole according to the Latitude of the Place: Bring the Place to the Meridian; and ſet the *Globe* North, and South by the Compaſs: Thus, the *Globe* having the ſame Situation to the Sun, as the Earth has; that Part thereof will be illumined, which is illumined on Earth.

Hence, the *Globe* being ſituate in the ſame manner, when the Moon ſhines, it will ſhew what Parts are then illumined by the Moon.

And, in the ſame manner, may we find where the Sun and Moon riſe and ſet at any given Time.

XV. *To find the Diſtance of two Places on the* Globe.

Take the given Places in the Compaſſes; and apply them to the Æquator. The Degrees they there ſubtend, being reduc'd into Miles, Leagues, or the like, give the Diſtances required. See Degree, Mile, *&c.*

The ſame may be done, and more commodiouſly, by laying the graduated Edge of the Quadrant of Altitude over the two Places; and noting the Degrees intercepted.—

GLOBULAR *Chart*, a Repreſentation of the Surface, or ſome Part of the Surface, of the Terraqueous Globe, upon a Plane; wherein the Parallels of Latitude are Circles nearly Concentric; the Meridian's, Curves bending towards the Poles; and the Rhumb-lines alſo Curves. See Chart, and Projection.

The Merits of this *Chart* conſiſt in this, that the Diſtances between Places upon the ſame Rhumb, are all meaſur'd by the ſame Scale of equal Parts, and the Diſtances of any two Places in the Arch of a great Circle, is nearly repreſented in this Chart by a Straight Line.—Hence, Land Maps made according to this Projection, would indiſputably have great Advantages above thoſe made any other way. See Map.

But for Sea Charts, and the Uſes of Navigation, 'tis yet controverted, whether the *Globular Chart* be preferable to *Mercator's*, where the Meridians, Parallels, and particularly the Rhumb-lines, are all ſtraight Lines; inaſmuch as ſtraight Lines are found more eaſy to draw, and manage than Curves, eſpecially ſuch as the Rhumb-lines on the *Globular Chart* are. See Mercator, Rhumb, &c.

This Projection is not new, tho' not much taken notice of till of late. It is mention'd by *Ptolomy*, in his *Geography*; as alſo by *Blundevil* in his *Exerciſes*.

Globular *Sailing*; ſee *Great Circle* Sailing.

GLOBULE, Globulus, a little Globe; call'd alſo a *Spherule*. See Globe.

Thus the Cruor, or red Particles of the Blood are call'd *Globules* of the Blood, on account of their Redneſs, and Smalneſs. See Cruor.

The Microſcope diſcovers the Blood to conſiſt of red, *globular* Particles, ſwimming in a limpid, tranſparent Water,

or

or Serum; and these, when at a due Distance, may be discern'd to attract each other, and unite into larger *Globules*, like the Spheres of Quickſilver. See BLOOD.

The *Carteſians* call the Particles broke off of the Matter of the firſt Element *Globules of the ſecond Element*. See ELEMENT, CARTESIANS, &c.

GLOBULUS *Naſi*, is us'd for the lower cartilaginous moveable Part of the Noſe. See NOSE.

GLORIA *Patri*, in the Liturgy, a Formula, or Verſe, repeated at the End of each Pſalm, and on other Occaſions, to give Glory to the Holy Trinity; call'd alſo *Doxology*. See DOXOLOGY.

It is thus called, becauſe beginning in the *Latin* Office with theſe Words, *Gloria Patri*, q. d. *Glory be to the Father*, &c.

Pope *Damaſus* is commonly held to have firſt order'd the Rehearſal, or rather the ſinging the *Gloria Patri* at the End of Pſalms. *Baronius*, indeed, will have it to have been us'd in the times of the Apoſtles: But its uſe, then, he allows to have been more obſcure; and that it did not become popular till after the Riſe of *Arianiſm*, when it was made a kind of Symbol of Orthodoxy.

The fifth Canon of the Council of *Vaiſon*, held in 529, decrees, "That the Name of the Pope ſhall always be re-"hears'd in the Churches of *France*; and after the *Gloria* "*Patri*, ſhall be added *Sicut erat in Principio*, as is done "at *Rome*, in *Africa*, &c. On account of the Hereticks, "who ſay that the Son of God had his Beginning in time." *Fleury*.

GLORIA *in Excelſis*, a kind of Hymn alſo rehearſed in the Divine Office; beginning with the Words *Gloria in Excelſis Deo, & in terra pax hominibus*, &c. Glory be to God on High, on Earth Peace, &c.

GLOSS, or GLOSSA, a Comment made on the Text of any Author, to explain his Senſe more fully, and at large; whether in the ſame Language, or another.

Nic. de Lira has compoſed a *Gloſs* of the Bible in ſix Volumes, Folio.—The *French* ſay proverbially of an ill Comment, that it is *Gloſe d'Orleans, plus obſcure que le Texte*.

The Word *Gloſs*, according to ſome, comes from the *Greek* γλῶτ∫α, Tongue; the Office of a *Gloſs* being to explain the Text; as that of the Tongue is to diſcover the Mind.

Others derive it from the Latin *Glos*, a Siſter-in-Law, which among the Lawyers ſometimes ſtands for Siſter; the *Gloſs* being, as it were, Siſter to the Text.—

GLOSS is alſo uſed for a literal Tranſlation; or an Interpretation of an Author in another Language, Word for Word. See TRANSLATION.

Young Scholars need an Interlineary *Gloſs* for the underſtanding of *Juvenal*, *Horace*, *Saluſt*, &c.

GLOSS is alſo us'd in Matters of Commerce, &c. for the Luſtre of a Silk, Stuff, or the like. See LUSTRE.

GLOSSARY, a kind of Dictionary, for explaining the obſcure, antient, and barbarous Words, and Phraſes of an alter'd, corrupted, or refined Language. See DICTIONARY, &c.

Spelman's *Gloſſary*, intituled *Latino-Barbarum*, is an excellent Work; tho' that Author did not begin to ſtudy in this way till 50 Years of Age.

M. *du Canges* Latin *Gloſſary* in three Volumes, and his Greek *Gloſſary* in two Volumes Folio, are wonderful Performances, full of uncommon Erudition.

Lindenbrok has a *Gloſſary* on the Laws of *Charlemaign*, &c.

GLOSSOCOMON, a Chirurgeons Inſtrument, uſed in ſetting broken and diſlocated Thighs and Legs; as alſo in extending thoſe which remain too ſhort after ſetting. See DISLOCATION, &c.

It conſiſts of a hollow Trunk, wherein the Thigh, or Leg is laid: At the Bottom hereof is a kind of Wheel; and towards the Top are two Pullies, one on each Side. Several Thongs of Leather are tied both above and below the fractur'd Place. Thoſe below, are faſten'd to the Axis of the Wheel, which they are near: Thoſe above, go over the Pullies to come to the Axis, which they are likewiſe faſten'd to; ſo that the ſame Turning of the Wheel, both draws the Part of the Leg, or Thigh, which is above the Fracture, upwards; and that below, downwards.

The Word is form'd of the *Greek* γλῶσα, Tongue, and κομεῖν, to have care; and was properly and primarily given by the Antients to a little Box, wherein they kept the Reeds of their Hautbois, &c.

GLOSSOCOMON, in Mechanicks, is a Name given by *Geron* to a Machine compoſed of divers dented Wheels, with Pinions; ſerving to raiſe huge Burthens.—

GLOSSOPETRA, or GLOTTOPETRA, in Natural Hiſtory, a kind of Stone, in form of a Tongue; commonly found in the Iſland of *Malta*, and divers other Parts. See STONE.

Naturaliſts are divided as to the Nature, and Origin of theſe Stones.—*Steno, de Corpore ſolido intra ſolidum contento: Ol. Wormius, Diſſert. de* Gloſſopetra; and *Reyſchius de* Gloſſopetris *Luneburgenſibus*, treat of them at large.

The vulgar Notion is that they are the Tongues of Serpents petrify'd; and hence their Name, which is a Compound of γλῶσα, Tongue, and πέτρα, Stone—Hence alſo their traditionary Virtue in curing the Bites of Serpents.

The People relate, that ſince the Viper which bit St. *Paul* without doing him any Harm; all the Serpents of that Iſland have had the ſame Virtue; and that the *Gloſſopetræ* are the Tongues of thoſe formerly dead—But this is palpable Fable, which the ſole Figure of the *Gloſſopetræ* refutes; they having nothing of the Figure of a Serpent; beſide that they are too big. See PETRIFACTION.

The common Opinion of Naturaliſts is that they are the Tongues of Fiſhes, left at Land by the Waters of the Deluge; and ſince petrify'd. See DELUGE.

Some ſpecify the very kind of Fiſh; and take it to be that which *Theophraſtus*, and the *Greek* Writers call καρχαείας, and the Moderns, the *Sea-dog*.

Camerarius cannot perſuade himſelf that the *Gloſſopetræ* found in *England*, *Malta*, and a-round *Montpelier* were ever the Teeth of a Sea-dog, or any other Fiſh—The chief Difficulty, he ſuggeſts, is the ſmall Quantity of volatile Salt and Oil they afford by Diſtillation. To which Dr. *Woodward* anſwers, in defence of the common Syſtem, that having laid ſo long burried under Ground, 'tis no wonder they ſhould have loſt the beſt Part of their volatile Principles.—'Tis certain that human Bones, and Skulls long interr'd don't afford near the Quantity of thoſe Principles, as they would have done immediately after the Perſon's Death.

Another Scruple propoſed by *Camerarius*, is, that the *Gloſſopetræ*, when expoſed to the naked Fire, turn to a Coal, and not a Calx; contrary to what is aſſerted by *Fabius Columna*—Dr. *Woodward* anſwers, that 'tis likely enough the *Gloſſopetræ*, in burning, may aſſume the Form of Coal, before it arrive at that of a Calx.

GLOTTIS, in Anatomy, a Cleft, or Chink in the Larynx, ſerving for the Formation of the Voice. See LARYNX.

The *Glottis* is in form of a little Tongue; whence its Name, from γλῶσα, Tongue: For the ſame reaſon the *Latins* call it *Lingula*, *i. e.* little Tongue.

Thro' this Chink the Air deſcends, and aſcends in reſpiring, ſpeaking, ſinging, &c. It has an Apparatus of Muſcles, whereby we contract and enlarge it; and hence all the Variety of Tones of the Voice. See VOICE.

The *Glottis* is cover'd and defended with a thin, ſoft Cartilage call'd the *Epiglottis*. See EPIGLOTTIS.

GLOVE, CHIROTHECA, a Habit or covering for the Hand and Wriſt; us'd both for Warmth, Decency, and to ſhelter from the Weather.

Gloves, are diſtinguiſh'd, with reſpect to Commerce, into Leathern *Gloves*, Silk *Gloves*, Thread *Gloves*, Cotton *Gloves*, worſted *Gloves*, &c.

There are alſo *Gloves* of Velvet, Satin, Taffaty, &c. Leather *Gloves* are made of Shammy, Kid, Lamb, Doe, Elk, Buff, &c. See LEATHER.

There are Perfumed *Gloves*; Waſh'd, Glazed, Wax'd, White, Black, Snuff-colour, &c. Single, lin'd, top'd, lac'd, fring'd with Gold, Silver, Silk, Fur, &c.

'Tis a Proverb, that for a *Glove* to be good, and well made, three Kingdoms muſt contribute to it; *Spain*, to dreſs the Leather; *France*, to cut it; and *England*, to ſew it: But, of late, the *French* ſeem to have appropriated the Functions of the other two; the *Gloves* of the *French* Manufacture having now the Advantage in point of dreſſing and ſewing; as much as cutting.—

To *throw the Glove*, was a Practice, or Ceremony very uſual among our Forefathers; being the Challenge, whereby another was defied to ſingle Combat—It is ſtill retain'd at the Coronation of our Kings; when the King's Champion caſts his *Glove* in *Weſtminſter-Hall*. See CHAMPION.

Favyn ſuppoſes the Cuſtom to have aroſe from the Eaſtern Nations, who in all their Sales, and Deliveries of Lands, Goods, &c. give the Purchaſer their *Glove* by way of Livery, or Inveſtiture. To this effect he quotes *Ruth* iv. 7. where the *Chaldee* Paraphraſe calls *Glove*, what the common Verſion renders by *Shoe*. He adds, that the Rabbins interpret by *Glove*, that Paſſage in the CVIII^th^ Pſalm, *In Idumæam extendam calceamentum meum*, Over *Edom* will I caſt out my Shoe.—Accordingly, among us, he who took up the *Glove*, declared thereby his Acceptance of the Challenge; and as a Part of the Ceremony, continues *Favyn*, took the *Glove* off his own right Hand, and caſt it upon the Ground, to be taken up by the Challenger. This had the Force of a mutual Engagement on each ſide, to meet at the Time and Place which ſhould be appointed by the King, Parliament, or Judges.—See GAGE, &c.

The ſame Author aſſerts, that the Cuſtom which ſtill obtains of *bleſſing Gloves* in the Coronation of the Kings of *France*, is a Remain of the Eaſtern Practice of giving Poſſeſſion with the *Glove*. *L. XVI. p.* 1017. &c.

Antiently it was prohibited the Judges to wear *Gloves* on the Bench. And at preſent in the Equeries of moſt Princes, 'tis not ſafe going in without pulling off the *Gloves*.—

GLUE,

GLUE, Gluten, a viſcid, tenacious Matter ſerving as a Cement to bind, or connect divers Things together. See Cement.

There are divers Kinds of *Glues* made uſe of in the divers Arts; as the Common *Glue*; Glove *Glue*; Parchment *Glue*—But the two laſt are more properly call'd *Size*.

The *Common*, or *Strong* Glue is a Commodity uſed by numerous kinds of Artificers; as Joiners, Cabinet-makers, Caſe-makers, Hatters, Bookbinders, &c. And the Conſumption thereof is very conſiderable. The beſt is that made in *England*, in ſquare Pieces, of a ruddy, brown Colour. *Flanders Glue* is held the next after the *Engliſh*.

Glue is made of the Skins of all kinds of Beaſts, as Oxen, Cows, Calves, Sheep, &c. The older the Beaſt is, the better is the *Glue*, made of its Hide. Indeed, 'tis rare they uſe whole Skins for this purpoſe; thoſe being capable of being applied to better purpoſe: But they make uſe of the Shavings, Parings, or Scraps thereof: Sometimes they make it of the Feet, Sinews, Nerves, &c. of Beaſts.

That made of whole Skins, is the beſt; and that of Sinews, &c. the worſt: And hence chiefly ariſes the Difference of *Glues*; and the Advantages of the *Engliſh* and *Flemiſh Glues*: For, as our Tanners generally make the *Glue* themſelves; they are not ſparing of the Parings of the Skins, which they never ſell: Whereas, in *France*, &c. the *Glue-makers* being a peculiar kind of Manufacturers, and having no Parings, &c. but what they buy, make uſe chiefly of Sinews, Feet, &c.

Method of making Glue.

To make *Glue* of Parings; they firſt ſteep them two, or three Days in Water; then waſhing them well out, they boil them to the conſiſtence of a thick Gelly. This done, they paſs the Gelly, while yet hot, thro' Oſier Baſkets, to ſeparate from it any Impurities; and in order to purify it ſtill further, they let it reſt ſome time. When the Ordures, or foreign Matters are precipitated to the Bottom of the Veſſel; they melt and boil it a ſecond time.

This done, they pour it into flat Frames, or Moulds; whence it is taken out, when pretty hard and ſolid, and cut into ſquare Pieces, or Cakes. Nothing now remains, but to dry it in the Wind, on a ſort of coarſe Net, and afterwards to ſtring it, to finiſh the Drying.

The *Glue* made of Feet, Sinews, &c. is manag'd after the ſame manner; with this only Difference, that they bone, and ſcour the Feet, and don't lay them to ſteep.

The beſt *Glue* is that which is oldeſt: The ſureſt Teſt of Goodneſs is to lay a Piece to ſteep three, or four Days in Water; if it ſwell conſiderably without melting, and when taken out reſume its former Dryneſs, it is excellent.

Fiſh Glue, is a ſort of *Glue* made of the nervous and mucilaginous Parts of a large Fiſh, found chiefly in the *Ruſſian* Seas.

Theſe Parts being boil'd, bear a near Reſemblance to that viſcid Matter found on the Skins of Cod Fiſh. When boil'd to the Conſiſtence of a Gelly, they ſpread it on a Leaf of Paper, and form it into Cakes; in which State it is ſent to us.

Fiſh Glue is of conſiderable uſe in Medicine, and divers other Arts; where it is better known under the Names of *Iſing Glaſs* and *Ichthyocolla*. See Ising *Glaſs*, &c.

GLUTÆUS, in Anatomy, from γλουτὸς, *Nates*, a Buttock; a Name common to three Muſcles, whoſe Office is to extend the Thigh—The firſt

The *Glutæus Major*, or the *greater*, ariſes ſemicircularly from the Os Coccygis, the Spines of the Sacrum, the Spine of the Ilium, and a ſtrong Ligament which runs between the Sacrum, and Tubercle of the Iſchium; and deſcending, is inſerted into the Linea aſpera, four Fingers Breadth below the great Trochanter.

The *Glutæus Medius*, or the *middle* one, call'd alſo *minor*, or *leſs*, ariſes from the Spine of the Ilium under the former, and is inſerted into the ſuperior and external Part of the great Trochanter.

The *Glutæus minimus*, or *leaſt*, ariſes from the lower Part of the external Side of the Ilium, under the former, and is inſerted at the ſuperior Part of the great Trochanter.

GLUTINATIVE, Agglutinative, or Conglutinative, in Medicine, and Pharmacy. See Conglutinative.

GLYCONIAN, or Glyconic, in the *Greek* and *Latin* Poetry.—A *Glyconian Verſe* is that conſiſting of two Feet, and a Syllable. See Verse, and Foot.

This is *Scaliger*'s Sentiment, who adds, that the *Glyconian* Verſe was alſo call'd *Euripidæan*.

Others hold that the *Glyconian* Verſe conſiſted of three Feet; a Spondee, and two Dactils; or rather, a Spondee, Choriambus, and a Pyrrhic; which Opinion is the moſt followed.

Sic te diva potens Cypri, is a *Glyconian Verſe*.

GLYCYRRHIZA, or Glicyrhizza, in Medicine, *Liquorice*. See Glicyrrhizza.

GLYPHE, or Glyphis, in Architecture, a general Name for any Cavity, or Canal, whether round, or terminating in an Angle; us'd as an Ornament, in any Part.

The Word is *Greek*, γλυφὴ, which literally ſignifies *graving*.

Τλυφὶς is properly a Nitch, or Indenture made in *graving*; or, more properly, the Notch in the Head of an Arrow, over which the String goes. See Triglyph.

GLYSTER; ſee Clyster.

GNOME, a Name which the Cabaliſts give to certain inviſible People, whom they ſuppoſe to inhabit the Inner Parts of the Earth, and to fill it to the Centre.

They are repreſented as very ſmall of Stature, tractable, and friendly to Men; and are made the Guardians of Mines, Quarries, hidden Treaſures, &c.

Vigenere calls them *Gnomons*—The Females of this Species are call'd *Gnomides*.

Vigneuil de Marville in his *Melange d'Hiſtoire & de Literature*, *T. I. p.* 100. gives a Relation of a Conference with a Philoſopher of this Claſs, who held that an Infinity of Spirits inhabited each of the four Elements, Fire, Air, Water, and Earth, under the Denomination of *Salamanders*, *Sylphs*, *Oudins*, and *Gnomes*; that the *Gnomes* are employ'd in working, or actuating the Machines of Brutes upon the Earth.

He added that ſome Philoſophers of that Sect, held that theſe Spirits were of two Sexes, for the two Sexes of Beaſts, or moving Machines; that they were even more or leſs perfect as the Brutes were; and that there was an infinite Number of exceedingly ſmall ones, to actuate the infinite Number of Inſects, and Animalcula, both thoſe that are viſible, and thoſe which are too ſmall to come under our Senſes; that all theſe Spirits in general govern their reſpective Machines according to the Diſpoſition of the Parts, or Organs, the Humors, Temperaments, &c. that they do not lay hold of all Machines indifferently, but of theſe ſuited to their own Character, Element, &c. That a haughty one, for inſtance, ſeizes a *Spaniſh* Gennet; a cruel one, a Tyger, &c. See Silph, &c.

Gnome, or Chria, is alſo us'd for a ſhort, pithy, uſeful, and ſententious Obſervation, Reflexion, or the like; worthy to be treaſur'd up, and remembred. See Sentence, Apothegm, &c.

Such is that of *Juvenal*,

Orandum eſt ut ſit mens ſana in corpore ſano.

The Writers of Rhetoricks diſtinguiſh ſeveral kinds of *Gnomes*, according as they turn on Words, on Actions, or both; denominating them Verbal, Active, and Mix'd *Gnomes* or Chriæ.

Gnomon, in Geometry.—If a Parallelogram be divided into four leſſer ones, by two Lines interſecting eath other; and one of theſe Parallelograms be retrench'd, or taken away; the other three will make a *Gnomon*, ordinarily call'd a *Square*. See Square.

Or, a *Gnomon* in a Parallelogram, may be ſaid to be a Figure form'd of the two Complements, together with either of the Parallelograms about the Diameter. Thus, in the Parallelogram A B *Tab. Geometry*, *Fig.* 5. the *Gnomon* is M + *x* + *z* + N; or M + N + *X* + Z.

Gnomon, in Aſtronomy, an Inſtrument, or Apparatus for meaſuring the Meridian Altitudes of the Sun, and Stars. See Meridian *Altitude*.

Thoſe converſant in Obſervations, prefer the *Gnomon* to the ſmaller Quadrants, both as more accurate, eaſier made, and more eaſily applied. See Quadrant, and Observation.

Accordingly, both Antients, and Moderns have made uſe of *Gnomons*, for the making of their more conſiderable Obſervations: *Ulugh Beigh*, King of *Parthia*, &c. uſed a *Gnomon*, in the Year 1437. which was 180 *Roman* Feet high: That erected by *Ignatius Dantes* in the Church of St. *Petronius* at *Boulogne*, in the Year 1576, was 67 Feet high; M. *Caſſini* erected another 20 Foot high, in the ſame Church, in the Year 1655. See Solstice.

To erect an Aſtronomical Gnomon, *and obſerve the Meridian Altitude of the Sun by the ſame.*

Erect a perpendicular Style, of a conſiderable Height, on the Meridian Line: Note the Point where the Shadow of the *Gnomon* terminates when projected along the Meridian Line: Meaſure the Diſtance of that Extreme from the *Gnomon*, *i.e.* the Length of the Shadow.—Thus, having the Height of the *Gnomon*, and the Length of the Shadow; the Meridian Altitude of the Sun is eaſily found.

Suppoſe, *e. gr.* T S (*Tab. Opticks*, *Fig.* 13.) the *Gnomon*, and T V the Length of the Shadow. Here, on the rectangled Triangle S T V, having the two Sides T V and T S; the Angle V which is the Quantity of the Sun's Altitude, is found out by this Analogy: As the Length of the Shadow T V, is to the Altitude of the *Gnomon* T S; ſo is the whole

whole Sine : to the Tangent of the Sun's Altitude above the Horizon.

Or, more accurately, thus ;

Make a Circular Perforation in a Braſs Plate, to tranſmit enough of the Sun's Rays to exhibit his Image on the Floor: Fix it parallel to the Horizon in a high Place, proper for Obſervation: Let fall a Line, and Plummet, wherewith to meaſure the Height of the Perforation from the Floor. Take care the Floor be perfectly level, and exactly horizontal; and let it be whiten'd over, to exhibit the Sun more diſtinctly. Draw a Meridian Line thereon, paſſing thro' the Foot of the *Gnomon*, *i. e.* thro' the Point the Plummet points out: Note the extreme Points of the Sun's Diameter on the Meridian Line K and I, and from each ſubtract a Right Line equal to the Semi-diameter of the Aperture, *viz.* K H, *Tab. Aſtron. Fig.* 57. on one Side, and L I on the other.—Then will H L be the Image of the Sun's Diameter, which biſſected in B, gives the Point on which the Rays fall from the Centre of the Sun.

Now, having given the Right Line A B, and the Altitude of the *Gnomon*, with the Angle A, which is Right; the Angle A B G, or the apparent Altitude of the Sun's Centre, is eaſily found: For, aſſuming one of the given Sides A B for Radius; A G will be the Tangent of the oppoſite Angle, B. Then ſay, As one Leg, A B, is to the other A G ; So is the whole Sine, to the Tangent of the Angle B.

GNOMON, in Dialling, is the *Style*, Pin, or Cock of a Dial; the Shadow whereof pointeth out the Hours. See STYLE, and DIAL.

The *Gnomon* of every Dial is ſuppos'd to repreſent the Axis of the World; and therefore the two Ends or Extremities thereof muſt directly anſwer to the North, and South Poles. See MERIDIAN.

The Word is *Greek*, γνόμον; which literally imports ſomewhat that *makes a thing known*; by reaſon the Style, or Pin makes the Hour, *&c.* known.

GNOMONICA, or GNOMONICE, GNOMONICKS, the Art of *Dialling*; or of drawing Sun and Moon Dials, *&c.* on any given Plane. See DIAL, and DIALLING.

'Tis thus call'd, as it ſhews how to find the Hour of the Day, *&c.* by the Shadow of a *Gnomon*, or Style.

GNOSIMACHI, an antient Sect in Religion, whoſe diſtinguiſhing Character was that they were profeſs'd Enemies of all ſtudied Knowlege in Divinity.

Damaſcenus ſays that they were perfectly averſe to all the *Gnoſis* of Chriſtianity, *i. e.* to all the Science, or Knowlege therein. They held it an uſeleſs Labour to ſeek for *Gnoſes* in the Holy Scriptures; that God requires nothing of Men but good Works; that it were, therefore, much better to walk with more Simplicity, and not to be ſo ſollicitous about the Dogmata of the Gnoſtic Life.

This *Gnoſis* which they decried, is commonly underſtood of Science; and *Damaſcenus*'s Interpreters tranſlate the Word ſo.

Some Authors take the Word *Gnoſis* to have a further Meaning, and that in the firſt Ages of Chriſtianity, it ſignified much the ſame with what we call *Spirituality*, and the *Gnoſtic Life*, Γνωσικὴ ἄσκησις. In which Senſe the *Gnoſimachi* muſt have been ſuch as were Enemies of the Spiritual Life; who contended for the doing of good Works in all Simplicity; and blamed ſuch as aim'd to render them more perfect by Meditation, a deeper Knowlege and Inſight into the Doctrines and Myſteries of Religion, and the ſublimer, and more abſtracted Exerciſes. See GNOSTIC.

The Word is *Greek*, γνωσιμάχος, *q. d.* an Enemy of Wiſdom.—

GNOSTICKS, antient Hereticks, famous from the firſt Riſe of Chriſtianity; principally in the Eaſt. See HERETICKS.

The Name *Gnoſtic*, which properly ſignifies *learned*, was adopted by thoſe of this Sect, as if they were the only Perſons who had the true Knowlege of Chriſtianity: Accordingly, they look'd on all the other Chriſtians as ſimple, ignorant, and barbarous Perſons, who explain'd, and interpreted the Sacred Writings in too low, and literal a Signification.

At firſt, they were no more than the Philoſophers, and Wits of thoſe Times, who form'd themſelves a peculiar Syſtem of Theology, agreeable to the Philoſophy of *Pythagoras*, and *Plato*; to which they accomodated all their Interpretations of Scripture.

But the Word *Gnoſtic* afterwards became a generical Name, comprehending divers particular Sects, and Parties of Hereticks, who roſe in the firſt Centuries; and who, tho' they differ'd among themſelves as to Circumſtances, yet all agreed in ſome common Principles: Such were the *Valentinians*, *Simonians*, *Carpocratians*, *Nicolaitans*, &c. See VALENTINIANS, SIMONIANS, &c.

Sometimes, the Word *Gnoſtic* is us'd as a proper Name, and peculiarly attributed to the Succeſſors of the firſt *Nicolaitans*, and *Carpocratians* in the ſecond Century, upon their laying aſide the Names of the firſt Authors. See CARPOCRATIANS, NICOLAITANS, &c.

Such as would be thoroughly acquainted with all their Doctrines, Reveries, and Viſions, may conſult St. *Irenæus*, *Tertullian*, *Clemens Alexandrinus*, *Origen*, and St. *Epiphanius*; particularly the firſt of theſe Writers, who relates their Sentiments at large, and confutes them at the ſame time: Indeed, he dwells more expreſly on the *Valentinians*, than on any other Sort of *Gnoſticks*; but he ſhews the General Principles whereon all their miſtaken Opinions were founded, and the Method they followed in explaining Scripture.

He accuſes them with introducing into Religion certain vain and ridiculous Genealogies, *i. e.* a kind of divine Proceſſions, or Emanations; which had no other Foundation but in their own Imaginations. See EON, ABRA, CADABRA, &c.

In effect, the *Gnoſticks* confeſs'd that theſe Emanations were no where expreſly deliver'd in the ſacred Writings; but inſiſted at the ſame time, that Jeſus Chriſt had intimated them in Parables, to ſuch as could underſtand him.

They built their Theology not only on the Goſpels, and the Epiſtles of St. *Paul*; but alſo on the Law of *Moſes*, and the Prophets. Theſe laſt were peculiarly ſerviceable to them, on account of the Allegories, and Alluſions they abound withal; which are capable of different Interpretations.

They ſet a great Value on the Beginning of the Goſpel of St. *John*; where they fancied they ſaw a great deal of their Emanations, under the *Word*, the *Life*, the *Light*, &c.

They divided all Nature into three kinds of Beings; *viz.* *Hylic*, or Material; *Pſychic*, or Animal; and *Pneumatic*, or Spiritual.

On the like Principle they alſo diſtinguiſh'd three Sorts of Men; *Material*, *Animal*, and *Spiritual*: The firſt, who were Material, and incapable of Knowlege, inevitably periſh'd both Soul and Body: The third, ſuch as the *Gnoſticks* themſelves pretended to be, were all certainly ſaved: The Pſychic, or Animal, who were the middle between the other two, were capable either of being ſaved, or damn'd, according to their good, or evil Actions.

The Word *Gnoſtic* is form'd of the Latin *Gnoſticus*, and that of the Greek γνωστικὸς, knowing, learned, witty, enlighten'd, ſpiritual; of γινώσκω, I know.

The Name *Gnoſtic* ſometimes occurs in a good Senſe, in the antient Eccleſiaſtical Writers, and particularly *Clemens Alexandrinus*, who, in the Perſon of his *Gnoſtic*, deſcribes the Characters and Qualities of a perfect Chriſtian. This Point he labours in the ſeventh Book of his *Stromata*, where he ſhews that none but the *Gnoſtic*, or learned Perſon has any true Religion. He affirms, that were it poſſible for the Knowlege of God to be ſeparated from eternal Salvation; the *Gnoſtic* would make no Scruple to chuſe the Knowlege: And that if God ſhould promiſe him Impunity in doing of any thing he has once ſpoke againſt, or offer him Heaven on thoſe Terms, he would never alter a Whit of his Meaſures. See GNOSIMACHI.

In this Senſe that Father uſes *Gnoſtic*, in oppoſition to the Hereticks of the ſame Name; affirming that the true *Gnoſtic* is grown old in the Study of the Holy Scripture; and that he preſerves the Orthodox Doctrine of the Apoſtles, and the Church: Whereas the falſe *Gnoſtic* abandons all the Apoſtical Traditions, as imagining himſelf wiſer than the Apoſtles.

At length the Name *Gnoſtic*, which originally was the moſt glorious, became infamous, by the idle Opinions, and diſſolute Lives of the Perſons who bore it; much, as in the preſent Age, has fared with the Names *Quietiſt*, *Pietiſt*, &c. See QUIETISM, &c.

GO, is ſometimes uſed in Law, in a ſpecial Signification: Thus, to *go without Day*; and, to *go to God*, is as much as to be diſmiſs'd the Court; to be acquitted.

GOAD, STIMULUS, a Stick arm'd at one End with a pointed Iron, to prick, and urge on a Horſe, Ox, or the like.

In ſpeaking of Horſes, we more commonly uſe the *French* Name *Valet*; reſerving *Goad* for Oxen.—

GOAL, a Priſon, or Place of legal Confinement. See PRISON.

The Word is form'd of the French *Geole*; and that of the Barbarous Latin *Geola*, *Gaola*, *Gayola*, a *Cage*: Whence the *Picards* ſtill call a Bird-cage, *Gayolle*.

The Goaler, Geolier, was call'd *Gaularius*, and *Cajularius*. *Scaliger* derives the Word *Goaler* from *Janicularius*. Some *Latin* Authors call him *Commentarienſis*, by reaſon he keeps a Regiſter, or Liſt of all thoſe under his Cuſtody.

GOBLET, or GOBELET, a kind of Drinking-cup, or Bowl, ordinarily of a round Figure, and without either Foot, or Handle.

Goblets, made of the Wood Tamarin, are rank'd among the Medicinal Drugs; in regard the Liquors infused a while therein, are supposed to acquire a Quality which renders them good in Diseases of the Spleen.

The Word is French, *Gobelet*; which *Salmasius*, and others derive from the Barbarous Latin, *Cupa*: *Budæus* derives it from the *Greek* κυπέλλον.—

GOBELINS, a celebrated Manufactory, established at *Paris*, in the Fauxbourg St. *Marcel*, or St. *Marceau*; for the making of Tapistry, and other Furniture, for the use of the Crown. See TAPISTRY.

The House where this Manufacture is carried on, was built by two Brothers, *Giles*, and *John Gobelins*, both excellent Dyers, and the first who brought to *Paris* the Secret of dying that beautiful Scarlet Colour still known by their Name; as well as the little River *Bievre*, on whose Banks they fix'd their Dye-house; and which is now known by no other Name than that of the River of the *Gobelins*.

It was in the Year 1667, that this Place, till then call'd *Gobelin*'s *Folly*, chang'd its Name into that of *Hotel Royal des Gobelins*, in consequence of an Edict of *Louis* XIV.

Monsr. *Colbert*, having re-established'd, and with new Magnificence enrich'd and compleated the King's Palaces, particularly the *Louvre*, and *Tuilleries*, began to think of making Furniture, suitable to the Grandeur of those Buildings: With this View he call'd together all the ablest Workmen in the divers Arts and Manufactures throughout the Kingdom; particularly Painters, Tapistry-makers, Sculptors, Goldsmiths, Ebenists, *&c.* and by splendid Offers, Pensions, Privileges, *&c.* call'd others from foreign Nations.

And to render the intended Establishment more firm and lasting, brought the King to purchase the *Gobelins*, for them to work in; and drew up a System of Laws, or Policy, in XVII Articles.

By these it is provided that the new Manufactory shall be under the Administration of the Superintendant of the King's Buildings, Arts, *&c.* That the ordinary Masters thereof shall take Cognizance of all Actions, or Processes brought against any of the Persons in the said Manufactory, their Servants, and Dependants: That no other Tapistry Work shall be imported from any other Country, *&c.*

The *Gobelins* has ever since remain'd the first Manufactury of this kind, in the World. The Quantity of the finest, and noblest Works, that have been produc'd by it; and the Number of the best Workmen bred up therein, are incredible. In effect, the present flourishing Condition of the Arts, and Manufactories of *France* is in a great measure owing thereto.

Tapistry Work, in particular, is their Glory. During the Superintendance of M. *Colbert*, and his Successor M. *de Louvois*, the making of Tapistry is said to have been practis'd to a Degree of Perfection, scarce inferior to what was antiently done by the *English*, and *Flemish*.

The Battles of *Alexander*; the Four Seasons; the Four Elements; the King's Palaces, and a Series of the principal Actions of the Life of *Louis* XIV. from the time of his Marriage to the first Conquest of *Franche Comte*, done from the Designs of M. *le Brun*, Director of the Manufactory of the *Gobelins*, are Master-pieces in their kind.

GOBONE, GOBONATED, in Heraldry, the same as *Compone*. See COMPONE.

GOD.—No just Definition can be given of the Thing signified by this Name, as being infinite, and incomprehensible. See DEFINITION.

In Scripture, he is defined by, I am that I am: Alpha and Omega; the Beginning and End of all Things.

Among Philosophers, he is defined a Being of infinite Perfection; or in whom there is no Defect of any thing which we conceive might raise, improve, or exalt his Nature. See PERFECTION.

Among Men, he is chiefly consider'd as the first Cause, the first Being, who has existed from the Beginning, has created the World, and who subsists necessarily, or of himself. See CAUSE, *&c.*

Sir *Isaac Newton* chuses to consider, and define *GOD* not as is usually done, from his Perfection, his Nature, Existence, or the like; but from his Dominion. 'The Word *God*,' according to him, 'is a relative Term, and has a Regard to Servants: 'Tis true, it denotes a Being eternal, infinite, and absolutely perfect; but a Being, however eternal, infinite, and absolutely perfect, without Dominion, would not be *God*.

'The Word *God* frequently signifies *Lord*; but every Lord is not *God*: The Dominion of a spiritual Being or Lord, constitutes *God*; true Dominion, true *God*; the supreme, the Supreme; feign'd, the feign'd.

'From such true Dominion it follows that the true *God* is living, intelligent, and powerful; and from his other Perfections, that he is supreme, or supremely perfect: He is eternal, and infinite, omnipotent, and omniscient; that is, he endures from Eternity to Eternity, and is present from Infinity, to Infinity.

'He governs all Things that exist, and knows all Things that are to be known: He is not Eternity, or Infinity, but eternal and infinite: He is not Duration, or Space, but he endures, and is present: He endures always, and is present every where; and by existing always and every where, constitutes the very Things Duration and Space, Eternity and Infinity. See ETERNITY, DURATION, SPACE, &c.

'Since every Particle of Space is always, and every indivisible Moment of Duration, every where, the Creator and Lord of all Things can never be *nunquam nusquam*. See UBIQUITY, &c.

'He is omnipresent, not only virtually, but also substantially; for Power without Substance cannot subsist. See POWER, &c.

'All Things are contain'd, and move in him; but without any mutual Passion: He suffers nothing from the Motions of Bodies; nor do they undergo any Resistance from his Omnipresence.

'It is confessed that *GOD* exists necessarily; and by the same Necessity he exists always, and every where. Hence also he must be perfectly similar; all Eye, all Ear, all Brain, all Arm, all the Power of perceiving, understanding and acting; but after a manner not at all corporeal, after a manner not like that of Men, after a manner wholly to us unknown. See ANTHROPOMORPHITE.

'He is destitute of all Body, and all bodily Shape; and therefore cannot be seen, heard, nor touched; nor ought to be worship'd under the Representation of any thing corporeal. See IMAGE, &c.

'We have Ideas of the Attributes of *God*, but do not know the Substance even of any Thing: We see only the Figures, and Colours of Bodies; hear only Sounds, touch only the outward Surfaces, smell only Odours, and taste Tasts; and do not, cannot, by any Sense, or any reflex Act know their inward Substances, and much less can we have any Notion of the Substance of *God*. See BODY, SUBSTANCE, &c.

'We know him by his Properties, and Attributes; by the most wise, and excellent Structure of Things, and by final Causes; but we adore, and worship him only on account of his Dominion: For *God*, setting aside Dominion, Providence, and final Causes, is nothing else but Fate, and Nature. *Philos. Nat. Princip. Math. in Calce*. See FATE, NATURE, &c.

A late ingenious Divine has wrought these Thoughts of that admirable Philosopher into Form, and ripen'd them into a more express System; in a Discourse upon this Occasion.

The great Principle or Proposition he lays down, is that 'God is not rightly defined a Being absolutely perfect, but a spiritual Being endued with absolute Dominion—Not that he denies the self existent Being to be infinitely perfect; but only that it is his Dominion, not his Perfection, that is intended by the Word *God*.'

The self existent Being, he observes, may be consider'd either *absolutely*, or *relatively*: Absolutely, as he is in his own Nature, and as he is consider'd by the Metaphysician: Relatively, as he stands related to his Creatures, and as he is consider'd by the Religionist, his Worshipper. Now, in treating of the Definition of *God*, he intends a nominal, not a real Definition; not what the Nature of that self-existent Being is, which we call *God*; but what it is we mean by the Word *God*: Which, on this System, is that self existent Being, consider'd not absolutely, but relatively; not as he is abstractedly in his own Nature, but as he stands related to the Universe, whose Sovereign Lord he is. See UNIVERSE.

'Tis added, that the Names given him in most Languages, denote, not his abstract, metaphysical, and absolute Idea, but his religious, popular, and relative one.

Indeed, every Worshipper of *God* will allow that he worships that self-existent Being for no other Reason, but because he is *God*; that is, because he is *Lord* and Sovereign; for one would be under no Obligation to worship a Being, tho' absolutely perfect, that had no Dominion over him.—A perfect Being without Dominion, would be only an Object of Contemplation, and Admiration; not of Worship: For Worship is only a Payment of Homage, an Acknowledgment of Subjection; which, where there is no Dominion, cannot be due, and is therefore always due in proportion to the Degree of Dominion.

The Word *God* signifies *Lord*, and not a Being absolutely perfect: Thus when I say, my *God*, the *God* of the Universe, it seems plain, that the Notion of *God* is relative, not absolute, that is, includes Dominion, not absolute Perfection; and if I were to express the same in any other Words, could I do it otherwise than thus, My Lord, the Lord of the Universe; and not thus, my perfect Being, the perfect Being of the Universe?

Indeed, it seems impossible to prove the Existence of a *God*, in the Sense affix'd to that Name, *a priori*, or any otherwise than from his Dominion; that is by arguing from the Effect to the Cause. The following Propositions, 'tis true, are undeniably demonstrable *a priori*. 1° That there is a self-existent, *i. e.* necessarily existent Being; because the Uni-

Univerſe could not produce itſelf. 2° That a neceſſarily exiſtent Being muſt be eternal, and omnipreſent, that is coextended with infinite Duration, and infinite Space, becauſe whatever exiſts by an abſolute Neceſſity of Nature, has no Relation to Difference of Time, Place, &c. and conſequently muſt exiſt always and every where. 3° This Being muſt be perfectly ſimilar, ſimple, and uncompounded, without the leaſt Variety, or Difference imaginable, or poſſible, becauſe abſolute Neceſſity is every where and always the ſame. From which Propoſition it alſo follows, as a Corollary, that this Being is immutable.

It is apparent therefore, *a priori*, that there is a ſelf-exiſtent Being, which is not Matter; and that this Being is eternal, omnipreſent, ſimilar, and unchangeable, by neceſſary Connexion between ſelf-Exiſtence, and theſe Attributes: but it is impoſſible to ſhew any neceſſary Connexion between ſelf-Exiſtence and Underſtanding; and if ſo, it is impoſſible to prove that the ſelf-exiſtent Being is intelligent *a priori*, or any otherwiſe than by arguing from the Effect to the Cauſe; that is, from the Conſideration of the Frame of the Univerſe, the Laws of Nature, and final Cauſes. *Maxwell's Diſc. concern.* GOD.—

The *Hebrews* call the Name of *God* בוארכע אותיוה, and the *Greeks*, after this Example, Τετραγράμματον; as conſiſting of four Letters, which it is obſerv'd to do in moſt Languages: Thus, in the Hebrew, *God* is called יהוה, *Jehovah*; in Greek, Θεὸς; in Latin, *Deus*; in Spaniſh, *Dios*; in Italian, *Idio*; in French, *Dieu*; in the antient Gauliſh, *Diex*; in antient German, *Diet*; in the Sclavonic, *Buch*; in Arabic, *Alla*; in the Poliſh, *Bung*; in the Pannonian, *Iſtu*; in the Egyptian, *Tenu*; in the Perſian, *Sire*; in the Language of the Magi, *Orſi*.—

The Rabbins, and Hebraiſts, particularly St. *Jerom*, and the Interpreters, reckon up ten different Names of *God* in Scripture; which are, אל, *El*, אלהים, *Elohim*, אלהי, *Elohe*, or in the Singular, אלה, *Eloah*, צבאות, *Tſebaoth*, עליון, *Elion*, אהיה, *Ehjeh*, ארוני, *Adonai*, יה, *Jah*, שרי, *Shaddai*, יהוה, *Jehovah*; but 'tis wrong to divide אלהי from צבאות; they ſhould be but one Name אלהיצבאות, *Eliohe tſebaoth*, i. e. *God of Hoſts*.—Of theſe Names there are three which expreſs the Eſſence of *God*, and are proper Names, *viz.* אהיה, *Ehjeh*, יה, *Jah*, and יהוה, *Jehovah*: The others are only Names of Attributes. St. *Jerom* gives a particular Explanation of the ten Names, in his Epiſtle to *Marcella*: And *Buxtorf* the younger has an expreſs Diſſertation on the ſame; *Diſſertatio de nominibus Dei*. The Jeſuit *Souciet* has three ſeveral ones on the three Names *El*, *Shaddai*, and *Jehovah*, printed at *Paris* in 1715.

Cicero in his Treatiſe *de Nat. Deorum* puts this ridiculous Argument againſt the Exiſtence of a *God* in the Mouth of *Cotta*: 'How ſhall we conceive any thing of a *God*, when we 'cannot poſſibly attribute any Virtue to him? Shall we ſay 'he has Prudence? No, for Prudence conſiſting in making a 'Choice between good and evil, what need has *God* of 'ſuch Choice, when he is by his own Nature incapable of 'any evil? Shall we ſay he has Underſtanding and Rea'ſon? No, for Underſtanding and Reaſon only ſerve to 'diſcover Things unknown to us, by Things that are known; 'but there can be nothing unknown to *God*. Nor can we 'attribute Juſtice to *God*; that being a Thing which only 'relates to human Society: Nor Temperance; ſince he 'has no Pleaſure to reſtrain: Nor Courage, in regard he is 'not ſuſceptible of any Pain, Labour, or Fatigue; nor ex'poſed to any Danger. How then can a Thing be *God*, 'which has neither Virtue, nor Underſtanding?' See Attribute, Divinity, &c.

God is alſo uſed in ſpeaking of the falſe Deities of the Heathens; many of which were only Creatures, to which divine Honours and Worſhip were paid. See Idol.

The *Greeks* and *Latins*, it is obſervable, did not mean by the Name *God* an all-perfect Being, whereof Eternity, Infinity, Omnipreſence, &c were eſſential Attributes: With them, the Word only implied an excellent and ſuperior Nature; and accordingly they give the Appellation *Gods* to all Beings of a Rank, or Claſs higher and more perfect than Men.

Nay, Men themſelves, according to their Syſtem, might become *Gods*, after Death; inaſmuch as their Souls might attain to a Degree of Excellence ſuperior to what they were capable of in Life. See Deification.

The firſt Divines, Father *Boſſu* obſerves, were the Poets: The two Functions, tho' now ſeparated, were originally combined, or rather one and the ſame Thing. See Poetry.

Now the great Variety of Attributes in *God*, that is the Number of Relations, Capacities, and Circumſtances wherein they had occaſion to conſider him; put theſe Poets, &c, under a Neceſſity of making a Partition, and to ſeparate the divine Attributes into ſeveral Perſons; by reaſon of the Weakneſs of the human Mind could not conceive ſo much Power and Action in the Simplicity of one ſingle divine Nature.

Thus the Omnipotence of *God* came to be repreſented under the Perſon and Appellation of *Jupiter*; the Wiſdom of *God*, under that of *Minerva*; the Juſtice of *God*, under that of *Juno*. See Epick, Fable, &c.

The firſt Idols, or falſe *Gods* that are ſaid to have been adored, were the Stars, Sun, Moon, &c. in regard of the Light, Heat, and other Benefits we derive from them. See Astronomy, Star, Sun, &c.

Afterwards, the Earth came to be deified for furniſhing Fruits neceſſary for the Subſiſtance of Men and Animals: Then Fire and Water became Objects of divine Worſhip, for their Uſefulneſs to human Life. See Fire, and Water.

When Things were thus got in the Train, *Gods*, by degrees, became multiplied to Infinity; and ſcarce any thing but the Weakneſs, or Caprice of ſome Devotee or other, elevated into the Rank; Things uſeleſs, or even deſtructive not excepted.

To authorize their own Crimes, and juſtify their Vices and Debaucheries, they conſtituted criminal, vitious, and licentious *Gods*, unjuſt, rapacious, and tyrannical *Gods*, covetous and thieviſh *Gods*, Drunken *Gods*, impudent *Gods*, cruel and bloody *Gods*.—

The principal of the antient *Gods*, whom the *Romans* call'd *Dii majorum Gentium*, and which *Cicero* calls *Cæleſtial Gods*; *Varro*, *Select Gods*; *Ovid*, *Nobiles Deos*, others, *Conſentes Deos*; were *Jupiter*, *Juno*, *Veſta*, *Minerva*, *Ceres*, *Diana*, *Venus*, *Mars*, *Mercury*, *Neptune*, *Vulcan*, *Apollo*.

Jupiter is conſider'd as the *God* of Heaven; *Neptune* as *God* of the Sea; *Mars* as the *God* of War; *Apollo* of Eloquence, Poetry, and Phyſick; *Mercury* of Thieves; *Bacchus* of Wine; *Cupid* of Love, &c.

A ſecond Sort of *Gods*, call'd *Demi Gods*, *Semi-Dii*, *Dii minorum Gentium*, *Indigites*, or *Gods* adopted, were Men canonized, and deified.—As the greater *Gods* had Poſſeſſion of Heaven by their own Right, ſo theſe ſecondary Deities had it by Right of Donation; being tranſlated into Heaven for that they liv'd as *Gods* upon Earth. See Indigites, Hero, and Apotheosis.

The Heathen *Gods* may be all reduced to the following Claſſes. 1° Created Spirits, Angels, or Demons; whence good and evil *Gods*; *Genii*, *Lares*, *Lemures*, *Typhones*, Protecting *Gods*, Infernal *Gods*, &c. See Dæmon, Genius, Lares, &c.

2° Heavenly Bodies, as the *Sun*, *Moon*, and other *Planets*, fixed *Stars*, *Conſtellations*, &c. See Sun, Moon, Star, Constellation, &c.

3° Elements, as *Air*, *Earth*, *Ocean*, *Ops*, *Veſta*; the *Rivers*, *Fountains*, &c. See Naiads, Fountains, &c.

4° Meteors; thus the *Perſians* adored the *Wind*: *Thunder*, and *Lightning*, were honour'd under the Name of *Geryon*. See Thunderbolt. And ſeveral Nations of *India* and *America* have made themſelves *Gods* of the ſame. *Caſtor*, *Pollux*, *Helena*, and *Iris* have alſo been prefer'd from Meteors to be *Gods*; and the like has been practic'd in regard to *Comets*: Witneſs that which appear'd at the Murther of *Cæſar*. *Socrates* deified the *Clouds*, if we may give Credit to *Ariſtophanes*; and the primitive Chriſtians, *Tertullian* aſſures us, were reproach'd with the ſame Thing.

5° They erected Minerals, or Foſſils into Deities; ſuch was *Bætylus*; the *Finlanders* ador'd *Stones*; the *Scythians Iron*; and many Nations *Silver*, and *Gold*.

6° Plants have been made *Gods*; thus *Leeks* and *Onions* were Deities in *Egypt*: The *Sclavi*, *Lithuanians*, *Celtæ*, *Vandals*, and *Peruvians* ador'd *Trees* and *Foreſts*: The antient *Gauls*, *Britons*, *Druids*, bore a particular Devotion to the Oak; and it was no other than Wheat, Corns, Seeds, &c. that the Antients adored under the Names of *Ceres* and *Proſerpina*. See Panes, Sylvans, Druids, &c.

7° They took themſelves *Gods* from among the *Waters*: The *Syrians*, and *Egytians* adored *Fiſhes*; the *Oxyrinchites*, *Latopolitani*, *Sienites*, and the Inhabitants of the *Eliphantide* had each a Fiſh for their *God*; and the *Tritons*, *Nereids*, *Syrens*, &c. what were they but Fiſhes? Several Nations have ador'd *Serpents*, particularly the *Egyptians*, *Pruſſians*, *Lithuanians*, *Samogitians*, &c. See Tritons, Nereid, Syren, &c.

8° Inſects, as *Flies* and *Ants* have had their Sacrificers; theſe among the *Theſſalians*, and thoſe in *Acarnania*, where Bullocks were offer'd to them.

9° Among Birds, the *Stork*, *Crow*, *Sparrowhawk*, *Ibys*, *Eagle*, *Griffon*, and *Lapwing* have had Divine Honours; the laſt in *Mexico*, the Reſt in *Egypt*, and at *Thebes*.

10° Four-footed Beaſts have had their Altars, as the *Bull*, *Dog*, *Cat*, *Wolf*, *Baboon*, *Lion*, and *Crocodile* in *Egypt* and elſewhere; the *Hog* in the Iſland of *Creta*; *Rats* and *Mice* in the *Troas*, and at *Tenedos*; *Weaſels* at *Thebes*, and the *Porcupin* throughout all *Zoroaſter's* School.

11° Nothing was more common than to place Men among the Number of Deities; and from *Belus*, or *Baal* to the *Roman* Emperors before *Conſtantine*; the Inſtances of this kind are innumerable. Frequently they did not wait ſo

long

long as their Deaths for the Apotheosis. *Nebuchadnezzar* provided to have his Statue worship'd while living; and *Virgil* shews that *Augustus* had Altars, and Sacrifices offer'd to him, *Eclog.* 1. *v.* 6, 7. As we learn from other Hands, that he had Priests call'd *Augustales*; and *Temples*, at *Lyons*, *Narbona*, and several other Places; and he must be allowed the first of the *Romans*, in whose behalf Idolatry was carried to such a Pitch. The *Æthiopians* deem'd all their *Kings*, Gods: The *Velleda* of the *Germans*; the *Janus* of the *Hungarians*; and the *Thaut*, *Othin*, and *Assa* of the Northern Nations were also Men.

12° Not Men only, but every thing that relates to Man has also been deified; as *Labour*, *Rest*, *Sleep*, *Youth*, *Age*, *Death*, *Virtues*, *Vices*, *Occasion*, *Time*, *Place*, *Numbers* among the *Pythagorians*; the *Generative* Power, under the Name of *Priapus*: *Infancy* alone had a Cloud of Deities; as *Vagetanus*, *Levana*, *Rumina*, *Edusa*, *Potina*, *Cuba*, *Cumina*, *Carna*, *Ossilago*, *Statulinus*, *Fabulinus*, &c.

They also ador'd the Gods *Health*, *Fever*, *Fear*, *Love*, *Pain*, *Indignation*, *Shame*, *Impudence*, *Opinion*, *Renown*, *Prudence*, *Science*, *Art*, *Fidelity*, *Felicity*, *Calumny*, *Liberty*, *Money*, *War*, *Peace*, *Victory*, *Triumph*, &c.

Lastly, *Nature*, or the *Universe*, was reputed a *God*. See Nature, and Universe.

Hesiod has a Poem under the Title of Θεογονία, *i. e.* the Generation of the *Gods*; wherein he explains their Genealogy and Descent, sets forth who was the first, and principal of all the others; who first descended from him and what Issue each had; the whole making a sort of System of Heathen Theology. See Theogony.

Beside this popular Theology, each Philosopher had his separate System; as may be seen from the *Timeus* of *Plato*, and *Cicero De Natura Deorum*.

Justin Martyr, *Tertullian* in his *Apologeticks* and his Books *contra Gentes*; *Arnobius*, *Minucius Felix*, *Lactantius*, *Eusebius*, Prepar. & Demon. Evangel. St. *Augustin* De Civit. Dei, and *Theodoret* adverss. Gentes, shew the Vanity of these *Gods*.

'Tis very difficult to discover the real Sentiments of the Heathens, with respect to their *Gods*: They are exceedingly intricate and confused, and even frequently contradictory. They admitted so many superior and inferior *Gods*, who shared the Empire, that all was full of *Gods*. *Varro* reckons up no less than thirty thousand ador'd within a small Extent of Ground, and yet their Number was every Day growing. The Way to Heaven was so easy for the Great Men of those Days, that *Juvenal* brings in *Atlas* complaining he was ready to sink under the Load of such a Number of new *Gods* as were daily placed in the Heavens: Yet Fa. *Mourges* seems to have proved, that all the Philosophers of Antiquity have acknowledg'd that there was but one *God*—*Plan Theol. des Sect. Scavant. de Grece*. See Goddess.

GOD-*Bote*, in our antient *Saxon* Customs. *Mulcta ex delictis in Deum admissis obveniens*.—A Fine, or Amerciament for Crimes and Offences against *God*: An Ecclesiastical, or Church Fine.

God-*Fathers*, and God-*Mothers*, Persons who direct, and attend at the Baptism of Infants, or other Persons; and give the Name. See Baptism, and Name.

The Number of *God-fathers*, and *God-mothers* is now reduc'd to three in the Church of *England*, and to two in that of *Rome*: Antiently, they had as many as they pleas'd.—

The *Romanists* have also *God-fathers*, and *God-mothers* at their *Confirmation*. See Confirmation.

They also give *God-fathers*, &c. to Bells, at their Baptism. See Bell.

Among the Antients it was the Custom for Persons of Quality to have others of like Quality cut their Childrens Hair, the first time; by which they became reputed a sort of *God-fathers*. And the like was practis'd with regard to the Hair of the Beard. See Adoption, Father, Hair, &c.

The Name *God-father* was also antiently given to a kind of Seconds, who attended and assisted the Knights in Tournaments, or single Combats.

The *God-fathers* of Duels were a kind of Advocates, chosen by the two Parties, to represent the Reasons of their Combat to the Judges. See Combat, Duel, Champion, &c.

Something of this kind is still retain'd at solemn Carrousals: There are two, or more in each Quadrile. See Quadril.

The Institution of *God-fathers* and *God-mothers*, *Patrimi* and *Matrimi* is originally *Roman*: They were young People, who in the Games of the Circus had the Direction of the Chariots, Shews, and Images of the Gods. *Cicero* makes mention of them in his Oration *de Haruspicum responsis*.

Their Office was much like that of the Children in some Romish Ceremonies, who are dress'd in the Habit of Angels, to strew Flowers, bear Incense-Pots, Lights, &c. and accompany the Relicks, and Images of Saints.—

GODDESS, *Dea*, *Diva*, a Heathen Deity, of the female Sex. See God.

The Antients had almost as many *Goddesses*, as Gods: Such were *Juno*, the *Goddess* of Air; *Diana*, the *Goddess* of Woods, and Chastity; *Proserpina*, the *Goddess* of Hell; *Venus*, of Beauty; *Thetis*, of the Sea: Such also were *Victory*, *Fortune*, &c. See Fortune.

Nay, they were not contented to make Women Gods, and admit both Sexes into the Roll; but they had also Hermophrodite Gods: Thus *Minerva*, according to several of the Learned, was both Man and Woman, and worship'd both under the Appellation of *Lunus*, and *Luna*. *Mitra*, the *Persian* Deity, was both God and *Goddess*; and the Sexes of *Venus* and *Vulcan* are very dubious: Whence, in the Invocations of those Deities, they used this Formula, *Be thou God, or Goddess*; as we learn from *A. Gellius*.

It was a Privilege peculiar to *Goddesses*, that they might be represented on Medals, naked: The Imagination, it was supposed, must be aw'd, and kept from taking Liberties, by the Consideration of the Divine Character.

GOD-*Gild*, in our antient Customs, that which is offer'd to God. See Gild.

GOLD, Aurum, a yellow Metal; the heaviest, purest, most ductile, and shining, and on those accounts the most valuable, of all Metals. See Metal.

The Chymists call Gold *Sol*, the *Sun*, to denote its Preeminence over the other Metals, which are call'd by the Names of the Planets: Its Symbol, or Character is ☉, which in their Hieroglyphical way of writing, denotes Perfection, Simplicity, Solidity, &c.—See Character.

The Weight of *Gold* is to that of Silver as 19 to 10—A Cubic Inch of pure *Gold* weighs 12 Ounces, 2 Drachms, 52 Grains; and the Cubic Inch of Silver 6 Ounces, 5 Drachms, 28 Gr.—The Pound Weight, or twelve Ounces Troy of *Gold* is divided into 24 Carats. See Caract, Weight, and Specific *Gravity*.

The Value of *Gold* is to that of Silver as 14 to 1; antiently, it was only as 12 to 1. Indeed, this Proportion varies as *Gold* is more or less plentiful: For *Suetonius* relates, that *Cæsar* brought such a Quantity of *Gold* from *Italy*, that the Pound of *Gold* was only worth seven Pound and half of Silver. Standard *Gold* is worth 44 *lib.* 10 *s.* Sterling the Pound-weight: Standard Silver, is worth 3 *l.* the Pound; or 5 *s.* the Ounce. See Standard; see also Silver, and Money.

The *first* Characteristic, or Property of *Gold* is that it is the heaviest of all Bodies—So that whoever would make *Gold*, must be able to add to the Weight of other Matters, and make them equiponderate with *Gold*.

In every Mass of Matter, therefore, heavier than Mercury, there must of necessity be a Share of *Gold*; there being no Body in Nature of intermediate Gravity; *i. e.* no Body whose Gravity is to that of *Gold*, more than as 14 to 19. See Mercury.

Its *second* Character is, that of all known Bodies it is the most ductile, and malleable, and of all Bodies its Parts have the greatest Degree of Attraction, *i. e.* cohere with the greatest Force.—Our Gold-beaters, and Wier-drawers furnish us with Proof of this Property. They every Day reduce *Gold* into Leaves, or Lamellæ, unconceiveably thin; yet without leaving the least Aperture, or Chasm visible to the best Microscope, or even pervious to the Light. *See this Property consider'd more at large under the Article* Ductility.

This Tenacity, or cohesive Force of *Gold* depends altogether on its being free from Sulphur: For mix but a single Grain of Sulphur with 1000 times the Weight of *Gold*, and the Mass ceases to be malleable. See Sulphur.

The *third* Character of *Gold* is its Fixedness in the Fire; in which it exceeds all other Bodies.—This Property seems to result from the Homogenity, and Equality of its Parts, which equally aid, and support each other, and have equal Pores, or Interstices thro' which the fiery Corpuscles find an easy Passage.—The Prince of *Mirandola*, Mr. *Boyle*, and other Chymists furnish divers Experiments to illustrate this wonderful Fixity. After laying a Quantity of *Gold* two Months in the intensest Heat imaginable, it is taken out without any sensible Diminution of Weight. See Fixity.

It must be added, however, that in the Foci of the large Burning Glasses of Mess. *Tschirnhausen*, and *Villette*, even *Gold* itself volatizes and evaporates. After this manner, we are told from the Royal Academy at *Paris*, a Quantity of pure *Gold* was vitrified; being first fused into a sort of Calx, which emitted Fumes, and lost of its Weight. But the same Calx fused again with a Quantity of Greese was restor'd into *Gold*. See Volatility, Vitrification, Burning *Glass*, &c.

Its *fourth* Character is, not to be dissoluble by any Menstruum in Nature, except *Aqua Regia*, and Mercury. See Menstruum.

The Basis of *Aqua Regia* is Sea Salt, which is the only Salt in Nature that has any Effect on *Gold*. But this Salt has its Effect in what Form or Manner soever applied, whether as a Fluid, or a Solid; in Substance, or in Spirit. See *Aqua* Regia, and Salt.

Mr. *Boyle*

Mr. *Boyle* made a Menſtruum of Butter of Antimony, which diſſolved *Gold* with great Facility; and hence concluded that *Gold* might be diſſolv'd without Sea Salt: But by Miſtake, the effective Part even of this Menſtruum being ſtill Sea Salt, which is an Ingredient in Sublimate of Mercury wherewith Butter of Antimony is made. See SALT, SUBLIMATE, &c.

The ſeventh Character is that it readily and ſpontaneouſly, as by ſome Magnetic Virtue, attracts, and abſorbs Mercury; tho' what My Lord *Bacon* writes, *viz.* that *Gold*, in imbibing Mercury, increaſes in Weight, we doubt, is but ill warranted. For 'tis certain it muſt be increas'd in Bulk, more than in Weight, and conſequently muſt be ſpecifically lighter. See MERCURY.

It may be added, that as ſoon as the Mercury enters the *Gold*, the Metal becomes ſoft, like a Paſte. See AMALGAMATION.

The eighth Character is, that it withſtands the Violence both of Lead, and Antimony, *i. e.* being fuſed in the Coppel along with either of thoſe Matters, it does not diſſipate and fly off with them in Fume, but remains fix'd, and unchanged.

All other Metals, except *Gold*, and Silver melted with Lead, periſh with it, and evaporate by Fire; and in Antimony, all other Metals except *Gold*, and even Silver itſelf, undergo the ſame Fate.—Thus, if a Maſs conſiſting of *Gold*, Silver, Stones, Copper, *&c.* be fuſed together with Antimony, the ſeveral Matters become ſeparated, and all but the *Gold* riſes to the Surface in form of a Scoria, and is blown off with Bellows: But the *Gold* remains behind, much purified, as having loſt all its heterogeneous Parts along with the other Metals. And hence Antimony is uſed as the Teſt of *Gold*. See TEST, COPPEL, REFINING, &c.

The ninth Character is that of all Bodies it is the ſimpleſt (the primary Elements being here excepted).—By *ſimple* we here mean that whoſe minuteſt Part has all the Phyſical Properties of the whole Maſs. Thus, if a Grain of *Gold* be diſſolv'd in *Aqua Regia*; and a ſingle Drop of the Solution be taken, a Quantity of *Gold* may be ſeparated therefrom, which ſhall only be the Millionth Part of the Grain, and yet have all the Characters of *Gold*. Or, if you fuſe a Grain of *Gold* with a large Maſs of Silver, and mix the two together, ſo that the *Gold* becomes equally diffuſed thro' the whole Maſs; you will have in every Particle of the Maſs a Particle of perfect *Gold*. Accordingly, diſſolve any Part of the Mixture in *Aqua fortis*, and a Quantity of *Gold* will precipitate to the Bottom, bearing the ſame Proportion to the Grain that the Part diſſolved did to the whole Maſs. On which Principle depends the Art of Eſſayng. See ESSAYNG.

All the known Parts of the Earth afford this precious Metal; tho' with a deal of Difference, in point of Purity, and Abundance: *Europe*, ſo fertile in other reſpects, comes ſhort of all the other Quarters, in *Gold*. *America* furniſhes the moſt; and particularly the Mines of *Peru*, and *Chilly*. That of *Aſia* is eſteem'd the fineſt, particularly that of *Menaricabo* in the *Eaſt Indies*: The *Spaniards* aſſure us that they get *Gold* out of ſome of their *Peruvian* Mines, 23 Carats fine before it be purified. Add, that the *Gold* of *Axima* on the Coaſt of *Africa* is found from 22 to 23 Carats.

Glauber, an eminent Chymiſt, holds that there is not any Sand, or Stone, but *Gold* may be procured from; Limeſtone only excepted: Only that the Expence of ſeparating it, much ſurmounts the Profits.

Gold is chiefly found in Mines: Tho' there is ſome alſo found in the Sand and Mud of Rivers, and Torrents; particularly in *Guinea*. This laſt is in form of a fine Powder, and call'd ἀμμοχρύσος, *Gold-duſt*. *Glauber* holds that there is a third ſort of *Gold*, ſcarce found any where but in the Drains of the Mountains of *Chilly*, which they ſeparate from the Earth by waſhing; whence the Places where it is found, or ſeparated, are call'd *Lavadero's*.

This Earth is uſually reddiſh, and very fine: At about ſix Foot deep it is mix'd with Grains of large Duſt; and from hence commences the Stratum, or Bed of *Gold*. Between are Banks of ſoft blueiſh Stone, mix'd with yellow Threads, which yet are not *Gold*, but only Pyrites, or Marcaſſites of *Gold*.

When they have diſcover'd any of this Earth, they endeavour to bring Rivulets to it (which in thoſe Mountains are very frequent) in order, by force thereof, to tear off the upper Earth, and lay the *Golden* Stratum bare. This they forward by digging with Spades, *&c.* As ſoon as the Golden Earth is uncover'd, they turn off the Water; and dig up the Soil by Force of Arm; and loading it on Mules, carry it to the *Lavadoro's*, *i. e.* a ſort of Baſons of Water, where the Earth undergoing divers repeated Lotions, in different Waters, the earthy, and impure Part is all ſeparated and carried off by the Stream, and the *Gold* left at Bottom. See LAVATORY.

This Method of getting *Gold* is immenſely gainful; the Expences being but trifling, compared with thoſe accruing in the common way by Machines, Fire, and Quickſilver: The richeſt of theſe *Lavadero's* is that *de l'Eſtancia del Rey*, twelve Leagues from the *Conception*, a Port of the South Sea—*Thuringia*, and ſome other Places along the *Rhine*, are the only Places in *Europe*, where *Gold* is got in this manner.

The *Gold* of Mines is of two kinds; the one in ſmall Pieces, or Grains of various Forms, and Weights. Of this ſort, among the Specimens ſent by *Columbus* into *Spain*, to let them ſee the Richneſs of his Diſcovery, there were ſome of 18 Ounces Weight; and the Relations of thoſe Days aſſure us, that in 1502 there were others found of thirty two Pounds Weight.

The other kind of *Gold* is dug up in Stony Glebes, which is what they call the *Mineral*, or *Ore* of *Gold*: Theſe Glebes are of various Colours, and uſually 150 or 160 Fathom deep. Along with the *Gold* they uſually contain ſome other Mineral Matter, as Antimony, Vitriol, Sulphur, Copper, or Silver; particularly the laſt; without ſome Share of which it is ſcarce ever found.

Manner of ſeparating GOLD.

They firſt break the Metalline Stone with Iron Mallets, pretty ſmall; then carry it to the Mills, where it is ground into a very fine Powder; and laſtly paſs it thro' ſeveral Braſs Sieves one after another, thelaſt as fine as any of our Silk Sieves.

The Powder thus prepar'd, is laid in wooden Troughs with a proper Quantity of Mercury and Water, and there left to knead and ſaturate in the Sun and Air for twice twenty four Hours. After this the Water, with the recrementitious Earth is drove out of the Tubs by means of other hot Waters, pour'd thereon. This done, there remains nothing but a Maſs of Mercury with all the *Gold* that was in the Ore. The Mercury they ſeparate from it by Diſtillation in large Alembicks. The *Gold*, in this State, is call'd *Virgin Gold*; as well as that found in the Sand of Rivers, or that in Grains in the Mines; in regard none of them have paſs'd the Fire. After this, they uſually fuſe them in Crucibles, and caſt them into Plates, or Ingots. See FUSION.

Manner of Refining GOLD.

There are three principal Manners of refining *Gold*; the firſt with Antimony; the ſecond with Sublimate; and the third with *Aqua fortis*. This laſt, which is call'd *Departing*, or Parting, is already deſcrib'd under the Article DEPART; and the two former under thoſe of *Refining*. See REFINING.

Beſide theſe three, there are other Methods of Refining *Gold*; particularly that call'd the *Coppel*, which is perform'd with Lead and Aſhes; and that call'd *Cementation*, by means of a Compoſition of Brick Duſt, common Salt, Sal Ammoniac, Sal Gemma, and Urine. See COPPEL, and CEMENTATION.

The Eſſaying of GOLD, is perform'd with the Touch-ſtone, but more ſecurely by Fire. See TOUCH-*Stone*, and ESSAYING.

For the Making of GOLD, ſee *Philoſopher* STONE, and TRANSMUTATION.

GOLD WIRE, is a Cylindrical Ingot of Silver, ſuperficially gilt, or cover'd with *Gold*, at the Fire; and afterwards drawn ſucceſſively thro' an infinite Number of little round Holes of a Wire-drawing Iron, each leſs than the other, till it be no bigger than a Hair of the Head. See WIRE.

It may be obſerv'd, that before the Wire be reduc'd to this exceſſive Fineneſs, it is drawn thro' above an hundred and forty different Holes; and that each time they draw it, it is rubb'd freſh over with new Wax, both to facilitate its Paſſage, and to prevent the Silver's appearing thro'.

It is amazing to what Degree of Fineneſs the *Gold* is here drawn; and yet it ſtill keeps firm together, and never ſhews the leaſt Signs of the Silver underneath it. The Reader may ſee a Computation hereof, as alſo a more particular Account of the manner of proceeding, under the Article DUCTILITY *of Gold*.

GOLD WIRE FLATTED, is the former Wire flatted between two Rollers of poliſh'd Steel, to fit it to be ſpun on Silk, or to be uſed flat as it is, without ſpinning, in certain Stuffs, Laces, Embroideries, *&c.*

GOLD THREAD, or *Spun* GOLD, is the flatted *Gold* wrapp'd, or laid over a Thread of Silk, by twiſting it with a Wheel, and Iron Bobins.

The Methods of managing and drawing *Gold* and Silver both real and ſeeming in all theſe Kinds, are very curious, and of great Uſe in Commerce.

Manner of forming GOLD WIRE, *and* GOLD THREAD *both round, and flat.*

Firſt, An Ingot of Silver of 24 Pound is forged into a Cylinder about an Inch in Diameter: Then 'tis drawn thro' eight or ten Holes of a large, coarſe Drawing Iron, both to finiſh the

Roundneſs, and to reduce it to about three Fourths of its former Diameter. This done, they file it very carefully all over, to take off any Filth remaining of the Forge: Then they cut it in the Middle, and thus make two equal Ingots thereof; each about 26 Inches long; which they draw thro' ſeveral new Holes to take off any Inequalities the File may have left, and to render it as ſmooth, and equable as poſſible.

The Ingot thus far prepar'd, they heat it in a Coal Fire: Then, taking ſome Gold Leaves, each of about four Inches ſquare, and weighing 12 Grains; they join four, eight, twelve, or ſixteen of theſe together, as the Wire is intended to be more, or leſs gilt; and when they are ſo join'd as only to form a ſingle Leaf, they rub the Ingots, reeking hot, with a Burniſher.

Theſe Leaves, thus prepar'd, they apply over the whole Surface of the Ingot to the Number of ſix, over each other; burniſhing or rubbing them well down with the Blood-ſtone, to cloſe, and ſmoothen them.

When gilt, the Ingots are laid a-new in a Coal Fire; and when rais'd to a certain Degree of Heat, they go over them a ſecond time with the Blood-ſtone, both to ſolder the *Gold* more perfectly, and to finiſh the Poliſhing.—

The Gilding finiſh'd, it remains to draw the Ingot into Wire. In order to this, they paſs it thro' twenty Holes of a moderate Drawing-iron, by which it is brought to the Thickneſs of the Tag of a Lace: From this time, the Ingot loſes its Name, and commences *Gold Wire*. Twenty Holes more of a leſſer Iron, leave it ſmall enough for the leaſt Iron; the fineſt Holes of which laſt, ſcarce exceeding a Hair of the Head, finiſh the Work.

To diſpoſe the Wire to be ſpun on Silk, they paſs it between two Rollers of a little Mill: Theſe Rollers are of poliſh'd Steel, and about three Inches Diameter. They are ſet very cloſe to each other, and turn'd by means of a Handle faſten'd to one of them, which gives Motion to the other. The *Gold* Wire in paſſing between the two, is render'd quite flat; but without loſing any thing of its Gilding; and is render'd ſo exceedingly thin, and flexible, that it is eaſily ſpun on Silk Thread, by means of a Hand Wheel; and ſo wound on a Spool, or Bobin. See FLEXIBILITY.

GOLD LEAF, or *Beaten* GOLD, is *Gold* beaten with a Hammer, into exceedingly thin Leaves.

'Tis prodigious to conſider the Fineneſs they will thus reduce a Body of *Gold* to: 'Tis computed, that an Ounce may be beaten into 1600 Leaves, each three Inches ſquare; in which State, it takes up more 159092 times its former Space. See DUCTILITY.

This *Gold* they beat on a Block of Marble, commonly black Marble, about a Foot ſquare, and uſual rais'd three Foot high: They make uſe of three ſorts of Hammers, form'd like Mallets, of poliſh'd Iron. The firſt, which weighs three, or four Pounds, ſerves to chaſe, or drive; the ſecond, of eleven or twelve Pounds, to cloſe; and the third, which weighs fourteen or fifteen Pounds, to ſtretch, and finiſh.

They alſo make uſe of four Moulds, of different Sizes; *viz.* two of Vellum, the ſmalleſt whereof conſiſts of 40 or 50 Leaves, and the larger, of two hundred: The other two, conſiſting each of 500 Leaves, are made of Bullocks Gut, well ſcour'd and prepared. See MOULD.

The Method of preparing, and beating GOLD, is as follows.

They firſt melt a Quantity of pure *Gold*, and form it into an Ingot: This they reduce, by forging, into a Plate about the Thickneſs of a Sheet of Paper: Which done, they cut the Plate into little Pieces about an Inch ſquare, and lay them in the firſt, or ſmalleſt Mould, to begin to ſtretch them. After they have been hammer'd here a while with the ſmalleſt Hammer, they cut each of them into four; and put them in the ſecond Mould to be extended further.

Upon taking them hence, they cut them again into four, and put them into the third Mould; out of which they are taken, divided into four, as before, and laid in the laſt, or finiſhing Mould; where they are beaten to the Degree of Thinneſs required.—

The Leaves thus finiſh'd, they take them out of the Mould, and diſpoſe them in little Paper Books prepar'd with red Bole, for the *Gold* to ſtick to: Each Book ordinarily contains 25 Gold Leaves.

There are two Sizes of theſe Books: Twenty five Leaves of the ſmalleſt only weigh five or ſix Grains; and the ſame Number of the largeſt nine, or ten Grains.

It muſt be obſerv'd that *Gold* is beaten more, or leſs, according to the Kind, or Quality of the Work it is intended for: That for the Gold-wire Drawers to gild their Ingots withal, is left much thicker, than that for gilding the Frames of Pictures, &c. withal.

SHELL GOLD is that us'd by the Illuminers; and wherewithall we write *Gold* Letters.—It is made of the Parings of Leaf Gold, and even of the Leaves themſelves, reduc'd into an impalpable Powder, by grinding on a Marble, with Honey. After leaving it to infuſe ſome time in *Aqua fortis*, they put it in Shells, where it ſticks. To uſe it, they dilute it with Gum Water, or Soap Water.

Burniſh'd GOLD, is that ſmoothen'd, or poliſh'd with a Steel Inſtrument, call'd the *Burniſher*, if it be wrought *Gold*, or Gilding on Metal; or with a Wolf's Tooth, if it be gilding in Water. See BURNISHER, and GILDING.

Million of GOLD, is a Phraſe us'd to ſignify a Million of Crowns. See CROWNS.

Tun of GOLD, is a kind of Money of Account, us'd by the *Dutch*, and in ſome other Countries; containing a hundred thouſand Florins. See FLORIN.

GOLD *Coin*, or *Species of* GOLD; ſee COIN.

A hundred Pounds of, or in, *Gold*, is found to weigh two Pound, ten Ounces: The ſame Sum in Silver, weighs 26 Pound, 4 Ounces. Twenty two Pence, in Copper Farthings and Half-pence, weigh one Pound Avoirdupoiſe.—

A Tun of *Gold* at 4 Pounds the Ounce amounts to 96000 *l.* A Tun of Silver at 5 *s.* 2 *d.* the Ounce, to 6200 *l.* A Pound Sterling *Gold*, to 48 *l.* An Ounce is worth 4 *l.* The Penny-weight, 4 *s.* One Grain, 2 *d.* A Pound of Sterling Silver amounts to 3 *l.* 2 *s.* An Ounce is worth 5 *s.* 2 *d.* The Penny-weight, 3 *d.* and ſomething more; one Grain, a half-penny. A Pound of Silver Avoirdupoiſe comes to 3 *l.* 5 *s.* 3 *d.* half-penny.

Moſaic GOLD, is *Gold* applied in Panels on a proper Ground, diſtributed into Squares, Lozanges, and other Compartments, part whereof is ſhadow'd to raiſe, or heighten the reſt. See MOSAIC.

Virgin GOLD, is *Gold*, juſt as it is taken out of the Mines before it have undergone any Action, or Preparation of Fire: Whence the *Greeks* call it ἄπυρὸς. Such is the ἀμμοχρύσος, or *Gold Duſt*, and that got by Lotion in the Lavedero's in *Chilly*: 'Tis added, that there are Maſſes, or Lumps of pure *Gold* found in the Mines, particularly thoſe of *Hungary*. Accordingly, in the Emperor's Collection are ſtill preſerved ſeveral Plates of *Gold*, ſaid to have been thus found.

Virgin *Gold* is ſaid to be very pale, and ſo ſoft that it may be moulded into any Figure, with the Hand: It even takes an Impreſſion from a Seal, like the ſofteſt Wax. To harden it, as alſo to highten its Colour, they mix Emery with it.

Fine, or *Pure* GOLD, is that purged by Fire of all its Impurities, and all Alloy.—The *Latins* call it *Aurum purum*, *Aurum primum*, *Aurum obrizum*, *Aurum coctum*.

The Moderns frequently call it *Gold of* 24 *Carats*; but, in Reality, there is no ſuch thing as *Gold* ſo very pure; and there is always wanting at leaſt a Quarter of a Carat. *Gold* of 22 Carats has one Part of Silver, and another of Copper: That of 23 Carats has half a Part, *i. e.* half a twenty-fourth of each. See CARAT, and ALLOY.

Bouteroue maintains, that the *Electrum* of the Antients was *Gold* of 19 Carats; or four Parts *Gold*, and a fifth Silver.—From an Ordonance of King *John* of *France*, it appears that the *Gold* then ſtruck at *Paris* was of 19 Carats $\frac{1}{5}$; and yet 'tis added that it was the beſt and fineſt *Gold* then known on Earth.

In *England*, at this time, the Standard of Crown *Gold* is 22 Carats. See GUINEA.

Cloth of GOLD, } ſee { CLOTH *of* GOLD.
GOLD *Money*, } { MONEY.

Potable GOLD, *Aurum potabile*, ſee POTABLE *Gold*.

Fulminating GOLD, *Aurum fulminans*, ſee FULMINATING.

GOLD, in Medicine, and Chymiſtry.—The Chemiſts make ſeveral Preparations of *Gold* for Medicinal Uſes; as Salts, Mercuries, and Tinctures of *Gold*; but 'tis a Point not yet well agreed on whether *Gold* have any real Property whereby it may be of Uſe of Medicine.—

The moſt antient Phyſicians are all ſilent on the Matter: The *Arabs* are the firſt who mention it in this Quality.—*Avicenna* attributes extraordinary Virtues to it; but he ſpeaks on Conjecture more than Experiment. And yet it is pretty certain *Gold* muſt have an Effect: A Quantity of Gold Filings being taken by a Perſon in a Bolus, he was very well purg'd thereby: But this might well be owing to the great Weight of its Particles, which impinging violently againſt the Glands of the Inteſtines, promoted their Vibrations, and thus expreſs'd the Humor ſecreted therein. *Boræus*, in a Letter to *Bartholin* relates, that having heated an Ingot of fine *Gold* ſeveral times red hot, and extinguiſh'd it as often in Water, he found the Weight of the Ingot conſiderably diminiſh'd; upon which, proceeding to evaporate the Water, he drew a little Quantity of *Gold* from it. Hence it appears, that the ſubtile Parts of the *Gold* paſs into the Liquors it is extinguiſh'd in; and hence, 'tis argued, it may have conſiderable Effects.

Notwithſtanding the ſmall Number of Experiments whereon the Medicinal Efficacy of *Gold* is founded; the Alchymiſts will have it contain the Radical Balm of Life, for the retrieving of Health and Youth, and the Removal of all Diſeaſes. *Gold*, according to them, contains a Sulphur friendly to Nature, like that of the Sun, which animates the whole Univerſe: And on this Principle they have form'd a thou-

a thouſand airy Projects for an Univerſal Remedy. See ELIXIR.

In effect, 'tis probable the *Arabs* and Alchemiſts were only brought to attribute all theſe Virtues to *Gold*, from their perceiving certain Qualities therein, which they ſuppoſed it muſt communicate to other Bodies. Thus, *e. gr. Gold* being commonly ſaid to be incapable of being deſtroyed; 'tis hence concluded to be proper to preſerve animal Matters, and defend them from Putrifaction: Which is juſt as reaſonable as ſome Phyſicians preſcribing the Blood of an Aſſes Ear as an appeaſing Remedy, by reaſon the Aſs is a very peaceable Animal. See POTABLE *Gold*.

GOLD, in Heraldry, is one of the Metals; more properly call'd by the *French* Name *Or*. See METAL, and OR.

GOLDEN, ſomething that has a relation to Gold, or conſiſts of Gold, is valuable like Gold, or the like. See GOLD.

GOLDEN BULL, *Bulla Aurea*, ſee explain'd under the Article BULL.

GOLDEN *Fleece*, in the antient Mythology, was the Skin, or Fleece of the Ram, upon which *Phryxus* and *Hella* are ſuppos'd to have ſwam over the Sea to *Colchos*; and which being ſacrific'd to *Jupiter*, was hung upon a Tree in the Grove of *Mars*, guarded by two Brazen-hoof'd Bulls, and a monſtrous Dragon that never ſlept; but taken, and carried off by *Jaſon*, and the *Argonauts*. See ARGONAUT.

Many Authors have endeavour'd to ſhew that this Fable is an Allegorical Repreſentation of ſome real Hiſtory.

Order of the GOLDEN FLEECE, is a Military Order inſtituted by *Philip the Good*, Duke of *Burgundy*, in 1429. See MILITARY *Order*.

It took its Denomination from a Repreſentation of the *Golden* Fleece, bore by the Knights on their Collars, which conſiſted of Flints, and Steels. The King of *Spain* is now Grand Maſter of the Order, in Quality of Duke of *Burgundy*: The Number of Knights is fix'd to 31.

'Tis uſually ſaid to have been inſtituted on occaſion of an immenſe Profit which that Prince made by Wool: Tho', others will have a Chymical Myſtery couch'd under it, as under that famous one of the Antients, which the Adepti contend to be no other than the Secret of the Elixir, wrote on the Fleece of a Sheep.

Oliver de la Marche writes that he had ſuggeſted to *Philip* I. Archduke of *Auſtria*, that the Order was inſtituted by his Grand-father *Philip the Good*, Duke of *Burgundy*, with a View to that of *Jaſon*; and that *John Germain*, Biſhop of *Chalons*, Chancellor of the Order, upon this occaſion made him change his Opinion, and aſſur'd the young Prince that the Order had been inſtituted with a View to the Fleece of *Gideon*.

William Biſhop of *Tournay*, Chancellor likewiſe of the Order, pretends that the Duke of *Burgundy* had in View the *Golden* Fleece of *Jaſon*, and *Jacob*'s Fleece, *i. e.* the ſpeckled Sheep belonging to this Patriarch, according to the Agreement made with his Father-in Law *Laban*. Which Sentiment gave Birth to a great Work of this Prelate in two Parts: In the firſt, under the Symbol of the Fleece of *Jaſon* is repreſented the Virtue of Magnanimity, which a Knight ought to poſſeſs; and under the Symbol of the Fleece of *Jacob*, he repreſents the Virtue of Juſtice.

Paradin is of the ſame Mind, and tells us that the Duke deſign'd to inſinuate that the fabulous Conqueſt which *Jaſon* is ſaid to have made of the *Golden* Fleece in *Colchos*, was nothing elſe but the Conqueſt of Virtue, which requires a Victory over thoſe horrible Monſters Vice, and our evil Inclinations.

GOLDEN NUMBER, in Chronology, a Number ſhewing what Year of the Moon's Cycle, any given Year is. See CYCLE *of the Moon*.

To find the Golden Number *of any Year ſince Chriſt.*

Since the Lunar Cycle commences with the Year before our Saviour's Birth; to the given Year add 1: Then, dividing the Sum by 19; the Sum remaining after the Diviſion, is the *Golden Number* required: If there be nothing remaining, the *Golden Number* is 19.

Suppoſe, *e. gr.* the *Golden Number* of the preſent Year 1725 were required: $1725 + 1 = 1726$. And 1726 divided by 19, gives a Quotient 9, and leaves a Remainder of 16, the *Golden Number* of this Year.

The *Golden Number* is uſed in the *Julian* Calendar, to ſhew on what Days the New Moons fall. In Succeſſion of Time, however, it muſt be obſerv'd, that the *Golden* Numbers, thro' the Defect of the Lunar Cycle, recede, and do no longer ſhew the true Time of New Moons, *&c.* See CALENDAR.

Hence, in the *Gregorian* Reformation of the Calendar the *Golden* Number is thrown out; and the Epact introduced in lieu thereof. See EPACT.

GOLDEN RULE, in Arithmetick, a Rule, or Praxis, of great Uſe, and Extent in the Art of Numbers; whereby we find a fourth Proportional to three Quantities given. See PROPORTION.

The *Golden Rule* is alſo call'd the *Rule of Three*, and *Rule of Proportion*. *See its Nature and Uſe under the Article* RULE *of Three*.

GOLDEN CALF, was a Figure of a Calf, which the *Iſraelites* caſt in that Metal, and ſet up in the Wilderneſs, to worſhip, during *Moſes*'s Abſence in the Mount; and which that Legiſlator, at his Return, burnt, ground to Powder, and mix'd with the Water the People were to drink of; as related *Exodus* xxxii.

The Commentators have been divided on this Article: The pulverizing of Gold, and rendring it potable, is an Operation in Chymiſtry, of the laſt Difficulty; and 'tis hard to conceive how it ſhould be done at that Time, before Chymyſtry was ever heard of, and in a Wilderneſs too. Many therefore, ſuppoſe it done by a Miracle: And the reſt, who allow of nothing ſupernatural in it, advance nothing but Conjectures, as to the Manner of the Proceſs.

He could not have uſed ſimple Calcination, nor Amalgamation, nor Antimony, nor Calcination; nor is there one of thoſe Operations, that quadrates with the Text.

M. *Sthall* has endeavour'd to remove this Difficulty. The Method *Moſes* made Uſe of, in making his *Aurum potabile*, according to this Author, was the ſame with that which now obtains; only that inſtead of Tartar, he made uſe of the *Egyptian* Natron, which is common enough throughout the Eaſt. See POTABLE *Gold*.

GOLOPS, in Heraldry, are Roundles of a Purple Colour. See ROUNDLE.

GOMPHOSIS, in Anatomy, a kind of Articulation of the Bones, wherein the one is chaſed, or fitted immoveably into the other, after the manner of a Peg, or Nail. See ARTICULATION.

The Teeth are ſet in the Jaws by *Gomphoſis*. See TEETH, and MAXILLÆ.

The Word is *Greek*, γόμφωσις, form'd of γομφὸς, *clavus*, a Nail.

GONAGRA, in Medicine, the Gout in the Knee. See GOUT.

The Word is compos'd of γόνυ, Knee, and ἄγρα, *captura*, Seizing.

GONARCHA, a Term in the antient Dialling—Mr. *Perrault*, in his Notes on *Vitruvius*, *lib. IX. c. 9.* takes the *Gonorcha* to have been a Dial drawn on divers Surfaces, or Planes; ſome of which being Horizontal, others Vertical, others Oblique, *&c.* form'd divers Angles. Whence the Appellation; from γόνυ, Knee, or γωνία, Angle. See DIAL.

GONDOLA, a little, flat Boat, very long, and narrow; chiefly uſed at *Venice*, to row on the Canals. See BOAT.

The middle-ſized *Gondola's* are upwards of 30 Foot long, and four broad: They always terminate, at each End, in a very ſharp Point, which is rais'd perpendicularly the full Height of a Man.

The Word is Italian, *Gondola*. *Du Cange* derives it from the vulgar *Greek* γόμτελας, a Bark, or little Ship. *Lancelot* deduces it from γόνδυ, a Term in *Athenæus* for a ſort of Vaſe.

The Addreſs of the *Venetian Gondoliers*, in paſſing their narrow Canals, is very remarkable: There are uſually two to each *Gondola*; and they row by puſhing before them. The Fore-man reſts his Oar on the left Side of the *Gondola*: The Hind-man is placed on the Stern, that he may ſee the Head over the Tilt, or covering of the *Gondola*; and reſts his Oar, which is very long, on the right ſide of the *Gondola*.

GONFALCON, or GONFANON a Kind of round Tent, bore as a *Canopy*, at the Head of the Proceſſions of the principal Churches at *Rome*, in Caſe of Rain; its Verge, or Banner ſerving for a Shelter, where there is not a great deal of Attendance.

GONORRHÆA, or rather GONORRHEA in Medicine, an involuntary Flux, or Dripping of Seed, or other Humor, by the Penis; without Erection, or Titillation. See SEED.

The Word is form'd of the *Greek* γόνος, *genitura*, Seed, and ῥέω, *fluo*, I flow.—

The *Gonorrhæa* is of two kinds: The one *Simple*, the other *Virulent*.

The *Simple Gonorrhæa*, or that without Virus, or Malignity, takes its riſe from violent Exerciſes, and Strainings; the immoderate Uſe of hot Foods, and particularly, fermented Liquors, as Wine, Beer, Cyder, *&c.* It is cured by indulging Reſt, nouriſhing Foods, Broths, *&c.*

This Species is again divided into two; the one *True*, *Gonorrhæa vera*, wherein the Humor diſcharged is real Seed: The other *Spurious*, *Gonorrhæa Notha*, wherein the dripping Humor is not Seed, but a Matter from the Glands about the Proſtates. See PROSTATES.

This latter Kind bears ſome Reſemblance to the *Fluor Albus*, or Whites in Women; and frequently remains a long time, without much Diminution of the Patient's Strength. Some call it a *Catarrhal Gonorrhæa*. Its Seat is in the Glands of the Proſtates, which are either too much relax'd, or ulcerated.

The

The *Virulent* GONORRHÆA, *Gonorrhæa Virulenta*, ariſes from ſome impure Commerce, and is the firſt Stage of the Venereal Diſeaſe; being what we popularly call a *Clap*. See VENEREAL *Diſeaſe*, and CLAP.

The Parts here primarily affected are the *Proſtates* in Men, and *Lacunæ* in Women, which being ulcerated by ſome contagious Matter received in Coition, emit, firſt, a whitiſh, watery Liquor, with an acute Pain: This afterwards grows yellowiſh, then ſharper, and at length greeniſh, or blueiſh, and frequently fœtid.

It is attended with a Tenſion and Inflammation of the Yard, and an *Ardor Urinæ*, or Sharpneſs of Urine, which gives a painful Senſation in the Emiſſion; the urinary Paſſage being torn and excoriated by the Acrimony of the Humor.

Hence ariſe Tumors of the Prepuce, and Glands, with Ulcers on the ſame; and ſometimes Caruncles in the Urethra.

The Cauſe of the Virulent *Gonorrhæa*, according to M. *Littre*, is ſome acid Humor, heated, rarified, and rais'd at the time of Coition, from the internal Parts of the Pudendum of a Woman infected, and lodg'd in the Urethra of the Man. It has different Seats in the Body: Sometimes it only fixes on *Cowper*'s mucous Glands; ſometimes on the Proſtates; and ſometimes on the Veſiculæ Seminales: Sometimes it poſſeſſes two; and ſometimes all three of the Places at once.

From this Diverſity of Seat of the *Gonorrhæa Virulenta*, M. *Littre* makes two Sorts; *Simple*, which only affects one of the three Parts; and *Compound*, or Complicated, where ſeveral are affected.

That ſeated in the mucous Glands, he obſerves, may remain Simple, thro' the whole Courſe of the Diſeaſe, by reaſon the Mouths of thoſe Glands open into the Urethra an Inch and half on this Side the Proſtates, and alſo look down towards the Glans; ſo that their Liquor is eaſily diſcharged. The other two Sorts mutually produce each other; by reaſon the Ducts of the Veſiculæ Seminales terminate in the Urethra in the Middle of thoſe of the Proſtates: So that there is an eaſy Communication between them.

That ſeated in the mucous Glands, is much the rareſt Caſe; and the eaſieſt cured. The Cure is effected by emollient Cataplaſms, and Fomentations upon the Part, and a Half-bath. *Mem. de Acad.* An. 1711.

For the other Species, more powerful Means are to be uſed.—The principal Remedies are *Mercurial Purges*, an *Emulſion of green Hempſeed*, *Cuttle-fiſh-bone*, *Turpentine*, *Sacch. Saturni*, &c. We have likewiſe great Commendations of *Green Precipitate of Mercury*, and *Mercur. dulcis*. *Balſ. Saturni Terebinthinatum*, prepared with a gentle Fire of *Sacch. Saturni*, and *Oil of Turpentine*, is much applauded where the Heat is great about the Reins and Genitals; as alſo *Camphor*. An *Infuſion of Cantharides* in Wine, is the *Noſtrum* of a noted *Dutch* Phyſician. *Reſin* of the Wood *Guaiacum* is alſo recommended; and *Balſom of Cupaiba* is held a ſort of Specifick: To which muſt be added *Antimonium Diaphoreticum*, *Bezoardicum Minerale*, Water wherein Mercury has been boiled; *Injections of Lime-water*, *Mercurius dulcis*, *Saccharum Saturni*, &c.

Pitcairn's Method of curing the *Gonorrhæa Virulenta*, is as follows: In the Beginning of the Diſeaſe, he purges with a laxative Ptiſan of Senna, Salt of Tartar, and Melilot Flowers; and gives the Patient Whey for his Drink. After three, or four Days ſpent in purging, if the Scalding of the Urine, and the Flux, be abated, and the Colour and Conſiſtence of the Matter improved; he adminiſters Bolus's of Turpentine, and Rheum for ſix or ſeven Days; and if they keep the Body looſe, ſo much the better. By all means, Aſtringents to be avoided; the *Gonorrhæa* being ſcarce ever known to degenerate into a Pox, unleſs too haſtily ſtop'd. *Pitcairn in MS.*

Du Blegny directs the Cure of the *Gonorrhæa*, to begin with a gentle Cathartic of Caſſia, Senna, Cryſtal Mineral, Tamarinds, Althæa, and Rhubarb, adminiſter'd every other Day: Then, Diureticks, particularly thoſe of Turpentine; and laſtly, gentle Aſtringents; as Mineral Waters, *Crocus Martis aſtringens*, Tincture of Roſes, Tincture of Coral in Cochineel.

A Ptyaliſm, or Salivation never cures a *Gonorrhæa*. See SALIVATION.

GOOD or GOODNESS, in the general, is whatever tends, or conduces to preſerve, or improve Nature, or Society; in oppoſition to *Evil*, which tends to deſtroy or impair the ſame. See EVIL.

Hence *Good* is divided by the Philoſophers into 1° *Bonum ſui*, Private *Good*; which is that whereby a thing tends to preſerve &c. it ſelf; under which comes that popular Diviſion of *Goods* of Body, Mind, and Fortune: And 2° *Bonum Communionis*, whatever promotes the Intereſt, and Welfare of Society; as all the Civil Offices &c.

GOOD, in Metaphyſicks, or *Metaphyſical* GOOD, call'd alſo *Abſolute*, or *Real* GOOD, and GOOD *per ſe*, is the eſſential Perfection or Integrity of a thing, whereby it has every thing that belongs to its Nature. See PERFECTION.

In this Senſe all things that are, are *Good*; in as much as they have the Perfections naturally belonging to things of their Kind. Thus, a thinking Subſtance is *good*, or perfect, as it has all the eſſential Attributes of Thought: So an extended Subſtance is *good*, as is poſſeſſes all the Parts neceſſary to conſtitute it ſuch.

In effect, as it is abſurd to imagine a Being without its Eſſence; ſo is it, to imagine a Being without the Requiſites of its Eſſence: So that it appears an Error in ſome Philoſophers who divide Beings into *Good*, or Perfect; and *Evil*, or Imperfect. See ESSENCE.

Others define Metaphyſical, or Tranſcendental *Goodneſs*, by Congruency with the Divine Will; as making that the Meaſure of all real *Goodneſs*.

Phyſical, or *Natural* GOOD, is that whereby a thing poſſeſſes all things neceſſary to its *Bene eſſe*, *i. e.* to its well Well-being, or ſecond Perfection; and to the Performance of its Functions, and Uſes.

In this Senſe Phyſical *Goodneſs* coincides with Phyſical Perfection. See PERFECTION.

To this are required the ſeveral Powers, and Faculties in their proper Degree; a due Situation, Figure, Proportion, &c. of Parts.

Note, beſide abſolute Phyſical *Goodneſs*, there may be a *Relative* one; as in Foods, which to one Man are Salutary, to another Poiſon, &c. To this Head alſo belong Things *Good pro tempore*, or according to Circumſtances; as the Amputation of a mortified Limb, &c.

Moral, or *Ethical* GOOD, is the Agreement of a Thinking, reaſonable Being, and of the Habits, Acts, and Inclinations thereof, with the Dictates of right Reaſon, and the Will of the Creator, as diſcover'd by natural Light.

In order to this, it is not enough that a thing done, ſaid, thought, deſir'd, be juſt, and *good*; but it muſt be done thought, &c. well, *i. e.* from good Principles, and to good Ends.

Others define *Moral Good* more largely. *Moral*, which they alſo call *Relative Good* according to them, is ſomething that is good to another, or that tends ſomeway to the Perfection thereof. In this Senſe they divide it into three Kinds, *Honeſtum*, *Jucundum*, and *Utile*.

The firſt, *Bonum honeſtum*, is what agrees with right Reaſon; and is deſirable for it ſelf; as all things virtuous; as to love God, reſpect our Parents, &c. It is conſider'd without any regard to Pleaſure; not but that there is a ſincere Pleaſure annex'd to it. *Zeno*, and the *Stoicks* allow of no other *Goods*; the *Goods* of Body, &c. they call *Commoda*, Conveniences, not *Goods*. See STOICKS.

Bonum jucundum, is that which is good, as is tends to give us Pleaſure, and is deſired for that reaſon; but without any Repugnancy to Virtue, or right Reaſon: As Muſic, to the Ears; Painting, to the Eyes, &c.

Bonum utile, or *commodum*, is that which is good on account of ſomething elſe for which it is deſired; as Money, Riches, &c.

Chief, or *Supreme* GOOD, *Summum Bonum*; ſee SUMMUM *Bonum*.

The Philoſophers are divided as to what the Chief *Good* of Man conſiſts in; whether in the *Goods* of Fortune, of Body, or Mind. Some, hold Riches, and Honors, the Supreme *Good*; others, as *Ariſtippus*, and the *Cyrenaic* School, bodily Pleaſures; and others, as *Zeno*, and the *Stoicks*, Virtue. See CYRENAIC, STOICKS, &c.

GOOD *Works* } ſee { MERIT, and SUPEREROGATION.
GOOD *Will* } ſee { COMMON *Place*.

GOOD *Abearing*, *Bonus Geſtus*, in a Law Senſe, is particularly uſed for an exact Carriage, or Behaviour of a Subject towards the King, and his liege People; to which ſome Men, upon their Misbehaviour, are bound.

He that is bound to this, *Lambard* ſays, is more ſtrictly bound than to the Peace; becauſe whereas the Peace is not broken without an Affray, Battery, or ſuch like, this Surety *De bono geſtu* may be forfeited by the Number of a Man's Company, or by his, or their Weapons, or Arms. See PEACE.

GOOD-*Behaviour*; ſee GOOD *Abearing*.

GOODS, *Bona*, in Law, and particularly the Civil Law, include all kinds of Effects, Riches, Poſſeſſions.

There are two Kinds of *Goods*; *Moveable*, *res moventes*, *mobiles*; and *Immoveable*, *res non moventes*. See MOVEABLE, and IMMOVEABLE.

It is a Maxim in the Civil Juriſprudence, that he who confiſcates the Body, confiſcates the *Goods*; meaning that all the Effects of a Perſon condemned to a capital Puniſhment, or perpetual Baniſhment, are forfeited to the King. See CONFISCATION.

A Man is ſaid to bind himſelf *Body and Goods*; meaning, that beſide his *Goods* he obliges his Perſon, and ſubmits to remain in Priſon, provided he don't execute his Promiſe.

Goods, again, are divided into *Proper*, *Avita*, *Paterna*, *Hæreditaria*: *Acquired*, or *Acqueſts*, *Alio quam hæreditatis jure*

jure acquiſita: And *Conqueſts*; *Viro & Uxori ſtante ſocietate* acquiſita.

And again, into *real* and *perſonal Goods*; ſee REAL, and PERSONAL.

And laſtly, into *Noble*, or *Free*; and *Servile*, or *Baſe*.

Goods belonging to the Domain of the Crown, *ad Fiſcum ſpectantia*, cannot be alienated for ever; unleſs by way of Exchange: They may be ſold under the Faculty of perpetual Redemption.—See REDEMPTION.

Dotal Goods, *Dotalia*, are thoſe accruing from a Dowry, and which the Husband is not allowed to alienate. See DOWER.

Vacant Goods, *Vacantia*, are thoſe abandoned, or left at large, either by reaſon the Heir renounces them, or that the Defunct has no Heir. See VACANT.

Paraphernal Goods, *Paraphernalia*, are thoſe which the Wife gives her Husband to enjoy, on condition of withdrawing them when ſhe pleaſes. See PARAPHERNALIA.

Adventitious Goods, *Adventitia*, are thoſe which ariſe otherwiſe than by Succeſſion from Father, or Mother; or from direct Anceſtor to Deſcendant. See ADVENTITIOUS.

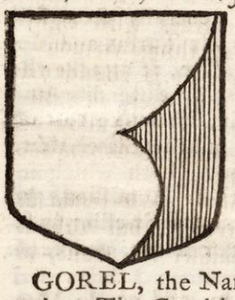
Provectitious Goods, *Provectitia*, are thoſe ariſing by direct Succeſſion. See PROVECTITIOUS.

Receptitious Goods were thoſe which the Wife might reſerve the full Property of to her ſelf, and enjoy them independantly of her Husband; in diſtinction from *Dotal* and *Paraphernal Goods*.

GORDIAN, a Term in Hiſtory.—The GORDIAN *Knot* was a Knot made in the Leathers, or Harneſs of the Chariot of *Gordius*, Father of *Midas*; ſo very intricate, that there was no ſeing where it began, or ended.

The Inhabitants had a Tradition, that the Oracle had declared that he ſhould be Maſter of *Aſia* who could untie this Knot. *Alexander* having undertaken it, and fearing that if he ſhould not be able to effect it, it would be deem'd an ill Augury, and prove a Check in the way of his Conqueſts; cut it aſunder with his Sword; and thus, ſays *Quintus Curtius*, either accompliſh'd, or eluded the Oracle.

Some will have the Phraſe derived from *Gordius*, King of *Phrygia*, who tied the fatal Knot; others, from *Gordium*, a City in *Phrygia*, where the Knot was made.—



GORE, in Heraldry, one of the regular Abatements, uſed, according to *Gwillim*, to denote a Coward. See ABATEMENT.

It conſiſts of two Arches, or Curve Lines, drawn, one from the Siniſter Chief, the other from the Siniſter Baſe, and meeting in an acute Angle in the middle of the Feſs-Point; as in the Figure adjoining.

GOREL, the Name, or Title given to the Prince of *Georgia*.—The *Gorel* is always a *Mahometan*: The *Sophi* of *Perſia* obliges him to obſerve the Religion of the Alcoran, to preſerve the Dignity of *Gorel* in his Family.

GORGE, a *French* Term, uſed for what in *Engliſh* we call the *Throat*, and the Latins *Fauces*. See THROAT.

GORGE, in Falconry, is the uppermoſt Bag, or Stomach of a Hawk, or Falcon; being that which receives the Food the firſt. See HAWK.

The *Gorge*, *Ingluvies*, is the ſame in Birds of Prey with what we call the *Crow*, or *Crop*.

When the Bird is fed, he is ſaid to be *gorged*. See HAWKING.

GORGE, in Architecture, a ſort of concave Moulding, wider, but not ſo deep as a Scotia; uſed chiefly in Frames, Chambranles, &c. See SCOTIA.

GORGE *of a Chimney*, is the Part between the Chambranle, and the Crowning of the Mantle.—Of this there are divers Forms, ſtraight, perpendicular, in form of a Bell, &c.

GORGE is ſometimes alſo uſed for a Moulding that is concave in the upper Part, and convex at Bottom; more properly called *Gula*, and *Cymatium*. See GULA, and CYMATIUM.

GORGE is alſo uſed for the Neck of a Column; more properly called *Collarino*, and *Gorgerin*. See GORGERIN, &c.

GORGE, in Fortification, the Entrance of a Baſtion; or of a Ravelin, or other Out-work. See BASTION, RAVELIN, &c.

The *Gorge* is what remains of the Sides of the Polygon of a Place, after retrenching the Curtains: In which caſe it makes an Angle in the Centre of the Baſtion—Such is A H D *Tab. Fortification, Fig.* 1.

In flat Baſtions, it is a Right Line on the Curtain by which we enter either the Baſtion, or the Out-works. It is alſo the Aperture thro' which we enter, or the Interval between, the two Wings, or Flanks on the Side of the Ditch.

All the *Gorges* are to be deſtitute of Parapets; otherwiſe, the Beſiegers having taken poſſeſſion of a Work, might make uſe thereof to defend themſelves from the Shot of the Place: So that they are only fortified with Paliſado's, to prevent a Surpriſe.

Half the Gorge, *Demi* GORGE, or That Part of the Polygon between the Flank, and the Centre of the Baſtion, as A H, is call'd the *Demi Gorge*. See DEMI *Gorge*.

GORGED, in Heraldry, is when a Crown, Coronet, or the like thing is bore about the Neck of a Lion, a Swan, &c. In that caſe they ſay, the Lion, or Cygnet is *gorged* with a Ducal Coronet, &c.

Gorged is alſo uſed when the Gorge, or Neck of a Peacock, Swan, or the like Bird is of a different Colour, or Metal from the reſt.—

GORGED, among Farriers, &c. ſignifies as much as *ſwelled*.

In this Senſe they ſay, the Legs of a Horſe are *gorged*; the paſtern Joint is *gorged*.

GORGERIN, a Part of the antient Armour; being that which cover'd the Throat, or Neck of a Perſon arm'd at all Points.—

GORGERIN, or GORGE, in Architecture, is the little Frieze in the Doric Capital, between the Aſtragal at the Top of the Shaft of the Column, and the Annulets. See *Doric* CAPITAL.

Some call it *Colarino*.—*Vitruvius* gives it the Name *Hypotrachelium*. See HYPOTRACHELIUM.

GOTHIC, or GOTHICK, ſomething that has a relation to the *Goths*, an antient People, originally inhabiting that Part of *Sweden* call'd *Gothland*; whence they ſpread themſelves over *Greece*, *Dalmatia*, *Bulgaria*, *Italy*, *Spain*, &c.

Thus we ſay, *Gothic* Manner, *Gothic* Ignorance: The Tyrant *Maximin* was of *Gothic* Race, &c.

GOTHIC *Character*, or *Gothic* Writing, is a Character, or manner of Writing, which, in the main, is the ſame with the *Roman*, only full of Angles, Turns, and Bendings; eſpecially at the Beginning and Ending of each Letter. See CHARACTER, and LETTER.

The Manuſcripts in *Gothic* Characters are not very antient.—*Ulpilas*, Biſhop of the *Goths*, was the firſt Inventor of the *Gothic* Characters; and the firſt that tranſlated the Bible into the *Gothic* Tongue.

The *Runic* Characters are alſo frequently called *Gothic* Characters: Fa. *Mabillon*, *De re Diplomat.* L. I. C. II. But they who take the *Gothic* Characters to be the ſame with the *Runic*, are miſtaken; as is ſhewn by *Ol. Wormius*, *Junius* in his Preface to the Goſpels wrote in *Gothic* Letters, and Dr. *Hicks* on the *Runic* Tongue. See RUNIC.

GOTHIC *Architecture*, is that which deviates from the Proportions, Characters, &c. of the Antique. See ARCHITECTURE.

The *Gothic* Architecture is frequently very ſolid, heavy, and maſſive; and ſometimes, on the contrary, exceedingly light, delicate, and rich. The Abundance of little, whimſical, impertinent Ornaments, are its moſt uſual Character.

Authors diſtinguiſh two Kinds of *Gothic Architecture*; the one antient, the other Modern.—The *Antient*, is that which the *Goths* brought with them from the North, in the Vth Century: The Edifices built in this manner, were exceeding maſſive, heavy, and coarſe.

Thoſe of the *Modern Gothic* run into the other Extreme, being light, delicate, and rich to a Fault: Witneſs *Weſtminſter* Abby, the Cathedral of *Lichfield*, the Croſs of *Coventry*, &c.

The laſt kind continued long in uſe, eſpecially in *Italy*, *viz.* from the XIIIth Century, to the Reſtauration of the antique Building in the XVIth. All the antient Cathedrals are in this kind. See ARCHITECTURE.

The Inventors of the *Gothic* Architecture thought, no doubt, they had far ſurpaſs'd the *Greek* Architects: A *Greek* Building has not a ſingle Ornament but what adds a Beauty to the Whole. The Parts neceſſary to ſuſtain, or ſhelter it, as the Columns, Corniches, &c. derive all their Beauty from their Proportions: Every thing is ſimple, meaſur'd, and reſtrain'd to the Uſe it is intended for. No daring, out of the way Strokes; nothing quaint to impoſe on the Eye: The Proportions are ſo juſt, that nothing appears very grand of itſelf, tho' the whole be grand. On the contrary, in the *Gothic* Architecture, we ſee huge Vaults rais'd on ſlender Pillars, which one would expect every Minute to tumble down, tho' they will ſtand for many Ages. Every thing is crammed with Windows, Roſes, Croſſes, Figures, &c.

GOTHIC *Column*, is any round Pillar, in a *Gothic* Building, either too thick, or too ſmall for its Height. See COLUMN.

There are ſome found even of 20 Diameters high; without either Diminution, or Swelling. See PILLAR, DIMINUTION, SWELLING, &c.

GOUD, or GAUD, or *Woad*, a Plant uſed by the Diers, to give a yellow Colour; and for this reaſon called in Latin, *Luteola*, of *luteus*, yellow. See YELLOW.

This Plant is ſown in a light Ground, in the Months of *March*, or *September*; and is ripe in *June*, or *July*. In hot Countries it is frequently dry enough when gather'd; but in the colder, care muſt be taken to dry it. Great Circumſpection to be uſed, that it be not gather'd before thorough ripe; as alſo to prevent its getting wet, when gather'd. See WOAD.

GOVERNMENT, or GOUVERNMENT, a Quality, or Office, which gives a Man Power, or Right, to command, or rule over a Place, a City, a Province, a Kingdom, or the like; either ſupremely, or by Deputation.

Government is either *General*, and Supreme, as that of a whole Kingdom, Empire, Soveraign State, &c. See KINGDOM, EMPIRE, STATE, &c. or *Particular*, and Subordinate; which again is ſubdivided into Civil, Military, or Eccleſiaſtical. See CIVIL, MILITARY, and ECCLESIASTICAL.

The *Government* of the King's Houſhold belongs to the Lord *Steward*. See STEWARD, and HOUSHOLD.

Our Cities, Corporations, and Boroughs are uſually *govern'd* by Mayors, with Aldermen, and Common Council-Men. See MAYOR, ALDERMAN, &c. See alſo CITY, &c.

The King was called to the *Government* of *England*, by the free Voices of the Parliament, and the People.—Such a Lord bought the *Government* of ſuch a Province, Iſland, &c. The Eaſt India Company nominate to the *Government* of *Fort St. George*, &c.

GOVERNMENT is alſo uſed for the City, Country, or Place to which the Power of *governing* or commanding, is extended.

Sanſon has given us Maps of *France*, divided into its *Governments*. There are 38 *Governments*, or Provinces in that Kingdom, independant of each other. Beſide theſe, there is another Diviſion into *Governments*, called *Grand Governments*, whereof there are twelve, *viz.* thoſe of the Iſle of *France*, *Burgundy*, *Normandy*, *Brittany*, *Picardy*, *Dauphiny*, &c. which are not proper Provinces, commanded each by its ſeveral Governor, but rather ſo many Claſſes of Governors, or *Governments*, contrived for the better, and eaſier regulating the Seats, &c. of ſo many Governors, Baillages, Prevotes, &c. as were obliged to aſſiſt at the holding of the General Eſtates.—

GOVERNMENT, again, is uſed for the manner, or Form of *governing*, *i. e.* for the Policy of a Country, State, &c. See LAW, and POLICY.

In this Senſe, *Governments* are divided into *Monarchies*, *Ariſtocracies*, and *Democracies*. See MONARCHY, ARISTOCRACY, DEMOCRACY.

The *Government* of *France* is *Monarchic*; that of *Venice*, *Ariſtocratic*; and that of the United Provinces, *Democratic*: The *Government* of *England* is both *Monarchic*, *Ariſtocratic*, and *Democratic* all in one.

GOVERNMENT, in Grammar, is underſtood of that Conſtruction of Nouns, and Verbs, wherein they require ſome Alteration to be made in others, join'd or conſtructed with them. See CONSTRUCTION, NOUN, and VERB.

Conſtruction is divided into two Parts, that of *Concord*; and that of *Government*, call'd alſo *Regimen*. See CONCORD.

The Rules, or Meaſures of Government, *or Regimen, ſee under the Article* REGIMEN.

GOVERNOUR, or GOUVERNOUR, an Officer veſted by a King or Soveraign Prince, with the Command and Adminiſtration of a Province, Place, &c. See GOVERNMENT.

Such a *Governour* being charg'd with Mal-adminiſtration, was recalled, and brought to his Trial.

A *Governour* repreſents the King; and not only commands the Garriſon, Troops, &c. but the Citizens, &c. A *Governour* of a fortified Place was antiently required to hold out three Attacks, before he ſurrender'd.—

GOVERNOUR is alſo frequently uſed for a Superintendant. Thus we ſay, The *Governour* of the Bank; the *Governour* and Directors of the South Sea Company; the *Governour* of a Hoſpital, &c. See BANK, COMPANY, HOSPITAL, &c.

GOUGE, an Inſtrument uſed by divers Artificers; being a ſort of round, hollow Chiſſel; ſerving to cut Holes, Channels, Grooves, &c. in Wood, Stone, &c. See CHISSEL.

GOUST, Goût, a *French* Term, for what the *Italians* call *Guſto*, and we, *Taſte*. See TASTE.

GOUT, ARTHRITIS, in Medicine, a painful Diſeaſe, occaſion'd by a Flux of ſharp Humor, upon the Joints of the Body. See DISEASE.

Some Phyſicians define the *Gout*, an Inflammation, Swelling, and Painfulneſs of the Joints. Its prime Cauſe is uſually attributed to Wine, Venery, Gluttony, and Idleneſs,

The *Gout* is ſuppoſed to ariſe from two Cauſes: A Redundancy of Humors, and a Weakneſs of the Joints. Its proper Seat is in the Limbs; not in the Trunk of the Body: In the latter Caſe it frequently proves mortal, not in the former.

Muſgrave makes the Apoplexy a *Gout*, becauſe ariſing from the Abundance of Pituita, or Phlegm. According as this redundant Pituita throws itſelf on the Lungs, the Liver, or any other Part, it makes, according to him, an *Apoplexy*, a *Gout of the Liver*, *of the Lung*, *of the Spleen*, &c.

The *Gout* is a Painful, Periodical, and Critical Paroxyſm, tending to free the Body of an offenſive, or corroſive Matter, by throwing it upon the Extremities; breathing it out inſenſibly; or comminuting it ſo as to render it harmleſs, or capable of circulating freely along with the Juices, till by collecting again, gradually increaſing, or ſeparating from the Blood, it cauſes another Paroxyſm.

The *Gout* is either Regular, or Irregular.

Regular, when it appears to be ſeated in the Extremities of the Body, returns at ſtated Periods, and with a gradual Increaſe and Decline of the Symptoms: *Irregular*, when the Paroxyſms are frequent, and uncertain; when the Symptoms vary, or happen promiſcuouſly, and the Diſeaſe appears to be ſeated in the internal Parts of the Body; as the Stomach, Brain, &c. leaving the extreme Parts, as the Hands, Feet, &c. free from Pain.

According as different Parts are affected by this Diſtemper, it goes by different Names: When it ſeizes the Feet, it is called *Podagra*; when the Knees, *Gonagra*; when the Hands, *Chiragra*; and when the Hip Joint, *Sciatica*, &c. See PODAGRA, CHIRAGRA, SCIATICA, &c.

Sometimes it attacks the whole Body at the ſame time, and then it is called the *General*, or *Univerſal Gout*.

The *Gout* may be Hereditary, or Natural to the Conſtitution, proceeding from a too great Conſtriction of the Capillary Veſſels, whence the *gouty* Humor is more eaſily lodged, or detained in them. It may alſo proceed from High-living, Crapula's, and eating ſuch things as are hard of Digeſtion; a ſedentary Life, drinking too freely of tartarous Wines; irregular living, Exceſs in Venery; an obſtructed Perſpiration, and a Suppreſſion of the natural Evacuations.

The immediate Cauſe of the *Gout* appears to be an Alkaline, or acrimonious Matter in the Blood; which being ſeparated from it at particular times, falls upon the Joints, but moſt frequently upon the Feet, and Hands; which, if it be repelled, or if the Blood be overcharged therewith, ſo that a Criſis cannot be procured in the Extremities (as generally happens in old Age) it falls upon the nobler Parts; and then produces the Irregular *Gout*.

The Regular, chiefly and immediately affects the Tendons, Nerves, Membranes, and Ligaments of the Body, about the Joints—Sometimes a cold ſhivering Fit precedes, and generally a Fever accompanies, its firſt Appearance, which ſoon goes off, and returns by Intervals. A ſlight Pain is felt in the Joints, where the Criſis is perform'd, which increaſes gradually; and in the Podagra generally fixes firſt on the great Toe, thence proceeding to the Tarſus and Metatarſus; ſometimes, eſpecially in old Age, it attacks the Knees and Hands; and wherever it is, by diſtending and irritating the Parts, cauſes a violent Pain, not unlike to that of a diſlocated Bone. When the Pain is at its State, there appears an Inflammation, and a Swelling; both which increaſe as the Pain increaſes; and upon their Remiſſion, the Paroxyſm is ended: Tho' the Tenderneſs and Swelling in ſevere Fits, will ſometimes remain a longer Time, and cauſe an Uneaſineſs upon Motion.

It it obſerved, that Women, Children, and young Men, are ſeldom troubled with the *Gout*, unleſs it be hereditary; that it rarely attacks, before the Patient is 35, or 40 Years old, and ſometimes not till the Decline of Life; that the Corpulent are more ſubject to it, than thoſe who are ſpare, and lean; that the Pain increaſes towards Night, and decreaſes towards the Morning; that the longer the Interval between the Paroxyſms, the more ſevere they prove, and the longer they generally continue.

The Diſeaſe uſually returns twice a Year, *viz.* in the Spring, and Autumn; and in the latter the Paroxyſm is ſometimes two, or three Months, before it comes to a Period; tho' its Duration is ſometimes not above three, or four Weeks.

Theſe are called *Cardinal Paroxyſms*, to diſtinguiſh them from others of leſs Duration, which happen between the Spring and Autumn. The more high-colour'd the Urine, and the leſs Sediment it depoſites; the further is the Diſeaſe from the State of *Concoction*, as 'tis termed. According to the Violence and Continuance of the Fever, the Paroxyſm proves more or leſs ſevere.

In Conſtitutions much broke or ſhatter'd with the *Gout*, there are uſually ſtony, or chalky Concretions form'd in the Joints of the Fingers, or Toes, and thence tranſlated to the Viſcera; which caſe is often attended with irregular, frequent, and ſhort Paroxyſms in the Extremities. In the Decline of Life, when the uſual Fits do not happen; or if the *gouty* Matter be ſuddenly repelled from the Extremities by an improper Regimen, or Medicines; it uſually ſeizes the internal Parts, and frequently the Stomach, Head, Inteſtines, &c. Cauſing Want of Appetite, Reaching to vomit, Indigeſtion, a Cachexia, the Jaundice, Aſthma, Diarrhæa; and at laſt, ſo obſtructs the fine capillary, nervous Tubes (eſpecially thoſe of the Stomach, and Brain) as poſſibly to hinder the Flux of the Animal Spirits: Upon which Death ſuddenly enſues.

Sydenham gives us an accurate Hiſtory of a Fit of the *Gout* in the Feet: It begins towards the Cloſe of *January*, or Beginning of *February*, without the leaſt previous Notice; except, perhaps, a Crudity, or Apepſy for ſome Weeks beforehand; with a ſort of windy Intumeſcence, and a Heavineſs

of

of the Body, which continually increaſes, till at laſt, a Paroxyſm breaks out; being preceded, ſome Days, with a ſort of Torpor, and a ſenſible Deſcent of the Flatulences thro' the Fleſh of the Thighs, with ſome ſpaſmodic Symptoms. The Day before the Paroxyſm, his Appetite is very greedy; an Hour or two after Midnight, he is waked by a Pain, commonly in his great Toe, ſometimes in the Heel, Ankle, or the Calf of the Leg, not unlike the Pain felt upon a Diſlocation of the ſaid Bones; with a Senſe as if Water were ſprinkled on the Part affected. This is ſucceeded by a Chilline ſs, and ſome Approach to a Fever: The Pain in the mean time, which at firſt was more remiſs, gradually increaſes; in proportion to which the Chilline ſs abates. By Night, it is arrived at its Height, and ſettled about the Ligaments of the Bones of the Tarſus, and Metatarſus; where it ſometimes reſembles a violent Tenſion; and ſometimes a Laceration of theſe Ligaments; ſometimes the Biting, or Gnawing of a Dog; a Squeezing, or Coarctation. Thus far the Part affected has ſuch an exquiſite Senſe, that it cannot bear the Weight of the Linnen, nor even the Shaking of the Room occaſion'd by a Perſon's Stepping. Hence, a thouſand vain Endeavours to get Eaſe, by changing the Poſture of the Body, the Poſition of the Foot, &c. till about two or three a-Clock in the Morning (the Space of a Nychthemeron from its Acceſs), when a Remiſſion is firſt perceived; the morbid Matter being by this time tolerably digeſted, or even diſſipated. The Patient, hereupon, drops a-ſleep, and at his Waking finds his Pains much abated, but the Part newly ſwell'd. A few Days hence, the other Foot undergoes the ſame Fate: Sometimes, both are attack'd from the firſt. From the Time it has ſeiz'd on both Legs, the Symptoms become more irregular, and precarious, both as to the Time of Invaſion, and the Duration thereof. But this ſtill holds, that the Pain recruits in the Night, and remits again in the Morning. A Series of theſe little, alternate Acceſſes, &c. conſtitutes a *Fit*, or *Paroxyſm of the Gout*, which holds longer, or leſs, according to the Age, &c. of the Patient. In ſtrong People, and thoſe who have not had it often, fourteen Days is a moderate Paroxyſm: In old People, and thoſe long uſed to it, it will hold two Months.

For the firſt fourteen Days the Patient is uſually bound: A Loſs of Appetite, Chilline ſs towards Evening, and a Heavine ſs, and Uneaſine ſs even of the Parts not affected, attend the whole Paroxyſm. As it goes off, he is ſeiz'd with an intolerable Itching, eſpecially between the Fingers; the Furfur falls, and his Toes ſcale, as if he had drank Poiſon.

Such is the Courſe of a *Regular Gout*; but when thro' improper Treatment it is diſturbed, or prolonged, it ſeizes the Hands, Wriſts, Elbows, Knees, and other Parts: Sometimes diſtorting the Fingers, and taking away their Uſe; ſometimes generating tophaceous Concretions, or Knots about the Ligaments of the Joints, reſembling Chalk, or Crabs Eyes; ſometimes raiſing a whitiſh, inflamable Tumor, almoſt as big as an Egg, about the Elbows. &c.

It may be added, that where a Perſon has labour'd under the *Gout* for many Years; the Pain is ſenſibly leſſen'd each Paroxyſm, till at length it becomes rather an Uneaſine ſs than a Pain: Hence that Reflexion of the Great *Sydenham*, DOLOR IN HOC MORBO AMARISSIMUM EST NATURÆ PHARMACUM.

The *Gout* is rank'd among the Number of incurable Diſeaſes: In effect, we have no thoro', and aſſured Remedy yet diſcovered for it; theſe that now obtain are little more than Palliatives: They tend to aſſuage the Pain, to diminiſh it for a time; but not to extirpate it.

Bleeding, and Purging are found abſolutely prejudicial; and Diaphoreticks of no Service. Emeticks, according to *Pitcairn*, and *Etmuller*, may do good in the Beginning of the Diſeaſe. But, upon the whole, nothing, in *Sydenham*'s Opinion, proves of more Service than Digeſtives, or Medicines which ſtrengthen the Stomach, and promote Digeſtion: As, Angelica Root, *Enul. Campan.* The Theriac *Andromach.* the Jeſuit's Bark; and Antiſcorbuticks: Theſe chiefly to be adminiſter'd in the Intervals between the Paroxyſms. *Muſgrave*, however, recommends internally Repellents, and principally Cardiacks; externally, Emplaſters of *Gum. Caran.* or *Oxycroc*, or Cephalic, with *Burgundy* Pitch; or green Sea-cloth, commonly called *Hat-caſe*, &c. Yet *Dolæus* affirms, that Repellents do more harm than good; and gives us the following Recipe, as more than equal to all others.

℞ *Confect. hamech.* ℥j. *Pulv. Jalap.* ℥ ſs. *extract. Trifol. fibrin.* ℥ij. *Litharg. aur.* ℥vj. *Sapæ Antimon.* ℥ ſs. *Sacchar. Canth.* ℥vj. *Ol. Olivar. q. s. Ceræ & Picis parum f. s. a.* An Emplaſter to be laid on the Joint affected, till the Pain, and the morbid Matter be driven away.—

GRABATARII, or GRABBATARII, in Church Antiquity, were ſuch Perſons as defer'd the receiving of Baptiſm, to the Hour of Death; or, who did not receive it till they were dangerouſly ill, and out of Hopes of Life: From an Opinion, that Baptiſm abſolutely waſh'd away all former Sins. See BAPTISM.

The Word is form'd of the Latin *Grabatum*, Bed; and that from the Greek γραβᾶτος, a Hanging-bed, of κρεμᾶν, to ſuſpend: Such was the Bed of Slaves, poor People, *Cynic* Philoſophers, &c. who were Enemies of Luxury and Eaſe.

GRACE, in Theology, any Gift which God makes to Man, of his own free Liberality, and without their having deſerv'd it at his Hands; whether ſuch Gift regard the preſent, or a future Life.—

Grace is uſually divided into *Natural*, and *Supernatural*. By *Natural Grace* is underſtood the Gift of Being, of Life, of ſuch and ſuch Faculties, of Preſervation, &c. St. *Jerom*, Epiſt. 139. allows it a *Grace* of God, that Man was created: *Gratia Dei eſt quod homo creatus eſt.* So, alſo, it is by the *Grace* of God, that Angels, and human Souls are immortal; that Man has free Will, &c.

Supernatural Grace, is a Gift from above confer'd on intelligent Beings, in order to their Salvation.— 'Tis theſe, only, are called *Graces* in the Rigor of Theology; and 'tis for the Conveyance, Improvement, and Strengthening of theſe that the Sacraments are confer'd, the Miniſtry of the Word inſtituted, &c. See SACRAMENT, &c.

The Divines diſtinguiſh this *Grace* into *Habitual*, and *Actual*; *Juſtifying*, and *Sanctifying*.—

Habitual GRACE, is that which reſides ſtatedly in us; is fix'd in the Soul, and remains till ſome grievous, wilful Sin expunge it.

This is alſo called *Juſtifying Grace*, as it makes us appear righteous and innocent before God: And *Sanctifying Grace*, as it makes us holy, and devoted to God. See JUSTIFICATION, and SANCTIFICATION.

Actual GRACE, is that which God gives us for the ſpecial Performance of ſome particular Good thing; as to convert us, enable us to reſiſt a Temptation, &c.—

This, the Divines ſubdivide into divers Kinds: *Preventing*, *Concomitant*, and *Subſequent Grace*.

It is an Article of Faith, 1° That Actual *Grace* is neceſſary for the beginning, carrying on, and finiſhing every good Work. 2° That the Will is able to reſiſt this *Grace*, and reject it. See WILL.

And hence this *Grace* becomes further divided into *Efficacious*, and *Sufficient*.—It is *Efficacious*, or *Efficient*, when it has the Effect; and *Sufficient*, when it has it not, tho' it might have had it. See EFFICACIOUS, and SUFFICIENT.

Some of the more rigid *Calviniſts*, &c. admit a *Neceſſitating Grace*. See CALVINIST, PREDESTINATION, REPROBATION, &c.

We alſo ſay, *the Law of Grace*; the *Covenant of Grace*, in oppoſition to the *Moſaic* Law, &c. See LAW; ſee alſo REVELATION, &c.

Days of GRACE, or *Favour*, are a certain Number of Days, allow'd for the Payment of a Bill of Exchange, after the ſame becomes due. See DAY *of Grace*.

The Days of *Grace* in *England* are 3; at *Rome* 5; at *Rotterdam*, 6; at *Paris*, 10; at *Hamburg*, 12; at *Antverp*, 14.

Act of GRACE, is an Act of Parliament for the Relief of inſolvent Debtors in the ſeveral Priſons; by clearing ſuch as are qualified, or come within the Terms of the ſame, from all their former Debts, &c.

GRACES, *Gratiæ*, in the Canon Law, are the ſame with what we otherwiſe call *Proviſions*, See PROVISION.

Expectative GRACES, *Gratiæ Expectativæ*, are a ſort of reverſionary Benefices, diſpoſed before the Time, or before they become vacant. See EXPECTATIVE.

GRACE is alſo a Term in the Formula of all Patents, &c. which begin, *George, by the* Grace *of God King of* Great Britain, &c.—The *Romiſh* Biſhops frequently begin their Mandates in the like manner. Such-a-one, by the *Grace* of God, and the Holy See, Biſhop of, &c.

The *Engliſh* Archbiſhops ſay, *By Divine Grace*, or *Divine Providence*. See ARCHBISHOP, &c.

All Soveraigns now uſe the Phraſe *Grace of God*; Emperors, Kings, Princes, &c. Antiently Dukes, Counts, and even Lords talk'd in the ſame Style: In the new Collection of Fa. *Martene* we meet with a mere Seigneur qualified *by the Grace of God Seigneur de Comborn*. *Louis* XI. forbad the Duke of *Brittany* to entitle himſelf *by the Grace of God*.

GRACE is alſo a Title of Dignity, attributed to Princes of inferior Rank, and who are not qualified for that of *Highneſs*. See TITLE.

Till the Time of King *James* I. the Kings of *England* were addreſs'd to under the Title of *Grace*, as they now are under that of *Majeſty*. See MAJESTY, KING, &c.

Our *Engliſh* Dukes and Archbiſhops are addreſs'd to under the Title of *Grace*. But that Title is moſt frequent in Upper *Germany*, and particularly *Auſtria*; where it is bore by the Barons, as being inferior to that of Excellence. See QUALITY, EXCELLENCE, &c.

GRACES, *Gratiæ*, *Charites*, in the Heathen Theology, were a Set of fabulous Deities, three in Number, who attended on *Venus*. See GOD.

Their

Their Names are, *Aglaia*, *Thalia*, and *Euphroſyne*; and they are ſuppoſed to be the Daughters of *Jupiter*. *Voſſius de Idolol. L. XIII. c. XV.*

Some will have the *Graces* to have been four, and make them the ſame with the *Horæ*, Hours, or rather with the four Seaſons of the Year. See HOURS, &c.

A Marble in the King of *Pruſſia's* Cabinet repreſents the three *Graces* in the uſual manner, with a fourth, *ſeated*, and cover'd with a large Veil, with the Words underneath, AD SORORES IIII. Yet Monſ. *Beger* will not allow the *Graces* to have been four: The Company there preſent, he underſtands to be the three *Graces*, and *Venus*, who was their Siſter, as being Daughter of *Jupiter* and *Dione*.

They were always ſuppoſed to have hold of each other's Hands, and never parted. They were painted naked, to ſhew that the *Graces* borrow nothing from Art, and that they have no other Beauties but what are natural.

Yet, in the firſt Ages, they were not repreſented naked, as appears from *Pauſanias L. VI.* and *L. IX.* who deſcribes their Temple, and Statues. They were of Wood, all but their Head, Feet, and Hands, which were white Marble. Their Robe, or Gown was gilt: One of them held in her Hand a Roſe, another a Dye, and the other a Sprig of Myrtle.

The Poets feign the *Graces* to have been very ſmall of Stature; to intimate that the Things which charm, and delight us, are frequently little Matters; as, a Geſture, a Laugh, a careleſs Air, or the like.

GRACILIS, in Anatomy, a Muſcle of the Leg, thus called from its ſlender Shape. See LEG.

It ariſes partly tendinous, and partly fleſhy, from the Os Pubis internally, between the firſt and ſecond Heads of the Triceps; and in its Deſcent in the Inſide of the Thigh, grows narrow, and becomes tendinous a little below the Sartorius, and is thus inſerted into the Tibia. It aſſiſteth in bringing the Thigh and Leg inwards.

GRADATION, the Act of aſcending, Step by Step, to any Pitch, or Eminence: From the Latin *Gradus*, Degree Step.— See DEGREE.

GRADATION, in Rhetoric, is when a Series of Proofs is brought, riſing by degrees, and emproving each on the other. See CLIMAX.

GRADATION, in Logic, is an Argumentation conſiſting of four, or more Propoſitions, ſo diſpoſed, as that the Attribute of the firſt is the Subject of the ſecond; and the Attribute of the ſecond, the Subject of the third; and ſo on, till the laſt Attribute come to be predicated of the Subject of the firſt Propoſition.

As, in *Porphyries* Tree: Man is an Animal; an Animal is a living Thing; a living Thing is a Body; a Body is a Subſtance: Therefore Man is a Subſtance.

An Argument of this kind is liable to a world of Fallacies; both from the Ambiguity of Words, and Things: *E. gr. Peter* is a Man; Man is an Animal; Animal is a Genus; Genus is an Univerſal; therefore *Peter* is an Univerſal.

GRADATION, in Chymiſtry, is a kind of Proceſs belonging to Metals.—It conſiſts in raiſing, or exalting them to a higher Degree of Purity, and Goodneſs, ſo as both to increaſe their Weight, Colour, Conſiſtence, &c. See METAL, TRANSMUTATION, &c.

GRADATION, in Architecture, ſignifies an artful Diſpoſition of ſeveral Parts, as it were, by Steps, or Degrees, after the manner of an Amphitheater; ſo that thoſe placed before, do no Diſſervice, but rather Service to thoſe behind.

The Painters alſo uſe the Word *Gradation* for an inſenſible Change of Colour, by the Diminution of the Teints, and Shades. See DEGRADATION.

GRADUAL, GRADUALE, was antiently a Church-book, containing divers Prayers, rehearſed, or ſung after the Epiſtle.

In ſome of our antient Writers 'tis read *Graile*, *Graduale*, &c.

After reading the Epiſtle, the Chantor aſcended the Ambo with his *Gradual*, and rehears'd the Prayers, &c. therein; being anſwer'd by the Choir: Whence the Name *Gradual*, on account of the Steps, or *Degrees* of the Ambo. See AMBO.

In the *Romiſh* Church, the Name *Gradual* is ſtill retain'd to a Verſe which they ſing after the Epiſtle, and which antiently rehears'd on the Steps of the Altar: Tho' *Ugotio* gives another Account, and ſays it took its Denomination *Gradual*, becauſe ſung in a gradual Aſcent from Note to Note. *Magri* ſpeaks differently ſtill, and will have it to have took this Name, becauſe ſung while the Deacon went up the *Steps* to the Pulpit, to ſing the Goſpel.

GRADUALS, GRADUALES, is alſo applied to the fifteen Pſalms ſung, among the *Hebrews*, on the fifteen Steps of the Temple.—Others are of Opinion they were thus denominated, becauſe the Singers rais'd their Voice by degrees, from the firſt to the laſt.

Cardinal *Bona*, in his Treatiſe of Divine Pſalmody, ſays, The fifteen gradual Pſalms are intended to repreſent to the Mind, that we only arrive at the Perfection of Goodneſs or Holineſs, by degrees: He goes on to lay down the fifteen Degrees of Virtue, correſponding to the 15 Pſalms; five of them are for Beginners; five for Proficients; and the reſt for the Perfect.

GRADUATE, a Perſon who has the Degrees in any Faculty. See DEGREE, &c.

A *Graduate* in Phyſic, in Divinity, &c. See FACULTY, DOCTOR, &c.

In *France*, one Third of the Benefices of the Kingdom are affected to *Graduates*, *viz.* all that become vacant in the Months of *January*, and *July*; *April*, and *October*.

This Privilege of *Graduates* is no older than the fifteenth Century: It being obſerv'd that Men of Learning were much neglected by the Collators, and Patrons of Churches, Complaint therefore was made to the Council of *Baſil*, where this Decree was made; which was afterwards confirm'd by the *Pragmatic* Sanction, and again by the Concordat. See PRAGMATIC, &c.

GRADUATION, is uſed in Mathematicks, for the Act of *Graduating*, or dividing any thing into Degrees. See DEGREE.

Graduation of this Quadrant, Theodolite, or the like, is very juſt, and clean. See QUADRANT, THEODOLITE, &c.

GRAFT, in Agriculture and Gardening, a little Shoot, Cyon, Bud, or Eye of a Tree, inſerted into another Tree, to make it yield Fruit of the ſame Nature, and Kind as thoſe of the Tree whence the *Graft* is taken. See BUD, CYON, EYE, &c.

Or, *Graft*, is a little Portion of a Tree, incloſed in a Cleft, or Inciſion made in another, in order to correct, qualify, or improve the Taſte of its Fruit; or even to make it bear a different Sort of Fruit. See ENGRAFTING; ſee alſo FRUIT, TREE, STOCK, &c.

The Word is form'd of the French *Greffe*, which ſignifies the ſame thing; and *Greffe*, in this Senſe, is ſuppos'd to have been derived from the Reſemblance the Shoot bore to the Point of a Penknife, which was antiently called *Greffe*. *Du Cange* goes further, and derives the antient *Greffe* from *Graphiolum*; *Menage*, from *Graphium*, a *Latin* Word, ſignifying a little Style, or Iron Bodkin, one End whereof was pointed, and ſerved to write withal on Waxen Tablets; and the other flat, ſerving to efface, or rub out what was wrote.

GRAFTING, or GRAFFING, or INGRAFTING, in Agriculture, and Gardening. See ENGRAFTING.

GRAFTING *Wax*. See WAX, &c.

GRAIN, a minute Body, or Parcel of a Body pulveriz'd. In this Senſe we ſay, a *Grain* of Sand; a *Grain* of Salt; a *Grain* of Gunpowder, &c. See PULVERIZATION, &c.

GRAIN is alſo uſed for the Fruits, or Seeds of divers Plants; as, a *Grain*, or Corn of Pepper, of Fileria, &c. See BERRY, SEED, KERNEL, &c.

The Kingdom of Heaven is compared to a *Grain* of Muſtard Seed.

GRAIN is more generally uſed for any Fruit, or Seed growing in a Spica, or Ear. See SPICA.

In this Senſe, *Grain* comprehends all ſorts of *Corn*; as Wheat, Rye, Barley, Oats, &c. See CORN.

GRAIN is alſo a ſmall Weight, us'd in eſtimating divers Subſtances. See WEIGHT.

The *Grain* is the ſmalleſt of all the Weights known in *England*.—It is taken from the Weight of a *Grain* of Wheat, gather'd out of the Middle of the Ear, and well dried. 24 *Grains* make a Penny-weight, and 20 Penny-weight an Ounce. See PENNY-*Weight*, and OUNCE.

The *Grain* is a Troy Weight, and uſed in the weighing of Gold, Silver, Jewels, Bread, and Liquors. See TROY *Weight*.

Among the Antients, the *Grain* was the fourth Part of the *Siliqua*, or twelfth of the *Obolus*, and the 72d of the *Drachma*. It comprehended a Lens and an half. See SILIQUA, OBOLUS, &c.

Fernelius L. IV. c. 6. Method. Medend. affirms it as a thing known and certain, that the *Grain* is of the ſame Weight, every where; but he is miſtaken. Mr. *Greaves* in his Treatiſe of the *Roman Foot* has ſhewn, that 179 *Dutch Grains*, which *Snellius* had found to be the Weight of a *Philip* of Gold, only amount to 134½ *Engliſh Grains*. Add, that Monſ. *Perrault* has computed the French *Grain* to be leſs than the *Engliſh*; and yet bigger than the *Dutch*: To the *Engliſh*, it is as 158 to 134½; and to that of *Holland*, as 158 to 179.

The *Grain* uſed by the Apothecaries, is the ſame with that of the Goldſmiths; tho' they make a Difference in the Weights rais'd therefrom. Thus, 20 *Grains*, with them, make a Scruple, ℈; 3 Scruples, a Drachm, ʒ; 8 Drachms, an Ounce, ℥, &c. See DRACHM, SCRUPLE, &c.

The Carat uſed in weighing Diamonds and precious Stones, is alſo divided into four *Grains*. See CARAT.

GRAIN is alſo uſed for the Figure, or Repreſentation of *Grains* on Stones, Stuffs, Leathers, &c. Thus we ſay, Morocco has a bolder *Grain* than Shagreen. See MOROCCO, and SHAGREEN.

In ſome Marble, the *Grain* is very fine; in others coarſer. See MARBLE, STONE, &c.

Steel

Steel is known by its *Grain*, which is much finer than that of Iron. See STEEL, and IRON.

GRAINING-BOARD, is a Board uſed by the Curriers, to give the Grain to their Leather. See CURRYING.

It is made with Teeth, or Nitches running quite a-croſs; into which, the ſoft, moiſten'd, ſuppled Leather being preſs'd, its Surface readily takes the Impreſſion.—See LEATHER.

GRAMINEUS, GRAMINEA, in Antiquity, a Crown form'd of Graſs, *Gramen*, beſtow'd, by the *Romans*, on certain of their Generals, in conſideration of their having ſaved, or reſcued an Army. See CROWN.

The *Graſſy* Crown was but rarely confer'd; and for ſome ſignal Exploit; when, thro' the Courage, or Dexterity of a General, an Army reduc'd to the laſt Extremities had been ſaved, or deliver'd, and the Enemy put to flight.

GRAMINEOUS *Herbs*, among Botaniſts, are ſuch as have a long, narrow Leaf, and no Foot-ſtalk. See PLANT.

GRAMMAR, the Art of *ſpeaking* rightly; that is, of expreſſing one's Thoughts, by Signs mutually agreed on for that purpoſe. See SPEAKING.

The Signs, here found moſt convenient, are articulate Sounds; but, as theſe are tranſient, others have been invented more permanent, *viz. Grammata*, γεάμμαλα, Letters, whence the Name *Grammar*. See VOICE, and LETTER.—

Grammar is more accurately defined, after Mr. *Johnſon*, the Art of expreſſing the Relations of Things in Conſtruction, with due Quantity in ſpeaking, and Orthography in writing, according to the Cuſtom of thoſe whoſe Language we learn. See LANGUAGE.

Grammar is divided by ſome Authors, into four Parts, *Orthography*, *Proſody*, *Etymology*, and *Syntax*. See ORTHOGRAPHY, PROSODY, ETYMOLOGY, and SYNTAX.

Others chuſe to divide it ſomewhat more obviouſly, into the Doctrine of *Letters*, or *Sounds*, which coincides with Orthography and Orthoepy; that of *Syllables*, their Accent, Time, &c. which falls in with Proſody; that of *Words*, their Kinds, Derivations, Changes, Analogy, &c. which amounts to Etymology; and that of *Sentences*, which conſiders the placing, or joining of Words together, called Syntax. See LETTER, WORD, SYLLABLE, and SENTENCE.—

The chief Buſineſs of *Grammar* is to decline, conjugate, conſtruct, and ſpell Nouns, Verbs, and other Parts of Speech. It teaches the Propriety, and natural Force of each Part of Diſcourſe; and the Reaſon of all Expreſſions uſed therein. See DECLENSION, CONJUGATION, CONSTRUCTION, NOUN, VERB, SPEECH.

Some have called *Grammar* the Door, or Gate of the Arts and Sciences; by reaſon none of theſe are attainable, but by means hereof. *Grammar*, according to *Quintilian*, is that to Eloquence, which the Foundation is to the Building: They who deſpiſe it, as only dealing in low, trivial Things, are exceedingly miſtaken: It has, really, more Solidity than Shew.

The Authors of the *Art of Thinking* conſider *Grammar*, as not leſs neceſſary to try, and exerciſe the Abilities of the moſt Knowing, than to form the Minds of Beginners: The Advantages of *Grammar* are well ſet forth by *Perizonius*, in the Preface of his Edition of *Sanctius*'s *Minerva*, *Amſterd.* 1714. See GRAMMARIAN.

Diogenes Laertius relates, after one *Hermippus*, that *Epicurus* was the firſt that gave the Rules of *Grammar* for the *Greek* Tongue; but that *Plato* was the firſt who had taken the thing into Conſideration, and even made ſome Diſcoveries on that Subject.

At *Rome*, *Crates* of *Mallunthus* in *Myſia*, cotemporary with *Ariſtarchus*, gave the firſt Lectures thereon to the *Romans*, during the Time of his being Embaſſador for King *Attalus*, to the Commonwealth, between the ſecond and third *Punic* Wars, ſoon after *Ennius*'s Death. Before him, it was not known at *Rome* what *Grammar* meant. *Polydor Virgil De Invent. Rer. L. I. C.* 7.

Grammar is the ſame in all Languages, as to its general Principles, and Notions which it borrows from Philoſophy to explain the Order and Manner wherein we expreſs our Ideas by Words: But, as each Language has its particular Turns, its ſeveral Character, and Genius, different from the Genius and Character of other Languages: Hence ariſe as many *Grammars*, as Languages.—An Example will ſuffice to ſhew this: We ſay in Engliſh, *Draw a ſtrait Line*, not, *a Line ſtrait*: In *French*, they ſay, *tirer ligne droite*, a Line ſtrait, not *droite ligne*, a ſtrait Line: And in *Latin* there is a Liberty to ſay it either the one way, or the other, *rectam lineam*, or *lineam rectam*, *ducere*. And if there be a Language which in the Phraſe above-mentioned follows the ſame Analogy, as the *Engliſh*; it differs from it on a hundred other Occaſions.—

Hence Dr. *Wallis* juſtly finds Fault with our *Engliſh* Grammarians, where he ſays, that all of them forcing our *Engliſh* Tongue too much to the *Latin* Method, have deliver'd many uſeleſs Things concerning Caſes, Genders, and Declenſions of Nouns; Tenſes, Moods, and Conjugations of Verbs; as alſo the Government of Nouns and Verbs, which our Language has nothing to do with. See ENGLISH, CASE, DECLENSION, GENDER, MOOD, &c.

GRAMMAR is alſo uſed for a Book containing the Rules of *Grammar* which obtain in any Language. See LANGUAGE.

The antient *Grammars*, are; for the *Hebrew*, that of Rabbi *Judas Chiug*, which is commonly held the firſt *Hebrew Grammar* that appear'd; tho' it is certain, Rabbi *Saadias Haggaon*, who lived before Rabbi *Juda*, compos'd two Works in the ſame kind, one, expreſly of *Grammar*; and the other, of the Elegances of the *Hebrew* Tongue. See HEBREW, &c.

For the *Greek*, the oldeſt *Grammar* is that of *Gaza*: The *Latin* ones, are the Works of *Martianus Capella*, *Priſcian*, and *Aſconius Pædianus*. See GREEK, &c.

The beſt of the modern *Grammars*, are 1° For the *Hebrew*, that of *Pagninus*, the Edition of *Hen. Stevens*, or *le Preux* at *Geneva*, in 1592; that of *Petrus Martinius* at *Rochel* 1592; that of *Buxtorf*; that of *Ludovicus Deus*, in three Languages; that of *Sixtinus Amama*, which is a Collection from *Martinius* and *Buxtorf*; that of *Bellarmine*, with the Notes of *Muis*; that of Fa. *Sglanther* is uſeful for Beginners.

2° For the *Chaldee*, the beſt are thoſe of *Martinius*, *Buxtorf*, and *Lud. Deus*, in three Languages. See CHALDEE.

3° For the *Syriac*, thoſe of *Amira*, *Myricæus*, *Waſerus*, and *Beveridge*; with the *Chaldee* and *Syriac* ones of *Buxtorf*, of *Lud. Deus* in three Languages, and that of *Lambden*.

4° For the *Coptic*, the *Prodromus Coptus*, and *Lingua Æ yptiaca Reſtituta* of *Kircher*. See COPTIC.

5° For the *Arabic*, that of *Erpenius*, and that of *Golius*, which is only *Erpenius*'s a little augmented. See ARABIC.

6° For the *Ethiopic*, that of *J. Ludolphus*.

7° For the *Perſian*, that of *Lud. Deus*.

8° For the *Armenian*, thoſe of *Schroder*, and *Galanus*.

9° For the *Greek*, thoſe of *Mart. Rulandus*, *Silburgius*, Fa. *Mocquet*, *Voſſius*, *Busby*, and *Port Royal*.

10° For the *Latin*, thoſe of *Deſpauter*, the *Minerva* of *Sanctius*, thoſe of *Voſſius*, and that of *Port Royal*, which is only a Collection from the reſt.

11° For the *Italian*, thoſe of *Berger*, *Lanfredini*, *Port Royal*, and *Veneroni*.

12° For the *Spaniſh*, thoſe of *Salazar*, *Port Royal*, the Abbot *de Verac*, &c.

13° For the *Portugueſe*, that of *Pereyra*.

14° For the *French*, thoſe of the Abbe *Regnier*, and Fa. *Buffier*.

15° For the *High-Dutch*, thoſe of *Heim*, *Claius*, *Hertzberger*, and *Leopold*. Laſtly,

16° For the *Engliſh*, thoſe of *Wallis*, *Brightland*, and *Greenwood*.—

GRAMMARIAN, GRAMMATICUS, a Perſon well verſed, in Grammar; or who teaches Grammar. See GRAMMAR.

The Denomination *Grammarian*, is, like that of *Critic*, now frequently uſed as a Term of Reproach; A mere *Grammarian*; A dry, plodding *Grammarian*, &c. The *Grammarian* is conceived as a Perſon wholly attentive to the *Minutiæ* of Language; induſtriouſly employ'd about Words, and Phraſes; incapable of perceiving the Beauties, the Delicacy, Fineſſe, Extent, &c. of a Sentiment. See PEDANT.

Scaliger, however, conſider'd *Grammarians* in another Light. *Utinam eſſem*, ſays he, *bonus* Grammaticus: *Sufficit enim ei, qui omnes Authores probe vult intelligere, eſſe* Grammaticum.—

The Title *Grammarian*, 'tis certain, was antiently a Title of Honour; being given not only to ſuch as applied themſelves to Grammar, or excell'd in Philology; but to all who were reputed Learned in any Art, or Faculty whatever, as is ſhewn by *Ger. Voſſius*, in his Book of Grammar.

The Word was properly a Title of Literature and Erudition, and frequently given to Perſons who excell'd in all, or many Arts, call'd alſo *Polyhiſtores*. See POLYHISTOR.

Thus, *Philoponus*, a famous Philoſopher in *Juſtinian*'s Time, remarkable for the Extent, and Variety of his Knowledge, was ſurnamed *Grammaticus*, as appears from *Photius*'s Library: So *Saxo*, the *Daniſh* Hiſtorian, in the XIIIth Century, got the Apellation *Grammaticus*: And as late as the Year 1580 *Thomas d'Acurſius*, a celebrated *Neopolitan* Lawyer, was ſurnamed the *Grammarian*.

The Title *Grammarian* was antiently beſtow'd on thoſe we now call Criticks, Men of Learning, Erudition, Letters, &c. and particularly ſuch as wrote well, and politely in every kind. See CRITICISM.

'Tis in this Senſe that *Suetonius* entitles his Book which he wrote on the beſt *Latin* Authors, *Of the Celebrated Grammarians*; and that *Cornelius Nepos* calls the Commentators on the Orators, and Poets, *Grammarians*; and laſtly, 'tis in this Senſe the Word is attributed by the Antients to *Apion*, *Philoponus*, and *Solinus*.

The moſt celebrated *Grammarians* of the II^d Century, were *Aper*, *Pollio*, *Eutychius*, *Proculus*, *Athenæus*, *Julius Pollux*, *Macrobius*, and *Aulus Gellius*: The Works of theſe laſt Authors, are an Aſſemblage of Abundance of very different Things, and Subjects, relating to the Criticiſm of the antient Writers, and the polite Literature.

If the Name have loſt its antient Effect, 'tis thro' the Fault of thoſe who have aſſumed it; by treating of Grammar in a low, Pedantic, Dogmatic manner; reducing it to Words and Syllables; and dwelling altogether on trifling, puerile Remarks, and Cenſures: Whereas its proper Office is to make an accurate, and thoro' Examen of an Author; to enter into all his Views, to point out the Beauties, and the Defects thereof; to diſtinguiſh the true Beauties from the falſe; and the genuine Productions of an Author, from the Suppoſitious: That is, a *Grammarian* was then, what we call a *Critic*, now.

Thoſe who only taught to read, underſtand, and explain Authors, were called *Grammatiſts*, *Grammatiſtæ*; in Contradiſtinction from *Grammatici*: tho', in courſe of Time, the *Grammatiſtæ* have roſe into the Place of *Grammatici*; who are prefer'd to that of *Critici*. See CRITICISM.

GRAMMATICAL, ſomething relating to Grammar.—Thus we ſay, *Grammatical* Conſtruction: *Grammatical* Signification, *&c.* Idioms, as Angliciſms, Latiniſms, Greciſms, Galliciſms, *&c.* deviate from *Grammatical* Strictneſs. See ANGLICISM, GALLICISM, &c.

Such a Phraſe is not *Grammatically* juſt; 'tis an Idiom. See IDIOM.

GRANADO, or GRANADA, or GRENADA, in the Military Art, a hollow Ball, or Shell, of Iron, Braſs, or even Glaſs, or Potters Earth, filled with Gunpowder, and fitted with a Fuſee to give it Fire.

Of theſe there are two kinds; the one *large*, the other *ſmall*: The firſt to be thrown at the Enemy by a Mortar, properly call'd *Bombs*. See BOMB.

The latter to be caſt with the Hand; and thence denominated *Hand Granado's*.

Caſimir, indeed, makes another Diſtinction; where the Ball, or Shell is round, whatever the Size be, he calls it a *Granado*; and where, Oval, or Cylindrical, a *Bomb*: But Cuſtom allows only the former Diviſion.

The beſt way, *Caſimir* obſerves, to ſecure a Man's ſelf from the Effect of a *Granada*, is, to lie flat down on the Ground, before it burſt.

Hiſtorians relate, that at the Siege of *Oſtend* there were above fifty thouſand *Granado's* thrown in one Month into the City; and that the Citizens threw above twenty thouſand into the Works of the Beſiegers.

The Common, or *Hand Granade* is a little, hollow Ball of Iron, Wood, Paſtboard, *&c.* fill'd with ſtrong Powder, lighted with a Fuſee, and thus thrown with the Hand among the Enemy's Battallions, Trenches, Poſts, *&c.*

Their Compoſition is the ſame with that of Bombs; which ſee.—For Size, they are uſually about the Bigneſs of an Iron Bullet, and weigh about three Pounds: As to Dimenſions, they are common in Thickneſs one eighth, one ninth, or one tenth of their Diameter; their Aperture, or Orifice about $\frac{2}{19}$ wide, as preſcribed by *Caſimir*.

Thuanus obſerves that the firſt time *Granado's* were uſed, was at the Siege of *Wachtendonck*, a Town near *Gueldres*; and that the Inventor was an Inhabitant of *Venlo*, who in making an Experiment of the Effect thereof, occaſion'd two thirds of that City to be burnt; the Fire being kindled by the Fall of a *Granado*.

Bombs: were known long before the Invention of *Granado's*. See MORTAR.

The Antients had a ſort of *Ollæ*, or Fire-pots, ſomewhat of the ſame Nature with our *Granado's*, but leſs perfect.

Caſimir mentions a ſort of Blind *Granado's*, without any Aperture, or Fuſee, as not needing to be lighted; but being thrown with a Mortar, take Fire of themſelves whenever they fall on any hard, ſolid Object.

The Name *Granada* takes its Riſe hence, that they are fill'd with Grains of Powder, as a Pomgranate is with Kernels. See POMGRANATE.

GRANADIER, or GRENADIER, or GRANADEER, a Soldier who carries a Pouch full of Hand Granado's to be thrown among the Enemy. See GRANADO.

There are Companies of *Foot Granadiers*, and *Horſe Granadiers*, or *Granadiers* of Horſe, who march at the Head of the King's Guards.

To each Troop of Horſe Guards there is added by Eſtabliſhment a Troop of *Granadiers*, conſiſting of 64 Men, beſide Officers commanded by the Captain of the Troop of Guards. See GUARDS.

One Diviſion of *Granadiers* mounts with a Diviſion of the Troop; go out on ſmall Parties from the Guard; perform Centinels, Duty, *&c.*

The Pay of the private *Granadiers* is 2 *s.* 6 *d. per* Day.

GRANARY, A Place to lay, or ſtore Corn in, particularly for keeping. See CORN.

Sir *Hen. Wotton* adviſes to make it look towards the North, as much as may be; becauſe that Quarter is moſt cool and temperate.

Mr. *Worlidge* obſerves, that the beſt *Granaries* are built of Brick, with Quarters of Timber wrought in the Inſide, whereto to nail the Boards, with which the Inſide of the *Granary* muſt be lined ſo cloſe to the Bricks, that there be no Room for Vermine to ſhelter themſelves. There may be many Stories one above another, and let them be near the one to the other; for the ſhallower Corn lieth, the better, and it is the eaſier turned.

Some have had two *Granaries*, the one above the other, and filled the upper with Wheat, or other Corn: This upper one had a ſmall Hole in the Floor, by which the Corn deſcended into the lower one, like the Sand in an Hour-Glaſs; and when it was all come down into the lower *Granary*, it was then carried up again into the upper one; and ſo it was kept continually in Motion: Which is a great Preſervation to the Corn. See further in the Article CORN.

A large *Granary*, full of ſquare wooden Pipes, may keep Corn from heating.

GRANATE, a Gem, or pretious Stone, of a high, red Colour; thus called from the Reſemblance it bears to that of the Kernel of a Pomgranate. See PRECIOUS *Stone*.

Granates are either *Oriental*, or *Occidental*: The firſt are brought from divers Parts of the Eaſt Indies; the ſecond from *Spain*, *Bohemia*, and *Sileſia*.—

Theſe, from the Eaſt, are diſtinguiſh'd by their Colour into three Kinds: The firſt, of a deep, browniſh Red, like black clotted Blood; of which Kind there are ſome as big as an Hen's Egg: The ſecond, are nearly of the Colour of a Hyacinth, with which it were eaſy to confound them, but for their ſuperior Redneſs. The laſt, having a Mixture of Violet with their Red, are called by the Italians, *Rubini della Rocha*. See RUBY.

The Occidental *Granates* are of divers Reds, according to the Places they are found in. Thoſe of *Spain*, imitate the Colour of the Kernel of a Pomgranate: Thoſe of *Bohemia* have a golden Caſt with their Red, glittering like a live Coal: Thoſe of *Sileſia* are the darkeſt of all, and ſeldom thoroughly tranſparent.

Of the *Occidental Granates*, thoſe of *Bohemia* are the moſt valued: Some even give them the Preference over the Oriental Kind. They are found near *Prague*; not in any particular Mines, but are pick'd up by Peaſants in the Fields, from among the Sands, and Pebbles.

The *Granate* is of ſome Uſe in Medicine: Its Powder is ſometimes an Ingredient in the Cordial Electuaries. The Antients held it excellent againſt Heavineſs and Melancholy.

GRAND, a Term rather *French*, than *Engliſh*, though uſed on many Occaſions in our Language. It has the ſame Import with *Great*; being form'd of the Latin *Grandis*.—See GREAT.

In this Senſe we ſay, The *Grand* Maſter of an Order; the *Grand* Maſter of *Malta*; of the Free Maſons, *&c.* See MALTA, and MASON.

So alſo we ſay, the *Grand Viſier*, the *Grand Signior*, &c. See VISIER, and SIGNIOR, &c.

Grand Father, *Grand* Mother, *&c.* See PARENTAGE, DESCENT, DEGREE, CONSANGUINITY, &c.

In the *French* Polity and Cuſtoms, are divers Officers thus denominated, which we frequently retain in *Engliſh*; as *Grand Almoner*, *Grand Ecuyer*, *Grand Chambellan*, *Grand Voyer*, &c.

We alſo ſay, the *Grand Guſt*, *Grand Monde*, the *Grand Style*, &c. See SUBLIME, &c.

GRAND *Aſſize*; ſee ASSIZE, and MAGNA *Aſſiſa*.

GRAND *Cape*; ſee CAPE, and ATTACHMENT.

GRAND *Diſtreſs*, *Diſtrictio magna*, a Diſtreſs ſo called, not for the Quantity, for it is very ſhort; but for the Quality, for the Extent is very great; for thereby the Sheriff is commanded, *Quod* diſtringat *tenentem*, *ita quod ipſe nec aliquis per ipſum ad ea manum apponat*, *donec habuerit aliud præceptum*; *& quod de exitibus eorundem nobis reſpondeat*, *& quod habeat corpus ejus*, &c. See DISTRESS.

This Writ lies in two Caſes: Either when the Tenant, or Defendant is attach'd, and ſo returned, and appears not, but makes Default; or where the Tenant, or Defendant hath once appear'd, and after makes Default. On ſuch Occaſions, this Writ lies by Common Law, in lieu of a *Petit Cape*.

GRAND *Guſto*, is a Term uſed by Painters, to expreſs, that there is ſomething in the Picture very great, and extraordinary, calculated to ſurpriſe, pleaſe, and inſtruct.

Where this is found, they ſay, The Painter was a Man of the *Grand Guſto*: And they uſe the Word *Sublime*, and *Marvellous*, when they ſpeak of a Picture in much the ſame Senſe.

GRAND *Sergeanty*; ſee CHIVALRY, and SERGEANTY.

GRANDEE, is underſtood of a Lord of the firſt Rank, or prime Quality.

In *Spain*, the Term *Grandees*, is ſpoken abſolutely of the Prime Lords of the Court, to whom the King has once given Leave to be cover'd in his Preſence: There are ſome *Grandees*

dees for life only; made by the King's saying, simply, *Be cover'd.* Others, are *Grandees* by Descent; made by the King's saying, *Be cover'd for thy self, and Heirs.* These last, are reputed far above the former. There are some have three, or four *Grandees*, or *Grandates* in their Family.

GRANGE, an antient Term for a *Barn*; or Place wherein to lay up and thrash Corn.

The Word is sometimes also used in a more extensive Sense, for the whole Farm; with all the Appendages of Stables for Horses, Stalls for Cattle, &c. See FARM.

It is form'd of the Latin *Grania*; or of *Granum*, Grain, Corn.—Hence also *Granger*, or *Grangier*, a Farmer.

GRANI, in our antient Writers, Mustachoes, or Whiskers of a Beard.—*Quia cum sint in fine rotundati* Granorum *formam efficiunt.*

It is given for a Reason why the Cup is refused to the Laity, *Quia barbati, & prolixos habent* Granos, *dum poculum inter epulas sumunt, prius liquore pilos inficiunt quam ori infundunt.*

GRANIT, GRANITES, a sort of Marble, extreamly hard, rough, and incapable of taking a thoro' Polish: Thus called, as being sprinkled over with a great Number little Stains, resembling Grains of Sand. See MARBLE.

There are three sorts of *Granit*; that of *Egypt*; that of *Italy*, and that of *Dauphiny.*

The first has browniſh, or greeniſh Spots, on a dirty, white Ground. It is found in very large Pieces; and is that chiefly used by the *Egyptians*, in their Obelisks, and Pyramids on the Tombs of their great Men. There are Columns of this Stone above 40 Foot high.

The *Granit* of *Italy* is softer than that of *Egypt*; especially in the Quarry, where it cuts with much more Ease. There is also a sort of *Green Granit*, which is a Species of Serpentine, spotted with green, and white Spots.

The *Granit* of *Dauphiny*, a Quarry whereof has been found, is only a very hard sort of Flint.

GRANIVOROUS, an Epithet, or Denomination given to such Animals as feed upon Corn, or any other Grain or Seeds. See ANIMAL and SEED.

Granivorous Animals are chiefly of the Bird kind. See BIRD.

These have a peculiar Provision for the digesting of so dry and hard a Food. See DIGESTION, GIZZARD, &c.

GRANT, in Law, a Gift in Writing, of something which cannot aptly be passed, or convey'd by Word only; as Rents, Reversions, Services, Advowsons in Gross, Tithes, &c.

Or, it is a Gift made by such Persons as cannot give but by Deed; as the King and all Bodies Politick. See DONATION.

This Difference is often, in Speech, neglected; and the Word *Grant* taken generally for every Gift whatsoever, made of any thing, by any Person. In this Sense he that granteth is named *Grantor*, and he to whom it is made, the *Grantee.* —A Thing is said to *lie in Grant*, which cannot be assigned without Deed. See DEED.

GRANULATION, in Chymistry, an Operation perform'd on Metals, whereby they are reduc'd into small *Grains*, or Globules.

It is done by melting them; and when in Fusion, casting them into cold Water; in which they congeal into Granules, as required: And are hereby render'd more easy to be dissolved. See DISSOLUTION.

The best way is to pour the fluid Metal thro' a Culender, or a new Birchen Broom.—

We also say, the *Granulation* of Gun-powder. See GUN-*Powder.*

GRAPE, see VINE, RAISIN, and WINE.

GRAPPLE, in the Manage—A Horse is said to *grapple* with one, or both Legs, when he catches, or raises 'em more hastily, and higher than ordinarily, as if he were curvetting.

GRAPHOIDES, in Anatomy, an Appendage of the Bones of the Temples, long, small, sharp, and a little crooked, like a Cock's Spur. See *Os* TEMPORIS.

The same Name is sometimes also applied to the *Musculus Digastricus.* See DIGASTRICUS.

Likewise, to an Extension of the Brain, resembling a Writing-pen. See BRAIN.

GRAPHOMETER, a Name which some Authors, particularly the *French*, give to a Surveying Instrument, by us commonly called a *Semicircle.* See SEMICIRCLE.

GRASS-*Plots*, and *Walks*, make a considerable Article in Gardening, &c. See WALK, &c.

Grass, or *Green Plots* are had either by sowing of Hay-seed, or laying of Turf: For the first, which is the cheapest way, the Seed of the finest Upland Pastures is to be chose, well sifted and cleansed.

For the second, the Turf should be cut on a Down, or Green, or Common, or Sheep-walk, where the *Grass* is short and fine; if there be any Knobs, or Roughnesses, the Place must be cleansed and roll'd after a Shower, before it be cut up. The Turf is cut in Squares, mark'd out with Lines, rais'd with a Knife, and roll'd up; about three Inches thich.

The Quarters, or Verges are to be prepared with a fine Coat of poor Earth to lay the Turf on; and after laying, the Turf must be well water'd, rolled, &c.

Small Pieces of *Grass*-work, as Knots, Shell-work, and Volutes of Parterres, Cut-work, Verges about Basons, &c. must always be laid with Turf.—

To sow *Grass* for Plots, &c. the Ground must first be dug or broke with a Spade, then dress'd, laid even, raked fine, and cover'd an Inch thick with good Mould to facilitate the Growth of the Seed. Then the Seed to be sown pretty thick, that it may come up close and short; and lastly, to be raked up, and cover'd. The best Season is the latter End of *August*: When it is well come up, it must be mow'd, and this often repeated; since the oftener 'tis mow'd, the thicker and handsomer it grows. It must also be rolled from time to time.

GRATICULATION, a Term some Writers use for the dividing a Draught, or Design into Squares, in order to the reducing it thereby. See REDUCTION.

GRATIOLA, a Medicinal Plant, of considerable Virtues; tho' little known in the ordinary Practice; as being suppos'd dangerous of Application.

Its most noted Effects are to evacuate hydropic Waters, both upwards and downwards, taken either in Infusion, or Decoction; to cleanse Wounds, and to kill Worms.

Its Bark, taken in Powder, is said to be scarce inferior in Virtue to Ipecacuanha for Dysenteries.

It is of a very bitter Taste; whence, probably its vermifugous Power; and its Root astringent, whence its Use in the Dysentery.

M. *Boulduc* made an Extract of this Plant, which purged gently, and was very Diuretic: Another Extract made of the Fæces or Refuse, proved much more efficacious. *Hist. de l'Acad. An.* 1705.

GRAVE, in Music, is applied to a Sound, which is in a low, or deep Tune. See SOUND, and TUNE.

The thicker the Chord, or String, the more *grave* the Tone, or Note: And the smaller, the acuter. See CHORD.

Notes are supposed to be the more *grave*, in proportion as the Vibrations of a Chord, are less quick. See GRAVITY.

GRAVE, in Grammar, an Accent opposite to *Acute.* See ACCENT.

The *Grave* Accent is express'd thus: (`) and shews that the Voice is to be depress'd, and the Syllable over which it is placed, pronounced in a low, deep Tone.

GRAVE is also an Ingredient in the Composition of divers Terms in History, and Policy. Thus we say, *Landgrave, Burggrave, Markgrave, Palsgrave*, &c. See PALS-*Grave*, &c.

The Word, in this Sense, is form'd of the German *Graaf*, signifying *Comes*, Count; and in the Barbarous Latin *Gravio, Graphio.*— See COURT.

GRAVE is also used for a Tomb, wherein a Defunct is interr'd. See TOMB, and SEPULCHRE.

GRAVEDO, a Heaviness, or Listlessness, which accompanies a lessened Transpiration, or taking Cold as it is commonly called. Hence also, the Case being frequently accompanied with a Running of the Nose and Eyes.

The *Gravedo* and *Coryza* are sometimes used promiscuously. See CORYZA.

GRAVEL, in Natural History, coarse Sand, found at the Bottom, and the Sides of Rivers. See SAND.

Mons. *Perrault* lays down the Difference between *Sand*, and *Gravel.*—The first, according to him, is small, and consists of fine, even Grains: The latter is bigger, and consists of little Pebbles, mix'd with the finer Fragments of Stones.

Gravel is chiefly used in laying Yards, Courts, and Walks in Gardens,—

The Word is form'd of the French *Gravier*; which *du Cange* derives from the Barbarous Latin *Graveria*, signifying the same thing.—

GRAVEL, in Medicine, a Disease of the Bladder, and Kidneys, occasion'd by a sandy, or gritty Matter gather'd therein, which cohering into a stony Mass, prevents the due Secretion, and Excretion of the Urine. See URINE.

The *Gravel* is generally consider'd as the same Disease with the Calculus, or Stone. See STONE.

GRAVEL *Soil*, see SOIL.

GRAVEL *Walk*, in Gardening.—To lay, or form a Walk with *Gravel*, all the good Soil is to be pared away, below the Roots of any Grass, or Weeds; then the Place to be filled two or three Inches with coarse *Gravel* unsearced, laying it highest in the Middle: Then rolling it; a new Stratum of finer *Gravel* to be thrown on, two, or three Inches thick; And the Rolling to be repeated again and again.

Note, the Sides next the Beds should be laid a Foot and an half, or two Foot with Turf from whence the Heat of the Sun cannot be reflected as from *Gravel*, to the Prejudice of the neighbouring Flowers.

GRAVELLING, among Farriers, a Disorder incident to Travelling-horses, occasion'd by little Gravel-stones getting in between the Hoof and the Shoe, which settling to the Quick, frets, and festers the Part. 'Tis

'Tis cured by pulling off the Shoe, drawing the Place to the Quick, picking out all the Gravel, and ſtopping up the Foot with Horſe-greaſe, and Turpentine pour'd in hot.

GRAVER, a Steel Inſtrument, ſerving to engrave on Metals. See ENGRAVING.

The *Graver* conſiſts of four Sides, or Faces; and the Point uſually terminates in a Lozange. The other End is fitted into a Wooden Handle. See STEEL, TEMPER, &c.

Beſide Engravers, the Seal-cutters, Lockſmiths, Gunſmiths, Goldſmiths, Armourers, Spurmakers, *&c.* likewiſe make uſe of *Gravers*.—

GRAVING, the Act, or Art of cutting Lines, Figures, and other Deſigns on Metals; more properly called *Engraving*. See ENGRAVING.

GRAVITATION, the Exerciſe of *Gravity*, or the Preſſure a Body exerts on another Body underneath it by the Power of Gravity. See GRAVITY.

'Tis one of the Laws of Nature, diſcover'd by Sir *Iſaac Newton*, and now received by moſt Philoſophers, that every Particle of Matter in Nature *gravitates* towards every other Particle; which Law is the Hinge whereon the whole *Newtonian* Philoſophy turns. See NEWTONIAN *Philoſophy*.

What we call *Gravitation*, with reſpect to the *Gravitating* Body, is call'd *Attraction* with reſpect to the Body *gravitated* to. See ATTRACTION.

The Planets, both primary and ſecundary, as alſo the Comets, all *gravitate* toward the Sun, and toward each other; and the Sun toward them; and that in proportion to the Quantity of Matter in each. See PLANET, COMET, SUN, EARTH, MOON, &c.

The Peripateticks, *&c.* hold that Bodies only *gravitate* when out of their Natural Places; and that *Gravitation* ceaſes when they are reſtored to the ſame; the Intention of Nature being then fulfill'd. The final Cauſe of this Faculty, they hold, is only to bring Elementary Bodies to their proper Places where they may reſt. But the Moderns ſhew that Bodies exerciſe Gravity even when at reſt, and in their proper Places.

This is particularly ſhewn of Fluids; and it is one of the Laws of Hydroſtaticks, demonſtrated by Mr. *Boyle*, and others, that Fluids gravitate *in proprio loco*, the upper Parts preſſing on the lower, *&c.* See FLUID.

For the Laws of Gravitation *of Bodies in Fluids, ſpecifically lighter or heavier, than themſelves*; *ſee* SPECIFIC *Gravity*.

GRAVITY, in Phyſicks, the natural Tendency, or Inclination of Bodies towards a Centre. See CENTRE.

In this Senſe *Gravity* coincides with *Centripetal Force*. See CENTRIPETAL *Force*.

Gravity is defined by others, more generally, to be the Natural Tendency of one Body towards another; and by other more generally ſtill, the mutual Tendency of each Body, and each Particle of a Body towards all others: In which Senſe the Word coincides with what we more uſually call *Attraction*. See ATTRACTION.

The Terms *Gravity*, *Centripetal Force*, *Weight*, and *Attraction*, do, in effect, all denote the ſame thing; only in different Views, and Relations: Which different Relations, however, Authors are apt to confound; and accordingly, the four, are frequently uſed promiſcuouſly.

In Propriety, when we conſider a Body as tending towards the Earth, the Force wherewith it tends we call *Gravity*, Force of *Gravity*, or *Gravitating Force*: The ſame Force, when we conſider it as immediately tending to the Centre of the Earth, we call *Centripetal Force*: The ſame, when we conſider the Earth, or Body toward which it tends, we call *Attraction*, or *Attractive* Force; and when we conſider it, in reſpect of an Obſtacle, or a Body in the way of its Tendency, upon which it acts, we call it *Weight*. See WEIGHT, *&c.*

Philoſophers conceive very differently of *Gravity*: Its Nature, Uſe, Phænomena, Cauſe, Effects, and Extent have afforded various Speculations in all Ages.

Some conſider it as an active Property, or innate *Vis* in Bodies, whereby they endeavour to join their Centre. Others hold *Gravity* in this Senſe, to be an occult Quality, and as ſuch to be exploded out of all ſound Philoſophy. See OCCULT *Quality*.

Sir *Iſ. Newton*, tho' he frequently calls it a *Vis*, Power, or Property in Bodies; yet explains himſelf, that all he intends by the Word, is the Effect, or the Phænomenon. He does not conſider the Principle, the Cauſe whereby Bodies tend downwards, but the Tendency itſelf, which is no occult Quality, but a ſenſible Phænomenon, be its Cauſe what it will, whether a Property eſſential to Body, as ſome make it; or ſuperadded to it, as others; or even an Impulſe of ſome Body from without, as others. See NEWTONIAN *Philoſophy*.

'Tis a Law of Nature long obſerv'd, that *all Bodies near the Earth, have a* Gravity, *or Tendency towards the Centre of the Earth*; which Law, the Moderns, and particularly the immortal Sir *Iſ. Newton*, have found, from certain Obſervation, to be much more Extenſive; and to hold univerſally with reſpect to all the known Bodies in Nature. See NATURE.

'Tis now, therefore acknowledg'd a Principle or Law of Nature, that *all Bodies, and all the Particles of all Bodies* gravitate *towards each other, mutually*: From which ſingle Principle, Sir *Iſ. Newton* has happily deduc'd all the great Phænomena of Nature. See NEWTONIAN *Philoſophy*.

Hence *Gravity* may be diſtinguiſh'd into *Particular*, and *General*.

Particular Gravity is that whereby heavy Bodies deſcend towards the Earth. See EARTH.

Phænomena, or Properties of Particular GRAVITY.

1° All Circumterreſtrial Bodies do hereby tend towards a Point which is either accurately, or very nearly the Centre of Magnitude of the terraqueous Globe. See TERRAQUEOUS *Globe*.

2° This Point, or Centre is fix'd within the Earth; or at leaſt hath been ſo ever ſince we have had any authentick Hiſtory:

For a Conſequence of its ſhifting, tho' ever ſo little, would be the overflowing of the low Lands, on that Side of the Globe towards which it approached. Dr. *Halley* ſuggeſts, it would well account for the univerſal Deluge, to have the Centre of Gravitation removed for a Time towards the Middle of the then inhabited World: For the Change of Place but the 2000th Part of the Radius of our Earth would be ſufficient to lay the Tops of the higheſt Hills under Water. See DELUGE.

3° In all Places equi-diſtant from the Centre of the Earth, the Force of *Gravity* is nearly equal.

Indeed all Places of the Earth's Surface are not at equal Diſtances from the Centre; becauſe the Equatorial Parts are ſomething higher than the Polar Parts: The Difference between the Earth's Diameter and Axis being about 34 *Engliſh* Miles, which hath been proved by the Neceſſity of making the Pendulum ſhorter in thoſe Places, before it will ſwing Seconds. See PENDULUM.

4° *Gravity* equally affects all Bodies, without regard either to their Bulk, Figure, or Matter: So that abſtracting from the Reſiſtance of the Medium, the moſt compact and looſe, the greateſt and ſmalleſt Bodies would deſcend equal Spaces in equal Times; as appears from the quick Deſcent of very light Bodies in the exhauſted Receiver. See VACUUM.

Hence, a very great Difference may be obſerved betwixt *Gravity* and Magnetiſm; the latter affecting only Iron, and that towards its Poles; the former, all Bodies alike, in every Part. See MAGNETISM.

Hence, it follows that *Gravity*, in all Bodies, is proportionable to their Quantity of Matter; ſo that all Bodies conſiſt of Matters equally heavy. See BODY, MATTER, *&c.*

Hence alſo may be concluded that there is no ſuch thing as poſitive *Levity*, thoſe Things which appear light, being only comparatively ſo. See LEVITY.

If ſeveral things aſcend, and ſwim in Fluids, it is only becauſe they are not Bulk for Bulk, ſo heavy as thoſe Fluids; Nor is there any Reaſon, why Cork, for inſtance, ſhould be ſaid to be light, becauſe it ſwims on Water, any more than Iron, becauſe it will ſwim on Mercury. See SPECIFIC *Gravity*, &c.

5° This Power increaſes as we deſcend, and decreaſes as we aſcend from the Centre of the Earth, and that in the proportion of the Squares of the Diſtances therefrom reciprocally; ſo as, for inſtance, at a double Diſtance, to have but a Quarter of the Force, *&c.*

6° As all Bodies *gravitate* towards the Earth; ſo, does the Earth equally *gravitate* towards all Bodies, *i. e.* The Action of *Gravity* is mutual on each Side, and equal. See REACTION.

Hence alſo the attractive Powers of Bodies, at equal Diſtances from the Centre, are as the Quantities of Matter in the Bodies.

Hence alſo the attractive Force of the entire Bodies, conſiſts of the attractive Force of the Parts: For by the adding, or taking away any Part of the Matter of a Body, its *Gravity* is increas'd, or diminiſh'd in the Proportion of the Quantity of ſuch Particle to the entire Maſs.—

General, or Univerſal GRAVITY.

The Exiſtence of the ſame Principle of *Gravity* in the great Regions of the Heavens, as well as on Earth, is eaſily proved.

That all Motion is naturally rectilinear, is allow'd by all; thoſe Bodies, therefore, which move in Curves, muſt be retain'd therein by ſome Power continually acting on them. Hence, the Planets being found to revolve in curvilinear Orbits, we infer that there is ſome Power, by whoſe conſtant Influence, they are prevented from flying off in Tangents.

Again, it is proved by Mathematicians, that all Bodies moving in any Curve Line deſcribed in a Plane, and which by Radii drawn to any certain Point, deſcribe Areas about the Point proportionable to the Times; are impell'd, or acted on by ſome Power tending to that Point: Now it is ſhewn by the Aſtronomers that the Primary Planets, round the Sun; and the Secundary Planets, round the Primary ones, do deſcribe Areas proportionable to the Times. Conſequently, the Power whereby they are retain'd in their Orbits, is directed towards the Bodies placed in the Centres thereof.

Laſtly, it is demonſtrated, that if ſeveral Bodies revolve with an equable Motion in Concentrical Circles, and the Squares of their Periodical Times be as the Cubes of the Diſtances from the Common Centre; the Centripetal Forces of the revolving Bodies, will be reciprocally as the Squares of the Diſtances. Or, if Bodies revolve in Orbits approaching to Circles, and the Apſides of thoſe Orbits be at reſt; the Centripetal Forces of the revolving Bodies, will be reciprocally as the Squares of the Diſtances.

Now, the Aſtronomers all agree, that both theſe Caſes obtain in all the Planets: Whence it follows, that the Centripetal Powers of all the Planets are reciprocally as the Squares of the Diſtances from the Centres of the Orbits.

Upon the whole, it appears, that the Planets are retain'd in their Orbits by ſome Power which is continually acting on them: That this Power is directed toward the Centre of their Orbits: That the Intenſion, or Efficacy of this Power increaſes upon an Approach toward the Centre, and diminiſhes at its Receſs from the ſame; and that it increaſes in the ſame Proportion as the Diſtance diminiſhes; and diminiſhes in the ſame as the Diſtance increaſes—Now, by comparing this Centripetal Force of the Planets, with the Force of *Gravity* on Earth, they will be found perfectly alike.

This we ſhall illuſtrate in the Caſe of the Moon, the neareſt to us of all the Planets—The Rectilinear Spaces deſcrib'd in any given Time by a falling Body urged by any Powers, reckoning from the Beginning of its Deſcent, are proportionable to thoſe Powers. Conſequently, the Centripetal Force of the Moon revolving in its Orbit, will be to the Force of *Gravity* on the Surface of the Earth; as the Space which the Moon would deſcribe in falling, any little Time, by her Centripetal Force towards the Earth, had ſhe no circular Motion at all, to the Space, a Body near the Earth would deſcribe in falling by its *Gravity* towards the ſame.

Now, by an actual Calculus of thoſe two Spaces, it appears, that the firſt of them is to the ſecond, *i. e.* the Centripetal Force of the Moon revolving in her Orbit, is to the Force of *Gravity* on the Surface of the Earth, as the Square of the Earth's Semidiameter, to the Square of the Semidiameter of her Orbit: Which is the ſame Ratio, as that of the Moon's Centripetal Force in her Orbit, to the ſame Force near the Surface of the Earth.

The Moon's Centripetal Force, therefore, is equal to the Force of *Gravity*. Theſe Forces, conſequently, are not different, but one and the ſame: For, were they different, Bodies acted on by the two Powers conjointly, would fall towards the Earth, with a Velocity double to that ariſing from the ſole Power of *Gravity*.

It is evident, therefore, that the Moon's Centripetal Force, whereby ſhe is retain'd in her Orbit, and prevented from running off in Tangents; is the very Power of *Gravity* of the Earth, extended thither.

The Moon, therefore, gravitates towards the Earth; and the Earth reciprocally towards the Moon: which is further confirm'd by the Phænomena of the Tides. See TIDES.

The like Reaſoning might be applied to the other Planets—For, as the Revolutions of the Primary Planets round the Sun, and thoſe of the Satellites of Jupiter and Saturn round their Primaries, are Phænomena of the ſame Kind as the Revolution of the Moon round the Earth; as the Centripetal Powers of the Primary are directed towards the Centre of the Sun; and thoſe of the Satellites, towards the Centre of their Primaries; and laſtly, as all theſe Powers are reciprocally as the Squares of the Diſtances from the Centres: it may ſafely be concluded that the Power and Cauſe is the ſame in all.

Therefore, as the Moon gravitates towards the Earth, and the Earth towards the Moon; ſo do all the Secundaries to their Primary ones; the Primary to their Secundary ones; ſo, alſo, the Primary ones to the Sun, and the Sun to the Primary ones. See PLANET, COMET, SYSTEM, *&c.*

Phænomena, or Properties of Univerſal GRAVITY.

1. *All the ſeveral Particles of all Bodies in Nature gravitate to all the Particles of all other Bodies.*

To what has been urged in Proof hereof, from the Analogy between the Motions of the ſeveral Bodies in our Syſtem; it may be added, that *Saturn* is actually obſerved by Aſtronomers to change its Courſe when neareſt to *Jupiter*; and *Jupiter*, alſo, is found to diſturb the Motion of the Satellites of *Saturn*. So that the Gravitation of thoſe Bodies is Matter of actual Obſervation. See JUPITER, SATURN, and SATELLITES; ſee alſo DISTURBING *Force*.

2. *The Quantity of this* Gravity *at equal Diſtances, is always proportional to the Quantity of Matter in the gravitating Bodies.*

For, the Powers of *Gravity*, are as the Quantities of Motion they generate; which Quantities, in unequal Bodies, equally ſwift, are to each other as the Quantities of Matter. Conſequently, ſince unequal Bodies, which are equally ſwift, are to each other as the Quantities of Matter; therefore, in regard unequal Bodies at the ſame Diſtance from the attracting Body are found to move equally ſwift, by *Gravity*: It is evident, the Forces of *Gravity* are proportionable to the Quantities of Matter.

3. *The Proportion of the Increaſe, or Decreaſe of* Gravity *in the Approach, or Removal of Bodies from each other, is this; that the Force is reciprocally in a Duplicate Ratio*; i. e. *As the Squares of the Diſtances.*

Thus, ſuppoſe a Body of an hundred Pounds, at the Diſtance of ten Diameters from the Earth; the ſame Body, if its Diſtance were but half ſo great, would have quadruple the Weight: If its Diſtance were but one third of the former, its Weight would be nine times as great, *&c.*

Hence, we gather the following Corollaries. 1° That at equal Diſtances from the Centre of Homogeneal Bodies, the *Gravity* is directly as the Quantity of Matter, and inverſely as the Square of the Diameter. 2° That on the Surfaces of equal, ſpherical, and homogeneous Bodies, the *Gravities* are as the Denſities. 3° That on the Surfaces of ſpherical, homogeneous, equally denſe, but unequal Bodies, the *Gravities* are inverſely as the Squares of the Diameters. 4° That if both the Denſities and Diameters differ, the *Gravities* on the Surfaces will be in a Ratio compounded of the Denſities, and the Diameters. Laſtly, that a Body placed any where, within a hollow Sphere, which is homogeneous, and every where of the ſame Thickneſs, will have no *Gravity*, whereſoever it be placed; the oppoſite *Gravities* always preciſely deſtroying each other.

For the Particular Laws of the Deſcent of Bodies, by the Force of Gravity, *ſee* DESCENT *of Bodies*; and CENTRIPETAL *Force*.

Cauſe of GRAVITY.

We have various Theories advanced by the Philoſophers of various Ages to account for this Grand Principle of *Gravitation*. The antients, who were only acquainted with particular *Gravity*, or the Tendency of ſublunar Bodies towards the Earth, aim'd no further than at a Syſtem which ſhould anſwer the more obvious Phænomena of the ſame: But the Moderns, as their Principle is higher and more extenſive, ſo ſhould their Theory be.

Ariſtotle, and the Peripateticks, content themſelves to refer Gravity or Weight to a native Inclination in heavy Bodies to be in their proper Place or Sphere, the Centre of the Earth. See SPHERE and ELEMENT.

Copernicus aſcribes it to an innate Principle in all Parts of Matter, whereby when ſeparated from their Wholes, they endeavour to return to them again, the neareſt way.

But neither of theſe Syſtems aſſigns any Phyſical Cauſe of this great Effect: They only amount to this, that Bodies deſcend, becauſe they deſcend.—

Gaſſendus, *Kepler*, *Gilbert*, and others aſcribe *Gravity* to a certain Magnetic Attraction of the Earth.

Theſe Authors conceive the Earth to be one great Magnet continually emitting Effluvia, which lay hold on all Bodies, and draw them toward the Earth.—But this, we have obſerv'd, is inconſiſtent with the Phænomena. See MAGNETISM.

Des Cartes, and his Followers, *Rohault*, &c. attribute *Gravity* to an external Impulſe, or Truſion of ſome ſubtle Matter. See CARTESIANISM.

By the Rotation of the Earth, ſay they, all the Parts and Appendages thereof neceſſarily endeavour to recede from the Centre of Rotation: But they cannot, all, actually recede, as there is no Vacuum or Space to receive them.

If now, we ſuppoſe the Earth A B C D, *Tab. Mechanicks, Fig.* 8. and L a Terreſtrial Body placed in the Pyramidal Space, A E B: It follows, that the Matter in this Pyramid, will have ſo much leſs Endeavour to recede from the Centre, as the Body L has a leſs Endeavour than the fluid Matter whoſe Place it poſſeſſes. Hence it will follow, that the Matter of the adjacent Pyramids receding with more Force; that in the Pyramid A E B, and particularly the Body L will be thereby driven toward the Centre; for the ſame Reaſons, as Cork, tho' a heavy Body, aſcends in Water.

This Hypotheſis, tho' ingenious enough, yet, as it is founded on the Suppoſition of a Plenum, it is overthrown by what we ſhall prove of the Exiſtence of a VACUUM.

Dr. *Hook* inclines to an Opinion much like that of *Des Cartes*: *Gravity*, he thinks, deducible from the Action of a moſt ſubtle Medium, which eaſily pervades, and penetrates the moſt ſolid Bodies; and which by ſome Motion it has, detrudes all earthly Bodies from it, toward the Centre of the Earth.

Voſſius, and many others give partly into the *Carteſian* Notion, and ſuppoſe *Gravity* to ariſe from the Diurnal Rotation of the Earth round its Axis.

Dr. *Halley*, deſpairing of any ſatisfactory Theory, chuſes to have immediate Recourſe to the Agency of the Almighty.

So, Dr. *Clark*, from a View of ſeveral Properties of *Gravity*, concludes, that it is no adventitious Effect of any Motion, or ſubtle Matter, but an Original, and General Law impreſs'd by the Almighty on all Matter, and preſerv'd therein by ſome efficient Power penetrating the very ſolid, and intimate Subſtance thereof; as being found always proportionable, not to the Surfaces of Bodies or Corpuſcles, but to their ſolid Quantity and Contents.

It ſhould, therefore, ſays he, be no more enquired, why Bodies gravitate, than how they came to be firſt put in Motion.—*Annot. in* Rohaulti *Phyſ.* P. *c.* 28.

Dr. *S. Graveſande*, in his *Introduct. ad Philoſoph. Newton.* contends, that the Cauſe of Gravity is utterly unknown; and that we are to look on it no otherwiſe than as a Law of Nature, originally and immediately impreſſed by the Creator, without any Dependance on any ſecond Law or Cauſe at all. Of this he thinks, the three following Conſiderations, ſufficient Proof.

1*ſt*. That *Gravity* requires the Preſence of the gravitating or attracting Body: So the Satellites of *Jupiter*, *e. gr.* gravitate towards *Jupiter* wherever he be.

2*d*. That the Diſtance being ſuppoſed the ſame, the Velocity wherewith Bodies are moved, by the Force of *Gravity*, depends on the Quantity of Matter in the attracting Body: And that the Velocity is not changed, let the Maſs of the gravitating Body be what it will.

Laſtly, That if *Gravity* do depend on any known Law of Motion, it muſt be ſome Impulſe from an Extraneous Body; whence, as *Gravity* is continual, a continual Stroke wou'd be required.

Now, if there be any ſuch Matter continually ſtriking on Bodies, it muſt be fluid, and ſubtle enough to penetrate the Subſtance of all Bodies: But how ſhall a Body ſubtle enough to penetrate the Subſtance of the hardeſt Bodies, and ſo rare as not ſenſibly to hinder the Motion of Bodies, be able to impel vaſt Bodies towards each other with ſuch Force? How does this Force increaſe in a Ratio of the Maſs of the Body toward which the other Body is moved? whence is it that all Bodies, ſuppoſing the ſame Diſtance, and the ſame Body gravitated to, move with the ſame Velocity? Can a Fluid, which only acts on the Surface, either of the Bodies themſelves, or of their internal Particles, communicate ſuch a Quantity of Motion to Bodies, which in all Bodies ſhall exactly follow the proportion of the Quantity of Matter in them?

Mr. *Cotes*, goes yet further; giving a View of Sir *Iſ. Newton*'s Philoſophy, he aſſerts that *Gravity* is to be rank'd among the primary Qualities of all Bodies; and deem'd as eſſential to Matter, as Extenſion, Mobility, or Impenetrability. *Præfat. ad Newton. Princip.*

But this Author ſeems to have overſhot the Mark. His great Maſter, Sir *I. Newton* himſelf, diſclaims the Notion; and to ſhew that he does not take *Gravity* to be eſſential to Bodies, gives us his Opinion about the Cauſe; chuſing to propoſe it by way of Query, as not being yet ſufficiently ſatisfied about it by Experiments.

This Query we ſhall ſubjoin at large—After having ſhewn that there is a Medium in Nature vaſtly more ſubtle than Air, by whoſe Vibrations Light communicates Heat to Bodies, and is itſelf put into alternate Fits of eaſy Reflexion and eaſy Tranſmiſſion, and Sound propagated; and by the different Denſities whereof the Refraction and Reflexion of Light is perform'd. See MEDIUM, HEAT, REFRACTION, &c. He proceeds to enquire,

'Is not this Medium much rarer within the denſe Bodies 'of the Sun, Stars, Planets, and Comets, than in the empty 'celeſtial Spaces between them? And in paſſing from them 'to great Diſtances, doth it not grow denſer and denſer perpetually, and thereby cauſe the *Gravity* of thoſe great Bodies towards one another, and of their Parts towards the 'Bodies; every Body endeavouring to go from the denſer 'Parts of the Medium towards the rarer?

'For if this Medium be ſuppoſed rarer within the Sun's 'Body than at its Surface, and rarer there than at the hundreth Part of an Inch from its Body, and rarer there than 'at the fiftieth Part of an Inch from its Body, and rarer 'there than at the Orb of Saturn; I ſee no Reaſon why 'the Increaſe of Denſity ſhould ſtop any where, and not 'rather be continued thro' all Diſtances from the Sun to Saturn, and beyond.

'And tho' this Increaſe of Denſity may at great Diſtances 'be exceeding ſlow, yet if the Elaſtic Force of this Medium be exceeding great, it may ſuffice to impel Bodies 'from the denſer Parts of the Medium towards the rarer 'with all that Power which we call *Gravity*.

'And that the Elaſtick Force of this Medium is exceeding great, may be gather'd from the Swiftneſs of its Vibrations. Sounds move about 1140 *Engliſh* Feet in a ſecond 'Minute of Time, and in ſeven or eight Minutes of Time 'they move about one hundred *Engliſh* Miles: Light 'moves from the Sun to us in about ſeven, or eight Minutes 'of Time, which Diſtance is about 70000000 *Engliſh* Miles, 'ſuppoſing the Horizontal Parallax of the Sun to be about '12"; and the Vibrations or Pulſes of this Medium, that they 'may cauſe the alternate Fits of eaſy Tranſmiſſion, and eaſy 'Reflection, muſt be ſwifter than Light, and by conſequence, 'above 700000 ſwifter than Sounds; and therefore the Elaſtick Force of this Medium, in Proportion to its Denſity, muſt 'be above 700000 × 700000 (that is above 490000000000) 'times greater than the Elaſtick Force of the Air, is in Proportion to its Denſity: For the Velocities of the Pulſes of 'Elaſtick Mediums, are in a ſubduplicate Ratio of the Elaſticities and the Rarities of the Mediums taken together.

'As Magnetiſm is ſtronger in ſmall Loadſtones than in 'great ones, in proportion to their Bulk; and Gravity is 'ſtronger in the Surface of ſmall Planets, than in thoſe of 'great ones, in proportion to their Bulk; and ſmall Bodies 'are agitated much more by Electric Attraction, than great 'ones: So the Smallneſs of the Rays of Light, may contribute very much to the Power of the Agent by which they 'are refracted, And if any one ſhould ſuppoſe that Æther '(like our Air) may contain Particles which endeavour to 'recede from one another (for I do not know what this Æther 'is) and that its Particles are exceedingly ſmaller than thoſe 'of Air, or even than thoſe of Light; the exceeding Smallneſs of ſuch Particles may contribute to the Greatneſs of 'the Force by which they recede from one another, 'and thereby make that Medium exceedingly more 'rare and elaſtick than Air, and of conſequence exceedingly leſs able to reſiſt the Motions of Projectiles, and exceedingly more able to preſs upon groſs Bodies, by endeavouring to expend it ſelf. *Opticks*, p. 325, &c. See LIGHT, ELASTICITY, &c.

GRAVITY in *Mechanicks*, is the Conatus, or Tendency of Bodies toward the Centre of the Earth. See CENTRE.

That part of Mechanicks which conſiders the Motion of Bodies ariſing from *Gravity*, is peculiarly called *Staticks*. See STATICKS.

GRAVITY is diſtinguiſh'd into *Abſolute* and *Relative*.

Abſolute GRAVITY, is that wherewith a Body deſcends freely thro' another reſiſting Medium. See RESISTANCE.

The Laws of Abſolute GRAVITY, ſee under the Article DESCENT *of Bodies*.

Relative GRAVITY, is that wherewith a Body deſcends after having ſpent part of its Weight in overcoming ſome Reſiſtance. See RESISTANCE.

Such is that wherewith a Body deſcends along an inclined Plane, where ſome part is employed in overcoming the Reſiſtance, or Friction of the Plane. See FRICTION.

The Laws of Relative GRAVITY; ſee under the Article *Inclined* PLANE.

Centre of GRAVITY, *Diameter of* GRAVITY, *Plane of* GRAVITY, } See { CENTRE *of Gravity*, DIAMETER *of Gravity*, PLANE *of Gravity*.

GRAVITY in *Hydroſtaticks*—the Laws of Bodies *gravitating* in Fluids, make the Buſineſs of Hydroſtaticks. See HYDROSTATICKS.

GRAVITY is here divided into *Abſolute* and *Specific*.

Abſolute or *true* GRAVITY, is the whole Force wherewith the Body tends downward. See GRAVITATION.

Specific GRAVITY, call'd alſo *Relative*, *Comparative*, and *Apparent* GRAVITY, is the Exceſs of Gravity in any Body, above that of an equal Quantity or Bulk of another.

For the Laws of Specific GRAVITY: with the Methods of determining it both in Solids and Fluids. See SPECIFIC *Gravity*, and HYDROSTATICAL *Balance*.

GRAVITY *of the Air*. See WEIGHT *of the Air*. See alſo AIR and PRESSURE.

GRAVITY, in *Muſic*, an Affection of Sound, whereby it becomes denominated *grave*, *low*, or *flat*. See SOUND.

Gravity ſtands in Oppoſition to *Acuteneſs*, which is that Affection of Sound, whereby it is denominated *Acute*, Sharp, or high. See ACUTENESS.

The Relation of *Gravity*, and Acuteneſs, is the principal thing concerned in Muſic; the Diſtinctneſs, and Determinateneſs of which Relation, gives Sound the Denomination of *Harmonical*, or *Muſical*. See MUSIC and HARMONY.

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The Degrees of *Gravity*, &c. depend on the Nature of the Sonorous Body itſelf, and the particular Figure and Quantity thereof: Tho, in ſome Caſes, they likewiſe depend on the Part of the Body where it is ſtruck. Thus, *e. gr.* the Sounds of two Bells of different Metals, and the ſame Shape and Dimenſions, being ſtruck in the ſame Place, will differ as to Acuteneſs and *Gravity*; and two Bells of the ſame Metal will differ in Acuteneſs, if they differ in Shape or Magnitude, or be ſtruck in different Parts. See BELL.

So in Chords, all other things being equal, if they differ either in Matter, or Dimenſions, or Tenſion; they will alſo differ in *Gravity*. See CHORD.

Thus again, the Sound of a Piece of Gold is much graver than that of a Piece of Silver of the ſame Shape and Dimenſions; and in this Caſe, the Tones are, *cæteris paribus*, proportional to the Specific Gravities; ſo a ſolid Sphere of Braſs, two Foot diameter, will ſound graver than another of one Foot diameter; and here the Tones are proportional to the Quantities of Matter, or the Abſolute Weights.

But it muſt be obſerved, that Acuteneſs and *Gravity*, as alſo Loudneſs and Lowneſs, are but relative Things. We commonly call a Sound *acute* and loud, in reſpect to another which is *grave*, or low with reſpect to the former: So that the ſame Sound may be both *grave* and acute, and alſo loud and low, in different Compariſons.

The Degrees of Acuteneſs, and *Gravity*, make the different *Tones*, or *Tunes* of a Voice, or Sound: So we ſay one Sound is in Tune with another, when they are in the ſame Degree of *Gravity*. See TUNE.

The immediate Cauſe, or Means of this Diverſity of Tone lies deep. The modern Muſicians fix it on the different Velocity of the Vibrations of the Sonorous Body: In which Senſe *Gravity* may be defined, a relative Property of Sound, which, with reſpect to ſome other, is the Effect of a leſſer Number of Vibrations accompliſh'd in the ſame Time, or of Vibrations of a longer Duration: In which Senſe alſo, Acuteneſs is the Effect of a greater Number of Vibrations, or Vibrations of a ſhorter Duration.

If two, or more Sounds be compared in the Relation of *Gravity*, &c. they are either *Equal*, or *Unequal*, in the Degree of Tune.

Such as are equal, are call'd *Uniſons*. See UNISON.

The Unequal including, as it were, at a Diſtance between each other, conſtitute which we call an *Interval* in Muſic, which is properly the Difference in Point of *Gravity*, between the two Sounds. See INTERVAL.

Upon this Unequality, or Difference, does the whole Effect depend; and in reſpect hereof, theſe Intervals are divided into *Concords* and *Diſcords*. See CONCORD and DISCORD. See alſo SCALE.

GRAVY, in Cookery, &c. the Juice of Fleſh or Fiſh, obtained therefrom by Coction, Elexation, Frixion, or the like. See JUICE.

The procuring of *Gravies* is no inconſiderable part of Cookery, inaſmuch as theſe are required to heighten the *Guſto*, and Reliſh of moſt Diſhes. There are divers Proceſſes of *Beef Gravy*; one of the ſhorteſt and ſimpleſt, is to cut a Pound or two of lean Beef-Stakes into Slices, beat 'em well, fry them till brown, and then add a Pint of ſtrong Broth, and an Onion; letting the whole boil a little, and then ſtraining it for Uſe.

To make *Mutton Gravy*, they roaſt a Shoulder of Mutton a little more than half, cut it with a Knife, ſqueeze out the *Gravy* with a Preſs; then moiſten the Meat again with Broth, and preſs it a ſecond time: Add a little Salt, and keep it for Uſe.

Veal Gravy is chiefly had by cutting Stakes off a Fielet, beating them, and ſtewing them with ſliced Onions, Carrots, and Parſnips; and at laſt adding ſtrong Broth, Parſley, &c. letting them ſtew afreſh, and ſtraining them for Uſe.

To make *Fiſh Gravy*, Carps and Tenches are ſlit lengthways, and ſtewed with Butter, Onions, Carrots, &c. till brown; then a little Flower put in, and ſtew'd till brown. Laſtly, Some Fiſh-Broth is ſtrained in thro' a Cloth, and the whole ſeaſon'd with Salt, Lemon, Cloves, and ſavoury Herbs.

GRAY, a mix'd Colour, partaking of the two Extremes Black and White. See BLACK, WHITE, &c.

In the Manage they make ſeveral Sorts of *Grays*, as the *Branded* or blacken'd *Gray*, which has Spots quite black, diſperſed here and there. The *dappled Gray*, which has Spots of a darker Colour than the reſt of the Body. The *light* or *ſilver Gray*, wherein there is but a ſmall Mixture of black Hairs. The *ſad* or *powder'd Gray*, which has but a ſmall Mixture of white: And the *browniſh* or *ſandy-colour'd Gray*, where there are *bay-colour'd* Hairs mix'd with the Black. See HORSE.

GREASE. See FAT.

GREASE, among Farriers, &c. a Swelling and Gourdineſs of the Legs of a Horſe, generally happening after a Journey.

If the *Greaſe* be an Attendant of ſome other Diſeaſe, it will be in vain to attempt the Cure before the Diſeaſe be removed that is the original Cauſe of it: And therefore, if it be a Hectick, the Yellows, or the Farcin, &c. the Directions given for thoſe Diſeaſes are to be followed, and in the mean Time proper Applications to be uſed outwardly for the *Greaſe*.

If the *Greaſe* proceeds from common and ordinary Accidents, and the Horſe has no other Diſtemper upon him; then, Applications that are peculiar to that Diſtemper are to be followed: If the Horſe has been well fed and pampered, begin the Cure with Bleeding and Purging, ſo as to diminiſh the Redundance of the Humours; but theſe ought to be uſed with Moderation, and it may be better to effect it with ſpare Diet and daily Labour.

After moderate Evacuations, it may be proper to make a Rowel on the Inſide of the Thigh, or on the Belly; and to keep it open for a Month, or longer, as there ſhall be occaſion; and in the mean time to give the Horſe the Cinnabar or Antimonial Balls. See ROWEL.

GREAT, a Term of Compariſon, denoting a thing to have more Extenſion than ſome other to which it is refer'd. See COMPARISON.

Thus we ſay a *great* Space: A *great* Diſtance: A *great* Figure, a *great* Body, &c. See GRAND.

The Term is likewiſe uſed figuratively, and in Matters of Morality, &c. to ſignify Ample, Noble, Elevated, Extraordinary, Important, &c.

Thus we ſay, *Shakeſpear* was a *great* Genius: Queen *Elizabeth* had a *great* Soul: *Cromwell* was a Man of *great* Deſigns: *Da Vinci*, a *great* Painter: *Galileo* a *great* Philoſopher: *Boſſu* a *great* Critick, &c.

GREAT is alſo a Title or Quality affected to certain Princes, and other illuſtrious Perſonages. See TITLE and QUALITY.

Thus we ſay the *great* Turk: The *great* Mogul: The *great* Cham of *Tartary*: The *great* Duke of *Florence*, &c. See MOGUL, CHAM, &c.

GREAT is alſo a Surname beſtowed on ſeveral Kings and Emperors. See SURNAME.

Thus we ſay *Alexander the Great*: *Cyrus* the *Great*: *Charles* the *Great*, or *Charlemaign*: *Henry* the *Great* of *France*, &c. So the *Engliſh* frequently ſay, *Edward* the *Great*, or the *Great Edward*; *William* the *Great*, meaning King *William* III. or the *Great William*. And the *French*, *Louis the Great*, *le Grand*, ſpeaking of the late *Louis* XIV.

Gyles of *Paris*, ſays *Charlemaigne* firſt got the Surname *Great* from the Tallneſs and Eminence of his Stature. *Helgan* adds that *Hugue*, *Hugh* the *Great* of *France* was thus denominated on account of his great Piety, Goodneſs, &c.

GREAT is alſo applied to ſeveral Officers, who have Preeminence over others. See GRAND.

Thus we ſay, the Lord *Great* Chamberlain: The *Great* Marſhal of *Poland*, &c. See CHAMBERLAIN, &c.

GREAT *Circles* of the Sphere, are particularly ſuch as divide the Sphere into two equal Parts or Hemiſpheres; or whoſe Planes paſs thro' the Centre of the Sphere: in Contradiſtinction from the *leſſer* Circles, which cut the Sphere into unequal Parts, &c. See CIRCLE, SPHERE, CIRCLE, LESSER, &c.

The Equator, Meridian, Ecliptic, Vertical, &c. are *great* or *greater Circles* of the Sphere; and the Parallels, Tropicks, &c. leſſer Circles. See EQUATOR, MERIDIAN, &c.

GREAT *Tithes*, GREAT *Gun*, GREAT *Letters*, GREAT *Bear*, } ſee { TITH, CANON, CAPITAL, URSA *major*.

GREE, in our Law-Books, from the *Frence Gre*, i. e. *Will*, *Allowance*, or *liking*; ſignifies Agreement, Contentment, or Good-liking.— Thus to make *Gree* to the Parties, is to ſatisfy them for an Offence done. 'Judge-'ment ſhall be put in Suſpence, till the *Gree* be made to 'the King of his Debt, *Stat.* 25. *Edw.* 3. See AGREEMENT.

GREEK, GRECIAN, ſomething belonging to the People of *Greece*.

GREEK, abſolutely ſo called, or GREEK *Language*, or *antient* GREEK, is the Language ſpoke by the antient *Greeks*, and ſtill preſerv'd in the Works of their Authors, as *Plato*, *Ariſtotle*, *Iſocrates*, *Demoſthenes*, *Thucydides*, *Xenophon*, *Homer*, *Heſiod*, *Sophocles*, *Euripides*, &c. See LANGUAGE.

The *Greek* has been preſerved entire longer than any other Language known, maugre all the Revolutions that have happened in the Country where it was ſpoke. See ENGLISH.

Yet, from the Time of the Removal of the Seat of Empire to *Conſtantinople*, in the 15th Century, it has been gradually altering: The Alterations at firſt did not affect the Analogy of the Tongue, the Conſtruction, Inflexions, &c. There were only new Words, new Riches acquired, by taking in the Names of new Dignities and Offices, and the Terms of

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Art it was before unacquainted with: But, at length, the Incurſions of the Barbarians, and eſpecially the Invaſion of the *Turks*, wrought much more conſiderable Alterations. See *Modern* GREEK.

The *Greek* has a great Copia or Stock of Words: Its Inflexions are as remarkable for their Variety, as thoſe of moſt of the other European Tongues, for their Simplicity. See INFLEXION.

It has three Numbers, Singular, Dual, and Plural. See NUMBERS; and abundance of Tenſes in its Verbs, which makes a Variety in Diſcourſe, prevents a certain Dryneſs which always accompanies a too great Uniformity, and renders the Language peculiarly fit for all Kinds of Verſe. See TENSE, *&c.*

The Uſe of the Participles of the Aoriſtus, and Preterit, together with the compound Words, wherein it abounds; give it a peculiar Force and Brevity, without taking any thing from its Perſpicuity.

The proper Names, in the *Greek* Language, are ſignificative, as in the Oriental, as well as in moſt of the modern Languages, where the Learned ſtill find ſome, tho' remote, Character of their Origin. See NAME.

The *Greek* was the Language of a polite People, who had a Taſte for Arts and Sciences, which they cultivated with Succeſs. In the living Tongues, are ſtill preſerved a vaſt Number of *Greek* Terms of Arts: Some deſcended to us from the *Greeks*, and others form'd a-new. When a new Invention, Machine, Rite, Order, Inſtrument, *&c.* has been diſcovered, Recourſe has commonly been had to the *Greek* for a Name; The Facility wherewith Words are there compounded, readily affording us Names expreſſive of the Uſe, Effect, *&c.* of ſuch Inſtruments. Hence *Aræometer*, *Thermometer*, *Barometer*, *Micrometer*, *Logarithm*, *Teleſcope*, *Microſcope*, *Loxodromy*, &c.

Modern or *Vulgar* GREEK, is the Language now ſpoke in *Greece*.

There have been few Books writ in this Language, from the taking of *Conſtantinople* by the *Turks*; ſcarce any thing but ſome Catechiſms, and the like Pieces, compoſed or tranſlated into the Vulgar *Greek*, by the *Latin* Miſſionaries.

The native *Greeks* are contented to ſpeak the Language without cultivating it. The Miſery they are reduced to under the Dominion of the *Turks*, renders them ignorant, of neceſſity; the Turkiſh Politicks not allowing any of the Subjects of their Eſtates, to apply themſelves to the Arts and Sciences.

Whether it be out of a Principle of Religion, or Politicks, or Barbariſm, they have induſtriouſly deſtroy'd all the Monuments of antient *Rome*; deſpiſing the Study of a Language which might have render'd them polite, their Empire happy and flouriſhing, and have made the People forget their former Maſters, and their antient Liberty.

In this, widely different from the *Romans*, thoſe antient Conquerors of *Greece*, who after they had ſubdued the Country, applied themſelves to learn the Language; in order to imbibe their Politeneſs, Delicacy, and Taſte for Arts and Sciences.

'Tis not eaſy to aſſign the preciſe Difference between the vulgar, and the antient *Greek*: It conſiſts in the Terminations of Nouns, Pronouns, Verbs, and other Parts of Speech, which make a Difference between thoſe two Languages much like that obſerved between ſome of the Dialects of the *Italian* or *Spaniſh*: We inſtance in thoſe Languages, as being the moſt known, but we ought to have ſaid the ſame of the *Hebrew*, *Sclavonic*, &c. Dialects.

Beſide, the modern *Greeks* have divers new Words not in the antient; particularly ſeveral Particles which appear as Expletives, and which were introduced to characterize certain Tenſes of Verbs, and certain Dictions, which would have the ſame Meaning without ſuch Particles, had Cuſtom diſpenſed with them; Divers Names of Dignities and Offices, unknown to the antienr *Greeks*; and abundance of Words borrowed from the vulgar Tongues of the neighbouring Nations.

Accordingly, one may diſtinguiſh three Ages of the *Greek* Tongue: The firſt ends at the Time when *Conſtantinople* became the Capital of the *Roman* Empire; Not but there were ſeveral Books, eſpecially of the Fathers of the Church, wrote with great Purity after that Time; but, as Religion, Law, and Policy, both civil and military, began then to introduce new Words into the Language, it ſeems neceſſary to begin the ſecond Age of the *Greek* Tongue from that Epocha; which laſted to the taking of *Conſtantinople* by the *Turks*, where the laſt Age commences.

GREEK *Wine*. See WINE.

GREEK *Orders* in Architecture, are the *Doric*, *Ionic*, and *Corinthian*; in Contra-diſtinction to the two Latin Orders, the *Tuſcan* and *Compoſite*. See ORDER; ſee alſo DORIC, IONIC, and CORINTHIAN.

GREEK *Rite*, or RITUAL, is diſtinguiſhed from the Latin. See RITE and RITUAL.

GREEK *Church*, is that part of the Chriſtian Church which is eſtabliſhed in *Greece*; extending likewiſe to ſome other Parts of *Turky*. See CHURCH.

It is thus called in *Europe*, *Aſia*, and *Africa*, in Contra-diſtinction from the *Latin*, or *Romiſh* Church; as alſo the *Eaſtern* Church, in Diſtinction from the *Weſtern*. See LATIN.

The Romaniſts call the *Greek Church*, the *Greek Schiſm*, becauſe the *Greeks* don't allow the Authority of the Pope, but depend wholly, as to Matters of Religion, on their own Patriarchs. They have treated them as Schiſmaticks, ever ſince the Revolt, as they call it, of the Patriarch *Photius*. See PATRIARCH.

The Learned are divided as to the peculiar Doctrines and Sentiments of the *Greek* Church. 'Tis certain many Errors are uſually charged on them, which they are free of. The Point has been warmly conteſted between *Caucus* Archbiſhop of *Corfu*, and the Sieur *de Moni*, on the one Side; and *Lucas Holſatius*, and *Leo Allatius*, a *Greek*, on the other; the two firſt accuſing, the laſt excuſing them. *Caucus*, &c. will have them agree with the Proteſtants, in rejecting abundance of the Rules and Obſervances eſtabliſh'd in the *Romiſh* Church; while *Allatius*, &c. endeavours to find the ſame Obſervances among the *Greeks*, as among the *Latins*, only under other Forms, and with other Circumſtances.

Of the Seven Latin Sacraments, ſays *Caucus*, the *Greeks* only admit five: Confirmation and Extreme Unction, they ſet aſide. *Allatius*, on the contrary, inſiſts, that they don't properly ſet them aſide, but only differ as to the manner of adminiſtring them. Inſtead of confirming long after Baptiſm, they always join Baptiſm and Confirmation together: Beſide that Confirmation, among them, is confer'd by the ordinary Prieſts. The like Error is charged on *Caucus*, with regard to Extreme Unction. See SACRAMENT and EXTREME UNCTION.

But it is to be here added, that from the Anſwer of *Jeremy*, Patriarch of *Conſtantinople*, to the Divines of *Wirtembergh*, it appears, that the *Greeks*, like the Reformed, do really own no more than two Sacraments inſtituted by Chriſt, *viz.* Baptiſm and the Euchariſt. See EUCHARIST, *&c.*

The *Greeks*, ſays the ſame *Caucus*, offer no Worſhip to the Euchariſt: *Allatius* replies, it is true, they don't adore it, as the Romaniſts do, immediately after the ſpeaking thoſe Words, *This is my Body*: Yet do they really adore it after the Words wherein Conſecration conſiſts, *viz.* after the Prayer call'd *The Invocation of the Holy Spirit*. See ADORATION.

As to Confeſſion, *Caucus* is certainly in the right, that they don't hold it of divine Appointment, but only of poſitive, or eccleſiaſtical Right; which they likewiſe affirm of all the other Sacraments, except the two above-mentioned: yet have they the Uſe of Auricular Confeſſion. See CONFESSION.

As to Marriage, *Caucus* is juſt to them, in ſaying, that they do not eſteem it an indiſſoluble Band; they maintain with great Zeal, the Neceſſity and Validity of Divorce. See DIVORCE.

As to the Primacy of the Pope, *Caucus* does them Juſtice in ſaying they deny it. 'Tis certain the *Greeks*, *Melchites*, and other Orientals, do not allow the Primacy of the Pope over the other Patriarchs, in the Senſe it is allowed of among the *Latins*. See POPE, PRIMACY, *&c.*

Nor do they allow of more than Seven General Councils. All thoſe held by the *Latins* ſince *Photius*, they ſet aſide. See COUNCIL.

GREEK *Grammar*, GREEK *Teſtament*, GREEK *Lexicon*, } ſee { GRAMMAR, BIBLE, LEXICON, *&c.*

GREEN, one of the original Colours of the Rays of Light. See COLOUR, RAY, and LIGHT.

If Urine, Citron-Juice, or Spirit of Vitriol, be caſt on a *green* Ribbon, it becomes blew; by reaſon the yellow of the Greening-wide is thereby exhaled and conſumed; ſo that nothing but blue remains behind. See BLUE, *&c.*

Graſs and Herbs, and even all Vegetables in Places expoſed to the open Air, are *Green*; and thoſe in ſubterraneous Places, or Places inacceſſible to the Air, White and Yellow. Thus when Wheat, or the like, germinates under Ground, 'tis White or Yellow; and what is in the open Air, *Green*: Tho' this too is Yellow before it be *Green*.

Artificial Greens are rarely ſimple Colours, but produced by the Mixture of Yellow and Blue. See BLUE and YELLOW.

Two Powders, the one Blue, and the other Yellow, well mixed, appear perfectly *Green*; tho' when viewed with a Microſcope, we obſerve a Chequer of Blue and Yellow.

The Dyers make divers Shades, or Caſts of *Green*, as *Light-Green*, *Yellow-Green*, *Graſs-Green*, *Laurel-Green*, *Sea-Green*, *Dark-Green*, *Parrot-Green*, and *Celadon-Green*.

All the *Greens* are firſt dy'd in Blue, then taken down with Woad, Verdigreeſe, *&c.* and then *green'd* with the Weed, there

here being no one Ingredient that will give *Green* alone.

Mountain-*Green*, or *Hungary-Green*, is a ſort of *greeniſh* Powder found in little Grains, like Sand, among the Mountains of *Kernauſent* in *Hungary*, and thoſe of *Moldavia*.

Tho' ſome hold that this Mountain-*Green* is factitious, and the ſame with what the Ancients called *Flos Æris*, prepared by caſting Water, or rather Wine, on Copper red-hot from the Furnace, and catching the Fumes thereof on Copper-Plates laid over for the Purpoſe; or by diſſolving Copper-Plates in Wine, much as in making Verdegreaſe. The Painters make uſe of this Colour for a *Graſs-Green*. It is ſometimes counterfeited, by grinding Verdegreaſe with Ceruſe.

Earth GREEN. See VERDITER.

Calcined GREEN, and *Diſtilled* GREEN. See VERDEGREASE.

GREEN *Copperas*. See COPPERAS.

GREEN *Fiſh*. See FISH.

GREEN *Glaſs*. See GLASS.

GREEN *Cap*. See CAP.

GREEN *Hide*, is that not yet curried, but ſuch as taken off from the Carcaſe. See HIDE, LEATHER, and CURRYING.

GREEN *Cloth*, a Board, or Court, of Juſtice, held in the Compting-Houſe of the King's Houſhold, for the taking Cognizance of all Matters of Government and Juſtice within the King's Court Royal; and for correcting all the Servants therein, that ſhall any way offend. See HOUSHOLD, and COMPTING-HOUSE.

To this Court alſo belongs the Authority of maintaining the Peace for twelve Miles round the King's Court, whereever it ſhall be, excepting at *London*. See PEACE and PAX.

The Judge of this Court, is the Lord Steward, aſſiſted by the Treaſurer, Comptroller, Cofferer, Clerks of the *Green-Cloth*, &c. See STEWARD; ſee alſo VERGE.

It takes its Name *Green-Cloth*, from a *Green-Cloth* ſpread over the Board where they ſit, whereon are the Arms of the Compting-Houſe.

Clerks of the GREEN-*Cloth*, are two Officers of the Board of *Green-Cloth*, who attend there, and have Buſineſs aſſign'd them by the Board. All Bills of Comptrolments relating to the Office, are ſum'd up, and allowed by the Clerks Comptrollers, and audited by the Clerks of the *Green-Cloth*.

They alſo appoint the King's, Queen's, and Houſhold's Diet, keep all Records, Leigers, and Papers relating thereto; make up Bills, Parcels, and Debentures for Salaries, *&c.* And Proviſions and Neceſſaries for the Offices of the Pantry, Buttery, Cellar, *&c.*

GREEN-*Houſe*, or *Conſervatory*; a Houſe, or Building, in a Garden; contrived for preſerving of the more tender and curious Exotic Plants, which will not bear the Winter's Cold abroad in our Climate. See EXOTIC.

Green-Houſes, as now built, ſerve not only as *Conſervatories*, but likewiſe as Ornaments of Gardens; being uſually large and beautiful Structures, in Form of Galleries, wherein the Plants are handſomely ranged in Caſes for the purpoſe. See GARDEN.

The *Green-Houſe*, Mr. *Mortimer* directs to be open to the South, or very little declining therefrom: The Heighth and Breadth to be about 12 Foot, and Length according to the Number of Plants intended to be kept therein. It ſhould be ſituate on the drieſt Ground, and ſo contrived, as that nothing may obſtruct the Sun's Rays in Winter. In the building it, Care muſt be taken, not to plaiſter it on the Inſide with Lime and Hair; Dampneſs being obſerved to continue longer on ſuch Plaiſter, than on Bricks or Wainſcote. To preſerve it the more from Moiſture and Colds, an artificial Heat is to be uſed: In order to this, ſome hang up Fires, and others place Pans of Coals in Holes in the Ground. The better way is, to have a Stove behind the *Green-Houſe*, and to convey the Heat thereof thro' Trills made under the Floor for that Purpoſe. The beſt Method of all, according to *Bradley*, is the new Stove invented by M. *Gauger*, and publiſhed in *Engliſh* by Dr. *Deſaguliers*. See FIRE.

Some have Saſhes, Caſements, and Doors of Glaſs; others prefer moveable Canvas Doors, to be taken off, and put on at pleaſure.

The Pots and Caſes are to be ranged in the *Green-Houſe* ſo, as not to incommode one another, or hinder any from readily receiving both Sun, Air, *&c.* As to the Management of the Plants herein, *Mortimer* recommends the opening of the Mould about them, from time to time, and ſprinkling a little freſh Mould in them, and a little warm Dung on that; as alſo to water them when the Leaves begin to wither and curl, and not oftner, which would make them fade and be ſickly; and to take off ſuch Leaves as wither and grow dry.

Bradley adviſes, that in the colder Parts of *England*, the Front of the *Green-Houſe* be built in a Sweep, or Semicircle, to receive the Sun's Rays, one part or other of it, all Day: That all the Windows, *&c.* in the Front, have cloſe, thick, wooden Shutters, to be ſhut every Night in Winter, for fear of Froſts, Nipping Winds, *&c.*—*Dutch* Tiles he thinks the beſt Lining for the Walls, as being dry, and reflecting a deal of Heat; and ſquare Tiles for the Pavement, which readily imbibe the Wet, and never ſweat, as Marble and the harder Stones do.—The Plants in the *Green-Houſe* are not to fill above a $\frac{1}{4}$ Part of the Space thereof; the reſt being left vacant for the Air to circulate about the Plants. If the *Houſe* be crowded with Plants, the Effluvia they are continually emitting by Perſpiration, and the Vapours from the Mould, will condenſe the Air, and cauſe Dampneſs. The Plants to be diſpoſed, as much as poſſible, about the middle Parts of the *Green-Houſe*, where they will be ſafer from the Cold, which is uſually greateſt near the Glaſſes and Walls: The tendereſt Plants to be diſpoſed neareſt to where the Heat comes in.

'Tis a general Rule among Gardeners, to ſet Exotic Plants into the *Green-Houſe*, about the ſecond Week in *September*, and to take them out again about the middle of *May*; tho' there ſhould be ſome Diſtinction made herein; the tendereſt Sorts from Places near the Line, as the Aloes, *&c.* being to be confined more to the *Green-Houſe*, than Oranges, Myrtles, *&c.*

GREEN-*Plots*, *Walks*, &c. See GRASS-*Plots*, &c.

GREENLAND *Fiſhery*. See *Whale* FISHERY.

GREENWICH *Hoſpital*. See HOSPITAL.

GREGORIAN *Calendar*, is that which ſhews the new and full Moon, with the Time of *Eaſter*, and the moveable Feaſts depending thereon, by Means of Epacts diſpoſed thro' the ſeveral Months of the *Gregorian* Year. See CALENDAR, EASTER, &c.

The *Gregorian Calendar*, therefore, differs from the *Julian*, both in the Form of the Year; and in that it uſes Epacts, inſtead of Golden Numbers. See EPACT, and GOLDEN *Number*.

This Reformation of the Calendar, was made in 1582, by Order of Pope *Gregory* XIII. and with the Advice of *Aloyſius Lilius*, and other Mathematicians: At the ſame Time, ten Days were cut off from that Year, and caſt away, to bring the Equinoxes to their antient Seat, *viz.* the 21° of *March*. And to keep them conſtantly there, the ſame Pope introduced the *Gregorian* Year. See the Article following.

GREGORIAN *Year*, is the *Julian* Year corrected, or modell'd, in ſuch manner, as that the three ſecular Years, which in the *Julian* Account are Biſſextile, are here common Years, and only every fourth ſecular Year, a Biſſextile Year. See BISSEXTILE.

The *Gregorian* Year, tho' it comes nearer to Nature and Truth, than the *Julian*; is not ſtrictly juſt: In 400 Years it gets 1 Hour 20'; and conſequently in 7200, a whole Day. See YEAR.

The *Gregorian* Year, is that now uſed in moſt Countries of *Europe*; *England*, moſt of the *United Provinces*, *Sweeden*, and *Denmark*, excepted; where the *Julian* Year ſtill obtains. See JULIAN *Year*.

From this Difference, ariſes the Diſtinction of *Old* or *Julian*, and *New* or *Gregorian* Style. See STYLE.

The *Old Style* is now 11 Days behind the *New*: So that the ſame Day which in the *Gregorian* Account is the 11th Day of any Month, in the *Julian* is only the 1°.

GREGORIAN *Epocha*, is the Epocha, or Time whence the *Gregorian* Calendar, or Computation, took Place. See EPOCHA.

The preſent Year 1726, is the 144th Year of the *Gregorian* Epocha.

GRENADA, GRENATE, GRENADIER, } ſee { GRANADO, GRANATE, GRANADIER.

GRESHAM-*College*. See COLLEGE.

GREVE, among our antient Writers, is a Denomination of Power and Authority; ſignifying as much as a *Comes*, or *Vicecomes*: and hence our *Shyreeve*, *Portgreeve*, &c. See PORTGREEVE, *&c.*

According to *Hoveden*, *Greve dicitur*, *ideo quod jure debeat* Grith, *i. e. pacem ex illis facere*, *qui Patriæ inferunt væ*, *i. e. miſeriam vel malum.*

Hence, but with leſs Power and Dignity, is derived the Word *Reve*, a Bailiff, or Under-Officer of the Lord of a Manor. See REVE.

GRIFFON, *Gryphus*, γρύψ, in Natural Hiſtory, a Bird of Prey, of the Eagle Kind. See EAGLE.

The Antients ſpeak fabulouſly of the *Griffon*; they repreſent it with four Legs, Wings, and a Beak; the upper Part repreſenting an Eagle, and the lower a Lion: They ſuppoſed it to watch over Gold Mines, hidden Treaſures, *&c.* The Animal was conſecrated to the Sun; and the antient Painters repreſented the Chariot of the Sun as drawn by *Griffons*. *M. Spanheim* obſerves the ſame of thoſe of *Jupiter* and *Nemeſis*.

We find mention of the *Griffon* in Holy Scripture; but are not to underſtand the Text of that chimerical Animal juſt deſcribed, which no Body ever ſaw but in Painting and Armories, notwithſtanding what *Servius*, in his Comment on the 8th Eclogue of *Virgil* and *Iſidore*, ſay of it.—The *Griffon* in Scripture, is that Species of Eagle, called in Latin *Oſſifraga*, and in Hebrew פרס, *Peres*, of the Verb פרס, *Pares*, to break.

God prohibited the *Jews* to eat divers Kinds of Birds of Prey, as the Kite, Vulture, &c. And the divers Species of Eagles, which are diſtinguiſhed in Latin by the Names of *Aquila*, *Gryps*, *Haliætus*.—*Pauſanias*, *in Arcadicis*, ſays the *Griffon* has his Skin ſpotted like a Leopard.

The *Griffon*, we mean the fabulous one, is frequently ſeen on antient Medals; and is ſtill bore in Coat-Armour.

Or, a *Griffon* Rampant, with Wings diſplay'd, Sable, is born by the Family of *Morgan* in *Monmouthſhire*, &c. *Guillam* blazons it *Rampant*; alledging that any very fierce Animal may be ſo blazoned, as well as a Lyon.

Sylveſter, *Morgan*, and others, uſe the Term *Segreiant* inſtead of Rampant. See RAMPANT and SEGREIANT.

GRILLADE, in Cookery, a Diſh of Meat broiled on the Grid-Iron; thus called from the *French Griller*, to broil.

The Word is alſo uſed for the browning of any Diſh, by rubbing a hot Iron over it.

To *Grill Oyſters*, is to put them into Scollop-Shells, ſeaſon them with Salt, Pepper, and Parſley ſhred, and pour their own Liquor to them; covering them with grated Bread; ſtewing them half an Hour on the Fire, and browning them with a red-hot Iron.

Shrimps are *grill'd* after the ſame Manner.

GRINDING, *Trituration*, the Act of breaking, or comminuting a ſolid Body, and reducing it into a Powder, Duſt, Flower, Farina, or the like; particularly, by means of a Mill. See MILL.

Grinding is one of the Species of Diſſolving. See DISSOLUTION.

The Painters Colours are ground on a Marble, or Porphyry, either with Oil or Gum Water; ſee PAINTING and COLOUR.

Some late Phyſicians have contended, that Digeſtion is perform'd by *grinding* the Food in the Stomach: Some even maintain that every Part in the Body, is a Veſſel or Veſſels; that all the Veſſels have a Motion of Syſtole and Diaſtole; and that all the Operations of the Body conſiſt in the Attrition or *grinding* of the Humours or Matters contained in ſuch Veſſels. See DIGESTION and TRITURATION.

GRINDING is alſo uſed for the rubbing or wearing off, the irregular or otherwiſe redundant Parts of the Surface of a Body, and of reducing it to the deſtined Figure, whether that be flat, concave, or the like. See FIGURE.

The *grinding of Glaſſes* is a conſiderable Art, and as ſuch, neceſſarily requires to be here inſiſted on; eſpecially that of Optic Glaſſes. See GLASS, OPTIC GLASS, &c.

Method of GRINDING *Optic Glaſſes.*

For Convex-Glaſſes, the firſt Step is to provide a Diſh or Baſon, within whoſe Cavity the Glaſs is to be form'd.

In order to this, they take a piece of Braſs, Copper, Iron, or Wood, and form it into a Segment of a Circle, with the Radius of the Baſon or Diſh intended. This done, a Baſon is made by a Smith, either of Iron or Copper; having its Cavity exactly fitting or correſponding to the Segment above mentioned: tho' ſometimes they chuſe to have the Baſon caſt; in which Caſe, the Rules above delivered for concave Mirrors, are to be here obſerved. See MIRROUR.

The Figure of the Baſon thus roughly formed, is to be finiſhed in the Pewterers Lathe; or on a Stone Mould A. *Tab. Miſcellany*, Fig. 12. fixed to an Iron Axis, with a Pinion B C, moveable by a Wheel D E, and that by a Winch or Handle F. The Baſon being ground on the Mould, till it exactly fit in all Parts; they take it off, and cementing it to a wooden Block (loaden, if need be, with Lead) ſtrew it over with fine ſifted Sand, and thus *grind* it over again on the Mould, till all the Furrows or Scratches be quite taken away.

Laſtly, They *grind* large Pieces of Glaſs in a Baſon, with fine Sand between; till ſuch Time as its Surface being well ſmoothed, there is no longer any Oppoſition to the Motion.

Note, the Diſh is known to be perfectly finiſhed, when a Hair being ſtretched over it, its Shadow projected in the Cavity, particularly in a Camera obſcura, does not appear diſtorted.

The Baſon finiſh'd, proceed to chuſe Glaſſes for the Purpoſe: In order to this, lay 'em on clean Paper, and obſerve what Colours are projected thereon; for the ſame are the Colours of the Glaſſes. Always ſet aſide thoſe of the darker Colours, and chuſe the brighter: But as the whiteſt and brighteſt have uſually Veins; and beſide, in Tract of Time, by the Humidity of the Air, are apt to ruſt, and loſe their Poliſh; for this Reaſon *Huygen* recommends thoſe a little yelloviſh, reddiſh, or greeniſh; *Hevelius* the blueiſh. A Glaſs is found to be free from Bubbles, Sands, Veins, Knots, and Spires, by holding it to the Sun, and receiving the Rays through it on a white Paper; for the Flaws abovementioned, will each project a Shadow thereon.

If inſtead of Lenticular, or at leaſt Spherical Glaſſes, you make uſe of Plate Glaſs; it muſt be divided, and cut with a Diamond, into Squares; and if it be too thick to break otherwiſe, you may do it by laying it on a Table covered with a Cloth, in ſuch manner, as that the Side or Part to be ſever'd, hang over the Edge; for being ſtruck with an Iron Inſtrument, in this Situation it eaſily breaks in the Direction of the Line drawn by the Diamond. Having thus got a ſquare Piece, deſcribe two concentric Circles thereon, with a Pair of Compaſſes, one of whoſe Legs carries a Diamond; the Diameter of the inner Circle, to be equal to the Breadth of the intended Lens, and that of the outer ſomewhat more; and break off the Corners, as above directed; and the leſſer Inequalities take off on a Grind-Stone, or the like. Examine now whether the Piece of Glaſs be every where equally thick; if it be not, reduce it to ſuch Equality by *grinding* it on an Iron Plate with Sand and Water. Laſtly, glue or cement the Glaſs thus prepared to a wooden Handle N M O, *Fig.* 31. with a Cement made of Pitch, with a fourth part of Roſin; or one Part of Wax, and eleven of Colophony. Care to be taken that the Baſe, or bottom of the Handle N O, be equal to the Glaſs; and that the Centre of the Glaſs and Handle meet together. Smaller Lens's, as thoſe uſed for Microſcopes, are fix'd on with Sealing-Wax.

Now, to grind the Glaſs, and bring it to the Convexity required; ſmear over the Diſh equally with fine ſifted Sand moiſten'd with Water: Then taking the Handle with the Glaſs thereon, work the Baſon ſometimes this way, and ſometimes that, to prevent the Form of the Baſon from being diſturb'd; never leaning too hard thereon. When the Glaſs has got the Figure of the Baſon, clean it well of all the Sand, and Filth adhering; and ſprinkle the Baſon over with Emery moiſten'd in Water; *grinding* the Glaſs thereon, till all the Roughneſſes and Inequalities are taken away. After this, the fine Sand uſed in Hour-Glaſſes may be of Service, applied and uſed as before; remembring to take out the Sand when too much worn, and ſubſtitute new in its ſtead. Some in lieu hereof, chuſe ſeveral Sorts of Emery, each finer than other, or even the Powder of Flints calcined and pounded. Laſtly, *grind* the ſame Glaſs in another Baſon, or Diſh which is a Segment of a leſſer Sphere, making uſe of the like Sand as before; till it have got a pretty high Rim or Margin all around.

In regard the Preſſion is not here determined accurately enough upon the Middle of the Glaſs, by the mere Guidance of the Hand; ſome have choſe to make Uſe of the following Machine, eſpecially for *grinding* of Object-Glaſſes.

Fix the Diſh H I, *Fig.* 14. on a horizontal Table: exactly over its Centre let the Aperture D be, through which paſs an Iron Arm five or ſix Inches long, faſten'd to the Staff A B. Let the other Extreme of the Staff be fitted into a Hole cut in the Diſh, and faſten'd therein. Now to *grind* the Glaſs, inſtead of the Diſh, take hold of the ſaid Staff, and work with Sand, &c. as before.

Huygens tells us, that he firſt uſed coarſe Emery, then a finer Powder of the ſame, which would be 50 Seconds in ſinking to the bottom of a Veſſel of Water, putting in freſh every half or quarter of an Hour. Sometimes too, he uſed Emery of 50 Seconds, for $\frac{1}{4}$ of an Hour; then Emery of 400 Seconds, for $\frac{1}{4}$ of an Hour; and laſtly, Emery of 45 Minutes for $\frac{1}{4}$ of an Hour. The ſame Effect is had from Powder of Flints, broke in an Iron Mortar, mix'd with Water, and ſtirred ſometime with a wooden Spatula, taking the Powder as it precipitates in ſome certain Time to the bottom of the Veſſel, by decanting the Water.

What remains is, to poliſh the Glaſs; *which ſee under the Article* POLISHING.

GRINDING is alſo uſed for a coarſer, and leſs accurate Method of ſmoothing or poliſhing the Surface of a Body; particularly Glaſs for Looking-Glaſſes, &c. See LOOKING-GLASS, &c.

In the new Method of working large Plates of Glaſs for Looking Glaſſes, Coach-Glaſſes, &c. by moulding, and, as it were, caſting them ſomewhat after the manner of Metals; deſcribed under the Article GLASS: The Surface being left uneven, it remains to be *ground* and poliſhed.

In order to this, the Plate of Glaſs is laid horizontal, on a Stone in Manner of a Table; and to ſecure it the better, plaſter'd down with Mortar, or Stuc, that the Effort of the Workman, or of the Machine uſed therein, may not ſhake or diſplace it. To ſuſtain it, there is a ſtrong wooden Frame that ſurrounds it an Inch or two higher than the Glaſs.

The Bottom or Baſe of the *grinding* Engine, is another rough Glaſs, about half the Dimenſions of the former: On this

this is a wooden Plank, cemented thereto; and upon this are proper Weights applied to promote the Triture: The Plank or Table, being faſten'd to a Wheel, which gives it a Motion. —This Wheel, which is at leaſt 5 or 6 Inches Diameter, is made of very hard but light Wood, and is wrought by two Workmen placed againſt each other, who puſh and pull it alternately; and ſometimes, when the Work requires it, turn it round. By ſuch means, a conſtant mutual Attrition is produced between the two Glaſſes, which is favour'd by Water and Sands of ſeveral Kinds beſtowed between; Sand ſtill finer and finer being applied, as the *grinding* is more advanced: At laſt Emery is uſed. We need not add, that as the upper or incumbent Glaſs poliſhes and grows ſmoother, it muſt be ſhifted from time to time, and others put in its Place.

It is to be noted, that only the largeſt Size Glaſſes are thus *ground* with a Mill; for the middling and ſmaller Sorts are wrought by the Hand, to which End there are four wooden Handles at the four Corners of the upper Stone, or Carriage, for the Workmen to take hold of, and give it Motion.

What remains to the Perfection of Glaſs, comes under the Denomination of Poliſhing. See POLISHING.

GRIP, or GRIPE, is a ſmall Ditch cut a-croſs a Meadow, or ploughed Land; in order to drain it: It alſo ſignifies an Handful; as, a *Gripe* of Corn.

GRIPE of a Ship, is the Compaſs or Sharpneſs of her Stem under Water; chiefly towards the bottom of her Stem. See SHIP.

The Deſign of ſharping her ſo, is to make her *gripe* the more, or keep a good Wind; for which purpoſe ſometimes a falſe Stem is put on upon the true one.

GRIPE is alſo a Sea-Phraſe for a Ship's being apt to run her Head or Noſe too much into the Wind: In ſuch Caſe they ſay, ſhe *gripes*; of which there are two Cauſes, either over-loading her a-head, the Weight of which preſſes her Head ſo down, that it is not apt to fall off from the Wind; or the ſtaying or ſetting her Maſts too much aft; which will always be a Fault in a ſmall Ship that draws much Water, and will cauſe her to be continually running into the Wind.

In floaty-Ships, if the Maſts be not ſtayed very far aft, they will never keep a good Wind.

GRIPES, *tormina Ventris*, in Medicine, a ſort of Colick, or painful Diſorder of the Lower Belly, occaſioned by ſome ſharp pungent Matters vellicating the Parts, or by Winds pent up in the Inteſtines. See COLICK.

The *Gripes* are a very common Symptom in young Children, and may be cauſed by the Aliment they uſe, which is conſiderably different from what they had been accuſtom'd to in the *Uterus*. See CHILDREN.

The Retention of a Part of the Meconium may alſo give occaſion hereto, as being ſomewhat acrimonious. See MECONIUM.

This Diſorder ſometimes proves ſo violent, as to throw the Child into univerſal Convulſions, or to cauſe what is vulgarly called Convulſions of the Bowels.

GRIST is Corn ground, or fit for grinding. See FLOWER, MEAL.

GROANING, in Heraldry, a Term uſed for the Cry or Noiſe of a Buck. See HUNTING.

GROAT, an *Engliſh* Money of Account, equal to Four-Pence. See PENNY.

Other Nations, as the *Dutch*, *Polanders*, *Saxons*, *Bohemians*, *French*, &c. have likewiſe their *Groats*, *Groots*, *Groches*, *Gros*, &c. See MONEY and COIN.

We had no Silver Money in the *Saxon* Times bigger than a Penny; nor after the Conqueſt, till *Edward* III. who about the Year 1351, coin'd *Groſſes*, i. e. *Groats*, or *great Pieces*, which went for 4*d.* a-piece; and ſo the Matter ſtood till the Reign of *Henry* VII. who, in 1504, firſt coined Shillings. See SHILLING.

GROCERS, by the Stat. 37 *Edw.* II. cap. 5. were uſed for thoſe who engroſſed Merchandize. See ENGROSSING.

GROGRAM, in the Manufactories, a ſort of Stuff, all Silk; being in Reality no more than a Taffety, coarſer and thicker than ordinary. See TAFFETY.

GROOM, properly denotes a Servant appointed to attend on Horſes; the Word being formed of the *German* Grom, Boy, Youth. See EQUERRY.

GROOM is alſo the Denomination of ſeveral Officers and Servants in the King's Houſhold. See HOUSHOLD.

There are *Grooms* of the Almonry, *Grooms* in the Compting-Houſe, *Grooms* of the Chamber, the Privy-Chamber, *Grooms* of the Robes, of the Wardrobe, &c. See ALMONRY, CHAMBER, WARDROBE, &c.

GROOM *of the Stole*. See STOLE.

GROOM-*Porter* is an Officer of the Houſhold, whoſe Buſineſs is to ſee the King's Lodging furniſhed with Tables, Chairs, Stools, and Firing; to provide Cards, Dice, &c. and to decide Diſputes ariſing at Cards, Dice, Bowling, &c.

GROS, a foreign Money, in divers Countries, anſwering to our *Groat*. See GROAT.

A *Pound* GROS, *Livre de Gros*. See POUND and LIVRE.

GROSS is the Quantity of twelve Dozen. See DOZEN.

GROSSA, a Groat—*Conceſſa eſt Regi una* Groſſa *quæ continet quatuor denarios de quolibet viro & muliere*. Knighton. *Anno* 1378.

GROSSE-*Bois*, in our antient Law-Books, ſignifies ſuch Wood as hath been, or is, either by the Common Law, or Cuſtom of the Country, reputed Timber. See TIMBER.

GROSSUS, in our antient Writers, denotes a thing entire, and not depending on another.

Thus, *Villanus* in *Groſſo*, was a Servant, who did not belong to the Land, but immediately to the Perſon of the Lord: So, an Advowſon in *Groſſo*, is a Right of Patronage not annexed to the Fee or Manor, but belonging to the Patron himſelf, diſtinct from the Manor. See ADVOWSON, VILLAIN, &c.

GROSS-*Weight* is the Weight of Merchandizes, and Goods with their Duſt and Droſs, as alſo of the Bag, Cask, Cheſt, &c. wherein they are contained; out of which *Groſs*-Weight, Allowance is to be made for Tare and Tret. See TARE and TRET.

GROTESQUE, or GROTESK, or GROTTESQUE, a wild whimſical Figure of a Painter, or Engraver; having ſomething ridiculous, extravagant, and even monſtrous in it.

The Name ariſes hence, that Figures of this Kind were antiently much uſed to adorn the Grotto's wherein the Tombs of eminent Perſons, or Families were incloſed. Such was that of *Ovid*, whoſe Grotto was diſcover'd near *Rome* about 50 Years ago. See GROTTO.

Calot a celebrated Engraver of *Lorrain*, had a wonderful Genius for deſigning *Groteſques*: the like ſaid of *Leonardo da Vinci*.

We alſo extend the Word to any Thing whimſical, or wildly pleaſant, in a Perſon's Dreſs, Diſcourſe, &c.—Maſquerade Habits are the more valued, the more *Groteſque* they are: Our Theatres preſent us with Entertainments in *Groteſque* Characters, *i. e.* Perſons quaintly dreſs'd; as Harlequins, Scaramouches, &c.

Planudes has given us a very *Grotesk* Picture of *Æſop*. *Arioſto* and the *Italian* Poets are full of *Groteſque* Deſcriptions.

GROTESQUE-*Work*, GROTESK-*Work*, or *Grotteſco*, is a Work or Compoſition in Painting, and Sculpture, in the *Groteſque* Manner or Taſte; conſiſting either of Things which are merely imaginary, and have no Exiſtence in Nature, or of Things turn'd and diſtorted out of the way of Nature, ſo as to raiſe Surprize and Ridicule.

Groteſque-Work is the ſame with what we ſometimes call *Antique*. See ANTIQUE. See alſo MORESQUE.

GROTESQUES, or GROTESKS, are particularly uſed for little fanciful Ornaments, of Animals, compounded with Foliages, Fruit, &c,

Such are thoſe painted by *Raphael* in the Apartments of the Vatican; and thoſe carved by *Michael Angelo* in the Ceilings of the Portico of the Capitol.

Vitruvius calls Compartments of this kind *Harpagenituli*.

GROTTO, or GROTTA, in natural Hiſtory, a large deep Cavern or Den in a Mountain or Rock. See STONE.

The antient *Anchorites* retired into Dens, and *Grotto's*, to apply themſelves the more attentively to Meditation, &c. See ANCHORITE, HERMIT, &c.

In *Grottos* are frequently found Cryſtals of the Rock, Stalactites, and other natural Conglaciations; ſee CRYSTAL, STALACTITES, PETRIFACTION, &c.

The Word is *Italian*, *Grotta*, form'd according to Menage, &c. from the Latin *Crypta*. *Du Cange* obſerves, that *Grota* was uſed in the corrupt Latin.

M. *Homberg* conjectures, from ſeveral Circumſtances, that the Marble Pillars in the *Grotto* of *Antiparos*, vegitate or grow.

That Author looks on this *Grotto* as a Garden, whereof the Pieces of Marble are the Plants; and endeavours to ſhew that they could only be produced by ſome vegetative Principles. *Memdel.* Acad. *Anno* 1702.

At *Foligno* in *Italy*, is another *Grotto*, conſiſting of Pillars and Orders of Architecture of Marble, with their Ornaments, &c. ſcarce inferior to thoſe of Art; but they all grow downwards: So that if this too be a Garden, the Plants are turn'd upſide down. *Memdel.* Acad. *Anno* 1711.

The *Zirchnitzer-Sea*, or Lake, in *Carniola*, famous for being full of Water, Fiſh, &c. the beſt part of the Year, and quite dry, and bearing Graſs, Corn, &c. the reſt; proceeds from ſome ſubterraneous *Grotto* or Lake; as is made highly probable by Mr. *Valvaſer*; Philoſoph. Tranſ. Nº 191.

We have ſeveral *Grotto*'s famous in Natural Hiſtory; as,

GROTTA *del Cane*, a little Cavern near *Puzzuoli*, four Leagues from *Naples*, the Steams whereof are of a mephitical or noxious Quality; whence alſo it is called *Bocca Venenoſa*, the *poiſonous Mouth*. See MEPHITES.

Two Miles from *Naples*, ſays Dr. *Mead*, juſt by the *Lago d'Agnano* is a celebrated *Moſeta*, commonly called *La Grotta*

de

de Cani, equally deſtructive to all within the Reach of its Vapours.

'Tis a ſmall *Grotto* about 8 Foot high, 12 long, and 6 broad; from the Ground ariſes a thin, ſubtle, warm Fume, viſible enough to a diſcerning Eye, which does not ſpring up in little Parcels here and there, but in one continued Stream, covering the whole Surface of the bottom of the Cave; having this remarkable Difference from common Vapours, that it does not, like Smoke, diſperſe it ſelf into the Air, but quickly after its Riſe, falls back again, and returns to the Earth; the Colour of the Sides of the *Grotto* being the Meaſure of its Aſcent; for ſo far it is of a darkiſh green, but higher only common Earth. And as I my ſelf found no Inconveniency by ſtanding in it, ſo no Animal, if its Head be above this Mark, is the leaſt injured. But when, as the manner is, a Dog, or any other Creature, is forcibly kept below it; or by reaſon of its Smallneſs, can't hold its Head above it; it preſently, looſes all Motion, falls down as dead, or in a Swoon, the Limbs convulſed and trembling, till at laſt no more Signs of Life appear, than a very weak and almoſt inſenſible beating of the Head and Arteries; which if the Animal be left a little longer, quickly ceaſes too, and then the Caſe is irrecoverable; but if ſnatched out, and laid in the open Air, ſoon comes to life again, and ſooner if thrown into the adjacent Lake.

The Fumes of the *Grotto*, the ſame Author argues, are no real Poiſon, but act chiefly by their Gravity; elſe the Creatures could not recover ſo ſoon; or if they did, ſome Symptoms, as Faintneſs, &c. would be the Conſequence of it. He adds, that in Creatures killed therewith, when diſſected, no Marks of Infection appears; and that the Attack proceeds from a want of Air, by which the Circulation tends to an entire Stoppage, and this ſo much the more, as the Animal inſpires a Fluid of a quite different Nature from the Air, and ſo no ways fit to ſupply its Place.

Taking the Animal out while alive, and throwing it into the neighbouring Lake, it recovers: This is owing to the Coldneſs of the Water, which promotes the Contraction of the Fibres, and ſo aſſiſts the retarded Circulation; the ſmall Portion of the Air which remains in the Veſiculæ, after every Expiration, may be ſufficient to drive out the noxious Fluid. After the ſame manner, cold Water acts in a *deliquium Animi*: The Lake of *Agnano* has no other Virtue in it more than others.

Grotta *delli Serpi*, is a ſubterraneous Cavern near the Village of *Saſſa*, eight Miles from the City of *Braccano* in *Italy*; deſcribed by *Kircher* thus:

The *Grotta delli Serpi*, is big enough to hold two Perſons; it is perforated with ſeveral fiſtular Apertures, ſomewhat in manner of a Sieve; out of which, at the beginning of the Spring Seaſon, iſſues a numerous Brood of young Snakes of divers Colours, but all free of any particular poiſonous Quality.

In this Cave they expoſe their Lepers, Paralyticks, Arthriticks, and Elephantiac Patients quite naked; where, the Warmth of the ſubterraneous Steams reſolving them into Sweat, and the Serpents clinging variouſly all around, licking and ſucking them, they become ſo thoroughly freed of all their vitious Humours, that upon repeating the Operation for ſome Time, they became perfectly reſtored.

This Cave *Kircher* viſited himſelf, and found it warm, and every way agreeable to the Deſcription given of it. He ſaw the Holes, and heard a murmuring, hiſſing Noiſe in them. Tho' he miſs'd ſeeing the Serpents, it being not the Seaſon of their creeping out; yet he ſaw a great Number of their Exuviæ, or Sloughs, and an Elm growing hard by laden with them.

The Diſcovery of this Cave, was by the Cure of a Leper going from *Rome* to ſome Baths near this Place; who, loſing his way, and being benighted, happen'd upon this Cave, and finding it very warm, pulled off his Cloaths, and being weary and ſleepy, had the good Fortune not to feel the Serpents about him till they had wrought his Cure. *Muſeum Wormian.*

We alſo read of the *Milky Grotto*, or *Crypta Lactea*, a Mile diſtant from the antient Village of *Bethlehem.*

It is ſaid to be thus denominated, on occaſion of the bleſſed Virgin, who let fall ſome Drops of Milk in giving Suck to the little Jeſus in this *Grotto*. And hence it has been commonly ſuppoſed, that the Earth of this Cavern has the Virtue of reſtoring Milk to Women that are grown dry, and even of curing Fevers.

Accordingly, they are always a-digging in it, and the Earth is ſold at a good Rate to ſuch as have Faith enough to give Credit to the Fable—An Altar has been built on the Place, and a Church juſt by it.

Grotto is alſo uſed for a little artificial Edifice made in a Garden, in Imitation of a natural *Grotto.*

The Outſides of theſe *Grottos* are uſually adorn'd with Ruſtic Architecture, and their Inſide with Shell-work, furniſh'd likewiſe with various Jet d'Eaus, or Fountains, &c. See Shell-Work, &c.

The *Grotto* at *Verſailles*, is an excellent Piece of Building.—*Solomon de Caux* has an expreſs Treatiſe of *Grottos* and Fountains.

GROVE, in Agriculture, &c. a little thick Wood. See Wood.

The antient *Romans* had a ſort of *Groves* near ſeveral of their Temples, which were conſecrated to ſome God, and called *Luci*, by *Antiphraſis*, *a non lucendo*, as being ſhady and dark. See Lucus.

In very large and magnificent Gardens, a *Grove* is uſually a Plot of Trees, incloſed with Paliſſades, conſiſting of tall Trees, as Elms, Horſe-Cheſnuts, &c. the Tops whereof make a Tuft or Plume, and ſhade the Ground below.

At the Foot of the tall Trees, which generally run all along the Paliſſades at equal Diſtance, other leſſer Trees are often planted, whoſe Tufts form a Reſemblance of a ſort of Copſe within the former.

GROUND, in Agriculture, a Piece of Land, or Soil; or a Portion of Earth, whether fit or unfit to be tilled and cultivated. See Earth and Soil. See alſo Orchard, Garden, &c.

All Sorts of Land may be reduced to *boggy* or *marſhy*, *chalky*, *gravelly*, and *ſtony*. See Bog, Marsh, Chalk, Sand, Gravel, &c.

Ground, in Painting, is the Surface, upon which the Figures, and other Objects, are raiſed or repreſented. See Painting.

The *Ground* is properly underſtood of ſuch Parts of the Piece as have nothing painted on them, but retain the original Colour upon which the other Colours are applied to make the Repreſentations. See Colouring.

A Drapery, Piece of Building, the like, are ſaid to ſerve as a *Ground* to a Figure, when the Figure is painted on the Drapery or Building.

In the like Senſe, we alſo ſay the *Ground* of a Piece of Tapiſtry, of an Embroidery, of a Medal, Coin, &c. See Tapistry, Embroidery, Brocade, Medal, Coin, &c.

The *Ground* of a Shield or Eſcutcheon in Heraldry, is properly called the *Field*. See Field.

Ground, in Etching, is a gummous Compoſition, ſmeared over the Surface of the Metal to be etch'd; to prevent the *Aqua Fortis* from eating, or having effect, except in Places where this *Ground* is cut thro', or pared off, with the Points of Needles. See Etching.

Ground-*Work*, in Building. See Foundation.

Ground-*Sell*, or Ground-*Plate*. See Sell.

Ground-*Tackle*, a Sea-Term denoting a Ship's Anchor, Cables, &c. with whatever is neceſſary to make her ride ſafe at Anchor in a proper *Ground*. See Tackle, Anchor, &c.

GROUNDING of a Ship, is the bringing her on *Ground*, to be trimmed, made clean, or to have ſome Leak ſtopped in her.

GROUPADES is corruptly uſed, in the Manage for *Croupades*. See Croupade.

GROUP, or Grouppe, in Painting and Sculpture, an Aſſemblage or Knot of two or more Figures of Men, Beaſts, Fruits, or the like, which have ſome apparent relation to each other.

In a good Painting, it is neceſſary that all the Figures be divided into 2 or 3 *Groups*, or ſeparate Collections—Such and ſuch a Thing make a *Group* with ſuch and ſuch others of different Nature and Kind. The antique *Laomedon* is a fine *Group* of three beautiful Figures.

A *Group* has ſomewhat in it of the Nature of a Symphony or Concert of Voices: As, in the one the Voices muſt ſuſtain each other, in order to fill the Ear with an agreeable Harmony from the whole; whence if any part were to ceaſe, ſomething would neceſſarily be miſs'd: So, in the *Group*, if the Parts or Figures be not well balanced, ſomething will be found diſagreeable.

There are two Sorts of *Groups*, or two manners of conſidering *Groups*; with regard to the Deſign, and to the Clair obſcure. The firſt is common both to Works of Painting, and thoſe of Sculpture; the latter peculiar to Painting.

Groups, with regard to the Deſign, are Combinations of divers Figures, which have relation to each other, either on account of the Action, or of their Proximity, or of the Effect they have. Theſe we conceive, in ſome meaſure, as repreſenting ſo many different Subjects, or at leaſt ſo many diſtinct Parts or Members of one greater Subject. See Design.

Groups, with regard to the Clair obſcure, are Bodies of Figures wherein the Lights and Shadows are diffuſed in ſuch manner that they ſtrike the Eye together, and naturally lead it to conſider them in one View. See Clair *obſcure*.

The Word *Grouppe* is *French*, form'd of the *Italian Groppo*, a *Knot*.

In Architecture we ſay a *Group of Columns*, ſpeaking of three or four Columns join'd together on the ſame Pedeſtal. See Column.

When there are but two together, we ſay a *couple*, not a *Group* of Columns. See Couple.

In Muſic, a *Group* is one of the Kinds of Diminutions

of

of long Notes, which in the Working, forms a ſort of *Group*, Knot, Buſh, or the like.

The *Group* uſually conſiſts of four Crotchets, Quavers, or Semiquavers tied together, at the Diſcretion of the Compoſer.

GRABATARII, Grabbatarii, in Antiquity, were ſuch Perſons as deferr'd the receiving of Baptiſm to the Hour of Death; or, who did not receive it till they were dangerouſly ill, and out of Hopes of Life; from an Opinion, that Baptiſm abſolutely waſh'd away all antecedent Guilt. See Baptism.

The Word is form'd of the Latin *Grabatum*, Bed; and that from the Greek γραβατος, a Hanging-Bed, of κρεμαν, to ſuſpend; ſuch being the Bed of Slaves, poor People, Cynic Philoſophers, &c. who were Enemies of Luxury and Eaſe.

GRUBBING a Cock, a Term uſed by Cock-fighters, for the cutting off the Feathers under the Wings.—It is a thing not allowed by Cock pit Law, nor to cut off his Feathers in any handling Place. See Cock-pit *Law*.

GRUBBS, in Medicine, a white, unctuous kind of Pimples or little Tumors, ariſing upon the Face, chiefly the Alæ of the Noſe. See Tumor, &c.

They are uſually owing to hard Drinking, and an obſtructed Perſpiration; though natural in ſome Conſtitutions—They begin with a ſmall black Point, which gradually ſpreads; and ſometimes the Matter tends to Suppuration, upon which the Heads of the Eruptions grow white or yellow—They are uſually reputed ſalutary; whence to check their Growth ſuddenly, has proved of ill Conſequence. They are cured by Evacuation, and acrimonious Lotions.

GRUME, Grumus, in Medicine, &c. A Particle of Blood, Milk, or other Fluid, which is coagulated, thicken'd, harden'd, or not ſufficiently thin, and diluted. See Blood, ſee alſo Coagulation, &c.

Phthiſical People frequently ſpit up *Grumes*, i. e. Clots of Blood. See Pthisis.

Grumes of Milk, are what we popularly call *Curds*. See Milk, Cheese, &c.

GRUMOUS *Blood*, is that State or Conſiſtence of the Blood, wherein it is too viſcid, and thick, for a due brisk Circulation: The Effects whereof are, that it ſtagnates in the Capillary Veſſels, and produces divers Diſeaſes. See Lentor; ſee alſo Disease, &c.

GRUS, in Antiquity, a Dance perform'd yearly by the young *Athenians*, around the Temple of *Apollo*, on the Day of the Delia. See Delia.

The Motions and Figures of this Dance were very intricate, and variouſly interwove, ſome of them being intended to expreſs the Windings of the Labyrinth, wherein the Minotaur was kill'd by *Theſeus*. See Labyrinth.

GRY, a Meaſure containing $\frac{1}{10}$ of a Line. See Line.

A Line is $\frac{1}{10}$ of a Digit; and a Digit $\frac{1}{10}$ of a Foot; and a Philoſophical Foot $\frac{1}{3}$ of a Pendulum, whoſe Diadromes, or Vibrations, in the Latitude of 45 Degrees, are each equal to one Second of Time, or $\frac{1}{60}$ of a Minute. See Inch, Foot, Pendulum, &c.

GRYPHUS, a kind of Enigma; or an artful obſcure Deſcription of a Thing. See Ænigma.

GUADAGE, or Guidage, among our antient Writers, (*eſt quod datur alicui, ut tuto conducatur per terram alterius*;) that which is given for ſafe Conduct through unknown Ways, or a ſtrange Territory.

GUADUM, Guoad, in Natural Hiſtory, an Herb by the antient *Romans* called *Glaſtum* and *Vitrum*; by the *Greeks Iſatis*; by the *Britains Guadum*; and by us now, *Woad*.

The antient *Britains*, *Cæſar* informs us, painted their Faces with this Herb, to appear the more terrible to their Enemies. And *Pliny* relates, that the ſame was practiced by the Women in divers Sacrifices. See Glass.

GUANNAGIUM. See Wannage.

GUARANTEE, or Warrantee, a Term relative to *Warrant*, or *Warranter*; properly ſignifying him whom the Warranter undertakes to indemnify, or ſecure from Damage. See Warrantee.

Guarantee, or *Guaranty*, is more frequently uſed for a *Warranter*, or a Perſon who undertakes and obliges himſelf to ſee a ſecond Perſon perform, what he has ſtipulated to a third.

The *Guarantee of a Treaty*, is a Prince, or Power, pitched on by the treating Parties, to ſee, or engage that each Side ſhall perform the Articles. The *Guarantees* of the Treaty of *Oliva*, of *Weſtphalia*, &c. See Treaty.

The antient Lords were obliged to *Guaranty* the Lands of their Vaſſals, *i. e.* to defend them againſt their Enemies; otherwiſe they loſt their Fee, and their Vaſſals were no longer bound to do them Homage and Service—Kings alone did not forfeit their Fiefs by not *Guarantying* them; and yet we read that *Borel*, Count of *Barcelona*, threaten'd the King of *France*, *Hugh Capet*, to ſwear Fealty to the *Sarazens*, in caſe he did not *guaranty* him; and under *Lewis* the Young, the Count of *Champagne* did Homage to the Emperor, on the like Account. See Fee.

To *Guaranty a Fee*, had likewiſe another Meaning, being uſed to denote, that where a *Fee* was divided between the eldeſt Son, and the younger, the eldeſt did Homage to the Lord both for himſelf and all the reſt; and by that Homage *guaranty'd* the whole.

GUARD, or Gard, in its general Senſe, implies Defence, Cuſtody, or Conſervation of any Thing; the Act of obſerving what paſſes, to prevent Surprize; or the Care and Precaution taken to hinder any Thing's being done contrary to the Intention and Deſire of another.

The Word is both uſed in a proper and a figurative Senſe; for the Act or Service of *Guarding*, and the Perſons appointed for that Purpoſe: Thus we ſay, to be upon *Guard*, to ſet the *Guard*, mount the *Guard*, &c. So alſo we ſay a ſtrong *Guard*, an Attempt on the *Guard*; 2000 Men are neceſſary for the *Guard* of the City, &c.—So, again, thoſe to whom the King commits the Safety of his Perſon, are called his *Guard*, *Life-Guard*, *Body-Guard*.

And ſo, thoſe who have the Education and Guardianſhip of Infants, or Idiots, are called their *Guards*, or Wards. See Ward.

The ſame Term is alſo applied to a Writ relating to the Office of Ward, whereof there are three Kinds; one called *droit de Garde*; the ſecond *Ejectment de Garde*; the third *Raviſhment de Garde*. See Ward and Guardian.

The Word is form'd of the *French Garde*, and that of the corrupt *Latin Warda*; and that of the *German Wahren* to keep.

Guard, in the military Senſe, is properly the Duty or Service done by the Soldiers, to ſecure the Army or Place from the Surprizes and Efforts of an Enemy.—Of this there are divers Kinds, as

Main-Guard, is that from whence all the other *Guards* are detach'd. Thoſe who are to mount the *Guard*, meet at the reſpective Captain's Quarters, and from thence go to the Parade; where, after the whole *Guard* is drawn up the ſmall *Guards* are detach'd for the Poſts and Magazines; and then the ſubaltern Officers throw Lots for their *Guards*, and are commanded by the Captain of the *Main-Guard*.

Grand-Guard, conſiſts of three or four Squadrons of Horſe, commanded by a Field-Officer, and poſted before the Camp on the Right and Left Wing, towards the Enemy; for the Security of the Camp.

In a Camp every Batallion poſts a ſmall *Guard*, commanded by a ſubaltern Officer, about 100 Yards before its Front. This is called the *Quarter-Guard*. As

That ſmall *Guard* of Foot, which a Regiment of Horſe mounts in their Front under a Corporal, is called the *Standard-Guard*.

Advance-Guard, is a Party of Horſe or Foot which marches before a Body to give Notice of approaching Danger. When an Army is upon the March, the Grand *Guards*, which ſhould ſerve that Day, are as *Advance-Guards* to the Army.—That ſmall Body alſo of 12 or 16 Horſe, which are poſted under a Corporal, or Quarter-Maſter, before the Grand-*Guard* of a Camp, are called the *Advance-Guard*.

There is alſo the *Picquet-Guard*, which is a Number of Horſe and Foot, who keep themſelves always in a Readineſs in caſe of an Alarm; the Horſes are ſaddled, and the Riders booted all the while, and the Foot draw up at the Head of the Batallion at the beating of the Tattou, but afterwards return to their Tents, where they are in a Readineſs to march upon any ſudden Alarm.—This *Guard* is to make Reſiſtance in caſe of an Attack, till the Army can get ready.

Guard is particularly underſtood of a Soldier, as a Muſqueteer, Archer, or the like, detach'd from a Company or Corps, to protect, detain, or ſecure any Perſon, or ſurvey his Actions.

A *Guard* was ſet over each Party, to prevent the Duel's taking Place.

The Term is alſo uſed for the Troops or Companies kept up to guard the King: As in the following Articles—

Royal Guards, are Forces raiſed and maintained to *guard* his Majeſty's Perſon. See King.

There are alſo Bodies of *Guards* to wait on the Princes of the Blood, in the ſame Capacity.

The *Guards* are diſtinguiſhed into *Horſe*, *Foot*, *Granadiers*, and *Yeomen*.

The *Horſe-Guards* are diſtinguiſh'd by Troops: Firſt, ſecond, third, and fourth Troop of *Horſe-Guards*. See Troop.

The *Foot-Guards* are diſtinguiſhed by Regiments: Firſt Regiment, Cold-Stream Regiment, Royal Regiment of *Foot-Guards*. See Regiment.

Guards, no doubt, are as antient as Monarchy. The remoteſt Antiquity affords Inſtances hereof; the Scripture mentions thoſe of *Saul* the firſt King of the People of God, 1 *King.* xix. 11. and thoſe of *Achis* King of the *Philiſtines*, 1 *King.* xxviii. The *Grecian* Kings had alſo their Guards: *Juſtin* mentions thoſe of *Piſiſtratus*, Tyrant of *Athens*, lib. 11. c. 8. thoſe of the Tyrants of the ſame City, eſtabliſhed by *Lyſander*, lib. v. c. 8. thoſe of *Agis* King of *Sparta*, lib. xii. c. 1. thoſe of *Alexander*, lib. xii. c. 8. thoſe of the *Ptolomys* Kings of *Ægypt*, lib. xvi. c. 2, &c. *Tarquin* the Proud, is

ſaid to have been the firſt who took *Guards* at *Rome*. *Dionyſ. Halicarnaſſæus*, lib. iv. and yet we find that *Romulus* form'd himſelf a *Guard*, conſiſting at firſt of 12 Lictors, and afterwards of 300 Soldiers, whom he called *Celeres*. See CELERES.

The *Roman* Emperors had, for their *Guard*, the *Pretorian* Cohorts, eſtabliſhed by *Auguſtus*, as *Dion* and *Suetonius* relate: Thoſe of the Emperors of *Conſtantinople*, were called *Buccellarii*. See BUCCELLARII; ſee alſo DOMESTICI and PROTECTORES.

Captain of the *Guards*, Colonel of the *Guards*, Brigadier of the *Guards*, Exempt of the *Guards*, &c. See CAPTAIN, COLONEL, BRIGADIER, EXEMPT, &c.

Yeomen of the GUARDS. See YEOMEN *of the Guards*.

The *French Guards* are divided into thoſe *within*, and thoſe *without* the Palace: The firſt conſiſts of the *Gardes du Corps*, q. d. Body-Guard; part whereof are *Gardes de la Manche*, q. d. of the Elbow: The hundred *Swiſſes*; and the *Guards* of the Gate.

The *Guards without*, are *Gens d'Armes*, Light-Horſe, Muſqueteers, and two Regiments of *Guards*, the one of *French*, the other *Swiſs*. See GENSD'ARMES.

The *Garde du Corps*, or *Life-Guard*, conſiſts of four Companies of Horſe: The firſt was antiently *Scotch*, and ſtill retains the Name; tho' it now conſiſts wholly of *French* Men. Not only the Name, but they alſo retain the antient Phraſe or Formula of anſwering when called upon, *I am here*. The *Scotch Guard* was firſt eſtabliſhed in *France* by *Charles* VII. who choſe himſelf a *Guard* out of ſuch *Scots* as were ſent by the Earls of *Buccan*, *Douglas*, and other *Scotch* Lords, to drive out the *Engliſh*.

Pretorian GUARDS, *White* GUARDS, } fee { PRETORIAN, SCHOLARES.

GUARD, in Fencing, an Action or Poſture proper to defend or ſcreen the Body from the Efforts, or Attacks of an Enemies Sword— See FENCING and DEFENCE.

There are four general *Guards* of the Sword; to conceive which, it will be neceſſary to imagine a Circle drawn on an upright Wall, and divided into four Cardinal Points, *viz.* top, bottom, right, and left.

Now, when the Point of the Sword is directed to the bottom Point of the Circle, and conſequently the Head of the Sword tilted up to the top Point, with the Body inclining forwards; this is called *Prime*, or the *firſt Guard*—The *ſecond Guard*, which ſome improperly called the *third*, is when the Point of the Sword is directed to the right or ſecond Point of the ſame Circle, a Quadrant diſtant from the *firſt*; with the Fort of the Sword turn'd to the right, and the Body rais'd proportionably—*Tierce*, or the *third Guard*, is perform'd by directing the Sword's Point to the uppermoſt Point of the ſame Circle diametrically oppoſite to that of *Prime*: In which Caſe the Body, Arm, and Sword, are in their natural Diſpoſition, being the Mean between the Extremes of their Motion—*Quart*, or the *fourth Guard*, is when the Point of the Sword is directed to the fourth Point of rhe Circle, deſcending to the right as far as one fourth of *Tierce*, wirh the external Side of the Arm and the Flat of the Sword turn'd towards the Ground; and the Body out of the Line to the right, and the Fort of the Sword towards the Line to the left—There is alſo *Quint*, or a kind of *fifth Guard*, being the return of the Point of the Sword on the right, after traverſing the Circle, to the Point of the *Prime* whence it had departed; and yet with a different Diſpoſition of the Body, Arm, and Sword.

Theſe *Guards* are alſo called *Figures* and *Poſtures*; and the common Centre of all their Motions is to be in the Shoulder.

In all theſe Kinds of *Guards*, there are high *advanced*, high *retired*, and high *intermediate Guards*, when diſpoſed before the upper part of the Body, either with the Arm quite extended, quite withdrawn, or in a mean State—*Mean advanced Guard*, or ſimply *mean Guard*, is when the Sword is diſpoſed before the middle part of the Body—*Low advanced*, *retired*. or *intermediate Guards*, are thoſe where the Arm and Sword are advanced, withdrawn, or, between the two Extremes, before the lower part of the Body.

Some will have *Prime* the principal *Guard*; others *Quint*; others, with better Reaſon, *Tierce*, in regard it conſiſts of right Lines, which are more eaſily defended than oblique ones, ſuch as thoſe of *Prime*, *Second*, *Quart*, and *Quint*. See SWORD.

GUARDS, in Aſtronomy, is a Name ſometimes applied to the two Stars neareſt the Pole, being in the hind part of the Chariot, at the Tail of the little Bear. See CYNOSURE.

Their Longitude, Latitude, &c. ſee among thoſe of the other Stars in the Conſtellation URSA *minor*.

One of them is the Pole Star. See POLE *Star*.

GUARDANT, or GARDANT, in Heraldry, a Term applied to a Lion or other Beaſt when born in a Coat of Arms, full faced, or with his Face turned towards the Spectator, and thus appearing in a Poſture of Guard, and Defence.—The Heralds ſay a Lion is never ſo repreſented, but a Leopard always.

GUARDIAN, or GARDIAN, he to whom the Charge or Cuſtody of any Perſon or Thing is committed. See WARD.

The Notion of *Guardian* Angels, is very antient in the Eaſt. See DÆMON.

In the Convents of *Franciſcans*, the Officer is called *Guardian* who in the reſt is called *Superior*. See SUPERIOR.

In the Order of the Garter, the Officer who in other military Orders is called Grand-Maſter, is called the *Sovereign Guardian* of the Order. See GARTER.

GUARDIAN, in Law, is a Perſon intruſted with the Education, Tuition, &c. of ſuch as are not of ſufficient Diſcretion to guide themſelves, and their own Affairs; as Children, and Ideots.

The Word *Guardian*, with us, includes the Offices both of the *Tutor* and *Curator* of the *Civilians*: The *Tutor*, for inſtance, had the Government of a Youth, till he arrived at 14 Years of Age. See TUTOR. And the *Curator* had the Diſpoſition and ordering of his Effects thence forward, till 25 Years of Age; or the Charge of a Lunatick, during his Lunacy. See CURATOR; all which Purpoſes, our *Guardian* alone anſwers.

We have three Kinds of *Guardians*: One appointed by the Father in his Will; another by the Judge afterwards; and a third caſt upon a Minor by the Cuſtom of the Land: But the antient Law relating to *Guardians*, is much alter'd by *Stat.* 12. *Car.* II. which ordains that, 'Where any Perſon 'has a Child under the Age of 21 Years, and unmarried at 'the Time of his Death, it ſhall be lawful for the Father 'of the Child, whether born at the Time of his Deceaſe, 'or yet in *ventre ſa mere*, either by Deed or Will, to diſpoſe of the Cuſtody and Tuition of ſuch Child while under Age, or for any leſſer Time, to any Perſon, Popiſh 'Recuſants excepted: Which Diſpoſition ſhall be good a'gainſt all Perſons claiming ſuch Child as *Guardian in Socage*, or otherwiſe. And in Caſe the Father appoint no 'Guardian, the Ordinary may appoint one to look to his 'Goods and Chattels till the Age of fourteen; at which 'Time the Child may chuſe a *Guardian* himſelf. And 'for his Lands, the next of kin on that ſide by which the 'Lands deſcends, ſhall not be *Guardian*, as heretofore in 'Caſe of a Tenure *in Socage*. See SOCAGE.

GUARDIAN *of the Spiritualities*, is he to whom the ſpiritual Juriſdiction of a Dioceſe is committed, during the Vacancy of the See. See VACANCY.

This *Guardian* may be either ſuch *in Law*, i. e. *Jure Magiſtratus*, as the Archbiſhop is of any Dioceſe within his Province; or by *Delegation*, as he whom the Archbiſhop or Vicar-General, does for the Time depute. See VICAR, &c.

The *Dean* and *Chapter* of *Canterbury*, are *Guardians* both for the Dioceſe, and the whole Province, during a Vacancy of the Archbiſhop.

GUARDIAN, or *Warden*, of the *Cinque-Ports*, is an Officer who has the Juriſdiction of the Cinque-Ports, with all the Power that the Admiral of *England* has in other Places. See CINQUE-PORTS, and ADMIRAL.

Cambden relates, that the *Romans*, after they had ſettled themſelves, and their Empire in our Iſland, appointed a Magiſtrate or Governour over the Eaſt Parts where the Cinque-Ports lie, with the Title of *Comes Littoris Saxonici per Britanniam*; having another that bore the like Title, on the oppoſite Side of the Sea. Their Buſineſs was to ſtrengthen the Sea Coaſt with Munition againſt the Outrages and Robberies of the Barbarians. And that Antiquary takes our Warden of the Cinque-Ports to have been erected in Imitation hereof. *Britannia*. p. 228.

GUARDIAN *of the Peace*. See CONSERVATOR *of the Peace*.

GUELPHS, or GUELFS, a celebrated Faction in *Italy*, Antagoniſts of the *Gibellins*. See GIBELLIN.

The *Guelphs* and *Gibellins* fill'd *Italy* with Blood and Carnage for many Years. The *Guelphs* ſtood for the Pope, againſt the Emperor. Their Riſe is referr'd by ſome to be the Time of *Conrad* III. in the 12th Century; by others to that of *Frederic* I. and by others, to that of his Succeſſor *Frederic* II. in the 13th Century.

The Name *Guelf* is commonly ſaid to have been form'd from that of *Welfe*, *Welfo*, on the following Occaſion: The Emperor *Conrad* III. having taken the Dutchy of *Bavaria* from *Welfe* VI. Brother of *Henry* Duke of *Bavaria*, *Welfe*, aſſiſted by the Forces of *Roger* King of *Sicily*, made War on *Conrad*, and thus gave Birth to the Faction of the *Guelfs*.

Others chuſe rather to derive the Name *Welfe* from that of *Guelfon*. Others, again, derive the Name *Guelfs* from the *German Wolff*, on account of the grievous Evils committed by that cruel Faction. Laſtly, others derive the Denomination from that of a *German* called *Guelfe*, who lived at *Piſtoye*; adding, that his Brother, named *Gibel*, gave the Name to the *Gibellines*: Under which Head, the Reader will find a more ample Account of the Origin and Hiſtory of thoſe celebrated Factions.

GUERITE, in Fortification, a ſmall Tower of Wood or Stone, placed uſually on the Point of a Baſtion, or on the Angles of the Shoulder; to hold a Centinel, who is to take care of the Ditch, and watch out againſt a Surprize—

GUEST-TAKERS, or GIST-TAKERS. See AGISTORS.

GUET,

GUET, a *French* Term of War, ſignifying *Watch*; particularly uſed for a Perſon poſted as a *Spy* in any Place, to have an Eye thereto, and give Notice of what paſſes. See CENTINEL, SENTRY, &c.

GUET is alſo uſed for a *Corps de Garde* poſted at any Paſſage; or Company of Guards who go on the Patrol. See WATCH.

Some Officers are exempted from *Guet* and Guard, *i. e.* Watch and Ward.

In the ſame Senſe they ſay *Guet de Nuit*, Night Watch: *Mot de Guet*, Watch-Word: *Guet Royal*: *Guet Bourgeoiſe*, &c.

The *Chevalier de Guet*, is the Officer who commands the *Guet Royal*, or Royal Watch.

GUEULE, in Architecture. See GULA.

GUIDON, a ſort of Flag, or Standard bore by the King's Life-Guard; being broad at one Extreme, and almoſt pointed at the other, and ſlit or divided into two. See FLAG, STANDARD, &c.

The *Guidon* is the Enſign or Flag of a Troop of Horſe-Guards. See GUARD.

GUIDON is alſo the Officer who bears the *Guidon*.

The *Guidon* is that in the Horſe-Guards, which the Enſign is in the Foot. See ENSIGN.

The *Guidon* of a Troop of Horſe takes place next below the *Cornet*.

GUIDONS, GUIDONES, or *Schola Guidonum*, was a Company of Prieſts, eſtabliſhed by *Charlemaign* at *Rome*, to conduct and guide Pilgrims to *Jeruſalem*, to viſit the holy Places; to aſſiſt them in caſe they fell ſick, and to perform the laſt Offices to them in caſe they died.

GUIDRIGILD. See WEREGILD.

GUILD, GELD, or GILD. See GILD.

GUILD-HALL, or GILD-HALL, the great Court of Judicature for the City of *London*. See HALL.

In it are kept the Mayor's Court, the Sheriffs Court, the Court of Huſtings, Court of Conſcience, Court of Common-Council, Chamberlain's Court, &c. See MAYOR'S-COURT, COMMON-COUNCIL, CHAMBERLAIN, &c.

Here alſo the Judges ſit upon *Niſi prius*, &c.

GUINEA, a Gold Coin ſtruck, and current in *England*. See COIN.

The Value or Rate of *Guineas* has varied: It was firſt ſtruck on the Footing of 20 Shillings; by the Scarcity of Gold it has ſince advanced to 21 Shillings and 6 Pence; but is now ſunk to 21 Shillings.

The Pound Weight Troy of Gold is cut into Forty-four Parts and an half; each Part makes a *Guinea*. See GOLD.

This Coin took its Denomination *Guinea*, by reaſon the Gold whereof the firſt were ſtruck, was brought from that Part of *Africa* called *Guinea*; for which Reaſon it likewiſe bore the Impreſſion of an Elephant.

GUINEA-*Pepper*. See PEPPER.

GULA, in Anatomy, the *Gullet*; or that Conduit by which Animals take down Food into the Stomach. See DIGLUTITION.

GULE, GUEULE, or GOLA, in Architecture, a wavy Member, whoſe Contour reſembles the Letter S; called by the *Greeks Cymatium*, q. d. a little Wave, and by our Workmen an *Ogee*. See CYMATIUM and OGEE.

This Member is of two Kinds, *recta* and *inverſa*:

The *firſt*, and principal, has its Cavity above, and Convexity below. This always makes the Top of the Corona of the Cornice, jetting over the Drip of the Cornice like a Wave ready to fall.

It is called *Gula recta*, and by the *French Doucine*. Sometimes it is abſolutely called the *Entablature*, as being the firſt or uppermoſt Member thereof. See DOUCINE, CORONA, CORNICE, &c.

The *ſecond* is juſt the reverſe of the former, its Cavity being at the Bottom; ſo that it appears inverted, with regard to the former. This is uſed in the Architrave, and ſometimes in the Cornice, along with the former, only ſeparated by a Reglet.

Some derive the Word from the Reſemblance theſe Members bear to the *Gula*, or Throat of a Man: Others from the Herald's Term *Gules*; as ſuppoſing the Moulding formed from the antient manner of wearing their Garments, which conſiſted of Slips or Swaths, alternately Fur and Stuff of various Colours; the Intervals between which, were called *Gules* or *Guales*.

GULES, in Heraldry, ſignifies the Colour *Red*. See COLOUR and RED.

The ſame Colour, in the Coats of Noblemen, is, by ſome, called *Ruby*; and in thoſe of ſovereign Princes *Mars*: but this is no ſtanding Practice. See METAL, PRETIOUS STONE, &c.

In Engraving, *Gules* is expreſs'd by perpendicular Strokes drawn from the Top of the Eſcucheon to the Bottom, with the Letter G.

This Colour is reputed a Symbol of Charity, Valour, Hardineſs, Generoſity; and repreſents Blood Colour, Cinnabar and true Scarlet. It is the firſt of all Colours uſed in Armory; and is of that account, that antiently it was prohibited any Perſon to wear *Gules* in his Coat Armour, unleſs he were a Prince, or had Permiſſion from the Prince. *Spelman* in his *Aſpilogia*, ſays this Colour was particularly honour'd by the *Romans*, as it had been before by the *Trojans*; and that they painted the Bodies of their Gods, and of their Generals that triumph'd, with Vermillion—Under the Conſuls, the *Roman* Soldiers wore *Red*; whence they were denominated *Ruſſati*. *John de Bado Aureo* adds, that the Red Garment, which the *Greeks* call *Phœnician*, and we Scarlet, was firſt uſed by the *Romans*, to prevent ſeeing of the Blood iſſue from Wounds in Fight.

In effect, *Gules* has always been eſteem'd an Imperial Colour; the Emperors were cloathed, ſhod, and had their Appartments furniſh'd with Red: Their Edicts, Diſpatches, Signatures, and Seals, were of Red-Ink, and Red Wax; whence the Name *Rubricks*. See RUBRIC.

Fa. *Monet* derives the Word *Gules*, *Gueules*, from the Hebrew *Gulud*, and *Guludit*, a reddiſh Pellicle or Skin appearing on a Wound when it begins to heal: But F. *Meneſtrier* reproaches him, that there were no ſuch Words in the *Hebrew* Tongue. This, however, is not true: All the Eaſtern Languages, the *Hebrew*, *Chaldee*, *Syriac*, and *Arabs*, ſay גָּלַד. *Gheled*, for *Cutis*, *Pellis*; when the *Arabic Gulud*. And in the general, the Word *Gules* ſignifies Red among moſt of the oriental Nations: The *Arabs* and *Perſians* give the Name to the Roſe.

Others, with *Nicod*, derive the Name *Gules* from *Gule*, the Throats of Animals, being generally Red; whence the Latin *Cuſculium*, of the Greek κοκκος, Scarlet Grain.

GULLET. See OESOPHAGUS.

GULPH, or GULF, in Geography, an Arm or Part of the Ocean running up within the Land.—Such is the *Gulph* of *Venice*, called alſo the *Adriatic Sea*; the *Gulph* of *Lyons*, the *Gulph* of *Mexico*, of *Florida*, &c. See OCEAN.

A *Gulph* is ſtrictly diſtinguiſhed from a *Sea*, in that that the latter is larger. See SEA. From a *Bay*, or Sinus, it is again diſtinguiſhed by its being greater than the ſame. See BAY.

Some will have it eſſential to a *Gulph*, to run into the Land thro' a Streight or narrow Paſſage. See STREIGHT.

The Sea is always moſt dangerous near *Gulphs*, by reaſon of the Currents being penn'd up by the Shores. The Word is form'd of the *Greek* κόλπος; which *Guichart* again derives from the *Hebrew* עוב, *Gob*. *Du Cange* derives it from the barbarous Latin *Gulfum* or *Gulfus*, which ſignifies the ſame Thing.

GUM, GUMMI, a vegetable Juice exſuding thro' the Pores of certain Plants, and there hardening into a tenacious tranſparent Maſs. See PLANT.

Gum is properly one of the Juices of the Bark: It is drawn thence by the Sun's Warmth, in Form of a glutinous Humour; and by the ſame Cauſe is afterwards inſpiſſated, concocted, and render'd tenacious

The Character of *Gums*, whereby they are diſtinguiſhed from Reſins and other vegetable Juices, is, that they are diſſoluble in Water, and at the ſame Time inflammable by Fire. See MENSTRUUM, WATER, and FIRE.

In the general they are more viſcid, and leſs friable, and generally diſſoluble in any aqueous Menſtruum; whereas Reſins are more ſulphurous, and require a ſpirituous Diſſolvent. *Boerhaave* conſiders a *Gum* as a ſort of ſaponaceous Fat; which beſide its oily Principle in common with a Reſin, has ſome other Ingredient that renders it miſcible with Water. See RESIN.

GUMS are different, according to the different Trees, Roots, &c. they ouze from: Some Authors diſtinguiſh them into *Aqueous*, and *Reſinous Gums*: The firſt, thoſe diſſoluble in Water, Wine, and the like Fluids; The ſecond, thoſe only diſſoluble in Oil.

To theſe two ſome add a third *anomalous* Kind, *viz.* thoſe ſoluble with much Difficulty either in Water or Oil.

Among the Claſs of *Gums* are uſually ranked, *Gum-Anima*, *Arabic*, *Gutta*, *Adraganth*, *Ammoniac*, *Aſſa Fœtida*, *Bdellium*, *Balm*, *Benjoin*, *Camphor*, *Copal*, *Elemy*, *Frankincenſe*, *Euphorbium*, *Galbanum*, *Lacca*, *Manna*, *Myrrh*, *Olibanum*, *Sagapenum*, *Sanguis Draconis*, *Sarcocolla*, *Stacte*, *Storax*, *Tacamahacha*, *Turpentine*. See each deſcribed under its proper Article.

Theophraſtus ſpeaks of a way of multiplying Plants, perform'd *per Lachrymas*, by means of the *Gum* or Reſin; but *Agricola* takes this to be only practicable where there are Seeds in the *Gum*.

GUM-*Anima*, or *Animi*, is a reſinous Juice ouzing from a Tree by the *Portugueze* called *Courbari*, growing in divers Parts of *America*.

This *Gum* is very hard and tranſparent, of an agreeable Smell, not unlike Amber: It neither diſſolves in Water nor Oil, and conſequently is not properly accounted a *Gum*. In lieu of this, they frequently ſubſtitute *Copal*.

GUM-*Arabic*, call'd alſo *Thebaic*, *Sarracenaic*, *Babyloniſh*, and *Achantine*, from the Places or the Tree which produce it, is the Juice of a little Tree growing in *Egypt*, of the *Caſſia* Kind, called in Latin *Acacia foliis Scorpioides Leguminoſa*. 'Tis very tranſparent, glutinous upon the Tongue, almoſt inſipid to the Taſte, and twiſted ſomewhat in form ner of a Worm.

It

It is eſteem'd good to incraſſate, to ſtop the Pores, blunt the Points of too pungent Medicines, and temper the Acrimony of the Trachea in Coughs, &c.

GUM-*Gutta*, or *Gutta-Gamba*, or *Gutta-Gemou*, or *Gamandra*, popularly *Gamboche*, is a reſinous *Gum* brought from the Kingdom of *Siam*, &c. in large Pieces faſhion not unlike Saucidges, hard, brittle, and very yellow.

It ouzes from Inciſions made in a kind of prickly Shrub, which climbs up the neighbouring Trees. It purges violently both upwards and downwards; and is particularly uſed in Dropſies, the Itch, &c. but it is dangerous.

It ſerves alſo to make a yellow Colour, for painting in Miniature. See MINIATURE.

GUM-*Senegal*, is the *Gum* ordinarily ſold by the Druggiſts for *Gum-Arabic*, which it reſembles very nearly both as to Form and Virtue: It is either white bordering on the yellow, or of a deep Amber Colour, tranſparent, &c. It ouzes out of a prickly Shrub common enough in *Africa*. The *Gum* is brought us from *Senegal*, whence its Name.—

GUMMO-*Reſin*, or *Gum-Reſin*, is a harden'd Juice of a middle Nature between a *Gum* and a *Reſin*, being both diſſoluble in aqueous Menſtruums like a *Gum*; and in oleaginous ones like a *Reſin*.

Such are MASTIC, CAMPHOR, STORAX, &c.

Some Naturaliſts make a Claſs of *Irregular* GUMMO *Reſins*, being ſuch as diſſolve, tho' with Difficulty, and not perfectly, both in aqueous and oleaginous Liquors; as *Bdellium*, *Myrrh*, &c.

GUM, among Gardeners, is a Diſeaſe incident to Fruit Trees, of the Stone kind, as Peaches, Plumbs, Apricots, Cherries, &c. See DISEASE, &c.

The *Gum* is a kind of Gangrene, ariſing from a Corruption of the Sap, which extravaſates and hardens. It uſually begins on ſome naked or broken Part, and ſpreads it ſelf to the reſt. To avoid its ſpreading, *M. Quintinie* directs to cut off the morbid Branch two or three Inches below the Part affected.

This *Gum* is no more than a thick, diſtemper'd, viſcid Juice, which not being able to make its way through the Fibres of the Body of the Tree, to feed and ſupply them, is obliged, by the Protruſion of other ſucceeding Juice, to burſt its Veſſels, which lie between the Wood and Bark, and to ouze out upon the Bark.

When the Diſtemper ſurrounds the Graft, it admits of no Remedy: When it is only on one Side of a Bough, the *Gum* muſt be taken off to the Quick of it; ſome Cow-dung clap'd on the Wound, and cover'd over with a linnen Cloth, and tied down.—

GUN, a Fire-Arm, or Weapon of Offence, which forcibly diſcharges a Ball, Shot, or other offenſive Matter, thro' a Cylindrical Barrel, by means of Gun-powder. See BALL, GUN-POWDER, ARM, &c.

GUN is a general Name, under which are included divers, or even moſt Species of Fire-Arms: They may be divided into *great* and *ſmall*.

Great-GUNS, called by the general Name *Cannon*, make what we call *Ordnance*, or *Artillery*; under which come the ſeveral Sorts of *Cannon*, as Cannon-Royal, Demi-Cannon, &c. *Culverins*, *Demi-Culvers*, *Sakers*, *Minions*, *Falcons*, &c. See ORDNANCE; ſee alſo CANNON, CULVERIN, &c.

Small Arms include

Muskets, *Musketoons*, *Carabines*, *Blunderbuſſes*, *Fowling-Pieces*, &c. See CARABINE, MUSKET, FOWLING-PIECE, &c.

Piſtols and *Mortars* are almoſt the only Kinds of regular Weapons charged with Gun-powder, that are excepted from the Denomination of *Guns*. See MORTAR and PISTOL.

For the Hiſtory and Invention of *Guns*, } ſee { CANNON and GUN-POWDER.
For the Uſe and Application of *Guns*, } ſee { GUNNERY.

GUNNERS, Officers of the Tower, and other Garriſons, whoſe Buſineſs is to manage and look after the Ordnance mounted on the Lines and Batteries, which are all fix'd and ready with Cartouches and Ball, for Service, on the ſhorteſt Warning.—One or more of them are on Duty Day and Night. See ORDNANCE and TOWER.

Maſter-GUNNER *of England*, is an Officer appointed to teach and inſtruct all ſuch as deſire to learn the Art of Gunnery, and to adminiſter to every Scholar an Oath; which, beſide the Duty of Allegiance, obliges him not to ſerve any foreign Prince or State without Leave; nor to teach the Art of Gunnery to any, but ſuch as have taken the ſaid Oath; and to certify to the Maſter of the Ordnance, the Sufficiency of any Perſon recommended to be one of his Majeſty's *Gunners*.

The *Gunner*, Sir *J. Moor* obſerves, ſhould know his Pieces, and their Names, which are taken from the Height of the Bore, the Names of the ſeveral Parts of a Piece of Ordnance, how to tertiate his Gun, and how to diſpart it. See ORDNANCE, TERTIATE, DISPART, &c.

GUNNERY, the Art of ſhooting with Guns and Mortars, *i. e.* of charging, directing, and exploding thoſe Fire-Arms to the beſt Advantage. See GUN and MORTAR.

GUNNERY is ſometimes conſidered as a part of the military Art, and ſometimes of Pyrotechny. See WAR and PYROTECHNY.

To the Art of *Gunnery* belongs the Knowledge of the Force, and Effect of Gun-powder, the Dimenſions of Pieces, and the Proportions of Powder and Ball they carry; with the Methods of Managing, Charging, Pointing, Spunging, &c. See GUN-POWDER, CHARGE, POINTING, SPUNGE, &c.

Some Parts of *Gunnery* are brought under mathematical Conſideration, which among Mathematicians are called abſolutely by the Name *Gunnery*, *viz.* the Method of elevating or raiſing the Piece to any given Angle, and of computing its Range; or of raiſing and directing it ſo, as it may hit a Mark or Object propoſed.

The Inſtruments chiefly uſed in this Part of *Gunnery*, are the Callipers or Gunners Compaſſes, Quadrant, and Level; the Methods of applying which ſee under the Articles CALLIPER, LEVEL, and QUADRANT.

The Line or Path in which the Bullet flies, whatever Direction or Elevation the Piece is in, is found to be the ſame with that of all other Projectiles, *viz.* a Parabola. See PARABOLA.

Hence, the particular Laws obſerved in the Motion or Flight of the Ball, its Velocity, Extent, &c. with the Rules for hitting Objects, are delivered under the Article PROJECTILE.

Maltus, an *Engliſh* Engineer, is mentioned as the Perſon who firſt taught any regular Uſe of Mortars, in the Year 1634; but all his Knowledge was experimental and tentative; he knew nothing of the Curve the Shot deſcribes in its Paſſage, nor of the Difference of Range at different Elevations. And moſt of the Gunners and Engineers employ'd about Batteries, &c. to this Day go by no better Rules: If the Range does not hit right, they raiſe or lower the Piece, till they bring it to a Truth: And yet there are certain Rules, founded on Geometry, for all theſe Things; moſt of which we owe to *Galileo* Engineer to the Grand Duke of *Tuſcany*, and his Diſciple *Torricellius*.

A Ball or Bomb going out of a Piece, we find, never proceeds in a ſtreight Line towards the Place it is levelled at, but begins to riſe from its Line of Direction the Moment it is out of the Mouth of the Piece.—This ſome account for thus: The Grains of Powder nigheſt the Breech, taking Fire firſt, preſs forward, by their precipitated Motion, not only the Ball, but likewiſe thoſe Grains which follow the Ball along the Bottom of the Piece; where ſucceſſively taking Fire, they ſtrike, as it were, the Ball underneath, which becauſe of a neceſſary Vent, has not the ſame Diameter, as the Diameter of the Bore; and ſo inſenſibly raiſe the Ball towards the upper Edge of the Mouth of the Piece, againſt which it ſo rubs in going out, that Pieces very much uſed, and whoſe Metal is ſoft, are obſerved to have a conſiderable Canal there, gradually dug by the Friction of Balls. Thus the Ball going from the Cannon, as from the Point of the Parabola E, Tab. *Fortification*, Fig. 13. raiſes it ſelf, in its Progreſs, to the Vertex G; after which it deſcends by mix'd Motion.

Ranges made from the Elevation of 45 Deg. are the greateſt; and thoſe made from Elevations equally diſtant from 45 Deg. are equal; that is, a Piece of Cannon, or a Mortar, level'd to the 40th Deg. will throw a Ball, or Bomb, the ſame Diſtance, as when they are elevated to the 50th Deg. and as many at 30 as 60, and ſo of others.

It has been ſhewn, that to find the different Ranges of a Piece of Artillery in all Elevations, we muſt, 1*ſt*. Make a very exact Experiment by firing off a Piece of Cannon, or Mortar, at an Angle well known, and meaſuring the Range made, with all the Exactneſs poſſible; for by one Experiment well made, we may come at the Knowledge of all others, in the following Manner.

To find the Range of a Piece, at any other Elevation required, ſay, as the Sine of double the Angle under which the Experiment is made, is to the Sine of double the Angle of an Elevation propoſed, ſo is the Range known by the Experiment, to the other required.

GUN-POWDER, a Compoſition of Salt-Peter, Sulphur, and Charcoal, mixed together, and uſually granulated; which eaſily takes Fire, and rarifies or expands with great Vehemence, by means of its Elaſtic Force. See ELASTICITY, RAREFACTION, &c.

'Tis to this *Powder* we owe all the Action, and Effect of Guns, Ordnance, &c. ſo that the modern military Art, Fortification, &c. depend wholly thereon. See GUN, ORDNANCE, FORTIFICATION, &c.

The Invention of *Gun-powder* is aſcribed, by *Polydore Virgil*, to a Chymiſt, who having accidentally put ſome of this Compoſition in a Mortar, and cover'd it with a Stone; it happen'd to take Fire, and blew up the Stone.

Thevet ſays, the Perſon here ſpoke of, was a Monk of *Frybourg*, named *Conſtantine Anelzen*: But *Belleforet* and other Authors, with more Probability, hold it to be *Bartholdus Schwartz*, or the Black: At leaſt it is affirm'd, he

he firſt taught the Uſe of it to the *Venetians*, in the Year 1380, during the War with the *Genoeſe*; and that it was firſt imployed in a Place antiently called *Foſſa Caudeana*, now *Chioggia*, againſt *Laurence de Medicis*; and that all *Italy* made Complaints againſt it, as a manifeſt Contravention of a fair Warfare.

But what contradicts this Account, and ſhews *Gun-powder* of an older Æra, is, that *Peter Meſſius*, in his various Readings, mentions, that the *Moors* being beſieged in 1343, by *Alphonſus* XI. King of *Caſtile*, diſcharged a ſort of Iron Mortars upon them, which made a Noiſe like Thunder: which is ſeconded by what *Don Pedro* Biſhop of *Leon* relates in his Chronicle of King *Alphonſus* who reduced *Toledo*, *viz.* that in a Sea Combat between the King of *Tunis*, and the *Mooriſh* King of *Sevil*, above 400 Years ago, thoſe of *Tunis* had certain Iron Tuns or Barrels, wherewith they threw Thunder-bolts of Fire.

Du Cange adds, that there is mention made of it in the Regiſters of the Chambers of Accounts in *France* as early as the Year 1338. See CANNON.

To ſay no more, it appears that our *Roger Bacon* knew of *Gun-powder* 150 Years before *Schwartz* was born: That excellent Friar mentions the Compoſition in expreſs Terms, in his Treatiſe *de Nullitate Magiæ*, publiſh'd at *Oxford* in 1216. 'You may raiſe Thunder and Lightning at pleaſure, 'ſays he, by only taking Sulphur, Nitre, and Charcoal, 'which ſingly have no Effect, but mix'd together, and 'confined in a cloſe Place, cauſe a Noiſe and Exploſion 'greater than that of a Clap of Thunder.'

There are divers Compoſitions of *Gun-powder*, with reſpect to the Proportions of the three Ingredients; to be met with in Pyrotechnical Writers: But the Proceſs is much the ſame in all.

The Sulphur and Salt-peter being purified, and reduced to Powder, are put, with the Charcoal-Duſt, in a Mortar, moiſten'd with Water or Spirits of Wine, or the like, and pounded 24 Hours together; taking Care to wet the Maſs from time to time, to prevent its taking Fire: Laſtly, ſqueezing it through a Sieve, it is formed into little Grains, or Globules; which being dried, the Powder is compleat; and the leaſt Spark being ſtruck thereon from a Steel and Flint, the whole will be immediately inflam'd, and burſt out with extreme Violence.

The Effect is not hard to account for: The Charcoal part of the Grain whereon the Spark falls, catching Fire like Tinder, the Sulphur and Nitre are readily melted, and the former alſo breaks into Flame; and at the ſame time the contiguous Grains undergo the ſame Fate. Now 'tis known that Salt-peter, when ignited, rarifies to a prodigious Degree. See SALT-PETER, and RARIFICATION.

Sir *J. Newton* reaſons thus on the Point: The Charcoal and Sulphur in *Gun-powder*, eaſily take fire, and kindle the Nitre; and the Spirit of the Nitre being thereby rarified into Vapour, ruſhes out with an Exploſion much after the manner that the Vapour of Water ruſhes out of an Æolipile; the Sulphur alſo being volatile, is converted into Vapour, and augments the Exploſion: Add that the acid Vapour of the Sulphur, namely, that which diſtils under a Bell into Oil of Sulphur, entring violently into the fix'd Body of the Nitre, lets looſe the Spirit of the Nitre, and excites a greater Fermentation, whereby the Heat is farther augmented, and the fix'd Body of the Nitre is alſo rarified into Fume, and the Exploſion thereby made more vehement and quick.

For if Salt of Tartar be mixed with *Gun-powder*, and that Mixture be warmed till it takes Fire, the Exploſion will be more violent and quick than that of *Gun-powder* alone, which cannot proceed from any other Cauſe than the Action of the Vapour of the *Gun-powder* upon the Salt of Tartar, whereby that Salt is rarified. See PULVIS FULMINANS.

The Exploſion of *Gun-powder* ariſes, therefore, from the violent Action whereby all the Mixture being quickly and vehemently heated, is rarified and converted into Fume and Vapour; which Vapour, by the Violence of that Action, becoming ſo hot as to ſhine, appears in the Form of Fume. See FIRE.

M. *de la Hire* aſcribes all the Force and Effect of *Gun-powder*, to the Spring or Elaſticity of the Air, incloſed in the ſeveral Grains thereof, and in the Intervals or Spaces between the Grains: The Powder being kindled, ſets the Springs of ſo many little Parcels of Air a-playing, and dilates them all at once; whence all the Effect; the *Powder* it ſelf only ſerving to light a Fire which may put the Air in Action; after which the whole is done by the Air alone. See AIR.

GUN-POWDER is a Commodity of ſuch Conſequence, both in reſpect of Speculation, of War, and of Commerce; (the Conſumption thereof being incredible,) that it will deſerve a more particular Detail—To make *Gun-powder* duely, then, Regard is to be had, that the *Salt-Peter* be pure, and in fine large Cryſtals or Shootings: Otherwiſe, it is to be purified, by taking away its fix'd or common Salt, and earthy Parts, thus: Diſſolve 10 Pounds of Nitre, in a ſufficient Quantity of fair Water, ſettle, filtrate, and evaporate it in a glazed Veſſel, to the Diminution of half, or till a Pellicle appear on it: The Veſſel may then be taken off from the Fire, and ſet in a Cellar: In twenty-four Hours the Cryſtals will ſhoot, which ſeparate from the Liquor; and after the like manner may the Liquor be cryſtalliz'd ſeveral Times, till all the Salt be drawn forth: This done, put it into a Kettle, and that on a Furnace with a moderate Fire, which gradually encreaſe till it begins to ſmoke, evaporate, looſe its Humidity, and grow very white: It muſt be kept continually ſtirring with a Ladle, for fear it ſhould return to its former Figure, whereby its Greaſineſs will be taken away; after that, ſo much Water is to be poured into the Kettle, as will cover the Nitre, and when 'tis diſſolv'd and reduc'd to the Conſiſtency of a thick Liquor, it muſt be ſtirred with a Ladle, without Intermiſſion, till all the Moiſture is again evaporated, and it be reduced to a dry and white Meal.

The like Regard is to be had to the Sulphur, chuſing that which is in huge Lumps, clear and perfectly yellow, not very hard nor compact, but porous; nor yet too much ſhining; and if when ſet on the Fire, it freely burns away all, leaving little or no reſident Matter, 'tis a ſign of its Goodneſs; ſo likewiſe if it be preſſed between two Iron Plates that are hot enough to make it run, and in the running appear yellow, and that which remains of a reddiſh Colour, it may be concluded to be fit for the purpoſe—But, in caſe the ſame be foul and impure, it may be prepared in this manner; Melt the Sulphur in a large Iron-Ladle or Pot over a very gentle Coal-fire well kindled, but not flaming; then ſcum off all that riſes on the Top, and ſwims upon the Sulphur; take it preſently after from the Fire, and ſtrain it through a double Linnen-Cloth, letting it paſs at leiſure; ſo will it be pure, the groſs filthy Matter remaining behind in the Cloth.

For the Charcoal, the third Ingredient, ſuch ſhould be choſen as is large, clear, free from Knots, well burnt, and cleaving.

There are three Kinds of *Powder*, viz. *Cannon-Powder*, *Musket-Powder*, and *Piſtol-Powder*, of each of theſe again there are two Sorts, a *ſtronger* and a *weaker*; all which Differences ariſe only from the various Proportions.

The Proportions are thus: In the ſtronger *Cannon-Powder*, to every hundred Pounds of Salt-Peter, 25 Pounds of Sulphur are generally allowed, with the ſame Quantity of Charcoal; and in the weaker *Cannon-Powder*, to every hundred Pounds of Salt-Peter, 20 Pounds of Sulphur, and 24 of Charcoal. As for the ſtronger *Musket-Powder*, an hundred Pounds of Salt-Peter require 18 Pounds of Sulphur, and 20 of Charcoal; and in the weaker there go to an hundred Pounds of Salt-Peter, 15 of Sulphur, and 18 of Charcoal. In the ſtronger *Piſtol-Powder*, an hundred Pounds of Salt-Peter require 12 of Sulphur, and 15 of Coal; whereas the weaker has an hundred Pounds of Salt-Peter, only 10 of Sulphur, and but 18 of Charcoal.

Other Authors preſcribe other Proportions: *Semienowitz*, for Mortars, directs an hundred Pounds of Salt-Peter, 25 of Sulphur, and as many of Charcoal: For great Guns, an hundred Pounds of Salt-Peter, 15 of Sulphur, and 18 of Salt-Peter: For *Muskets* and *Piſtols*, an hundred Pounds of Salt-Peter, 8 of Sulphur, and 10 of Charcoal.

Miethius extols the Proportion of one Pound of Salt-Peter to three Ounces of Charcoal; and two, or two and a quarter of Sulphur: than which, he affirms, no *Gun-powder* can poſſibly be ſtronger.

He adds, that the uſual Practice of making the *Gun-powder* weaker for Mortars, than Guns, as in the Example above, is without any Foundation, and renders the Expence needleſly much greater: For, whereas to load a large Mortar, 24 Pounds of common Powder is required, and conſequently to load it ten times 240 Pounds; he ſhews, by Calculation, that the ſame Effect would be had by 180 Pounds of the ſtrong *Powder*.

As to the Proceſs of making the Gun-powder: All the Ingredients are firſt to be finely powder'd, then moiſtened with fair Water, or Vinegar, or Spirit of Wine, or with Water and Spirit of Wine mixed together, or Urine, which is uſual; afterwards all muſt be well beat for the Space of 24 Hours at leaſt, and then granulated after the following manner: A Sieve is to be prepared with a Bottom of thick Parchment made full of round Holes, and the former beaten Maſs moiſten'd before-hand with 20 Ounces of Spirit of Wine, 12 of Spirit of Wine-Vinegar, 13 of Spirit of Nitre, 2 of Spirit of Sal Armoniack, and 1 Ounce of Camphire diſſolved in Spirit of Wine, and let all theſe be mingled together. Otherwiſe, take 40 Ounces of Brandy, and one of Camphire, and let them be mixt and diſſolved for the ſaid Purpoſe: When the whole Compound is made up into Balls as big as Eggs, put them into the Sieve, and with them a wooden Ball; which move up and down about the Sieve, ſo that it may break the Balls of Powder, and make it paſs thro' the little Holes in Corns.

For greater Quantities, Mills are uſually provided, by means of which, more Work may be perform'd in one Day, than a Man can do in an hundred. See MILL.

Gun-Powder may alſo be made of ſeveral Colours, but the Black is the moſt ſerviceable of any. To make *White-Powder*, proceed thus:

Take ten Pounds of Salt-Peter, one of Sulphur, and two of the Saw-duſt of Elder or the like Wood powder'd fine; mix them together, and uſe the former Method—Or thus, with ten Pounds of Nitre, and a Pound and a half of Sulphur dried and finely powder'd, mix two Pounds of Saw-duſt, *&c.* or inſtead of that, rotten Wood dried and powdered, with two Pounds and three Ounces of Salt of Tartar; whereof make *Powder* to be kept cloſe from the Air.

'Tis alſo to be noted, that in making *Piſtol-Powder*, if you would have it ſtronger, it ſhould be ſtirred up ſeveral Times while in the Mortar, and moiſten'd with Water diſtill'd from Orange or Lemmon-peels in an Alembick, and then beat for 24 Hours, as aforeſaid.

Corn-Powder is of ſo much greater Force than when in Duſt or Meal, that 'tis concluded, the larger Grains are ſtronger than the ſmaller; for which Reaſon *Cannon-Powder* is granulated larger than other Powders; and therefore *Powder* in loading ſhould not be beat home into the Piece, ſo as to bruiſe the Grains.

There are three Ways to prove the Goodneſs of *Gunpowder*, 1. By Sight, for if it be too black, it is too moiſt, or has too much Charcoal in it; ſo alſo if rubbed upon white Paper, it blackens it more than good *Powder* does: but if it be a kind of Azure Colour, ſomewhat inclining to Red, 'tis a ſign of good *Powder*. 2. By Touching, for if in cruſhing it with your Fingers-Ends, the Grains break eaſily and turn into Duſt without feeling hard, it has too much Coal in it; or if in preſſing under your Fingers upon a ſmooth hard Board, ſome Grains feel harder than the reſt, or as it were dent your Fingers-Ends, the Sulphur is not well mixed with the Nitre, and the *Powder* is naught. 3. By Burning, wherein little Heaps of *Powder* are laid upon White Paper three Inches or more aſunder, and one of them fired; which if it only fires all away, and that ſuddenly and almoſt imperceptibly, without firing the reſt, and make a ſmall thundering Noiſe, and a white Smoke riſes in the Air almoſt like a Circle, the Powder is good; if it leaves black Marks, it has too much Coal, or is not well burnt: If it leaves a Greaſineſs, the Sulphur or Nitre are not well cleanſed or ordered. Again, if two or three Corns be laid on Paper an Inch diſtant, and Fire be put to one of them, and they all fire at once, leaving no Sign behind, but a white ſmoaky Colour in the Place, and the Paper not touched; the *Powder* is good. So alſo if fired in a Man's Hand and it burns not: but if black Knots appear which burn downwards in the Place where Proof was made after firing, 'tis not ſtrong enough, but was Nitre.

To recover damaged *Powder*, the Method of the *Powder*-Merchants is to put part of the *Powder* on a Sailcloth, to which they add an equal Weight of what is equally good; and with a Shovel mingle it well together, dry it in the Sun, and barrel it up, keeping it in a dry and proper Place.

Others again, if it be very bad, reſtore it by moiſt'ning it with Vinegar, Water, Urine, or Brandy; then they beat it fine, ſearce it, and to every Pound of *Powder*, add an Ounce, an Ounce and half, or two Ounces (according as 'tis decay'd) of melted Salt-Peter; afterwards theſe Ingredients are to be moiſten'd and mixed well, ſo that nothing can be diſcern'd in the Compoſition; which may be known by cutting the Maſs, and then they granulate as aforeſaid.

In Caſe the *Powder* be in a manner quite ſpoiled, the only way is to extract the Salt-Peter with Water according to the uſual manner, by boiling, filtrating, evaporating, and cryſtallizing; and then with freſh Sulphur and Charcoal, to make it up a-new again.

GUNTERS-LINE, call'd alſo *Line of Lines*, and *Line of Numbers*, is a graduated *Line* uſually placed on Scales, Rules, Sectors, *&c.* See SCALE, RULE, *&c.*

This *Line* is only the Logarithms transfer'd upon a Ruler, from the Tables, ſo as to anſwer much the ſame Purpoſes inſtrumentally, as the Logarithms themſelves do arithmetically.—What the Logarithms do by Addition and Subſtraction, is done in this *Line* by turning a Pair of Compaſſes this way and that. See LOGARITHM.

This *Line* has been contrived various Ways, for the Advantage of having it as long as poſſible— As, firſt, on the two-foot Ruler, contrived by *Edm. Gunter*, and called *Gunter's-Scale*; whence alſo the *Line* itſelf took its popular Denomination *Gunter's-Line*. See GUNTER's-*Scale*.

After this, *Wingate* doubled the *Line*, or laid it together, ſo as one might either work right on, or a-croſs. Then it was projected in a Circle, by *Oughtred*, and made to ſlide by the ſame Author: And laſtly, projected in a kind of Spiral, by *Brown*.

The Method of uſing or applying it, is much the ſame in all; except that in *Gunter's* and *Wingate's* way; common Compaſſes are uſed: In *Oughtred's* and *Brown's*, flat Compaſſes, or an opening Index; and in the Sliding-Rules no Compaſſes at all. See SLIDING-RULE.

Deſcription of GUNTER's-*Line, or the Line of Numbers.*

The *Lines* repreſented, is uſually divided into an hundred Parts, whereof every Tenth is number'd, beginning with 1 and ending with 10: So that if the firſt great Diviſion 1, ſignify one tenth of any whole Number or Integer, the next will ſignify 2, two tenths; 3, three tenths, *&c.* and the intermediate Diviſions ſo many 100 Parts of the ſame Integer, or Tenths of one of the former Tenths. For Numbers greater than 10, the Sub-diviſions muſt ſignify Integers, and the greater Diviſions 10 Integers, ſo that the whole *Line* will expreſs 100 Integers; and if you would have it ſtill more, then the Sub-diviſions to be each 10 Integers, and each great Diviſion 100, ſo that the whole be 1000; and after the ſame Manner, may it be extended to 10000, by making each Sub-diviſion 100.

A whole Number under four Figures being given, to find the Point on the Line of Numbers that repreſents the ſame.

Look for the firſt Figure of the Number among the large figured Diviſions; this leads you to the firſt Figure of your Number. For the ſecond, count ſo many Tenths from that Diviſion forwards, as that ſecond Figure amounts to. For the third Figure, count from the laſt Tenth ſo many Centeſms as the third Figure contains: And ſo for the fourth Figure, count from the laſt Centeſm ſo many Millions as the fourth Figure has Units, or is in Value; that will be the Point where the Number propounded is, on the *Line* of Numbers.

For an Example—To find the Point repreſenting the Number 1728—for 1000 take the firſt grand Diviſion marked 1 on the *Line*; then for 7 reckon ſeven Tenths forwards, this is 700; for 2, reckon two Centeſms from the ſeventh Tenth; and for 8, eſtimate the following Centeſm to be divided into 10 Parts, if it be not expreſſed, which in *Lines* of ordinary Length cannot be done; and 8 of that ſuppoſed 10 Parts, is the preciſe Point for 1728, the Number propoſed to be found; and the like of any other Number.

To find a Fraction, conſider that the *Line* properly only expreſſes decimal Fractions, as thus, $\frac{1}{10}$, or $\frac{1}{100}$, or $\frac{1}{1000}$, and nearer the Rule cannot well come than as one Inch, one Tenth, one Hundred, or one Thouſand Part of an Inch: So that for other Fractions, as Quarters, Half-Quarters, *&c.* you muſt either eſtimate them as near as you can reaſonably, or elſe reduce them into Decimals.

Uſe of Gunter's-Line, *or the Line of Numbers.*

1° *Two Numbers being given*, to find a third geometrically proportional to them; and to three a fourth Number, to four a fifth, *&c.*—Extend the Compaſſes on the *Line* from one Number to another; then that Extent applied upwards or downwards, as you would either increaſe or diminiſh the Number from either of the Numbers, the moveable Point will fall on the third proportional Number required. Again, the ſame Extent applied the ſame way from the third, will give a fourth; and from the fourth a fifth, *&c.*

For Example—Let the two Numbers 2 and 4 be propoſed to find a third Proportional, *&c.* to them; extend the Compaſſes on the firſt Part of the *Line* of Numbers, from 2 to 4; which done, and the ſame Extent being applied upwards from 4, the moveable Point will fall on 8, the third Proportional required; and from 8 it will reach to 16, the fourth Proportional; and from 16 to 32 the fifth, *&c.* Contrariwiſe, if you would diminiſh, as from 4 to 2, the moveable Point will fall on 1, and from 1 to $\frac{5}{10}$ or .5; and from .5 to .25, *&c.*

But, generally, in this, and moſt other Works, make uſe of the ſmall Diviſions in the middle of the *Line*; that you may the better eſtimate the Fractions of the Numbers you make uſe of; for how much you miſs in ſetting the Compaſſes to the firſt and ſecond Term, ſo much the more you will err in the fourth; therefore the middle Part will be moſt uſeful. For Example; as 8 to 11, ſo is 12 to 16, .50, if you imagine one Integer to be divided but into 10 Parts, as they are on the *Line* on a two foot Rule.

2° *One Number being given to be multiplied by another, to find the Product*—Extend the Compaſſes from 1 to the Multiplicator; and the ſame Extent applied the ſame way from the Multiplicand, will make the moveable Point fall on the Product: Thus, if 6 be given to be multiplied by 5; extending the Compaſſes from 1 to 5, the ſame Extent will reach from 6 to 30, the Product ſought.

3° *One*

3° *One Number being given to be divided by another, to find the Quotient*—Extend the Compaſſes from the Diviſor *E. gr.* 25. to 1, and the ſame Extent will reach from the Dividend *E. gr.* 750, to the Quotient 30; or, extend the Compaſſes from the Diviſor to the Dividend, the ſame Extent will reach the ſame way from 1 to the Quotient.

4° *Three Numbers being given, to find a fourth in direct Proportion*—Extend the Compaſſes from the firſt Number, ſuppoſe 7, to the ſecond, *v. g.* 14: that done, the ſame Extent applied the ſame way from the third, 22, will reach to the fourth Proportional ſought, *viz.* 44.

5° *Three Numbers being given, to find a fourth in Inverſe Proportion*—Extend the Compaſſes from the firſt of the given Numbers, ſuppoſe 60, to the ſecond of the ſame Denomination, *viz.* 30; if the Diſtance be applied from the third Number backwards, 5, it will reach to the fourth Number ſought, 25.

6° *Three Numbers being given, to find a fourth in duplicate Proportion*— If the Denominations of the firſt and ſecond Terms be Lines, extend the Compaſſes from the firſt Term to the ſecond, of the ſame Denomination: This done, that Extent being applied twice the ſame way from the third Term, the moveable Point will fall on the fourth Term required. *E. gr.* the Area of a Circle, whoſe Diameter is 14, being 154, what will the Content of a Circle be, whoſe Diameter is 28; applying that Extent the ſame way from 154 twice, the moveable Point will fall on 616, the fourth Proportional or Area ſought.

7° *To find a mean Proportional between two given Numbers*—Biſſect the Diſtance between the given Numbers, the Point of Biſection will fall on the mean Proportional ſought. Thus the Quotient of the two Extremes divided by one another. Extremes being 8 and 32, the middle Point between them will be found 16.

8° *To find two mean Proportionals between two given Lines*—Triſſect the Space between the two given Extremes; the two Points of Triſſection will give the two Means required—Thus if 8 and 27 be the two given Extremes, the two Means will be found 12 and 18.

9° *To find the Square Root of any Number under* 1000000—The Square Root of a Number is always a mean Proportional between 1, and the Number whoſe Root is required; yet with this general Caution, that if the Figures of the Number be even, that is, 2, 4, 6, 8, 10, &c. then you muſt look for the Unit at the beginning of the Line, and the Number in the ſecond Part or Radius, and the Root in the firſt Part; or rather reckon 10 at the End to be Unity; and then both Root and Square will fall backwards towards the Middle in the ſecond Length or Part of the Line—If they be odd, the Middle 1 will be moſt convenient to be counted Unity, and both Root and Square will be found from thence forwards towards 10— On this Principle the Square Root of 9 will be found to be 3; the Square Root of 64, to be 8, &c.

10° *To find the Cube Root of any Number under* 1000000000-The Cube Root is always the firſt of two mean Proportionals between 1 and the Number given, and therefore to be found by triſſecting the Space between them. Thus the Cube Root of 1728 will be found 12; the Root of 17280, nearly 26; the Root of 172800 almoſt 56.

Though the Point on the Line repreſenting all the ſquare Numbers is in one Place, yet by altering the Unit, it produces various Points and Numbers for their reſpective Roots. —The Rule to find this, is to put Dots, or ſuppoſe them put over the firſt Figure to the Left-hand, the fourth Figure, the ſeventh, and the tenth: If then the laſt Dot on the Left-hand falls on the laſt Figure, as it does in 1728, the Unit muſt be placed at 1 in the Middle of the Line, and the Root, the Square, and the Cube, will all fall forwards toward the End of the Line.

If it fall on the laſt but 1, as in 17280, the Unit muſt be placed at 1 in the beginning of the Line, and the Cube in the ſecond Length; or the Unit may be placed at 10 at the End of the Line; and then the Root, the Square, and Cube, will all fall backwards, and be found in the ſecond Part, between the middle and the End of the Line. —Thus will the Cube Root of 8 be found 2; that of 27 3; that of 64, 4; that of 125, 5; that of 216, 6, &c.

For particular Uſes of Gunter's-*Line in the Meaſuring of Timber, Gauging of Veſſels*, &c. See Sliding-Rule.

For other Uſes in Geometry, Trigonometry, &c. See Sector *and* Gunter's-Scale.

Gunter's-*Quadrant*, is a Quadrant made of Wood, Braſs, or the like; being partly a Stereographic Projection on the Plane of the Equinoctial, the Eye ſuppoſed in one of the Poles: So that the Tropick, Ecliptick, and Horizon, are Arches of Circles, but the Hour-Circles all Curves, drawn by means of ſeveral Altitudes of the Sun for ſome particular Latitude every Day in the Year. See Stereographic and Projection.

The Uſe of this Inſtrument is to find the Hour of the Day, the Sun's Azimuths, &c. and other common Problems of the Globe; as alſo to take the Altitude of an Object in Degrees.

See its Deſcription and Uſe more at large under the Article Gunter's-Quadrant.

Gunter's-*Scale*, called alſo by Navigators abſolutely the *Gunter*, is a large Plain Scale, with divers Lines thereon; of great Uſe in working Queſtions in Navigation, &c. See Scale and Sailing.

On one Side the Scale repreſented Tab. *Trigonometry*, Fig. 35. are the Line of Numbers, marked Numbers; the Line of artificial Sines, marked Sines; the Line of artificial Tangents, marked Tangents; the Line of artificial verſed Sines, marked V. S. the artificial Sines of the Rhumbs, marked S. R. the artificial Tangents of the Rhumbs, marked T. R. the Meridian Line in *Mercator*'s Chart, mark'd Merid. and equal Parts marked E. P.—To which, on the ſhorter Scales, of a Foot long, are uſually added Lines of Latitudes, Hours, and Inclinations of Meridians.

On the Backſide of the Scale are the Lines uſually found on a Plain Scale. See Plain-Scale.

The Lines of artificial Sines, Tangents, and Numbers are ſo fitted on this Scale, that by means of a Pair of Compaſſes, any Problem, whether in right-lined or ſpherical Trigonometry, may be ſolved very expeditiouſly, and with tolerable Exactneſs; whence the Inſtrument becomes extremely uſeful in all Parts of Mathematicks where Trigonometry is concerned; as Navigation, Dialling, Aſtronomy. See Trigonometry, &c.

The ſame Lines are alſo occaſionally laid down on Rulers to ſlide by each other; hence called *Sliding-Gunters*; So as to be uſed without Compaſſes: but he that underſtands how to uſe them with, may, by what we have ſaid of *Everard*'s and *Coggeſhall*'s *Sliding-Rules*, uſe them without. See Sliding-*Rule*.

Uſe of Gunter's-*Scale*.

1° *The Baſe of a right-lined right-angled Triangle being given*, 30 *Miles, and the oppoſite Angle thereto* 26 *Degrees; to find the Length of the Hypothenuſe.*

The trigonometrical Canon or Proportion is thus—As the Sine of the Angle, 26 Deg. is to the Baſe 30 Miles, ſo is Radius to the Length of the Hypothenuſe—Set one Foot of the Compaſſes, therefore, on the 26th Deg. of the Line of Sines; and extend the other to 30 on the Line of Numbers, and the Compaſſes remaining thus opened, ſet one Foot on 90 Deg. on the End of the Line of Sines, and extend the other on the Line of Numbers: This will give 68 Miles and a half, for the Length of the Hypothenuſe ſought.

2° *The Baſe of a right-angled Triangle being given*, 25 *Miles, and the Perpendicular* 15; *to find the Angle oppoſite to the Perpendicular.*

As the Baſe 25 Miles is to the Perpendicular 15 Miles, ſo is Radius to the Tangent of the Angle ſought.—Extend the Compaſſes, then, on the Line of Numbers, from 15 the Perpendicular given, to 25 the Baſe given; and the ſame Extent will reach the contrary way, on the Line of Tangents, from 45 Deg. to 31 Deg. the Angle ſought.

3° *The Baſe of a right-angled Triangle being given, ſuppoſe* 20 *Miles, and the Angle oppoſite to the Perpendicular* 50 *Deg. to find the Perpendicular.*

As Radius is to the Tangent of the given Angle 50 Deg. ſo is the Baſe 20 Miles to the Perpendicular ſought—Extend the Compaſſes then on the Line of Tangents, from the Tangent of 45 Deg. to the Tangent of 50 Deg. and the ſame Extent will reach on the Line of Numbers the contrary way, from the given Baſe 20 Miles, to the required Perpendicular 23 ¾ Miles.

Note, The Extent on the Line of Numbers is here taken from 20 to 23 ¾ forwards; that the Tangent of 50 Deg. may be as far beyond the Tangent of 45 Deg. as its Complement 40 Deg. wants of 45 Deg.

4° *The Baſe of a right-angled Triangle being given, ſuppoſe* 35 *Miles, and the Perpendicular* 48 *Miles; to find the Angle oppoſite to the Perpendicular.*

As the Baſe 35 Miles is to the Perpendicular 48 Miles, ſo is Radius to the Tangent of the Angle ſought—Extend the Compaſſes from 35, on the Line of Numbers, to 48; the ſame Extent will reach the contrary way on the Line of Tangents, from the Tangent of 45 Deg. to the Tangent of 36 Deg. 5 Min. or 53 Deg. 55 Min.— To know which of thoſe Angles the Angle ſought is equal to, conſider that the Perpendicular of the Triangle being greater than the Baſe, and both the Angles oppoſite to the Perpendicular, and the

Baſe,

Baſe, making 90 Deg. the Angle oppoſite to the Perpendicular will be greater than the Angle oppoſite to the Baſe; and conſequently the Angle 53 Deg. 55 Min. will be the Angle ſought.

5° *The Hypothenuſe of a right-angled Spherical Triangle being given, ſuppoſe* 60 *Degrees, and one of the Sides* 20 *Degrees, to find the Angle oppoſite to that Side.*

As the Sine of the Hypothenuſe 60 Deg. is to Radius, ſo is the Sine of the given Side 20 Deg. to the Sine of the Angle ſought—Extend the Compaſſes on the Line of Sines, from 60 Deg. to the Radius or 90 Deg. and the ſame Extent will reach on the Line of Sines the ſame Way, from 20 Deg. the given Side, to 23 Deg. 10 Min. the Quantity of the Angle ſought.

6° *The Courſe and Diſtance of a Ship being given, to find the Difference of Latitude and Departure.*

Suppoſe a Ship ſails from the Latitude of 50 Deg. 10 Min. North, S. S. W. 48. 5 Miles: As Radius is to the Diſtance ſailed 48. 5 Miles, ſo is the Sine of the Courſe, which is two Points, or the ſecond Rhumb, from the Meridian, to the Departure—Extend the Compaſſes from 8 on the artificial Sine Rhumb-Line, to 48.5 on the Line of Numbers; the ſame Extent will reach the ſame way from the ſecond Rhumb, on the Line of artificial Sines of the Rhumbs, to the Departure Weſting 18.6 Miles.

Again, As Radius is to the Diſtance ſailed 48.5 Miles, ſo is the Coſine of the Courſe 67 Deg. 30 Min. to the Difference of Latitude—Extend your Compaſſes from the Radius, on the Line of Sines, to 48.5 Miles on the Line of Numbers; the ſame Extent will reach the ſame way, from 67 Deg. 30 Min. on the Line of Sines, to 44.8 on the Line of Numbers; which converted into Degrees, by allowing 60 Miles to a Degree, and ſubſtracted from the given North-Latitude 50 Deg. 10 Min. leaves the Remainder 49 Deg. 25 Min. the preſent Latitude.

7° *The Difference of Latitude and Departure from the Meridian being given; to find the Courſe and Diſtance.*

A Ship from the Latitude of 59 Deg. North, ſails North-Eaſtward till ſhe has altered her Latitude 1 Deg. 10 Min. or 70 Miles, and is departed from the Meridian 57.5 Miles, to find the Courſe and Diſtance—As the Difference of Latitude 70 Miles is to Radius, ſo is the Departure 57.5 Miles to the Tangent of the Courſe 39 Deg. 20 Min. or three Points and a half from the Meridian—Extend the Compaſſes from the fourth Rhumb, on the Line of artificial Tangents of the Rhumbs, to 70 Miles on the Line of Numbers, the ſame Extent will reach from 57.5 on the Line of Numbers to the third Rhumb and a half on the Line of artificial Tangents of the Rhumbs, to 70 Miles on the Line of Numbers.

Again; as the Sine of the Courſe 39 Deg. 20 Min. is to the Departure 57.5 Miles, ſo is the Radius to the Diſtance 90.6 Miles—Extend the Compaſſes from the third Rhumb and a half, on the artificial Sines of the Rhumbs, to 57.5 Miles on the Line of Numbers; that Extent will reach from the Sine of the eigth Rhumb, on the Sines of the Rhumbs, to 90.6 Miles on the Line of Numbers.

8° *Three Sides of an oblique Spherical Triangle being given, to find the Angle oppoſite to the greateſt.*

Suppoſe the Side A B, *Fig.* 36. be 40 Deg. the Side B C 60 Deg. and the Side A C 96 Deg. to find the Angle ABC. Add the three Sides together, and from half the Sum ſubſtract the greater Side A C, and note the Remainder: Thus, *e. gr.* the Sum will be 196 Deg. half of which is 98 Deg. from which ſubſtracting 96 Deg. the Remainder is 2 Deg.

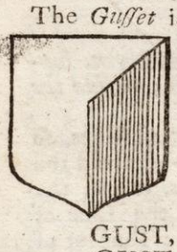
Then extend the Compaſſes from the Sine of 90 Deg. to that of the Side A B 40 Deg. and applying this Extent to the Sine of the other Side B C 60 Deg. you will find it reach to a fourth Sine 34 Deg.

Again; from this fourth Sine extend the Compaſſes to the Sine of half the Sum, *i. e.* the Sine of 72 Deg. the Complement of 98 Deg. to 180; this ſecond Extent will reach from the Sine of the Difference 2 Deg. to the Sine of 3 Deg. 24 Min. againſt which, on the verſed Sines, ſtands 151 Deg. 50 Min. the Quantity of the Angle ſought.

GUN-SHOT *Wounds.* See WOUND.

GUSSET, in Heraldry, one of the Abatements of Honour. See ABATEMENT.

The *Guſſet* is ſaid to be appropriated to laſcivious, effeminate, or wanton Perſons. It is form'd of a Line drawn from the Dexter, or ſiniſter Angle of the Chief, and deſcending diagonally to the chief Point; from whence another Line falls perpendicularly upon the Baſe: as in the Figure adjoining.



GUST, GUSTATION, } ſee { TASTE and GOÛT, TASTING.

GUST-*Hoſpes*, is uſed by *Bracton* and other antient Writers, for a Stranger, or *Gueſt*, who lodges with a Perſon the ſecond Night.

In the Laws of St. *Edward*, publiſhed by *Lambard*, it is written *Geſt*. See UNCOUTH.

GUTTA, a Latin Term for what in *Engliſh* we call *Drop*. See DROP.

GUTTÆ *Anglicanæ*, the *Engliſh Drops*, or the *Volatile Engliſh Drops*, or *Goddard's Drops*, is a medicinal Liquor prepared from divers Ingredients; of ſovereign Efficacy againſt Coagulations of the Blood, malignant Fevers, and particularly the Small-Pox, Obſtructions, Epilepſies, drouſy Diſeaſes, Vapours, &c.

The Inventor of theſe celebrated Drops, was Dr. *Goddard*, a Phyſician of *London*. The Secret of their Compoſition was purchaſed by King *Charles* II. at the Price of 6000 Pounds Sterling; whence the Denomination *Guttæ Anglicanæ*.

This coſtly Receipt, we ſhall here gratify the Reader withal, *a Meilleure Marche*: 'Take five Pounds of human 'Cranium of a Perſon hang'd, or dead of ſome violent 'Death, two Pounds of dried Vipers, two Pounds of Hart's-'Horn, and two of Ivory; mince the whole ſmall, put it in 'two or three Retorts, and diſtill it in a reverberatory Fur-'nace, with the ſame Precautions as are ordinarily uſed in 'diſtilling Hart's-Horn and Vipers, to extract their volatile 'Salt. When the Veſſels or Receivers are cold, unlute 'em, 'and ſhake them well, in order to looſen the volatile Salt 'from the Sides of the Veſſels. Pour the whole into a large 'Glaſs Cucurbite, and filtrate it through a Brown-Paper, in 'order to ſeparate the Oil, which is here uſeleſs: Put the 'filtrated Liquor in a Glaſs Retort, with a Sand Heat, and 'fit a Glaſs Retort thereto, as a Recipient: Take care all 'Things be well luted, and make a Cohobation of the ſaid 'Matters at three Times. But, by the way, add all the 'Salt before ſeparated from the Receivers; and after the 'ſaid three Cohobations, unlute the Retorts, and pour the 'whole into a Matraſs with a long Nock, to which fit a ſu-'table Capital, and a Receiver; lute all the Joinings on 'each Side with a wet Bladder, and ſet the Veſſel in a Sand 'Heat: By this means, the volatile Salt will be ſublimed, 'and ſtick to the Capital, and upper Part of the Matraſs. 'Continue the Fire till Spirit enough have roſe to fuſe and 'diſſolve the Salt which aroſe firſt: Then take all the Fire 'out of the Furnace, that the Diſtillation may proceed no 'further; which is a Circumſtance of the laſt Importance; 'without which the Medicine would be weaken'd by too 'much Phlegm. *Biet*, in the *Mem. de Trev. An.* 1713.

As to the Doſe of this Remedy, they begin with 7 or 8 Drops, increaſing, by Degrees, to 40 or 50, on preſſing Occaſions, as in Apoplexies, Lethargies, Weakneſſes, &c.

The real Compoſition of the *Guttæ*, however, is ſomewhat controverted. *M. Tournefort* aſſures us, that he had the Secret communicated to him by Dr. *Liſter*; and that it is no other than the volatile Spirit of Raw-Silk rectified with Oil of Cinnamon, or other eſſential Oil. See SILK.

The ſame Author aſſures us, he had found by Experience that the *Guttæ Anglicanæ* were not in any reſpect preferable to the common volatile Spirits of Hart's-Horn and Sal. Ammoniac, except that the Smell is more ſupportable.—*Mem. de l'Acad. An.* 1700.

GUTTÆ, in Architecture, are Ornaments in form of little Cones, uſed in the Plafond of the Doric Cornice, or on the Architrave, underneath the Triglyphs; repreſenting a ſort of Drops, or Bells; uſually ſix in Number. See TRIGLYPH.

They are ſometimes alſo called *Lachrymæ*, Tears; and *Campanæ* or *Campanulæ*, Bells. *Leon. Baptiſta Alberti* calls them *Nails*.

GUTTA *Serena*, is a Diſeaſe of the Eyes, conſiſting in an entire Prevention of Sight, without any apparent Fault or Diſorder of the Eyes, excepting that the Pupil looks ſomewhat larger and blacker than before. See EYES, &c.

Its Cauſe is ſuppoſed to be a Compreſſion or Obſtruction of the Optic Nerves, which prevents the due Flux of the animal Spirits into the Retina. *Pitcairn* aſcribes it to an Indiſpoſition of the Retina, occaſioned by the Veſſels thereof being too much diſtended with Blood.

The *Gutta Serena* is one of the moſt dangerous and untractable of all the Diſeaſes of the Eyes. The Cure, according to *Pitcairn*, muſt be attempted with Mercurials and even Salivation, and with Decoctions of Guiacum.

The *Muſcæ Volitantes* are a pathogonomic Sign of a growing *Gutta Serena*. The *Greeks* call it *Amauroſis*. See AMAUROSIS.

GUTTERS, in Building, are a kind of Vallies in the Roofs of Buildings, ſerving to drain and receive the Rain-Waters. See ROOF.

GUTTURAL *Letters*, are thoſe pronounced, or form'd as in were in the Throat. See LETTER.

Dr. *Wallis* diſtinguiſhes the Vowels in our Language into Labial, Palatine, and *Guttural*; according to the three ſeveral Degrees of opening of the Mouth to pronounce them, larger, middle, and leſs. On this Footing he makes three *Guttural* Vowels, and three Labial, and as many Palatines. See VOWEL.

GUTTUS,

GUTTUS, a Latin Term uſed among Antiquaries, for a ſort of Vaſe uſed in the *Roman* Sacrifices; to take the Wine and ſprinkle it, *Guttatim*, Drop by Drop, upon the Victim. See SACRIFICE.

Vigenere on *T. Livy*, gives the Figure of the *Guttus*, as repreſented on divers Medals and other antient Monuments.

GUTTY, or GUTTE, in Heraldry, is when a thing is repreſented as charged or ſprinkled with Drops.

In Blazon, the Colour of the Drops is to be named: Thus, *Gutty* of Sable, of Gules, &c.

Some Authors will have red Drops called, *Gutty de Sang*, or Drops of Blood; black ones, *Gutty de Poix*, of Pitch; white, *Gutty d'Eau*, of Water, &c.

GUZES, in Heraldry, Roundles of a ſanguin or murry Colour. See ROUNDLE.

GWABR-MERCHED, a *Britiſh* Word, ſignifying a Payment or Fine made to the Lords of ſome Manors, upon the Marriage of their Tenants Daughters; as alſo upon their committing Incontinency. See MARCHET and LAIRWITE.

GYMNASIARCH, GYMNASIARCHA, in Antiquity, the Maſter, or chief of a *Gymnaſium*. See GYMNASIUM.

The *Greeks* did not rank the *Gymnaſiarcha* among the Number of Magiſtrates; tho' his Office was of great Conſideration, as having the Care of all their Youth, who were truſted to him to be form'd to Exerciſes of the Body.

He had two Officers under him, to aſſiſt him in the Government of the *Gymnaſium*: The firſt named *Xyſtarch*, and the ſecond *Gynaſtes*. The former was Maſter of the *Athletæ*, and preſided over the Wreſtling. See XYSTARCH, ATHLETA, &c.

The latter had the Direction of all the other Exerciſes; taking Care they were performed in due Time and Manner; that they were not too ſevere; that the Youth attempted nothing beyond their Strength; and that nothing were done that might be injurious to their Health.

They had ſeveral ſubaltern Officers or Servants under them, for the Service and Inſtruction of the Youth committed to them.

The Word is compounded of γυμνάσιον, and ἀρχη, Government.

GYMNASIUM, a Place of Exerciſe; or a Place fitted for performing Exerciſes of the Body. See EXERCISE.

Among the Antients, the *Gymnaſium* was a Place deſtined for this very Purpoſe, and where People were even taught and regularly diſciplin'd therein. See XYSTUS.

If we may credit *Solon* in *Lucian*'s *Anachars*, and *Cicero de Orat.* lib. 2. the *Greeks* were the firſt who had *Gymnaſia*; and among the *Greeks*, the *Lacedæmonians*; after them, the *Athenians*.

Vitruvius deſcribes the Structure and Form of the antient *Gymnaſiums* at length, *lib.* 15. c. 11.—The Word is Greek, γυμνάσιον, form'd of γυμνὸς, Naked; by reaſon they put off their Clothes, to practice with the more Freedom.

GYMNASTICE, GYMNASTICA, the *Gymnaſtic Art*; or the Art of performing the Exerciſes of the Body. See EXERCISE.

The *Gymnaſtica* comprehended all the Exerciſes, as Wreſtling; Running, both on Foot and on Horſeback; Fencing; the Diſcus, or Quoits; the Uſe of the Launce, &c. *Hoffman* reckons no leſs than 55 *Gymnaſtic* Exerciſes. See WRESTLING, DISCUS, &c.

It appears that they did not perform their Exerciſes quite naked ſo early as the Time of *Homer*, but always in Drawers; which they did not lay aſide before the 32d Olympiad. One *Orſippus* is ſaid to have been the firſt that introduced the Practice; for having been worſted by means of his Drawers undoing, and entangling him; he threw them quite aſide, and the reſt afterwards came to imitate him.

GYMNIC, GYMNICUS, ſomething belonging to the Exerciſes of the Body.

The *Gymnic* Games are thoſe wherein the Body is exerciſed; ſuch are Wreſtling, Running, Dancing, the Uſe of the Launce, and Quoit-Playing. See GAME.

It was thoſe made the chief Diverſions of the *Olympic*, *Nemæan*, *Pythian*, and *Iſthmæan* Solemnities; being called by the *Greeks* Πενταθλον, and the *Latins Quinquatrium*. See OLYMPIC, NEMÆAN, PYTHIAN, and ISTHMÆAN, &c.

GYMNOPÆDIA, a kind of Dance, in Uſe among the antient *Lacedæmonians*. It was performed during their Sacrifices, by young Perſons who danced naked, ſinging at the ſame Time a Song in Honour of *Apollo*. See DANCE.

One *Terpander* is recorded as the Inventor of the *Gymnopædia*.

GYMNOPÆDICE, a kind of Dance, in Uſe among the Antients.

Athenæus deſcribes it as a *Bacchic* Dance, perform'd by Youths ſtrip'd quite naked, with certain interrupted, tho' agreeable Motions, and Geſtures of the Body, the Arms and Legs being flouriſhed and directed after a peculiar Manner, repreſenting a ſort of real Wreſtling.

The Word is compounded of γυμνὸς, naked, and παῖς, Child.

GYMNOSOPHISTS, a Set of *Indian* Philoſophers, famous in Antiquity; denominated from their going barefooted. See PHILOSOPHER.

The Word *Gymnoſophiſt* is form'd of the Greek γυμνοσοφιστὴς; *q. d.* a Sophiſt, or Philoſopher, who goes naked.

This Name was given to the *Indian* Philoſophers, whom the exceſſive Heat of the Country obliged to go naked; as that of *Peripateticks* was given thoſe who philoſophiz'd Walking. See PERIPATETICKS, &c.

Laertius, *Vives*, &c. will not have *Gymnoſophiſt* to be the Name of any particular Sect, but a common Name of all the Philoſophers in the *Indies*: And hence divides them into *Brachmans* and *Germans*. See BRACHMANS.

Among the *Germans*, called alſo by *Clemens Alexand. Sarmanæ*, ſome were called *Hylobii*; by *Clemens Alexand. Allobii*, as inhabiting the Woods; which laſt ſeem to come neareſt to the Notion of *Gymnoſophiſts*. *Clemens* relates, that they neither inhabit Cities nor Towns, are cloathed moſtly with the Leaves of Trees, eat Acorns and Berries, and drink Water out of their Hands, abſtaining from all Marriage and Procreation.

Apuleius Florid. lib. 1. deſcribes the *Gymnoſophiſts* thus: 'They are all devoted to the Study of Wiſdom, both the 'elder Maſters, and the younger Pupils; and what to me 'appears the moſt amiable thing in their Character, is, 'that they have an Averſion to Idleneſs and Indolence: 'Accordingly, as ſoon as the Table is ſpread, ere a Bit of 'Victuals be brought, the Youth are all called together 'from their ſeveral Places and Offices, and the Maſters 'examine them what good they have done ſince the Sun-'riſe. Here one relates ſomething he has diſcovered by 'Meditation; another has learn'd ſomething by Demon-'ſtration: And as for thoſe who have nothing to alledge 'why they ſhould dine, they are turn'd out to Work faſting.'

The great Leader of the *Gymnoſophiſts*, according to *Jerom*, was one *Buddas*, call'd by *Clemens Butta*; who is rank'd by *Suidas* among the *Brachmans*. That laſt Author makes *Buddas* the Præceptor of *Manes* the *Perſian*, the Founder of the *Gymnoſophiſts*.

GYNÆCEUM, among the Antients, the Apartment of the Women; or a ſeparate Place, where the Women kept themſelves retired, and out of the Sight of the Men.

The Word is compounded of the Greek γυνὴ, a Woman, and οἶκος, an Houſe.

Under the *Roman* Emperors there was a particular Eſtabliſhment of *Gynæcea*; being a kind of Manufactories managed chiefly by Women, for the making of Clothes, Furniture, &c. for the Emperor's Houſhold. Mention is made of theſe *Gynæcea* in the *Theodoſian* Code, *Juſtinian*'s Code, and divers other Authors.

In Imitation hereof, divers of the modern Manufactories, particularly thoſe of Silk, where a Number of Women and Maids, aſſociated and form'd into a Body, are called *Gynæcea*.

GYNÆCIARIUS, a Workman employ'd in a *Gynæceum*.

In the antient *Gynæcea* there were Men to weave and ſhape; the reſt, as Spinning, &c. being performed by Women.

Criminals were ſometimes condemned to ſerve in the *Gynæcea*, much as now in the Gallies. Frequently, too, this was a kind of Service which Princes exacted of their Subjects, or Vaſſals, both Men and Women, whom they made to work for them in their *Gynæcea*.

GYNÆCOCRATUMENIANS, GYNÆCOCRATUMENI, an antient People of *Sarmatia Europæa*, inhabiting the Eaſtern Banks of the River *Tanais*, near its Opening into the *Palus Meotis*; thus called, as Authors relate, becauſe they had no Women among them.

The Word is formed of γυνὴ, a Woman; and κρατῦμενος, vanquiſh'd; of κρατεω, I overcome; *q. d.* overcome by a Woman.

Fa. *Hardouin*, in his Notes on *Pliny*, ſays they were thus called, by reaſon, after a Battle which they loſt againſt the *Amazons* on the Banks of the *Thermodoon*, they were obliged to have a venereal Commerce with them, in order to get them Children: *Et quod Victricibus obſequantur ad procurandam eis Sobolem.*

Fa. *Hardoun* calls them the Husbands of the *Amazons*, *Amazonum Connubia*. For, as that Author obſerves, the Word *Unde* muſt be retrench'd from *Pliny*; having been foiſted into the Text by People who were not Maſters of the Author's Meaning, *Unde Amazonum Connubia*.

They who take the *Amazons* for a fabulous People, will imagine the ſame of the *Gynæcocratumenians*. See AMAZON.

GYNÆCONOMUS, the Name of a Magiſtrate of *Athens*, who had the Cenſure and Inſpection of the Women.

There were ten *Gynæconomi*: Their Buſineſs was to inform themſelves of the Lives and Manners of the Ladies of that City, and to puniſh ſuch as misbehaved themſelves, or tranſgreſſed the common Bounds of Modeſty and Decency.

They had a Liſt hanging out, of the Names of all thoſe whom they had cenſured, or condemned to any Mulct, Forfeiture, Penance, or other Penalty.

The Word is compounded of the Greek Γυνὴ, Γυναίκος, a Woman; and νόμος, Law.

GYNÆCOCRACY, GYNÆCOCRATIA, a State where Women have, or may have, the ſupreme Command.

In this Senſe, *England* and *Spain* are *Gynæcocracies*: The *French* value themſelves, and think they are greatly happy that their Monarchy is not *Gynæcocratic*. See SALIC *Law*.

The Word is form'd of Γυνὴ, γυναικὸς, a Woman, and κράτος, Authority, Power, Government.

GYNGLIMUS, in Anatomy, &c. See GINGLYMUS.

GYPSUM, in natural Hiſtory, a Stone found in Quarries, which being burnt, and diluted, or wrought up with Water, ſerves to make the fine Plaſter of *Paris*. See PLASTER.

GYPSE, GIPSE, or GYPSUM, is alſo uſed for a coarſer ſort of Talk; or a ſhining tranſparent Stone chiefly found in the Quarries of *Montmartre* near *Paris*, among other Plaſter Stones.

Some confound this with the former, on account of the Conformity of its Name with the Latin *Gypſum*; but unhappily enough; as the *Gypſe* is not fit for the making of Plaſter.

This Stone being calcined in a Kiln, beaten in a Mortar, and ſifted, and mix'd up with Gum, or ſize Water and Colours, ſerves to counterfeit Marble, which it does to that Perfection, that both the Eye and Touch may be deceived. See MARBLE.

The Method of preparing it, will be ſhewn under the Article MOSAIC WORK.

GYROMANCY, or GYROMANTIA, a kind of Divination, performed by walking round, or in a Circle. See DIVINATION.

The Word is compounded of the Greek γύρος, a Circle, and μαντεία, Divination.

H.

H Is the 8*th* Letter of the Alphabet, and the 6*th* Conſonant. See LETTER and ALPHABET.

Varro, *de Re Ruſtica*, L. III. *C.* 1. calls the H *afflatus*. And *Martianus Capella* ſays it is pronounced by a gentle Contraction of the *Trachea*. — Hence it has been diſputed, whether or no the *h* be a real Letter.

Some will only have it an Aſpiration, or Spirit, in Regard its Sound is ſo weak. And accordingly the *Greeks*, now a-days at leaſt, do not place it in the Line of the other Letters, but put it over the Head of the following Letter: Tho' it ſhould ſeem they antiently wrote it in the ſame Line with the reſt.

The *Latin* Grammarians, as they were religious Imitators of the *Greeks*, have on their Authority generally rejected the *h*; and the Moderns have herein followed the *Latins*.

But we have already ſhewn that the *h*, like all the other Aſpirates, from the Time it is aſpirated, and for this very Reaſon that it is aſpirated, is not only a Letter, but a real Conſonant; it being a Motion, or Effort, of the *Larynx*, to modify the Sound of the Vowel that follows; as is evident in the Words *Hallebard*, *Hero*, *Holland*, &c. where the Vowel *e*, is apparently differently modified from what it is in the Words *Endive*, *Eating*, *Elect*, &c. and ſuch Modification is all that is eſſential to a Conſonant. See CONSONANT.

Upon the whole, the *H* is either a Letter, or *S* and *Z* are none; thoſe being no more than hiſſing Aſpirations: And they who exclude the *h* from among the Letters, as conceiving it only a Mark of Aſpiration, might as well exclude the Labial Conſonants *b* and *p*, and ſay they are only Marks of certain Motions of the Lips, &c. See ASPIRATION.

The *H*, then, is a Letter and a Conſonant, of the Guttural Kind, *i. e.* a Conſonant, to the Pronunciation whereof, the Throat concurs in a particular Manner, more than any other of the Organs of Voice. See GUTTURAL.

'Tis true, in many Words beginning with *h*, the Aſpiration is very weak, and almoſt inſenſible; the *h* in thoſe Caſes, not doing its Office: But it does not ceaſe to be a Conſonant on that Score, more than various other Conſonants, which we write, but do not pronounce; as the *k* in Phyſick, &c. and ſeveral other Letters, particularly in the *Hebrew*, *French*, &c.

Nor does it ceaſe to be a Conſonant, becauſe it does not hinder the Eliſion of the foregoing Vowel, when another Vowel follows in the ſubſequent Word; for then *m* would undergo the ſame Diſqualification.

Monſ. *Menage* diſtinguiſhes two Kinds of *h*; the one an Aſpirate, which he allows a Conſonant; the other a Mute, which he conſiders as a Vowel. — Now, 'tis certain, the aſpirated *h* is a Conſonant; but the Mute *h* is no Vowel, as having no peculiar or proper Sound diſtinct from that of the Vowel, or Diphthong, immediately following it. See VOWEL.

When the *h* is preceeded by a *c*, the two Letters together have the Sound of the *Hebrew* ש, with a Point over the right Horn; as in Charity, Chyle, &c.

In moſt Words derived from the *Greek*, and beginning in that Language with the Letter χ, the *ch* which begins them in *Engliſh*, has generally the Sound of a *k*, as in Echo, Chorus, &c. tho' it is ſometimes ſoften'd a little, as in *Cherſoneſus*, &c.

After a *p*, the *h* is always pronounced together with the *p*, like an *f*; as in Phraſes, *Philiſtins*, Phlegm, Phlebotomy, Philoſophy, *Phocæans*, &c. — Moſt Words of this Claſs, are either proper Names, or Terms of Art, borrow'd from the *Greek*, or the *Oriental* Languages; and wrote in *Greek* with a φ, and with a פ in the others. — In antient Authors we frequently meet with *h* put inſtead of f; as *haba*, for *faba*; but this is principally obſervable in the *Spaniſh* Tongue, where, moſt of the Words borrow'd from the *Latin*, beginning with an *f*, take the *h* in lieu of it: As *hablar* for *fabulari*; *habo* for *favus*; *hado* for *fatum*.

The *Aſpera*, or ſharp Accent of the *Greeks*, which is the ſame with our *h*, is alſo frequently changed for an *s*; as, Ἅλς, *Sal*; ἕπτα, *Septem*; ἕξ, *Sex*; ἕρπω, *Serpo*; ἥμιον, *Semis*; ὗς, *Sus*, &c. — The *h* is alſo uſed for ſome other Letters enumerated at large by Paſſerat, *de Litterarum inter ſe cognatione & permutatione*.

Antiently, the *H* was put for *Ch*; thus, of *Chlodovæus* was form'd *Hludovicus*, as 'tis read in all the Coins of the IXth and Xth Centuries; and it was on this Account, that they wrote *Hludovicus* with an *H*. — In Courſe of Time, the Sound of the *h* being much weaken'd, or entirely ſuppreſs'd, the *H* was dropt, and the Word was wrote *Ludovicus*. In like Manner we read *Hlotaire*, *Hlouis*, &c.

Fa. Lobineau, will have this Difference to have aroſe from the Differences in the Pronunciation. — Such, ſays he, as could not pronounce the Guttural, wherewith thoſe two Words begin, ſubſtituted a *c* for it; and they who pronounced it ſo, wrote it after the ſame Manner: But ſuch as were accuſtom'd to pronounce it, wrote it likewiſe. — He might have added, that ſuch as could not pronounce the Guttural, at length abſolutely rejected it, and both wrote and ſpoke *Louis*, *Lothaire*, &c.

Some learned Men have conjectured that the *H* ſhould have been detach'd from the Name; and that it ſignified Lord, from the Latin *Herus*, or the German *Herr*. Much as the D, which the *Spaniards* prefix to their proper Names, as *D. Phelipe* for *Don Philip*. — But as it is likewiſe found before the Names of ſeveral Cities, 'tis more probable the Letter was there uſed to denote the rough harſh Pronunciation of the antient *Franks*.

The *H* is ſometimes alſo found prefix'd to the C; as *Hcarolus*, *Hcalendæ*, &c. for *Carolus*, *Calendæ*, &c.

Among the Antients, the *H* was alſo a Numeral Letter, ſignifying 200, according to the Verſe.

H *quoque ducentos per ſe deſignat habendos.*

When a Daſh was added a Top, $\overline{H}$, it ſignified two hundred Thouſand. — *See what has been obſerved on this Subject, under the Letter* E.

HABAKKUK, or HHABAKKUK, one of the twelve leſſer Prophets whoſe Prophecies are taken into the Canon of the Old Teſtament. See PROPHET and PROPHECY.

The preciſe Time is not known when *Habakkuk* propheſied; but from his predicting the Ruin of the *Jews*, by the *Chaldæans*, it may be concluded he propheſied before *Zedekiah*, or about the Time of *Manaſſes*. — His Prophecy only conſiſts of three Chapters.

The Name is wrote in the *Hebrew* with ח, *kheth*; and ſignifies a Wreſtler, or *Grappler*. The *Greek* Tranſlators call him *Ambakoum*.

HABDALA, or HABHDALAH, a *Jewiſh* Ceremony, practiſed among the People, every Sabbath-Day Evening.

Towards the Cloſe of the Sabbath, when the Stars begin to appear, each Maſter of a Family lights a Torch, or Flambeau, or, at leaſt, a Lamp with two Wicks. — A little Box of Spices is prepared, or a Glaſs of Wine taken; then ſinging, or rehearſing a Prayer, and bleſſing the Wine and the Spices, they all ſmell them, and after a few Ceremonies perform'd about the Torch, or Lamp, they caſt a little of the conſecrated Wine into the Flame; every Body taſts; and thus they break up, wiſhing each other not good Night, but good Week.

The Word is *Hebrew*, and literally ſignifies *Separation*: It is form'd of בדל, *badal*, to ſeparate, divide; the Ceremony being look'd upon, as the Diviſion or parting of the Sabbath from the reſt of the Week. It was eſtabliſh'd to prevent their being too haſty in ending the Sabbath.

HABEAS *Corpus*, in Law, a Writ, which a Man indicted for a Treſpaſs before the Juſtices of Peace, or in a Court of Franchiſe, and impriſoned for it, may have out of the King's Bench, thereby to remove himſelf thither, at his own Coſts, to anſwer the Cauſe at the Bar thereof.

The Order in this Caſe, is, firſt to procure a *Certiorari*, out of the Chancery, directed to the ſaid Juſtices, for removing the Indictment into the King's Bench; and upon that to procure this Writ to the Sheriff, for cauſing his Body to be brought at a certain Day.

HABEAS *Corpora*, is alſo a Writ, that lays for bringing in a Jury, or ſo many of them, as refuſe to come upon the *venire facias*, for the Trial of a Cauſe brought to Iſſue. See JURY, &c.

HABENDUM, a Word of Courſe in a Conveyance. — In every Conveyance are two principal Parts, the *Premiſſes*, and the *Habendum*: The Office of the firſt is to expreſs the Name of the Grantor, the Grantee, and the Thing granted.

The *Habendum* is to limit the Eſtate, ſo that the general Implication, which, by Conſtruction of Law, paſſeth in the Premiſſes, is by the *Habendum* controlled and qualified. — As in a Leaſe to two Perſons; the *Habendum* to one for Life, alters the general Implication of the Jointenancy in Free-hold, which ſhould paſs by the Premiſſes, if the *Habendum* were not. See CONVEYANCE.

HABERE *facias Seſinam*, a Writ Judicial, which lies where a Man hath recovered Lands in the King's-Court; directed to the Sheriff, commanding him to give him the Seiſin thereof. See SEISIN.

This Writ iſſues ſometimes out of the Records of a Fine executory, directed to the Sheriff of the County, where the Lands lye; commanding him to give to the Cognizee, or his Heirs, Seiſin of the Land, whereof the Fine is levied.

The Writ lieth within the Year after the Fine, or Judgment, upon the *Scire facias*; and may be made in divers Forms.

There is alſo a Writ called *Habere facias Seiſinam, ubi Rex habuit annum, diem & vaſtum*; which is for the Delivery of Lands to the Lord of the Fee, after the King had taken his Due of his Lands who was convict of Felony.

HABERE *facias Viſum*, is a Writ that lies in divers Caſes, as in Dower, Formedon, *&c.* where a View is to be taken of the Land, or Tenements, in Queſtion. See VIEW.

HABERGE, or HAUBERGE, or HAUBERE, or HAUBERT, in the antient Cuſtoms, the ſame with *Habergeon*, viz. a Coat of Mail. See HABERGEON.

HABERGEON, or HAUBERGEON, or HABERGETUM, a Coat of Mail; or an antient Piece of defenſive Armour, in Form of a Coat, deſcending from the Neck to the Middle; form'd of little Iron Rings, or Maſhes, link'd into each other. See MAIL.

Varro makes the *Gauls* the firſt Inventors of the *Habergeon*.

The Antiquaries and Criticks are divided as to the Etymology of the Word. — *Spelman* derives it from *hame*, *haim*, or *hamecon*, Hook; and *berg*. *Menage*, &c. derive from *al*, or *alba*, all; and *bergen*, to cover. — *Fauchet* derives it from *albus*, by Reaſon the Maſhes, or Links, were white, poliſh'd, and ſhining.

Some of our Writers, and particularly *Du Cange*, make the *Habergeon*, a Head-piece, or Helmet, covering the Head and Shoulders; and derive the Word from the German *Hals*, Neck, and *bergen*, to cover. He adds, that in the Age of corrupt *Latin*, they wrote it *Halsberga*, *Albergellum*, *Ausbergatum*, &c.

HABILLIMENTS *of War*, in our antient Statutes, ſignify Armour, Harneſs, Utenſils, or other Proviſions, for War; without which there is ſuppoſed no Ability to maintain War. 3*d* Part. *Inſtit.* fol. 97.

HABIT, or HABITUDE, in Philoſophy, an Aptitude, or Diſpoſition, either of the Mind, or Body, acquired by a frequent Repetition of the ſame Act. See HABITUDE.

Some of the Schoolmen call it *Qualitative Habit*, *Habitus Qualitativus*; and define it a Quality adventitious to a Thing, fitting and diſpoſing it either to act, or ſuffer: Others define it an Affection of Mind, or Body, perſiſting by long Uſe and Continuance.

Habits may be diſtinguiſhed into thoſe of the Mind, and of the Body. — Thus Virtue is call'd a *Habit* of the Mind: Strength a *Habit* of the Body.

All natural *Habits*, whether of Body or Mind, are no other than the Body and Mind themſelves, conſider'd as either acting or ſuffering; or they are Modes of the Body or Mind, wherein it perſeveres till effaced by ſome contrary Mode. See MODE.

Ariſtotle enumerates ſix *Habits* of the Mind, *viz.* Underſtanding, Knowledge, Wiſdom, Prudence and Art: Which Diviſion the later Writers ſet aſide, and only admit of three Intellectual *Habits*, viz. *Science*, *Prudence*, and *Art*; agreeable to the three Kinds of Objects, about which the Mind has occaſion to be facilitated; which are either *Theoretical*, *Practical*, or *Effective*. See ART, SCIENCE, *&c.*

HABIT, in Medicine, is what we otherwiſe call the *Temperament*, or *Conſtitution* of the Body, whether obtain'd by Birth, or Manner of Living. See TEMPERAMENT and CONSTITUTION.

An ill diſtemper'd *Habit*, without any particular apparent Diſeaſe, the Phyſicians uſually call a *Cachexia*, or *Cacochymia*. See CACHEXIA and CACOCHYMIA.

A Thing is ſaid to *enter the Habit*, when it becomes intimately diffuſed throughout the Body; and is convey'd to the remoteſt Stages of Circulation.

HABIT is alſo uſed for a *Dreſs*, or *Garb*; or the Aſſemblage, or Compoſition of Garments, wherewith a Perſon is cover'd. See GARMENT.

In this Senſe we ſay, the *Habit* of an Eccleſiaſtic; of a Religious, *&c.* The military *Habit*, &c.

The Eccleſiaſtical *Habit* only commenced about the Time of *Gregory the Great*, i. e. it only began at that Time to be diſtinguiſhed from the Lay *Habit*, viz. in the VIth Century. — The Eſtabliſhment of the barbarous Nations was the Occaſion thereof: For the Laymen took the *Habit* of the Nations they had ſubmitted to; but the Prieſts kept to the *Roman* Dreſs.

The Abbot *Boileau* has an expreſs Treatiſe on the *Eccleſiaſtical Habit*, wherein he maintains, contrary to the common Opinion and Cuſtom, that the Eccleſiaſtic *Habit* ſhould be a ſhort one, and that a ſhort *Habit* is more decent than a long one.

HABIT, is particularly uſed for the uniform Garments of Religious, conformable to the Order whereof they make Profeſſion. See RELIGIOUS and ORDER.

The *Habit* of St. *Benedict*, of St. *Auguſtine*, &c.

In this Senſe, we ſay abſolutely ſuch a Perſon has taken the *Habit*, meaning he has enter'd upon a Novitiate in a certain Order. — So he is ſaid to quit the *Habit*, when he renounces the Order. See NOVITIATE, VOWS, *&c.*

The *Habits* of the ſeveral Religious, were not ſuppoſed to be calculated for Singularity or Novelty: The Founders of the Orders, who were at firſt chiefly Inhabitants of Deſarts and Solitudes, gave their Monks the *Habit* uſual among the Country People. Accordingly the Primitive *Habits* of S. *Anthony*, S. *Hilarion*, S. *Benedict*, &c. are deſcribed, by the antient Writers, as conſiſting chiefly of Sheep's Skins, the common Dreſs of the Peaſants, Shepherds, and Mountaineers of that Time: And the ſame they gave their Diſciples.

The Orders eſtabliſh'd in and about Cities, and inhabited Places, took the Habit wore by the Eccleſiaſticks at the Time of their Inſtitution. — Thus S. *Dominic* gave his Diſciples the *Habit* of regular Canons, which he himſelf had always bore to that Time. And the like may be ſaid of the *Jeſuites*, *Barnabites*, *Theatins*, *Oratorians*, &c. who took the common *Habit* of the Eccleſiaſticks at the Time of their Foundation. And what makes them differ ſo much from each other, as well as from the Eccleſiaſtical *Habit* of the preſent Times, is, that they have always kept invariably to the ſame Form; whereas the Eccleſiaſticks have been changing their Mode at every Turn.

HABITATION, a Dwelling-Place, or Houſe. See HOUSE, EDIFICE, BUILDING, *&c.*

HABITATION, is ſometimes alſo uſed for *Cohabitation*. See COHABITATION.

HABITUAL, ſomething that is become, or turn'd into a Habit, or Habitude. See HABITUDE, *&c.*

Thus, we ſay, a *Habitual*, or inveterate Diſeaſe: *Habitual* Sin, *&c.* An *Habitual* Diſpoſition is the ſame Thing with a Habitude it ſelf.

Habitual Grace, is that convey'd to us by Baptiſm, and afterwards augmented and improved by the Euchariſt, and other appointed Means. See GRACE.

The *Romiſh* Divines hold *Habitual Grace* neceſſary in Order to be ſaved; and Actual Grace, to the doing any Thing meritorious.

HABITUDE, HABITUDO, in the Schools, ſignifies the Reſpect, or Relation, which one Thing bears to another. See RELATION.

In this Senſe, *Habitude* is one of *Ariſtotle*'s Categories. See CATEGORY.

Some of the more preciſe, and accurate Schoolmen, conſider *Habitude* as a Genus; and ſub-divide it into two Species. Where it is conſider'd as Quieſcent, they call it *Reſpect*; where, as moved, *Relation*: To which ſome add a third Species, conſider'd with Reſpect of Figure, which they call *Mode*.

HABITUDE, is alſo uſed in Philoſophy, for what we popularly call *Habit*, viz. a certain Diſpoſition, or Aptitude, for the performing, or ſuffering, of certain Things; contracted by reiterated Acts of the ſame Kind. See HABIT.

Habitudes are diſtinguiſh'd into thoſe of the *Body* and the *Mind*.

Among thoſe of the *Mind*, call'd alſo intellectual *Habitudes*, are frequently number'd Memory, Knowledge, Prudence and Art. But others deny there are any ſuch Thing as proper intellectual *Habits*; and fix them all in the Brain.

Bodily *Habitudes* are innumerable: To theſe we refer all our *Arts*. See ART.

Virtues, and Vices, are conſider'd by the Philoſophers under the Notion of good and bad *Habitudes*. See VIRTUE and VICE.

The Archbiſhop of *Cambray* defines *Habitudes*, in the general, to be certain Impreſſions left in the Mind; by Means whereof, we find a greater Eaſe, Readineſs, and Inclination to do any Thing formerly done, by having the Idea ready at hand to direct us how it was done before, — Thus, *E. gr.* we form a *Habitude* of Sobriety, by having always before us the Inconveniencies of Exceſs; the Reflections whereof, being often repeated, render the Exerciſe of that Virtue more and more eaſy.

Fa. *Mallebranch* gives a more artful, and mechanical Theory of the *Habitudes*. — His Principle is, that they conſiſt in a Facility, which the Spirits have acquired, of paſſing eaſily from one Part of the Body to another. He argues thus: If the Mind act on, and move the Body, 'tis, in all Probability, by Means of a ſtock of animal

animal Spirits, lodg'd in the Brain, ready to be ſent at the Motion of the Will, by means of the Nerves which open or terminate in the Brain, into the Muſcles of the Body. See BRAIN and NERVE.

Now, an Influx of Spirits into a Muſcle, occaſions a Swelling; and, of Conſequence, a ſhortening of the Muſcle; and conſequently a Motion of the Part that Muſcle is faſten'd to. See MUSCULAR *Motion*.

Further, the Spirits do not always find all the Roads open and free, which they are to paſs thro'; whence that Difficulty we perceive of moving the Fingers with that Quickneſs neceſſary to play on a Muſical Inſtrument; or of moving the Muſcles neceſſary to pronounce the Words of a foreign Language. But, by Degrees, the Spirits, by their continual Flux, ſmoothen the Ways; ſo that at length they meet with no Reſiſtance at all. Now, 'tis this Facility the Spirits find of paſſing, when directed into the Members of the Body, that *Habitudes* conſiſt. See SPIRIT.

On this Hypotheſis, 'tis eaſy accounting for an Infinity of Phænomena relating to the *Habitudes*. — Why, for Inſtance, Children acquire new Habits with more Eaſe than grown Perſons: Why, 'tis difficult getting rid of inveterate Habits: Whence that incredible Quickneſs in the Pronunciation of Words, even without thinking of them, as is particularly obſervable in thoſe long accuſtom'd to Formula's, *&c.*

On this footing, the Faculty of Memory appears to have very much the Nature of a *Habitude*; inſomuch that in one Senſe it may paſs for a *Habitude*. See MEMORY. See alſo PASSION, NATURAL *Inclination*, &c.

HACHES, and HACHING. See HATCHES and HATCHING.

HACKNEY. See HAQUENY.

HACKNEY *Coach*. See *Hackney* COACH.

HADRIANEA, or HADRIANALIA, in Antiquity, Games inſtituted in Honour of the Emperor *Hadrian*, or *Adrian*. See GAMES.

There were two Sorts of *Hadrianalia*, the one held every Year, and the other every five Years.

HÆMATITES, or HÆMATITES *Lapis*, in Natural Hiſtory, the *Blood-Stone*; a ruddy Mineral in Form of a Stone; thus call'd, either on Account of its reſembling dry, curdled Blood, or of the Faculty it has of ſtanching Blood; from the *Greek*, αἷμα, *Sanguis*, Blood.

Pliny reckons five Kinds, *viz.* the *Ethiopic*, the *Androdomas*, or black, the *Arabic*, the *Elalites*, or *Milites*, and the *Chiſtos*; beſide that commonly call'd the *Magnes Hæmatites*; from the Property it has of attracting Iron.

The five Sorts differ chiefly in point of Hardneſs: The beſt, according to *Dioſcorides*, is that which is friable, hard, black, and ſmooth, without either gritty Parts, or Veins.

That commonly us'd by the Painters is factitious; being made of *Armenian* Bole, and other Drugs.

The Native, or Foſſil Kind, comes from *Egypt*, *Bohemia*, &c. It has divers Uſes in Medicine; being held cooling and aſtringent, and in that Quality preſcribed in Hæmorrhages. — It is given, in Subſtance, in Form of a fine Powder.

The Gilders uſe it for Burniſhers, to poliſh their Gold withal. *Bauſchius* has an expreſs Treatiſe on this Stone. See GILDING.

HÆMATOSIS, in Medicine, the Action whereby the Chyle is converted into Blood; call'd alſo *Sanguification*. See SANGUIFICATION.

The Word is form'd of the *Greek*, αἷμα, *Sanguis*, Blood.

The chief of the vital Actions, are the *Chyloſis*, and *Hæmatoſis*. See CHYLOSIS, BLOOD, *&c.*

HÆMOPTYSIS, or HÆMOPTOE, in Medicine, a ſpitting of Blood; occaſion'd by the Rupture, or Eroſion of ſome Veſſel of the Lungs; and accompanied, uſually, with a Cough, and a Senſe of Preſſure on the Breaſt. See BLOOD.

The *Hæmoptyſis* differs from a Vomiting of Blood, in that in the *Hæmoptyſis*, the Blood comes from the Lungs, and for that Reaſon is florid and frothy; whereas in the Vomiting of Blood, it comes from the Stomach, and is blackiſh.

The *Hæmoptyſis* is occaſioned by violent Shouts, or Cries; by Strains, Falls, vehement Coughs; by the Suppreſſion of ſome ordinary Evacuation, or by the Abundance of ſome ſharp corroſive Humor.

The *Hæmoptyſis* is either accidental, or habitual — The latter is a Symptom of the *Phthiſis*. It is beſt cured, according to *Morton*, by the *Cortex*: It is ſtopp'd by Aſtringents, as *Armen. Bol. Sang. Dracon. Lapis Hæmat.* &c. See PHTHISIS.

The Word comes from αἷμα, *Blood*; and πτυειν, *to ſpit*.

HÆMORRHAGE, in Medicine, a Flux of Blood, at any Part of the Body; ariſing either from a Rupture of the Veſſels, as when they are too full, or too much preſs'd; or from an Eroſion of the ſame, as when the Blood is too ſharp and corroſive. See FLUX and BLOOD.

The *Hæmorrhage*, properly ſpeaking, as underſtood by the *Greeks*, was only a Flux of Blood at the Noſe; but the Moderns extend the Name to any Kind of Flux of Blood, whether by the Noſe, Mouth, Lungs, Stomach, Inteſtines, Fundament, Matrix, or the like.

Hypochondriac, Scorbutic, and Cachectic Perſons, are liable to various and immoderate *Hæmorrhages*. — The Cure of *Hæmorrhages* ariſing from a Plethora, is by Evacuants, and particularly Phlebotomy, to cauſe a Revulſion. — That from an increas'd Velocity of a thin acrimonious Blood, is to be attack'd with Coolers, and Agglutinants.

The principal ſimple Remedies in *Hæmorrhages*, are *Album Græcum*, Spirit or Oil of Vitriol, *Calcanthum* rubified, Colophony pulverized, Oil of Turpentine, Decoction of *Catechu*, *Cortex Peruv.* &c. See STYPTICS.

A Ligature on the Limb has frequently a good Effect: So *Elect. Boylean. Pulvis Galeni*; *Elect. Styptic. Tinctur. Roſar. Epithem. de Sacchar. Saturn.* &c.

An *Hæmorrhage* at the *Anus*, is more uſually call'd a *Dyſentery*. See DYSENTERY.

The Word is compounded of the *Greek*, αἷμα, *Sanguis*, Blood; and ῥήγνυμι, or ῥυσσω, *frango*, *rumpo*, *erumpo*, I break, burſt forth, *&c.*

HÆMORRHOIDAL, an Epithet given to the Veins and Arteries of the *Inteſtinum Rectum*, and the Fundament; as being the Seat of the *Hæmorrhoids*. See HÆMORRHOIDS.

The *Hæmorrhoidal* Arteries are two; the one *internal*, the other *external*.

The internal is a Branch of the lower Meſenteric, which running along the *Rectum*, terminates at the Fundament; the external ſprings from the Hypogaſtric Artery.

The *Hæmorrhoidal* Veins are alſo internal and external. The internal carries back the Blood of the *Rectum* and Fundament, which it embraces regularly; and is inſerted ſometimes into the ſplenic Branch of the *Porta*, and ſometimes into the Meſenteric: The external brings back the Blood from the muſculous Parts about the Fundament, and terminates in the Hypogaſtric Vein.

HÆMORRHOIDS, in Medicine, a Diſeaſe of the Fundament, popularly call'd the *Piles*.

The *Hæmorrhoids* are a painful, periodical Tumor, in the lower Part of the *Inteſtinum Rectum*; uſually appearing externally in the *Anus*. — They may be conſider'd as a Sort of varicous Tumors in the *Hæmorrhoidal* Veins; ariſing from the too great Abundance of morbid Blood therein. See HEMORRHOIDAL *Veſſels*.

The Diſeaſe is either *ſimple*, as when the Veins alone are tumified; or *compound*, as when the neighbouring Parts become infected, or an Excreſcence ariſes therefrom, as a *Ficus*, *Criſta Galli*, *Condyloma*, or the like.

Hæmorrhoids are either *open*, *fluentes*, that is, yield Blood; or *blind*, *cæcæ*, where the Parts are only tumid. — In the firſt, the Veſſels of the *Rectum* are open; in the latter, there is ſome Obſtruction, which occaſions them to ſwell.

The *Hæmorrhoids* ſometimes are internal, and cauſe great Pain in going to Stool; eſpecially if the *Fæces* be indurated: After which they often appear externally, and Blood is ſeen upon the Excrements.

Etmuller is careful in diſtinguiſhing the genuine, hæmorrhoidal Flux, from a bloody Diarrhœa, frequent in ſcorbutic Caſes. — The *Hæmorrhoids* are uſually open'd by the Attrition of the Excrements in a Stool, ſo that the Blood flows at the ſame Time with the Excrements; but if it flow promiſcuouſly before, as well as after the Excrements, and without Pain, 'tis a ſcorbutic Flux.

Where the Flux is exceſſive, Phlebotomy, and Cupping, are good, by way of Revulſion; and internally, Aſtringents and Opiates. — Upon a Suppreſſion of the uſual Flux, without removing the Cauſe, the open *Hæmorrhoids* degenerate into the blind: In which Caſe they muſt be open'd again with Aloeticks, *&c.* Tamarinds are held excellent to aſſwage the Flux. Chalybeats ſtrike at the Cauſe of the Evil. Scrophulary, Onion, and Leek, are much commended.

The Word is form'd of the *Greek*, αἱμόῤῥοις, *Sanguinis profluvium*, Flux of Blood; which is compounded of αἷμα, *Blood*, and ῥέω, *I flow*.

HÆREDE *abducto*, is a Writ that lay for the Lord, who, having by Right the Wardſhip of his Tenant under Age, could not come by his Body, as being conveyed away by another. See RAVISHMENT *de Gard.*

HÆREDE *deliberando alii qui habet cuſtodiam terræ*, a Writ directed to the Sheriff, willing him to command one that had the Body of him who was ward to another,

to deliver him to him, whoſe Ward he was on Account of his Land. See WARD and GUARDIAN.

HÆREDIPETA, in our ancient Law-Books, the next Heir. *Et nullus* Hæredipeta *ſuo propinquo vel extraneo periculoſa ſane cuſtodia committatur.* Leg. H. *Cap.* 70.

HÆRESIARCH, *Hæreſiarcha*, of the *Greek*, Αἱρεσιάρχης, an Arch-Heretick. See HERETIC.

HÆRESIS, *Hereſy*, } See { HERESY.
HÆRETICUS, *Heretic*, } { HERETIC.

HÆRETICO *Comburendo*, is a Writ that lies againſt one who is an *Heretic*, viz. who having once been convicted of *Hereſy* by his Biſhop, and having abjured it, afterwards falling into it again, or ſome other, is thereupon committed to the ſecular Power. See HERETIC, *&c.*

Sir *Edward Coke* was of Opinion, that this Writ did not lye in his Time: But it is now formally taken away by Statute, *Car.* II.

HAGARD, in Falconry, a Hawk, or Falcon, not taken in the Neſt; but after ſhe had been inured to Liberty, and preying for her ſelf. See FALCONRY.

Hagard Hawks, are hard to tame, and bring under Diſcipline. See HAWK and FALCON.

The Word is *French*, and ſignifies *fierce*; ſome derive it from the Latin *agreſte*, wild: Others, from the German *hag*, Incloſure, fortified Place. — Whence, Monſ. *Huet* obſerves, the Word *Hagard* is ſometimes applied to a Man who becomes hardy and proud, in Confidence of the Strength of the Place he is in.

HAGIOGRAPHA, a Name given to Part of the Books of Scripture, call'd by the Jews *Chetuvim*. See SCRIPTURE, BIBLE, *&c.*

The *Jews* divide the Sacred Writings into three Claſſes: The *Law*, which comprehends the five Books of *Moſes*: The *Prophets*, which they call *Neviim*; and the *Chetuvim*, q. d. *Writings*, call'd by the *Greeks*, &c. *Hagiographa*, comprehending the Book of *Pſalms*, *Proverbs*, *Job*, *Daniel*, *Eſdras*, *Chronicles*, *Canticles*, *Ruth*, the *Lamentations*, *Eccleſiaſtes* and *Eſther*.

The *Jews* call theſe Books the *Writings*, by way of Eminence, as being wrote by immediate Inſpiration of the Holy Spirit. — Thus ſay *Kimhhi*, in his Preface to the *Pſalms*; *Maimonides*, in *More. Neb.* and *Elias Levita*, in his *Thisbi*, under the Word כתב.

They diſtinguiſh them, however, from the Prophets; in that their Authors did not receive the Matters contain'd in them, by the Way call'd Prophecy, which conſiſts in Dreams, Viſions, Whiſpers, Extaſies, *&c.* but by mere ſimple Inſpiration, and Direction of the Spirit. See INSPIRATION.

The Word is compounded of ἁγιος, *holy*; and γεφω, *I write.*

The Name is very antient: St. *Jerom* makes frequent Mention of it. — Before him, St. *Epiphanius* call'd theſe Books ſimply Γραφία.

HAGIOSIDERE, or HAGIOSIDIRE. — The *Greeks*, who are under the Dominion of the *Turks*, being prohibited the Uſe of Bells, make uſe of an Iron to call People to Church, call'd *Hagioſidere*. See BELL.

Magius gives us the Deſcription of a *Hagioſidere* he had ſeen. — 'Tis a Plate of Iron, about 3 Inches broad, and ſixteen long, faſten'd by the middle to a Chain, or Cord, whereby it is ſuſpended at the Church-Door. On this they ſtrike with an Iron Hammer, with ſome Meaſure and Cadence, ſo as to make no diſagreeable Noiſe.

They alſo carry a *Hagioſidere* before the Prieſt in a Proceſſion of the Sacrament to any ſick Perſon, beating on it from Time to Time, to advertiſe the People to adore it; much as in the *Romiſh* Church they do with a Bell.

The Word is compounded of ἁγιος, *holy*; and σιδηρος, *Iron.*

HAIL, *Grando*, in Phyſiology, an aqueous Concretion, in Form of white, or pellucid Spherules, deſcending out of the Atmoſphere. See METEOR and ATMOSPHERE.

Hail, is conceiv'd to be form'd of Drops of Rain, frozen in their Paſſage thro' the middle Region. See RAIN and FREEZING.

Others, take it for the Fragments of a frozen Cloud, half melted, and thus precipitated and congeal'd again. See CLOUD and BAROMETER.

Accordingly, the *Carteſians* define *Hail* to be a Cloud, either wholly, or in Part liquified; which tending downward by its own Gravity, is, in its Paſſage, froze by the Impreſſion of ſome very cold Wind; and thus precipitated, for the moſt Part, in round tranſparent Glebes. — They add, that if the Cloud have been totally liquified, the *Hail-ſtones* are pellucid; otherwiſe, only partly ſo. See SNOW.

Hail aſſumes various Figures, according to the Degrees of Heat or Cold of the Air, which the Parts of the liquified Clouds paſs thro': Sometimes 'tis round, ſometimes Angular, Triangular, Pyramidal, *&c.* ſometimes thin and flat, ſtar-like, with ſix equal Points, *&c.*

Hail is obſerved frequently to attend Thunder and Lightning; the Nitre that contributes to the one, having likewiſe a large Share in the Production of the other. See THUNDER, NITRE, *&c.*

Natural Hiſtories furniſh us with various Inſtances of extraordinary Showers of *Hail*. — In the *Philoſoph. Tranſactions*, Dr. *Halley*, and others relate, that in *Cheſhire*, *Lancaſhire*, &c. *April* 29. 1697, a thick, black Cloud, coming from *Carnarvonſhire*, diſpoſed the Vapours to congeal in ſuch Manner, that for about the Breadth of two Miles, which was the Limit of the Cloud, in its Progreſs for the Space of 60 Miles, it did inconceivable Damage: Not only killing all Sorts of Fowls, and other ſmall Animals, but ſplitting Trees, knocking down Horſes and Men, and even ploughing up the Earth, ſo that the *Hail-ſtones* buried themſelves under Ground, an Inch, or an Inch and a half deep. — The *Hail-ſtones*, many of which weighed five Ounces, and ſome half a Pound, and were five or ſix Inches about, were of various Figures, ſome round, others half round; ſome ſmooth, others emboſs'd and crenilated: The Icy Subſtance of them was very tranſparent and hard; but there was a ſnowy Kernel in the middle of them.

In *Hertfordſhire*, May 4. the ſame Year, after a ſevere Fit of Thunder and Lightning, a Shower of *Hail* ſucceeded, which far exceeded the former: Some Perſons were kill'd by it, their Bodies beat all black and blue: Vaſt Oaks were ſplit, and Fields of Rye cut down as with a Scythe. The Stones were meaſur'd from ten to thirteen or fourteen Inches about. Their Figures were various, ſome oval, others picked, ſome flat. *Philoſoph. Tranſact.* N°. 229.

At *Liſle* in *Flanders*, 1686, fell *Hail-ſtones* of a very large Size; ſome of which contained in the middle a dark brown Matter, which thrown on the Fire, gave a very great Report. *Phil. Tranſact.* N°. 203.

Mezeray, ſpeaking of the War of *Louis* XII. in *Italy*, in the Year 1510, relates, that there was for ſome Time, a horrible Darkneſs, thicker than that of Night; after which the Clouds broke into Thunder and Lightning, and there fell a Shower of *Hail-ſtones*, or rather as he calls them Pebble-ſtones, which deſtroy'd all the Fiſh, Birds, and Beaſts of the Country. — It was attended with a ſtrong Smell of Sulphur; and the Stones were of a bluiſh Colour: Some of them weighing an hundred Pounds. *Hiſt. de France*, T. II. p. 339.

HAILE, a Sea Term, uſed either to call to a Ship to know from whence ſhe comes, and whither ſhe is bound; or elſe to ſalute her, and wiſh her well. — To *hale* a Ship, is alſo the ſame Thing as what we call pulling a-ſhore.

HAIR, little ſlender Threads, iſſuing out of the Pores of the Skins of Animals; and ſerving moſt of them as a Tegument, or Covering. See SKIN and PORE.

In Lieu of *Hair*, the Nakedneſs of ſome Animals is cover'd with Feathers, Wool, Skins, *&c.* See FEATHER, WOOL, *&c.*

The *Hair* is found on all Parts of the Body, except the Soles of the Feet, and the Palms of the Hands. — But it grows longeſt on the Head, Beard, in the Arm-Pits, and about the Privities. See PUBES, *&c.*

The Phyſicians diſtinguiſh it into Kinds, and give it divers Denominations; but this only in *Greek* and *Latin*. — The *Hair* of the Head they call *Capillus*: That of Women particularly, *Coma*, from κομεῖν, *to dreſs* and *adjuſt*; and that of Men *Cæſaries*, from *cædendo*, becauſe often cut: That of the Back of the Head, *Juba* and *Crines*: That hanging behind the Ears, *Cincinni*; q. d. curled and buckled.

The Antients held the *Hair* a Sort of Excrement, fed only with excrementitious Matters, and no proper Part of a living Body. — They ſuppoſed them generated of the fuliginous Parts of the Blood, exhaled by the Heat of the Body to the Surface, and there condenſed in paſſing thro' the Pores. — Their chief Reaſons were, that the *Hair* being cut, will grow again apace, even in extreme old Age, and when Life is very low: That in Hectic, and Conſumptive People, where the reſt of the Body is continually emaciating and attenuating, the *Hair* ſhall thrive: Nay, and that it will grow again in dead Carcaſes. — They added, that *Hair* did not feed and grow like the other Parts, by Introſuſception, *i. e.* by a Juice circulating within 'em; but, like the Nails, by Juxtapoſition, each Part next the Root thruſting forward that immediately before it.

But the Moderns are all agreed that every *Hair* does properly and truly live, and receive Nutriment to fill and diſtend it like the other Parts; which they argue hence, that the Roots do not grow grey in aged Perſons, ſooner than the Extremities, but the whole changes Colour at once: And the like is obſerved in Boys, *&c.* which

ſhews that there is a direct Communication; and that all the Parts are affected alike. — To which it may be added, that there are Inſtances of Perſons, who by intenſe Grief, or Fear, have been known to grow grey in a Night's Time.

It may be obſerved, however, that, in Propriety, the Life and Growth of *Hairs*, is of a different Kind from that of the reſt of the Body; and is not immediately derived therefrom, or reciprocated therewith. — 'Tis rather of the Nature of Vegetation. They grow as Plants do out of the Earth; or as ſome Plants ſhoot from the Parts of others; from which tho' they draw their Nouriſhment, yet each has, as it were, its ſeveral Life, and a diſtinct Oeconomy. — They derive their Food from ſome Juices in the Body, but not from the nutritious Juices of the Body; whence they may live, tho' the Body be ſtarv'd. See VEGETATION, PLANT, *&c.*

The *Hairs*, examined by the Microſcope, appear to be fiſtulous Bodies like Horns. Their tubulous Structure is confirm'd from the Diſeaſe call'd *Plica Polonica*, wherein the Blood oozes out at their Extremities. See PLICA.

Each *Hair* is found to conſiſt of five or ſix other leſſer ones, all wrapp'd up in one common Tegument: They are knotted like ſome Sorts of Graſs, and ſend out Branches at the Joints. — They have each a round bulbous Root, which lies pretty deep in the Skin, being implanted in the pyramidal *Papillæ*; and by this they imbibe, or ſecrete, their proper Food from the adjacent Humors. Their Extremities ſplit or divide into two or three Branches, eſpecially when kept dry, and left to grow too long; ſo that what to the naked Eye appears only a ſingle *Hair*, to the Microſcope ſeems a Bruſh.

They turn grey on the fore-part of the Head, and particularly about the Temples, ſooner than behind; the back-part affording them the proper Juice longer than the reſt. See TEMPLES.

For the like Reaſon they fall ſooneſt on the Crown of the Head. See HEAD.

Their Size, or Thickneſs, depends on the Magnitude of the Pores they iſſue from: — If thoſe be ſmall, theſe are fine: If the Pores be ſtraight, the *Hairs* are ſtraight: If thoſe be oblique or ſinuous, the *Hair* is curl'd.

They ordinarily appear round, or cylindrical; but the Microſcope alſo diſcovers triangular, and ſquare ones; which Diverſity of Figures ariſes from that of the Pores; to which the *Hairs* always accommodate themſelves. Their Length depends on the Quantity of the proper Humor to feed them; and their Colour on the Quality of that Humor: Whence, at different Stages of Life the Colour uſually differs.

The *Hair* of a Mouſe, view'd by Mr. *Derham* with a Microſcope, ſeem'd to be one ſingle tranſparent Tube, with a Pith made up of fibrous Subſtance, running in dark Lines, in ſome Hairs tranſverſly, in others ſpirally. The darker medullary Parts, or Lines, he obſerves, were no other than ſmall Fibres convolved round, and lying cloſer together, than in the other Parts of the *Hair*. They run from the Bottom to the Top of the Hair; and, he imagines, may ſerve to make a gentle Evacuation of ſome Humor out of the Body. Hence, the *Hair* of hairy Animals, this Author ſuggeſts, may not only ſerve as a Fence againſt Cold, *&c.* but as an Organ of inſenſible Perſpiration.

It was eſteem'd a notable Honour among the ancient *Gauls*, to have long *Hair*; and hence came the Appellation *Gallia Comata*. For this Reaſon *Julius Cæſar*, upon ſubduing the *Gauls*, made them cut off their *Hair*, as a Token of Submiſſion.— It was with a View to this, that ſuch as afterwards quitted the World, to go and live in Cloiſters, procured their *Hair* to be ſhaven off; to ſhew that they bid Adieu to all earthly Ornaments, and made a Vow of perpetual Subjection to their Superiors. See TONSURE.

Greg. de Tours aſſures us, that in the Royal Family of *France*, it was a long Time the peculiar Mark and Privilege of the Kings and Princes of the Blood, to wear long *Hair*, artfully dreſs'd and curl'd: Every body elſe were obliged to be cut round, in Sign of Inferiority and Obedience. Some Writers aſſure us, that there were different Cuts for all the different Qualities and Conditions, from the Prince, who wore it at full Length; to the Slave, or Villain, who was quite cropt. *Hottoman* treats at large of this Privilege of the Kings of *France*. *Franco Gallia, C.* 11.

To cut off the *Hair* of a Son of *France*, under the firſt Race of Kings, was to declare him excluded from the Right of ſucceeding to the Crown, and reduced to the Condition of a Subject. Fa. *Daniel*, Hiſt. de *France*, T. 1.

In the 8*th* Century, it was the Cuſtom for People of Quality, to have their Childrens *Hair* cut the firſt Time, by Perſons they had a particular Honour and Eſteem for; who, in virtue of this Ceremony, were reputed a Sort of ſpiritual Parents, or God-fathers thereof. — Tho' this Practice appears to have been more ancient, inaſmuch as we read that *Conſtantine* ſent the Pope, the *Hair* of his Son *Heraclius*, as a Token that he deſired him to be his adoptive Father. See GODFATHER, ADOPTION, *&c.*

The Parade of long *Hair* became ſtill more and more obnoxious in the Progreſs of Chriſtianity; as ſomething utterly inconſiſtent with the Profeſſion of Perſons who bore the Croſs. Hence numerous Injunctions and Canons to the contrary. — Pope *Anicetas* is commonly ſuppoſed to have been the firſt who forbad the Clergy to wear long *Hair*; but the Prohibition is of an older Standing in the Churches of the *Eaſt*; and the Letter wherein that Decree is wrote, is of a much later Date than that Pope. — The Clerical Tonſure is related by *Iſidore Hiſpalenſis*, as of Apoſtolical Inſtitution. See CLERC.

Long *Hair* was anciently held ſo odious, that there is a Canon ſtill extant of the Year 1096, importing, that ſuch as wore long *Hair*, ſhould be excluded coming into Church while living; and not be pray'd for when dead.

We have a furious Declamation of *Luitprand* againſt the Emperor *Phocas*, for wearing long *Hair*, after the Manner of the other Emperors of the *Eaſt*; all except *Theophilus*, who being bald, enjoyn'd all his Subjects to ſhave their Heads.

The *French* Hiſtorians and Antiquaries, have been very exact in recording the Head of Hair of their ſeveral Kings. — *Charlemaign* wore it very ſhort, his Son ſhorter, *Charles the Bald* had none at all. Under *Hugh Capet*, it began to appear again: This the Eccleſiaſticks took in Dudgeon, and excommunicated all who let their *Hair* grow. *Peter Lombard* expoſtulated the Matter ſo warmly with *Charles the Young*, that he cut off his *Hair*; and his Succeſſors for ſome Generations wore it very ſhort.

A Profeſſor of *Utrecht*, in 1650, wrote expreſly on the Queſtion, whether it be lawful for Men to wear long *Hair*? and concluded for the Negative. — Another Divine, named *Reves*, who had wrote for the Affirmative, replied to him.

The *Greeks*, and after their Example, the *Romans*, wore falſe *Hair*. See PERRUKE.

Wulferus, in the Philoſophical Collections, gives an Account of a Woman buried at *Norimberg*, whoſe Grave being open'd 43 Years after her Death, there was *Hair* found iſſuing forth plentifully thro' the Clefts of the Coffin; inſomuch that there was Reaſon to imagine, the Coffin had ſome Time been cover'd all over with *Hair*. — The Cover being removed, the whole Corps appeared in its perfect Shape; but from the Crown of the Head to the Sole of the Foot, cover'd over with a thick ſet *Hair*, long and curl'd. — The Sexton going to handle the upper Part of the Head with his Fingers, the whole Structure fell at once; leaving nothing in his Hand but a Hand full of *Hair*: There was neither Skull, nor any other Bone left; yet the *Hair* was ſolid, and ſtrong enough.

Mr. *Arnold*, in the ſame Collection, gives a Relation of a Man hang'd for Theft, who in a little Time, while he yet hung upon the Gallows, had his Body ſtrangely cover'd over with *Hair*.

Dr. *Tyſon* adds, that tho' the outward Surface of the Body, be the uſual Place where the *Hair* grows; yet it has been ſometimes found on the Tongue, in the Heart, the Breaſts, Kidneys, *&c.* but that there is ſcarce any inward Part more ſubject to it, than the Ovary, or Teſticles of Females. *Phil. Collect. N°.* 2.

HAIR, makes a very conſiderable Article in Commerce; eſpecially ſince the Mode of Perrukes has obtain'd. See PERRUKE.

The *Hair* of the Growth of the *Northern* Countries, as *England*, &c. is valued much beyond that of the more Southern ones, as *Italy*, *Spain*, the South Parts of *France*, &c.

The Merits of a good *Hair* conſiſt in its being well fed, and neither too coarſe nor too ſlender; the Bigneſs rendering it leſs ſuſceptible of the artificial Curl, and diſpoſing it rather to frizzle; and the Smallneſs making its Curl of too ſhort Duration. — Its Length ſhould be about 25 Inches; the more it falls ſhort of this, the leſs Value it bears.

There is no certain Price for *Hair*, but it is ſold from Five Shillings to Five Pound an Ounce, according to its Quality. — The grey is the moſt coveted, then the white, *&c.*

The Scarceneſs of grey and white *Hair* has put the Dealers in that Commodity upon Methods of reducing other Colours thereto. — This is done by ſpreading the *Hair* to bleach on the Graſs, like Linnen; after firſt waſhing it out in a lixivious Water. See BLEACHING.

This Lye, with the Force of the Sun and Air, brings the *Hair* to ſo perfect a Whiteneſs, that the moſt experienced Perſon may be deceived therein; there being ſcarce any Way of detecting the Artifice but by boiling and drying it; which leaves the *Hair* of the Colour of a dead Walnut-Tree Leaf.

There is alſo a Method of dying *Hair* with Biſmuth; which renders ſuch white *Hair*, as borders too much upon the yellow, of a bright Silver Colour. — Boiling is the Proof of this too; the Biſmuth not being able to ſtand it.

Hair which does not curl or buckle naturally, is brought to it by Art; by firſt boiling, and then baking it in the following Manner: — After having pick'd and ſorted the *Hair*, and diſpoſed it in Parcels, according to the Lengths; they roll them up, and tye them tight down, upon little cylindrical Inſtruments, either of Wood or Pottery, a Quarter of an Inch thick, and hollow'd a little in the middle; in which State they are put in a Pot over the Fire, there to boil for about two Hours. — When taken out they let them dry; and when dried, ſpread them on a Sheet of brown Paper, cover them with another, and thus ſend them to the Paſtry Cook; who making a Cruſt or Coffin around them of common Paſt, ſets them in the Oven, till the Cruſt is about three fourths baked.

The End by which a *Hair* grew to the Head, is called the *Head* of the *Hair*; and the other, with which they begin to give the Buckle, the *Point*. — Formerly the Perruke-Makers made no Difference between the two Ends, but curled and wove them by either indifferently; which made them unable to give a fine Buckle: *Hair* wove by the Point never taking the right Curl. — Foreigners own themſelves obliged to the *Engliſh* for this Diſcovery; which was firſt carried abroad by a Perruke-Maker of our Country. *Dict. de Commerce.*

HAIR is alſo uſed in divers Arts and Manufactures.

The *Hair* of Beavers, Hares, Conies, *&c.* is the principal Matter whereof Hats are made. See HAT.

Spread on the Ground, and left to putrify on Corn Lands, *Hair*, as all other animal Subſtances, *viz.* Horns, Hoofs, Blood, Garbage, *&c.* proves a good Manure. See MANURE.

Hair alſo makes an Ingredient in the Compoſition of Plaiſter. See PLAISTER.

HAIR, in the Manage, and among Farriers, is popularly call'd the *Coat*, and makes a Point of principal Conſideration in Reſpect of Horſes, *&c.* See HORSE.

If the *Hair* of a Horſe, eſpecially about the Neck, and Parts uncover'd, be ſleek, and ſmooth, and cloſe; 'tis an Indication of his being in Health and good Caſe: If rough and ſtaring, or any Way diſcolour'd, it denotes a Coldneſs, Poverty, or ſome inward Defect. — To make the *Hair* ſmooth, ſleek, and ſoft, he muſt be kept warm, ſweated often, and when ſweated, the Coat well ſcraped and rubb'd down.

The *Hair* growing on the Fetlock, ſerves as a Defence to the prominent Part thereof, in travelling on ſtony Ways, or in froſty Weather.

If a Place be bare, or thin of *Hair*, or the *Hair* be too ſhort; the ancient Farriers uſed to waſh it with the Urine of a young Boy; and after that with a Lye of unſlaked Lime, Ceruſe, and Litharge. — The Moderns have various other Ways: Some waſh the Parts with a Decoction of the Roots of *Althæa*; others with Goats Milk, wherein Agrimony has been pounded; others rub the Part with Nettle Seed, bruis'd with Honey Water, and Salt: Others anoint it with the Juice of an Onion, or Radiſh; others with a Mixture of Alum, Honey, Goats Dung, and Swines Blood: Others with the Root of the white Lilly, boil'd in Oil: Others with Tar, Oil of Olives, and Honey: And others, with green Walnut Shells powder'd, and mix'd with Honey, Oil, and Wine.

To take off *Hair* in any Part, they apply a Plaiſter, made of unſlack'd Lime, boil'd in Water, with Orpiment added. See MARK, STAR, *&c.*

HAIRS-*Breadth*, is accounted the forty eighth Part of an Inch. See MEASURE, INCH, *&c.*

HALBARD, or HALBERD, an offenſive Weapon, conſiſting of a long Shaft, five Foot long, with a Steel Head, ſomewhat in manner of a Creſcent. See ARMS and ARMOUR.

The *Halbard* was antiently a common Weapon in the Army; where, there were Companies of *Halbardeers*: It is ſtill retain'd by the Sergeants and Corporals on divers Occaſions. — It was called the *Daniſh* Ax, becauſe firſt bore by the *Danes*; and on the left Shoulder. From the *Danes* it was derived to the *Scots*; from the *Scots* to the *Engliſh-Saxons*; and from them to the *French*.

The Word is form'd of the German *Hal*, Hall, and *bard*, a Hatchet. *Voſſius* derives it from the German *hellebaert*, of *hel*, clarus, ſplendens, and *baert*, bipennis. Others bring it from *ala*, by Reaſon the *Halbards* were ranged in the Wings of the Army, *quaſi aliparatum*.

HALBERT, among Farriers, *&c.* is a Piece of Iron, an Inch broad, and three or four Inches long, ſolder'd to the Toe of a Horſe's Shoe, that ſets out before; to hinder a lame Horſe from reſting or treading upon his Toe.

Halbert Shoes do of Neceſſity conſtrain a lame Horſe to tread or reſt on his Heel, when he goes a moderate Pace; which lengthens and draws out the back Sinew, that was ſomewhat ſhrunk before.

HALCYON-*Days*, *Dies Alcyonis*, a Phraſe, that frequently occurs among Writers, to denote a Time of Peace and Tranquillity.

The Diction takes its Riſe from a Sea-Fowl, call'd among Naturaliſts *Halcyon*, or *Alcyon*, which builds its Neſt about the Winter's Solſtice, when the Weather is uſually obſerv'd to be ſtill and calm.

The antient Tradition was, that it built its Neſt, and laid its Eggs in the Sea; chuſing for that Purpoſe a Seaſon when the Waves were quite ſtill.

HALF-*Bloom*, a round Maſs of Metal, which comes out of the Finery of an Iron-Work. See BLOOMERY and IRON-WORK.

HALF-*Mark*, *Dimdia Merkæ*, is a Noble. See NOBLE.

Fitz-herbert ſays, that in Caſe a Writ be brought, and the Seiſin of the Demandant, or his Anceſtor alledged; the Seiſin is not traverſable by the Defendant, but he may tender the *half Mark* for the Enquiry of this Seiſin: Which is, in plainer Terms, that the Defendant ſhall not be admitted to deny, that the Poſſeſſor, or his Anceſtors, was ſeiſed of the Land in Queſtion, and to prove his Denial; but that he ſhall be admitted to render *half a Mark* in Money, to have an Enquiry made, whether the Demandant, *&c.* were ſeiſed or not?

HALF-*Moon*, *Demi Lune*, in Fortification, is an Outwork, that hath only two Faces, forming together a ſaliant Angle, which is flanked by ſome Part of the Place, and of the other Baſtions. See *Out*-WORK, DEMI-*Lune*, &c.

Theſe *Half-Moons* are ſometimes raiſed before the Curtain, when the Ditch is a little wider than it ought to be; in which Senſe it is much the ſame with a Ravelin, only that the Gorge of an *Half-Moon* is made bending in like a Bow, or a Creſcent, and is moſt Times uſed to cover the Point of a Baſtion; whereas Ravelins are placed before the Curtain. — But they are defective, as being ill flanked. See RAVELIN.

HALF-*Penny*, a Copper Coin, whoſe Value is expreſs'd by its Name. See PENNY. See alſo OBOLUS.

HALF-*Seal*, is uſed in Chancery, for the Sealing of Commiſſions to Delegates appointed upon any Appeal in Eccleſiaſtical or Marine Cauſes. See DELEGATE.

HALF-*Tongue*, *Medietas Linguæ*, is a Jury impannell'd in a Cauſe, where a Stranger, or Foreigner, is a Party. See MEDIETAS *Linguæ*.

HALIEUTICKS, *Halieutica*, of the *Greek*, Ἁλιευτικὰ, Books treating of *Fiſhes*, or the Art of *Fiſhing*. See FISH and FISHING.

HALIGAMOT. See HALIMOTE.

HALL, was antiently uſed for a Manſion-Houſe, or Habitation. See MANSION.

HALL, *Salle*, in Architecture, is a large Room, at the Entrance of a fine Houſe, Palace, or the like. See PALACE, *&c.*

Vitruvius mentions three Sorts of *Halls*: The *Tetraſtyle*, which has four Columns ſupporting the Plafond, or Ceiling: The *Corinthian*, which has Columns all around, let into the Wall, and is vaulted over: And the *Egyptian*, which had a Periſtyle of inſolated *Corinthian* Columns, bearing a ſecond Order, with a Ceiling. Theſe were call'd *Oeci*.

The *Hall* is properly the firſt, and fineſt Partition, or Member of an Apartment; and, in the Houſes of Miniſters of State, public Magiſtrates, *&c.* is that wherein they diſpatch Buſineſs, and give Audience.

In very magnificent Buildings, where the *Hall* is larger and loftier than ordinary, and placed in the middle of the Houſe, it is call'd a *Saloon*. See SALOON.

A Royal Apartment is ſaid to conſiſt of a *Hall*, or Chamber of Guards, *Aula Prætoriana*; an Anti-chamber, *Procamera*; a Chamber, *Camera*; a Cabinet, *Conclave*; and a Gallery, *Porticus*. See APARTMENT.

HALL is alſo a public Building, erected for the Adminiſtration of the Policy and Juſtice of a City, or Corporation. — In this Senſe we ſay the *Town-Hall*, a *Company*'s *Hall*, &c.

Guild-HALL, is a ſtately Building in the City of *London*, and the great Court of Judicature for that City. See COURT and GUILD-*Hall*.

Here

Here, Meetings of the Citizens are held, for the Election of Officers, ſolemn Entertainments, *&c.*

HALL, is alſo particularly uſed for a Court of Juſtice; or an Edifice wherein there is one or more Tribunals. See COURT, JUSTICE, and TRIBUNAL.

In *Weſtminſter Hall* are held the great Courts of this Kingdom, *viz.* the King's-Bench, Chancery, Common-Pleas, and Exchequer. See *Kings*-BENCH, COMMON *Pleas*, and EXCHEQUER.

Above Stairs, is likewiſe held the High Court of Parliament. See PARLIAMENT.

Weſtminſter-Hall was the Royal Palace, or Place of Reſidence of our antient Kings; who ordinarily held their Parliaments, and Courts of Judicature, in their Dwelling-Houſes, (as is ſtill done by the Kings of *Spain*) and frequently ſat the ſaid Courts of Judicature, as they ſtill do in Parliament.

A great Part of this Palace was burnt under *Henry* VIII. what remains is ſtill reſerved for the ſaid Judicatories. — The great *Hall*, wherein the Courts of *Kings-Bench*, &c. are kept, is ſaid to have been built by *William Rufus*; others ſay by *Richard* I. or II. 'Tis reckon'd ſuperior, in Point of Dimenſions, to any *Hall* in *Europe*, being 300 Foot long, and 100 broad.

HALLAGE, a Fee due for Cloth brought for Sale to *Blackwell-Hall* in *London*.

The Word is alſo uſed for Toll paid to the Lord of a Fair, or Market, for Commodities ſold in the common *Hall* of the Place.

HALLELUJAH, a Term of Rejoycing, ſometimes ſung or rehears'd, at the End of Verſes on that Occaſion.

St. *Jerom* firſt introduced the Word *Hallelujah* into the Church Service: For a conſiderable Time it was only u ed once a Year, in the *Latin* Church, *viz.* at *Eaſter*: But in the *Greek* Church it was much more frequent. St. *Jerom* mentions its being ſung at the Interments of the Dead, which it ſtill continues to be in that Church; alſo on ſome Occaſions in *Lent*.

In the Time of *Gregory the Great*, it was appointed to be ſung all the Year round in the *Latin* Church, which rais'd ſome Complaints againſt that Pope, as giving too much into the *Greek* Way, and introducing the Ceremonies of the Church of *Conſtantinople* into that of *Rome*. But he excuſed himſelf by alledging that this had been the antient Uſage at *Rome*; and that it had been brought from *Conſtantinople* at the Time when the Word *Hallelujah* was firſt introduced under Pope *Damaſus*.

The Word is *Hebrew*; or rather, it is two *Hebrew* Words joyn'd together; one of them הללו, *hallelu*, and the other יה, *ja*, an Abridgment of the Name of God, יהוה, *Jehova*. The firſt ſignifies *Laudate*, praiſe ye; and the other *Dominum*, the Lord.

HALLIARDS, or HALYARDS, in a Ship, are Ropes which ſerve for hoiſting up all the Yards, except the Croſs Jack, and the Sprit-ſail Yards. See YARD.

HALMOTE, or HALIMOTE, from the *Saxon* Þeale, i. e. *Aula*, Hall, and ȝemoꝛ, *conventus*, Meeting; is the ſame with what we now call a *Court-Baron*; the Word implying a Meeting of the Tenants of the ſame Hall or Manor. See BARON.

Omnis cauſa terminetur, vel Hundredo, vel Comitatu, vel Halimote, *ſocam habentium vel dominorum curia.* L. L. *Hen.* I. Cap. 10.

The Name is ſtill retained at *Luſton*, and other Places in *Hereford*ſhire. See MOTE.

It is ſometimes alſo taken for a Convention of Citizens in their public *Hall*; which was alſo call'd *Folkmot* and *Halmot*. See FOLKMOTE, HALL, *&c.*

This *Halmote* and *Halimote*, are often confounded with the *Folkmote*, though originally they were two diſtinct Courts. In Effect, the *Halimote* properly ſignifies the Lord's Court, or a Court Baron held in the Manor, in which Differences between the Tenants were determined. See MANOR, COURT, TENANT, LORD, *&c.*

HALO, in Phyſiology, a Meteor, in Form of a luminous Ring, or Circle, of various Colours, appearing round the Bodies of the Sun, Moon, and Stars. See METEOR.

That around the Moon is the moſt uſual; and is alſo call'd *Corona*, Crown. See CORONA.

That about the Sun is peculiarly call'd *Parhelia*. See PARHELIA.

The Word is form'd of the *Greek*, ἁλως, or αλων, *Area*.

Naturaliſts conceive the *Halo* to ariſe from a Refraction of the Rays of Light in their paſſing thro' the fine, rare *Veſiculæ* of a thin *Nubecula*, or Vapour, toward the Top of our Atmoſphere; which Account they confirm hence, that a Quantity of Water being thrown up againſt the Sun, as it breaks and diſperſes into Drops, it forms a Kind of *Halo*, or Iris, exhibiting the Colours of the Natural ones. See RAINBOW.

Mr. *Huygens* ſuppoſes *Halo's*, or Circles round the Sun, to be formed by ſmall round Grains of a Kind of *Hail*, made up of two different Parts; one of which is opake, an incloſed in the other which is tranſparent: Which is the Structure really obſerved in Hail. See HAIL.

After the ſame Manner he accounts for the *Parhelia*; only that there he imagines the icy Grains of an oblong Figure, and rounding at the Ends; like Cylinders, with round Convex Tops. — Where ſome of theſe Cylinders are in an erect Poſition, the Circle they form will be white, by Reaſon of the Reflection of the Rays of the Sun on the Surface of theſe Cylinders.

He proceeds to account for the coloured *Halo's*, and *Parhelia*, from the ſame Hypotheſis; and produces an Experiment of a glaſs Cylinder, a Foot long, having within it an opake Kernel, (which was a Cylinder of Wood) and the ambient Space filled with Water: This Cylinder being expoſed to the Sun, and the Eye diſpoſed in a proper Place; the ſeveral ſucceſſive Reflections and Refractions neceſſary to produce ſuch an Effect did plainly appear.

The Light which comes through Drops of Rain by two Refractions, without any Reflection, Sir *Iſ. Newton* obſerves, ought to appear ſtrongeſt at the Diſtance of about 26 Degrees from the Sun, and to decay gradually both Ways, as the Diſtance from him increaſes and decreaſes: And the ſame is to be underſtood of Light, tranſmitted through ſpherical Hail-ſtones, — Add, that if the Hail be a little flatted, as is often the Caſe, the Light tranſmitted may grow ſo ſtrong at a little leſs Diſtance than that of 26 Degrees, as to form a *Halo* about the Sun or Moon; which *Halo*, as often as the Hail-ſtones are duly figured, may be coloured; and then it muſt be red within by the leaſt refrangible Rays, and blue without by the moſt refrangible ones; eſpecially if the Hail-ſtones have opake Globules of Snow in their Centre, to intercept the Light within the *Halo*, as *Huygens* has obſerved, and make the inſide thereof more diſtinctly defined than it would otherwiſe be.

Such Hail-ſtones, though ſpherical, by terminating the Light by the Snow, may make a *Halo* red within, and colourleſs without, and darker in the red than without, as *Halo's* uſe to be: For of thoſe Rays which paſs cloſe by the Snow, the Rubriform will be leaſt refracted, and ſo come to the Eye in the directeſt Lines. *Optice*.

HALSFANG. See HEALFANG and PILLORY.

HALT, in War, a Pauſe, or Stop, in the March of a military Body. See PAUSE.

In Places full of Defiles, frequent *Halts* muſt be made. The Army made a *Halt* to reſt themſelves.

Some derive the Word from the Latin *Halitus*, Breath; it being a frequent Occaſion of *halting*, to take Breath. Others from *alto*, by Reaſon in *Halts* they raiſe their Pikes, *&c.* an End.

HALTERISTÆ, HALTERISTS, in Antiquity, a Sort of Players at *Diſcus*; denominated from a peculiar Kind of *Diſcus*, by the *Greeks* call'd ἁλτὴς, and by the Latins *Halter*. See DISCUS.

Budæus, and others, take the *Halter* to have been a leaden Weight, or Club, which the Vaulters bore in their Hands, to ſecure and keep themſelves the more ſteady in their Leaping. — Nor will theſe Authors allow of any Sort of *Halter* beſides this Weight; nor other *Halteriſts* but theſe Vaulters. — But *Cornarius*, in his Comments on *Galen*, refutes the Opinion.

Others, as *Cornarius*, *Conſtantine*, and *Portus*, will have the *Halter* to be a Lump, or Maſſive of Lead, or Stone, with a Hold, or Handle, fix'd to it, by which it might be carried; and that the *Halteriſtæ* were thoſe who exerciſed themſelves in removing theſe Maſſives from Place to Place. — Theſe Authors add, that the Weight, or Ball mention'd by *Budæus*, was not call'd ἁλτὴς, *Halter*, but ἄλκτὴρ, *Alter*, which ſignifies *Aſſiſtance*, *Help*.

Hier. Mercurialis, in his Treatiſe *de Arte Gymnaſtica*, L. II. *C.* 12. diſtinguiſhes two Kinds of *Halteriſtæ*; for tho' there was but one *Halter*, there were two Ways of applying it. — The one was to throw or pitch it in a certain Manner, or only to hold it out at Arm's End; and in this Poſture to give themſelves divers Motions, ſwinging the Hands backwards and forwards, *&c.* according to the engraven Figures thereof given us by *Mercurialis*.

The *Halter* was of a cylindrical Figure, leſs in the middle, where it was held, by one Diameter, than at the two Ends. It was above a Foot long; and there was one for each Hand: It was either of Iron, Stone, or Lead.

Galen, *De tuend. Valetud.* Lib. I. Lib. V. and Lib. VI. ſpeaks of this Exerciſe, and ſhews of what Uſe it is in purging the Body of peccant Humors; making it equivalent both to Purgation and Phlebotomy. See EXERCISE and GYMNASTIC.

HALTING,

HALTING, among Farriers, *&c.* an Irregularity in the Motion of a Horſe, ariſing from a Lameneſs, or other Injury in the Shoulder, Leg, or Foot; which leads him to ſpare the Part, or uſe it too timorouſly.

An Acquaintance with this Diſorder, in its ſeveral Circumſtances, is a Thing of great Extent in the Affairs of the Manage; for which Reaſon we ſhall add the principal Points relating thereto. — If a Horſe *halts*, 'tis either *before*; in which Caſe his Grief lies either in the Shoulder, the Legs, or Feet: Or *behind*, where it muſt lye in the Hip, Ham, or the like.

1°. The Signs which indicate it in the *Shoulder*, are his not lifting up his Leg, but trailing it on the Ground; or his caſting out one Leg more than the other, and with his Knee, in a Manner, unbent. — Add that in turning ſhort he will viſibly favour the Leg on the lame Side. Again, if the Ailment be found in the Shoulder, it muſt either be in the Top of the Shoulder Blade, call'd the *Withers*, which is known by his *Halting* moſt when a Perſon is on his Back, his ſhrinking much, and offering to bite when griped, and handled about the Top of the Shoulder Blade: Or in the Bottom of the Shoulder Blade, joyning to the Marrow Bone, which is the fore Pitch of the Breaſt; which is known by his treading his Steps thick, and ſhrinking, ready to fall down, when preſs'd in that Part: Or in the Elbow, which joyns the Marrow Bone to the Leg; which is known by wincing, and taking up his Foot when pinch'd there.

2°. If the Grievance be in the *Legs*, it either lies in the Knee, or Paſtern Joint, which he diſcovers by refuſing to bow the one or the other, and going ſtiffly on it: Or in the *Shank*, which is diſcovered by ſome Splint, Screw, Wind-gall, or other viſible Malady thereon.

3°. If it be in the *Foot*; it is either in the Coronet, and owing to ſome Strain, to be diſtinguiſh'd by ſome Tumor, or breaking thereon, or its appearing hot and burning to the Touch: Or in the *Heel*, owing to an Over-reach or the like, and viſible to the Eye, as alſo by his treading altogether on his Toe: Or in the *Quarters*, between the middle of the Hoof and the Heel, which is known by his *Halting* more when on the Edge of a Bank than when on plain Ground. — This is ſometimes occaſion'd by being pricked with a Nail in the Shoeing; and the faulty Nail is diſtinguiſhed by pinching the Head of each Nail, and the Hoof together with a Pair of Pinchers.

If a Horſe halt *behind*, from a Diſorder in the Hip, or Huckle Bone, he will go ſidelong, and not follow ſo well with that Leg as the others; nor will he turn on that Side without favouring the Leg; add, that he ſhows it ſtill moſt, in walking on the Side of a Bank with the worſt Leg higheſt.

If a Horſe has any hidden Infirmity, that will bring him to *halt* when he comes to Travel, it may be diſcover'd by running him in the Hand on ſmooth Way, at the Length of the Halter; and obſerving how he ſets down his Legs: If he favour none of them, he is to be further proved, by riding him roundly till well heated; then letting him ſtand ſtill an Hour, and after that running him in the Hand at Halters length as before.

HALYMOTE, properly ſignifies an Holy, or Eccleſiaſtical Court. See HALMOTE.

There is a Court held in *London* by this Name, before the Lord Mayor and Sheriffs, for regulating the Bakers. — It was antiently held on *Sunday* next before St. *Thomas*'s Day, and for this Reaſon called the *Halymote*, or Holy-Court. — The Title thereof runs thus: *Cura ſancti-motus tenta in* Guilhalda *Civitatis* London. *Coram Majors & Vicecom.* &c.

HALYWERCFOLK, antiently ſignified ſuch Perſons of the Province of *Durham*, as held Lands, on Condition of defending the Corps of St. *Cuthbert*; and who hereupon claimed the Privilege not to be forced to go out of the Biſhoprick either by King or Biſhop. *Hiſt. Dunelm.*

Hence *Durham* in our Year Books is called *Franchiſe de Werk*. Selden.

HAM, a *Saxon* Word, properly ſignifying a Houſe, or Dwelling-Place. — Sometimes it alſo ſignifies a Street, or Village.

Hence it is that the Name of many of our Towns end with it; as Notting*ham*, Bucking*ham*, Walſing*ham*, &c.

HAM, is alſo a Part of the Leg of an Animal; being the inner, or hind Part of the Knee; or the Ply, or Angle, in which the Leg and Thigh, when bent, incline to each other. See LEG, THIGH and KNEE.

HAM, in Commerce, *&c.* is uſed for a Thigh or Shoulder of Pork, dried, ſeaſon'd, and prepar'd to make it keep, and give it a briſk agreeable Flavour. See GAMMON.

Weſtphalia-Hams, ſo much in Vogue, are prepared by Salting them with Salt-Petre, preſſing them in a Preſs eight or ten Days, ſteeping them in *Juniper* Water, and drying them by the Smoak of *Juniper* Woods.

HAMADRYADES, in Antiquity, fabulous Deities, revered among the ancient Heathens, and believ'd to preſide over Woods and Foreſts, and to be incloſed under the Bark of Oaks. See GOD.

The Word is compounded of ἅμα, *ſimul*, together; and δρυας, *Dryad*, of δρυς, *Oak*. See DRYADES.

The *Hamadryades*, αμαδρυάδες, were ſuppoſed to live and dye with the Trees they were attach'd to; as is obſerved by *Servius* on *Virgil*, *Eccl.* X. v. 62. after *Meneſimachus*, the Scholiaſt of *Apollonius*, &c. who mention other Traditions relating thereto.

The Poets, however, frequently confound the *Hamadryades*, with the *Naiads* and *Napææ*; witneſs *Catullus Carm.* LXIII. *v.* 23. *Ovid. Faſt.* IV. 229. *Proper. Eleg.* XX. 32. See NAIADS.

Feſtus calls them *Querquetulanæ*, as being iſſued, or ſprung from Oaks. An ancient Poet, one *Pherenicus*, in *Athenæus*, L. III. calls the Vine, Fig-Tree, and other Fruit Trees, *Hamadryades*, from their Mother's Name.

HAMAXOBII, HAMAXOBIANS, in the ancient Geography, a Nation of People who lived wholly in Chariots; whence their Appellation, from αμαξα, *a Car*, or *Chariot*, and βιος, *Life*.

The *Hamaxobii*, or *Hamaxobitæ*, were an ancient People of *Sarmatia Europæa*, inhabiting the Southern Part of *Muſcovy*. — They had no Houſes, but Tents made of Leather, and fix'd on Chariots, to be ready for ſhifting and Travel.

HAMBOROUGH *Company*. See COMPANY.

HAMMELING, or HAM-*ſtringing*, the Act of cutting off the *Ham*.

Hameling, or *Hambling* of Dogs, is the ſame with Expeditating, or Lawing. See EXPEDITATING.

HAMLET, HAMEL, or HAMPSEL, from the Saxon, *Ham*, Houſe, and the German, *Let*, Member; are Diminutives of *Ham*; and ſignifie a little Village; or rather, a Part of a Village. See VILLAGE.

The learned *Spelman* upon theſe Words, ſhewing the Difference between *Villa integra*, *Villa dimidia*, & Hamleta, ſays, Hamleta *vero, quæ medietatem friborgi non obtinuit, hoc eſt ubi quinque capitales plegii non deprehenſi ſint.* — The Statute of *Exon*, 14 *Edw.* I. mentions this Word thus, *Les noſmes de toutes les Villes &* Hamlets *que ſont en ſon Wapentake.* In an ancient MS. it is expounded *the Seat of a Free-holder.*

HAMMER, an Inſtrument of Iron, with a Handle of Wood; uſed in moſt mechanic Arts, to beat, ſtretch, drive, *&c.* See BEATING, *&c.*

Bodies capable of being ſtretch'd, or extended, under the *Hammer*, are ſaid to be *malleable*. See MALLEABILITY.

The *Latins* call it *Malleus*, of *Martellus*, by which Name *Pliny* calls it, when he ſays, that *Cynira*, Daughter of *Agriope*, invented the *Hammer* and Pinchers. *Menage* derives the *Latin* Name *a Marte, & Martus.*

The *Hammers* of Forges, are moved or worked by a Water-Mill. See FORGE.

HAMMER *Hardening*. See HARDENING.

HAMMER *of a Clock*. See CLOCK and CLOCK-WORK.

HAMMER, in Anatomy. See MALLEUS.

HAMMERING, the Act of beating, or extending, and faſhioning a Body under the *Hammer*. See HAMMER.

When it is perform'd on Iron heated for the Purpoſe, the Smiths uſually call it *Forging*. See FORGING.

HAMMERING, in Coining. — A Piece of Money, or a Medal, is ſaid to be *Hammer'd*, when ſtruck, and the Impreſſion given, with a *Hammer*, and not with a Mill. See COIN and MEDAL.

For the Method of Coining with the Hammer, See COINING.

HAMMOCK, or HAMAC, a Kind of hanging-Bed; ſuſpended between two Trees, Poſts, Hooks, or the like; much uſed throughout the *Weſt Indies*, as alſo on Board of Ships.

The *Indians* hang their *Hamacs* to Trees, and thus ſecure themſelves from wild Beaſts and Inſects, which render lying on the Ground dangerous.

The People of the *Caribbee* Iſlands are wonderfully ſuperſtitious in the Point of their *Hamacs*; and do not make them without a deal of Ceremonies. — At each End of the Room, they put Bags of Aſhes, without which, it is the Opinion, that the *Hammock* won't laſt. If they were to eat Figs on a *Hammock*, they believe it would rot: Nor dare they eat any Fiſh that has good Teeth, as believing that would make their *Hammock* ſoon wear thro'.

According

According to Fa. *Plumier*, who has often made uſe of the *Hamac* in the *Indies*, it conſiſts of a large, ſtrong Coverlet, or Sheet of coarſe Cotton, about ſix Foot Square: On two oppoſite Sides, are Loops of the ſame Stuff, thro' which a String is run, and thereof other Loops are form'd, all which are tied together with a Cord; and thus is the whole faſten'd to two neighbouring Trees, in the Field; or two Hooks, in Houſes.

This Kind of Bed ſerves, at the ſame Time, for Bed, Quilts, Sheets, Pillow, *&c.*

HAMUS, or HAMULUS, is an Hook. See HOOK.

Surgeons alſo make Uſe of an Inſtrument thus called, to extract the Child in difficult Labours.

HANAPER, or HAMPER, an Office in Chancery. See CHANCERY.

The *Clerk of the Hanaper*, ſometimes ſtyled *Warden of the Hanaper*, receives all Money due to the King for Seals of Charters, Patents, Commiſſions, and Writs; and attends the Keeper of the Seal daily in Term-Time, and all Times of Sealing; and takes into his Cuſtody all ſealed Charters, Patents, and the like, which he receives into Bags; but anciently, it is ſuppoſed, into *Hampers*, which gave Denomination to the Office.

There is alſo an Officer, who is Comptroller of the *Hamper*. See COMPTROLLER.

HANCES, in a Ship, are Falls, or Deſcents of the Fife-Rails, which are placed as Baniſters in the Poop, *&c.* and down to the Gang-way.

HANCES, or HANSES, in Architecture, are the Ends of Elliptical Arches; which are Arcs of ſmaller Circles than the Scheme, or middle Part of the Arch. See ARCH.

HAND, *Manus*, a Part, or Member of the Body of Man; making the Extremity of the Arm. See ARM.

The Mechaniſm of the *Hand* is very curious; excellently contrived to fit it for the various Uſes and Occaſions we have for it, and the great Number of Arts and Manufactures it is to be imploy'd in. It conſiſts of a Compages of Nerves, and little Bones, joynted into each other, which give it a great Degree of Strength, and at the ſame Time an unuſual Flexibility, to enable it to handle adjacent Bodies, lay hold of them, and graſp them, in order either to draw them towards us, or thruſt them off.

Anaxagoras is repreſented by ancient Authors, as maintaining, that Man owes all his Wiſdom, Knowledge, and Superiority over other Animals, to the Uſe of his *Hand*. — *Galen* puts the Thing another Way: Man, according to him, is not the wiſeſt Creature, becauſe he has *Hands*; but he had *Hands* given him becauſe he was the wiſeſt Creature. For it was not our *Hands* that taught us Arts, but Reaſon. The *Hands* are the Organs of Reaſon, *&c. De uſu part.* Lib. I. C. 3.

HAND, in Medicine: — The *Hand*, among Anatomiſts, extends from the Shoulder to the Fingers Ends; call'd alſo the *greater Hand*.

It is divided into three Parts: — The firſt reaching from the Shoulder to the Elbow; properly call'd the *Arm*, *Brachium*. See ARM.

The ſecond reaches from the Elbow to the Wriſt. — The third, the *Hand*, *Manus*, properly ſo call'd; call'd alſo the *leſſer Hand*, or *extrema Manus*. — This is ſubdivided into three other Parts; the *Carpus*, which is the Wriſt: — The *Metacarpus*, which is the Body of the *Hand*, including the *Dorſum* and *Vola*: — And the Fingers, *Digiti*. See each deſcribed under its proper Article, CARPUS, METACARPUS, and FINGERS.

The Muſcles whereby the *Hand* is moved and directed, are the *Palmares*; the *Flexor* and *Extenſor*, *Carpi Ulnaris*, and *Radialis*; *Perforatus*; *Perforans*; *Lumbricales*; *Interoſſei*; *Extenſors*, *Abductors*, and *Flexors* of the Fingers. See each in its Place, PALMARIS, FLEXOR, EXTENSOR, *&c.*

The *Hand* makes the Subject-Matter of the Art of Palmiſtry, which is employ'd in conſidering the ſeveral Lines and Eminencies of the Palm of the *Hand*, their Significations, *&c.* See PALMISTRY.

Among the *Egyptians*, the *Hand* was uſed as a Symbol of Strength: — Among the *Romans*, it was held a Symbol of Fidelity; and accordingly was conſecrated to that Goddeſs, by *Numa*, with great Solemnity.

In Chirurgery, they uſe an *Iron Hand*, which is a Kind of Artificial, or Subſidiary *Hand*, to be applied, and fitted on the Stump of an Arm, after the *Hand* has been cut off.

It has moſt of the Motions of the natural *Hand*; which are effected by Means of Springs, Pullies, Pinions, Buttons, *&c.* *Amb. Pare* gives us its Structure at large.

HAND, in Falconry, is uſed for the Foot of the Hawk: — To have a clean, ſtrong, ſlender, glutinous *Hand*, well clawed, are ſome of the good Qualities of a Hawk or Falcon. See HAWK and FALCON.

HAND, in the Manage, is a Term variouſly uſed. — Sometimes it ſtands for the Fore-feet of a Horſe.

Hand is alſo uſed, for a Diviſion of the Horſe into two Parts, with Reſpect to the Rider's *Hand*. — The *Forehand* includes the Head, Neck, and fore-Quarters. — The *Hind-hand* is all the reſt of the Horſe.

Spear-HAND, or *Sword-Hand*, is uſed for a Horſeman's Right-*Hand*.

Bridle-Hand, is his Left-*Hand*. — Your regular Cavalier holds his Bridle-*Hand* 2 or 3 Inches above the Pommel of the Saddle.

A Horſeman is ſaid to have *no Hand*, when he only makes Uſe of the Bridle unſeaſonably; not knowing how to give the Aids or Helps of the *Hand* with Diſcretion.

To keep a Horſe *upon the Hand*, ſignifies to feel him in the Stay upon the *Hand*, and to be always prepared to avoid any Surprize from him. — When the Horſe obeys and anſwers the Effects of the *Hand*, he is ſaid to *reſt well upon the Hand*.

A Horſe-man ought to have a *light Hand*, i. e. he ought only to feel the Horſe upon his *Hand*, ſo as to reſiſt him whenever he attempts to ſlip from it; and aſſoon as he has made his Reſiſtance, ought to lower the Bridle, inſtead of cleaving to it.

If a Horſe, by a too great Eagerneſs to go forward, *preſſes* too much *upon the Hand*; it ought to be ſlacken'd at certain Times, and at other Times to be kept hard, in order to diſappoint him from continually preſſing upon the Bit. This Facility, or Liberty of the Horſeman, of ſlackening or ſtiffening the *Hand*, makes what they call a *good Hand*.

A Horſe is ſaid to *force the Hand*, when he does not fear the Bridle, but runs away in Spite of the Rider.

To *work a Horſe upon the Hand*, is to manage him by the Effects of the Bridle, without any other Helps, except the Calves of the Legs.

To be *heavy upon the Hand*, is underſtood of a Horſe, which by Reaſon of the Softneſs of his Neck, the Weakneſs of his Back, the Largeneſs of his Head, and the Weight of his Fore-quarters; or his Wearineſs; throws himſelf upon the Bridle, without making any Reſiſtance, or Effort, to force the Horſeman's *Hand*.

Harmonical HAND, in Muſic, is uſed by ſome Writers for the ancient Diagramma, or Scale of Muſic, upon which they learn'd to ſing. See GAMMUT, SCALE, DIAGRAM, *&c.*

The Reaſon of the Appellation was, that *Guido Aretin*, upon inventing the Notes, *ut*, *re*, *mi*, *fa*, *ſol*, *la*, diſpoſed them on the Fingers of the Figure of a *Hand* ſtretch'd out. See NOTE.

He changed the Letters of the Alphabet, uſed till that Time to expreſs the Notes, for theſe ſix Syllables, which he took out of the firſt Strophe of the Hymn of St. *John Baptiſt*, compoſed by *Paulus Diaconus*.

Ut *queant Laxis* re-*ſonare fibris*
Mi-*ra Geſtorum* fa-*muli tuorum*
Sol-*ve polluti* la-*bii reatum*.
Sancte Joannes.

Impoſition of HANDS, or *Laying on of Hands*, ſignifies the conferring of Holy Orders; a Ceremony wherein the *Hands* are laid on the Head of another, as a Sign of a Miſſion, or of a Power given him to exerciſe the Functions of the Miniſtry belonging to the Order. See ORDINATION, *&c.*

The Apoſtles began to appoint Miſſionaries by the Impoſition of *Hands*. See IMPOSITION.

Waſhing one's HANDS of a Thing, ſignifies the witneſſing that a Perſon has no Part or Concern in an Affair; and that he will not be anſwerable for it: As *Pilate* did in Reſpect of our Saviour's Death. — In this Senſe a Man is ſaid to have *clean Hands*; and particularly a Judge, to denote that he has not been corrupted by Bribes or Preſents.

Left-HAND, — To marry with the *Left Hand*, is to Eſpouſe a Woman of inferior Degree, whoſe Children, in virtue of ſuch Marriage, are not to ſucceed to the Father, nor ſhare with the other Children; but be contented with what Fortune the Husband ſhall appoint them the next Day after Marriage.

This Method of taking *Left-handed Wives* obtains in *Germany*. See MARRIAGE.

HAND, is alſo uſed for the Index of a Clock, Watch, or the like, ſerving to point the Hour, *&c.* See INDEX.

HAND *of Juſtice*, is a Scepter, or Batoon, a Cubit long, having an Ivory Hand at the Extremity thereof; uſed as an Attribute of Kings, wherewith they are painted in their Royal Robes; as on the Coronation Day.

Authors uſually call it *Virga*. — *Louis* X. of *France*, firſt took the *Hand* of Juſtice for his Deviſe.

Long-HAND, *Longimanus*. — A Kind of Title, or Surname, aſſumed by certain Princes. *Artaxerxes*, the Son of *Xerxes*, and his Succeſſor in the *Perſian* Empire, were thus denominated; as having one *Hand* longer than the other.

Short HAND. See TACHEOGRAPHY.

Bloody HAND. See BLOODY-*Hand*.

HAND is alſo figuratively uſed in Painting, Sculpture, *&c.* for the Manner or Style of this or that Maſter. See MANNER, STYLE, *&c.*

HANDS, are born in Coat Armour, *dexter* and *ſiniſter*; that is, right and left; expanded or open, and after other Manners.

Azure, a *dexter* Hand couped at the Wriſt, and extended in pale Argent; is born by the Name of *Brome*. — Argent, three *ſiniſter* Hands, couped at the Wriſt, Gules, by the Name of *Maynard*.

The Knights Baronets, are to bear in a Canton, or in an Eſcutcheon, which they pleaſe, the Arms of *Ulſter*, viz. In a Field Argent, a *ſiniſter* Hand couped at the Wriſt, Gules. See BARONET.

HAND-*Borow*, from the *Saxon*, Bopg-hand, a *Surety*; *eſt quaſi vas, aut fidei juſſor manuenſis, hoc eſt, minor, ſeu inferior; nam Head-borow, vas eſt Capitalis, vel ſuperior*. Spelman. See HEAD BOROUGH.

HAND-*Breadth*, is ſometimes uſed for a Meaſure of three Inches. See INCH and MEASURE.

HAND, or HANDFUL, is alſo a Meaſure of four Inches, by the Standard; according to the Stat. 33 *H.* 8. *Cap.* 5. See MEASURE.

The *Hand*, among Jockeys, is four Fingers Breadth, and is the Meaſure of a Fiſt clench'd; by which the Height of Horſes is meaſured.

A Horſe for War ſhould be 16 or 18 *Hands* high.

HAND-HABEND, in our ancient Cuſtoms, denotes a Thief taken in the very Fact. See HOND-HABEND.

Si quis hominem liberum latrocinium, ſeu rem furatam ſecumdeferentem (*quem* hæbbenðne hanða *vocant*) *comprehenderit*, &c. Concil. Berghamſted, *Anno* 697.

HANDLING, a Term uſed in Reſpect of fighting Cocks; ſignifying the meaſuring the Girth of them, by griping one's Hands and Fingers about the Cock's Body.

HANGINGS, Linings for Rooms, made of Arras, Tapeſtry, *&c.* See TAPESTRY.

HANGS-*Over*, in Building. See BATTER.

HANSE, or ANSE, an ancient Name, for a Society or Company of Merchants; particularly thoſe of certain Cities in *Germany*, &c. hence call'd *Hanſe Towns*. See COMPANY and HANSE *Town*.

HANSE *Towns*, certain Free Towns of *Germany*, and the *North*, united in ſtrict League, under Laws and Magiſtrates of their own appointing, for the better carrying on of Commerce, and their mutual Safety and Aſſiſtance. See COMPANY.

This celebrated Aſſociation, which makes ſo great a Figure in the Hiſtory of Commerce, is commonly ſuppoſed to have commenced at *Bremen* on the *Weſer*, in the Year 1164; others ſay in 1260, immediately after the Incurſions and Pyracies of the *Danes*, *Normans*, &c. others in 1206; and others in 920: But be its Origin when it will, it was confirm'd and re-eſtabliſh'd in 1270. See COMMERCE.

At firſt it only conſiſted of Towns ſituate on the Coaſts of the *Baltic* Sea, or not far from it. — But its Strength and Reputation increaſing, ſcarce any Trading City in *Europe* but deſired to be admitted into it.

Under our King *Henry* III. the *Hanſe* conſiſted of no leſs than 62 Cities; to which were afterwards added 4 more.

France furniſhed to the Confederacy, *Rouen*, St. *Malo*, *Bourdeaux*, *Bayonne*, and *Marſeilles*: Spain, *Barcelona*, *Sevil*, and *Cadix*: England, *London*: Portugal, *Liſbon*: — The Low-Countries, *Antwerp*, *Dort*, *Amſterdam*, *Bruges*, *Rotterdam*, *Oſtend*, and *Dunkirk*: And Italy and Sicily, *Meſſina*, *Leghorn*, and *Naples*.

The *Hanſe* was divided into 4 Claſſes, or Members, which were thoſe of *Lubec*, *Cologn*, *Brunſwick*, and *Pruſſia*, or *Dantzic*. — Thoſe four Cities were the Heads of the four Members; and *Lubec* that of the whole *Hanſe*.

Beſide this, the *Hanſe* had four principal Factories, or Staples, at *London*, *Bruges*, *Novogrod*, and *Berg*; that of *Bruges* was afterwards removed to *Antwerp*. But the firſt and principal was that of *Lubec*, which ſtill remains the Head of the Aſſociation. That of *London* was call'd *Guildhalla Teutonicorum*, or the *Stillyard*. See STILLYARD.

The Government of the *Hanſe* was at firſt Ariſtocratical: Then it came under the ſole Direction of the Grand Maſter of the *Teutonic* Order; and, at length, divers Princes and Lords made Intereſt for it.

The End of the XIV*th* Century, and the Beginning of the XV*th*, were the moſt flouriſhing Times of this Alliance. — They were then in a Condition to proclaim War againſt Kings: Hiſtory is not ſilent, as to that they waged againſt *Waldemar* King of *Denmark*, about the Year 1348; and againſt *Eric*, in 1428; particularly this laſt, where the *Hanſeatic* Fleet conſiſted of Forty Ships, containing above 12,000 Regular Troops, beſide the Seamen.

But the ſeveral Princes, whoſe principal Cities were enter'd into the Aſſociation, began to think it Policy to put ſome Bounds to a Power, which, in Time, might have proved formidable to themſelves. — The Means were eaſy, and ſhort: Each withdrew the Merchants of his Country from the Aſſociation; which, in a little Time, from the great Number of Cities it had comprehended, found it ſelf ſunk to thoſe few which had begun the Confederacy; which henceforth was call'd the *Teutonic Hanſe*. Tho' theſe are ſtill ſo conſiderable in Point of Commerce, that they are admitted to make Treaties with the greateſt Kings.

The Diviſions that were got among them, contributed greatly to their Fall: Nor muſt it be forgot, that the Eſtabliſhment of the Republic and Commerce of *Holland* had its Share therein.

The four firſt Cities which form'd the League, were *Lubec*, *Cologn*, *Brunſwick*, and *Dantzick*, which were call'd *Mother-Towns*; as thoſe afterwards added thereto, were call'd *Daughters* thereof.

A great Number of Towns in *Germany*, ſtill retain the Title of *Hanſe Towns*; but this is rather an empty Title which they affect, than any Argument of their continuing to trade under the Laws and Protection of the ancient Alliance; there being ſcarce any but *Lubec*, *Hamburgh*, *Bremen*, *Roſtock*, *Brunſwick*, and *Cologn*, that are truly *Hanſeatic*, and that have Deputies at the Aſſemblies held on the common Occaſions thereof.

The great Trade the *Dutch* maintain with the *Hanſe Towns*, contributes not a little towards maintaining ſome Part of them in their ancient Reputation; and 'tis principally to their Alliance with that flouriſhing Republic, that they owe the Preſervation of their Liberties: The Succours ſome of them have received from the *Dutch*, having ſav'd them more than once from the Enterprizes of the Neighbouring Princes. See COMMERCE.

The Word *Hanſe*, is obſolete *High-Dutch*, or *Teutonic*, and ſignifies Alliance, Confederacy, Aſſociation, *&c.*

Others derive it from the two *German* Words, *Am-ſee*, that is, on the Sea; by Reaſon the firſt *Hanſe Towns* were all ſituate on the Sea-Coaſt: Whence, the Society is ſaid to have been firſt call'd, *aen zee ſteden*, that is, Cities on the Sea; and afterwards, by Abbreviation, *Hanſee*, and *Hanſe*.

HANSEATIC, ſomething belonging to the Alliance, or Company of the *Hanſe*.

Thus we ſay, The *Hanſeatic* Body: The *Hanſeatic* Towns, *&c.* See HANSE.

HANSGRAVE, the Title of an Officer in *Germany*. — The *Hanſgrave* is the chief of a Company, or Society.

The Word is a Compound of the German, *Hanſe*, and *Graf*, Count. See GRAVE.

HAP, in Law, from the French, *Happer*, to catch, or ſnatch; ſignifies the ſame with us: — Thus we ſay, to *Hap* the Poſſeſſion of a deed Poll, *Littleton*, Fol. 8. to *Hap* the Rent.

If Partition be made between two Partners, and more Land be allowed the one than the other; and ſhe that hath moſt of the Land, charges her Land to the other, and *happeth* the Rent; ſhe ſhall maintain Aſſize without Speciality. *Term. ley.*

HAQUENY, *Hackney*, an old *French* Word for an ambling Horſe. See AMBLING.

HAQUEBUT, a Kind of Gun, or Caliver, otherwiſe call'd an *Harquebuſs*, or *Arquebuſſe*. See HARQUEBUSS.

It is alſo call'd a *Hagbut*. — The *Haquebut* is a bigger Sort of Hand-Gun; thus call'd from the *Teutonic*, *Haeck Buyſe*.

HARANGUE, a Modern *French* Name for a *Speech*, or *Oration*; i. e. a Diſcourſe made by an Orator in public. See ORATION.

Menage derives the Word from the German *huborung*, or the *Engliſh* hearing. Others derive it from the Latin, *Ara*, Altar, by Reaſon the firſt *Harangues* were made before Altars: Whence the Verſe of *Juvenal*,

Aut Lugdunenſem Rhetor dicturus ad Aram.

The Word is alſo frequently uſed in an ill Senſe, *viz.* For a too pompous, prolix, or unſeaſonable Speech, or Declamation. — In *Homer*, the Poets generally *Harangue*

ere

ere they come to fight; as in *England*, Criminals *Harangue* on the Scaffold before they die. St. *Evrem.*

HARBINGER, an Officer of the King's Houſhold, having four Yeomen under him, who ride a Day's Journey before the Court when they travel, to provide Lodgings, &c.

HARBOUR, a *Sea-Port*; or a Station where Ships may ride ſafe at Anchor. See PORT.

The Word is chiefly applied to thoſe cloſed, or ſecured with a Bomb, or Chain; and that are furniſhed with a Mole, &c. See MOLE, &c.

To *Harbour*, is to lodge, receive, or entertain; to find a retiring Place. — Among Hunters, an Hart is ſaid to *Harbour* when he goes to Reſt; whence to *unharbour* a Deer, is to diſlodge him. See HUNTING.

HARDENING, the Act of communicating a greater Degree of *Hardneſs* to a Body, than it already has. See HARDNESS.

The *Hardening* and Tempering of Iron and Steel, makes a conſiderable Article in the mechanical Arts. See IRON, STEEL, TEMPERING, &c.

There are divers Ways of effecting it; as by the Hammer; quenching it, when hot, in cold Water; Caſe hardening, &c.

To *harden* and temper *Engliſh*, *Flemiſh*, and *Swediſh* Steel, they give it a pretty high Heat, then ſuddenly quench it in Water, to make it very hard: *Spaniſh* and *Venice* Steel only need a blood red Heat, and then quench'd. See HEAT.

The Workmen ſometimes grind Indigo, and Sallad Oyl together, and rub the Mixture upon it with a Woollen Rag while it is heating, and let it cool of it ſelf.

If the Steel be too *hard* or brittle for an Edge, ſpring, or pointed Inſtrument, it may be let down, or made ſofter, thus: Take a Piece of Grind-ſtone, or Whet-ſtone, and rub hard on the Work, to take the black Scurf off it, and brighten it; then let it heat in the Fire, and, as it grows hotter, the Colour will change by degrees, coming firſt to a light Goldiſh Colour, then to a darker Goldiſh Colour, and at laſt to a blue Colour: Chuſe which of theſe Colours the Work requires, and quench it ſuddenly in the Water.

Hammer HARDENING, is moſtly uſed on Iron and Steel Plates, for Saws, Springs, Rules, &c. See SPRING, &c.

Caſe HARDENING is thus perform'd: — Take Cow-horn, or hoof, dry it well in an Oven, and beat it to Powder; put as much Bay-Salt as Powder into ſtale Urine; or White-wine Vinegar, and mix them well together, cover the Iron, or Steel, all over with this Mixture, and wrap it up in Loam, or Plate Iron, ſo as the Mixture touch every Part of the Work; then put it in the Fire, and blow the Coals to it, till the whole Lump have a blood-red Heat, but no higher; laſtly, take it out and quench it.

HARDNESS, *Durities*, in Philoſophy, that Quality in Bodies, whereby their Parts cohere firmly together, ſo as to reſiſt the Touch. See COHESION.

In this Senſe *Hardneſs* coincides with what on other Occaſions we call *Firmneſs*, and ſometimes *Solidity*, in Oppoſition to Fluidity. See FIRMNESS, SOLIDITY, and FLUIDITY.

More ſtrictly ſpeaking, a Body is ſaid to be *hard*, when its Parts mutually cohere, ſo as not to yield inwards, or give Way to an external Impulſe; and therefore not ſubject to any Motion in Reſpect of each other, without breaking the Body. — In which Senſe, *Hardneſs* ſtands oppoſed to *Softneſs*, where the Parts do readily give Way.

The Peripateticks make *Hardneſs* a ſecondary Quality; as ſuppoſing it to ariſe from *Dryneſs*, which is a primary one, and to be in Proportion thereto. See QUALITY.

Its remote Cauſes, according to them, are either Heat or Cold, according to the Diverſity of the Subject: Heat producing Dryneſs, and by that Means *Hardneſs* in Clay; and Cold, doing the like in Wax.

The *Epicurean* and Corpuſcular Philoſophers, account for *Hardneſs*, from the Figure of the component Parts, and their Union together. — Accordingly, ſome aſcribe it to the Atoms, or Particles of the Body, being hooked, and thus mutually catching and hanging upon one another: But this is directly bringing that for an Anſwer, which was the Queſtion. For how do thoſe hooked Parts hang on? See PARTICLE.

Again: The *Carteſians* will have the Coheſion of hard Bodies, effected by Reſt; that is, by nothing at all. See REST.

Sir *Iſ. Newton* ſhews, that the primary Particles of all Bodies, whether ſolid or fluid, are *hard*, perfectly *hard*; and not capable of being broke or divided by any Power in Nature. — See MATTER, BODY, ELEMENT, &c.

Theſe Particles he maintains to be connected together by an attractive Power; and according to the Circumſtances of this Attraction, is the Body either *hard*, or ſoft, or even fluid. See ATTRACTION.

If the Particles be ſo diſpoſed or fitted for each other, as to touch in large Surfaces, ſuch Body will be *hard*; and the more ſo, as thoſe Surfaces are the larger. If, on the contrary, they only touch in ſmall Surfaces, the Body, by the Weakneſs of the Attraction, will remain ſoft. See PARTICLE.

HARDS, or HURDS, of Flax, or Hemp, are the coarſer Parts, ſeparated in the dreſſing of it, from the Tear, or fine Stuff. See HEMP.

HARE-*Hunting*. See *Hare*-HUNTING.

HARIOT, or HERIOT, a Due, or Service, belonging to the Lord at the Death of his Tenant; conſiſting of the beſt Beaſt the Tenant had at the Time of his Death. See SERVICE.

Coke on *Littleton* obſerves, that *Heriot* in *Saxon* is called ꝥeꝥegat, *q. d.* the *Lord's Beaſt*: ꝥeꝥe, ſignifying *Lord*, and ȝeat, *Beaſt*; from which others diſſent, urging that ꝥeꝥe, in *Saxon*, ſignifies an *Army*, and ȝeoт, *fuſus*: And that the *Saxon* ꝥeꝥegat, whence we derive our *Hariot*, ſignified *Proviſion* for War, or a Tribute, or Relief, given to the Lord of a Mannor, for his better Preparation towards War. — *Erat enim* Heriotum *militaris ſupellectilis præſtatio, quam obeunte vaſſallo, Dominus reportavit in ſui ipſius munitionem*, ſays *Spelman*.

By the Laws of *Canutus*, Tit. de *Heriotis*, it appears, that at the Death of the great Men of this Nation, ſo many Horſes and Arms were to be paid, as they were in their reſpective Life obliged to keep for the King's Service. See RELIEF.

But *Heriot* is now wholly taken for a Beaſt, which the Lord by Cuſtom, chuſes out of all the Store of his deceaſed Tenant, be it Horſe, Ox, &c. and in ſome Mannors, the beſt Piece of Plate, Jewel, or the beſt Moveable.

Heriot is of two Sorts: 1°. *Heriot Cuſtom*, where *Heriots* have been paid Time out of Mind by Cuſtom, after the Death of a Tenant for Life. 2°. *Heriot Service*, when a Tenant holds by ſuch Service to pay *Heriot* at the Time of his Death; which Service is expreſſed in the Deed of Feoffment. See SERVICE.

For this the Lord ſhall diſtrain; and for the other he ſhall ſeize and not diſtrain. — If the Lord purchaſe Part of the Tenancy, *Heriot Service* is extinguiſhed; but not ſo of *Heriot Cuſtom*. See FARLEY and SOLE *Tenant*.

HARLEQUIN, a *Buffoon*. — In the *Italian* Comedy, the *Harlequin* is the ſame with a Merry Andrew, or Jack Pudding in our Drolls, on Mountebanks Stages, &c. — We have alſo introduced the *Harlequin* upon our Theatres; and this is one of the ſtanding Characters in our Groteſque Entertainments.

The Term took its Riſe from a famous *Italian* Comedian, or rather Buffoon, who came to *Paris* under *Henry* III. and who frequenting the Houſe of M. *de Harlay*; his Companions uſed to call him *Harlequino*, q. d. *little Harlay*, a Name which has deſcended to all thoſe of the ſame Rank, and Profeſſion.

HARLOT, a Woman given to Incontinency; or that makes a *Habit* or a Trade of proſtituting her Body.

The Word is ſuppoſed to be uſed for *Whorelet*, or a little Whore. — Others derive it from *Arletta*, Miſs to *Robert* Duke of *Normandy*, and Mother to *William the Conquerour*: *Cambden* derives it from one *Arlotha*, Concubine to *William the Conquerour*. — Others from the Italian *Arlotta*, a proud Whore.

HARMONIA, in Muſic, &c. See HARMONY.

HARMONIA, in Anatomy, a Sort of Jointure, or Articulation of the Bones. See ARTICULATION.

Harmonia is a Species of the *Symphyſis*, or Juncture, intended for abſolute Reſt. See SYMPHYSIS.

Two Bones are ſaid to be joyn'd *per Harmoniam*, by *Harmonia*, when the Jointure is in one uniform, right, or circular Line; or when the Bones meet with even Margins: In Contradiſtinction from *Sutura*, where they are indented. See SUTURA.

The Bones of the upper Jaw are joyn'd *per Harmoniam*. See MAXILLA *Superior*.

HARMONICA, HARMONICKS, a Branch, or Diviſion of the antient Muſic. See MUSIC.

The *Harmonica* is that Part which conſiders the Differences, and Proportion of Sounds, with Reſpect to acute and grave: In Contradiſtinction from *Rythmica* and *Metrica*. See RYTHMICA and METRICA.

The only Part of their Muſic the Antients have left us any tolerable Account of, is the *Harmonica*; which it ſelf is but very general and theoretical.

Mr.

Mr. *Malcolm* has made a very induſtrious, and learned Inquiry into the *Harmonica*, or Harmonic Principles of the Antients. — They reduced their Doctrines into ſeven Parts, *viz.* of *Sounds*; of *Intervals*; of *Syſtems*; of the *Genera*; of the *Tones*, or *Modes*; of *Mutations*; and of the *Melopœia*. See each conſider'd under its proper Article SOUND, INTERVAL, SYSTEM, GENERA, MODE, MUTATION and MELOPOEIA.

HARMONICAL *Arithmetic*, is ſo much of the Theory and Doctrine of Numbers, as relates to making the Compariſons, Reductions, *&c.* of Muſical Intervals, which are expreſſed by Numbers, in order to our finding their mutual Relations, Compoſitions and Reſolutions. See INTERVAL, *&c.*

HARMONICAL *Compoſition*, in its general Senſe, includes the Compoſition both of *Harmony* and *Melody*, i. e. of Muſic, or Songs, both in a ſingle Part, and in ſeveral Parts. See COMPOSITION.

In its more proper and limited Senſe, *Harmonical Compoſition* is reſtrain'd to that of Harmony. In which Senſe it may be defined the Art of diſpoſing and concerting ſeveral ſingle Parts together, in ſuch Manner, as to make one agreeable whole. See SONG, *&c.*

The Art of Harmony has been long known under the Name of *Counterpoint*. See COUNTERPOINT.

At the Time when Parts were firſt introduced, Muſic being then very ſimple, there were no different Notes of Time; and the Parts were in every Note made Concord.

This they afterwards call'd *ſimple*, or *plain Counterpoint*, to diſtinguiſh it from another Kind, then introduced, wherein Notes of different Value were introduced, and Diſcords brought in between the Parts. See DISCORD.

This they call'd *Figurative Counterpoint*. See FIGURATIVE *Counterpoint*.

HARMONICAL *Interval*, is an Interval, or Difference of two Sounds which are agreeable to the Ear, whether in Conſonance or Succeſſion. See INTERVAL.

Harmonical Intervals, therefore, are the ſame with *Concords*. See CONCORD.

They are thus call'd, as being the only eſſential Ingredients of Harmony. See HARMONY.

HARMONICAL *Proportion*, is a Sort of Proportion between three Quantities, wherein the Difference of the firſt and ſecond, is to the Difference of the ſecond and third; as the firſt is to the third.

Thus, 2 : 3 : 6 are *Harmonical*, becauſe 2 : 6 :: 1 : 3 are Geometrical.

So four Numbers are *Harmonical*, when the firſt is to the fourth, as the Difference of the firſt and ſecond, to the Difference of the third and fourth.

Thus, 24 : 16 : 12 : 9 are *Harmonical*; becauſe 24 : 2 :: 8 : 3 are Geometrical.

For the Laws and Rules of HARMONICAL *Proportion*. See *Harmonical* PROPORTION.

HARMONICAL *Series*, is a Series of many Numbers in continual *Harmonical* Proportion. See SERIES.

If there be four or more Numbers, whereof, every three immediate Terms are *Harmonical*; the whole makes an *Harmonical Series*, of continual *Harmonical* Proportionals: As 30 : 20 : 15 : 12 : 10.

Or if every 4 immediately next each other are *Harmonical*, 'tis alſo a continual *Harmonical Series*, but of another Species; as 3, 4, 6, 9, 18, 36, *&c.*

HARMONICAL *Sounds*, is an Appellation given by M. *Sauveur* to ſuch Sounds as always make a certain determinate Number of Vibrations in the Time that ſome other fundamental Sound, to which they are referr'd, makes one Vibration. See SOUND and VIBRATION.

Harmonical Sounds, are produced by the Parts of Chords, *&c.* which vibrate a certain Number of Times while the whole Chord vibrates once. See CHORD.

By this they are diſtinguiſhed from the third, fifth, *&c.* where the Relations of the Vibrations is 4 to 5, or 5 to 6, or 2 to 3. See THIRD, *&c.*

The Relations of Sounds, had only been conſider'd in the Series of Numbers 1 : 2, 2 : 3, 3 : 4, 4 : 5, *&c.* which produced the Intervals call'd *Octave*, *Fifth*, *Fourth*, *Third*, &c. Mr. *Sauveur* firſt conſider'd them in the natural Series, 1, 2, 3, 4, &c. and examined the Relations of the Sounds ariſing therefrom. — The Reſult is, that the firſt Interval 1 : 2, is an Octave; the ſecond 1 : 3, a twelfth; the third 1 : 4, a fifteenth, or double Octave; the fourth 1 : 5, a ſeventeenth; the fifth 1 : 6, a nineteenth, *&c.*

This new Conſideration of the Relations of *Sounds*, is more natural than the old one; and does expreſs and repreſent the whole of Muſic, and is in Effect all the Muſic that Nature gives without the Aſſiſtance of Art. — The String of a Harpſichord, or a Bell, beſide their general Sound, which is proportionate to their Length, Tenſion, *&c.* do alſo at the ſame Time yield other ſubordinate and acuter Sounds, which a nice Ear, with a good Attention, clearly diſtinguiſhes.

Theſe ſubordinate *Sounds* ariſe from the particular Vibrations of ſome of the Parts of the String, or Bell, which are, as it were, detach'd from the reſt, and make ſeparate Vibrations: In Effect, every half, every third, every fourth, *&c.* of the Chord performs its Vibrations apart, while a general Vibration is made of the whole Chord. — Now all theſe ſubordinate Sounds are *Harmonical* with Regard to the whole Sound: The leaſt acute, which we hear, is Octave with the whole Sound; the leaſt acute that follows, makes a twelfth with the whole Sound; the next a ſeventeeth, *&c.* till they grow too acute for the Ear to perceive them. Now throughout the whole, we hear no ſuch Thing as a Sound that makes a fifth, or a third, *&c.* with the whole Sound; none in ſhort, but what are comprized in the Series of *Harmonical* Sounds.

Add, that if the Breath, or Bellows that blow a Wind Inſtrument, be play'd ſtronger and ſtronger, the Tone will be continually rais'd, but this only in the *Ratio* of the *Harmonical Sounds*. — So that it appears that Nature, when ſhe makes as it were a Syſtem of Muſic her ſelf, uſes no other but this Kind of Sounds; and yet they had hitherto remained unknown to the Muſicians: Not but that they frequently fell into 'em, but it was inadvertently, and without knowing what they did. — M. *Sauveur* ſhews that the Structure of the Organ depends entirely on this unknown Principle. See ORGAN.

HARMONY, in Muſic, the agreeable Reſult of an Union of ſeveral Muſical Sounds, heard at one and the ſame Time; or, the Mixture of divers Sounds, which together have an Effect agreeable to the Ear. See SOUND.

As a continued Succeſſion of Muſical Sounds produces *Melody*; ſo does a continued Combination of thoſe produce *Harmony*. See MELODY.

Among the Antients, however, as ſometimes alſo among the Moderns, *Harmony* is uſed in the ſtrict Senſe of *Conſonance*; and ſo is equivalent to the *Symphony*. See CONSONANCE and SYMPHONY.

The Words *Concord*, and *Harmony*, do really ſignify the ſame Thing; tho' Cuſtom has made a little Difference between them. Concord is the agreeable Effect of two Sounds in Conſonance: And *Harmony*, the Effect of any greater Number of agreeable Sounds in Conſonance. See CONCORD.

Again, *Harmony* always implies *Conſonance*: But *Concord* is alſo applied to Sounds in *Succeſſion*; tho' never but where the Terms can ſtand agreeably in Conſonance: The Effect of an agreeable Succeſſion of ſeveral Sounds, is call'd *Melody*; as that of an agreeable Conſonance, *Harmony*.

The Antients ſeem to have been entirely unacquainted with *Harmony*; the Soul of the modern Muſic. — In all their Explications of the *Melopœia*, they ſay not one Word of the Concert, or *Harmony* of Parts. We have Inſtances, indeed, of their joyning ſeveral Voices, or Inſtruments, in Conſonance: But then thoſe Voices, *&c.* were not ſo joyn'd, as that each had a diſtinct and proper Melody, ſo making a Succeſſion of various Concords; but were either Uniſons, or Octaves, in every Note; and ſo all perform'd the ſame individual Melody, and conſtituted one Song. See SONG, SYNAULIA, *&c.*

When the Parts differ, not in the Tenſion of the whole, but in the different Relations of the ſucceſſive Notes; 'tis thus that conſtitutes the modern Art of *Harmony*. See MUSIC and MELOPOEIA.

Harmony is well defined the Sum of Concords, ariſing from the Combination of two or more Concords, *i. e.* of three or more ſimple Sounds, ſtriking the Ear all together: And different Compoſitions of Concords make different *Harmony*.

To underſtand the Nature, and determine the Number, and Preference of *Harmonies*; it is to be conſider'd, that in every compound Sound, where there are no more than three ſimple ones, there are three Kinds of Relations, *viz.* the primary Relation of every ſimple Sound to the fundamental, or graveſt, whereby they make different Degrees of Concord with it: The mutual Relations of the Acute ſounds each with other, whereby they mix either Concord or Diſcord into the Compound: And the ſecondary Relation of the whole, whereby all the Terms unite their Vibrations, or coincide more or leſs frequently.

Suppoſe, *e. gr.* four Sounds, A, B, C and D, whereof A is the graveſt; B next; then C; and D the acuteſt. — Here, A is the fundamental; and the Relations of B, C, and D, to A are primary Relations: So, if B be a 3d *g* above A, that primary Relation is 4 to 5; and if C be 5th to A, that primary Relation is 2 to 3; and if D be

8ve

8ve to A, that is 1 to 2. For the mutual Relations of the acute Terms, B, C, D, they are had by taking their primary Relations to the fundamental, and ſubſtracting each leſſer from each greater: Thus, B to C is 5 to 6, a 3d *l*; B to D is 5 to 8, a 6th *l*, &c. — Laſtly, to find the ſecondary Relation of the whole, ſeek the leaſt common Dividend to all the leſſer Terms or Numbers of the primary Relations, *i. e.* the leaſt Number that will be divided by each of them exactly: This is the Thing ſought; and ſhews that all the ſimple Sounds coincide after ſo many Vibrations of the Fundamental as the Number expreſſes.

So in the preceding Example, the leſſer Terms of the three primary Relations are 4, 2, 1, whoſe leaſt common Dividend is 4. Conſequently, at every 4th Vibration of the fundamental, the whole will coincide.

Now *Harmony*, we have obſerved, is a compound Sound, conſiſting of three, or more, ſimple Sounds. — Its proper Ingredients are Concords; and all Diſcords, at leaſt in the primary and mutual Relations, are abſolutely forbidden. 'Tis true Diſcords are uſed in Muſic; but not for themſelves ſimply, but to ſet off the Concords by their Contraſt and Oppoſition. See DISCORD.

Hence, any Number of Concords being propoſed to ſtand in primary Relation with a common Fundamental; we diſcover whether or no they conſtitute a perfect *Harmony* by finding their mutual Relations. — Thus, ſuppoſe the following Concords, or primary Relations, *viz.* the greater 3d, 5th, and Octave given; their mutual Relations are all Concord, and therefore may ſtand in *Harmony*. For the greater 3d and 5th are to one another, as 5 : 6, a leſſer third. The greater 3d and Octave, are as 5 : 8 a leſſer 6th. And the 5th and Octave are as 3 : 4 a leſſer fourth. But if 4th, 5th, and 8ve, be propoſed, 'tis evident they cannot ſtand in *Harmony*; by Reaſon betwixt the 4th and 5th there is a Diſcord, *viz.* the Ratio 8 : 9. Again, ſuppoſing any Number of Sounds which are Concord, each to the next, from the loweſt to the higheſt; to know if they can ſtand in *Harmony*, we muſt find the primary, and all the mutual Relations, which muſt be all Concord. So let any Number of Sounds be as 4 : 5 : 6 : 8, they may ſtand in *Harmony* by Reaſon each to each is Concord: But the following ones cannot, *viz.* 4, 6, 9, becauſe 4 : 9 is Diſcord.

The neceſſary Conditions of all *Harmony*, then, are Concords in the primary and mutual Relations; on which Footing, a Table is eaſily form'd of all the poſſible Varieties: But to determine the Preference of *Harmonies*, the ſecondary Relations are likewiſe to be conſider'd. — The Perfection of *Harmonies* depends on all the three Relations: It is not the beſt primary Relations that make beſt *Harmony*: For then a 4th and 5th muſt be better than a 4th and 6th. Whereas the firſt two cannot ſtand together, becauſe of the Diſcord in the mutual Relation: Nor does the beſt ſecondary Relation carry it; for then would a 4th and 5th, whoſe ſecondary Relation with a common Fundamental is 6, be better than a leſſer 3d and 5th, whoſe ſecondary Relation is 10: But here alſo the Preference is due to the better mutual Relation. — Indeed, the mutual Relations depend on the primary; tho' not ſo, as that the beſt primary ſhall always produce the beſt mutual Relation: However, the primary Relations are of the moſt Importance; and together with the ſecondary, afford us the following Rule for determining the Preference of *Harmonies*.

Viz. Comparing two *Harmonies*, which have an equal Number of Terms, that which has the beſt primary and ſecondary Relations, is moſt perfect. — But in Caſes, where the Advantage is in the primary Relation of the one, and the ſecondary of the other, we have no certain Rule: The primary are certainly the moſt conſiderable; but how the Advantage in theſe ought to be proportion'd to the Diſadvantage in the other, or *vice verſa*, we know not. So that a well turned Ear muſt be the laſt Reſort in theſe Caſes.

Harmony is divided into Simple and Compound.

Simple HARMONY, is that where there is no Concord to the fundamental above an Octave.

The Ingredients of ſimple *Harmony*, are the ſeven ſimple original Concords, of which there can be but 18 different Combinations, that are *Harmony*; which we give in the following Table from Mr. *Malcolm*.

Table of ſimple HARMONIES.

		2dary *Rel.*			2dary *Rel.*	
5th	8ve	2	3d *g* 5th	4	3d *g*, 5th 8ve
4th	8ve	3	3d *l* 5th	10	3d *l*, 5th 8ve
6th *g*	8ve	3	4th, 6th, *g*	3	4th, 6th, *g* 8ve
3d *g*	8ve	4	3d *g*, 6th *g*	12	3d *g*, 6th *g* 8ve
3d *l*	8ve	5	3d *l*, 6th *l*	5	3d *l*, 6th *l*, 8ve
6th *l*	8ve	5	4th, 6th *l*	15	4th, 6th *l*, 8ve

These are all the poſſible Combinations of the Concords that make *Harmony*: For the 8ve is compounded of a 5th and 4th, or a 6th and 3d; which have a Variety of greater and leſſer; out of theſe are the firſt ſix *Harmonies* compoſed: Then, the 5th being compoſed of the greater 3d, and leſſer 3d, and the 6th of 4th and 3d; from theſe proceed the next ſix of the Table: Then an 8ve joyn'd to each of theſe 6, make the laſt ſix.

The Perfection of the firſt twelve is according to the Order of the Table: Of the firſt ſix each has an Octave, and their Preference is according to the Perfection of the other leſſer Concord joyn'd to the Octave. — For the next ſix, the Preference is given to the two Combinations with the 5th, whereof that which has the 3d *g* is beſt; then to theſe two Combinations with the 6th *g*, of which that which has the 4th is beſt. — For the laſt ſix, they are not placed laſt, as being the leaſt perfect, but becauſe they are the moſt complex, and are the Mixtures of the other 12 with each other. In Point of Perfection they are plainly preferable to the preceding ſix, as having the very ſame Ingredients, and an Octave more.

Compound HARMONY, is that which to the ſimple *Harmony* of one Octave, adds that of another Octave.

For the Compound *Harmonies*, their Variety is eaſily found out of the Combinations of the ſimple *Harmonies* of ſeveral Octaves.

Harmony, again, may be divided into that *of Concords*, and that *of Diſcords*.

The *firſt* is that we have hitherto conſider'd, and wherein nothing but Concords are admitted.

The *ſecond* is that wherein Diſcords are uſed, intermix'd with the Concords. See HARMONICAL *Compoſition*.

Compoſition of HARMONY. See HARMONIC *Compoſition*.

HARMONY, is ſometimes alſo uſed in a laxer Senſe, to denote an Agreement, Suitableneſs, Union, Conformity, *&c.*

The Word is form'd of the *Greek* ἁρμονία, of the Verb ἁρμόζειν, *convenire*, *congruere*, to agree, match, *&c.*

In Muſic, we ſometimes apply it to a ſingle Voice, when ſonorous, clear, and ſoft; or to a ſingle Inſtrument, when it yields a very agreeable Sound. — Thus, we ſay, the *Harmony* of her Voice: of his Lute, *&c.*

In Matters of Learning, we uſe *Harmony* for a certain Agreement between the ſeveral Parts of a Diſcourſe, which renders the reading thereof agreeable. — In this Senſe we ſay *Harmonious* Periods, *&c.* See PERIOD, NUMBERS, *&c.*

In Architecture, *Harmony* denotes an agreeable Relation between the Parts of a Building. See SYMMETRY.

In Painting, they ſpeak of a *Harmony*, both in the Ordonnance and Compoſition, and in the Colours of a Picture. — In the Ordonnance, it ſignifies the Union, or Connection between the Figures, with Reſpect to the Subject of the Piece. See ORDONNANCE.

In the Colouring it denotes the Union, or agreeable Mixture of different Colours. See COLOURING.

M. *de la Chambre* derives the *Harmony* of Colours from the ſame Proportions, as the *Harmony* of Sounds. — This he inſiſts on at large, in his Treatiſe of the Colours *of the Iris*. On this Principle, he lays down green, as the moſt agreeable of Colours, correſponding to the Octave in Muſic; red, to a fifth; yellow, to a fourth, *&c.*

The Name *Harmony*, or *Evangelical Harmony*, is uſed as the Title of divers Books, compoſed to ſhew the Uniformity and Agreement of the four Evangeliſts. See EVANGELIST.

The firſt Attempt of this Kind is attributed to *Tatian*, or *Theophilus* of *Antioch*, in the IId Century. — After his Example, divers other *Harmonies* have been compoſed, by *Ammonius* of *Alexandria*, *Euſebius* of *Cæſarea*, *Janſenius* Biſhop of *Gant*, Monſ. *Toinard*, Mr. *Whiſton*, &c.

HARMONY *of the Spheres*, or *Celeſtial* HARMONY, is a Sort of Muſic, much ſpoke of by many of the Philoſophers and Fathers; ſuppoſed to be produced by the regular, ſweetly tuned Motions of the Stars and Planets. See SYSTEM.

Plato, *Philo Judæus*, St. *Auguſtine*, St. *Ambroſe*, St. *Iſidore*, *Boetius*, and many others, are ſtrongly poſſeſs'd with the Opinion of this *Harmony*, which they attribute to the various and proportionate Impreſſions of the heavenly Globes upon one another; which acting under proper Intervals, form a *Harmony*.

It is impoſſible, according to them, that ſuch ſpacious Bodies, moving with ſo much Rapidity, ſhould be ſilent; on the contrary, the Atmoſphere, continually impell'd by them, muſt yield a Set of Sounds, proportionate to the Impulſions it receives: Conſequently, as they do not all run the ſame Circuit, nor with one and the ſame Velocity, the different Tones ariſing from the Diverſity of Motions, directed by the Hand of the Almighty, form an admirable Symphony, or Concert. See MUSIC.

St. *Irenæus*, St. *Baſil*, and St. *Epiphanius*, have appeared againſt the Notion.

Pre-eſtabliſh'd HARMONY, a celebrated Syſtem of M. *Leibnitz*, by Means whereof he accounts for the Union or Communication between the Soul and Body. See SOUL, *&c.*

The Philoſophers had univerſally held that the Soul and Body act really and phyſically on each other. — *Des Cartes* firſt appear'd, and ſhew'd that the Heterogeneity of their Nature did not allow of ſuch real Union; and that they could only have an apparent one, whereof God is the Mediator. See CAUSE.

Mr. *Leibnitz*, unſatisfied with either of theſe Hypotheſes, eſtabliſhes a third. — A Soul, or Spirit, he obſerves, is to have a certain Series of Thoughts, deſires and wills: A Body, which is only a Machine, is to have a certain Series of Motions, to be determined by the Combination of its mechanical Diſpoſition, with the Impreſſions of external Objects.

If, now, there be found a Soul and a Body ſo framed, that the whole Series of Wills of the Soul, and the whole Series of Motions of the Body, exactly correſpond; and that at the ſame Time, for Inſtance, when the Soul deſires to go to any Place, the two Feet move mechanically that Way: This Soul and Body will have a Relation to one another, not by any actual Union between them, but by the conſtant and perpetual Correſpondence of the ſeveral Actions of both. — Now, God puts together this Soul and Body, which had ſuch a Correſpondence antecedent to their Union; ſuch a *pre-eſtabliſh'd Harmony*. — And the ſame is to be underſtood of all the other Souls and Bodies, that have been or ever will be joyn'd.

In Effect, the Laws of Motion in the Body, ſucceeding in the Order of Efficient Cauſes, do alſo agree and correſpond with the Ideas of the Soul; ſo that the Body is determined to act at the Time when the Soul wills.

The ſame Principle he extends further, and makes a *pre-eſtabliſh'd Harmony* between the Kingdoms of Nature and Grace; to account for the apparent Communication between them, and make phyſical and moral Evil correſpond. See GRACE, EVIL, *&c.*

Such is the Syſtem of pre-eſtabliſh'd Harmony, *Harmonie pre-etabile*. — The Author's Way of ſtating and inforcing it, may be ſeen in his *Eſſais de Theodicee*.

HARMONY, in Anatomy. See HARMONIA.

HARMOSTES, in Antiquity, a Sort of Magiſtrate among the *Spartans*; whereof there were ſeveral in Number. — Their Buſineſs was to look to the Building of Citadels, and repairing the Forts, and Fortifications of the Cities.

The Word is *Greek*, Ἁρμόστης, form'd of ἁρμόω, *apto, concinno*.

HARNESS, a compleat Armour; or, the whole Equipage and Accoutrements of a Cavalier, heavily arm'd; as Caſk, Cuiraſs, *&c.* See ARMOUR. See alſo CASK, CUIRASS, *&c.*

The Word is form'd of the *French*, *Harnois*; which ſome derive from the *Greek*, αρναξις, a Lamb's Skin; by Reaſon they anciently cover'd themſelves herewith. — *Du Cange* obſerves, that the Word *Harneſium* is uſed in the corrupt *Latin*, in the ſame Senſe; and that it comes from the *High-Dutch*, *Harnas*, or *Harniſch*. Others derive it from the *Italian*, *arneſe*. Others from the *Celtic*, *Harnes*, a Cuiraſs.

HARNESS, is alſo uſed for the Furniture put on a Horſe, to draw in a Coach, Waggon, or other Carriage; as Collars, Leathers, Traces, *&c.*

HARO, in the Cuſtoms of *Normandy*, a Cry whereby to invoke the Help and Aſſiſtance of the Officers of Juſtice, *&c.* See CRY.

When any Perſon finds his Man, and would carry him before the Judge: Upon hearing the *Haro*, he is obliged to follow the Perſon who has cried it on him; and both of them either remain in Priſon, or put in Bail.

The Letters of the *French* Chancery have uſually this Clauſe, *Non obſtant Clameur de Haro*, &c.

The *Haro* had anciently ſuch vaſt Power, that a poor Man of the City of *Caen*, named *Aſſelin*, in virtue hereof, arreſted the Corps of *William the Conqueror*, in the middle of the Funeral Proceſſion, till ſuch Time as his Son *Henry* had paid the Value of the Land in Queſtion; which was that whereon the Chapel was built, where he was interr'd.

The Word is commonly derived of *Ha* and *Roul*, as being ſuppoſed an Invocation of the Soveraign Power, to aſſiſt the Weak againſt the Strong, on Occaſion of *Raoul* firſt Duke of *Normandy*, about the Year 912; who render'd himſelf venerable to his Subjects, by the Severity of his Juſtice: So that they call'd on him even after his Death, when they ſuffer'd any Oppreſſion.

Guill. Guiart ſpeaks of the *ha Rous*, (i. e. *ha Roul*) as a Military Cry brought into *Neuſtria* by the *Normans*, under the Conduct of *Raoul*. Others ſay, that during his Life-time, they uſed to cry *a Raoul*, I cite you to appear before *Raoul*, by Reaſon he adminiſter'd Juſtice to his Subjects in Perſon. But others, as M. *Caſeneuve*, take all theſe Etymologies to be falſe; and ſuppoſe the Word *Haro*, to have been a Cry long before Duke *Raoul*. Some derive it from *Harola* King of *Denmark*, who in the Year 826, was made Grand Conſervator of Juſtice at *Mentz*. Others, laſtly, derive it from the *Daniſh aa rau*, ſignifying *help me*; a Cry rais'd by the *Normans*, in flying from a King of *Denmark*, named *Roux*, who made himſelf Duke of *Normandy*.

HARP, a Muſical Inſtrument, of the String Kind; being of a triangular Figure, and placed an End between the Legs to be play'd on. See INSTRUMENT.

There is ſome Diverſity in the Structure of *Harps*. — That call'd the *Triple Harp*, has 78 Strings, or Chords, in three Rows, 49 in each, which make four Octaves: The firſt Row is for the Semitones; and the third is in Uniſon with the firſt. There are two Rows of Pins, or Screws, on the right Side, ſerving to keep the Strings tight in their Holes, which are faſten'd at the other End to three Rows of Pins on the upper Side.

This Inſtrument is ſtruck with the Finger and Thumb of both Hands. Its Muſic is much like that of the Spinett; all its Strings going from Semitone to Semitone: Whence ſome call it an *inverted Spinett*. See SPINETT.

It is capable of a much greater Degree of Perfection than the Lute. See LUTE.

King *David* is uſually painted with a *Harp* in his Hands; but we have no Teſtimony in all Antiquity, that the *Hebrew Harp*, which they call *Chinnor*, was any Thing like ours. — On a *Hebrew* Medal of *Simon Machabæus* we ſee two Sorts of Muſical Inſtruments; but they are both of them very different from our *Harp*, and only conſiſt of three or four Strings.

Papias, and *du Cange* after him, will have the *Harp* to have took its Name from the *Arpi*, a People of *Italy*, who were the firſt that invented it; and from whom it was borrowed by other Nations.

All Authors agree, that it is very different from the *Lyra*, *Cythara*, or *Barbiton*, uſed among the *Romans*. See LYRA.

Fortunatus, *L.* VII. *Carm.* 8. witneſſes, that it was an Inſtrument of the *Barbarians*.

Romanuſq; Lyra, plaudet tibi Barbarus Harpâ
Græcus Achilliaca, Crotta Britannia canat.

Menage, &c. derive the Word from the *Latin*, *Harpa*; and that from the *German*, *herp*, or *harpff*. Others bring it from the *Latin Carpo*, becauſe touch'd, or thrum'd with the Fingers. Dr. *Hicks* derives it from *Harpa*, or *Hearpa*, which ſignify the ſame Thing; the firſt in the Language of the *Cimbri*, the ſecond in that of the *Anglo Saxons*.

The *Engliſh* Prieſt who wrote the Life of St. *Dunſtan*, and who lived with him in the *Xth* Century, ſays, C. 2. N. 12. *Sumpſit ſecum ex More Citharam ſuam, quam paterni lingua* Hearpam *vocamus*; which intimates the Word to be *Anglo-Saxon*.

HARPIES, HARPYÆ, in Antiquity, a Sort of fabulous Monſters, of the Bird-Kind, mention'd among the Poets.

They are repreſented with Wings, Ears like Bears, Bodies like Vultures, Faces like Women, and Feet and Hands hooked like the Talons of Birds of Prey. See *Virgil. Æneid. L.* III. who gives a Deſcription of them.

The Ancients looked on the *Harpies*, as a Sort of *Genii*, or Dæmons. — Some make them the Daughters of *Tellus* and *Oceanus*, the Earth and Ocean; whence, ſays *Servius*, it is, that they inhabit an Iſland, half on Land, and half in Water. *Valerius Flaccus* makes them the Daughters of *Typhon*.

There were three *Harpies*, *Aello*, *Ocypete*, and *Celæno*, which laſt *Homer* calls *Podarge*. — *Heſiod*, in his Theogony, *v.* 267. only reckons two, *Aello* and *Ocypete*; and makes them the Daughters of *Thaumas* and *Electra*; affirming, that they had Wings, and went with the Rapidity of the Wind. *Zephirus* begat of them *Balius* and *Xanthus*, *Achilles*'s Horſes. *Pherecydes* relates, that the *Boreades* expell'd them from the *Ægean* and *Sicilian* Seas, and purſued them as far as the Iſlands, which he calls *Plotæ*; and *Homer*, *Calynæ*; and which have ſince been call'd *Strophades*.

Voſſius, *de Idolol.* L. III. C. 99. *p.* 63. thinks, that what the Ancients have related of the *Harpies*, agrees to no other Birds ſo well as the *Bats*, found in the Territories of *Darien* in *South America*. — Theſe Animals kill not only Birds, but Dogs and Cats; and prove very troubleſome

ſome to Men by their Peckings. But the Ancients, as the ſame *Voſſius* obſerves, knew nothing of theſe Birds. By the *Harpies*, therefore, he thinks, they could mean nothing elſe but the Winds; and that it was on this Account they were made Daughters of *Electra*, the Daughter of *Oceanus*. Such is the Sentiment of the Scholiaſts of *Apollonius*, *Heſiod*, and *Euſtathius*. — Their Names *Aelle*, *Ocypate*, and *Cæleno*, are ſuppoſed to be a further Argument.

HARPINEER, the Engineer, or Fiſherman, who manages, and throws the *Harping Iron*. See HARPING *Iron*.

The *Harpineers*, are the moſt robuſt and dexterous Perſons in the Crew of Ships ſent on Whale Fiſhing. — Their Place is at the End of the Pinnace, and they direct the Pilot as well as the Rowers. When they come within Reach of the Whale, they dart their Iron with great Vehemence into his Head, ſo as to penetrate the Skin and Fat, and enter deep into the Fleſh. Immediately upon this, the Whale dives to the Bottom, and when he returns to the Air again to fetch Breath, the *Harpineer* takes Occaſion to ſtrike him afreſh; tho' he would have died of the former Wound; it being a Circumſtance well aſſured, that Blood never ſtanches, nor Wounds ever heal in the Water.

This done, the other Fiſhers approach a Side of him, and run a long Spear ſho'd with Iron, under the Fins, thro' the Inteſtines, into his Breaſt. The Blood now ſpouts out, and the Carcaſe welters in its own Fat. It remains to tow him to Shore, there to cut off the Blubber, *&c.* See *Whale* FISHERY.

— Aſſoon as the *Harpineer* perceives the Sturgeon's Belly, which is frequently turning, now on this Side, and then on that, he darts his Iron into the ſame, as being deſtitute of Scales. *Denis Hiſt. de l'Amerique.* See *Sturgeon* FISHERY.

HARPING-*Iron*, *Harpago*, a Sort of Dart, or Spear, faſten'd to a Line, wherewith they catch Whales, and other large Fiſh, as Sturgeons, *&c.* See HARPINEER.

This *Harping-Iron* is a large Javelin of forged Iron, five or ſix Foot long, with a ſharp, cutting, triangular Point, barbed like that of an Arrow. At the upper End is engraven the *Harpineer*'s Name, near a Ring, to which the Line is faſten'd, which they let down, aſſoon as the Beaſt is ſtruck, to give him Room to dive, *&c.* See *Whale* FISHERY.

HARPINGS, in a Ship, is properly her Breadth at the Bow; tho' ſome call the Ends of the Bends, which are faſten'd into the Stem, by the ſame Name.

HARPOCRATIANS, a Sect of Hereticks, mention'd by *Celſus*; the ſame with *Carpocratians*. See CARPOCRATIANS.

HARPSICHORD, or HARPSICHOL, a Muſical Inſtrument of the Wind-Kind; play'd after the Manner of an Organ. See ORGAN.

The *Italians* call it *Clave Cimbala*, and the *French Clavecin*. In *Latin* it is uſually call'd *Grave Cymbalum*, q. d. a large or deep Cymbal. See CYMBAL.

The *Harpſichord* is furniſh'd with a Set of Keys; ſometimes two Sets: — The touching, or ſtriking of theſe Keys, moves a Kind of little Jacks, which move a double Row of Chords, or Strings of Braſs and Iron, ſtretch'd on the Table of the Inſtrument over four Bridges. See MUSIC.

HARQUEBUS, or HARQUEBUSS, in our ancient Statutes, call'd alſo ARQUEBUSE, HAQUEBUT, or HAGBUT; is a *Hand-Gun*; or a Fire-Arm of a proper Length, *&c.* to be bore in the Arm. See GUN.

The *Harquebus* is properly a Fire-Arm, of the ordinary Length of a Muſquet, or Fowling-Piece; cock'd, uſually, with a Wheel. — *Hanzelet* preſcribes its Legitimate Length to be 40 Calibers; and the Weight of its Ball one Ounce, ſeven eights; its Charge of Powder as much.

There is alſo a larger Kind, call'd *Harquebuſs a Croc*, much of the Nature of our Blunderbuſſes, uſed in War, for the Defence of Places; being uſually reſted on ſomething when diſcharged.

The firſt Time theſe Inſtruments were ſeen, was in the *Imperial* Army of *Bourbon*, who drove *Bonnivet* out of the State of *Milan*. — They were ſo big and heavy, that there were two Men to carry them.

The Word *Harquebus*, is form'd of the *French*, *Arquebuſe*; and that from the *Italian*, *Arcobuſio*, or *Arco Abuſo*, of *Arco*, a Bow, and *Buſio*, a Hole; on Account of the Touch-Hole, at which the Powder is put to prime it; and that it ſucceeded to the Bows of the Ancients.

HARRIER, a Kind of Hound, call'd in *Latin*, *Sagax*, from his tracing, or chaſing by Foot. — Being endow'd with an admirable Gift of Smelling, and alſo very bold in the Purſuit of his Game. See HOUND.

There are ſeveral Kinds; all differing in their Services; ſome are for the Hare, Fox, Wolf, Hart, Buck, Badger, Otter, Pole-Cat, Weaſel, Coney, and ſome for one Game, ſome for another, *&c.* See HUNTING.

HARROW, in Husbandry, a Drag made in a Square Form, to break the Clods of Earth after Ploughing. See PLOUGHING, TILLING, SOWING, *&c.*

It conſiſts of three Parts; 1°. The *Harrow*-Bulls, which are the Holes where the Nails go in; 2°. The Slots, which are the Croſs-Pins; 3°. The *Harrow* Tines, Pins, or Tuſhes, which are Iron Nails; 4°. The Hook, being that which faſtens the Horſe to them; 5°. The Couples, when two *Harrows* are tied together.

HART, in the Foreſt Law, a Stag of five Years old compleat. See GAME.

If the King or Queen hunt him, and he eſcape, he is called an *Hart Royal*. See HUNTING.

And if by ſuch Hunting he be chaſed out of the Foreſt, Proclamation is commonly made in the Places adjacent, that in Regard of the Paſtime the Beaſt has afforded the King or Queen, none ſhall hurt, or hinder him from returning to the Foreſt; upon which he is call'd an *Hart Royal proclaim'd*. See PURLIEU, *&c.*

HARTS-*Horn*, *Cornu Cervi*. See *Harts*-HORN.

HART-*Hunting*. See *Hart*-HUNTING.

HARTH-*Peny*, and *Harth-Silver*, (*Sax.* heorþpening) See CHIMNEY-*Money*, and PETER-*Pence*.

HARUSPEX, or ARUSPEX, in Antiquity, a Sort of Prieſt, or Diviner, who inſpects and conſiders the Entrails of Beaſts, particularly thoſe of Victims; to find Signs, or Indications of ſomething he wants to know. See DIVINATION.

Cicero de Divinat. L. II. explains the Difference between *Auſpex* and *Haruſpex*. See AUSPICES.

The Word is *Latin*, form'd of *Hara*, an Augur's Bird; or *Haruga*, *Viſcera*, Entrails; and *inſpicio*, I look into.

In *Feſtus* we meet with *Harviga*, or *Haruiga*, which he defines to be a Victim, whoſe *Viſcera* are conſider'd while yet remaining together. Upon which M. *Dacier* obſerves, that *Harviga* is form'd from ἀρὴξ, *Aries*, by inſerting the *Eolic Digamma*, before the ι, thus, ἀϝριξ. It was properly, therefore, a Ram they ſacrificed; but afterwards the Name became common to all Victims. See VICTIM.

HASSOCK, or HASECK, probably of the *Teutonic Haſe*, Hare, and *Socks*, becauſe Hare-Skins are ſometimes worn inſtead thereof to keep the Feet warm in the Winter; denotes a Baſs, or Cuſhion made of Ruſhes, to kneel upon in Churches.

HASTA, among Antiquaries and Medalliſts, ſignifies a Kind of Javelin, not ſho'd or headed with Iron; or rather, an ancient Scepter, ſomewhat longer than ordinary, occaſionally given to all the Gods. See SCEPTER.

The *Haſta* is ſuppoſed a Symbol of the Goodneſs of the Gods, and of the Conduct of Providence, which is equally mild and forcible.

The *Haſta pura* on Medals, is that unadorn'd with any Ferrils, *&c.*

In ſome Countries, *Haſta* is a Meaſure, or Quantity of Ground, amounting to 30 Paces; thus call'd, according to M. *du Cange*, from the *Haſta*, Pole, or Rod, wherewith it was meaſured.

HASTIVE, or HASTING, a *French* Term ſometimes uſed in *Engliſh*, for *haſty*, *forward*, or ſomething that comes before the ordinary Time or Seaſon.

The HASTIVE Fruits are Straw-berries and Cherries. — We have alſo *Haſtive* Peas, *&c.*

HAT, a Covering for the Head, wore by the Men throughout the Weſtern Part of *Europe*. See HEAD.

Hats are chiefly made of Hair, Wool, *&c.* work'd, full'd, and faſhion'd to the Figure of the Head. See HAIR and WOOL.

Hats are ſaid to have been firſt ſeen about the Year 1400; at which Time they became of Uſe for Country Wear, Riding, *&c.* — Father *Daniel* relates, that when *Charles* II. made his Publick Entry into *Rouen* in 1449, he had on a *Hat*, lined with red Velvet, and ſurmounted with a Plume, or Tuft of Feathers. — He adds, that it is from this Entry, at leaſt under this Reign, that the Uſe of *Hats* and Caps is to be dated, which henceforward began to take Place of the Chaperoons and Hoods, that had been wore before.

In Progreſs of Time, from the Laity, the Clergy likewiſe took the Habit; but it was look'd on as a crying Abuſe, and ſeveral Regulations were publiſh'd, forbidding any Prieſt, or Religious, to appear Abroad in a *Hat* without Cornets; and enjoyning them to keep to the Uſe of Chaperoons, made of black Cloth, with decent Cornets: If they were Poor, they were at leaſt to have Cornets faſten'd to their *Hats*, and this upon Penalty of Suſpenſion and Excommunication. — Indeed, the Uſe of *Hats* is ſaid to have been of a longer Standing among the Eccleſiaſtics of *Brittany*, by two hundred Years; and principally among the

the Canons: But theſe were no other than a Kind of Caps; and 'twas from hence aroſe the ſquare Caps wore in Colleges, &c. See CAP.

Lobineau obſerves, that a Biſhop of *Dol*, in the XII*th* Century, zealous for good Order, allow'd the Canons alone to wear ſuch *Hats*; enjoyning, that if any other Perſon ſhould come with them to Church, Divine Service ſhould immediately ſtand ſtill. *T. I. p.* 845.

Hats make a very conſiderable Article in Commerce. — The fineſt, and thoſe moſt valued, are made of the pure Hair of an amphibious Animal, call'd *Caſtor*, or *Beaver*, frequent in *Canada*, and other Provinces of *North America*. See CASTOR.

Method of making HATS.

Hats, we have obſerved, are made either of Wool, or of Hair of divers Animals, particularly the Caſtor, Hare, Coney, Camel, &c. The Proceſs is much the ſame in all; for which Reaſon we ſhall content our ſelves to inſtance in that of Caſtors.

The Skin of this Animal is ſet with two Kinds of Hair; the one long, ſtiff, gloſſy, and pretty ſcarce; this being what renders the Skin, or Fur, of ſo much Value. See FUR. The other ſhort, thick, and ſoft; which alone is uſed in *Hats*.

To tear off one of theſe Kinds of Hair, and cut the other, the *Hatters*, or rather the Women imploy'd for that Purpoſe, make Uſe of two Knives, a large one like a Shoemaker's Knife, for the long Hair; and a ſmaller, not unlike a Vine-Knife, wherewith they ſhave, or ſcrape off the ſhorter Hair.

When the Hair is off, they mix the Stuff; to one third of dry Caſtor, putting two thirds of Old Coat; *i. e.* Hair which has been wore ſome Time by the Savages; and card the whole with Cards, like thoſe uſed in the Woollen Manufactory, only finer. This done, they weigh it, and take more or leſs, according to the Size or Thickneſs of the *Hat* intended. — The Stuff is now laid on the *Hurdle*, which is a Square Table, parallel to the Horizon, having longitudinal Chinks cut thro' it. On this Hurdle, with an Inſtrument call'd a *Bow*, much reſembling that of a Violin, but larger; whoſe String is work'd with a little Bow-ſtick, and thus made to play on the Furs; they *fly* and mix them together, the Duſt and Filth at the ſame Time paſſing thro' the Chinks. This they reckon one of the moſt difficult Operations in the whole; by Reaſon of the Juſtneſs required in the Hand to make the Stuff fall preciſely together, and that it may be every where of the ſame Thickneſs. — In Lieu of a Bow, ſome *Hatters* make uſe of a Sieve, or Searce of Hair, thro' which they paſs the Stuff.

After this Manner they form Gores or two Capades, of an Oval Form, ending in an acute Angle a-top. — And with what Stuff remains, they ſupply and ſtrengthen them in Places where they happen to be ſlenderer than ordinary. — Tho' it is to be remember'd, that they deſignedly make them thicker in the Brim, near the Crown, than towards the Circumference, or in the Crown it ſelf.

The Capades thus finiſh'd, they go on to harden them into cloſer, more conſiſtent Flakes, by preſſing down a *hardening Skin*, or Leather thereon. — This done, they are carried to the *Baſon*, which is a Sort of Bench with an Iron Plate fitted therein, and a little Fire underneath it; upon which laying one of the harden'd Capades, ſprinkled over with Water; and a Sort of Mould applied thereon; the Heat of the Fire, with the Water and preſſing, imbody the Stuff into a ſlight hairy Sort of Stuff, or Felt: After which, turning up the Edges all around over the Mould, they lay it by; and thus proceed to the other. — This finiſh'd, the two are next join'd together, ſo as to meet in an Angle a-top, and only form one Conical Cap, after the Manner of a *Manica Hippocrates*.

The *Hat* thus baſon'd, they remove it to a large Kind of Receiver, or Trough, reſembling a Mill-hopper, going ſloping, or narrowing down from the Edge, or Rim, to the Bottom, which is a Copper Kettle, fill'd with Water and Grounds, kept hot for the Purpoſe. — On the Deſcent, or ſloping Side, call'd the *Plank*, the Baſon'd *Hat*, being firſt dipt in the Kettle, is laid. — And here they proceed to work it, by rolling and unrolling it again and again, one Part after another, firſt with the Hand, and then with a little wooden Roller; taking Care to dip it from Time to Time: till at length by thus fulling and thickening it, four or five Hours, it is reduced to the Extent, or Dimenſions of the *Hat* intended. — To ſecure the Hands from being injured by this frequent Rolling, &c. they uſually guard them with a Sort of thick Gloves.

The *Hat* thus wrought, they proceed to give it the proper Form; which is done by laying the conical Cap on a Wooden *Block*, of the intended Size of the Crown of the *Hat*; and thus tying it round with a Pack-Thread, call'd a *Commander*: After which, with a Piece of Iron, or Copper, bent for the Purpoſe, and call'd a *Stamper*, they gradually beat or drive down the Commander all around, till it has reach'd the Bottom of the Block; and thus is the Crown form'd; what remains at Bottom below the String, being the Brim.

The *Hat* being now ſet to dry; they proceed to *ſinge* it, by holding it over a Flair of Straw, or the like; then it is *pounced* or rubbed with Pumice, to take off the coarſer Nap; then rubbed over afreſh with Seal-Skin, to lay the Nap ſtill finer; and laſtly, carded with a fine Card, to raiſe the fine Cotton, with which the *Hat* is afterwards to appear.

Things thus far advanced, the *Hat* is ſent, upon its Block, and tyed about with Pack-Thread as before, to be dyed. — The Dyer's Copper is uſually very large, holding 10 or 12 Dozen *Hats*. The Dye, or Tincture, is made of *Logwood*, *Verdegreaſe*, *Copperas*, and *Alder Bark*; to which ſome add *Galls* and *Sumac*. See DYING.

Here the *Hat* is kept boiling for about three Quarters of an Hour; then taken out and ſet to cool, and then return'd to the Dye; and this for 10 or 12 Times ſucceſſively.

The Dye being compleat, the *Hat* is return'd to the *Hatter*, who proceeds to dry it, by hanging it in the Top, or Roof, of a Stove or Oven; at the Bottom of which is a Charcoal Fire. — When dry, it is to be ſtiffned, which is done with melted glue, or *Gum Senek*, applied thereon by firſt ſmearing it, and beating it over with a Bruſh, and then rubbing it with the Hand. — The next Thing is to *ſteam* it, on the *Steaming Baſon*, which is a little Hearth, or Fire Place, rais'd three Foot high, with an Iron Plate laid over it, exactly covering the Hearth. On this Plate they firſt ſpread Cloths, which being ſprinkled over with Water to ſecure the *Hat* from Burning, the *Hat* is placed, Brim downwards, thereon. When moderately hot, the Workman ſtrikes gently on the Brim, with the Flat of his Hand, to make the Jointings incorporate and bind, ſo as not to appear; turning it from Time to Time, this Way and that Way, and at laſt overturning and ſetting it on the Crown.

When ſteam'd ſufficiently, and dried, they put it again on the Block, bruſh and *iron* it on a Table, or Bench for the Purpoſe, call'd the *Stall-Board*. This they perform with a Sort of Irons like thoſe commonly uſed in Ironing Linnen, and heated like them; which being rubb'd over and over each Part of the *Hat*, with the Aſſiſtance of the Bruſh, ſmoothens and gives it a Gloſs, which is the laſt Operation; nothing now remaining but to clip the Edges even with Sciſſars, and ſew a Lining into the Crown.

HAT, is alſo figuratively uſed for the Dignity of a Cardinal, or a Promotion to the Dignity. See CARDINAL.

In this Senſe they ſay, To expect the *Hat*; claim, or have Pretenſions to the *Hat*, &c.

Pope *Innocent* IV. firſt made the *Hat* the Symbol, or Cognizance of the Cardinals; injoyning them to wear a *Red Hat*, at all Ceremonies and Proceſſions, as a Token of their being ready to ſpill their Blood for Jeſus Chriſt.

HA't, in Heraldry. See CHAPEAU.

HATCHES, in a Ship, are Doors in the Mid-ſhip, or between the Main-maſt, or Fore-maſt; by which any Goods of Bulk are let down into the Hold.

Hence, the *Hatch-Way* is that Place directly over the *Hatches*; ſo that to lay a Thing into the *Hatch-Way*, is to put it ſo that the *Hatches* cannot be come at, or opened.

HATCHES, are alſo Flood-Gates, ſet in a River, &c. to ſtop the Current of the Water.

The Word is particularly uſed for certain Dams, or Mounds, made of Rubbiſh, Clay, or Earth, to prevent the Water that iſſues from the Stream-Works, and Tin-Waſhers in *Cornwal*, from running into the freſh Rivers. See TIN.

The Tenants of *Bulyſtoke*, and other Mannors, are bound to do certain Days Works to the *Hatches*.

HATCHING, the Act whereby fœcundated Eggs, after ſeaſonable Incubation, exclude their young. See EGG and INCUBATION.

Hatching, with Reſpect to the Oviparous Tribe, amounts to the ſame as Parturition, or Delivery, in the Viviparous. See DELIVERY, &c.

The Oſtrich is ſaid to lay her Eggs in the Sand; and that the Heat of the Sun does the Office of a parent Animal, and *hatches* them.

In *Egypt*, they *hatch* their Chickens by the Heat of an Oven: The Method whereof is given us by Mr. *Greaves*, in the *Philoſophical Tranſactions*, N°. 117.

They have Houſes, it ſeems, built for the Purpoſe; having a long Entrance, on each Side whereof are 12 or 14 Ovens, whoſe Bottoms and Sides are form'd of Sun

dried

dried Bricks, lined with Mats, for the Eggs to lye on; and the Tops cover'd with Sticks, except two Spaces, which are Brick, and ſerve as Hearths to build the Fires on wherewith the Eggs are to be heated. — Over theſe, is another Story of Ovens; having Holes, which are either ſtop'd with Tow or left open at Pleaſure, to govern the Heat of the Ovens below.

They begin to heat the Ovens in the middle of *January*; ſpending every Morning about an hundred Pound Weight of Camel's or Buffalo's Dung, and the like Quantity at Night; till the middle of *February*; by which Time the Ovens are too hot for the Hand to be held upon the Walls. — After this they put in the Eggs to *hatch*; which they continue ſucceſſively till the End of *May*.

The Eggs are firſt put upon Matts in the lower Ovens, upon the Ground, 7 or 8000 Eggs in Number, and laid only double, one upon another; in the Ovens over theſe, the Fire is made in the little Channels, from whence the Heat is conveyed into the lower: The Eggs directly under theſe Hearths lie threefold.

At Night, when they new-make their Fires in the Hearths, they remove the Eggs that were directly undermoſt, lying three one upon another, in the Place of thoſe which lay on the Sides only double; and theſe being now removed, they lie treble under the Hearth, becauſe the Heat is greater there, than on the Sides.

Theſe Eggs continue in the lower Ovens fourteen Days and Nights; after which they remove them into the upper. And in theſe, there being now no more Fire uſed, they turn the Eggs four Times every twenty four Hours.

The 21*ſt*, or 22*d* Day, the Chickens are *hatched*; which, the firſt Day eat not: The ſecond, they are fetched away by Women who give them Corn, *&c.* The Maſter of the Ovens hath a third Part of the Eggs for his Coſt and Pains; out of which he is to make good to the Owners, who have two thirds in Chicken for their Eggs, if any happen to be ſpoil'd, or miſcarry.

The Fire in the upper Ovens, when the Eggs are placed in the lower, is thus proportioned. — The firſt Day the greateſt Fire, the ſecond leſs than the firſt; the fourth more than the third, the fifth leſs, the ſixth more than the fifth, the ſeventh leſs, the eighth more, the ninth without Fire, the tenth a little Fire in the Morning, the eleventh they ſhut all the Holes with Flax, *&c.* making no more Fire; for if they ſhould, the Eggs would break. They take Care that the Eggs be no hotter than the Eye of a Man, when they are all laid upon it can well endure. When the Chickens are *hatch'd*, they put them into the lower Ovens, *&c.*

HATCHING, or HACHING, in Deſigning, Engraving, *&c.* ſignifies the making of Lines with a Pen, Pencil, Graver, or the like; and the interſecting, or going a-croſs thoſe Lines, with others drawn over them another Way. See ENGRAVING, DESIGN, *&c.*

The Depths and Shadows of Draughts are uſually form'd by *Hatching*, or *Hatch-Work*.

What is ſurprizing in the Gravings of *Mellan* and *Sadelers*, is, that they expreſs the Shadows exceeding well, without any *Hatches*, or *Hatchings*. See SHADOW.

Theſe *Hatchings* are of great Uſe in Heraldry, to diſtinguiſh the ſeveral Colours of an Eſcutcheon, without its being illumined. See COLOUR.

The firſt Kind of *Hatching* in Pale, or from Top to Bottom, ſignifies *Gules*, or *Red*. — The ſecond in Feſs, a-croſs the Coat, *Azure* or *Blue*.

Hatching in Pale, counter-*hatch'd* in Feſs, ſignifies *Sable*, or Black. — *Hatching* in Bend, proceeding from right to left, ſignifies *Green:* And that in Bars, from left to right, *Purple*.

When the Coat is only dotted, it is ſuppoſed to be *Or*. And when quite bare, or void, *Argent*, or *White*. See ARGENT, *&c.*

The Invention is, commonly, aſcribed to Fa. *Pietra Sancta*. —Tho' the Sieur *de la Colombiere*, has diſputed his Title to it.

HATCHMENT, in Heraldry, the Marſhalling of ſeveral Coats of Arms in an Eſcutcheon. See MARSHALLING.

HATCHMENT, is alſo a popular Name for an *Atchievement*. See ATCHIEVEMENT.

HATTOCK, a Shock of Corn, containing twelve Sheaves. — Others make it only three Sheaves laid together.

HAVEN, a *Sea-Port*, or Harbour for Ships. See PORT and HARBOUR.

The Word is derived from the Saxon *Hafene*; or the German *hafen*, or the French *havre*, which all ſignifie the ſame Thing.

HAUNCH, or HANCH, the *Hip*; or that Part of the Body between the laſt Ribs, and the Thigh.

The *Haunches* conſiſt of three Bones, joyn'd together by Cartilages; which, in Courſe of Time, grow dry, hard, and bony; ſo that in Adults, the three only ſeem to conſtitute one continued Bone. See SACRAM.

The *Haunches*, or *Hips*, of a Horſe, are thoſe Parts of the hind Quarters, which extend from the Reins or Back, to the Hoof or Ham; See HORSE.

One of the moſt neceſſary Leſſons in managing the great Horſe, is that of *putting him upon his Haunches*; which in other Terms is called to *couple* him well, or to put him well together or compact.

A Horſe that does not *bend*, or *lower his Haunches*, throws himſelf too much upon his Shoulders, and is heavy upon the Bridle. — To *drag the Haunches*, is to change the leading Foot in Galloping.

HAUNT, among Hunters, the Walk of a Deer, or the Place of his ordinary Paſſage. See HUNTING.

HAVRE, in Geography, *&c.* a *French* Term; ſignifying the ſame with *Haven*, or *Harbour*. See HARBOUR.

HAUTBOY, or HOBOY, a Sort of Muſical Inſtrument, of the Wind-kind, with a Reed to blow or play it withal. See INSTRUMENT.

The *Hautboy* is ſhaped much like the Flute, only that it ſpreads, or widens, more toward the Bottom. The Treble is two Foot long: The Tenor goes a fifth lower, when blown, or ſounded open. It has only ſeven Holes: The Baſs is five Foot long, and has eleven Holes.

The Word is *French*, *Haut-bois*, q. d. *High-wood*; and is given to this Inſtrument, by Reaſon its Tone is higher than that of the Violin.

HAW, among Farriers, *&c.* a Griſtle growing between the nether Eye-lid and the Eye of a Horſe, and which will put it quite out, if not timely taken away.

It comes by groſs, tough, and flegmatic Humours, falling from the Head, and knitting together, which in the end grow to this Infirmity, the Signs whereof are the watering of the Eye, and the involuntary opening of the nether Side.

Every Smith can cut it out: The affected Beaſt is to be held faſt by the Head, and with a ſtrong double Thread, a Needle to be put in the midſt of the upper Eye-lid, and tied to his Horn: Then taking the Needle again, with a long Thread, and putting it through the Griſtle of the Haw; with a ſharp Knife cut the Skin finely round, and ſo pluck out the *Haw*. — That done, lay about his Eye, take out the Blood, waſh it with Beer, or Ale, and caſt in a good deal of Salt; waſh it again afterwards, ſtroaking it down with your Hands, and ſo let him go. — To cure a Sheep of this Malady, drop into the Eye the Juice of Cammomile, or Crows-foot.

HAWK, *Accipiter*, a Bird of Prey, of a bold and generous Nature; whereof there are ſeveral Species. See BIRD.

The *Hawk* makes the Subject of a particular Art, call'd *Hawking*, or Falconry. See HAWKING and FALCONRY.

Naturaliſts diſagree about the Number and Diviſion of the *Hawk-kind*.—The moſt commodious Diſtribution is into *Long-winged* and *Short-winged Hawks*.

To the *Long-winged*, which may be alſo call'd the *Falcon*-Tribe, belong the Falcon, Haggard Falcon, Gerfalcon, Lanner, Hobby, Saker, Merlin and Bawler; all which are reclaim'd, mann'd, fed and mued, much after the ſame Manner. — Of the *ſhort-winged* Species, or *Hawks* properly ſo call'd, are the *Gos-Hawk*, and *Sparrow-Hawk*.

The former are generally brought to the Lure; and ſeize their Prey with the Foot; breaking the Neck Bone with their Beak, ere they proceed to plume or tire it: The latter are brought to the Fiſt; and kill their Game by Strength, and force of Wing, at Random; and proceed immediately to plume them. See LURE, PLUME, *&c.*

It is to be noted, that the Female of all Birds of Prey is much larger, ſtronger, and more couragious than the Male; which is diſtinguiſhed therefrom by ſome diminutive Name. — Thoſe of the *Falcon* and *Gos-Hawk*, are call'd *Tiercels*, or *Tiercelets*; that of the Gerfalcon, *Jerkin*; that of the Merlin, *Jack*; that of the Hobby, *Robbin*; that of the Sparrow-Hawk, *Musket*; and that of the Lanner, *Lanneret*.

Hawks alſo have different Names, according to their different Ages. — The firſt Year ſhe is call'd a *Soarage*. — The ſecond an *Enterview*. — The third a *white Hawk*. — The fourth a *Hawk of the firſt Coat*.

Add, that they have different Denominations according to the different Seaſons when they are taken. — Thoſe taken in the Eyrie, are call'd *Eyeſſes*, or *Nyeſſes*. — Thoſe which had forſaken it, and were fed in ſome Place, not far off, by the old ones, *Branchers*. — Thoſe which had begun to prey for themſelves, *Soar-Hawks*. — Thoſe which have chang'd their Feathers once or more, *Mew'd Hawks*. — And thoſe which lived at large, and prey'd for themſelves about the Woods, *Hagards*.

We ſhall here, according to our Method in other Things, give the Reader what relates to the ſeveral Species of *Hawks*; referring for what is common to 'em all, to the Article HAWKING.

1°. Of the *Falcon*, or *Falcon Gentle*, her Nature and Qualities; with the Manner of luring and reclaiming, and bringing her up to the Sport, we have elſewhere ſpoke under the Article FALCON.

2°. The *Hagard Falcon*, call'd alſo *Peregrine Falcon*, *Paſſenger*, and *Traveller*, becauſe no Native of our Iſland; or rather, by Reaſon of its Roving, and Wandring more than any other Sort; is not inferior to the beſt of the Tribe, for Strength, Courage, Hardineſs, and Perſeverance. She is diſtinguiſhed from the Common Falcon, as being larger, longer arm'd, with a longer Beak and Talons, a higher Neck, *&c.* She will lie longer on the Wing; and is more deliberate and adviſed in her ſtooping, *&c.*

The *Hagard Falcon*, when wild and unreclaim'd, takes the greateſt Liberty of all Birds; living either by Land or Sea: And is of ſuch abſolute Power, that wherever ſhe comes, all flying Fowl ſtoop under her Subjection: Even the Tiercelet, tho' her natural Companion, dares not ſit by her, or approach her Reſidence, except in Cawking Time; when, for Procreation Sake, ſhe admits him in a ſubmiſſive Manner to come near and woo her.

When very young, ſhe is apt to attack Birds too ſtrong for her; which ſhe perſiſts in, till a ſound Beating have brought her to a better Underſtanding. — She is an inceſſant Pains Taker; no Weather diſcouraging her from her Game. — When unreclaim'd, ſhe has ſeiz'd her Prey, and broke the Ink or Neck, ſhe falls on the Crop, and feeds firſt on what is contain'd there; then on the other Parts. When ſhe has fill'd her Gorge, ſhe flies to ſome ſolitary Place, near the Water, where ſhe ſits all Day, and at Night takes Wing to ſome convenient Place, where ſhe had before purpos'd, to pearch till Morning.

For the Method of Reclaiming, Manning, Entering, &c. *a* Hagard Falcon, *or other Sort of* Hawk, *with the Terms of Art uſed in Reſpect thereof.* See the Article HAWKING.

3°. The *Gerfalcon*, or *Gyrfalcon*, is the largeſt Bird of the *Falcon* Kind; coming next to the Size of a Vulture; and of the greateſt Strength next an Eagle: She is ſtoutly armed; and in all Reſpects a lovely Bird to the Eye.

Her Head and Eyes are like the Hagard; her Back great and bending, her Nares large: — Her Sails long and ſharp pointed, and her Train and Mail much like the Lanners, having a large Marble ſeared Foot; and plumed black, brown, and ruſſet. — She may alſo be called a *Paſſenger*, her Eyrie being in *Pruſſia*, *Muſcovy*, and the Mountains of *Norway*.

The *Gerfalcon* is of a fierce and fiery Nature, very hardly managed and reclaimed; but being once overcome, proves an excellent *Hawk*, ſcarce refuſing to ſtrike at any Thing. She does not naturally fly the River; but always purſues the Herons, Shovelers, *&c.* In going up to their Gate, they do not hold the Courſe, or Way, which others uſe to do; but climb up upon the Train, when they find any Fowl, and aſſoon as they have reach'd her, pluck her down, if not at the firſt, yet at the ſecond or third Encounter.

4°. The *Saker*, or *Sacre*, is the third in Eſteem, next the Falcon, and Gerfalcon, but difficult to be managed, being a *Paſſenger*, or *Peregrine Hawk*, whoſe Eyrie has not yet been diſcovered, but chiefly found in the Iſlands of the *Levant*.

She is ſomewhat longer than the *Hagard Falcon*; her Plume ruſty and ragged; the Sear of her Foot and Beak like the Lanner; her Pounces ſhort, and her Train the longeſt of all Birds of Prey.

She is very ſtrong and hardy to all Kind of Fowl, being more diſpoſed to the Field a great deal than the Brook, and delighting to prey on great Fowl, as the Heron, Gooſe, *&c.* but for the Crane ſhe is not ſo free as the Hagard Falcon. — She alſo excels for the leſſer Fowl, as Pheaſants, Partridges, *&c.* and is much leſs dainty in her Diet, as long-winged *Hawks* uſually are.

The *Saker* makes excellent Sport with a Kite; who, as ſoon as he ſees caſt off, immediately betakes her ſelf to, and truſts in the Goodneſs of her Wings, and gets to her Pitch, as high as poſſibly ſhe can, by making many Towers and Wrenches in the Air; which together with the Variety of Conteſts and Bickerings between them, affords a curious Spectacle.

5°. The *Lanner*, or *Lanar*, is a *Hawk* common in moſt Countries, eſpecially *France*; making her Eyrie on lofty Trees in Foreſts, or on high Clifts near the Sea-ſide.

She is leſs than the Falcon Gentle, fair plumed, and of ſhorter Talons than any other Falcon. — Such as have the largeſt and beſt ſeaſon'd Heads, are eſteemed the beſt.

Mewed *Lanners* are not eaſily known from Gos-Hawks, or Sakers; the chief Marks and Characteriſticks are, That they are blacker, have leſs Beaks, and are leſs armed and pounced than any other *Hawks*.

Of the whole *Hawk* Tribe, there is none ſo fit for a young Falconer as this, becauſe ſhe is not inclined to Surfeits, and ſeldom melts Greaſe by being overflown.

There is another Sort of *Lanners*, whoſe Eyrie is in the *Alps*, having their Heads white, and flat aloft, large and black Eyes, ſlender Nares, ſhort and thick Beaks; being leſs than the Hagard, and Falcon Gentle, tho' there are different Sizes of them; their Tail Marble, or Ruſſet: Breaſt Feathers white and full of Ruſſet Spots, and the Points and Extremities of their Feathers full of white Drops; their Sails and Trains long; ſhort legged, with a Foot leſs than that of a Falcon, marble-ſeered.

This *Hawk* never lies upon the Wing, after ſhe has flown to a Mark; but after once ſtooping, makes a Point; and like the *Gos-Hawk*, waits the Fowl. — She is more valued abroad than in *England*; we looking on her as ſlothful, and hard mettled. The Truth is, a very ſtrict Hand muſt be kept over her; as being of an ungrateful Diſpoſition. — She is flown at Field, or Brook, and will maintain long Flights; by which Means much Fowl is killed. To fly them, they muſt be kept very ſharp; and becauſe they keep their Caſtings long, they muſt have hard Caſtings made of Tow, and Knots of Hemp.

6°. The *Merlin* is the ſmalleſt of all Birds of Prey; and bears a Reſemblance to a Hagard Falcon in Plume, as alſo in the Seare of the Foot, Beak, and Tallons, and not unlike her in Conditions.

When well manned, lured, and carefully looked after, ſhe proves an excellent *Hawk*; eſpecially at Partridge, Thruſh, and Lark. — But ſhe is very buſie, and unruly, and ſpecial Care muſt be had leſt ſhe unnaturally eat off her own Feet and Talons, as ſhe has often been known to do.

She is wonderouſly ventureſome; and will fly at Birds bigger than her ſelf, with ſuch Eagerneſs, as to purſue them even into a Town or Village.

Tho' the *Merlin* be accounted an *Hawk* of the Fiſt, ſhe may be brought to take delight in the Lure; when you have made her come to the Lure, ſo as ſhe will patiently endure the Hood, you ſhould make her a Train with a Partridge; if ſhe foot and kill it, reward her well: Then fly her at the wild Partridge, and if ſhe take or make it at firſt or ſecond Flight, being retrieved by the Spaniels, feed her upon it with a reaſonable Gorge; chearing her in ſuch Manner with the Voice, that ſhe may know it another Time: If ſhe do not prove hardy at the firſt or ſecond Time, ſhe will be good for nothing.

7°. The *Hobby*, is a Sort of *Hawk* that naturally preys on Doves, Larks, and other ſmall Game.

She has a blue Beak, but the Sear thereof and Legs are yellow; the Crinels, or little Feathers under the Eye, very black, the Top of the Head between black and yellow.

She has alſo two white Seams on her Neck: The Plumes under the Gorge, and about the Brows, are reddiſh, without Spot or Drop; the Breaſt Feathers for the moſt Part brown, yet interſperſed with white Spots; her Back, Train and Wings, are black aloft, having no great Scales upon the Legs, unleſs a few behind; the three Stretchers and Pounces are very large, with Reſpect to her ſhort Legs; her brail Feathers are tinctured between red and black; the pendant ones, or thoſe behind the Thigh, of a ruſty, ſmoaky Hue.

She is a *Hawk* of the Lure, and not of the Fiſt; and is an higher Flyer, being in every Reſpect like the Saker, but ſhe is of a much leſs Size; for ſhe is not only nimble and light of Wings, but dares encounter Kites, Buzzards, or Crows, and will give Souſe for Souſe, Blow for Blow, till ſometimes they ſiege and come tumbling down to the Ground both together. — But ſhe is chiefly for the Lark, which poor little Creature does ſo dread the Sight of her, ſoaring in the Air over her, that ſhe will rather chooſe to commit her ſelf to the Mercy of Men or Dogs, or to be trampled on by Horſes, than venture into the Element, when ſhe ſees her mortal Enemy ſoaring there.

The *Hobby* alſo makes excellent Sport with Nets and Spaniels; for when the Dogs range the Field, to ſpring the Fowl, and the *Hobby* ſoars aloft over them, the ſilly Birds, apprehenſive of a Conſpiracy among the *Hawks* and Dogs to their utter Ruin, dare not commit themſelves to their Wings, but think it ſafer to lie cloſe on the Ground, and ſo are taken in the Nets. — This Sport is call'd *Daring*.

8°. The *Goſhawk*, or *Goſs-Hawk*, q. d. *Groſs Hawk*, is a large, ſhort-winged *Hawk*, of which there are ſeveral Sorts, differing in Goodneſs, Force, and Hardineſs, according to the Diverſity of their Choice in Cawking; at which Time the ſeveral Sorts of Birds of Prey aſſemble themſelves with the *Goſhawk*, and gallant it together.

There are *Gos-Hawks* from moſt Countries, but none better than thoſe bred in the North of *Ireland*. — She ought to have a ſmall Head, a long and ſtraight Face, a large Throat, great Eyes, deep ſet; the Apple of the Eye black; Nares, Ears, Back and Feet large and black; a

black

black long Beak, long Neck, big Breaſt, hard Fleſh, long fleſhy Thighs, the Bone of the Leg and Knee ſhort, long large Pounces and Talons; and to grow round from the Stern, or Train, to the Breaſt forward. — The Feathers of the Thighs, towards the Train, ſhould be large, and the Train Feathers ſhort and ſoft, ſomewhat tending to an Iron Mail. The Baril Feathers ought to be like thoſe of the Breaſt; and the Covert Feathers of the Train, ſpotted and full of black Rundles, but the Extremity of every Train Feather black ſtreaked.

To diſtinguiſh the Strength of the Bird, tie divers of them in ſeveral Places of one Chamber, or Mew; and that *Hawk* that ſlices and mutes higheſt and fartheſt off, may be concluded to be ſtrongeſt.

The *Gos-Hawk* flies at the Pheaſant, Mallard, wild Gooſe, Hare, and Coney; nay ſhe will venture to ſeize a Kid, or Goat. — She is to be kept with Care, as being very choice and dainty in Eating, *&c.*

9°. *Sparrow-Hawk*, is alſo a Kind of ſhort-winged *Hawk*; whereof there are ſeveral Sorts, different in Plumes: Some ſmall plumed and black; others of a larger Feather; ſome plumed like the Quail; ſome brown or Canvas-Mail, *&c.*

The *Sparrow-Hawk*, ſo far as her Strength will give her Leave, is a good *Hawk*; and he that knows how to man, reclaim, and fly with a *Sparrow-Hawk*, may eaſily attain to the keeping and managing of all others. — In this Reſpect ſhe really excels, that ſhe ſerves both for Winter and Summer, with great Pleaſure, and will fly at all Kind of Game, more than the Falcon.

HAWKERS, antiently, were fraudulent Perſons; who went from Place to Place, buying and ſelling Braſs, Pewter, and other Merchandize, which ought to be uttered in open Market.

In this Senſe, the Word is mention'd, *Anno* 25 *Hen.* VIII. *Cap.* 6. and 33 *ejuſdem*, *Cap.* 4.

We now call thoſe *Hawkers*, who go up and down *London* Streets, crying News Books, and ſelling them by Retail. — The Women who furniſh the *Hawkers*, i. e. ſell the Papers by Wholeſale from the Preſs, are call'd *Mercuries*.

The Appellation of *Hawkers* ſeems to grow from their uncertain Wandring, like thoſe who, with *Hawks*, ſeek their Game where they can find it.

HAWKING, the Art, or Exerciſe of Chaſing and taking Wild-Fowl, by Means of *Hawks*, or Birds of Prey. See HAWK.

Hawking is the ſame Thing with what we otherwiſe call *Falconry*. See FALCONRY.

The Word *Hawking*, in its Latitude, does alſo include the taming and diſciplining of *Hawks*, and fitting them for the Sport.

Hawking, tho' an Exerciſe now much diſuſed among us, in Compariſon of what it antiently was, does yet furniſh a great Variety of ſignificant Terms, which ſtill obtain in our Language.

Thus, the Parts of a *Hawk* have their proper Names. — The Legs, from the Thigh to the Foot, are call'd the *Arms*: The Toes, the *Petty-ſingles*: The Claws, the *Pounces*. — The Wings are call'd the *Sails*; the long Feathers thereof the *Beams*; the two longeſt, the *principal Feathers*; thoſe next thereto, the *Flags*. — The Tail the *Train*. — The Breaſt Feathers, the *Mailes*: — Thoſe behind the Thigh, the *Pendant Feathers*: When the Feathers are not yet full grown, ſhe is ſaid to be *unſumm'd*; when they are compleat, ſhe is *ſumm'd*: — The Craw, or Crop, is call'd the *Gorge*: — The Pipe next the Fundament, where the Fœces are drawn down, is call'd the *Pannel*: — The ſlimy Subſtance, lying in the Pannel, is call'd the *Glut*: — The upper and crooked Part of the Bill, is call'd the *Beak*; the nether Part the *Clap*: The yellow Part between the Beak and the Eyes, the *Sear* or *Sere*; the two ſmall Holes therein, the *Nares*.

As to her Furniture: — The Leathers, with Bells button'd on her Legs, are call'd *Bewits*. — The Leathern Thong, whereby the Falconer holds the *Hawk*, is call'd the *Leaſe*, or *Leaſh*; the little Straps, by which the Leaſe is faſten'd to the Legs, *Jeſſes*; and a Line or Pack-thread faſten'd to the Leaſe, in diſciplining her, a *Creance*. — A Cover for her Head, to keep her in the Dark, is call'd a *Hood*; a large wide Hood, open behind, to be wore at firſt, is call'd a *rufter Hood*: To draw the Strings, that the Hood may be in Readineſs to be pull'd off, is call'd *unſtriking the Hood*. — The blinding a Hawk juſt taken, by running a Thread thro' her Eye-lids, and thus drawing them over the Eyes, to prepare her for being hudded, is call'd *Seeling*. — A Figure, or Reſemblance of a Fowl, made of Leather and Feathers, is call'd a *Lure*. — Her reſting Place, when off the Falconer's Fiſt, is call'd the *Pearch*. — The Place where her Meat is laid, is call'd the *Hack*. — And that wherein ſhe is ſet, while her Feathers fall and come again, the *Mew*.

Something given a Hawk, to cleanſe and purge her Gorge, is call'd *Caſting*: — Small Feathers given to make her Caſt, are call'd *Plumage*: — Gravel given her to help bring down her Stomach, is call'd *Rangle*: — Her throwing up Filth from the Gorge after Caſting, is call'd *Gleaming*. — The Purging of her Greaſe, *&c.* *Enſeaming*. — A being ſtuffed is call'd *Gurgiting*. — The inſerting a Feather in her Wing, in lieu of a broken one, is call'd *Imping*. — The giving her a Leg, Wing, or Pinion of a Fowl to pull at, is call'd *Tiring*: — The Neck of a Bird the *Hawk* preys on, is call'd the *Inke*: — What the *Hawk* leaves of her Prey, is call'd the *Pill*, or *Pelf*.

There are alſo proper Terms for her ſeveral Actions: — When ſhe flutters with her Wings, as if ſtriving to get away, either from Perch or Fiſt, ſhe is ſaid to *Bate*. — When ſtanding too near, they fight with each other, it is call'd *Crabbing*: — When the young ones quiver, and ſhake their Wings in Obedience to the elder, it is call'd *Cowring*: — When ſhe wipes her Beak after feeding, ſhe is ſaid to *Feak*: — When ſhe ſleeps, ſhe is ſaid to *Jouk*: — From the Time of exchanging her Coat, till ſhe turn white again, is call'd her *Intermewing*: — Treading is call'd *Cawking*. — When ſhe ſtretches one of her Wings after her Legs, and then the other, it is call'd *Mantling*: — Her Dung is call'd *Muting*; when ſhe mutes a good Way from her, ſhe is ſaid to *ſlice*; when ſhe does it directly down, inſtead of yerking backwards, ſhe is ſaid to *ſlime*; and if it be in Drops, it is call'd *Dropping*. — When ſhe as it were ſneezes, it is call'd *Suiting*. — When ſhe raiſes and ſhakes her ſelf, ſhe is ſaid to *Rouze*; when after Mantling, ſhe croſſes her Wings together over her Back, ſhe is ſaid to *Warble*.

When a *Hawk* ſeizes, ſhe is ſaid to *Bind*. — When after ſeizing ſhe pulls off the Feathers, ſhe is ſaid to *Plume*. — When ſhe raiſes a Fowl aloft, and at length deſcends with it to the Ground, it is call'd *Truſſing*. — When being aloft, ſhe deſcends to ſtrike her Prey, it is call'd *Stooping*. — When ſhe flies out too far from the Game, ſhe is ſaid to *Rake*. — When forſaking her proper Game, ſhe flies at Pyes, Crows, *&c.* that chance to croſs her, it is call'd *Check*. — When miſſing the Fowl, ſhe betakes her ſelf to the next Check, ſhe is ſaid to *fly on Head*. — The Fowl or Game ſhe flies at is call'd the *Quarry*. — The dead Body of a Fowl, kill'd by the *Hawk*, is call'd a *Pelt*. — When ſhe flies away with the Quarry, ſhe is ſaid to *carry*. — When in ſtooping, ſhe turns two or three Times on the Wing, to recover her ſelf ere ſhe ſeizes, it is call'd *Cancelleering*. — When ſhe hits the Prey, yet does not truſs it, it is call'd *Ruff*.

The making a *Hawk* tame and gentle, is call'd *Reclaiming*. — The bringing her to endure Company, *Manning her*. — An old ſtaunch *Hawk* uſed to fly and ſet Example to a young one, is call'd a *Make-Hawk*.

The Reclaiming, Manning, and bringing up a *Hawk* to the Sport, is not eaſy to be brought to any preciſe Set of Rules. — It conſiſts in a Number of little Practices, and Obſervances, calculated to familiarize the Falconer to his Bird, to procure the Love thereof, *&c.* — The principal Hold and Foundation which the Falconer has to work upon, is the Bird's Stomach. — The great Principle of Appetite he is to make uſe of an hundred Ways, to lead the Bird obliquely to what he would have from him: All he can do is, to divert Nature, and make her ſubſervient to his Purpoſes, to make it the Intereſt of the Bird, either real or apparent, to do what the Falconer requires of her.

The Courſe, 'tis evident, will be different, according to the State and Condition of the Bird to be managed. — An *Eyeſs*, e. gr. needs no reclaiming; ſhe is to be carefully nurſed, and brought up in their natural Tameneſs.

A *Brancher*, *Soar-Hawk*, or *Ramage-Hawk*, needs no Nurſing; ſhe is to be brought down from her Wildneſs, and habituated to another Courſe of Life; and in Purſuance of her own Views, and Intereſts, to be made ſubject to thoſe of her Maſter.

To *Reclaim*, e. gr. a *Hagard* Falcon; they begin with ſhutting her up from the Light, by pulling a Hood over her Eyes; and fixing her by a *Creance*, which makes her more acceſſible. — The next Thing is to handle her frequently, taking her up, often ſtroaking her, ſetting her on the Hand, and carrying her about; unhudding, and preſently hudding her again; and this for eight or nine Days, without ever ſuffering her to ſleep. — All the while ſhe is to be kept ſharp ſet, but to be frequently fed, with a little at a Time; unhudding her for the Purpoſe, and when unhudded, the Voice to be continually uſed to her, that ſhe may learn it; and that the hearing of the Voice may naturally put her in Hopes of being fed. — This done ſhe is to be invited to come from the Pearch to the Fiſt, by unſtriking her Hood, ſhewing her ſome Meat, uſing the Voice, and calling her till ſhe come to it, and feed thereon. — If ſhe ſtill refuſe, keep her ſharp ſet

till ſhe do. — Proceed then to bring her to the Lure, by giving her to ſome Perſon to hold, and calling her with a Lure, well garniſhed with Meat on both Sides, and give her a Bit: Uſe her to this for ſix or ſeven Days; after which tempt her to come gradually further and further off, to the Lure, waving it and caſting it round your Head, *&c.* and if ſhe come to it roundly, reward her. In three or four Days more call her to your Lure, well garniſhed as above, as far as 'tis poſſible for her to ſee or hear you; and ſet her looſe from all her Furniture.

The *Hawk* thus mann'd, reclaim'd and lured, you may go with her into the Fields; and whiſtle her off your Fiſt, to ſee whether ſhe will rake out or no. If ſhe mount and fly round you in Circles, as a good *Hawk* ought to do; after two or three Turns call to her with your Voice, and fling out the Lure about your Head, and upon her ſtooping, or coming to it, give her a Chicken, or Pidgeon, and let her kill and feed thereon. — Being thus far initiated, give her firſt Stones, every Evening, to prepare her Body for Caſtings; and then Caſtings to cleanſe and ſcour her Body, and make her eager. — This Courſe continue till ſhe have have endewed and mewted enough to enter upon Buſineſs.

If the *Hawk* be intended for ſome particular Sort of Game, let her Lure be a Reſemblance of that Sort of Game; and make a Practice of frequently feeding and rewarding her thereon; or on a Train of the ſame Kind; calling her when feeding, as if ſhe were call'd to the Lure. Add, that it may be proper to feed her in ſuch like Places as thoſe her Game is chiefly to be found in.

To *enter a Hawk*, it may be convenient to take a well quarried *Hawk*, and let her ſtoop a Fowl, on Brook or Plaſh; this done, reward, hood and ſet her; and taking the young *Hawk*, go half a Bow-ſhot up the Wind, looſe her Hood, and ſoftly whiſtle her off the Fiſt, till ſhe have rouzed or mewted; then let her fly with her Head into the Wind; and when ſhe is at a proper Height, let go a Fowl for her to ſtoop and truſs. *See further under the Article* FALCON.

HANKWIT, or HANGWITE, from the *Saxon* hangan, i. e. *ſuſpendere*, to hang, and wite, *Mulcta*, Puniſhment, is a Liberty granted to a Man, whereby he is quit of a Felon, or Thief, hanged without a Judgment, or eſcaped out of Cuſtody. — We alſo read it interpreted to be *Quit de laron pendu ſans Serjeants le Roy*, i. e. without a legal Trial. — And elſewhere, *Mulcta pro latrone præter juris exigentiam ſuſpenſo vel elapſo.*

Some ſuſpect that the Word may alſo ſignifie a Liberty, whereby a Lord challengeth the Forfeiture due for him who hangs himſelf within the Lord's Fee. See BLOODWIT.

It ſeems to be ſo *in Conſuetud. ex Domeſday*, by Dr. *Gale*, viz. *Hangenwithum faciens in Civitate* 10 *S. dabit.*

HAWSER, or HALSER, belonging to a Ship, is a Rope conſiſting of three Strands; being a Kind of little Cable, ſerving for many Uſes on Board, as to faſten the Main and Fore-ſhrouds, to warp a Ship over a Bar, *&c.* See ROPE, CABLE.

HAWSES, in a Ship, are two round Holes under her Head, through which the Cables paſs, when ſhe is at Anchor. See CABLE and ANCHOR.

A *Bold Hawſe*, is when the Hole is high above the Water.

A *Freſh Hawſe*, when there is Reaſon to ſuſpect the Cable may be fretted in thoſe Holes.

Burning in the Hawſe, is when the Cable endures an extraordinary Streſs.

Clearing the Hawſe, is the untwiſting of two Cables, which being let out at different *Hawſes*, are twiſted about one another.

Freſhing the Hawſe, is when new Pieces are laid upon the Cable in the *Hawſe*.

Riding upon the Hawſe, is when any weighty Subſtance lies acroſs, or falls directly before the *Hawſe*.

HAY, HAYA, or HAYE, a Fence or Incloſure, form'd of Rails; wherewith ſome Foreſts, Parks, *&c.* were antiently ſurrounded.

Sometimes the Word is uſed for the Park it ſelf: And ſometimes for an Hedge, or hedged Ground. — *Univerſis. Capitulum B. Petri Ebor. conceſſiſſe ad firmam totam* Hayam *noſtram de Langerath, cum ſolo ejuſdem* Hayæ, *Bruera, Mariſco, & omnibus aliis pertin. Reddendo inde annuatim nobis tempore pinguedinis unum damum, & fermiſonæ tempore unam damam*, &c.

HAYBOOT, in our antient Cuſtoms, from the *Saxon* Hæg, *Hedge*, and Bote; a Mulct or Recompence for a Hedge-breaking; or rather, a Right to take Wood neceſſary for making Hedges, either by Tenant for Life, or for Years, though not expreſſed in the Grant or Leaſe. — 'Tis mention'd in the *Mon.* 2 *Tom.* pag. 134, *& concedo ei ut de boſco meo Heybot*, &c. — In the ſame Place, *Husbote* ſignifies a right to take Timber to repair the Houſe.

HAYS, a particular Kind of Nets for the taking of Rabbets, Hares, *&c.*

HAYWARD, or HAWARD, a Keeper of the common Herd of Cattle of a Town; who is to look that they neither break nor crop the Hedges of incloſed Grounds; and is ſworn in the Lord's Court, for the due Performance of his Office. See HAY.

HAZARD. See CHANCE and GAMING.

HEAD, *Caput*, the uppermoſt, or foremoſt Part of the Body of an Animal. See BODY and ANIMAL.

Pliny, and other of the antient Naturaliſts, ſpeak of a Nation of People without *Heads*, call'd *Blemmyes*. See BLEMMYES.

We have Accounts in modern Geographers and Travellers, of People whoſe *Heads* are as flat as the Hand; it being the Cuſtom among them to flatten their Children's *Heads*, when new Born, by paſſing them thro' a Preſs, or laying them between two Planks with a conſiderable Weight thereon. — They are ſaid to be the Inhabitants of the Province *Coſaquas*, on the great River of the *Amazons*, in South *America*.

Anatomiſts account the *Head* of Man, the firſt or uppermoſt Venter; being that which comes laſt in Order of Diſſection, by Reaſon its Contents are not ſo ſubject to Corruption. See VENTER.

The *Head* is divided into two Parts: The 1*ſt*, the *Calvaria*, or Scalp, being that Part cover'd with Hair. See HAIR.

The 2*d*, ſmooth, or without Hair, call'd the *Face*, or Viſage; by the Latins *Vultus*, and by the Greeks *Proſopon*, q. d. *looking forward*. See FACE.

The former is ſubdivided into four; *viz.* the *Front*, or Forehead, which is reputed the moſt humid, call'd by Phyſicians the *Sinciput*, q. d. *ſummum Caput*. See FRONT and SINCIPUT.

The hind, or Back Part, call'd *Occiput*; by the Greeks *Inion*, by Reaſon all the Nerves, which among them are call'd *Ines*, ariſe herefrom. See OCCIPUT and NERVE.

The middle, or Top-part, call'd the *Crown* of the *Head*, and by Anatomiſts *Vertex*, *a Vertendo*, by reaſon the Hair turns round there. See VERTEX.

Laſtly, the Sides are call'd the *Temples*, *Tempora*, as being the Places where the Hair firſt begins to turn grey, and diſcover the Age. See TEMPLE.

The Bone, or Baſis of the *Head*, is call'd by one general Name *Skull*, or *Cranium*; conſiſting of ſeveral Parts, or leſſer Bones. See CRANIUM.

The Bone of the Fore-head, is call'd *Os frontis*, or *Puppis*, or *Coronale*, or *Verecundum*, whence impudent Perſons are ſaid to be *frontleſs*. See *Os* FRONTIS, *&c.*

The Bone of the Scalp is call'd *Os ſincipitis*, or *Bregma*. See BREGMA, *&c.*

The Bone of the Back of the *Head Os Occipitis*, or *Proræ*. See *Os* OCCIPITIS, *&c.*

And thoſe of the Temples, *Temporalia*, or *Oſſa Temporis*. See *Os* TEMPORIS.

Theſe Bones are connected or joyn'd together by Sutures. See SUTURE.

In the *Head* are ſeated the principal Organs of Senſe; *viz.* the *Eye*, *Ear*, &c. And in it is likewiſe the *Brain*, inveſted with its Meninges; the ſuppoſed Seat of the Soul. See SENSE, BRAIN, *&c.*

The *Head* is moved by ten Pair of Muſcles, *viz.* the *Par Splenium*, *Complexum*, *Rectum majus externum*, *Rectum minus externum*, *Obliquum Superius*, *Obliquum Inferius*, *Maſtoideum*, *Rectum internum majus*, *Rectum internum minus*, and *Rectum Laterale*. See each deſcribed under its reſpective Article.

The Orientals cover the *Head* with a *Turban*, or a *Cap*. — The Occidentals with a *Hat*, &c. See TURBAN, HAT and CAP.

Kings, on ſolemn Occaſions, wear the Crown on the *Head*; Biſhops the Mitre, *&c.* See CROWN, MITRE, *&c.*

The antient Cavaliers wore *Helmets*. — The Soldiers, *Casks*. See HELMET and CASK.

HEAD, is alſo uſed for the Top of a Tree, or other Plant. See TREE and PRUNING.

HEAD, is alſo applied to the Extremity of a Bone. See BONE.

When a Bone has a round Tip, or End, which advances, or projects forward, whether in the Way of an Apophyſis or Epiphyſis; it is call'd the *Head* of the Bone. See APOPHYSIS, *&c.*

If its Riſe, or Origin, be ſlender, and it enlarge by Degrees, it is call'd the *Neck*. See NECK.

If it terminate in a Point, it is call'd *Corone*, *Corvus*, or *Coracoides*, as reſembling a Crow's Bill. See CORONE, CORACOIDES, *&c.*

When the *Head* is flat, they call it *Condylus*, or *double Head*; as in the Extremities of the Bones of the Fingers. See CONDYLUS.

HEAD, is alſo uſed for the Extreme of a Muſcle, which is faſten'd or inſerted into the Stable-Bone, or

the

the Part not intended for Motion. See MUSCLE, &c.

The *Head* of a Muſcle is a Tendon. See TENDON and TAIL.

HEAD, again, is applied in the Mechanic Arts, to the Parts of Inanimate and Artificial Bodies. See CAPITAL.

In this Senſe we ſay, that ſome Nails have *Heads*; others *Hooks*; others, as Brads, neither. See NAIL.

So alſo we ſay the *Head* of a Pin, &c. See PIN.

HEAD, is alſo uſed in Painting, Sculpture, &c. for a Picture, or Repreſentation of that Part of the human Body; whether in Colours, Draught, Relievo, or Creux. See SCULPTURE, BUSTO, &c.

Thoſe in Painting, taken from the Life, or ſuppoſed to bear a juſt Reſemblance to the Perſon; are more properly call'd *Portraits*. See PORTRAIT.

HEAD, in Architecture, &c. an Ornament of Sculpture, or carved Work, frequently ſerving as the Key of an Arch, Plat-band, and on other Occaſions. See KEY and ARCH.

Theſe Sort of *Heads* uſually repreſent ſome of the Heathen Divinities, Virtues, Seaſons, Ages, &c. with their Attributes. — As a Trident for *Neptune*, a Helmet for *Mars*, a Crown of Ears of Corn for *Ceres*, a Caduceus for *Mercury*, a Diadem for *Juno*. See ATTRIBUTE, &c.

The *Heads* of Beaſts are alſo uſed in Places ſuitable thereto: As a Bullock's, or Sheep's *Head*, for a Shambles, or Market-houſe; a Dog's, for a Kennel; a Deer's, or Boar's, for a Park or Foreſt; a Horſe's, for an Equery, &c.

In the Metopes of the Freezes, and other Parts of certain *Antique*, *Doric* Temples, we meet with Repreſentations of Bullocks, or Rams *Heads* flea'd; as a Symbol of the Sacrifices offer'd there.

In Heraldry, the *Heads* of Men, Beaſts, Birds, &c. are bore in Armoury, either full-faced and in *front*, or ſide-faced and in *profile*; which muſt be diſtinguiſh'd in Blazoning. — *Vert a Chevron Gules, between three Turks Heads, Couped, Side-faced, proper:* By the Name of *Smith*.

Among Medalliſts, the different *Heads* on antient Coins, are diſtinguiſh'd by the different Dreſſes thereof. See MEDAL.

In the *Imperial* Medals, where the *Head* is quite bare, 'tis uſually a Sign the Perſon was not an Emperor, but one of the Children thereof, or the preſumptive Heir of the Empire. Tho' we have Inſtances of thoſe who were only *Cæſars*, and never reign'd, being crown'd with Lawrel, or adorn'd with a Diadem: As, on the contrary, we have Emperors *Heads* entirely bare.

The *Heads* which are cover'd, are either cover'd with a Diadem, or a Crown, or a ſimple Caſk, or a Veil, or ſome other foreign Covering; whereof the Diadem is the moſt antient. — The Senate firſt granted it to *Julius Cæſar*, to wear the Lawrel Crown, which his Succeſſors took after him. See CROWN, DIADEM, &c.

The *Heads* of Deities are frequently diſtinguiſh'd by ſome ſpecial Symbol thereof.

HEAD, is alſo applied to Monſters; ſuppoſed moſt of them fabulouſly to have many *Heads*. See MONSTER, &c.

The Serpent *Amphisbæna*, or *Cæcilia*, is ſaid by Naturaliſts to have two *Heads*. — The Poets attribute three *Heads* to *Hecate*, *Geryon*, and *Cerberus*: *Typhon* and *Hydra* are ſaid to have an hundred *Heads*.

The *Head* of the Gorgon *Meduſa*, is ſaid to have ſtruck People dead with the very Sight. — It has been ſince tranſlated into Heaven, and made a Conſtellation; where it ſtill ſhines as a Part or Appendage of the Conſtellation *Perſeus*; continuing ſtill to diſpenſe its malific Influences, as the Aſtrologers ſuppoſe, upon our Earth. See CONSTELLATION.

The Stars, &c. in *Meduſa's Head*, which is alſo call'd from the Arabs, *Ras Algol*; See among the reſt of PERSEUS.

HEAD, is alſo uſed for the Horns of a Deer; as a Hart, Buck, &c. See HORN.

Hart's *mew*, or caſt their *Heads* every Year; and get new ones. See MOULTING.

The old Hart, or Buck, caſts his Head ſooner than the young; and the Time is about the Months of *February* and *March*. — Having caſt their *Heads*, they inſtantly withdraw into the Thickets; hiding themſelves in convenient Places near good Water, &c. far from the Annoyance of Flies.

After they have mewed, they begin to *button* again in *March*, or *April*, i. e. to ſhoot out new Horns; which at firſt appear like little Bunches.

Note. If a Hart be gelt before he have a *Head*, he will never bear any; and if he be gelt when he has a *Head*, he will never after mew or caſt it. — If only one of his Teſticles be taken out, he will want the Horn of that Side: If one of the Teſticles be only tyed up, he will want the Horn of the oppoſite Side. See CASTRATION and GELDING.

The Age of a Hart, or Deer, is uſually reckon'd by the Number of *Heads*. — A Deer of the firſt *Head*, the ſecond *Head*, &c.

At one Year they have nothing but Bunches, call'd *Significators* of Horns to come. The 2d Year they appear more perfectly, but ſtrait and ſimple: This makes the firſt *Head*, properly call'd *Broches*, and in a Fallow-Deer, *Pricks*. The 3d Year they grow into two *Speers*, or four, ſix, or eight ſmall Branches. At the 4th, they bear eight or ten: At the 5th, ten or twelve: At the 6th, fourteen or ſixteen: At the 7th Year they bear their *Heads* beamed, branched and ſummed as much as they will bear; never multiplying further, but only growing in Magnitude.

The Names and Diverſities of Heads *in the hunting Language*, are as follow:

The Thing that beareth the Antlers, Royals, and Tops, is call'd the *Beam*; and the little Streaks therein are *Glitters*. — That which is about the Cruſt of the Beam, is termed *Pearls*; and that which is about the Bur it ſelf, formed like little Pearls, is called *Pearls bigger than the reſt*. — The Bur is next the *Head*, and that which is about the Bur, is called *Pearls*. — The firſt is called *Antler*, the ſecond *Sur-antler*; all the reſt which grow afterwards, till you come to the Crown, Palm, or Croche, are call'd *Royals* and *Sur-royals*; the little Buds or Broches about the Tops, are called *Croches*.

Their *Heads* go by ſeveral Names: The firſt *Head* is called a *Crown-top*, becauſe the Croches are ranged in Form of a Crown. — The ſecond is called a *Palmed-top*, becauſe the Croches are formed like a Man's Hand. — All *Heads* which bear not above three or four, the Croches being placed aloft, all of one Height, in Form of a Cluſter of Nuts, are called *Heads of ſo many Croches:* All *Heads* which bear two on the Top, or having their Croches doubling, are called *Forked-Heads*. — All *Heads* which have double Burs, or the Antlers, Royals, and Croches turned downwards, contrary to other *Heads*, are called ſimple *Heads*. See HUNTING.

HEAD, is ſometimes alſo uſed for the whole Man.

In this Senſe we ſay, to offer a Reward for a Man's *Head*. — In Proſcriptions a Price is ſet on a Man's *Head*. See PROSCRIPTION.

Capitation is a Tax laid upon each *Head*; call'd alſo *Poll* and *Head-money*. See CAPITATION and POLL.

HEAD, again, is uſed figuratively in ſpeaking of Communities and Bodies politic, for the principal or leading Member thereof. See PRINCIPAL.

Thus, we ſay, a Preſident, or Maſter, is at the *Head* of his Company. — A Dean is the *Head* of his Chapter. — The Miniſters are at the *Head* of Affairs. See PRESIDENT, DEAN, MINISTER, &c.

The King of *Great Britain* is at the *Head* of the *Proteſtant* World, &c.

HEAD, is alſo uſed to denote the Relation of Priority; or that which comes firſt in any Thing. See PRIORITY.

In this Senſe, we ſay, the Names of Authors ſhould always appear at the *Head* of their Books. — Prefaces, and Epiſtle Dedicatory, come at the *Head*. — The Governour marches out at the *Head* of the Garriſon.

HEAD, in the military Art. — The *Head of the Camp*, is the Front, or fore-moſt Part of the Ground, an Army is incamped on; or that which advances moſt towards the Campaign, Field, or the Enemy. — The *Head* of the Camp is always to be the beſt fortified. See CAMP, &c.

In the like Senſe we ſay, the *Head of the Trenches*. — The *Head of the Sap:* — *Of the Works*, &c. meaning thoſe Parts advanced the furtheſt towards the Enemy. See WORKS, SAP, &c.

Such a Night the *Head* of the Trenches was carried further by an hundred Paces. — There are two *Heads* of a Trench; that is, two Attacks. See TRENCH and ATTACK.

The *Head of a Horn-Work*, is that Part contain'd between two Demi-Baſtions. See HORN-*Work*.

HEAD *of a Ship*, or other Veſſel, is the *Prow*, or Part that goes foremoſt. See PROW. See alſo SHIP.

HEAD, in the Manage. The Perfections required to the *Head of Horſe*, are that it be ſmall, narrow, lean and dry. — Horſes with a big groſs *Head*, are apt, by their Weight, to reſt and loll upon the Bridle; and ſo incommode the Rider's Hand. — A Horſe with a large *Head* can never look ſtately, unleſs he have a long and very well turned Neck, and place his *Head* well. — Horſes with groſs fat *Heads*, much charged with Fleſh, are ſubject to Infirmities of the Eyes.

But the chief Thing in a Horſe's *Head* is a good *Onſet*, ſo as he may be able to bring his *Head* into his natural Situation; which is, that all the fore Part, from the Brow to the Noſe, be perpendicular to the Ground; ſo that if a Plummet were applied thereto, it wou'd but juſt raze or ſhave it. See HORSE.

The *Head* of a Horſe is alſo uſed to import the Action of his Neck, and the Effect of the Bridle and Wriſt.

Moors HEAD, is underſtood of a Horſe with a black *Head* and Feet; the Body being uſually of a Roan Colour. See HORSE.

Moors Head, is alſo uſed by Engineers, for a Kind of Bomb or Granado, ſhot out of a Cannon. See BOMB and GRANADO.

Moors Head, is alſo uſed in Heraldry, for a Repreſentation, uſually in Profile, of a *Black-moors Head*, ſwath'd or roll'd about with a Bandage; frequenly bore as a Creſt. See CREST.

Moors Head, in Chymiſtry, is a Cover, or Capital, of an Alembic, having a long Neck, to convey the Vapours rais'd by the Fire, into a Veſſel, which ſerves as a Refrigeratory. See ALEMBIC.

In Muſic, the HEAD of a Lute, Theorbo, or the like, is the Place where the Pins or Pegs are ſcrew'd, to ſtretch or ſlacken the Strings. See LUTE, *&c.*

The *Dragons Head*, in Aſtronomy, *&c.* is the aſcending Node of the Moon, or other Planet. See NODE, DRAGON, *&c.*

HEAD-*Ach*, a painful Senſation in the Muſcles, Membranes, Nerves, or other Parts of the *Head*. See CEPHALALGIA.

It is ſuppoſed to ariſe from an extraordinary Diſtention of thoſe Parts, either by the Fluids therein being rarified, or their Quantity and Motion increas'd.

When attended with a Vomiting, Deafneſs, and Watching, it portends Madneſs; with a Noiſe in the Ear, Dulneſs of Feeling in the Hands, *&c.* an Apoplexy or Epilepſy. See MADNESS, APOPLEXY, *&c.*

The Cure is by Bleeding in the Jugular; Cupping, or applying Leeches to the Temples, and behind the Ears and Neck. — Iſſues, Emeticks, and Diaphoreticks are alſo occaſionally uſed; with Anti-epilepticks and Apoplecticks. — A Veſicatory applied to the whole Scalp, is the laſt Remedy.

M. *Homberg* gives us an extraordinary Inſtance of the Cure of a moſt vehement and inveterate *Head-Ach*, by an accidental Burn of the *Head*. See BURN.

HEAD-*Borow*, ſignifies the Perſon who is chief of the Frank-Pledge; and had antiently the principal Direction of thoſe within his own Pledge. See FRANK-*Pledge*.

He was alſo called *Burrow-Head*, *Burſholder*, now *Boſholder*, *Third-Borow*, *Tything-Man*, Chief-Pledge, and *Borow-Elder*, according to the Diverſity of Speech in divers Places. See TYTHING-*Man*, *&c.*

This Officer is now uſually call'd a *High-Conſtable*. See CONSTABLE.

The *Head-Borow* was the chief of ten Pledges; the other nine were call'd *Hand-Borows*, or *Plegii Manuales*. See FRIBOURG.

HEAD *Farcin*. See FARCIN.

HEAD-*Land*, in Husbandry, is that Part which is ploughed acroſs, at the Ends of other Lands.

HEAD *Mould-Shot*, a Diſeaſe in Children, wherein the Sutures of the Skull, generally the Coronal, *ride*; that is, have their Edges ſhot over one another; and ſo cloſe lock'd together, *e. gr.* as to compreſs the internal Parts, the Meninges, or even the Brain it ſelf. See SUTURE.

The Diſeaſe uſually occaſions Convulſions; and is ſuppoſed to admit of no Cure from Medicines; unleſs Room cou'd be given, by manual Operation, or a Divulſion of the Sutures.

The *Head Mould-Shot*, is the Diſorder oppoſite to the Horſe-Shoe Head. See HORSE-*Shoe Head*.

HEAD-*Pence*, and HEAD-*Silver*. See COMMON *Fine*.

HEAD-*Sea*, is when a great Wave, or Billow of the *Sea*, comes right a-head of the Ship, as ſhe is in her Courſe.

HEAD-*Stall*, in the Manage. See CAVESON.

HEALFANG, or HALSFANG, in our antient Cuſtoms, *Colliſtrigium*, or the Puniſhment of the Pillory. See PILLORY.

The Word is compounded of two *Saxon* Words, Halſ, i. e. *Collum*, and ꝑang, *Captura*; *pœna ſcilicit qua alicui Collum ſtringatur*. See COLLISTRIGIUM.

Healfang, however, cannot ſignifie a Pillory in the Charter of *Canutus de Foreſtis*, Cap. 14. *Et pro culpa ſolvat Regi duos ſolidos quos Dani vocant* Halfehang.

Sometimes it is taken for a pecuniary Puniſhment, or Mulct, to commute for ſtanding in the Pillory; and is to be paid either to the King, or to their chief Lord. — *Qui falſum Teſtimonium dedit, reddat Regi vel Terræ Domino* Halfeng. *Leg. H.* 1.

HEALING, in its general Senſe, includes the whole Proceſs of curing or removing a Diſorder, and reſtoring Health. See CURE and DISEASE.

In this Senſe, Medicine is defined the Art of *Healing*. See MEDICINE, *&c.*

In its more reſtrained Senſe, as uſed in Chirurgery, *&c.* *Healing* denotes the uniting or conſolidating the Lips of a Wound or Ulcer. See WOUND and ULCER.

The Medicines, proper for this Intenſion, are call'd Incarnatives, Agglutinatives, Vulneraries, *&c.* See INCARNATIVE, AGGLUTINANT, VULNERARY, *&c.*

Dr. *Beale* has a Diſcourſe of *Healing Springs* and *Waters* in the *Philoſoph. Tranſact.* N°. —. See WATER and SPRING.

HEALING, in Architecture, denotes the Covering the Roof of a Building. See ROOF and COVERING.

The *Healing* is various; as of *Lead*, *Tyles*, *Slate*, *Horſham Stone*, *Shingles*, *Reed* and *Straw*. See LEAD, TYLES, STONES, SHINGLES, *&c.*

HEALTH, *Valetudo*, *Sanitas*, a due Temperament, or Conſtitution, of the ſeveral Parts whereof an Animal is compoſed, both in Reſpect of Quantity and Quality. — Or it is that State of the Body, wherein it is fitted to diſcharge the natural Functions perfectly, eaſily, and durably. See BODY, LIFE, FUNCTION, *&c.*

Health, is the State or Condition, oppoſite to *Diſeaſe*. See DISEASE.

The Preſervation, and Reſtoration of *Health*, makes the Object of the Art of Medicine. See MEDICINE.

The Condition, or Continuance of *Health*, depends principally on the ſix Non-Naturals, viz. *Air*, *Food*, *Exerciſe*, the *Paſſions*, *Evacuation* and *Retention*, and *Sleep* and *Waking*. See each in its Place, FOOD, EXERCISE, PASSION, *&c.*

The Antients perſonified and even deified *Health*; or rather, erected a Goddeſs to whom they ſuppoſed the Care of *Health* to belong. — The *Greeks* worſhipp'd her under the Name *Hygeia*, and the *Latins* under that of *Sanitas*. — The Place of her Worſhip at *Rome* was on the *Mons Quirinalis*, where ſhe had a Temple; and a Statue crown'd with Medicinal Herbs.

We frequently find the Goddeſs *Health* on the Reverſe of Medals. — She is repreſented with a Serpent ſtretch'd on her left Arm, and holding a Patera to it with the left. Sometimes ſhe has an Altar before her, with a Serpent twiſted round the ſame, and raiſing its Head to take ſomething out of the ſame. The Inſcription is SAL. AUG.

Houſe of HEALTH, a Kind of Hoſpital, or public Building, for the Reception and Entertainment of Perſons infected with the Plague, or coming from Places infected therewith. See PEST-*Houſe*, QUARANTINE, *&c.*

In the like Senſe we ſay, Officers of *Health*, Certificate of *Health*, &c.

HEAM, among Farriers, the ſame with the After-birth in Women. See SECUNDINE.

Thyme, Penny-Royal, Winter Succory, or common Horehound, boil'd in white Wine, and given a Mare, are eſteem'd hood to expel the *Heam*. — Dittany given in a Peſſary, expels the *Heam*, as well as the dead Fole: So do Fennel, Hops, Savin, Angelica, *&c.*

HEARING, *Auditus*, the Act, or Faculty of perceiving Sounds. See SOUND and PERCEPTION.

Hearing is reckon'd among our external Senſes. — Its Organ is the *Ear*, and particularly the auditory Nerve diffuſed thro' the ſame: And its Object certain Motions, or Vibrations of the Air. See SENSE, EAR, and AIR.

Hence, *Hearing* may be more ſcientifically defined a Senſation, whereby from a due Motion impreſs'd on the Fibrillæ of the auditory Nerve, and communicated thence to the Senſory; the Mind perceives, or gets the Idea of Sounds. See SENSATION.

Philoſophers have differ'd as to the immediate Organ of *Hearing*. — *Ariſtotle* will have it the *Cochlea* and *Tympanum*, and takes the Senſe of *Hearing* to be ſeated therein. *Hiſt. Animal*, Cap. 10. in which he is followed by *Galen*, Lib. 8. *de uſu par.* See TYMPANUM, *&c.*

The Moderns ſpeak of the Point on much better Ground. — The Ear, and the ſeveral Parts thereof, Membranes, Canals, Labyrinths, Nerves, *&c.* are only Means, Vehicles, for the Reception, Modification, and Tranſmiſſion of the ſonorous Matter to the Brain; which is the Seat of the Senſe. See BRAIN and SENSORY.

A Sound, in Effect, is nothing but a certain Refraction, or Modulation of the external Air, which being gathered by the external Ear, paſſes through the *Meatus Auditorius*, and beats upon the *Membrana Tympani*, which moves the four little Bones in the *Tympanum*. See AURICLE and TYMPANUM.

In like Manner, as it is beat by the external Air, theſe little Bones move the internal Air, which is in the *Tympanum* and *Veſtibulum*; which internal Air makes an Impreſſion upon the auditory Nerve in the Labyrinth, and *Cochlea*, according as it is moved by the little Bones in the *Tympanum*; ſo that according to the various Refractions of the external Air, the internal Air makes various Impreſſions upon the auditory Nerve, the immediate Organ of *Hearing*; which different Impreſſions repreſent different Sounds.

Sir

Sir *Isaac Newton* carries the Thing ſomewhat farther, and ſuppoſes *Hearing*, like Seeing, to be perform'd, not immediately by the Vibrations of the Air, but by thoſe of ſome other more ſubtle Medium, excited in the auditory Nerves by the Tremors of the Air, and propagated thro' the ſolid Capillaments of the Nerve to the Place of Senſation. See MEDIUM, VISION, *&c.*

The curious Structure of the Labyrinth, and Cochlea, tend to make the weakeſt Sounds audible; for the whole Organ of *Hearing* being included in a ſmall Space, had the auditory Nerve run in a ſtrait Line, the Impreſſion would only have been made on a very ſmall Part of it; and the Strength of the Impreſſion being, *Cæteris paribus*, always as the Number of Parts upon which the Impreſſion is made, Sounds which are now low, could not have been heard at all. — If the auditory Nerve had, like the *Retina*, been expanded into a large Web, which had covered or lined ſome wide Cavity, the Impreſſion of Sounds even in this Caſe had been much weaker, than they are now: For this large Cavity had given Room for the Sounds to dilate; and all Sounds grow weaker, as they dilate.

Both of theſe Inconveniencies are prevented by the preſent Structure of the Labyrinth and Cochlea, whoſe Canals, by their winding, contain large Portions of the auditory Nerve, upon every Point of which the ſmalleſt Sound being at once impreſſed becomes audible; and by their Narrowneſs, the Sounds are hindred from dilating: And the Impreſſions made upon the Nerves by the firſt Dilatations are always the ſtrongeſt.

The Strength of the Impreſſion in narrow Canals, is likewiſe increaſed on Account of the Elaſticity of the Sides of the bony Canal; which receiving the firſt and ſtrongeſt Impulſes of the Air, do reverberate them more ſtrongly upon the auditory Nerve.

It may be obſerved, that tho' Air be the uſual Matter of Sounds; ſo that a Bell rung in *Vacuo* is not heard at all: Yet will moſt other Bodies, properly diſpoſed, do the like Office; only ſome more faintly than others. See MEDIUM.

Thus may a Sound be heard thro' Water, or even thro' Earth; of which we have various Inſtances. See SOUND.

Add, that tho' the Ear be the ordinary Organ of *Hearing*; yet *Hagerup*, a *Daniſh* Phyſician, maintains, that one may hear with the Teeth. — Thus, if one End of a Knife, or the like, be applied on a Harpſichol, and the other held between the Teeth; the Muſic thereof will be plainly heard, tho' the Ears be ever ſo cloſely ſtopp'd. — But this, perhaps, may as well be referr'd to the Senſe of Feeling. See FEELING.

Such as Want the Senſe of *Hearing* are ſaid to be *Mute* or *Deaf*. See DEAFNESS.

'The Senſe of *Hearing*, ſays *Cicero*, is always open; 'for this we have Need of even when aſleep. The 'Paſſage to it is full of Turns, and Meanders; that 'nothing hurtful may enter or find its Way in. If any 'little Vermine does endeavour to paſs; it muſt ſtick and 'be bemired in the *Cerumen*, or Ear-Wax, laid for that 'Purpoſe near the Entrance.' *De Nat. Deor. L.* 2 Cap. 57.

HEARING, is particularly uſed in Civil and Judicial Concerns, for a Cauſe, being brought before the Judge and Jury, and the Parties being heard as to the Merits thereof. See CAUSE, JUDGE, *&c.*

Such a Cauſe was kept off eight Months, e're it was brought to a *Hearing*. — We are to have our *Hearing* the laſt Day of the Term. See ISSUE.

The *Hearing* of Embaſſadors at the Courts of Princes is uſually call'd *Audience*. See AUDIENCE and EMBASSADOR.

HEARSE, among Hunters, an Hind in the ſecond Year of her Age. See HUNTING.

HEART, *Cor*, in Anatomy, a muſculous Part, in the animal Body, ſituate in the *Thorax*; wherein the Veins all terminate, and from which all the Arteries ariſe; and which, by its alternate Contraction and Dilatation, is the chief Inſtrument of the Circulation of the Blood, and the Principle of vital Action. See ARTERY, VEIN, BLOOD, LIFE, *&c.*

This noble Part is included in a Capſula, or Pouch, call'd the *Pericardium*; whoſe Structure and Office will be explain'd under the Article PERICARDIUM.

The Figure of the *Heart* is a Cone, or Pyramid reverſed; the upper, and broader Part whereof, is called the *Baſis*; and the lower, the *Cone*, *Apex*, or *Point*; which is turn'd a little towards the left Side.

Its Magnitude is indeterminate, and different in ſeveral Subjects, according to their reſpective Dimenſions. — Its ordinary Length is about ſix Inches, its Breadth at the Baſis four or five; and the whole Circumference fourteen. Its Place is in the middle of the *Thorax*, between the two Lobes of the Lungs; and it is faſten'd to the *Mediaſtinum* and *Pericardium*, and ſupported by the great Blood-Veſſels, to which alone it is immediately connected; being, for the Conveniency of its Motion, diſengaged from any other Impediments. — It is cover'd with a thin Membrane, which, about the Baſis, is guarded with fat; and which is no other than the common Membrane of the Muſcles. See MEMBRANE.

It has two great Cavities, call'd *Ventricles*, ſomewhat unequal; the right being larger, capable of containing between two and three Ounces of Blood. — They are divided by a fleſhy Partition, conſiſting of the ſame muſcular Fibres with the *Parietes* themſelves, and called the *Septum*; the Figure whereof is Concave towards the left Ventricle, and Convex towards the right. — There is no immediate Communication between the Ventricles; but for the Blood to paſs out of one into the other, it muſt fetch a round thro' the Lungs. See SEPTUM, *&c.*

The *Parietes*, or Sides of theſe Ventricles, are of a Thickneſs and Strength very unequal; the left much exceeding the right, becauſe of its Office, which is to force the Blood thro' all the Parts of the Body; whereas the right drives it through the Lungs only, and is therein greatly aſſiſted by other Parts. — The right Ventricle, in Effect, ſeems only intended with a View to the Lungs; whence, in ſuch Animals as have no Lungs, we only find one Ventricle, which is the left. See LUNGS.

In the Ventricles are little Muſcles, called *Columnæ Carneæ*, or *Lacertuli*, derived from the *Parieties*, and connected, by tendinous Extremities, to the *Valves* of the *Heart* hereafter mention'd. See COLUMNÆ.

The Ventricles are capped each with an *Auricle*, or little Muſcle, conſiſting, like the Ventricles themſelves, of a double Order of fleſhy Fibres. See AURICLE.

The Veſſels, either ariſing from, or terminating in the *Heart*, and its Auricles are two *Arteries*, viz. the *Aorta*, and the *Pulmonary* Artery, which have their Origin from the two Ventricles, *viz.* the *Aorta* from the left, and the *Pulmonary* from the right: And two *Veins*, which terminate in the Auricles, *viz.* the *Cava* Vein in the right, and *Pulmonary* Vein in the right. See AORTA, CAVA, PULMONARY, *&c.*

At the reſpective Orifices of theſe Veſſels are placed *Valves*. See VALVE.

Particularly, at the Orifice of the Arteries, within each of them, are three ſemi-lunar Valves, or Membranes, of a ſemi-lunar Figure, which cloſe the Orifice of the Artery, and hinder the Relapſe of the Blood into the *Heart* at the Time of its Dilatation. — At the Mouth of the right Ventricle, juſt at its Juncture with the Auricle, are three others call'd *Tricuſpides*, from their three Points being faſten'd by tendinous Fibres to the *Columnæ Carneæ*; ſo that upon the Contraction, or Syſtole of the *Heart*, they cloſe the Orifice, and hinder the Blood from recurring into the great Vein. — The ſame Office do the two Mitral Valves, at the Exit of the left Ventricle, ſtopping the Return of the Blood into the Pulmonary Vein. See SEMI-*Lunar*, TRICUSPID, and MITRAL.

The Subſtance of the *Heart* is entirely fleſhy, or muſculous. — The Antients, indeed, generally took it for a *Parenchyma*; but *Hippocrates* had a juſter Sentiment; and after him *Steno* and the Moderns, have evidently found it to conſiſt of a continued Series of proper muſculous Fibres, variouſly contorted, or wound up, and ending at the Orifices of the reſpective Ventricles, where they form their Tendons.

In diſſecting the *Heart*, after taking off the proper Membrane, there appear, on the outer Surface of the right Ventricles, ſome ſlender ſtrait Fibres tending to and ending in the Baſis. — Immediately under theſe is a double Order of ſpiral Fibres, the exterior whereof aſcend obliquely from the Septum to the Baſis, and form a Sort of *Helix*, or *Cochlea*: The interior take a contrary Courſe; winding obliquely from the right Side towards the left, ſo as to encompaſs both Ventricles, and ending in the Baſis on the left Side, form likewiſe an *Helix* of an inverſe Order. — Under theſe appear the Fibres of the left Ventricle; and firſt, a ſpiral Series running to the left, under which, as in the other Ventricle, lie another Order running the contrary Way, which not only extend to the outward Paries, but encompaſſing the whole Ventricle, make the Septum more immediately appertain to, and be a Part of, the left Ventricle. Some of them, inſtead of terminating, as the reſt do, in the Tendons of the *Heart*, run inwards, and form the *Columnæ Carneæ*; while others, reaching down to the Cone, are wound about it, and form the Circle called the *Centre* of the *Heart*. See CENTRE.

The Fibres of the *Heart* appear to be the ſame with thoſe of the other Muſcles; whence the Part now generally paſſes for a real Muſcle; tho' ſome think the Inference not over juſt, inaſmuch as the *Aorta* has the ſame Claim to be reputed a Muſcle. See MUSCLE and AORTA.

Some late Authors, upon conſidering the Structure and Diſpoſition of the ſpiral Fibres, chuſe rather to make the *Heart* a double Muſcle, or two Muſcles tyed together. — In Effect, the two Ventricles, with their reſpective Auricles, are found two diſtinct Bodies, two Veſſels, or Cavities, which may be ſeparated, and yet ſtill remain Veſſels; the Septum, which was ſuppoſed to belong only to the left, being now found to conſiſt of Fibres derived from them both. — To ſay no more, the two Ventricles, according to M. *Winſlow*, are two ſeveral Muſcles united together, not only by the Septum, but by ſeveral Plans of Fibres ariſing from the exterior Baſe of the *Heart*, and meeting at the *Apex*, which entering the left Ventricle, lines the Parietes, *&c.*

The *Heart* has alſo its proper Blood Veſſels, *viz.* two Arteries ſpringing from the Entrance of the *Aorta*; and one larger Vein, with one or two leſſer; all which, from their encompaſſing the *Heart*, are called *Coronariæ*. See CORONARY.

The Nerves of the *Heart* and its Auricles, come from a Plexus of the *Par Vagum*, called by *Willis*, *Plexus Cardiacus*. See NERVE and PLEXUS.

It has alſo *Lymphæducts*, which carry the *Lymph* from the *Heart* to the *Thoracic* Duct. See LYMPHÆDUCT.

The Uſe of the *Heart*, and its appendant Auricles, is to circulate the Blood through the whole Body: In Order to which, they have an alternate Motion of Contraction and Dilatation. — By the Dilatation, call'd the *Diaſtole*, their Cavity is open'd, and their internal Dimenſions enlarged to receive the refluent Blood from the Veins; and by their Contraction, call'd the *Syſtole*, their Cavity is ſhrunk, and their Dimenſions leſſen'd, to expel the Blood again into the Arteries. See SYSTOLE and DIASTOLE.

It muſt be added, that theſe alternate Motions of the *Heart* and Auricles, are oppoſite in Time to each other; the Auricles being dilated whilſt the *Heart* is contracted again; and contracted whilſt it is dilated, to drive the Blood into it. See AURICLE.

By Means of the right Ventricle, the Blood is driven through the Pulmonary Vein, from which being received into the Pulmonary Artery, it is returned to the left Ventricle; from which by the *Aorta*, it is diſtributed all over the reſt of the Body, and thence returned to the right Ventricle by the *Vena Cava*; ſo making an entire Circulation through the whole Body. See CIRCULATION.

Scheuchius ſpeaks of a Man who had no *Heart*; but *Molinetti* denies it: As alſo that there ever were two *Hearts* found in any Man, tho' the Caſe be common in divers Inſects, which have naturally ſeveral *Hearts*; witneſs Silk-Worms, which have a Chain of *Hearts* running the whole length of their Bodies. But we have inconteſtable Inſtances of two *Hearts*, even in the ſame Man. — There have been *Hearts* found all gnawed and devoured with Worms: *Muretus* open'd the *Hearts* of ſome *Banditti*, which were all Hairy, or at leaſt inveſted with a *Tomentum*, or Down. — And what is ſtill more extraordinary, we have Accounts of Perſons in whom the *Heart* has been found inverted, or turned upſide down; particularly in a Woman hang'd ſome Time ago in *Saxony*, and a Man hang'd at *Paris*. *Journ. des Scav.*

Timorous Animals have always larger *Hearts* than courageous ones; as we ſee in Deer, Hares, Aſſes, *&c.* — There is a Bone found in the Baſis of the *Hearts* of certain Animals, particularly Deer; which ſeems to be no other than the Tendons of the Fibres of the *Heart* indurated and oſſified.

Hiſtorians relate, that Pope *Urban* VIII. being open'd after his Death, was found to have ſuch a Bone in his *Heart*. The Caſe is very uſual in the Trunk of the *Aorta*, which ſprings from the *Heart*. See AORTA.

Many amphibious Creatures, as the Frogs, *&c.* have but one Ventricle in the *Heart*. — The Tortoiſe is ſaid by the *French* Academiſts to have three Ventricles: M. *Buſſiere* charges this on them as a Miſtake; and maintains it has but one. The Point is ſcarce yet aſcertain'd. *Mem. de l'Acad. An.* and *Philoſoph. Tranſact.* N°. 328.

Theory of the Motion of the HEART.

The Principle of Motion in the *Heart*, or the Power from which its alternate Contraction and Dilatation ariſes, has been greatly controverted among the late Phyſicians and Anatomiſts.

The Expulſion of the Blood out of the Ventricles, argues a very conſiderable Motion in the Part. — The motive Power, 'tis certain, muſt ſurmount the Reſiſtance made to it; and according to *Borelli*'s Computation, the Reſiſtance made to the Motion of the Blood thro' the Arteries, is equal to 180000 Pounds, which therefore are to be removed by the *Heart*; or elſe the Circulation muſt ceaſe. Now, whence comes the Machine of the *Heart* to have ſuch a Power? And after the Expulſion, what other Power is it that ſurmounts the former, and reſtores the Part to its State of Dilatation, to produce a reciprocal *Æſtus*?

The whole Affair remain'd in the utmoſt Darkneſs and Uncertainty, till Dr. *Lower*'s excellent Treatiſe *De Corde*, where the Mechaniſm, whereby the Contraction, or Syſtole, is effected, was admirably explain'd. — The Cauſe of the Dilatation, or Diaſtole, which Dr. *Lower* had in great Meaſure over-look'd, has ſince been happily ſupplied by Dr. *Drake*.

That the *Heart* is a Muſcle, furniſhed and inſtructed for Motion like other Muſcles, is abundantly demonſtrated by Dr. *Lower* and others; and as it is a ſolitary Muſcle, without any proper Antagoniſt, and not directly under the Power of the Will, nor exerciſing voluntary Motion, it approaches neareſt to the ſphincter Kind, which has theſe Conditions in common with it. See SPHINCTER.

But in conſtant, and regular Alternations of Contraction and Dilatation, the *Heart* differs exceedingly from all the other Muſcles of the Body. See MUSCLE.

This Alternation has given the Learned Abundance of Trouble, who finding nothing peculiar in the Structure, which ſhould neceſſarily occaſion it; nor any Antagoniſt, whoſe Re-action ſhould produce it; have been extremely perplexed to find out the Cauſe.

That, Contraction is the proper Action and State of all Muſcles, is evident both from Reaſon and Experience. For if any Muſcle be freed from the Power of its Antagoniſt, it immediately contracts, and is not by any Action of the Will or Spirits, to be reduced to a State of Dilatation. — Thus, if the Flexors of any Joint be divided; the Extenſors of that Joint being by that Means freed from the contrary Action of their Antagoniſts, the Joint is immediately extended, without any Conſent of the Will, and in that State remains; and ſo *vice verſa*, if the Extenſors be divided.

Hence it appears, that the ordinary Muſcles have no reſtitutive Motion, but what they derive from the Action of their Antagoniſts, by which they are ballanced. — Thus the Sphincters of the *Anus*, *Veſica*, &c. having no proper Antagoniſts, are always in a State of Contraction, and ſuffer nothing to paſs them, but what is forced through them by the contrary Action of ſome ſtronger Muſcles, which, tho' not properly called Antagoniſts, yet on all neceſſary Occaſions, perform the Office of ſuch. See ANUS, VESICA, *&c.*

We have here, then, an adequate Cauſe of the Contraction of the *Heart*, viz. the natural *Vis Motrix* of muſculous Fibres, whoſe proper *Niſus*, or Tendency, is to contract themſelves. See MUSCULAR and FIBRE.

It may be added, however, that tho' the muſcular Fibres of the *Heart*, acted by the Nerves, be the immediate Inſtrument of its Conſtriction, or Syſtole, as is ſhewn by Dr. *Lower*, yet is there another Cauſe which contributes not a little thereto, and which Dr. *Lower* over-look'd, *viz.* the intercoſtal Muſcles and Diaphragm, which aid and facilitate this Contraction, by opening a Paſſage for the Blood through the Lungs, which denied, would be an invincible Obſtacle. — Add, that the pulmonary Artery and Vein, ſpreading themſelves throughout all the Diviſions and Sub-diviſions of the *Bronchia* of the Lungs, and being as it were co-extended therewith, muſt ſuffer the like Alteration of ſuperficial Dimenſions, as the *Bronchia* do in the Elevation and Depreſſion of the *Coſtæ*. So that while the Ribs are in a State of Depreſſion, whether before Commerce with the external Air, or after, the annular Cartilages of the *Bronchia* ſhrink one into another, and by that Means their Dimenſions are exceedingly contracted: In Conformity to which Condition of the *Bronchia*, the pulmonary Artery and Vein muſt likewiſe, either by Means of their muſcular Coats, contract themſelves to the ſame Dimenſions, or lie in Folds or Corrugations; which is leſs probable. — On the other Hand, when the Ribs are elevated, and the Diaphragm bears downwards, the Air ruſhing into the Lungs, ſhoots out the cartilaginous Rings, and divaricates the Branches of the *Trachea*, and by them extends the ſeveral Diviſions of the pulmonary Artery and Vein, and thereby lengthens and enlarges their Cavities: And this their alternate Action, will be continued, and imparted to the *Heart*; from which they ariſe.

Thus is a Paſſage open'd to the Blood from the light Ventricle of the *Heart*, to the left, through the Lungs, to which it could not otherwiſe paſs; and the Oppoſition which the Blood, contained in that Ventricle, muſt otherwiſe neceſſarily have made to its Conſtriction, is taken off; and the Syſtole thereby facilitated. See SYSTOLE.

For the Diaſtole, or Dilatation of the *Heart*, Dr. *Lower* contents himſelf to aſcribe it to a Motion or Reſtitution of the over-ſtrained Fibres. — His Words are, 'Since all 'its Motion conſiſts in its Contraction; and the Fibres 'of the *Heart* are made for Conſtriction only; 'tis evi-'dent, all the Motion of the *Heart* is in its Syſtole; But,

'as the Fibres are ſtretch'd beyond their Tone in every 'Conſtriction; for this Reaſon, after that *Niſus* is over, 'the *Heart* relaxes again by a natural Motion of Reſtitu-'tion, and is diſtended by the Influx of new Blood from 'the Veins. The Diaſtole, then, is not effected by any 'further Action of the *Heart* beſide a Remiſſion of its 'former Tenſion, and the Influx of the Blood.'

Now, if Contraction be the ſole Action of thoſe Fibres, as it certainly is, and as the Author here confeſſes; how can their Diſtention, vulgarly tho' improperly, call'd their Relaxation, be a Motion of Reſtitution? For, from the Nature of thoſe Fibres, and their Diſpoſition; the Structure of the *Heart* manifeſtly appears tonical, and its Dilatation a State of Violence. So that the Conſtriction is the true Motion of Reſtitution, and the only State to which it will ſpontaneouſly return when the Force is taken off; and thus we are left ſtill to ſeek for the true Cauſe of the Diaſtole, which appears the moſt difficult Phænomenon relating to the *Heart*.

Mr. *Cowper*, in his Introduction to his *Anatomy*, improves on the Share Dr. *Lower* hints the Blood to have in that Action, and makes it the main Inſtrument of the Dilatation of the *Heart*; in which he is followed by Dr. *Drake*; who, however, differs from him as to the Manner, and Reaſons of its being ſo.

'The *Heart* of an Animal,' ſays Mr. *Cowper*, 'bears a great 'Analogy to the Pendulums of thoſe artificial *Automata*, 'Clocks and Watches, while its Motion is performed like that 'of other Muſcles; the Blood doing the Office of a *Pondus*.' — If he means that the Blood, in its Reflux, by gravitating on the Auricles and Ventricles, dilates and expands them; acting therein as a Counterpoize to its Contraction as a Muſcle; 'tis pity he had not given an Explication at large of ſo abſtruſe and important a Phænomenon: The ſpecific Gravity of the Blood, not ſeeming a Cauſe adequate to the Effect it is here ſuppoſed to produce. — For if the Blood act only as a Weight, by meer Gravitation; ſo much of it only as deſcends from above the *Heart*, can be employed in that Action; which, at the largeſt Computation, does not amount to above five Pound Weight, and muſt be able, according to the Computation of *Borellus*, to overcome a Reſiſtance of 135,000 Pound.

Whatever, therefore, the Force that dilates the *Heart* and is the Cauſe of the Diaſtole, be, it muſt be equal to that of the *Heart*, the intercoſtal Muſcles and Diaphragm; to all which it acts as an Antagoniſt.

Such a Power is hard, perhaps impoſſible, to be found in the Machine of an animal Body; and yet without ſome ſuch Antagoniſt, it is as impoſſible the Circulation of the Blood ſhould be maintained. — All the Engines yet diſcovered within the Body, conſpire towards the Conſtriction of the *Heart*, which is the State of Quieſcence, to which it naturally tends; yet we find it alternately in a State of Violence, or Dilatation: And on this Alternation does all animal Life depend.

Some external Cauſe, therefore, muſt be found to produce this Phænomenon; which Cauſe muſt be either in ſome Quality of the Air, or the Preſſure of the Atmoſphere, becauſe we have no conſtant and immediate Commerce, with any other *Media*.

Some Phyſicians obſerving this, and that deprived by whatſoever Means of Communication with the external Air, we became inſtantly extinct; have imagined, that in the Act of Inſpiration, certain purer Parts of the Air were mixed with the Blood in the Lungs, and conveyed along with it to the *Heart*, where they nouriſhed a Sort of vital Flame, which was the Cauſe of this reciprocal *Æſtus* of the *Heart*. See FLAME.

Others, rejecting an actual Flame, have fancied that theſe fine Parts of Air, mixing with the Blood in the Ventricles of the *Heart*, produced an Efferveſcence which dilated it. See EFFERVESCENCE.

But theſe Notions have been long exploded, upon ample Conviction; and 'tis a Point yet undetermined, whether any Air does mix with the Blood at all in the Lungs or not. See LUNGS, *&c.*

But, ſuppoſing ſome Air do inſinuate it ſelf into the pulmonary Vein, it can no other Way dilate the *Heart*, than by an Efferveſcence in the left Ventricle, which would not dilate the right. — But even this Opinion is contradicted by Autopſy, and abundantly confuted by divers Authors. See RESPIRATION.

Upon the whole, the groſs Body of the Atmoſphere appears to be the true Antagoniſt to all the Muſcles ſerving for ordinary Inſpiration, and the Conſtriction of the *Heart*; which is confirmed not only from its ſufficient Power, but the Neceſſity of its Action upon animal Bodies. See ATMOSPHERE.

The *Heart*, we have obſerv'd, is a ſolitary Muſcle, of very great Strength; and the intercoſtal Muſcles and Diaphragm, which likewiſe have no Antagoniſts, are a vaſt additional Force, which muſt be ballanced by the contrary Action of ſome equivalent Power, or other. For tho' the Action of the intercoſtal Muſcles be voluntary, it does not exempt them from the Condition of all other Muſcles ſerving for voluntary Motion, which would be in a State of perpetual Contraction, notwithſtanding any Influence of the Will, were it not for the Libration of antagoniſt Muſcles. This Libration, between other Muſcles, is anſwered by the Weight of the incumbent Atmoſphere, which preſſes upon the *Thorax*, and other Parts of the Body. And as in all other voluntary Motions, the Influence of the Will only gives a Prevalence to one, of two Powers before equilibrated; ſo here it ſerves to enable thoſe Muſcles to lift a Weight too ponderous for their Strength not ſo aſſiſted: So that as ſoon as that Aſſiſtance is withdrawn, the Ribs are again depreſſed by the mere Gravitation of the Atmoſphere, which would otherwiſe remain elevated thro' the natural Tendency of thoſe Muſcles to Contraction.

This is evidently proved from the *Toricellian* Experiment, and thoſe made upon Animals in *Vacuo*; where, aſſoon as the Air is withdrawn, and the Preſſure thereby taken off, the intercoſtal Muſcles and Diaphragm are contracted, and the Ribs elevated in an Inſtant, and cannot by any Power of the Will be made to ſubſide, till the Air is again let in to bear them forcibly down. See VACUUM.

As in the Elevation of the Ribs, the Blood, by the Paſſage open'd for it, is in a Manner ſollicited into the Lungs; ſo in their Depreſſion, by the Subſidence of the Lungs, and Contraction of the Blood Veſſels conſequent thereof, the Blood is forcibly driven thro' the pulmonary Vein into the left Ventricle of the *Heart*. And this, together with the general Compreſſion of the Body by the Weight of the Atmoſphere which ſurrounds and preſſes on its whole Surface, is that Power which cauſes the Blood to mount in the Veins, after the Force impreſs'd upon it by the *Heart* is broken and ſpent, and which ſuffices to force the *Heart* from its natural State to Dilatation.

Upon computing the Weight of a Column of Air equal to the Surface of the Body, it appears a Power ſufficient for the Effects here aſcribed to it: And conſidering that the Bodies of Animals are compreſſible Machines, it appears that it muſt of Neceſſity affect them in the Manner here laid down. — And yet, tho' our Bodies be entirely compoſed of *Tubuli*, or Veſſels filled with Fluids, this Preſſure, how great ſoever, being equal every Way, could not affect them, were it not that the ſuperficial Dimenſions are eaſily variable; becauſe, being compreſs'd on all Parts with the ſame Degree of Force, the contained Fluids could not any where begin to recede, and make Way for the reſt to follow, but would remain as fix'd and immoveable, as if they were actually ſolid. See FLUID. — But, by the Dilatation of the *Thorax*, Room is made for the Fluids to move; and by the Coarctation of it, freſh Motion is impreſt; which is the great Spring whereby the Circulation is ſet and kept going.

This reciprocal Dilatation and Contraction of the ſuperficial Dimenſions of the Body, ſeems ſo neceſſary to animal Life, that there is not any Animal ſo imperfect as to want it, at leaſt none to which our anatomical Enquiries have yet reach'd. — For tho' moſt Kinds of Fiſh, and Inſects, want both moveable Ribs and Lungs, and conſequently have no dilatable *Thorax*; yet that Defect is ſupplied by an analogous Mechaniſm, anſwering ſufficiently the Neceſſities of their Life. — Thus, Fiſhes, which have no Lungs, have Gills to do the Office of Lungs, receiving and expelling alternately the Water, whereby the Blood-Veſſels ſuffer the ſame Alteration of Dimenſions, as in the Lungs of more perfect Animals. See GILLS.

Add, that the Lungs, or Air-Veſſels of Inſects, are much more different from thoſe of perfect Animals, than thoſe of Fiſhes are; and yet in their Action and Uſe, agree perfectly with both; that is, removing and expelling the Air, and varying the Dimenſions and Capacities of the Blood Veſſels. Having no *Thorax*, or ſeparate Cavity for the *Heart* and Air-Veſſels, the latter are diſtributed thro' the whole Trunk; by which they communicate with the external Air through ſeveral Spiracles or vent Holes, to which are fitted ſo many little *Tracheæ* or Wind-Pipes, which thence ſend their Branches to all the Muſcles and *Viſcera*, and ſeem to accompany the Blood-Veſſels all over the Body, as they do in the Lungs of perfect Animals. By this Diſpoſition, in every Inſpiration, the whole Body is inflated, and in every Expiration compreſſed; and conſequently the Blood-Veſſels muſt ſuffer a Viciſſitude of Extention and Contraction, and a greater Motion be thereby impreſſed on the contained Fluids, than the *Heart*, which in theſe Creatures does not appear to be muſcular, would be capable of giving. — The only Animal, exempted from this neceſſary Condition of receiving and expelling alternately ſome Fluid in and out of the Body, is a Fœtus:

But this, while included in the Womb, ſeems to have little more than a vegetative Life; and ought ſcarce to be reckon'd among the Number of Animals: And were it not for that ſmall Share of muſcular Motion which it exerciſes in the Womb, it might, without Abſurdity, be accounted a Graft upon, or Branch of the Mother. See FOETUS, EMBRYO, &c.

One Difficulty we muſt not here conceal, which will lie againſt the whole Doctrine, *viz.* That the *Hearts* of ſeveral Animals have been found to beat regularly and ſtrongly, even in *Vacuo*; not leſs ſo than in the Air. Witneſs the *Hearts* of Frogs, tried by Mr. *Boyle*. *Philoſoph. Tranſact.* N°. 62.

Eſtimate of the Force of the HEART.

The Quantity of the Force of the *Heart* has been variouſly eſtimated, and on various Principles; by various Authors, particularly *Borelli*, *Morland*, *Keill*, *Jurin*, &c.

The Force of the *Heart* may be defined by the Motion wherewith the *Heart* contracts; or by the Motion of a Weight which being oppoſed to the Blood at its Exit out of the *Heart*, will juſt balance and ſtop the ſame. — This we have no Way of coming at *a priori*; the internal Structure of the Part, and the Nature and Power of the contracting Cauſe being but imperfectly known: So that the only Means remaining, is to eſtimate it by the Effects.

All the Action of the *Heart* conſiſts in the Contraction of its Ventricles: The Ventricles contracting, ſtrike or preſs upon the Blood, and communicating Part of their Motion thereto, drive it out with Vehemence where the Paſſage is open. — The Blood thus protruded into the *Aorta*, and pulmonary Artery, preſſes every Way; partly againſt the Coats of the Arteries, which by the laſt Diaſtole had been left in a collapſed, flaccid State; and partly againſt the anterior Blood moving on too ſlowly before it. By ſuch Means the Coats of the Arteries are gradually diſtended, and the antecedent Blood has its Motion accelerated. — By the Way it may be obſerved, that the more flaccid the Arteries are, the leſs Reſiſtance will they make to a Dilatation; and the more they are dilated, the more ſtrongly will they reſiſt a further Diſtraction; ſo that the Force of the Blood, at its Egreſs out of the *Heart*, is at firſt ſpent in diſtending the Arteries, more than protruding the antecedent Blood; but afterwards more in protruding the Blood, than in diſtending the Arteries.

Borelli, we have already obſerved, in his *Oecon. Animal.* makes the Obſtacles to the Motion of the Blood thro' the Arteries, equivalent to 180,000 Pounds; and the Force of the *Heart* it ſelf, only equal to 3,000 Pound, which is only $\frac{1}{60}$ of the Oppoſition it has to overcome. Then, deducting 45,000 Pound for the adventitious Help of the muſcular Elaſtic Coat of the Arteries; he leaves the *Heart* with a Force of 3,000 Pound, to overcome a Reſiſtance of 135,000 Pound; that is, with 1 to remove 45; which he ſuppoſes it enabled to do by Virtue of Percuſſion.

But had he proceeded in his Calculation to the Veins, which he allows to contain Quadruple the Quantity of Blood as the Arteries do, and to which this Energy of Percuſſion either does not reach at all, or very languidly; he would readily have ſeen the Syſtem of Percuſſion to be inſufficient.

But his Calculus it ſelf is alſo found to be faulty; the Force aſcribed by him to the *Heart* being immenſely too great. — Dr. *Jurin* ſhews, that had he not made a Miſtake in the Computation, the Reſiſtance which the *Heart* has to overcome, muſt have come out, on his own Principles, much greater; and inſtead of 135,000 Pound, would have been 1,076,000 Pound, which tranſcends all Probability.

The great Faults in his Solution conſiſt, according to Dr. *Jurin*, in his eſtimating the motive Force of the *Heart* by a Pondus at reſt; in ſuppoſing the whole Weight ſuſtain'd by a Muſcle, in one of his Experiments, to be ſuſtain'd wholly by the contracting Force thereof; in aſſuming Muſcles, equally heavy, to be of equal Force: In ſuppoſing the utmoſt Force of the *Heart* exerted at every Syſtole, &c.

Dr. *Keill*, in his Eſſays of the *Anim. Oecon.* firſt ventured to ſet aſide *Borelli*'s Calculus; and ſubſtituted another, almoſt infinitely ſmaller, in its Stead. His Method of eſtimating the Force of the *Heart* is as follows: — Having the Velocity wherewith a Fluid flows out at an Orifice, without meeting any Reſiſtance from an anterior Fluid; the Force which produces that Motion is thus determined. Let the Line AB be the heighth from which a falling Body will acquire a Velocity equal to that wherewith the Fluid flows out at the Orifice; then is the Force which produces the Motion of this Fluid, equal to the Weight of a Cylinder of the ſame Fluid, whoſe Baſe is equal to the Orifice, and Weight equal to

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2 A B: *Coroll.* 2. *Prop.* 36. *Lib.* II. Newton *Princip.*

Now, the Blood flowing out of the *Heart*, is reſiſted in its Motion by the anterior Blood in the Arteries and Veins, and therefore cannot flow with all the Velocity the Force of the *Heart* will give it; part of that Force being ſpent in overcoming the Reſiſtance of the Maſs of Blood. If therefore we knew how much the Velocity of the Blood is diminiſhed by this Reſiſtance, or what Proportion the Velocity of the Blood reſiſted, has to the Blood driven out, and not reſiſted; having already determined the Velocity of the Blood as it is reſiſted, we might eaſily recollect the Velocity, by which the Blood would flow were it not reſiſted; and from thence, the abſolute Force of the *Heart*.

To find this, the Author made the following Experiment. — Having uncover'd the *Iliack* Artery and Vein in the Thigh of a Dog, near his Body; and paſſed convenient Ligatures under them; he open'd the whole Diameter of the Veſſels, and received the Blood which run from it in the Space of ten Seconds: The ſame was afterwards done by the Artery, for the ſame Space of Time; and both the Quantities of the Blood were exactly weighed. The Experiment was repeated for the greater Security: Till, the Quantity of Blood from the Artery, was found at a Medium, to that from the Vein in the ſame Space of Time, nearly as $7\frac{1}{2}$ to 3.

Now, the Velocity of the Blood in the *Iliack* Artery, ſo near the *Aorta*, muſt be nearly the ſame with that in the *Aorta* it ſelf; and conſequently the Velocity with which it flows out of the *Iliack* Artery cut aſunder, is the ſame with which it would flow out of the *Heart* unreſiſted: Or, the Blood runs thro' a Wound in the *Iliack* Artery, with all the Velocity it received from the *Heart*. Now all the Blood which runs along the *Iliack* Artery, returns again by the *Iliack* Vein; and conſequently, the Quantities of Blood which paſs thro' both in the ſame Space of Time, are equal. The Quantity of Blood, therefore, which runs out of the *Iliack* Vein cut aſunder, is the ſame which ran thro' the *Iliack* Artery, before it was cut, in that Space of Time. Having, therefore, the Quantity which runs thro' the *Iliack* Artery when it is cut, and when it is not cut, we have their Velocities; for the Velocity of a Fluid, running thro' the ſame Canal, in equal Spaces of Time, is directly as their Quantities: But the Velocity of the Blood, when the Artery is cut, is equal to that it receives by the full Force of the *Heart*; and the Velocity when it is not cut, is that Velocity with which the Blood moves thro' the *Aorta*, reſiſted by the anterior Blood: And therefore theſe two Velocities are to one another as $7\frac{1}{2}$ to 3.

If now the *Heart* throws out two Ounces of Blood every Syſtole, which is a probable Aſſumption, then the Blood moves thro' the *Aorta* at the Rate of 156 Feet in a Minute; and therefore the abſolute Velocity, wherewith the Blood would be forced into the *Aorta*, did it find no Reſiſtance, is ſuch as would make it move 390 Feet in a Minute, or $6\frac{1}{2}$ Feet in a Second.

We now proceed to enquire, what is the Height from which a falling Body will acquire this given Velocity; for this Height doubled, gives the Length of the Cylinder whoſe Baſe is equal to the Orifice of the *Aorta*, and Weight equal to the abſolute Force of the *Heart*.

It is known by Experiment, that the Force of Gravity will make a Body move 30 Feet in a Second, which is the Velocity it acquires in falling thro' 15 Feet; and therefore this Velocity is to the Velocity of the Blood flowing without Reſiſtance into the *Aorta*, as 30 to 6. 5: But becauſe the Heights from which Bodies acquire given Velocities, are as the Squares of the Velocities, that is, as 900 to 42. 25; therefore, as 900 to 42. 25, ſo is 15 to 0. 74. — This Height doubled, gives 1. 48, or in Inches 17. 76, which is the Height of a Cylinder of Blood, whoſe Baſe is equal to the *Aorta*, which we have ſuppoſed to be equal to 0. 4187; and therefore the ſolid Content is 7. 436112, the Weight of which is equal to the abſolute Force of the *Heart*.

This Weight is five Ounces, whence the *Force of the* Heart *is found equal to the Weight of five Ounces.*

The ſame Author, by another Method of Calculating, from the Laws of Projectiles, finds the Force of the *Heart* almoſt equal to 8 Ounces, which tho' ſomewhat more than was before determined, yet the Difference is of no ſmall Moment in Reſpect of *Borelli*'s Account; the great Failing in whoſe Calculation Dr. *Keill* takes to ariſe from his not diſtinguiſhing between the Blood at reſt, and already in Motion. — The Force of the *Heart*, 'tis certain, is not employ'd in giving Motion to any Quantity of Blood at reſt, but only to continue it in Motion; how that Motion firſt aroſe, ſeems out of human Capacity to determine. 'Tis demonſtrable, that if the Reſiſtance of the Blood always bore the ſame Proportion to the Force of the *Heart*

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it does now, the Blood never could at firſt be put in Motion by the *Heart*. If the Blood conſtantly moved forwards, with the Motion firſt communicated to it; and did the Coats of the Veſſels make no Reſiſtance; the poſterior Blood would not be retarded by the anterior, and the Force of the Blood would equal the intire Force of the Mover. But becauſe of the Reſiſtance made by the Coats of the Blood-Veſſels, and the Force which is ſpent in diſtending them, the Blood is continually retarded in its Motion as it circulates, and would in a ſhort Time ſtop, were not the Motion loſt made up again by a freſh Impulſe from the *Heart*; and therefore the Force of the *Heart* muſt be equal to the Reſiſtances the Blood meets with in its Motion: If it were more, the Velocity of the Blood would be continually increaſing; if leſs, it would continually decreaſe; and at laſt ſtop: And hence it is evident, that if the Circulation of the Blood was once ſtopped, all the Force of the *Heart* could never ſet it moving again.

Thus much for Dr. *Keill*'s Syſtem: — Dr. *Jurin* charges even this with its Defects; and particularly in that it ſuppoſes the Weight, whereby the Motion of Water running out at a Veſſel may be generated, to be what generates that Motion: Which, this laſt Author takes for a Miſapprehenſion of Sir *Iſaac Newton*'s Corollary; urging, that the Water falling by the Power of Gravity, acquires its Motion of it ſelf; and that the Weight falling the ſame Time, only receives a Motion equal to that of the Water out of the Veſſel. — There are ſome other Points which he objects againſt; and of which the learned Author, has an expreſs Vindication in the *Philoſoph. Tranſactions*; to which his Antagoniſt has ſince reply'd: But the Author dying in the mean Time prevented any Rejoynder.

Dr. *Jurin*, however, proceeds to give another Computation, on more unexceptionable Principles; tho' his Adverſary has found occaſion therein for Recrimination.

He conſiders one of the Ventricles of the *Heart* impelling the Blood, as a given Body impelling another at Reſt, with a given Velocity; and after communicating Part of its Motion thereto, proceeding with the ſame common Velocity. On which Principle the Force of the *Heart* will either be equal to the Factum of the Weight of the Ventricle, and its initial Velocity ere it impels the Blood; or to the Sum of the Motions of the Ventricle and the Blood flowing out of the ſame, and the Motion communicated to the Coats of the Arteries and the antecedent Blood.

Now, it is demonſtrable: 1°. That the Motion whereby a hollow Machine, unequally contractile, does act in Contraction, is equal to the Sum of the Factums of the ſeveral Particles of the Machine multiplied into their reſpective Velocities. Whence it follows, that the Motion of the Machine is equal to the Factum of its Weight into ſome mean Velocity between the Particles moved ſwifteſt, and thoſe moved ſloweſt. — 2°. That if the Water be expreſs'd out of the Orifice of ſuch a Machine, the Motion of the Water, burſting out of the ſame, will be equal to the Sum of the Facta of any tranſverſe Sections of all the Threads of Water, ſeverally multiplied into their reſpective Lengths and Velocities: Whence it follows, that the Motion of the Water is equal to the Factum of the Water iſſuing out at the Orifice into ſome mean Length between that of the longeſt Thread and the ſhorteſt. Hence, alſo, if there be ſeveral ſuch Machines full of Water, and contracted alike, whether equally or unequally, the Motion of the Water, burſting out at the Orifice of one of them, will be in a Ratio compounded of the Quadruple Ratio of any homologous Diameter of the Machine, and the reciprocal Ratio of the Time wherein the Contraction is effected.

From theſe Data is drawn a Solution of the Problem, *To find the Force of the Heart?* — For, calling the Weight of the left Ventricle, or the Quantity of Blood equal to the ſame, p; the inner Surface of the Ventricle, S; the mean length of the Filaments, or Threads of Blood expell'd from the ſame, l; a Section of the *Aorta*, s; the Quantity of Blood, contain'd in the left Ventricle, q; the Time wherein the Blood would be thrown out of the *Heart*, were the Reſiſtance of the Arteries and antecedent Blood removed, t; the variable Velocity, wherewith the Blood would flow thro' the *Aorta*, if the Reſiſtance were taken away, v; the variable Length of the *Aorta*, paſs'd over by the Blood, x; and the Time wherein the length x is run, z. — The mean variable Velocity of the Blood contiguous to the Ventricle, or the mean Velocity of the Ventricle it ſelf will be $= \frac{sv}{S}$; the Motion of the Ventricle, $= p \times \frac{sv}{S}$; the Motion of the Blood iſſuing out, $= sv \times \overline{l + x}$; and their Sum, or the Force of the Ventricle, $= sv \times \frac{p}{S} + l + x$. But, $v = \frac{x}{z}$; whence, by the inverſe Method of Fluxions, the Force of the Ventricle is found $= \frac{sx}{z} \times \overline{\frac{p}{S} + \frac{x}{2}} + l$. But ſince $z = t$; $sx = q$. And hence, the Force of the Ventricle $= \frac{q}{t} \times \overline{\frac{p}{S}\frac{q}{2s} + l}$. After the like Manner the Force of the right Ventricle, (noting the ſame Things by *Greek* Letters, which in the left are denoted by *Italic* ones) is found $= \frac{q}{t} + \overline{\frac{\pi}{\Sigma} + \frac{q}{2\sigma}} + \lambda$. So that the whole Force of the *Heart* is $= \frac{q}{t} \times \frac{p}{S} + \frac{\pi}{\Sigma} + \frac{q}{2S} + \frac{q}{2\sigma} + l + \lambda$. *Q. E. F.*

If now we ſuppoſe $p = 8$ Ounces, and π to 4 Ounces, avoird; $S = 10$ Square Inches, and $\Sigma =$ to as much; $l = 2$, and $\lambda = 1\frac{1}{2}$ Inches; $q = 2$ Ounces, avoird; $s = 0{,}4185$ Square Inches, $\sigma = 0{,}583$; and $t = 0\ 1''$: The Forces of the Ventricles will be equal to the Weights underwritten, *viz.*

	Lib. Oz.
Of the left Ventricle, — — — —	9 — 1
Of the right Ventricle, — — — —	6 — 3
Force of the whole Heart, — — —	15 — 4

Which Weights have a Velocity, wherewith they wou'd move an Inch each Second of a Minute.

Cor. Hence it is inferr'd, that when the Pulſe is quicker than ordinary, either the Reſiſtance is leſs than ordinary, or the Force of the *Heart* is increas'd, or a leſs Quantity of Blood than uſual is expell'd at each Contraction of the *Heart*; and *vice verſa*. — As alſo, that if the Reſiſtance be either increas'd or diminiſh'd; either the Pulſe, or the Quantity of Blood expell'd at each Contraction, will be either increas'd or diminiſh'd reſpectively. — And that if the Force of the *Heart* be increas'd or diminiſh'd, either the Pulſe muſt be accelerated, or the Reſiſtance diminiſh'd. See PULSE.

On theſe Principles, Dr. *Jurin* proceeds to demonſtrate the three following Theorems.

1°. That the whole Motion of Reſiſtance made to the Blood, iſſuing out of the *Heart* in the Syſtole, or the whole Motion communicated to the antecedent Blood and the Coats of the Arteries, is equal to the whole Force of the *Heart*, *quam proxime*.

2°. That the Motion communicated to the antecedent Blood in a Syſtole, is to the Motion communicated to the Coats of the Arteries, as the Time of the Syſtole is to the Time of Diaſtole. Whence if, with Dr. *Keill*, we ſuppoſe the Syſtole perform'd in one third of the Interval between two Pulſes, the Motion communicated to the antecedent Blood will be $\frac{1}{3}$ of the whole Motion of the *Heart*; and that communicated to the Arteries $\frac{2}{3}$.

3°. In different Animals, the Force of the *Heart* is in a Ratio compounded of the Quadruple Ratio of the Diameter of any homologous Veſſel, and the inverſe Ratio of the Time wherein the *Heart* is contracted; or a Ratio compounded of the Ratio of the Weight either of the *Heart*, or the whole Animal; the ſubtriplicate Ratio of the ſame Weight, and the reciprocal Ratio of the Time.

HEART-*Burn*, a Diſeaſe, among Phyſicians uſually call'd *Cardialgia*. See CARDIALGIA.

The Teſtaceous Powders, as Oyſter-Shells, Crabs-Eyes, *&c.* are the uſual Remedies. See TESTACEOUS.

HEART *of a Tree*, the middle Part thereof, taken longitudinally, is called ſo. See TREE and TIMBER.

HEART, in the Manage. — A Horſe that works in the Manage, with Conſtraint and Irreſolution, and can't be brought to conſent to it, is ſaid to be a Horſe of *two Hearts*.

HEARTH, *Focus*. See FIRE, CHIMNEY, *&c.*

HEARTH-*Money*. See CHIMNEY-*Money*.

HEARTH-*Stones*. See FIRE-*Stone*.

HEAT, *Calor*, one of the primary Qualities of Bodies; oppoſed to *Cold*. See QUALITY and COLD.

Or, *Heat* may be defined a Phyſical Being, whoſe Preſence is known, and its Degree meaſured, by the Expanſion of the Air, or Spirit, in the Thermometer. See THERMOMETER.

Heat is properly a Senſation, excited in us by the Action of Fire: Or it is the Effect of Fire on our Organ of Feeling. See SENSATION and FIRE.

Hence it follows, that what we call *Heat*, is a particular Idea, or Modification of our own Mind; and not any Thing exiſting in that Form in the Body that occaſions it. — *Heat* is no more in the Fire that burns the Finger, than Pain in the Needle that pricks it. — In Effect, *Heat*, in the Body that gives it, is only Motion; in the Mind, only a particular Idea, or Diſpoſition of the Soul. See IDEA.

Heat,

Heat, with Reſpect to our Senſation, or the Effect produced on us by a *hot* Body, is eſtimated by its Relation to the Organ of Feeling; no Object appearing to be *hot*, unleſs its *Heat* exceed that of our Body: Whence, the ſame Thing to different Perſons, or at different Times to the ſame Perſon, ſhall appear both *Hot* and *Cold*.

Heat, as it exiſts in the hot Body; or that which conſtitutes and denominates a Body *hot*, and enables it to produce ſuch Effects on our Organ; is variouſly conſider'd by the Philoſophers. — Some will have it a Quality, others a Subſtance, and others only a Mechanical Affection, *viz.* Motion.

Ariſtotle, and the *Peripateticks*, define *Heat* a Quality, or Accident, whereby homogeneous Things, *i. e.* Things of the ſame Nature and Kind, are collected or gather'd together; and heterogeneous ones, or Things of different Nature, ſever'd or diſ-united. — Thus, ſays he, the ſame *Heat* which aſſociates and brings into a Maſs ſeveral Particles of Gold before ſeparate, ſeparates the Particles of two Metals before mix'd together.

But, not only the Doctrine, but the very Inſtance he produces, is faulty: For *Heat*, tho' continued to Eternity, will never ſeparate a Maſs, *e. gr.* of Gold, Silver, and Copper: And, on the contrary, if ſeveral Quantities of Gold, Silver, and Copper, be put ſeparately in a Veſſel over a Fire; notwithſtanding all their Heterogeneity, they will be mix'd and congregated into a Maſs thereby.

In Effect, *Heat* cannot be ſaid to do either this Thing or that univerſally; but all its Effects depend on the Circumſtances of Application. — Thus, to do the ſame Thing in different Bodies, different Degrees of *Heat* are required; as, to mix Gold and Silver, the *Heat* muſt be in a moderate Degree, but to mix Mercury and Sulphur in the higheſt. See GOLD, SILVER, *&c.*

Add, that the ſame Degree of *Heat* ſhall have oppoſite Effects: — Thus a vehement Fire ſhall render Water, Oils, Salts, *&c.* volatile; and yet the ſame imbody Sand and a fix'd alcaline Salt, into Glaſs. See GLASS.

The *Epicureans*, and other *Corpuſcularеans*, define *Heat* not as an Accident of Fire, but as an eſſential Power or Property thereof, the ſame, in Reality, with it, and only diſtinguiſh'd therefrom in the Manner of our Conception.

Heat, then, on their Principles, is no other than the volatile Subſtance of Fire it ſelf, reduced into Atoms, and emitted in a continual Stream from ignited Bodies; ſo as not only to *warm* the Object within its reach, but alſo, if they be inflammable, to *kindle* them, turn them into *Fire*, and conſpire with them to make *Flame*.

In Effect, theſe Corpuſcles, ſay they, flying off from the ignited Body, while yet contain'd within the Sphere of its Flame, by their Motion conſtitute Fire; but when fled, or got beyond the ſame, and diſperſed every Way, ſo as to eſcape the Apprehenſion of the Eye, and only to be perceivable by the feeling, they take the Denomination of *Heat*; inaſmuch as they ſtill excite in us that Senſation.

The *Carteſians*, improving on this Doctrine, aſſert *Heat* to conſiſt in a certain Motion of the inſenſible Particles of a Body, reſembling the Motion whereby the ſeveral Parts of our Body are agitated by the Motion of the Heart and Blood. See HEART and BLOOD.

Our lateſt, and beſt Writers of Mechanical, Experimental, and Chymical Philoſophy, differ very conſiderably about *Heat*. — The fundamental Difference is, whether it be a peculiar Property of one certain immutable Body call'd *Fire*: Or whether it may be produced mechanically in other Bodies, by inducing an Alteration in the Particles thereof.

The former, which is as antient as *Democritus*, and the Syſtem of Atoms; had given Way to that of the *Carteſians* and other Mechaniſts; but is now with great Addreſs retriev'd and improved on by ſome of the lateſt Writers, particularly *Homberg*, the younger *Lemery*, *Graveſande*, and above all, the learned and induſtrious *Boerhaave*, in a Courſe of Lectures expreſly on *Fire*; the Reſult whereof we have already laid down under the Article FIRE.

The Thing we call *Fire*, according to this Author, is a Body, *Sui generis*, created ſuch *ab Origine*, unalterable in its Nature and Properties, and not either producible *de Novo*, from any other Body, nor capable of being reduced into any other Body, or of ceaſing to be Fire.

This Fire, he contends, is diffuſed equably every where, and exiſts alike, or in equal Quantity, in all the Parts of Space, whether void, or poſſeſs'd by Bodies; but that naturally, and in it ſelf, is perfectly latent and imperceptible; and is only diſcover'd by certain *Effects* which it produces, and which are cognizable by our Senſes.

Theſe Effects are *Heat*, Light, Colour, Rarefaction and Burning; which are all Indications of Fire, as being none of them producible by any other Cauſe: So that wherever we obſerve any of theſe, we may ſafely infer the Action and Preſence of Fire.

But, tho' the Effect cannot be without the Cauſe, yet the Fire may remain without any of theſe Effects; any, we mean, groſs enough to affect our Senſes, or become Objects thereof: And this, he adds, is the ordinary Caſe; there being a Concurrence of other Circumſtances, which are often wanting, neceſſary to the Production of ſuch ſenſible Effects.

Hence, particularly, it is, that we ſometimes find ſeveral, and ſometimes all of theſe Effects of Fire together, and ſometimes one unaccompanied with any others; according as the Circumſtances favour or diſpoſe for the ſame. — Thus we find Light without *Heat*; as in rotten Wood, putrid Fiſhes, or the mercurial Phoſphorus: Nay, and one of them may be in the higheſt Degree, and the other not ſenſible; as in the Focus of a large burning Glaſs expoſed to the Moon, where, tho' the Light, as Dr. *Hook* found, was ſufficient to have inſtantly blinded the beſt Eye, yet no *Heat* was perceivable, nor was there the leaſt Rarefaction occaſion'd in an exquiſite Thermometer. See LIGHT.

On the other Hand, there may be *Heat* without Light, as we find in ſolid Phoſphorus; in Fluids, which emit no Light, even when they boil, and not only *heat* and rarify, but alſo burn or conſume the Parts; and in Metals, Stones, *&c.* which conceive a vehement *Heat* ere they ſhine, or become ignited. — Nay, and there may be the moſt intenſe *Heat* in Nature without any Light: Thus in the Focus of a large burning concave, where Metals melt, and the hardeſt Gems vitrify, the Eye perceives no Light; ſo that ſhould the Hand happen to be put there, it would be inſtantly turn'd into a Coal, or even a Calx.

So alſo Rarefractions are frequently obſerved by the Thermometer, in the Night Time, without either *Heat* or Light, *&c.*

Thus it appears, that the Effects of Fire have a Dependance on other concurrring Circumſtances; ſome more, and others leſs. — One Thing ſeems to be required in common to them all, *viz.* that the Fire be *collected* or brought into leſs Compaſs: Without this, as Fire is every where equably diffuſed, it could have no more Effect in one Place than another, but muſt either be diſpoſed to warm, burn, and ſhine every where, or no where. Indeed ſuch every where does amount to no where; for to have the ſame *Heat*, &c. in every Place, would be to have no *Heat*: 'Tis only the Changes that we perceive; thoſe alone make the Mind diſtinguiſh in its State, and become conſcious of the Things that diverſify it. So our Bodies being equally preſs'd on all Sides by the ambient Air, we feel no Preſſure at all; but if the Preſſure be only taken off in any one Part, as by laying the Hand over an exhauſted Receiver, we ſoon grow ſenſible of the Load.

This Collection is perform'd two Ways: The firſt, by *directing* and *determining* the fluctuating Corpuſcles of Fire into Lines, or Trains, call'd *Rays*; and thus driving infinite Succeſſions of the fiery Atoms, upon the ſame Place or Body, each to produce its ſeveral Effort, and ſecond that of the preceding ones, till by a Series of Augmentations, the Effect is ſenſible. — This is the Office of thoſe Bodies which we call *Luminaries*; ſuch as the Sun, and other heavenly Bodies; and Culinary Fires, Lamps, *&c.* on Earth, which do not emit the Fire from their own Subſtance, as is commonly conceiv'd, but only by their rotatory Motation direct the undetermined Corpuſcles into parallel Rays. And the Effect may be ſtill further intended by a ſecond Collection of theſe parallel, into converging Rays, by Means of a Concave Speculum, or a Convex Glaſs, which at length bring them all into a Point; whence thoſe aſtoniſhing Effects of our large burning Glaſſes, *&c.* See RAY, PARALLEL, CONVEX, BURNING *Glaſs*, &c.

The ſecond Way wherein the Collection is made, is not by determining the vague Fire, or giving it any new Direction; but merely by aſſembling it; which is done by the *Attrition*, or rubbing of two Bodies ſwiftly againſt each other; ſo ſwiftly, in Effect, as that nothing in the Air, except the floating Fire, has Activity enough to move an equal Pace, or ſucceed faſt enough into the Places continually relinquiſh'd by it: By which Means Fire, the moſt agile Body in Nature, ſlipping in, becomes collected in the Path of the moving Body; ſo that the moveable has, as it were, a fiery Atmoſphere around it. — Thus it is the Axes of Chariot Wheels, Mill-ſtones, the Ropes of Ships, Cannon-Balls, *&c.* conceive *Heat*, and frequently kindle into Flame.

Thus much for the Circumſtance in *Heat*, common to all the Effects of Fire, *viz.* Collection. — The particular Circumſtances are various: Thus, for it to warm, or to *heat*, i. e. give the Senſation of it, 'tis neceſſary that there be more Fire in the *hot* Body, or Thing, than in the Organ whereby it is to be felt; otherwiſe the Mind will not be put into any new State upon its Approach, nor have any new Idea. — Whence, alſo, if the contrary to this obtains, *v. gr.* if there be leſs Fire in the external

Object

Object than in the Organ, it will raiſe an Idea of Cold, or Chilline ſs.

Thus it is that a Man coming out of a hot Bath, into a moderately warm Air, ſeems as if he were got into an exceſſively cold Place; and another entering a Room ſcarcely warm, in a very pinching Day, will at firſt fancy himſelf in a Stove. — Whence it appears, that the Senſe of *Heat* does by no Means determine the Degree of Fire; the *Heat* being only the Ratio, or Difference, between the internal and external Fire.

As to the Circumſtances neceſſary to the Fires producing Light, Burning, Rarefaction, *&c.* See LIGHT, BURNING, *&c.*

The mechanical Philoſophers, particularly my Lord *Bacon*, Mr. *Boyle*, and Sir *Iſaac Newton*, look on *Heat* in another Light. — They do not conceive it as an original inherent Property of any particular Sort of Body; but mechanically producible in any Body.

My Lord *Bacon*, in an expreſs Treatiſe *de Forma Calidi*, deduces, from a particular Enumeration of the ſeveral Phænomena and Effects of *Heat*:

1°. That *Heat* is Motion: Not, that Motion generates *Heat*, or *Heat* Motion; tho' in many Caſes, this be true: But, that the very Thing *Heat* is very Motion, and nothing elſe. — But this Motion, he ſhews, has ſeveral peculiar Circumſtances which conſtitute it *Heat*.

As, 2°. That it is an expanſive Motion, whereby a Body endeavours to dilate or ſtretch into a larger Dimenſion than it had before.

3°. That this expanſive Motion is directed towards the Circumference, and at the ſame Time upwards; which appears hence, that an Iron Rod being erected in the Fire, will burn the Hand that holds it, much ſooner than if put in laterally.

4°. That this expanſive Motion is not equable, and of the whole, but only of the ſmaller Particles of the Body; as appears from the alternate Trepidation of the Particles of hot Liquors, ignited Iron, *&c.* — Laſtly, that this Motion is very rapid.

Hence, he defines *Heat* an expanſive, undulatory Motion, in the minute Particles of the Body; whereby they tend, with ſome Rapidity, towards the Circumference, and at the ſame Time incline a little upwards.

Hence, again, he adds, that if in any natural Body, you can excite a Motion whereby it ſhall expand or dilate it ſelf; and can ſo repreſs and direct this Motion upon it ſelf, as that the Dilatation ſhall not proceed uniformly, but obtain in ſome Parts, and be check'd in others, you will generate *Heat*.

This Doctrine, *Des Cartes* and his Sect adhere to with ſome little Variation. — According to them, *Heat* conſiſts in a certain Motion, or Agitation of the Parts of a Body, like to that wherewith the ſeveral Parts of our Body are agitated by the Motion of the Heart and Blood. See CALIDUM.

Mr. *Boyle*, in a Treatiſe of the *Mechanical Origin of Heat and Cold*, ſtrenuouſly ſupports the Doctrine of the Producibility of *Heat*, with new Obſervations and Experiments: As a Specimen, we ſhall here give one or two.

In the Production, ſays he, of *Heat*, there appears nothing, on the Part either of the Agent or Patient, but Motion and its natural Effects. — When a Smith briſkly hammers a ſmall Piece of Iron, the Metal thereby becomes exceedingly hot; yet there is nothing to make it ſo, except the forcible Motion of the Hammer, impreſſing a vehement and variouſly determined Agitation on the ſmall Parts of the Iron, which being a cold Body before, grows, by that ſuper-induced Commotion of its ſmall Parts, hot: Firſt, in a more looſe Acceptation of the Word, with Regard to ſome other Bodies, compared with which it was Cold before: And then ſenſibly *Hot*, becauſe this Agitation ſurpaſſes that of the Parts of our Fingers; and in this Inſtance, oftentimes, the Hammer and the Anvil continue cold, after the Operations; which ſhews that the *Heat*, acquir'd by the Iron, was not communicated by either of thoſe Implements as *Heat*, but produced in it by Motion great enough ſtrongly to agitate the Parts of ſo ſmall a Body as the Piece of Iron, without being able to have the like Effect upon ſo much greater Maſſes of Metal, as the Hammer and the Anvil. Tho', if the Percuſſions were often, and briſkly renew'd, and the Hammer were ſmall; this alſo might be *heated*. — Whence it is not neceſſary that a Body it ſelf ſhould be hot to give *Heat*.

If a large Nail be driven by a Hammer into a Plank of Wood, it will receive ſeveral Strokes on its Head, ere it grow hot; but when it is once driven to the Head, a few Strokes ſuffice to give it a conſiderable *Heat*: For while, at every Blow of the Hammer, the Nail enters farther into the Wood, the Motion produced is chiefly progreſſive, and is of the whole Nail tending one Way; but when the Motion ceaſes, the Impulſe given by the Stroke, being unable to drive the Nail further on, or break it, muſt be ſpent in making a various, vehement, and inteſtine Commotion of the Parts among themſelves, wherein the Nature of *Heat* conſiſts. *Mech. Product. of Heat and Cold.*

That *Heat*, ſays the ſame Author, is mechanically producible, appears probable from a Conſideration of its Nature, which ſeems principally to conſiſt in that mechanical Property of Matter called Motion; but which is here ſubject to three Conditions or Modifications.

Firſt, the Agitation of the Parts of the Body muſt be vehement. — For this diſtinguiſhes the Bodies ſaid to be *hot*, from thoſe which are barely fluid. — Thus, the Particles of Water, in its natural State, move ſo calmly, that we do not feel it at all warm, tho' it could not be a Liquor, unleſs they were in a reſtleſs Motion; but when Water becomes actually *hot*, the Motion manifeſtly and proportionably appears vehement, ſince it does not only ſtrike our Organs of Feeling briſkly, but ordinarily produce numerous very ſmall Bubbles, melts coagulated Oil caſt upon it, and affords Vapours, which by their Agitation aſcend into the Air. — And if the Degree of *Heat* be ſuch as to make the Water boil, the Agitation becomes more manifeſt by the confuſed Motions, Waves, Noiſe, Bubbles, and other obvious Effects, excited therein. Thus, in a heated Iron, the vehement Agitation of its Parts may be eaſily inferred from the Motion, and the hiſſing Noiſe it makes with the Drops of Water that fall upon it. — But tho' the Agitation be various, as well as vehement, yet there is a third Condition required to make a Body *hot*; which is, that the agitated Particles, or at leaſt the greateſt Number of them, be ſo minute, as to be ſingly inſenſible. — Were an Heap of Sand to be vehemently agitated by a Whirl-wind, the Bulk of the Corpuſcles would keep their Agitation from being properly *Heat*, tho' by their numerous Strokes upon a Man's Face, and the briſk Commotion of the Spirits, which may thence enſue, they may perhaps produce that Quality.

The ſecond Condition is, that the Determination be very various, and tend all manner of Ways. — This Variety of Determinations appears to be in *hot* Bodies, both by ſome of the Inſtances already mentioned, and eſpecially that of Flame, which is a Body; by the Dilatations of Metals when melted; and by the Operations of *Heat*, exerciſed by *hot* Bodies upon others, in what Poſture or Situation ſoever the Body to be *heated* thereby, be applied to them: Thus a Coal, throughly kindled, will appear on all Sides red, and melt Wax, and kindle Brimſtone, whether the Body be applied to the upper, the lower, or any other Part of it. — Hence, if we duly attend to this Notion of the Nature of *Heat*, 'tis eaſy to diſcern how it may be mechanically produced ſeveral Ways; for, except in ſome few anomalous Caſes, by whatever Means the inſenſible Parts of a Body can be put into a very confuſed and vehement Agitation, *Heat* will be introduced into that Body: And as there are ſeveral Agents and Operations, by which the *heating* Motion may be excited; ſo there muſt be ſeveral mechanical Ways of producing *Heat*: Various Experiments may be reduced to almoſt each of theſe Heads; Chance it ſelf having, in the Laboratories of Chymiſts, afforded ſeveral Phænomena referable thereto. Boyle, *Ubi ſupra.*

This Syſtem is further ſupported by Sir *Iſaac Newton*, who does not conceive *Fire*, as any particular Species of Body, originally endued with ſuch and ſuch Properties. — *Fire*, according to him, is only a Body much ignited, *i. e.* heated hot ſo as to emit Light copiouſly; what elſe, ſays he, is red hot Iron than Fire? and what elſe is a burning Coal than red hot Wood? or Flame it ſelf than red hot Smoak? 'Tis certain, that Flame is only the volatile Part of the Fuel *heated* red hot, *i. e.* ſo hot as to ſhine; and hence only ſuch Bodies as are volatile, *i. e.* ſuch as emit a copious Fume will flame; nor will they flame longer than they have Fume to burn. — In diſtilling hot Spirits, if the Head of the Still be taken off, the aſcending Vapours will catch Fire from a Candle, and turn into Flame. So ſeveral Bodies, much heated by Motion, Attrition, Fermentation, or the like, will emit lucid Fumes; which, if they be copious enough, and the *Heat* ſufficiently great, will be Flame; and the Reaſon why fuſed Metals do not flame, is the Smallneſs of their Fume; for, that Spelter, which fumes more copiouſly, does likewiſe flame. — Add, that all flaming Bodies, as Oil, Tallow, Wax, Wood, Pitch, Sulphur, *&c.* by flaming waſte, and vaniſh into burning Smoak. *Opticks.*

And do not all fixed Bodies, when *heated* beyond a certain Degree, emit Light and ſhine? And is not this Emiſſion perform'd by the vibrating Motion of their Parts? And do not all Bodies, which abound with terreſtrial and ſulphureous Parts, emit Light as often as thoſe Parts are ſufficiently agitated; whether that Agitation be made by external Fire, or by Friction, or Percuſſion, or Putrefaction,

or any other Cauſe? — Thus, Sea-Water, in a Storm; Quickſilver agitated in *Vacuo*; the Back of a Cat, or the Neck of a Horſe, obliquely rubb'd in a dark Place, Wood, Fleſh and Fiſh, while they putrifie, Vapours from putrifying Waters, uſually call'd *Ignes fatui*; Stacks of moiſt Hay or Corn, Glow-Worms, Amber and Diamonds, by rubbing; Scrapings of Steel, ſtruck off with a Flint, *&c.* emit Light. *Id. Ibid.*

Are not groſs Bodies and Light convertible into one another? And may not Bodies receive much of their Activity from the Particles of Light, which enter their Compoſition? I know no Body leſs apt to ſhine than Water; and yet Water, by frequent Diſtillations, changes into fix'd Earth; which, by a ſufficient *Heat*, may be brought to ſhine like other Bodies. *Id. Ibid.*

Add, that the Sun and Stars, according to Sir *Iſaac Newton*'s Conjecture, are no other than great Earths vehemently heated: For large Bodies, he obſerves, preſerve their *Heat* the longeſt, their Parts *heating* one another; and why may not great, denſe, and fixed Bodies, when *heated* beyond a certain Degree, emit Light ſo copiouſly, as by the Emiſſion and Re-action thereof, and the Reflections and Refractions of the Rays within the Pores, grow ſtill hotter, till they arrive at ſuch a Period of *Heat* as is that of the Sun? Their Parts may be further preſerved from fuming away, not only by their Fixity, but by the vaſt Weight and Denſity of their Atmoſpheres incumbent on them, and ſtrongly compreſſing them, and condenſing the Vapours and Exhalations ariſing from them. Thus, we ſee, warm Water, in an exhauſted Receiver, ſhall boil as vehemently as the hotteſt Water open to the Air; the Weight of the incumbent Atmoſphere, in this latter Caſe, keeping down the Vapours, and hindering the Ebullition, till it has conceiv'd its utmoſt Degree of *Heat*. So, alſo, a Mixture of Tin and Lead, put on a red-hot Iron in *Vacuo*, emits a Fume and Flame: But the ſame Mixture, in the open Air, by Reaſon of the incumbent Atmoſphere, does not emit the leaſt ſenſible Flame. — Thus much for the *Syſtem of the Producibility of Heat*.

On the other Hand, M. *Homberg*, in his *Eſſai du Souffre Principe*, holds, that the Chymical Principle, or Element, Sulphur, which is ſuppoſed one of the ſimple, primary, pre-exiſtent Ingredients of all natural Bodies, is real Fire; and conſequently that Fire is co-eval with Body. *Mem. de l'Acad.* An. 1705. See SULPHUR.

Dr. *S' Graveſande* goes on much the ſame Principle: Fire, according to him, enters the Compoſition of all Bodies, is contained in all Bodies, and may be ſeparated or procured from all Bodies, by rubbing them againſt each other, and thus putting their Fire in Motion. But Fire, he adds, is by no Means generated by ſuch Motion. *Elem. Phyſ.* T. II. *C.* 1.

A Body is only ſenſibly *hot*, when the Degree of its *Heat* exceeds that of our Organs of Senſe; ſo that there may be a lucid Body, without any ſenſible *Heat*; and conſequently, as *Heat* is only a ſenſible Quantity, without any *Heat* at all.

Heat, in the hot Body, ſays the ſame Author, is an Agitation of the Parts of the Body, made by Means of the Fire contained in it; by ſuch Agitation a Motion is produced in our Bodies, which excites the Idea of *Heat* in our Minds: So that *Heat*, in Reſpect of us, is nothing but that Idea, and in the hot Body nothing but Motion. — If ſuch Motion expel the Fire, in right Lines, it may give us the Idea of Light; if in a various and irregular Motion, only *Heat*.

M. *Lemery* the younger, agrees with theſe two Authors in aſſerting this abſolute, and ingenerable Nature of Fire; but he extends it further. — Not contented to confine it as an Element to Bodies, he endeavours to ſhew that it is equably diffuſed thro' all Space, is preſent in all Places, in the void Spaces between Bodies, as well as in the inſenſible Interſtices between their Parts. *Mem. de l'Acad.* An. 1713. See ÆTHER.

This laſt Sentiment falls in with that of *Boerhaave* above deliver'd: — It ſeems extravagant to talk of *heating* Cold Liquors with Ice; yet Mr. *Boyle* aſſures us, he has eaſily done it, by taking out of a Baſon of cold Water, wherein ſeveral Fragments of Ice were ſwimming, one Piece or two which he perceived very well drenched with the Liquor, and ſuddenly immerſing them into a wide mouthed Glaſs, of ſtrong Oil of Vitriol: For the Menſtruum preſently mixing with the Water, which adhered to the Ice, produced in it a briſk *Heat*, ſometimes with a manifeſt Smoke, and that ſuddenly diſſolving the contiguous Parts of the Ice, and thoſe the next, the whole Ice was ſoon reduced to Water; and the corroſive Menſtruum being, by two or three Shakes, well diſperſed thro' it, the whole Mixture would immediately grow ſo hot, that ſometimes the containing Vial could not be endured in ones Hand. Boyle, *Ubi ſupra.*

There is a great Variety in the *Heat* of different Places, and Seaſons. — Naturaliſts commonly lay it down, that the nearer the Centre of the *Earth*, the hotter it is found; but this does not hold ſtrictly true. — In digging Mines, Wells, *&c.* they find that at a little Depth below the Surface, it feels cool; a little lower, and it is yet colder, as being now beyond any Reach, or Influence, of the Sun's Rays, inſomuch that Water will freeze almoſt inſtantaneouſly; and hence the Uſe of Ice-Houſes, *&c.* but when a little lower, *viz.* about 40 or 50 Foot deep, it begins to grow warmer, ſo that no Ice can bear it; and then the deeper they go, ſtill the greater the *Heat*: Till, at length, Reſpiration grows difficult, and the Candles go out.

Hence, ſome have Recourſe to the Notion of a Fund of Fire lodg'd in the Centre of the Earth; which they conſider as a central Sun, and the great Principle of the Generation, Vegetation, Nutrition, *&c.* of foſſil and vegetable Bodies. See *Central* FIRE. See alſo EARTH, EARTHQUAKE, *&c.*

But Mr. *Boyle*, who had been at the Bottom of ſome Mines himſelf, ſuſpects that this Degree of *Heat*, at leaſt in ſome of them, may ariſe from the peculiar Nature of the Minerals generated therein. To confirm this, he inſtances in a Kind of Mineral, of a Vitriolic Kind, dug up in large Quantities, in ſeveral Parts of *England*, which by the bare Effuſion of common Water will grow ſo hot, as almoſt to take Fire.

On the other Hand, as you aſcend high Mountains, the Air grows more and more piercing and Cold: Thus the Tops of the *Pico de Theide* in *Bohemia*, the Pike of *Tenariff*, and ſeveral others, even in the moſt ſultry Countries, are found eternally inveſted with Snow and Ice; the *Heat* never being ſufficient to thaw the ſame.

In ſome of the Mountains of *Peru* there is no ſuch Thing as running Water, but all Ice: Plants make a Shift to grow about the Feet of the Mountains, but near the Top no Vegetable can live, not for Want of Food, but thro' the Intenſeneſs of the Cold. — This Effect is attributed to the Thinneſs of the Air, and the little Surface of Earth there is to reflect the Rays. The Rays are here only determined into a Parallelliſm; but the Effect of direct parallel Rays is found, by Computation, to be very inconſiderable; this Effect being really greater in Winter than Summer.

HEAT, in Geography. — The Diverſity of the *Heat* of Climes and Seaſons, ariſes from the different Angles, under which the Sun's Rays ſtrike upon the Earth's Surface. See CLIMATE, ANGLE, *&c.*

It is ſhewn in Mechanicks, that a moving Body, ſtriking perpendicularly on another, acts on it with all its Force; and that a Body ſtriking obliquely, acts with the leſs Force, the more it deviates from the perpendicular. — Now, Fire, moving in right Lines, muſt obſerve the ſame Mechanical Law as other Bodies; and conſequently its Action muſt be meaſured by the Sine of the Angle of Incidence: And hence Fire, ſtriking on any Obſtacle in a Direction parallel thereto, has no ſenſible Effect, by Reaſon the Ratio is almoſt infinite, *i. e.* nothing. Accordingly, the Sun, radiating on the Earth in the Morning, ſcarce produces any warmth at all. See PERCUSSION and COMPOUND *Motion*.

Hence, Dr. *Halley* gives a mathematical Computation of the Effect of the Sun, under different Seaſons and Climates; going on this Principle, that the ſimple Action of the Sun, as all other Impulſes or Strokes, is more or leſs forcible, according to the Sines of the Angles of Incidence, or to the perpendicular let fall on the Plane: Whence, the vertical Ray (which is of the greateſt *Heat*) being put for Radius, the Force of the Sun on the Horizontal Surface of the Earth will be to that, as the Sine of the Sun's Altitude at any other Time.

Hence it follows, that the Time of the Continuance of the Sun's ſhining, being taken for a Baſis, and the Sines of the Sun's Altitudes erected thereon as Perpendiculars; and a Curve drawn through the Extremities of thoſe Perpendiculars: The Area comprehended will be proportionate to the Collection of the *Heat* of all the Sun Beams in that Space of Time.

Hence it will follow likewiſe, that under the Pole the Collection of all the *Heat* of a tropical Day is proportionate to a Rectangle of the Sine of 23 Degrees and an half, into 24 Hours; or the Circumference of a Circle; that is, the Sine of 23 Degrees and an half, being nearly $\frac{4}{10}$ of Radius, as $\frac{8}{10}$ into 12 Hours; or, the Polar *Heat* is equal to that of the Sun continuing 12 Hours above the Horizon at 53 Degrees height; than which the Sun is not 5 Hours more elevated under the Equinoctial.

But whereas the Nature of *Heat* is to remain in the Subject, after the Luminary that occaſion'd its being *heated* is removed, and particularly in the Air; under the Equinoctial the 12 Hours Abſence of the Sun does but little dimi-

diminiſh the Motion impreſs'd by the paſt Action of his Rays wherein *Heat* conſiſts, before he riſes again; but under the Pole, the long Abſence of the Sun for ſix Months, wherein the Extremity of Cold does obtain, hath ſo chill'd the Air, that it is, as it were, frozen, and cannot, before the Sun has got far towards it, be any Ways ſenſible of his Preſence, his Beams being obſtructed by thick Clouds, and perpetual Fogs and Miſts.

Add, that the differing Degrees of *Heat* and Cold in different Places, depend, in great Meaſure, upon the Accidents of Situation, with Regard to Mountains or Valleys, and the Soil. — The firſt greatly help to chill the Air by the Winds, which come over them, and which blow in Eddies through the Levels beyond. See WIND.

Mountains, ſometimes, turning a Concave Side towards the Sun, have the Effect of a burning Mirror on the Subject plain; and the like Effect is ſometimes had from the Concave or Convex Parts of Clouds, either by Refraction or Reflection. And ſome even take theſe to be ſufficient to kindle the Exhalations lodg'd in the Air, and produce Thunder, Lightning, *&c.* See MOUNTAIN, MIRROR, *&c.*

As to Soils: A ſtony, ſandy, or chalky Earth, 'tis known, reflects moſt of the Rays into the Air again, and retains but few; by which Means a conſiderable Acceſſion of *Heat* is derived to the Air; as, on the contrary, black ones abſorb moſt of the Rays, and return few into the Air, ſo that the Ground is ſo much the hotter. See BLACKNESS, WHITENESS, *&c.*

This the Peaſants, who inhabit the Moraſs *de Veenen*, where Turf is dug, are very ſenſible of; walking there but a little while, the Feet grow extremely hot, but the Face not at all: On the contrary, in a ſandy Place, the Feet are ſcarce warm when the Face is ſcorch'd by the great Reflection.

The following Table gives every tenth Degree of Latitude to the Equinoctial and Tropical Sun, by which an eſtimate may be made of the intermediate Degrees.

Lat.	Sun in ♈. ♎.	Sun in ♋	Sun in ♑
0	20000	18341	18341
11	19696	20290	15834
20	18797	21737	13166
30	17321	22651	10124
40	15321	23048	6944
50	12855	22991	3798
60	10000	22773	1075
70	6840	23543	000
80	3473	24673	000
90	0000	25055	000

Whence are deducible the following Corollaries:

1°. That the Equinoctial *Heat*, when the Sun becomes vertical, is as twice the Square of the Radius: Which may be propoſed as a Standard to be compared with, in all other Caſes.

2°. That under the Equinoctial, the *Heat* is as the Sine of the Sun's Declination.

3°. That in the frigid Zones, when the Sun ſets not, the *Heat* is as the Circumference of a Circle into the Sine of the Altitude at 6. And, conſequently, that in the ſame Latitude, theſe Aggregates of Warmth, are as the Sines of the Sun's Declination; and at the ſame Declination of the Sun, they are as the Sines of the Latitudes into the Sines of the Declination.

4°. That the Equinoctial Days *Heat*, is every where as the Coſine of the Latitude.

5°. In all Places where the Sun ſets, the Difference between the Summer and Winter *Heats*, when the Declinations are contrary, is equal to a Circle into the Sine of the Altitude at 6, in the Summer parallel; and conſequently thoſe Differences are as the Sines of Latitude into, or multiplied by, the Sines of Declination.

6°. From the foregoing Table it appears, that the Tropical Sun, under the Equinoctial, has of all others the leaſt Force: Under the Pole it is greater than any other Days *Heat* whatever, being to that of the Equinoctial as 5 to 4.

From the Table, and theſe Corollaries, a general Idea may be conceived of the Sum of all the Actions of the Sun in the whole Year, and thus that Part of *Heat*, which ariſeth ſimply from the Preſence of the Sun, may be brought to a Geometrical Certainty. — The *Heat* of the Sun, for any ſmall Portion of Time, is always as a Rectangle, contain'd under the Sine of the Angle of Incidence of the Ray, producing *Heat* at that Time.

HEAT, is uſually divided, by the School Philoſophers, into *Actual* and *Potential*.

Actual HEAT, is that which we have been hitherto ſpeaking of, and which is an Effect of real, elementary Fire.

Potential HEAT, is that which we find in Pepper, Wine, and certain chymical Preparations, as Oil of Turpentine, Brandy, Quick-lime, *&c.* See POTENTIAL.

The *Peripateticks* account for the *Heat* of Quick-lime from an Antiperiſtaſis. See ANTIPERISTASIS.

The *Epicureans*, and other *Corpuſcularеans*, attribute even *potential Heat*, to Atoms or Particles of Fire detain'd and lock'd up in the Bores of thoſe Bodies, and remaining at reſt therein; which being excited to Action again by the *Heat* and Moiſture of the Mouth, or by the Effuſion of cold Water, or the like Cauſe, break their Incloſures, and diſcover what they are.

This Doctrine is well illuſtrated by M. *Lemery* the younger, in the Inſtances of Quick-lime, Regulus of Antimony, Tin, *&c.* in the Calcination whereof he obſerves, 1°, That the Fire, which they imbibe in the Operation, makes a ſenſible Addition to the Weight of the Body, amounting ſometimes to one tenth of the whole; and, that during this Impriſonment, it ſtill retains all the particular Properties or Characters of Fire; as appears hence, that when once ſet at Liberty again, it has all the Effects of other Fire.

Thus, a ſtony, or ſaline Body being calcined, and Water poured thereon, that Fluid is found ſufficient, by its external Impreſſion, to break up the Cells, and let the Fire out; and upon this the Water is rendred more or leſs warm, according to the Fire lodged therein. — Hence, alſo, it is, that ſome of theſe Bodies viſibly contain a deal of actual Fire; and the ſlighteſt Occaſion is capable of diſengaging it: Upon applying them to the Skin, they burn and raiſe an Eſchar, not unlike the Top of a live Coal.

To this it is objected, that the Particles of Fire are only ſuch in Virtue of the rapid Motion, wherewith they are agitated; ſo that to ſuppoſe them fixed in the Pores of a Body, is to diveſt them at once of that, which conſtituted them Fire; and, conſequently, to diſqualify them for producing the Effects aſcribed to them. — To which M. *Lemery* anſwers, that tho' the rapid Motion of Fire do contribute very greatly to its Effects, yet the particular Figure of its Particles is to be conſider'd withal. And tho' Fire ſhould be detained, and fixed in the Subſtance of Bodies, yet why ſhould it fare worſe than other Fluids in the ſame Circumſtances? Water, for Inſtance, is a Fluid, whoſe Fluidity depends, as already obſerved, on Fire, and conſequently is leſs fluid than Fire; and yet every Day, Water incloſed in Bodies of all Sorts, without loſing its Fluidity, or any of the Properties that characterize it.

Add, that when Water is froze, the Motion of its Parts is, doubtleſs, diſcontinued; and yet the Figure of the Particles remaining the ſame, it is ready to commence a Fluid, as before, upon the leaſt warmth. See WATER.

Laſtly, tho' Salt be allowed to be the Matter of Taſtes, and that it has certain Properties, ariſing chiefly from the Figure of its Parts; yet it only acts when diſſolved; or, which amounts to the ſame, when it ſwims in a Fluid proper to keep its Parts in Motion: Yet it is not leſs Salt, or leſs the Matter of Taſte, when not in a State of Diſſolution: To diſpoil it of that Quality, the Figure of its Parts muſt be alter'd. See SALT.

As to what may be further objected of the Impoſſibility of fixing ſo fine, ſubtle, penetrative, and active a Matter as Fire, within the ſpongeous Subſtance of a groſs, porous Body; it will be of no great Weight, unleſs it can be proved, that the Pores of the Cells are bigger than the ſame. — If it be inſiſted, again, that a Body which could find its Way into a ſolid Body, might get out again the ſame Way; and that as it only penetrated the Body, by Reaſon its own Corpuſcles were ſmaller than the Pores, the ſame Conſideration muſt let it out again: It is anſwer'd, that the Pores are not now in the ſame Condition as before; the Fire, in calcining, open'd and dilated the Pores; which, upon the Fire's ceaſing, muſt cloſe and contract again. *Mem. de l'Acad.* An. 1713.

Mr. *Boyle* endeavours to ſet aſide this Account, and ſubſtitute a mechanical Property, *viz.* a peculiar Texture of Parts, in lieu of Fire. — Tho' a great Likeneſs might be expected between the Particles of Fire adhering to the Quick-lime, and thoſe of highly rectified Spirit of Wine; yet he has not found that the Effuſion of the Spirit upon Quick-lime, produced any ſenſible *Heat*, or viſible Diſſolution of the Lime, tho' it ſeem'd to be greedily ſuck'd in, as common Water would have been. And, further, he found, that if cold Water were poured on the ſame Lime ſo drenched, there would enſue no manifeſt *Heat*; nor did the Lump appear ſwelled or broken, till ſome Hours after; which ſeems to argue, that the Texture of the Lime admitted ſome Particles of the Spirit of Wine into ſome of its Pores, which were either larger, or more fit, without admitting it into

moſt numerous, whereinto the Liquor muſt be received, to be able ſuddenly to diſſipate the Corpuſcles of Lime into their minuter Particles.

Theſe Phenomena, according to Mr. *Boyle*, ſeem to ſhew, that the Diſpoſition which Lime has to grow hot with Water, greatly depends on ſome peculiar Texture; ſince the aqueous Parts, which one would think capable of quenching moſt of the fiery Atoms, ſuppoſed to adhere to Quick-lime, did not near ſo much weaken the Diſpoſition of it to *Heat*, as that Acceſs of the ſpirituous Corpuſcles, and their Contexture with thoſe of the Lime increas'd it.

Yet, in other Places, he appears rather to give into the Corpuſcular Scheme: Urging, that if inſtead of cold Water, you quench the Lime with hot Water, the Ebullition will be, oftentimes, far greater than if the Liquor were cold; which indeed might well be expected, hot Water being much fitter than cold, ſuddenly to pervade the Body of the Lime, and haſtily diſſolve, and ſet at Liberty, the fiery and ſaline Parts, wherewith it abounds. And what a greater Intereſt Salts may have in producing ſuch *Heats* than cold Water, he has alſo tried, by pouring acid Spirits, and particularly Spirit of Salt, upon good Quick-lime: For by this Means there would be a far greater Degree of *Heat* excited, than if he had uſed common Water; and this, whether he employed the Spirit cold or hot.

It is not eaſy, ſays the ſame Author, to apprehend how ſuch light and minute Bodies, ſhould be ſo long detained, as muſt by this Hypotheſis be allowed, in Quick-lime eſpecially; ſince no great *Heat* enſues the pouring of Water upon *Minium*, or *Crocus Martis per ſe*, tho' they have been calcined by a violent Fire, the Effluvia whereof ſeem to adhere to them, by the Increaſe of the Weight the Lead and Iron manifeſtly receive from the Operation of it. *Mech. Orig. of Heat.*

HEAT, in the Animal Oeconomy, *Natural* HEAT, *Vital* HEAT. See CALIDUM *Innatum*. See alſo HEART and BLOOD.

HEAT, in Chymiſtry. See FIRE and BATH.

HEAT, in Smithery, *&c.* See IRON.

HEAT, is alſo uſed in Reſpect of Race-Horſes, for the Exerciſes to be given them by Way of Preparation, *&c.* See HORSE.

Two *Heats* in a Week are reckon'd a juſt Meaſure for any Horſe of what State or Conſtitution whatever. — The Jockies lay it down as a Rule, that one of the *Heats* be given on the ſame Day of the Week, whereon the Horſe is to run his Match; and this to be the ſharpeſt *Heat*.

HEATHEN, See PAGAN.

HEAVE, at Sea, ſignifies to throw away, or fling any Thing over-board. — When a Ship, being at Anchor, riſes and falls by the Force of the Waves, ſhe is alſo ſaid to *Heave and ſet*.

To HEAVE *at the Capſtain*, ſignifies to turn it about. See CAPSTAIN.

To HEAVE *a Flag aboard*, is to hang it out. See FLAG, SIGNAL.

To HEAVE *out the Top-ſails*, is to put them abroad. See TOP-SAIL.

HEAVE-*Offerings*, under the *Jewiſh*-Law, were the firſt Fruits given to the Prieſt. See FIRST-*Fruit*.

HEAVEN, *Cœlum*, an Azure, tranſparent Orb, inveſting our Earth; wherein the Celeſtial Bodies perform their Motions. See EARTH, *&c.*

This is the popular Notion of *Heaven*; for the Word, it muſt be obſerved, has various other Ideas, in the Language of Philoſophers, Divines and Aſtronomers: Agreeably to which, we may lay down divers *Heavens*, as the *Higheſt*, or *Empyrean Heaven*; the *Ethereal*, or *Starry*, *Heaven*; the *Planetary Heaven*, &c.

HEAVEN, among Divines, call'd alſo the *Empyrean* HEAVEN, is the Abode of God, and bleſſed Spirits; as Angels, and the Souls of the righteous deceas'd. See GOD, ANGEL, *&c.*

This is alſo frequently call'd in Scripture the *Kingdom of Heaven*; the *Heaven of Heavens*; and by St. *Paul*, the *third Heaven*; ſometimes *Paradiſe*; the *New Jeruſalem*, &c. See EMPYREAN, *&c.*

This *Heaven* is conceiv'd as a Place in ſome remote Part of infinite Space, wherein the Deity is pleas'd to afford a nearer, and more immediate View of himſelf; a more ſenſible Manifeſtation of his Glory; a more adequate Perception of his Attributes, than in the other Parts of the Univerſe, where he is likewiſe preſent. See UNIVERSE, OMNIPRESENCE, *&c.*

This makes what the Divines alſo call the *Beatifick Viſion*. See VISION.

Authors are much divided as to the Reality of ſuch *Local Heaven*. — In this Senſe of the Word, *Heaven* ſtands oppoſed to *Hell*. See HELL.

The inſpired Writers give us very magnificent Deſcriptions of *Heaven*, the Structure, Apparatus, and Attendance thereof; particularly *Iſaiah*, and St. *John* the Divine. — The Philoſopher *Plato*, in his *Dial. de Anim.* ſpeaks of *Heaven* in Terms that bear ſo near a Reſemblance to thoſe of Scripture; that *Euſebius* charges him with borrowing his Account thence. *De Præpar. Evangel. L.* XI. C. 37.

The antient *Romans* had a Kind of *Heaven* in their Syſtem of Theology, call'd *Elyſium*, or the *Elyſian Fields*. See ELYSIAN *Fields*.

The *Mahometan Heaven*, or *Paradiſe*, is very groſs, agreeably to the Genius of their Religion. See MAHOMETANISM, ALCORAN, *&c.*

HEAVEN, among Aſtronomers, call'd alſo the *Etherial* and *Starry* HEAVEN, is that immenſe Region wherein the Stars, Planets and Comets are diſpoſed. See STAR, PLANET, *&c.*

This is what *Moſes* calls the *Firmament*, ſpeaking of it as the Work of the ſecond Days Creation; at leaſt 'tis thus the Word רקוע is uſually render'd by his Interpreters; tho' this ſomewhat abuſively, to countenance their own Notion of the *Heavens* being Solid. — The Word, 'tis certain, properly ſignifies no more than *Expanſe*, or *Extenſion*; a Term very well adapted by the Prophet to the Impreſſion which the *Heavens* make on our Senſes: Whence, in other Parts of Scripture, the *Heaven* is compared to a *Curtain*, or a *Tent* ſtretch'd out to dwell in. — The LXX. firſt added to this Idea of Expanſion, that of *Firm* or *Solid*; rendering it by στερεωμα, according to the Philoſophy of thoſe Times; in which they have been follow'd by the Modern Tranſlators.

The later Philoſophers, as *Cartes*, *Kircher*, &c. have eaſily demonſtrated this *Heaven* not to be *Solid*, but *Fluid*; but they ſtill ſuppoſe it full, or perfectly denſe, without any Vacuity, and canton'd out into ſo many Vortices. See ÆTHER, CARTESIANISM, *&c.*

But others carry the Thing much further, and overturn not only the Solidity, but the ſuppoſed Plenitude of the *Heavens*. — Sir *Iſaac Newton* has abundantly ſhewn the *Heavens* void of almoſt all Reſiſtance, and conſequently of almoſt all Matter; from the Phænomena of the Celeſtial Bodies; from the Planets perſiſting in their Motions without any ſenſible Diminutions of their Velocity; and the Comets freely paſſing in all Directions towards all Parts of the *Heavens*. See RESISTANCE, PLANET, COMET, VORTEX, *&c.*

Heaven, taken in this general Senſe, for the whole Expanſe between our Earth and the remoteſt Regions of the fix'd Stars, may be divided into two very unequal Parts, according to the Matter found therein, *viz.* the Atmoſphere, or *Aerial Heaven*, poſſeſs'd by Air; and the *Ætherial Heaven*, poſſeſs'd by a thin, unreſiſting Medium, call'd *Æther*. See ATMOSPHERE, AIR, ÆTHER and MEDIUM.

HEAVEN, is more particularly uſed in Aſtronomy, for an Orb, or Circular Region of the Ætherial *Heaven*. See ORB.

The antient Aſtronomers aſſumed as many different *Heavens*, as they obſerved different Motions therein. — Theſe they ſuppoſed all to be *Solid*, as thinking they could not otherwiſe ſuſtain the Bodies fix'd in them; and *Spherical*, as being the moſt proper Form for Motion.

Thus they had ſeven *Heavens* for the ſeven Planets, *viz.* — The *Heavens* of the *Moon*, of *Mercury*, *Venus*, the *Sun*, *Mars*, *Jupiter* and *Saturn*. See PLANET, *&c.*

The eighth was for the fix'd Stars, which they particularly call'd the *Firmament*. See FIRMAMENT.

Ptolomy added a ninth *Heaven*, which he call'd the *Primum Mobile*. See MOBILE.

After him two *Cryſtalline Heavens* were added, by King *Alphonſus*, &c. to account for ſome Irregularities in the Motions of the other *Heavens*: And, laſtly, an *Empyrean Heaven* was drawn over the whole, for the Reſidence of the Deity; which made the Number twelve. See EMPYREAN, *&c.*

The *Cryſtalline Heavens*, were not ſuppoſed to have any Stars fixed in them: They incompaſs'd the inferior, Starry and Planetary *Heavens*; and communicated their Motion to them. — The firſt ſerved to account for that ſlow Motion of the fix'd Stars, whereby they advance a Degree Eaſtward in 70 Years; whence the Preceſſion of the Equinox. The ſecond was to ſolve the Motions of Libration, or Trepidation. See PRÆCESSION, LIBRATION, TREPIDATION, *&c.*

But others admitted many more *Heavens*, according as their different Views, and Hypotheſes required. — *Eudoxus* ſuppoſed 23, *Calippus* 30, *Regiomontanus* 33, *Ariſtotle* 47, and *Fracaſtor* 70.

We may add, that the Aſtronomers did not much concern themſelves whether the *Heavens*, they thus allow'd of,

were

were real or not, provided they ſerved a Purpoſe in accounting for any of the Celeſtial Motions, and agreed with Phænomena. See HYPOTHESIS, SYSTEM, PHÆNOMENA, &c.

Among the other Reveries of the Rabbins, contained in the *Talmud*, we find it aſſerted, that there is a Place where the *Heavens* and Earth joyn together; that *Rabbi Barchana* going thither, laid his Hat on the Window of *Heaven*; and that going to take it again immediately after, it was gone, the *Heavens* having carried it off; ſo that he muſt wait for a Revolution of the Orbs to bring it to its Place again.

HEAVINESS, See WEIGHT, GRAVITY, &c.

For the Laws of the Deſcent of Heavy *Bodies*. See DESCENT, &c.

In Strictneſs, *Heavy* Bodies do not tend preciſely to the very Centre of the Earth, except at the Poles and the Equator; by Reaſon of the ſpheroidal Figure of the Earth. — Their Direction is every where perpendicular to the Surface of the Spheroid. See EARTH and SPHEROID.

HEAULME, or HEAUME, in Heraldry, an *Helmet*, or Head-piece. See HELMET.

HEWING *of Timber*. See TIMBER.

HEBBERMAN, in our antient Law-Books, a Fiſherman below *London-Bridge*; thus call'd, becauſe he commonly fiſhes at Ebb Water. See EBB.

HEBBERTHEF, in our antient Cuſtoms, a Privilege of having the Goods of a Thief, and the Trial of him, within a particular Diſtrict.

HEBDOMADIUS, antiently denoted a Canon, or Prebendary, in a Cathedral Church, who had the peculiar Care of the Choir, and the Inſpection of Officers of it for his Week. See CANON, CATHEDRAL, and CHOIR.

HEBDOMADEER, HEBDOMADARY, HEBDOMADARIUS, a Member of a Chapter, or Convent, whoſe Week it is to perform the Office, rehearſe the Anthems and Prayers, preſide and perform the uſual Functions which Superiors perform at ſolemn Feaſts, and on other extraordinary Occaſions.

The *Hebdomadeer* generally collates to the Benefices which become vacant during his Week: Tho' this is uſually look'd on as an Abuſe.

The Word is form'd of the *Greek*, ἑβδομας, which ſignifies the Number ſeven, of ἑπτα, *Seven*. See WEEK.

In Monaſteries, the *Hebdomadary* is he who waits at Table for a Week, or other ſtated Period; directs and aſſiſts the Cook, &c.

In Church Antiquity, we meet with nine different Sorts of *Hebdomadeers*, viz. — The *Hebdomadarius Cantor*, or *Hebdomadary Chantor*; *Hebdomadarius Chori*, *Hebdomadary* of the Choir; which two were really the ſame, *viz.* he who preſided at the public Service: *Hebdomadary* of the Kitchin, *Hebdomadarius Coquinæ*: *Hebdomadary* of the Defunct or the Dead, *Hebdomadarius Defunctorum*, he who took Care of the Office and Service of the Dead: *Hebdomadarius Invitatorii*, he who ſang the Invitatory: *Hebdomadarius Lector ad Menſam*, he who read at Meal Time: *Hebdomadarius majoris Miſſæ*, he who read Maſs: *Hebdomadarius Pſalterii*, which probably was the ſame with the *Hebdomadarius Chori*: And *Hebdomadarius ſacri Altaris*, which might be the ſame with *Hebdomadeer* of the high Maſs.

HEBRAISM, an Idiotiſm or Manner of Speaking peculiar to the *Hebrew* Tongue. See IDIOTISM.

There is no Underſtanding, even the Verſions of the Old Teſtament, without ſome Acquaintance with the *Hebrew*; they are ſo full of *Hebraiſms*.

We have Abundance of *Hebraiſms* borrow'd from Scripture, and naturalized in our own Language; as, *Son of Perdition*: *To ſleep in the Lord*, &c. See HEBREW.

HEBREW, ſomething relating to the People of the *Jews*, i. e. to the twelve Tribes, deſcended from the twelve Patriarchs, the Sons of *Jacob*. See JEWS. Thus we ſay,

HEBREW *Bible*. See BIBLE.

HEBREW *Character*. See CHARACTER.

There are two Kinds of *Hebrew* Characters; the *Antient*, call'd alſo the *Square*; and the *Modern*, or *Rabbinical* Characters.

The *Square Hebrew*, takes its Denomination from the Figure of its Characters, which ſtand more *Square*, and have their Angles more exact and preciſe than the other.

This Character is uſed in the Text of Holy Scripture, and their other principal and moſt important Writings. — When both this, and the *Rabbinical Character*, are uſed in the ſame Work; the former is for the Text, or the fundamental Part; and the latter, for the acceſſory Part, as the Gloſs, Notes, Commentaries, &c.

The beſt and beautifulleſt Characters of this Kind, are thoſe imitated from the Characters in the *Spaniſh* Manuſcripts; next, thoſe from the *Italian* Manuſcripts; then, thoſe from the *French*; and laſtly, thoſe of the *Germans*, whoſe Characters are much the ſame, with Reſpect to the other genuine *Square Hebrew* Characters, that the *Gothic* or *Dutch* Characters are with Reſpect to the *Roman*.

Several Authors contend, that the *Square* Character is not the real, antient *Hebrew* Character, wrote from the Beginning of the Language to the Time of the *Babyloniſh* Captivity; but that it is the *Aſſyrian*, or *Chaldee* Character, which the *Jews* aſſumed, and accuſtom'd themſelves to, during the Captivity, and retain'd afterwards. — Theſe Authors add, that what we call the *Samaritan* Character, is the antient *Hebrew*.

The learned Jeſuite *Souciet* maintains, with great Addreſs, that the antient *Hebrew* Character, is that found on the Medals of *Simon*, and others, commonly call'd *Samaritan Medals*; but which, he aſſerts, were really *Hebrew* Medals, ſtruck by the *Jews*, and not by the *Samaritans*. See SAMARITAN.

The *Modern*, or *Rabbinical Hebrew* Character, is a good neat Character, form'd of the *Square Hebrew* by rounding it, and retrenching moſt of the Angles, or Corners of the Letters, to make it the more eaſy and flowing. — Thoſe uſed by the *Germans*, are very different from the *Rabbinical* Character uſed every where elſe, tho' all form'd alike from the *Square* Character, but the *German* more ſlovenly than the reſt.

The *Rabbins* frequently make uſe either of their own, or the *Square Hebrew* Character, to write the modern Languages in. — There are even Books in the vulgar Tongues, printed in the *Hebrew* Characters: Inſtances whereof are ſeen in the *French* King's Library.

HEBREW *Language*, call'd abſolutely HEBREW, is the Language ſpoke by the *Hebrews*, and wherein moſt of the Books of the Old Teſtament are wrote; whence it is alſo call'd the *Holy*, or *Sacred Language*. See LANGUAGE.

There is no Piece, in all Antiquity, wrote in pure *Hebrew*, beſide the Books of the Old Teſtament; and even ſome Parts of thoſe are in *Chaldee*. See CHALDEE.

The *Hebrew*, then, appears to be the moſt antient of all the Languages in the World; at leaſt, 'tis ſo with Regard to us, who know of no older. Some learned Men will have it the Language ſpoke by *Adam* in Paradice; and that the Saints will ſpeak it in Heaven.

Alberti, in his *Hebrew Dictionary*, endeavours to find in each Word, in its Root, in its Letters, and the Manner of pronouncing them, ſome natural Reaſon of the Signification of that Word. But he has carried Matters too far; and it has been ſhewn, in the Memoirs *de Trevoux*, that on his Principles, Words which really ſignify quite different Things, ſhould ſignify the ſame.

Neuman, and *Loeſcher*, have proſecuted *Alberti*'s Scheme further, and with more Addreſs than he has done: The firſt, in his *Geneſis Linguæ Sanctæ*, and *Exodus Linguæ Sanctæ*; and the latter, in his Treatiſe *de Cauſis Linguæ Hebreæ*.

Be this as it will, the *Hebrew*, ſuch as we have it in the Holy Scripture, is a very regular, analogical Language, and particularly ſo in its Conjugations. Properly ſpeaking, there is but one, ſimple Conjugation; but this is varied in each Verb ſeven or eight Ways, which has the Effect of ſo many different Conjugations, and affords a great Number of Expreſſions, whereby to repreſent, under one ſingle Word, all the different Modifications of a Verb; and ſeveral Ideas at once, which in the modern, and moſt of the antient and learned Languages, are expreſſible only by Phraſes.

The Original, or Primitive Words in this Language, which they call *Radices*, Roots, rarely conſiſt of more than three Letters, or two Syllables, which are expreſs'd by two Sounds, or by the ſame Sound redoubled, which is indicated by a Point. See ROOT, RADICAL, &c.

There are twenty two Letters in the *Hebrew* Language, which Grammarians divide into *Guttural*, *Palatal*, *Dental*, *Labial*, and *Lingual*. — This Diviſion is taken from the ſeveral Organs of Speech; ſome whereof contribute more than others to the Pronunciation of certain Letters. See VOICE. See alſo GUTTURAL, PALATAL, &c.

Uſually, they only reckon five Vowels in the *Hebrew*, which are the ſame with ours, *viz.* a, e, i, o, u; but then each Vowel is divided into two, a long, and a *breve* or ſhort: The Sound of the former is ſomewhat graver, and longer; and that of the latter ſhorter, and more acute. — It muſt be added, that the two laſt Vowels have quite different Sounds, different, we mean, in other Reſpects beſide Quantity and Degree of Elevation.

To theſe ten or twelve Vowels muſt be added ſome others call'd *Semi-Vowels*, which are only ſlight Motions ſerving to connect the Conſonants, and make the eaſier Tranſitions from one to another. See VOWEL.

The Number of Accents is prodigious in the *Hebrew*. — There are near forty different ones; and of theſe, there are ſeveral, whoſe Uſe is not well aſcertain'd, notwithſtanding all the Enquiries of the Learned into that Matter.

In the general, we know theſe three Things: 1°. That they ſerve to diſtinguiſh the Sentences, and the Members thereof, like the Points and Comma's, *&c.* in *Engliſh*. 2°. To determine the Quantity of the Syllables: And 3°. To mark the Tone wherewith they are to be ſpoke or ſung. See ACCENT.

'Tis no Wonder, then, there ſhould be more Accents in the *Hebrew* than in other Languages; as they do the Office of three different Things, which in other Languages are called by different Names. See PUNCTUATION, QUANTITY, *&c.*

As we have no *Hebrew*, but what is contain'd in the Scriptures; that Language wants a World of Words; not only by Reaſon, in thoſe primitive Times, the Languages were not ſo copious as at preſent, but alſo on this Account that the inſpired Writers had occaſion to mention many of the Terms that might be in the Language.

The *Chaldee*, *Syriac*, *Ethiopic*, *Arabic*, &c. Languages, are all only Dialects of the *Hebrew*; as the *French*, *Italian*, *Spaniſh*, &c. are Dialects of the *Latin*. See CHALDEE, SYRIAC, ARABIC, *&c.*

Rabbinical HEBREW, or HEBREW *of the Rabbins*, or *modern* HEBREW, is the Language uſed by the Rabbins, in the Writings they have compoſed. See RABBIN.

The Baſis, or Body hereof, is the *Hebrew* and *Chaldee*, with divers Alterations in the Words of thoſe two Languages, the Meanings whereof they have conſiderably enlarged and extended. Abundance of Things they have borrowed from the *Arabic*. — The reſt is chiefly compoſed of Words, and Expreſſions, chiefly from the *Greek*; ſome from the *Latin*; and others, from the other modern Tongues; particularly that ſpoken in the Place where each Rabbin lived or wrote.

The *Rabbinical Hebrew*, muſt be allowed a very copious Language: — M. *Simon*, in his *Crit. de l'Ancien Teſtam.* L. III. *C.* 27. obſerves, that there is ſcarce any Art, or Science, but the Rabbins have treated thereof in it. They have tranſlated moſt of the antient Philoſophers, Mathematicians, Aſtronomers, and Phyſicians; and have wrote themſelves on moſt Subjects: They do not want even Orators and Poets. Add, that this Language, notwithſtanding 'tis ſo crowded with foreign Words, has its Beauties viſible enough in the Works of thoſe who have wrote well.

M. *Simon* ſays, 'tis impoſſible to reduce it into an Art, or Syſtem of Rules; tho' ſeveral learned Men are of another Sentiment; and it not only appears poſſible, but has actually been perform'd. *Genebrard* firſt attempted it in his *Iſagoge Rabbinica*, which yet goes no further than to the learning to read it. *Buxtorf* ſeconded him, at the End of his *Hebrew Grammar*; where we have an additional Piece, under the Title *Lectionis Hebræo-Germanicæ uſus & Exercitatio*. Others have gone yet further: *Majus* has lately given us a Rabbinical Grammar, at *Gieſſen*, under the Title of *Johannis Maii Grammatica Rabbinica*: And before him *Sennert* had done the ſame; *Rabbiniſmus*, h. e. *Præcepta Targumico-Talmudico Rabbinica*. Wirtemb. *An.* 1666.

HECATOMB, HECATOMBES, in Antiquity, a Sacrifice of an hundred Beaſts of the ſame Kind, at an hundred Altars, and by an hundred Prieſts, or Sacrificers. See SACRIFICE.

Pythagoras is ſaid to have ſacrificed a *Hecatomb* to the Muſes, of an hundred Oxen, in Joy and Gratitude, for his diſcovering the Demonſtration of the 47th Propoſition of the Firſt Book of *Euclid*, viz. that in a rectangled Triangle, the Square of the Hypothenuſe is equal to the Squares of the two other Sides. See HYPOTHENUSE.

The Word is form'd of the *Greek*, ἑκατόμβη, which properly ſignifies a ſumptuous, or magnificent Sacrifice. — Others derive it from the *Greek* ἑκατὸν, *Centum*, a Hundred, and βῶς, *Bos*, Bullock, *&c.* On which Footing, the *Hecatomb* ſhould be a Sacrifice of an hundred Bullocks.

For the Origin of *Hecatombs*. — *Strabo* relates, that there were an hundred Cities in *Laconia*; and that each City uſed to ſacrifice a Bullock every Year, for the common Safety of the Country; whence the Inſtitution of the celebrated Sacrifice of an hundred Victims, call'd *Hecatombs*. Others refer the Origin of *Hecatombs* to a Plague; wherewith the hundred Cities of *Peloponeſus* were afflicted; for the Removal whereof, they jointly contributed to ſo ſplendid a Sacrifice.

Some derive the Word from ἑκατὸν, and πῆς, *Pes*, Foot; and on that Principle hold, that the *Hecatomb* might conſiſt of only twenty five four footed Beaſts. They add, that it did not matter what Kind of Beaſts were choſe for Victims, provided the Quota of Feet were but had.

Yet *Julius Capitolinus* relates, that for a *Hecatomb* they erected an hundred Altars of Turf, and on theſe ſacrificed a hundred Sheep, and an hundred Hogs. He adds, that when the Emperors offered Sacrifices of this Kind, they ſacrificed a hundred Lyons, a hundred Eagles, and a hundred other Beaſts of the like Kind.

The Month wherein the annual, or ordinary *Hecatomb* was ſacrificed, was hence called the *Hecatombeon*. See MONTH.

The *Athenians* had a Sacrifice of the ſame Kind, offered yearly to *Mars*, called *Hecatomphoneuma*, of ἑκατὸν, *Centum*, and φονευμα, of φονεύω, *occido*, I kill; and that of φονος, *Cædes*.

HECATOMPHONIA, was an antient Sacrifice among the *Meſſenians*; offer'd by ſuch as had ſlain an hundred Enemies in Battel. See SACRIFICE.

Pauſanias makes mention of one *Ariſtomenes* of *Corinth*, who offered no leſs than three *Hecatomphonia*.

The Word comes from ἑκατὸν and φωνεύω, *I kill*.

HECK, among Husbandmen, a *Rack*; at which Horſes are fed with Hay.

It is alſo an Engine, wherewithal to take Fiſh in the River *Owſe*. — A *Salmon-Heck*, is a Grate for the catching of that Sort of Fiſh. See *Salmon* FISHING.

Hence, alſo, the Word *Heckagium*, or *Heceagium*, which occurs in antient Records, for a Rent paid the Lord for the Liberty to uſe ſuch Engines.

HECKLING of *Hemp*, See HEMP.

HECTIC, or HECTIC *Fever*, in Medicine, a Sort of ſlow habitual Fever, gradually preying on and conſuming the Moiſture of the Body, and ending in a *Tabes*, or Conſumption. See FEVER.

The *Hectic* is alſo an Attendant of a Conſumption; and is reputed one of the Diagnoſtic Signs thereof. See CONSUMPTION and PHTHISIS.

The Word is *Greek*, ἑκτικὸς, form'd of ἕξις, *Habitus*; a Quality hard to ſeparate from its Subject.

The *Hectic*, Dr. *Quincy* obſerves, is the Reverſe of thoſe Fevers which ariſe from a *Plethora*, or too great a Fulneſs from Obſtruction. This being attended with too lax a State of the excretory Paſſages, and particularly thoſe of the Skin, whereby ſo much runs off, as leaves not Reſiſtance enough in the contractile Veſſels to keep them ſufficiently diſtended, ſo that they vibrate oftener, agitate the Fluids more, and keep them thin and hot.

The Remedy conſiſts in giving a firmer Tone to the Solids, and laying more Load upon the Fluids, and thus bringing them to a better Conſiſtence; which is effected by Means of Balſamicks, Agglutinants, and Foods of the beſt Nouriſhment. — All Evacuation herein is bad.

A Milk Diet, is much recommended in *Hectick*s, and particularly Aſſes-Milk, as being the leaſt viſcid and heavy. Dr. *Baynard* propoſes Butter-Milk as a Succedaneum to Aſſes-Milk. According to him, it anſwers moſt of the Indications in this Caſe, as it cools, moiſtens, nouriſhes, &c. He adds, that he has known many Perſons cured of obſtinate *Hectick*s, by a continued Uſe thereof. See ANTIHECTICKS.

HEDAGIUM, antiently ſignified a Toll, or Cuſtom, paid at the Hyth, or Wharf, *&c.* for landing Merchandize, Goods, *&c.* See WHARF, HYTH, *&c.*

From ſuch Toll, or cuſtomary Duty, Exemptions were ſometimes granted by the Sovereign to particular Perſons, and Societies.

The Word is form'd from *Heda*, a Hyth, Port or Wharf.

HEDGE, in Agriculture, *&c.* a Fence, incloſing a Field, Garden, or the like; made of Branches of Trees interwoven. See FENCE.

The Word is form'd of the German *hag*, or *haag*, or the Anglo-Saxon *hegge*, or *hoeg*; which ſignify ſimply Incloſure, Circumference.

Quick-ſet Hedge, is that made of quick, or live Trees, which have taken Root; in Contradiſtinction to that made of Faggots, Hurdles, or dry Boughs, *&c.*

To plant a *Quick-Hedge* of Thorn, or the like, Mr. *Mortimer* directs, that the Sets be about as big as the Thumb, and cut within four or five Inches off the Ground: That if the *Hedge* have a Ditch, it be three Foot wide a-top, and one at Bottom, and two deep: That if the *Hedge* be without a Bank, or Ditch, the Sets be in two Rows, almoſt perpendicular, and at a Foot Diſtance: That the Turf be laid with the Graſs Side downwards: That at every 30 Foot Diſtance, a young Oak, Elm, Crab, or the like be placed: That Stakes be driven into the looſe Earth, at about two Foot and a half Diſtance, ſo low as to reach the firm Ground.

When

When the *Hedge* is eight or nine Years growth, it may be *ſplaſh'd* or laid down; by giving the Shoots, or Branches, a Cut with a Knife, or Bill, half thro'; and then weaving it about the Stakes, and trimming off the ſmall ſuperfluous Branches.

Inſtead of Building a Garden Wall facing the North Eaſt, Mr. *Lawrence* adviſes, that to ſave Charge, *&c.* a Crab-Tree *Hedge* of three Rows be planted; which will be a good Mound, and quickly grow up to be a better Fence than a Wall againſt the Weſt and South-Weſt Winds, which make the greateſt Deſtruction in a Garden, and which blow two Parts in three of the whole Year: Beſide the Stock of Fruit ſuch a *Hedge*, grafted with Red ſtreak, or Gennet Moyl, will yield.

Eſpalier HEDGES. See ESPALIER.

Tranſplanting of HEDGE-*Rows*. See TRASPLANTING.

HEEL, in Anatomy, the hind Part of the Foot. See FOOT.

In Winter, the *Heels* are liable to Kind of Chilblains, call'd *Kibes*, which tend to Mortification. See CHILBLAIN.

The *Bone of the Heel* is called *Calcaneum*. See CALCANEUM.

HEEL *of a Horſe*. See HORSE.

The *Heel* ſhould be high and large; and one Side not riſe higher on the Paſtern than the other. — The Diſtempers incident to this Part, are ſcabbed *Heels* and Scratches. See SCRATCHES.

The *Heel* is properly the hind Part of the Foot; and has two Sides, where the Quarters terminate; or, it is the lower hinder Part of the Foot, comprehended between the Quarters, and oppoſite to the Toe. — Some narrow *heel'd* Horſes have high *Heels*, but ſo weak and tender, that by preſſing the two Sides of the *Heel* one againſt another, they will ſenſibly yield. See HOOF.

To *open the Heels*, is to pare the Foot, and cut the *Heel* low, almoſt cloſe to the Fruſh; taking it down within a Finger's Breadth of the Coronet, or Top of the Hoof, ſo as to ſeparate the Quarters, and by that Means weaken and take away the Subſtance of the Foot, and make it cloſe, and become narrow at the *Heels*.

The *Heel of the Horſeman*, being the Part which is armed with a Spur; the Word is uſed for the Spur it ſelf: As, this Horſe underſtands the *Heels* well. See AID and CORRECTION.

To *ride a Horſe from one Heel to another*, is to make him go Side-ways, ſometimes to one *Heel*, and ſometimes to another.

HEEL, in the Sea-Language. — If a Ship lye on one Side, whether a-ground or a-float, they ſay ſhe *heels* offward, or to the Shore, a-ſtar-board, or a-port.

HEEL *of a Maſt*, is that Part of the Foot thereof, which is pared away ſlanting, that the Maſt may be ſtay'd afterward on. See MAST.

HEELER, or *Bloody-Heel Cock*, is a fighting Cock which ſtrikes or wounds much with his Spurs: — Cock-Maſters know ſuch a Cock, even while a Chicken, by the ſtriking of his two Heels together in his going.

HEGIRA, in Chronology, a celebrated Epocha, uſed by the *Arabs* and *Mahometans*, for the Computation of Time. See EPOCHA.

The Word *Hegira*, in its original *Arabic*, ſignifies *Flight*; the Event which gave Occaſion to this Epocha, being *Mahomet*'s Flight from *Mecca*. — The Magiſtrates of that City fearing his Impoſtures might raiſe a Sedition, reſolved to expel him: This, accordingly, they effected in the Year of our Lord 622, on the Evening of the 15th or 16th of *July*.

To render this Epocha more creditable, the *Mahometans* affect to uſe the Word *Hegira* in a peculiar Senſe, for an Act of Religion, whereby a Man forſakes his Country, and gives Way to the Violence of Perſecutors and Enemies of the Faith: They add, that the *Coraichites* being then the ſtrongeſt Party in the City, obliged their Prophet to fly, as not being able to endure his aboliſhing of Idolatry.

This Flight was not the firſt; but it was the moſt famous. It happen'd on the 14th Year from his aſſuming the Character of Prophet and Apoſtle, and promulgating his new Religion. See MAHOMETANISM.

The *Orientals* do not agree with us, as to the Time of the *Hegira*. Among the *Mahometans*, *Amaſſi* fixes it to the Year of Chriſt 630; and from the Death of *Moſes* 2347: And *Ben Caſſem*, to the Year of the World 5800, according to the *Greek* Computation. Among the Chriſtians, *Said Ebn Batrik* refers the *Hegira* to the Year of Chriſt 614, and of the Creation 6114.

Khondemir relates, that it was *Omar*, the ſecond Caliph, that firſt eſtabliſh'd the *Hegira* as an Epocha, and appointed the Years to be numbered from it: At the Time he made this Decree, there were already ſeven Years elapſed. This Eſtabliſhment was made in Imitation of the Chriſtians; who, in thoſe Times, reckon'd their Years from the Perſecution of *Diocleſian*. See DIOCLESIAN *Æra*.

But there is another *Hegira*, and the earlier too, tho' of leſs Eminence: — *Mahomet*, in the 14th Year of his Miſſion, was obliged to relinquiſh *Medina*: The *Caraſchaites* had all along oppoſed him very vigorouſly, as an Innovator, and Diſturber of the public Peace. Many of his Diſciples, not enduring to be reputed Followers of an Impoſtor, deſired Leave of him to abandon the City, for Fear of being obliged to renounce their Religion. This Retreat makes the firſt *Hegira*.

Theſe two *Hegira's*, the *Mahometans* in their Language call *Hegiratan*.

The Word is *Arabic*, form'd of הגרה, *hagirah*, Flight; of הגר, to fly, quit ones Country, Family, Friends, *&c.*

The Years of the *Hegira* conſiſt only of 354 Days. To reduce theſe Years to the *Julian* Calendar, *i. e.* to find what *Julian* Year a given Year of the *Hegira* anſwers to; reduce the Year of the *Hegira* given, into Days, by multiplying by 354; divide the Product by 365, and from the Quotient ſubſtract the Intercalations, *i. e.* as many Days as there are four Years in the Quotient; and, laſtly, to the Remainder add 622. See YEAR.

HEIGHT, the third Dimenſion of a Body, conſider'd with Regard to its Elevation above the Ground. See DIMENSION and ELEVATION.

Altimetria teaches how to find, or meaſure all *Height*, both acceſſible and inacceſſible. See ALTIMETRIA.

The Inſtruments chiefly uſed to meaſure *Heights*, are the *Quadrant*, and the Geometrical *Quadrat*. See QUADRANT and QUADRAT. See alſo SHADOW and MIRROR.

To meaſure the *Height* of Mountains, and particularly thoſe of the Moon. See BAROMETER, MOON, *&c.*

HEIGHT, is ſometimes alſo uſed for *Depth*. See DEPTH.

The Deſign of Levelling, is to find the different *Heights*, or Depths, of Places. See LEVELLING.

HEIGHT, in Aſtronomy, *&c.* is more properly call'd *Altitude*. See ALTITUDE.

The *Height*, or Altitude, of the Sun, *&c.* is an Arch of the Meridian, comprehended between the Sun, *&c.* and the Horizon. See SUN, *&c.*

To find the Meridian *Heights* of the Sun, Stars, *&c.* See MERIDIAN *Altitude*.

The *Height* of a Star, is either true or apparent. — The apparent *Height* is its Diſtance from the rational Horizon; or, rather, it is the *Height* of a Star ſuch as it appears: The true *Height* is, what remains after the Refraction has been ſubſtracted. See REFRACTION.

M. *Parent* ſuggeſts a new Method of taking *Heights* at Sea, by a common Watch. — 'Tis obvious, that in an oblique Sphere, the Difference between the riſing and ſetting of two Stars, on the ſame Meridian, is greater, as they are further diſtant from one another. See RIGHT *Aſcenſion*.

Now, the Aſtronomical Tables furniſhing us with Tables of the right Aſcenſions and Declinations of all the fix'd Stars; 'tis eaſy, after obſerving the Difference of Time between the riſing of two Stars, to diſtinguiſh that Part of the Difference which accrues from their different Poſition, from that which ariſes from the Obliquity of the Sphere. — But ſuch Difference is the preciſe *Height* of the Pole of the Place of Obſervation. See POLE.

Indeed, the Ship not being immoveable, but changing Place between the two Obſervations; ſeems to lay the Method under ſome Difficulty; to which M. *Parent* anſwers, that a ſmall Alteration either of the Ship's Longitude or Latitude, will make no ſenſible Error; and that if ſhe have gone a large Diſtance between the two Obſervations, 'tis eaſy reckoning how much it is, and allowing for it. See SAILING, *&c.*

HEIGHT, in Geography, Navigation, *&c.* is properly call'd *Elevation*. See ELEVATION.

The *Height*, or Elevation of the Pole, is an Arch of the Meridian intercepted between the Horizon and the Pole. See POLE.

The *Height* of the Pole is always equal to the Latitude of the Place. See LATITUDE.

HEIGHT, in the Manage, *&c.* the Stature of a Horſe, *&c.* See STATURE and HORSE.

It is a reputed Imperfection in a Horſe, when ſet too *high* on his Legs, *i. e.* when the Legs are too long in Proportion to the Body.

Some Jockeys have determined a Meaſure for them thus: — Take a String, and meaſure from the Horſe's Withers to his Elbow, and what Length that is, the ſame ſhould he have betwixt the Elbow and the lower Part of the Heels. — Some meaſure their Colts after this Manner at a Year old; being of Opinion that the Legs of a Colt at this Age, are as long as they ever will be.

The Duke of *Newcaſtle*, and Sir *W. Hope*, allow this to hold generally, but not univerſally.

HEIGHTS, in the military Art, are the Eminences round a fortified Place, whereon the Armies uſually poſt themſelves. — The Enemy had ſeiz'd all the *Heights*: Appear'd on the *Heights*, &c.

HEIR, *Hæres*, in the Civil Law, he who ſucceeds to the whole Eſtate and Effects of another, whether by Right of Blood, or of Teſtament. See SUCCESSION.

The Inſtitution of an *Heir*, is a Circumſtance neceſſary to the Validity of a Teſtament. See TESTAMENT.

There are two principal Kinds of *Heirs*, *Apparent* and *Preſumptive*.

An *Heir Apparent*, is he on whom the Succeſſion is ſo ſettled, that he cannot be ſet aſide, without altering the Laws of Succeſſion.

Heir Preſumptive, See PRESUMPTIVE *Heir*.

The Word is form'd of the Latin *Hæres*, of the Verb *hærere*, to ſtick, remain faſt, be near, follow immediately, &c.

HEIR, in Common Law, is he who ſucceeds, by Right of Blood, to any Man's Lands, or Tenements in Fee.

For, nothing paſſes in Common Law, *Jure hæreditatis*, by Right of Inheritance, but *Fee*. See FEE.

By Common Law, therefore, a Man cannot be *Heir* to Goods or Chattels; for *Hæres dicitur ab hæreditate:* 'Tis the Inheritance denominates the *Heir*. See INHERITANCE.

Every *Heir*, having Lands by Deſcent, is bound by the Acts of his Anceſtors, if he be named; it being a Maxim, that *qui ſentit Commodum ſentire debet & Onus*.

Moveables, or Chattels immoveable, are given by Teſtament, to whom the Teſtator thinketh fit; otherwiſe they lye at the Diſpoſition of the Ordinary, to be diſtributed as he in Conſcience likes beſt.

Laſt HEIR, See LAST *Heir*.

HEIR *Loom*, in our Law-Books, ſignify ſuch Houſhold Furniture, as is not inventoried after the Owner's Deceaſe; but neceſſarily comes to the *Heir* along with the Houſe. See HEIR.

Heir Loom comprehends divers Implements; as Tables, Preſſes, Cup-boards, Bed-ſteads, Furnaces, Wainſcot, and ſuch like, which, in ſome Countries, have belonged to a Houſe for certain Deſcents, and are never inventoried after the Deceaſe of the Owner as Chattels are, but accrue by Cuſtom, not by common Law, to the *Heir*, with the Houſe it ſelf.

Conſuetudo Hundredi de Stretford, *in Com.* Oxon. *eſt quod hæredes tenementorum infra Hundredum predict. exiſten. poſt mortem Anteceſſorum ſuorum habebunt*, &c. *Principalium, Anglice an* Heir-Loome, *viz. De quodam genere Catallorum, utenſilium*, &c. *Optimum plauſtrum, optimam Carucam, optimum Ciphum*, &c. Coke on Littleton.

HELCESAITES, or ELCESAITES, a Sect of antient Hereticks, in the IId Century; denominated from their Leader *Elxai*, or *Helxeus*.

The *Helceſaites* condemn'd Virginity, and held it a Duty of Religion to marry: They taught that Jeſus Chriſt was a mere Creature, who appear'd at the Beginning of the World in the Figure of *Adam*, and afterwards under that of *Jeſus Chriſt*. That the Holy Spirit, which they ſuppoſed of the Female Sex, was the Siſter of Jeſus, &c. They eſtabliſh'd ſeven Witneſſes of an Oath, *viz.* Salt, Water, Earth, Bread, Heaven, Air and the Wind.

HELEPOLIS, in Antiquity, a military Machine, for the battering down the Walls of a Place beſieged.

The *Helepolis*, as deſcribed by *Diod. Siculus*, &c. appears to have been no more than the *Aries*, or battering Ram, with a Roof, or Covering over it, to prevent its being ſet on Fire, as alſo to ſcreen the Men who work'd it. See ARIES.

Some will have it a Combination of two or three battering Rams, moving on large ſtrong Wheels, roofed over, and cover'd with raw or wet Skins. It had ſeveral Iron Points, or Heads, wherewith the Execution was done; form'd much like the Thunderbolts which Painters repreſent. Within, was a great Number of Soldiers, who drove it with Force of Arm and by Means of Ropes, violently againſt the Wall where the Breach was intended.

Others, will have *Helepolis* a generical Name, comprehending all the Machines uſed by the Antients in the beſieging of Towns; as, among us, the Name *Artillery* includes all the Sorts of Fire Arms. — But this Opinion is chiefly founded on the Origin of the Name, and does by no Means ſuit with thoſe minute Deſcriptions given of the *Helepolis* in the antient Writers.

The Word is *Greek*, ἑλέπολις, compounded of the Words ἑλεῖν, *to take*, and πόλις, *City*.

The Invention of the *Helepolis*, and divers other military Machines, is aſcribed to *Demetrius*, which, with the great Number of Cities he took thereby, gave him the Denomination of *Poliorcetes*, or City Taker.

HELIACA, in Antiquity, Sacrifices, and other Solemnities, perform'd in Honour of the *Sun*; whom the *Greeks* call *Helios*, ἥλιος. See SUN, CIRCUS, &c.

HELIACAL, in Aſtronomy. — The HELIACAL *Riſing* of a Star, Planet, &c. is its iſſuing, or emerging out of the Rays and Luſtre of the Sun, wherein it was before hid; whether this be owing to the Receſs of the Sun from the Star, or of the Star from the Sun. See RISING.

HELIACAL *Setting*, is its entering or immerging into the Sun's Rays, and ſo becoming inconſpicuous by the ſuperior Light of that Luminary. See SETTING.

Or, a Star *riſes Heliacally*, when after it has been in Conjunction with the Sun, and on that Account inviſible, it gets at ſuch a Diſtance from him, as to be ſeen in the Morning before the Sun's Riſing. — The ſame is ſaid to *ſet Heliacally*, when it approaches ſo near the Sun, as to be hid therein. So that, in Strictneſs, the *Heliacal* Riſing and Setting, are only an Apparition and Occultation. See OCCULTATION, &c.

The *Heliacal* Riſing of the Moon, happens when ſhe arrives at the Diſtance of 17 Degrees from the Sun; for the other Planets, 20 Degrees Diſtance is required: And for the Stars more or leſs, as they are greater or ſmaller. See MOON, PLANET and STAR.

To find the HELIACAL *Riſing and Setting by the Globe*. See GLOBE.

The Antients computed that a Star, between the Tropicks, would be forty Days ere it got clear of the Sun's Rays, and become conſpicuous again. *Heſiod* firſt made this Computation; and the reſt follow'd him. The Period comes very near to the Computation of the Moderns: For the Sun advancing nearly a Degree every Day, it will be 20 Days approaching thereto, from the *Heliacal* Setting of the Star; and 30 Days more withdrawing, till the *Heliacal* Riſing.

The Word is derived from the *Greek*, ἥλιος, *Sol*, Sun.

HELIASTES, in Antiquity, Officers, or Magiſtrates of *Athens*, conſtituting a Court of 500 Perſons, or Judges, who took Cognizance of Civil Matters.

The Court of *Heliaſtes* was one of the ſix Civil Juriſdictions of *Athens*; and that to which Matters of the greateſt Moment were uſually brought: So that it was held the moſt conſiderable of all the Civil Tribunals. The Delinquencies of the military Men were alſo brought before the *Heliaſtes*.

Ulpian gives us two Etymologies of the Word: Some, ſays he, derive it from ἥλιος, *Helios*, Sun; and hold it thus call'd by Reaſon they ſat in the open Air, in Sight of the Sun. *Ulpian* himſelf chuſes rather to derive *Heliaſtes* from Ἡλιαία, *Heliæa*, the Place where this Court, or Council was held; and that from ἀλίζω, *I aſſemble*, of ἅλις, *ſatis*, enough.

HELICE, in Aſtronomy, the ſame with *Urſa*. See URSA.

HELICOID *Parabola*, or the *Parabolic Spiral*, a Curve ariſing upon a Suppoſition of the Axis of the common *Apollonian Parabola's*, being bent round into the Periphery of a Circle. See PARABOLA.

The *Helicoid Parabola*, then, is a Line paſſing thro' the Extremities of the Ordinate, which now converge towards the Centre of the ſaid Circle.

Suppoſe, *e. gr.* the Axis of the common *Parabola* to be bent into the Periphery of the Circle B D M, *Tab. Conicks Fig.* 11; then, the Curve B F G N A, which paſſes thro' the Extremities of the Ordinates C F, and D G, which converge towards the Centre of the Circle A; conſtitutes what we call the *Helicoid*, or *Spiral Parabola*.

If the Arch B C, as an Abſciſſe, be called x, and the Part C F of the Radius, as an Ordinate to it, be call'd y; the Nature of this Curve will be expreſs'd by the Equation $lx = yy$. See CURVE and EQUATION.

HELIOCENTRIC, in Aſtronomy, is applied to Things which would appear ſo to the Eye, were it placed in the Centre of the Sun. See SUN.

The Word is compounded of ἥλιος, *Sun*, and κέντρον, *Centrum*.

HELIOCENTRIC *Latitude* of a Planet, is the Inclination of the Line drawn between the Centre of the Sun and the Centre of a Planet, to the Plane of the Ecliptic. See LATITUDE.

The *Heliocentric Latitude* of a Planet is thus determined. — If the Circle K L M, *Tab. Aſtronom. Fig.* 62. repreſent the Orbit of the Earth round the Sun, and the inner one A N B n be placed ſo, as to be inclined to the Plane of the other (for which Reaſon it appears in the Form of an Ellipſis) when the Planet is in N or n, (which Points are called its Nodes) it will appear in the Ecliptic, and ſo have no Latitude; if it move to P, then, being ſeen by the Sun, it will appear to decline from the Ecliptic, or to have Latitude; and the Inclination of the Line R P, to the Plane of the Ecliptic, is called the *Planet's Heliocentric Latitude*, and the Meaſure of it is the Angle P R q, ſuppoſing the Line P q, to be perpendicular to the Plane of the Ecliptic.

This *Heliocentric Latitude* will be continually increaſing, till it come to the Point A, which they call the Limit, or utmoſt Extent of it; and then it will decreaſe again, till

till it come to nothing in N; after which it will increaſe again till it come to B; and laſtly, be decreaſing again, till the Planet come to be in n, &c.

HELIOCENTRIC *Place* of a Planet, is the Place wherein the Planet would appear to be, if viewed from the Centre of the Sun: Or the Point of the Ecliptic, wherein a Planet view'd from the Sun, would appear to be. See PLACE.

The *Heliocentric Place*, therefore, coincides with the Longitude of a Planet view'd from the Sun. See LONGITUDE and PLANET.

HELIOCOMETES, a Phænomenon ſometimes obſerv'd at the ſetting of the Sun.

It was denominated *Heliocometes*, q. d. *Comet of the Sun*, by *Sturmius*, and *Pylen* who had ſeen it, in Regard it ſeems to make a Comet of the Sun, being a large Tail, or Column of Light fix'd, or hung to that Luminary, and dragging after it at his Setting, much in the Manner of the Tail of a Comet. See COMET.

In that obſerved by M. *Pylen* at *Gryphſwald*, March 15. 1702, at Five of the Clock in the Afternoon, the End which touched the Sun was only half the Sun's Diameter broad; but the other End, oppoſite to the Sun, much broader. Its Length was above ten Diameters of the Sun; and it moved in the ſame Track as the Sun. Its Colour was yellow next the Sun, and darker further off. It was only ſeen painted on the thinner, higher Clouds: A little Teleſcope eaſily diſcover'd that there was nothing of it on the thicker, and lower Clouds; tho' the naked Eye could not diſcover ſo much. It laſted, in its full Vigour, the Space of an Hour, and then gradually diminiſh'd.

HELIOSCOPE, in Opticks, a Sort of Teleſcope, peculiarly fitted for viewing and obſerving the Sun, without doing Prejudice to the Eye. See TELESCOPE.

Helioſcopes are neceſſary in viewing the Phænomena of the Sun; as his Spots, Eclipſes, &c. See SUN, SPOT, ECLIPSE, &c.

There are various Apparatus's of this Kind. —

As coloured Glaſſes are found to diminiſh the Force of the Sun's Rays; to make a *Helioſcope*, 'tis enough that both the Object Glaſs, and the Eye Glaſs of the Teleſcope, be of colour'd Glaſs; the firſt, *e. gr.* of Red, and the latter Green.

But, as there is a Neceſſity for the Glaſſes to be very tranſparent, and equally colour'd; which rarely happens: *Hevelius* chuſes rather to uſe two plain coloured Glaſſes, with a Piece of Paper between, either tied, or cemented together, and applied before the Eye Glaſs.

Dr. *Hook*, in an expreſs Treatiſe on *Helioſcopes*, recommends four reflecting Glaſſes placed in the Tube; by theſe, he obſerves, the Force of the Rays will be ſo weaken'd, as only to ſtrike the Eye with a 256*th* Part of their Force: And this *Helioſcope* he prefers to all others.

M. *Huygen*'s Method is much eaſier: — He only blackens the inſide of the Eye Glaſs of the Teleſcope, by holding it over the Flame, or Smoak of a Lamp or Candle. Or, which is yet more commodious, blackens a Piece of plain Glaſs, and holds it between the Eye and the Object Glaſs: Or, which is beſt of all, claps the ſmoak'd Glaſs to another, with a Rim of thick Paper between, to keep the black from rubbing off, and fits the two into a Cell, or Frame, to be applied between the Eye and the Eye Glaſs.

The Word is compounded of ἥλιος, and σκέπτομαι, *video*, *ſpecto*, I ſee, view, conſider.

HELIOTROPE, HELIOTROPIUM, in Natural Hiſtory, a Plant popularly call'd the *Sun-flower*; as alſo *Tournſol*, or *Turnſol*. See TOURNSOL.

The Word is compounded of the *Greek*, ἥλιος, *Sun*, and τρέπω, *verto*, I turn.

HELIOTROPE, is alſo a pretious Stone, of a green Colour, ſtreak'd with red Veins. See PRETIOUS *Stone*.

Pliny ſays 'tis thus call'd, by Reaſon when caſt into a Veſſel of Water, the Sun's Rays falling thereon, ſeem to be of a Blood Colour; and that when out of the Water, it bears ſome Reſemblance of the Figure of the Sun; and is proper to obſerve Eclipſes of the Sun withal, as a *Helioſcope*.

The *Heliotrope* is alſo call'd *Oriental Jaſper*, on Account of its ruddy Spots. See JASPER.

It is found in the *Eaſt Indies*; as alſo in *Ethiopia*, *Germany*, *Bohemia*, &c. Some have aſcribed to it the Faculty of rendering People inviſible, like *Gyges*'s Ring.

HELISPHERICAL *Line*, in Navigation, denotes the *Rhumb Line*. See RHUMB *Line*.

It is thus call'd, becauſe, on the Globe, it winds round the Pole Helically, *i. e.* ſpirally, and ſtill comes nearer and nearer to it.

HELIX, in Geometry, a *Spiral Line*. See SPIRAL.

In Architecture, ſome Authors make a Difference between the *Helix* and *Spiral*.

A Stair-Caſe, according to *Daviler*, is in a *Helix*, or is *Heliacal*, when the Stairs, or Steps, wind round a Cylindrical Newel; whereas the Spiral winds round a Cone, and is continually approaching nearer and nearer its Axis. See STAIR-*Caſe*.

The Word is *Greek*, ἕλιξ, and literally ſignifies a *Wreath*, or *Winding*, of ἑλίσσω, *involvo*, I inviron.

HELIX, in Anatomy, is the whole Circuit or Extent of the Auricle, outwards: In Oppoſition to which the inner Protuberance anſwering thereto is call'd *Antheli*x. See AURICLE and EAR.

HELIX, is alſo uſed in Architecture, for the *Caulicoles*, or little Volutes, under the Flower of the *Corinthian* Capital; call'd alſo *Urillæ*. See CAULICOLES and URILLÆ.

HELL, *Tartarus*, *Infernus*, a Place of Puniſhment, wherein the Wicked are to receive the Reward of their Deeds, after this Life. — In this Senſe, the Word *Hell* ſtands oppoſed to *Heaven*. See HEAVEN.

Among the Antients, *Hell* was call'd Ταρταρος, Ταρταρα, *Tartarus*, *Tartara*; Ἅιδης, *Hades*, *Infernus*, *Inferna*, *Inferi*, &c. — The *Jews*, wanting a proper Name for it, call'd it *Gehenna*, or *Gehinnon*, from a Valley near *Jeruſalem*, wherein was a Tophet, or Place, where a Fire was perpetually kept. See GEHENNA.

Divines reduce the Torments of *Hell* to two Kinds; *Pœna Damni*, the Loſs and Privation of the Beatific Viſion; and *Pœna Senſus*, the Horrors of Darkneſs, with the continual Pains of Fire inextinguiſhable.

Moſt Nations and Religions have their *Hell*. — The *Hell* of the Poets is terrible enough: Witneſs the Puniſhment of *Tityus*, *Promotheus*, the *Danaids*, *Lapithæ*, *Phlegyas*, &c. deſcribed by *Ovid* in his *Metamorphoſis*. *Virgil*, after a Survey of *Hell*, Æneid. *Lib.* VI. declares, that had he a hundred Mouths and Tongues, they would not ſuffice to recount all the Plagues of the tortured. — The New Teſtament repreſents *Hell* as *a Lake of Fire and Brimſtone*; *a Worm which dies not*, &c. *Rev.* XX. 10, 14, &c. *Mark* IX. 43, &c. *Luke* XVI. 23, &c. — The *Caffres* are ſaid to admit 13 *Hells*, and 27 Paradiſes, where every Perſon finds a Place of Recompence ſuited to the Degree of Good or Evil he has done.

There are two principal Points of Controverſy among Writers touching *Hell*: The 1*ſt*, Whether there really be any *Local Hell*, any proper and ſpecific Place of Torment and Fire: The 2*d*, Whether the Torments of *Hell* are to be Eternal.

I. The Locality of *Hell*, and the Reality of the Fire thereof, has been controverted from the Time of *Origen*. — That Father, in his Treatiſe περὶ ἀρχῶν, interpreting the Scripture Account metaphorically; makes *Hell* to conſiſt not in external Puniſhments, but in the Conſcience of Sinners, the Senſe of their Guilt, and the Remembrance of their paſt Pleaſures. — St. *Auguſtine* mentions ſeveral of the ſame Opinion in his Time; and *Calvin*, and many of his Followers, have embraced it in ours.

The Retainers to the contrary Opinion, much the greateſt Part of Mankind, are divided as to the Situation, and other Circumſtances of this horrible Scene. — The *Greeks* after *Homer*, *Heſiod*, &c. conceiv'd *Hell*, Τοπον τινα ὑπο την γην μεγαν, &c. a large and dark Place under the Earth: Lucian, *de Luctu*, and *Euſtath.* in *Homer*.

Some of the *Romans* lodg'd it in ſubterranean Regions, directly under the Lake *Avernus*, in *Campania*; which they were led to from the Conſideration of the poiſonous Vapours emitted by that Lake. See AVERNUS. — Thro' a dark Cave, near this Lake, *Virgil* makes *Æneas* deſcend to *Hell*. See ELYSIUM.

Others placed *Hell* under *Tenarus*, a Promontary of *Laconia*, as being a dark frightful Place, beſet with thick Woods, out of which there was no finding a Paſſage. This Way, *Ovid* ſays, *Orpheus* deſcended to *Hell*. — Others fancied the River, or Fountain of *Styx* in *Arcadia*, the Spring-head of *Hell*, by Reaſon the Waters thereof were deadly.

But theſe are all to be conſider'd as only Fables of Poets; who, according to the Genius of their Art, allegoriſing and perſonifying every Thing, from the certain Death met withal in theſe Places, took Occaſion to repreſent them as ſo many Gates, or entering Places, into the other World. See FABLE, PERSONIFYING, &c.

The Primitive Chriſtians, conceiving the Earth a large extended Plane, and the Heavens an Arch drawn over the ſame; took *Hell* to be a Place in the Earth, the furtheſt Diſtant from the Heavens; ſo that their *Hell* was our Antipodes. See ANTIPODES.

Tertullian, *De Anima*, repreſents the Chriſtians of his Time, as believing *Hell* to be an Abyſs in the Centre of the Earth; which Opinion was chiefly founded on the Belief of Chriſt's Deſcent into *Hades*, Hell, *Matt.* XII. 40. See the following Article HELL.

The learned Mr. *Whiſton* has lately advanced a New Opinion. — According to him, the Comets are to be conceiv'd as ſo many *Hells*, appointed, in the Courſe of their Trajectories, or Orbits, alternately to carry the Damned into the Confines of the Sun, there to be ſcorch'd by his Flames; and then return 'em to ſtarve in the cold, dreary, dark Regions, beyond the Orb of *Saturn*. See COMET.

The Reverend and Orthodox Mr. *T. Swinden*, in an expreſs Inquiry into the *Nature and Place of Hell*, not contented with any of the Places hitherto aſſign'd; contends for a new one. — According to him, the Sun it ſelf is the *Local Hell*. See SUN.

This does not ſeem to be his own Diſcovery: — 'Tis probable he was led into the Opinion by that Paſſage in *Rev.* XVI. 8, 9. — Tho' it muſt be added, that *Pythagoras* ſeems to have had the like View, in that he places *Hell* in the Sphere of Fire; and that Sphere, in the middle of the Univerſe. — Add, that *Ariſtotle* mentions ſome of the *Italic*, or *Pythagoric* Schools, who placed the Sphere of Fire in the Sun, and even called it *Jupiter*'s Priſon. *De Cœlo*, L. II. See PYTHAGORIAN.

To make Way for his own Syſtem, Mr. *Swinden* undertakes to remove *Hell* out of the Centre of the Earth, from theſe two Conſiderations: — 1°. That a Fund of Fuel or Sulphur, ſufficient to maintain ſo furious and conſtant a Fire, cannot be there ſuppoſed: And 2°. That it muſt want the nitrous Particles in the Air, to ſuſtain and keep it alive. — And how, ſays he, can ſuch Fire be Eternal, when by Degrees the whole Subſtance of the Earth muſt be conſumed thereby?

It muſt not be forgot, however, that *Tertullian* had long ago obviated the former of theſe Difficulties, by making a Difference between *Arcanus*, and *Publicus Ignis*, ſecret and open Fire: The Nature of the firſt, according to him, is ſuch, as that it not only conſumes, but repairs what it preys upon. — The latter Difficulty is ſolved by St. *Auguſtine*, who alledges, that God ſupplies the Central Fire with Air, by a Miracle.

Mr. *Swinden*, however, proceeds to ſhew, that the Central Parts of the Earth are poſſeſs'd by Water, rather than Fire; which he confirms from what *Moſes* ſays of *Water under the Earth*, Exod. XX. from *Pſalms* XXIV. 2. and *Job* XXXI. 8. — As a further Proof, he alledges that there would want Room, in the Centre of the Earth, for ſuch an infinite Hoſt of Inhabitants, as the fallen Angels, and wicked Men.

Drexelius, we know, has fix'd the Dimenſions of *Hell* to a *German* Cubic Mile, and the Number of the Damned to an hundred Thouſand Millions: *De Damnator Carcer. & Rogo.* But Mr. *Swinden* thinks he needed not have been ſo ſparing in his Number, for that there might be found an hundred Times as many; and that they muſt neceſſarily be unſufferably crowded in any Space we could allow 'em in our Earth. — 'Tis impoſſible, he concludes, to ſtow ſuch a Multitude of Spirits in ſuch a ſcanty Apartment, without a Penetration of Dimenſions, which, he doubts, is not good Philoſophy, even in Reſpect of Spirits: If it be, he adds, 'he does not ſee why God ſhould prepare, *i. e.* 'make, a Priſon for 'em, when they might have been all 'crowded together into a Baker's Oven.' *p.* 206.

His Arguments for the Sun's being the *Local Hell*, are,

1°. Its Capacity: — No Body will deny the Sun ſpacious enough to receive all the damned conveniently; ſo that there will be no Want of Room. Nor will Fire be wanting, if we admit of Mr. *Swinden*'s Argument againſt *Ariſtotle*, whereby he demonſtrates that the Sun is hot, *p.* 208, and *ſeq.* — The Good Man is 'fill'd with Amaze-'ment to think what *Pyrenean* Mountains of Sulphur, 'how many *Atlantic* Oceans of ſcalding Bitumen, muſt 'go to maintain ſuch mighty Flames as thoſe of the 'Sun: Our *Ætna* and *Veſuvius* are mere Glow-Worms,' *p.* 137.

2°. Its Diſtance and Oppoſition to the *Empyreum*, which has uſually been look'd upon as the Local *Heaven*; ſuch Oppoſition is perfectly anſwerable to that Oppoſition in the Nature and Office of a Place of Angels and Devils, of Elect and Reprobate, of Glory and Horror; of Hallelujahs and Curſings: And the Diſtance quadrates well with *Dives* ſeeing *Abraham afar off*, &c. *the great Gulf between them*; which this Author takes to be the Solar Vortex.

3°. That the *Empyreum* is the higheſt, and the Sun the loweſt Place of the Creation; conſidering it as the Centre of our Syſtem: And that the Sun was the firſt Part of the viſible World created; which agrees with the Notion of its being primarily intended or prepared to receive the Angels, whoſe Fall he ſuppoſes to have immediately preceded the Creation.

4°. The early, and almoſt univerſal Idolatry paid the Sun; which ſuits well with the great Subtlety of that Spirit to entice Mankind to worſhip his Throne.

II. As to the Eternity of *Hell Torments*, we have *Origen*, again, at the Head of thoſe who deny it; it being the Doctrine of that Writer, that not only Men, but Devils themſelves, after a ſuitable Courſe of Puniſhment, anſwerable to their reſpective Crimes, ſhall be pardoned and reſtored to Heaven. Aug. *de Civit. Dei*, L. XXI. *C.* 17. — The chief Principle *Origen* went upon was this, that all Puniſhments are emendatory; applied only as painful Medicines, for the Recovery of the Patient's Health. Other Objections inſiſted on by modern Authors, are the Diſproportion between temporary Crimes, and eternal Puniſhments, *&c.*

The Scripture Phraſes for Eternity, as is obſerved by Archbiſhop *Tillotſon*, do not always import an infinite Duration: Thus, in the Old Teſtament, *For Ever*, often ſignifies only a long Time; particularly till the End of the *Jewiſh* Diſpenſation: Thus in the Epiſt. of *Jude*, V. 7. the Cities of *Sodom* and *Gomorrah* are ſaid to be ſet forth for an Example, ſuffering the Vengeance of *Eternal Fire*; that is, of a Fire that was not extinguiſhed till thoſe Cities were utterly conſumed. — So one Generation is ſaid to come, *&c.* but the Earth endureth *for Ever*.

In Effect, M. *le Clerc* notes, that there is no *Hebrew* Word which properly expreſſes Eternity: עולם *Holam*, only imports a Time whoſe Beginning or End is not known; and is accordingly uſed in a more or leſs extenſive Senſe, according to the Thing treated of.

Thus, when God ſays, concerning the *Jewiſh* Laws, that they muſt be obſerved לעולם *leholam*, for ever; we are to underſtand as long a Space as he ſhould think fit; or a Space whoſe End was unknown to the *Jews* before the coming of the Meſſiah. — All general Laws, and ſuch as do not regard particular Occaſions, are made *for ever*, whether it be expreſſed in thoſe Laws or not; which yet is not to be underſtood in ſuch a Manner, as if the Sovereign Power could no Way change them.

Archbiſhop *Tillotſon*, however, argues very ſtrenuouſly, that where *Hell Torments* are ſpoke of, the Words are to be underſtood in the ſtrict Senſe of infinite Duration; and what he eſteems a peremptory Deciſion of the Point is, that the Duration of the Puniſhment of the Wicked, is in the very ſame Sentence expreſſed by the very ſame Word which is uſed for the Duration of the Happineſs of the righteous, which all agree to be Eternal. 'Theſe,' ſpeaking of the Wicked, 'ſhall go away, εἰς κόλασιν αἰώνιον, into eternal Puniſhments, but the Righteous, εἰς ζωὴν αἰώνιον, into Life eternal.

The ſame great Author attempts to reconcile this Eternity with the Divine Juſtice, which had not been ſatisfactorily done before. — Some had urged that all Sin is infinite, in Reſpect of the Object it is committed againſt, *viz.* God, and therefore deſerves infinite Puniſhment: But, that Crimes ſhould be heightned by the Quality of the Object, to ſuch Degree, is abſurd; ſince the Evil and Demerit of all Sin muſt then be equal, inaſmuch as none can be more than infinite; and conſequently there can be no Foundation for Degrees of Puniſhment in the next Life. Add, that for the ſame Reaſon as the leaſt Sin againſt God is infinite, in Reſpect of its Object; the leaſt Puniſhment inflicted by God may be ſaid to be infinite, becauſe of its Author; and thus all Puniſhments from, as well as Sins againſt, God, would be equal.

Others have urged, that if the Wicked were to live for ever, they would ſin for ever: But this, ſays the Author, is mere Preſumption. Who can ſay, that if a Man lived ever ſo long, he would never repent? Beſides, the Juſtice of God only puniſhes Sins Men have committed, not thoſe they might poſſibly have done.

Others therefore urge that God gives Men the Choice of everlaſting Happineſs and Miſery; and that the Reward promiſed to Obedience, is equal to the Puniſhment threaten'd to Diſobedience. — To which it is anſwer'd, that tho' it be not contrary to Juſtice to exceed in Rewards, that being Matter of mere Favour; it may be ſo to exceed in Puniſhments.

It may be added, that Man in this Caſe has nothing to complain of, ſince he has only his Election. — But tho' this may ſuffice to ſilence the Sinner, and make him acknowledge his Deſtruction to be of himſelf, yet does not ſatisfie the Objection from the Diſproportion between the Crime and the Puniſhment. — All the Conſiderations, therefore, hitherto alledg'd, proving ineffectual; our great Author is left to ſolve the Difficulty himſelf.

In Order to this, he obſerves that the Meaſure of Penalties, with Reſpect to Crimes, is not only, nor always taken from the Quality and Degree of the Offence; much leſs from the Duration and Continuance of it; but from the Reaſons of Government, which require ſuch Penalties

as

as may ſecure the Obſervation of the Law, and deter Men from the Breach of it. — Among Men it is not reckon'd Injuſtice to puniſh Murther and many other Crimes which perhaps are committed in a Moment, with perpetual Loſs of Eſtate, or Liberty, or Life. So that the Objection of temporary Crimes being puniſhed with ſuch long Sufferings, is of no Force.

In Effect, what Proportion Crimes and Penalties are to bear to each other, is not ſo properly a Conſideration of Juſtice, as of Wiſdom and Prudence in the Law-giver, who may enforce his Laws with what Penalties he pleaſes, without any Impeachment of his Juſtice, which is out of the Queſtion.

The primary End of all Threatning is not Puniſhment, but the Prevention of it: God does not threaten that Men may ſin and be puniſhed; but that they may not ſin, and ſo eſcape: And therefore the higher the Threatning runs, the more Goodneſs there is in it.

After all, it is to be conſider'd, ſays the good Archbiſhop, that he who threatens, has ſtill the Power of Execution in his own Hands. — There is this Difference between Promiſes and Threatnings; that he who promiſes, paſſes over a Right to another, and thereby ſtands obliged to him in Juſtice, and Faithfulneſs to make good his Word; but it is otherwiſe in Threatnings; he that threatens, keeps the right of puniſhing ſtill with him, and is not obliged to execute what he threatened, any further than the Reaſons and Ends of Government require. — Thus, God abſolutely threaten'd the Deſtruction of *Nineveh*; and his peeviſh Prophet underſtood the Threatning to be abſolute, and was angry for being employ'd in a Meſſage that was not made good: But God underſtood his own Right, and did what he pleaſed, notwithſtanding the Threatning he denounced, and notwithſtanding *Jonah* was ſo touched in Point of Honour, that he had rather have periſhed, than *Nineveh* ſhould have eſcaped.

HELL, *Hades*, is ſometimes alſo uſed, in the Scripture-Style, for Death, or Burial; by Reaſon the *Hebrew* and *Greek* Names, ſignifie ſometimes the Place of the damn'd, and ſometimes ſimply the Grave. See TOMB, SEPULCHRE, *&c.*

Divines are divided about the Senſe of that Article in the Apoſtle's Creed, where our Saviour is ſaid to have been crucified, dead and buried, and that he deſcended into *Hell*, ἄδης. — Some underſtand this Deſcent into *Hell* as no other than a Deſcent into the Tomb, or Sepulchre; which others object againſt, in that his Burial is expreſly mention'd before; and maintain, that our Saviour's Soul actually deſcended into the ſubterraneous, or Local *Hell*; where he triumph'd over the Devils, *&c.*

The *Romaniſts* add, that he there comforted the Souls in Purgatory; and brought away the Spirits of the Patriarchs, and other juſt Perſons, departed till that Time, carrying them with them into Paradice. See PURGATORY, PATRIARCH, *&c.*

In the *Romiſh* Church, that Part of *Hell*, wherein thoſe were retained who died in the Mercy and Favour of God before our Saviour's Suffering, is call'd *Limbus*. See LIMBUS.

HELLEBORE, HELLEBORUS, HELLEBORUM, ELLEBORE, a medicinal Plant, reputed, among the Antients, a ſpecific for the Cure of Folly, Melancholy, and Madneſs.

There are two Sorts of *Hellebore*, the Black and White.

The *Black Hellebore*, *Helleborus Niger*, call'd alſo *Melampodium*, has a dark-coloured Root, furniſhed with Abundance of little Fibres; its Stem green, its Leaves dented, and its Flower of a Carnation Hue, not unlike the Roſe.

The *White Hellebore*, *Helleborus Albus*, call'd alſo *Veratrum*, to diſtinguiſh it from the former, has a whitiſh Root, beſet with Fibres of the ſame Colour, ſhooting out at a Sort of Bulb, not unlike the Head of an Onion. Its Leaves are broad; at firſt green, afterwards of a yellowiſh red. From the middle of the Leaves riſes a Stem, two or three Foot high, which ſeparates about the middle into Branches, each whereof bears a conſiderable Number of little Flowers like Stars, diſpoſed in Manner of a *Spica*, or Ear.

'Tis only the Roots are uſed, in each Kind; which are to be choſen large and fair, furniſh'd with big Filaments: Thoſe of the White, tan coloured without, and white within; and thoſe of the Black, blackiſh without, and browniſh within; dry, clean, and of a ſharp diſagreeable Taſt.

The Antients, as already obſerved, had a great Opinion of their Efficacy in Diſeaſes of the Mind; whence various Phraſes and Forms of ſpeaking among Writers: As *Caput Helleboro Dignum*. — He needs a double Doſe of *Hellebore*. — The Iſland of *Anticyra*, ſituate againſt Mount *Oeta*, was famous for the Growth and Uſe of this Plant, it being here in its greateſt Perfection, and uſed with the beſt Effect. — Whence the Proverb, *Naviget Anticyras*, ſend him a Voyage to *Anticyra*.

They act as Purgatives, but ſo very violently, both upwards and downwards, as frequently to cauſe Convulſions; whence the Uſe of them internally is now out of Doors, unleſs joyn'd with other Purgatives, and even Alterants to correct them; but are ſtill retain'd with Succeſs, for the Farcy in Horſes, and the Scab in Sheep.

The chief Uſe wherein the preſent Practice acknowledges white *Hellebore*, is in Form of a ſternutatory Powder, to clear and open the Head. See STERNUTATORY.

The black *Hellebore* uſed among us, Dr. *Quincy* ſuggeſts to be much inferior in Virtue to that of the Antients; for that it will not operate much by Stool, but is only a powerful Alterative, getting far into the Habit, and ſo promoting Sweat. See PURGATIVE.

He adds, that he has known it do Wonders in the Gout and Rheumatiſm, and that it rarely fails in Obſtructions of the Menſes.

HELLENISM, a Sort of *Greeciſm*; or a Phraſe accommodated to the Genius and Conſtruction of the *Greek* Tongue. See GREEK.

The Word *Helleniſm*, is diſtinguiſh'd from a *Greeciſm*, in that the former is not applied to Authors who have wrote in *Greek*: Their Language, it is evident, ſhould be a continual *Helleniſm*: But it is applied to Authors, who writing in ſome other Language, uſe Turns and Expreſſions peculiar to the *Greek*.

There are Abundance of *Helleniſms* in the Vulgate Verſion of the Scriptures. See VULGATE.

HELLENISTIC, or HELLENISTIC *Language*, that uſed among the *Helleniſts*. See HELLENISTS.

The Criticks are divided as to this Language. — Several of them, and among the reſt *Druſius* and *Scaliger*, take it to be the Language uſed among the *Grecian Jews*, They add, that 'tis in this Language the *Greek* Tranſlation of the Seventy was wrote; and even the Books of the New Teſtament compoſed. — M. *Simon* calls it the *Language of the Synagogue*.

It muſt not be imagined, that this was any peculiar Language diſtinct from all others; or even any peculiar Dialect of the *Greek*: 'Twas thus denominated, to ſhew that it was *Greek*, mix'd with *Hebraiciſms*, and *Syriaciſms*.

Salmaſius has oppoſed the common Opinion of the Learned touching the *Helleniſtic* Language; and has wrote two Volumes on the Subject. But his Diſputation turns chiefly on Words.

HELLENISTS, HELLENISTÆ, a Term occurring in the *Greek* Text of the New Teſtament, and which in the *Engliſh* Verſion is render'd *Grecians*.

The Criticks are divided as to the Signification of the Word. — *Oecumenius* in his *Scholia* on *Acts* VI. 1. obſerves, that it is not to be underſtood as ſignifying thoſe of the Religion of the *Greeks*, but thoſe who ſpoke *Greek*, τὸς ἑλλενιςὶ φθεγγομένους. The Authors of the Vulgate Verſion, indeed, render it, like ours, *Græci*; but the Meſſieurs *du Port Royal*, more accurately, *Juifs Grecs*, Greek or Grecian Jews; it being the *Jews* who ſpoke *Greek* that are here ſpoke of, and who are hereby diſtinguiſhed from the *Jews* call'd *Hebrews*; that is, who ſpoke the *Hebrew* Tongue of that Time. See HEBREW.

The *Helleniſts*, or *Grecian Jews*, were thoſe who lived in *Egypt*, and other Parts, where the *Greek* Tongue prevail'd. 'Tis to them we owe the *Greek* Verſion of the Old Teſtament, commonly call'd the *Septuagint*, or Seventy. See SEPTUAGINT.

Salmaſius, and *Voſſius*, are of a different Sentiment with Regard to the *Helleniſts*. The latter will only have them to be thoſe who followed the *Greek* Party. *Scaliger* is repreſented in the *Scaligerana*, as aſſerting the *Helleniſts* to be the *Jews* who lived in *Greece*, and who read the *Greek* Bible in their Synagogue.

HELM, in Navigation, a Horizontal Piece of Timber, ſerving to move another fitted into it at right Angles, call'd the *Rudder*. See RUDDER.

The *Helm*, or *Tiller of a Ship*, is a Beam, or Piece of Timber, faſten'd into the Rudder, and ſo coming forward into the Steerage; where he that ſtands at *Helm* ſteers the Ship. See STEERAGE, SAILING, *&c.*

To *A Lee the Helm*, ſignifies to put the *Helm* to the Lee-Side of the Ship. — To *Bear up the Helm*, is to let the Ship go before the Wind. — To *Port the Helm*, is to put the *Helm* over to the right Side of the Ship. — To *Right the Helm*, or *Helm the Midſhip*, is to keep it even with the Middle of the Ship. — To *Starboard the Helm*, is to put it to the right Side of the Ship.

HELM, in Chymiſtry, is the Head of a Still or Alembic; thus call'd, becauſe in Figure it ſomething reſembles a *Helm*, or Helmet. See ALEMBIC.

Hence, to bring a Thing *over the Helm*, is the ſame as to force it by Fire up to the Top of the Veſſel, that it

it may diſtil down into the Receiver by the Beak of the Head. See DISILLATION.

And when they ſay, ſuch a Thing cannot be brought over the *Helm*, they mean, that it is of too fixed a Nature to be raiſed into Vapour, by the Force of Fire. See FIXITY and VOLATILITY.

HELMET, or HELM, an antient Armour of Defence, wore by the Cavaliers, both in War, and in Tournaments, as a Cover and Defence of the Head; and ſtill uſed by Way of Creſt or Ornament, over the Shield or Coat of Arms. See CREST.

The *Helmet* is known by divers other Names, as the *Cask*, *Head-piece*, *Steel-Cap*, &c. See CASK.

The *Helmet* cover'd the Head and Face, only leaving an Aperture about the Eyes, ſecured by Bars, which ſerved as a Viſor.

The *Helmet* is bore in Armoury as a Mark of Nobility; and by the different Circumſtances of the bearing of the *Helmet*, are the different Degrees of Nobility indicated. In *France*, whence all our *Heraldry* originally came, the following Rules obtain.

A Perſon newly ennobled, or made a Gentleman, bears over his Eſcutcheon a *Helmet* of bright Iron or Steel; in Profile, or ſtanding ſideways; the Vizor quite cloſe.

A Gentleman of three Deſcents bears it a little open, but ſtill in Profile, ſhewing three Bars of the Vizor.

Antient Knights, *&c.* have it in Profile, but ſhewing five Bars; the Edges of Silver.

A Baron's *Helmet* is of Silver, the Edges gold; with ſeven Bars, neither quite in Profile, nor yet in Front; with a Coronet over it adorned with Pearls. See BARON.

Viſcounts and Earls formerly bore a Silver *Helmet*, with gold Edges; its Poſition like the former: But now they bear it quite fronting, with a Coronet over it. See VISCOUNT and EARL.

Marquiſſes bear a Silver *Helmet*, damaſk'd, fronting; with eleven Bars, and their Coronet. See MARQUIS, *&c.*

Dukes and Princes have their *Helmet*, damaſk'd, fronting, the Vizor almoſt open, and without Bars; with their Coronets over them. See DUKE, *&c.*

Laſtly, the *Helmets* of Kings and Princes, are all of Gold, damaſk'd, full fronting, and the Vizor quite open, and without Bars. See KING, *&c.*

The *Helmets* of Baſtards are to be turn'd to the left, to denote their Baſtardy. See BASTARD.

Among the *Engliſh Heralds*, theſe Laws are of late ſomewhat varied. — *Leigh* will have the *Helmet* in Profile, and cloſe, to belong to Knights: But all other Authors give it to Eſquires and Gentlemen.

To a Knight they aſſign the *Helmet* ſtanding right forward, and the Bearer a little open. See KNIGHT.

The *Helmet* in Profile, or poſited ſide-ways, and open, with Bars, belongs to a Nobleman under the Conditon of a Duke.

The *Helmet* right forward, and open, with many Bars, is aſſigned to Dukes, Princes, and Kings.

Thoſe turned ſidewiſe, are ſuppoſed to be giving Ear to the Commands of Superiors; and thoſe right forwards to be giving Orders with abſolute Authority.

Commonly there is but one *Helmet* in a Shield; but, ſometimes, two or three; if there be two, they muſt be placed facing each other: If three, the two Extremes muſt be looking towards that in the middle.

HELMONTIAN *Laudanum*. See LAUDANUM.

HELPS, in the Manage. — To teach a Horſe his Leſſons, there are ſeven *Helps*, or Aids, to be known. — Theſe are the *Voice*, *Rod*, *Bit*, or *Snaffle*; the *Calves* of the Legs, the *Stirrups*, the *Spur*, and the *Ground*. See AID.

The *Helps* are occaſionally turn'd into *Corrections*. See CORRECTION.

HELVETIC, ſomething that has a Relation to the *Switzers*, or *Swiſs* Cantons, who were antiently called *Helvetii*.

The *Helvetic* Body is the Republic of *Switzerland*, conſiſting of thirteen Cantons, which make ſo many particular Common-wealths. See CANTON.

By the Laws, and Cuſtoms of the *Helvetic* Body, all Differences between the ſeveral States, and Republicks are to be decided within themſelves, without the Intervention of any foreign Power.

HELVIDIANS, a Sect of antient Hereticks, denominated from their Leader *Helvidius*.

Their diſtinguiſhing Principle was, that *Mary* the Mother of *Jeſus* was not a Virgin; but had other Children by *Joſeph*.

HEMEROBAPTISTS, a Sect among the antient *Jews*, thus call'd from their waſhing and bathing every Day, in all Seaſons. See BAPTISM.

Epiphanius, who mentions this as the fourth Hereſy among the *Jews*, obſerves, that in other Points they had much the ſame Opinions as the *Scribes* and *Phariſees*; only they denied the Reſurrection of the Dead, in common with the *Sadducees*, and retain'd a few other Impieties of theſe laſt.

D' Herbelot ſpeaks of them as a Sect ſtill ſubſiſting: — The Diſciples of St. *John Baptiſt*, ſays he, who in the firſt Ages of the Church were called *Hemerobaptiſtes*, have conſtituted a Sect, or rather a Religion a-part, under the Name of *Mendai Iahia*. Theſe People, whom our Travellers call Chriſtians of St. *John Baptiſt*, by Reaſon their Baptiſm is very different from ours, have been confounded with *Sabæans*, from whom, however, they are very different. See SABÆANS.

HEMERODROMI, among the Antients, were Centinels, or Guards, appointed for the Security and Preſervation of Cities, and other Places. See GUARD.

They went out of the City every Morning, aſſoon as the Gates were open'd, and kept all Day patrolling round the Place, ſometimes making Excurſions further into the Country, to ſee that there were no Enemies laying in wait to ſurpriſe them.

The Word is *Greek*, ἡμερροδρόμοι, compounded of ἡμέρα, *Day*, and δρομος, *Courſe*, *running about*, &c.

HEMERODROMI, were alſo a Sort of *Couriers* among the Antients, who only travell'd one Day, and then deliver'd their Packets or Diſpatches, to a freſh Man, who run his Day; and ſo on, to the End of the Journey. See COURIER.

The *Greeks* had of theſe Sort of Couriers, which they learnt from the *Perſians*, the Inventors thereof, as appears from *Herodotus*. — *Auguſtus* had the ſame: At leaſt, he eſtabliſhed Couriers, who, if they did not relieve each other from Day to Day, yet did it from Space to Space, and that Space was not great.

HEMI, a Word uſed in the Compoſition of divers Terms. — It ſignifies the ſame with *Semi*, or *Demi*, viz. half; being an Abbreviature of ἥμισυς, *hemiſys*, which ſignifies the ſame. See SEMI and DEMI.

The *Greeks* retrench'd the laſt Syllable of the Word ἥμισυς, in the Compoſition of Words; and after their Example we have done ſo too, in moſt of the Compound Words borrowed from them.

HEMICRANIA, in Medicine, a Species of *Cephalalgia*, or *Head-Ach*; wherein one Hemiſphere, or half of the Head is affected. See CEPHALALGIA and HEAD-*Ach*.

HEMICYCLE, HEMICYCLIUM, is a *Semicircle*. See SEMICIRCLE.

HEMICYCLE, is particularly applied in Architecture, to Vaults in the Cradle-Form; and Arches and Frames, or Sweeps of Vaults, conſtituting a perfect Semi-circle. See VAULT.

To conſtruct an Arch of hewn Stone, they divide the *Hemicycle* into ſo many Vouſſoirs; taking Care to make them an uneven Number, that there be no Joynt in the middle, where the Key-Stone ſhould be. See KEY.

The *Hemicyclium* was alſo a Part of the *Orcheſtra* in the antient Theatre. — *Scaliger*, however, obſerves, it was no ſtanding Part of the *Orcheſtra*; being only uſed in Dramatic Pieces, where ſome Perſon was ſuppoſed to be arrived from Sea, as in *Plautus*'s Rudens.

The Antient's had alſo a Sort of Sun-Dial, call'd *Hemicyclium*. — It was a concave Semicircle, the upper End or Cuſp whereof look'd to the North.

There was a Style, or Gnomon, iſſuing from the middle of the *Hemicycle*, whereof that Point correſponding to the Centre of the *Hemicycle*, repreſented the Centre of the Earth: And its Shadow projected on the Concavity of the *Hemicycle* which repreſented the Space between one Tropic and another, the Sun's Declination, the Day of the Month, Hour of the Day, *&c.*

The Word is compounded of ἥμισυς, *dimidius*, and κυκλος, *Circle*.

HEMINA, a Veſſel uſed as a Meaſure among the antient *Romans*. See MEASURE.

The *Hemina* contain'd eight Ounces of Liquor; and was the 12th Part of the *Congius*. See CONGIUS.

The Word is form'd of the *Greek*, ἥμι, *half*. Several Authors have wrote expreſs Treatiſes on the *Roman Hemina*; particularly Meſſ. *Arnaud* and *Pelletier*.

St. *Benedict* preſcribes the *Hemina*, as the Portion or Quantity of Wine to be allowed the Religious of his Order at each Meal. Fa. *Mabillon*, who has wrote on the Subject, ſhews that this *Hemina* is a Meaſure peculiar to the *Benedictines*, as well as the Pound of Bread allowed the ſame Religious, which only conſiſted of fifteen Ounces. Fa. *Lancelot* has a Diſſertation to prove that the *Hemina* of Wine, preſcribed by St. *Benedict*, only amounts to a *Demi Septier* of *Paris* Meaſure: Others make it two *Septiers*; and others three.

HEMIOLUS,

HEMIOLUS, an antient Mathematical Term, occurring chiefly in Musical Writers. — It signifies the Ratio of two Things, whereof the one contains the other once and an half; as 3 : 2, or 15 : 10. See RATIO.

Macrobius, on the *Somnium Scipionis*, L. II. *C.* 1. observes, that the Concord, call'd in the antient Music *Diapente*, and in the Modern a *Fifth*, arises from this Proportion. See FIFTH.

The Word is compounded of ἥμι, *half*, and ὅλος, *whole*.

HEMIOPE, or HEMIOPUS, a Musical Instrument in Use among the Antients. See MUSIC.

The *Hemiopus* was a Flute with only three small Holes. See FLUTE.

The Word is compounded of ἥμι, and ὀπὴ, *Hole*.

HEMIPLEGIA, or HEMIPLEXIA, in Medicine, a Palsy of one whole Side of the Body. See PALSY and PARALYSIS.

The Word is compounded of ἥμι, *half*, and πλήσσω, *I strike*, or *seize*.

HEMISPHERE, HEMISPHERIUM, in Geometry, is one half of a Globe, or Sphere, when divided into two by a Plane passing thro' its Centre. See SPHERE.

If the Diameter of a Sphere be equal to the Distance of the two Eyes; and a right Line drawn from the Centre of the Sphere to the middle of that Distance, be perpendicular to the Line which joyns the Eyes: The Eyes making a Rotation on the Axis, or middle Point between them, will see the whole *Hemisphere*. — If the Distance of the Eyes be either greater or lesser than the Diameter of the Sphere; in making such Rotation they will view respectively more or less than a *Hemisphere*. See VISION.

The Writers in Opticks demonstrate, that a Glass *Hemisphere* unites parallel Rays at the Distance of a Diameter, and one third of a Diameter from the Pole of the Glass. See LENS, PARALLEL, *&c.*

The Centre of Gravity of a *Hemisphere* is five Eights of the Radius, distant from the Vertex. See CENTRE.

HEMISPHERE, in Astronomy, is particularly used for one half of the Mundane Sphere. See WORLD, ASTRONOMY, *&c.*

The Equator divides the Sphere into two equal Parts, call'd the *Northern* and *Southern Hemispheres*. See EQUATOR.

The *Northern Hemisphere*, is that half in whose Vertex is the North Pole. — Such is that represented by D P A, (*Tab. Astronomy Fig.* 52.) terminated by the Equator D A, and having the Pole P in its Zenith. See POLE and NORTH.

The *Southern Hemisphere*, is that other half D Q A, terminated by the Equator D A; and having the South Pole Q in its Zenith. See SOUTH.

The Horizon also divides the Sphere into two *Hemispheres*, *upper* and *lower*. See HORIZON.

The *Upper Hemisphere* is that half of the Mundane Sphere H Z R, terminated by the Horizon H R, and having the Zenith Z in its Vertex. See ZENITH.

The *Lower Hemisphere*, is that other half H N R, terminated by the Horizon H R, and having the Nadir N in its Vertex. See NADIR.

HEMISPHERE, is also used for a Map, or Projection, of half the terrestrial Globe, or half the Celestial Sphere, on a Plane. See MAP and PROJECTION.

Hemispheres, are frequently called *Planispheres*. See PLANISPHERE.

The Word is compounded of ἥμι, *half*, and σφαῖρα, *Sphere*, or *Globe*.

HEMISPHEROIDAL, in Geometry, something that approaches the Figure of a Hemisphere, but is not justly so. The Cacao opens when yellow and ripe, into two large *Hemispheroids*, three Foot in Diameter. *Freezier*.

HEMISTICH, in Poetry, half a Verse. See VERSE.

'Tis disputed, whether or no the *Hemistichs*, left in the *Æneid*, were left with Design; or whether they are owing to the Work's being unfinish'd.

In *English*, &c. the Common and *Alexandrine* Verses, require a Rest at the End of each *Hemistich*: Common Verses at the End of four Syllables; and *Alexandrine* at the End of six. See VERSE, PAUSE, REST, ALEXANDRINE, *&c.*

Leonine Verses rhime both at the End and at the *Hemistich*. See LEONINE, RHYME.

The Word is compounded of ἥμι, *half*, and στίχος, *Verse*.

HEMITONE, in the antient Music, was, what we now call an half Note or Tone. See NOTE and TONE.

HEMITRITÆUS, in Medicine, an irregular, intermitting Fever, which returns twice every Day; by which it is distinguish'd from the *Quotidian*, which only returns once in the Day. See FEVER.

The Word is compounded of ἥμι, *half*, and τεταρτῖος, *third*.

HEMLOCK, *Cicuta*, a Narcotic Plant; of some Use in Physic, in that Intention. See NARCOTIC.

There is a Plaster denominated from it in the College Dispensatory; consisting of the Juice of the Plant boiled up with Gums, *&c.*

The Common *Hemlock* is a Poison; tho' not of the violent Sort. — We have Instances of considerable Quantities being taken without the least Disorder. *Philosoph. Transact.* N°. 231. See POISON.

The *Cicuta* so much celebrated among the Antients, was the Juice of a Species of this Plant, call'd *Oenanthe Aquatica*. See CICUTA.

HEMP, a Plant of great Use in the Arts and Manufactories; furnishing Thread, Cloth, Cordage, *&c.* See THREAD, *&c.*

Hemp, by Naturalists call'd *Cannabis*, bears a near Analogy to Flax, *Linum*; both in respect of Form, Culture and Use. See FLAX.

The Plant is annual; that is, must be sown a-fresh every Year. — It rises quick, into a tall, slender Sort of Shrub, whose Stem however is hollow, and big enough to be charr'd, and thus used in the Composition of Gun-Powder. — Its Leaves arise by fives or sixes from the same Pedicle, and are a little jagged; yielding a strong Smell, which affects the Head. — Its Flowers grow grape-wise, opposite to each other, in Manner of a St. *Andrew*'s Cross; each consisting of five yellowish Stamina, incompass'd with a like Number of Petala, purple without, and white within. — Its Fruit, or Seed, is small and round, fill'd with a white solid Pulp; and grows on the Top of the Stem; having its Pedicles distinct from those of the Flowers. — Lastly, its Bark is a Tissue of Fibres, joyn'd together by a soft Matter, which easily rots it.

Hemp is of two Kinds; Male, popularly call'd *Karl*; and Female, or *Fimble*. — 'Tis the Male alone that produces Seed, to perpetuate the Kind: From the Seed of the Male arises both Male and Female.

It does not appear, that the Antients were acquainted with the Use of *Hemp*, in respect of the Thread it affords. *Pliny*, who speaks of the Plant in his *Natural History*, L. XX. *C.* 23. says not a Word of it; contenting himself with extolling the Virtues of its Stem, Leaves and Root. In Effect, what some Writers of the *Roman* Antiquities remark, *viz.* that the *Hemp*, necessary for the Use of War, was all stored up in two Cities of the *Western* Empire, *viz.* at *Ravenna* and *Vienna*, under the Direction of two Procurators, call'd *Procuratores Linificii*; must be understood of Flax.

The Seed is said to have the Faculty of abating Venereal Desires; and its Decoction in Milk, is recommended against the Jaundice, *&c.* — The Leaves are held good against Burns, and the Juice thereof against Deafness. — The Powder, or Flower, mix'd with any ordinary Liquor, is said to turn those who drink thereof, stupid.

The Culture and Management of *Hemp*, makes a considerable Article in Agriculture; there being divers Operations required therein, as *Pulling*, *Watering*, *Beating*, *Swingling*, &c.

The Plant is sown in *May*, in a warm, sandy, rich Soil; and is it self sufficient to destroy Weeds on any Ground. — About *Lammas* they begin to gather it; the Light or Female being first ripe. The Marks of its Maturity, are its Leaves turning yellow, and the Stalks white.

The Way of gathering, is to *pull* it up by the Roots; after which they bind it up in Handfuls or Bundles: The Male they let stand eight or ten Days in the Air, that the Seed may dry and ripen; after which they cut off the Heads, and beat or thrash them to get out the Seed. — They also beat the Female, to get out a thick fetid Sort of Dust, contain'd therein.

This done, they proceed to *water* or *rate* it, by laying it five or six Days in a Pool, or other stagnant Water, to rot the Bark. A Stream, or running Water, would do the Business much better, but that it infects the Water, and gives it a Quality very pernicious to the Health; for which Reason it is forbid to rate it in Waters used for domestic Purposes

When rotted, and taken out again, they *dry* it; then *Brake* or beat out the dry Bun, or Hex, which is the woody Part of the Stem, from the Rind or Bark which covers it, by crushing it in a tooth'd or nick'd Instrument call'd a *Brake*, beginning with the Root End.

When the Bun is sufficiently broke, and hangs by small Shivers, they *swingle* or beat them out with a Piece of Wood, edged for the Purpose. — Note, the *Karl Hemp* they sometimes break with the Fingers, and strip off the Rind, without the Help of the *Brake*, or *Swingle*.

The next Thing is to *beat* the *Hemp*; which is done either on a Block, or in a Trough, with an Hammer, or with Beetles; till it feel sufficiently soft and pliable. — It remains now to be *heckled*, or passed thro' divers Tooth-Instruments, not unlike the Wool-dressers Combs, of different Fineness: This, separating the shorter Tow from it, the rest is fit to be spun, wove, *&c.* for Thread,

Cloth, Cordage, or the like. See SPINNING, CORDAGE, &c.

HENDECAGON, in Geometry, a Figure which has eleven Sides, and as many Angles. See FIGURE and POLYGON.

In Fortification, it is taken for a Place defended by eleven Baſtions. See BASTION.

The Word is *Greek*, ἑνδεκαγωνον, compounded of ἑνδεκα, *eleven*, and γωνια, *Angle*.

HENDECASYLLABUS, in the *Greek* and *Latin* Poetry, a Verſe of eleven Syllables. See VERSE.

Sapphic, and *Phaleuc* Verſes, are *Hendecaſyllables*, or *Hendecaſyllabic*, E. gr.

Sap. *Jam ſatis terris nivis atque diræ*, &c.
Phal. *Paſſer mortuus eſt meæ Puellæ*, &c.

The Word is *Greek*, compounded of ἑνδεκα, *Eleven*, and συλλαμβανω, whence the Word Syllable is borrow'd.

HENOTICUM, in Church Hiſtory, a famous Edict of the Emperor *Zeno*, in the Vth Century, intended to reconcile, and reunite the *Eutychians* with the Catholicks. See EUTACHIAN.

It was procured of the Emperor, by Means of *Acacius* Patriarch of *Conſtantinople*, with the Aſſiſtance of the Friends of *Peter Mogus*.

The Sting of this Edict lies here, that it does not admit the Council of *Chalcedon*, like the other three, but rather ſeems to charge it with Errors. — It is in Form of a Letter, addreſs'd by *Zeno* to the Biſhops, Prieſts, Monks, and People of *Egypt* and *Lybia*. It was oppoſed by the Catholicks, and condemn'd in Form by Pope *Felix* III.

The Word is *Greek*, ἑνοπκὸν, q. d. *unitive*, *reconciliative*; of ἑνδω, *I unite*.

HEPAR, in Anatomy, the *Liver*. See LIVER.

HEPAR *Uterinum*, the ſame with *Placenta*. See PLACENTA.

HEPATIC, in Medicine and Anatomy, ſomething that relates to the *Liver*; which the *Greeks* call ἧπαρ, *Hepar*. See LIVER.

HEPATIC *Flux*. See FLUXUS *Hepaticus*.

HEPATIC *Vein*, is that otherwiſe call'd *Baſilica*. See BASILICA.

HEPATIC *Duct*, is a Veſſel more uſually call'd *Porus Bilarius*. See PORUS *Bilarius*.

HEPATI-*Cyſtic Ducts*. See CYST-*Hepatic Duct*.

HEPATIC *Aloes*, is that otherwiſe call'd *Aloes Succotrina*. See ALOES.

HEPATIC *Plexus*, See PLEXUS *Hepaticus*.

HEPATITES, *Liver Stone*, in Natural Hiſtory, a Sort of Stone, thus denominated from its Liver-Colour. See STONE.

HEPATITIS, in Medicine, an Inflammation of the *Liver*, with an Abſceſs or Impoſthume thereof. See INFLAMMATION and LIVER.

The *Hepatitis* bears a near Reſemblance to the *Pleuriſy*; only that its Symptoms are leſs intenſe. See PLEURISY.

It uſually either kills the Patient, or diſcuſſes, or ſuppurates gradually, or degenerates into a Schirrus.

HEPATOSCOPIA, the Art of divining, or diſcovering future, or hidden Things, by inſpecting the Entrails of Beaſts. See DIVINATION.

The Word is compounded of the *Greek* ἥπαρ, the Genitive of ἧπαρ, *Liver*, and σκοπέω, *I conſider*; the Liver being a Part principally regarded.

The *Romans* call'd it *Extiſpicina*. See EXTISPEX.

HEPTACHORD, in the antient Poetry. — *Heptachord Verſes*, were thoſe ſung or play'd on ſeven Chords; that is, in ſeven different Notes, or Tones; and probably on an Inſtrument with ſeven Strings.

The Word is compounded of ἑπτὰ, *ſeptem*, and χορδὴ, *Chord*, *String*.

HEPTAGON, in Geometry, a Figure conſiſting of ſeven Sides and ſeven Angles. See FIGURE.

If the Sides be all equal, it is call'd a *Regular Heptagon*. See REGULAR.

In Fortification, a Place ſtrengthen'd with ſeven Baſtions for its Defence, is call'd a *Heptagon*. See BASTION.

The Word is compounded of ἑπτὰ, *ſeptem*, ſeven, and γωνια, *Angle*.

HEPTAGONAL *Numbers*, are a Sort of Polygonal Numbers; wherein the Difference of the Terms of the correſponding arithmetical Progreſſion is five. See POLYGONAL *Number*.

One Property, among others, of theſe Numbers, is, that if they be multiplied by 40, and 9 added to the Product; the Sum is a ſquare Number. See NUMBER.

HEPTAMERIS, EPTAMERIS, literally ſignifies a ſeventh Part; being form'd of the *Greek*, ἑπτὰ, *ſeven*, and μερις, *Part* or *Portion*.

The Word is uſed by M. *Sauveur*, in his Principles of *Acouſticks*, for the ſeventh Part of a *Meris*; and in his *Syſtem*, for the 43d Part of the Octave. See OCTAVE.

HEPTAMERON, a Term literally implying *ſeven Days*; being compounded of ἑπτὰ, *ſeven*, and ἡμερα, *Day*.

It is chiefly uſed as a Title of certain Books, containing the Tranſactions of ſeven Days.

The *Heptameron* of *Margared de Valois*, Siſter to *Francis* I. of *France*, and Queen of *Navarre*, is a very ingenious Piece, in the Manner of *Boccace*'s *Decameron*.

HEPTARCHY, a Government compoſed of ſeven Perſons: Or a Country govern'd by ſeven Perſons; or divided into ſeven Kingdoms. See GOVERNMENT.

The *Saxon Heptarchy*, included all the *Southern* Part of *England*, which was canton'd out into ſeven petty Kingdoms. It ſubſiſted from the Year 428, to the Year 825, when King *Egbert* re-united them into one; and made the *Heptarchy* into a Monarchy. See MONARCHY.

The Word is compounded of the *Greek*, ἑπτὰ, *ſeven*, and ἀρχὴ, *Imperium*, Command, Rule.

HEPTATEUCH, in Matters of Literature, a Volume conſiſting of ſeven Books: Or a Work in ſeven Books.

The Term is chiefly applied to the firſt ſeven Books of the Old Teſtament, viz. *Geneſis*, *Exodus*, *Leviticus*, *Numbers*, *Deuteronomy*, *Joſhua*, and *Judges*; that is, the five Books of *Moſes* called the *Pentateuch*; and the two following ones, which are uſually joyn'd therewith. See PENTATEUCH.

The Word is compoſed of ἑπτὰ, *ſeven*, and τευχομαι, *I do*, *I work*; whence τευχος, *a Work*, *Book*, and ἑπτάτευχος, *Heptateuch*, a Work of ſeven Parts; or ſeven different Works joyn'd in one Volume.

HEPHTHEMIMERES, in the *Greek* and *Latin* Poetry, a Sort of Verſe conſiſting of three Feet, and a Syllable; that is, of ſeven half Feet. See VERSE, FOOT, &c.

Such are moſt of the Verſes in *Anacreon*.

Θέλω | λέγειν | Ατει | δας,
Θέλω | οδε κάδ | μον ἀ | δεῖν, &c.

And that of *Ariſtophanes* in his *Plutus*:

Ἐ πεδε μητει χοῖρι.

They are alſo call'd *Trimetri Catalectici*.

HEPHTHEMIMERES, or HEPHTHEMIMERIDE, is alſo a *Cæſura*, after the third Foot, that is, in the ſeventh half Foot. See CÆSURA.

'Tis a Rule, that this Syllable, tho' it be ſhort in it ſelf, muſt be made long, on Account of the *Cæſura*, or to make it an *Hephthemimeres*: As in that Verſe of *Virgil*.

Et furiis agitatus Amor, & conſcia Virtus.

It may be added, that the *Cæſura* is not to be on the fifth Foot, as it is in the Verſe which Dr. *Harris* gives us for an Example,

Ille latus niveum molli fultus Hyacintho.

This is not a *Hepthemimeres Cæſura*, but a *Hennea-mimeres*, i. e. of nine half Feet.

The Word is *Greek*, Ἑφθεμιμερὴς, compoſed of Ἑπτὰ, *ſeven*, ἡμισυς, *half*, and μερος, *Parts*.

HERACLEONITES, antient Hereticks, of the Party of the *Gnoſticks*; thus called from their Leader, *Heracleon*. See GNOSTICKS.

S. *Epiphanius*, Hær. 36. is very ample on this Hereſy. He repreſents *Heracleon* as one who had reform'd the Theology of the *Gnoſticks* in many Points; tho', at Bottom, he had retain'd the principal Articles thereof. He refined on the ordinary Interpretations of Abundance of Texts of Scripture; and even alter'd the Words of ſome to make them conſiſt with his own Notions.

For Example, he maintain'd, that by thoſe Words of St. John, *all Things were made by him*, is not to be underſtood the Univerſe, and all that is good therein: The Univerſe, which he calls *Æon*, was not made by the Word, but was made before him. And to ſupport this Conſtruction, he added to thoſe Words of St. John, *without him nothing was made*, thoſe other Words *of Things in the World*.

He diſtinguiſhed two Kinds of Worlds; the one Divine, the other Corruptible; and reſtrained the Word πάντα, *all Things*, to this laſt. He held that the Word did not create the World immediately, and of himſelf, but only gave Occaſion to the *Demiurgos* to do it.

The *Heracleonites*, after the Example of their Maſter, annull'd all the antient Prophecies; holding, that St. *John* was really the Voice that proclaimed and pointed out the Meſſiah, but that the Prophecies were only empty Sounds, and ſignified nothing. — They held themſelves ſuperior in Point of Knowledge to the Apoſtles; and on that footing dared to advance the moſt extravagant Paradoxes, on Pretence of explain-

explaining Scripture in a ſublime, elevated Manner. They were ſo fond of theſe Myſtic Interpretations, that *Origen*, tho' a Stickler that Way himſelf, was obliged to reproach *Heracleon* with his abuſing Scripture by that Means. See PROPHECY, ALLEGORY, &c.

HERACLIDES, in Antiquity, the Deſcendants of *Hercules*; whom the *Greeks* called Ἡρακλῆς, *Heracles*.

The *Heraclides* were expell'd from *Peloponneſus*, by *Euriſtheus* King of *Mycenæ*, after the Death of *Hercules*.

The Return of the *Heraclides* into *Peloponneſus*, is a celebrated Epocha in the antient Chronology; tho' the Time when it happen'd is differently aſſign'd, by reaſon Authors miſtake the divers Attempts which they made to return, for the Return it ſelf. The firſt Attempt was 20 Years before the taking of *Troy*: The ſecond, was 100 Years later, or 80 Years after the taking of *Troy*. This laſt is ſuppoſed to have ſucceeded; at leaſt, according to *Petavius*, who mentions only theſe two. *Rat. Temp.* P. I. *L.* I. C. 12. and *Doctr. Temp.* L. IX. and *C.* 30.

Scaliger diſtinguiſhes three Attempts; and fixes the firſt, 50 Years later than *Petavius*, viz. 30 Years after the taking of *Troy*. He ſays nothing of the ſecond, which was unfortunate like the firſt; but places the third in the ſame Year with *Petavius*. — This Return occaſion'd a World of Changes and Revolutions in the Affairs of *Greece*; ſcarce a State, or People, but were turn'd upſide down thereby. See EPOCHA.

The Return of the *Heraclides* is the Epocha of the Beginning of profane Hiſtory: All the Time that preceded it, is reputed fabulous. Accordingly, *Ephorus*, *Cumanus*, *Calliſthenes*, and *Theopompus*, only begin their Hiſtories from hence. See HISTORICAL.

HERALD, an Officer of Arms, antiently in great Repute, and poſſeſs'd of ſeveral conſiderable Functions, Rights and Privileges. See ARMS and ARMOURY.

Their principal Employment was to compoſe, or make out Coats of Arms, Genealogies, and Titles of Nobility. They were the Superintendants of military Exploits, and the Conſervators of the Honours of War. They had a Right to take away the Arms of ſuch as for Cowardice, Treaſon, &c. deſerv'd to be degraded. They had a Commiſſion to examine, and correct the Vices and Diſorders of the Nobles, and to exclude them from Juſts, Tournaments, &c. To them belong'd the correcting of all Uſurpations, and Abuſes relating to Crowns, Coronets, Caſks, Creſts, Supporters, &c. They took Cognizance of all Differences among the Nobles, with Reſpect to their Bearings, the Antiquity of their Families, Precedencies, &c. They went into the Countries to ſearch into the Grounds and Pretenſions of Nobility; and had a Right to open all Libraries, and to command all the antient Charters and Inſtruments in the Archives to be ſhown them. They had Admiſſion into all foreign Courts; where they were commiſſion'd to proclaim War, and Peace; and their Perſons were held ſacred as thoſe of Embaſſadors.

To them it belong'd to make Publication of Juſts and Tournaments; to call the People to them; to ſignify the Cartels; to mark the Ground, Liſt, or Place of Duel; to ſee fair play obſerv'd; and to divide the Sun between the two Parties. In the Army, they advertiſed the Cavaliers, and Captains, of the Day of Battle, and aſſiſted therein, before the Standard, retiring, after the firſt Onſet, to ſome Place of Eminence, there to obſerve who behaved beſt, and to give a faithful Report thereof to the King. They number'd the Dead, reliev'd the Enſigns, redemanded Priſoners, ſummon'd Places to ſurrender, and in Capitulations walk'd before the Governour of the Place, to ſecure and warrant his Perſon. They were the principal Arbitrators of the Diſtribution of the Spoils of the vanquiſh'd, and of military Rewards. They publiſh'd Victories; and gave Notifications thereof to foreign Courts. They convened the Eſtates of the Kingdom, aſſiſted at Royal Marriages, and frequently made the firſt Demand; officiated at ſolemn Feaſts, &c.

The Origin of *Heralds* is very antient. — *Stentor* is repreſented by *Homer* as *Herald* of the *Greeks*, who had a Voice louder than fifty Men together. The *Greeks* call'd them κήρυκες, and σημηνοφύλακες; and the *Romans*, *Feciales*. See FECIALES.

The *Romans* had a College of *Heralds*, appointed to decide whether a War were juſt or unjuſt; and to prevent its coming to open Hoſtilities, till all Means had been attempted for deciding the Difference in a pacific Way. See COLLEGE.

Heralds, or *Heralds at Arms*, have formerly been denominated *Dukes at Arms*, becauſe properly belonging to Dukes; as Kings at Arms, to Kings. See KING *at Arms*.

In *England*, we have ſix *Heralds*, viz. 1°. *Richmond*, 2°. *Lancaſter*, 3°. *Cheſter*, 4°. *Windſor*, 5°. *Somerſet*, 6°. *York*. Their Office is to wait at Court, to attend public Solemnities, proclaim War and Peace; look to the Regulation of the Bearings of Arms, ſearch Pedigrees, &c.

They were formerly created and chriſten'd by the King, who ſlowly pouring a gold Cup of Wine on their Head, gave them their *Herald's* Name: Now 'tis done by the Earl Marſhal. — They could not arrive at the Dignity of *Herald*, without having been ſeven Years Purſuivant: Nor could they quit the Function of *Herald*, but to be made King at Arms. See POURSUIVANT, &c.

The modern *Heralds*, i. e. thoſe we properly call *Heralds*, have loſt a good deal of the Diſtinction and Offices of the antient ones. What relates to the making out Arms, the rectifying of Abuſes therein, &c. is chiefly committed to the *Kings at Arms*.

And in the Army, Drums and Trumpets have ſucceeded to the Function of *Heralds*; being ſent by the Generals on the ſame Errands; and on that Account enjoying the ſame Rights and Privileges. Their Perſons are under the Protection of the Law of Nations, when they bear the Marks of their Office publickly, *i. e.* the Trumpeter his Trumpet, and the Drummer his Drum; in the ſame Manner as the *Herald* his Coat.

The ſix *Heralds*, with the three Kings at Arms, and the four Purſivants, are a *College*, or Corporation; erected into ſuch by Charter of *Richard* III. who granted them divers Privileges, as to be free from Subſidies, Tolls, and all troubleſome Offices. See COLLEGE *of Arms*.

Clarencieux, and Norroy King at Arms, are alſo call'd *Provincial Heralds*. See CLARENCIEUX, &c.

The Word *Herald*, according to *du Cange*, comes from the two *German* Words, *Here*, Army; and *helt*, or *held*, Servant; becauſe chiefly ſerving in the Army: Others, will have the two Words ſignify *Champion of the Army*, in Alluſion to their Office of denouncing War, proclaiming Peace, &c. — *Du Cange* adds, that they were call'd *Clarigarii* as well as *Heralds*.

Borel derives the Word from the Latin *Herus*, Maſter; *q. d.* one coming from his Maſter. Others from *Herhaut*, q. d. High-lord; others from *Herold*, which is the ſame with *Dominus Veteranus*: And others, laſtly, from *heerhoud*, q. d. faithful to his Lord, or the Army.

HERALDRY, the Art of Armoury, and Blazoning; or the Knowledge of what relates to the Bearing of Arms, and the Laws and Regulation thereof. See ARMS, ARMOURY, BLAZON, &c.

Heraldry likewiſe comprehends what relates to the Marſhalling of ſolemn Cavalcades, Proceſſions, and other Ceremonies at Coronations, Inſtallments, Creations of Peers, Funerals, Nuptials, &c. See HERALD.

HERB, a Name common to all Plants whoſe Stalks, or Stems, die away every Year, after their Seed is become ripe. See PLANT.

There are ſome *Herbs* whoſe Root periſhes with the Stem: And others, where the Root ſurvives the Stem by ſeveral Years. See ROOT and STEM.

Of the former, thoſe which come to Maturity the firſt Year, and after they have caſt their Seed, die away; are call'd *Annuals*: Such are *Wheat*, *Rye*, &c. See ANNUALS.

Thoſe which only bear Flowers and Fruit the ſecond Year, or even the third Year, and then periſh; are called *Biſannuals*: Such are the Garden *Angelica*, and ſome others.

Herbs whoſe Root does not periſh after they have ſhed their Seed, are call'd *Perennials*; ſuch are *Mint*, *Fennel*, &c. See PERENNIAL.

Of theſe, ſome keep their Leaves all the Year round, and are call'd *Ever-greens*; as the *Aſarabaca*, *yellow Violet*, &c. See EVER-GREEN.

The reſt loſe their Leaves, and continue bare, part of the Year; as *Fern*, *Colts-foot*, &c.

Herbs are alſo diſtinguiſhed into *Kitchin*, or *Sallet-Herbs*, and *Medicinal Herbs*.

Sallet-HERBS, *Pot*-HERBS, } See { SALLET. POT-*Herb*.

The Word *Herb* is form'd of the Latin *Herba*; which ſome derive from *Arvum*, Field: Others derive it from the *Greek*, φερβεῖν, *paſcere*, to feed; of φερβὴ, *Pabulum*. Of the Greek *Ferbe*, the *Latins* form'd *Ferba*; and of *Ferba*, Herba, after the Manner of the *Spaniards*, who always change the *f* at the Beginning of a Word into *h*. See F and H.

HERBAGE, a collective Name, comprehending all Kinds of *Herbs*. See HERB.

The antient Hermits liv'd altogether of *Herbage*. See HERMIT.

What makes the principal Difference in the Goodneſs of Butters and Cheeſes, is the Difference of *Herbage*. See BUTTER, &c.

HERBAGE, in Law, ſignifies the Paſture, or Fruits of the Earth, provided by Nature for the Bite or Mouth of Cattle. See PASTURE, &c.

The

The Word is alſo uſed for a Liberty, that a Man hath to feed his Cattle in another Man's Ground; as, in the Foreſt. — *Occurrit frequens* (ſays *Spelman*) *pro jure depaſcendi alienum ſolum, ut in foreſtis.*

HERBAL, a Book which treats of Plants; or deſcribes the Figure, Genus, Species, Properties, Virtues, *&c.* of *Herbs*, Trees, Seeds, *&c.* See PLANT.

Such are *Gerard*'s *Herbal*, *Parkinſon*'s *Herbal*, &c.

HERBAL, is alſo uſed for a Set or Collection of Specimens of the ſeveral Kinds of Plants, dried and preſerved in the Leaves of a Book.

In the *Philoſophical Tranſactions*, we have a Method deſcribed for preſerving Specimens for ſuch an *Herbal*. — The Flowers, Leaves, *&c.* gather'd perfectly ripe, and in their true Colours, are to be ſpread on brown Paper, with the Parts all diſplay'd as diſtinctly as may be. If the Stem, or the Body of the Flower, *&c.* be thick, one half to be pared away to make it lye flat. Over them is to be ſpread another brown Paper; and the whole to be put between two Iron Plates, ſcrew'd tight together, and thus baked in an Oven for two Hours. When taken out, waſh them over with a Mixture of Brandy and *Aqua fortis*, and lay them on freſh Paper to dry. Laſtly, lick over the Backſides with a Bruſh dipped in a Diſſolution of *Gum Dragon*, to make them ſtick; and lay them in the Paper Book, where they will lye faſt, and always look freſh.

HERBALIST, or HERBORIST, a Perſon knowing in Plants; the ſame with *Botaniſt*. See BOTANIST.

HERBE, in the Academies, a Reward, or ſome good Stuff given to a Horſe that has work'd well in the Manage. See HORSE, *&c.*

HERBENGER, or HARBINGER, an Officer of the King's Court, who allots the Noblemen, and thoſe of the Houſhold their Lodging. See HARBINGER.

HERCULES, in Aſtronomy, one of the Conſtellations of the Northern Hemiſphere. See CONSTELLATION.

The Stars in the Conſtellation *Hercules*, in *Ptolomy*'s Catalogue are 29: In *Tycho*'s 28: In the *Britannic* Catalogue 95. The Longitudes, Latitudes, Magnitudes, *&c.* whereof are as follow.

Stars in the Conſtellation HERCULES. ΕΝ ΓΟΝΑΣΙΝ.

Names and Situations of the Stars.	Sign.	Longit. ° ′ ″	Latitude. North. ° ′ ″	Magnit.
In the Extrem. of the Preced. Foot.	♑	28 07 58	57 06 09	5
Another follow. this & contiguous.		28 20 48	57 14 25	5 4
In the Preced. Thigh.	♍	0 41 32	57 13 30	6
		3 49 02	60 15 56	4
5		3 53 59	61 05 43	5 6
That Preced. the Ulna.		4 41 24	60 38 53	6
		19 08 16	37 35 34	5
		23 20 09	25 15 42	5 6
North. in the Calf of the Preced. Leg.		23 07 21	30 14 32	6
10		3 58 25	64 20 11	4
In the Preced. Ulna. according to Bayer, in the Hand.)		21 18 33	37 14 20	4
Another contiguous to this to the South.)		21 28 09	37 26 10	6
In the Preced. South. Calf of Leg.		22 24 34	37 03 43	6
15		20 23 23	43 43 48	5
North. of the Preced. in the Club.		7 20 50	63 50 09	4
Another contiguous to this.		24 50 05	32 11 07	6 5
		25 08 01	32 10 39	6
In the Preced. Arm.		23 01 35	30 22 43	5 6
In the Club, the middle of Prec ed.		24 51 32	40 02 12	3
20		28 27 13	28 10 49	6
Againſt the Preced. Knee.		9 56 46	65 51 29	4
		19 37 11	54 15 48	5
		19 43 17	54 10 22	5
North. of the Subſeq. in the Club.		20 30 51	52 53 41	6
25		27 12 27	35 13 14	4 5
(Arm-pit.				
In the Preced. Shoulder near the South. of the Preced. in the Club.	♐	18 52 35	57 53 20	5
Middle of the Subſeq. in the Club.	♏	26 45 10	42 44 55	3
South in the Middle of the Preced. Thigh.)		1 03 32	27 09 23	6
30		29 53 38	33 02 45	5
		17 06 16	62 19 46	5
(Thigh.	♐	24 53 26	51 41 38	6
North. in the middle of the Preced.	♏	11 13 55	69 00 00	6
Preced. in the Extrem. of the Club.	♐	1 55 58	28 53 42	6
35		18 51 39	63 11 37	4
		3 30 30	26 12 09	6
In the Preced. Side.	♏	2 04 16	34 16 30	6
		28 46 42	48 35 14	5
South. of the Subſeq. in the Club.	♐	27 08 51	53 07 14	3 4
40		14 58 13	69 33 21	5
		4 12 55	30 41 30	5 6
(againſt the Buttocks.				
In the Top of the Preced. Thigh	♏	2 46 35	37 45 47	6
Middle in Extrem. of the Club.	♐	24 22 07	60 19 48	3
		5 18 31	27 27 57	5
		4 25 27	33 17 27	6
Subſeq. in the Extrem. of the Club.		5 42 37	29 32 02	5 6
45				
	♐	4 29 34	35 27 56	6
		0 24 26	51 54 01	6 5
		4 52 18	37 14 19	6
That between the Shoulders.		0 55 30	51 48 33	5
50		2 44 56	46 47 08	5
		22 17 39	67 25 36	5 6
In the Neck.		1 08 07	53 45 58	5
		5 15 10	40 46 55	4 5
		4 26 56	47 41 07	6
55		7 46 52	37 32 06	6
That in the following Side.		3 57 40	53 17 15	3
More South in the follow. Buttock.		3 37 33	55 56 10	6
Preced. in the Crown of the Head.		9 14 39	35 26 42	5 6
In the Riſe of the following Thigh.		4 27 05	57 54 38	6
60		8 18 04	47 12 48	6
In the Head.		11 49 24	37 18 54	3
In the following Shoulder.		10 24 02	47 44 13	3 4
Subſeq. in the Crown of the Head.		13 24 13	33 55 38	5 6
Foremoſt of three in the Thigh.		7 41 13	59 35 33	3 4
Foremoſt of two in the Belly.		9 33 15	55 59 17	5
65				
Middle on the following Thigh.		8 33 10	60 08 25	5
That following the hind Shoulder.		12 25 07	47 31 53	5
Subſeq. and South. againſt the Belly.		10 53 28	55 32 12	6
		6 13 52	69 02 52	6
Laſt of three in the Thigh.		10 59 00	60 10 03	4
70				
In the hind Arm.		15 32 52	49 20 18	5
Preced. of three in the hind Foot.		8 16 30	71 14 16	6
Middle in the following Foot.		13 13 40	71 48 31	5
In the following Tibia.		15 32 10	69 18 24	4
That in the following Arm.		20 55 31	51 12 41	3 4
75				
Laſt of three in the Foot.		20 23 36	71 49 49	6
In the Calf of the following Leg.		22 43 20	63 28 19	6
In the following Knee. (Arm.		24 05 50	60 43 57	3
Mid. in the Carpus of the follow.		24 49 26	52 44 27	3 4
Preced. and South. in the Branch.		25 42 00	40 19 26	5
80				
North. in the Carpus.		25 05 57	53 40 34	4
Preced. of two middle ones in the Branch.)		26 07 34	45 04 57	4 5
		26 23 48	44 19 16	6
Preced. of two over the Carpus.		27 37 30	45 42 06	6
85		28 14 26	54 01 44	6
Inform. under Subſeq. in the Carpus.		28 21 20	49 33 56	6
Subſeq. and South. of 3 in the Carpus.		28 20 10	52 13 26	4 5
		28 29 58	43 30 48	6
Laſt of the mid. ones in the Branch.		28 29 54	44 17 09	4 5
Laſt over the Carpus.		0 05 11	54 50 30	6
90				
That in the hind Hand.		2 21 15	45 19 56	6 7
Small one over it.		3 08 56	52 13 13	5 6
Subſeq. in the Branch.		3 13 35	53 12 30	6 7
Inform. behind the Branch, over the		3 25 30	45 06 58	4
95 (Eagles Tail.		13 46 35	45 17 05	5

HERCULEUS *Morbus*, in Medicine, the Epilepſy; thus call'd, from the Terror of its Attacks, and the Difficulty of Cure. See EPILEPSY.

HERD, among Hunters, a Company, or Aſſemblage, of black or fallow Beaſts; in Contradiſtinction to *Flock*. See FLOCK.

A *Herd* of Deer from ſuch a Foreſt. — The Deer begin to *herd* in the Month of *December*. See GAME, HUNTING, *&c.*

In the Hunting Language, there are various Terms uſed for Companies of the divers Kinds of Game. — We ſay a *Herd* of Harts or Bucks; a *Bevy* of Roes; a *Rout* of Wolves; a *Richeſs* of Martens, *&c.* See HUNTING.

The Word is form'd of the antient Gauliſh *Hordage*, ſignifying the ſame Thing.

HERDEWICH, HERDEWIC, HERDEWYCH, in our antient Law-Books, a Grange, or Place for Cattle and Husbandry. See GRANGE.

Et unam Herdewycham *apud Hethcotum in Peco*, &c. Mon. Angl.

HEREBOTE, the King's Edict antiently iſſued to command his Subjects into the Field.

The Word is form'd of the Saxon *Here*, Exercitus, *Army*; and *Bode*, a *Meſſenger*.

HEREDITAMENTS, in Law, are ſuch Things immoveable, as a Man may have to himſelf and his Heirs, by Way of Inheritance; or which, not being otherwiſe bequeathed, do naturally, and of Courſe, deſcend to him,

and

and his next Heir of Blood, and fall not within the Compaſs of an Executor, or Adminiſtrator, as Chattels do. See HEIR, HEIR-*Lome*, &c.

It is a Word of a large Extent; and much uſed in Conveyances; for by the Grant of *Hereditaments*, Iſles, Seigniories, Mannours, Houſes, and Lands of all Sorts, Charters, Rents, Services, Advowſons, Conveyances, and whatever may be inherited, will paſs. See CONVEYANCE.

HEREDITARY, ſomething appropriated to a Family, or belonging thereto by Right of Succeſſion from Heir, to Heir. See HEIR.

Of Monarchies, ſome are *Hereditary*, others *Elective*: Of *Hereditary* Monarchies, ſome only deſcend to the Heirs Male, as in *France*; others to the next of Blood, whether Male or Female, as in *England*, *Spain*, &c. See MONARCHY and ELECTIVE.

The Dominions of the Emperor are diſtinguiſhed into *Hereditary*, which are thoſe he derives from his Anceſtors by Right of Blood and Inheritance; and thoſe he enjoys in Quality of Emperor, by Virtue of his Election.

HEREDITARY, is alſo applied to Offices, and Honours affected or attach'd to certain Families. — The Offices of Lord Great Chamberlain, and Earl Marſhal, are *Hereditary*, in the Families of the *Howards*, and *Lindſeys*. See MARSHAL and CHAMBERLAIN.

'Tis of no very long Date, that the Dignities of Duke, Count, &c. are *Hereditary*. See DUKE, COUNT, &c.

The Canon Law has taken all poſſible Precautions to prevent Benefices from becoming *Hereditary*. See BENEFICE.

HEREDITARY, is alſo uſed figuratively for Good or Evil Qualities, Habitudes, &c. capable of being tranſmitted, by Blood, from Father to Son.

The Gout, King's-Evil, Madneſs, &c. are *Hereditary* Diſeaſes, *i. e.* are tranſmitted from the Parents in the Stamen, or firſt Rudiments of the Fœtus. And ſuch, probably, is the Origin of numerous other Chronic Diſeaſes.

HEREDITARY *Right*, is a Right, or Privilege, in Virtue whereof a Perſon ſucceeds to the Effects of his Anceſtors.

The Nonjurors, &c. hold *Hereditary Right* to be *divine Right*, i. e. of God's own Appointment, and conſequently indiſpenſible. They ſtickle for the Obligation of *Hereditary Right*; in Favour of the Deſcendants of King *James* II. See JACOBITES.

HERESIARCH, or *Arch-Heretic*; the Founder or Inventor of a Hereſy; or the Chief, and Ring-leader of a Sect of *Hereticks*. See HERETIC.

Thus *Arius*, and *Socinus*, are called *Hereſiarchs*; as being the Founders and Patriarchs of the *Arians* and *Socinians*. See ARIANS and SOCINIANS.

Simon Magus is recorded as the firſt *Hereſiarch* under the New Law. See SIMONIANS.

The Word is compounded of αἵρεσις, *Hæreſis*, Hereſy; and ἀρχὸς, *Princeps*, Prince, Chief.

HERESY, an Error in ſome Point of Chriſtian Faith, attended with Obſtinacy in the Defence thereof. See ERROR and HETERODOXY.

'Tis properly the Obſtinacy that conſtitutes the Character of *Hereſy*; not the Error. — When a Man is humble, and ingenuous; ready and deſirous to receive further Light and Inſtruction; gives every Thing urged againſt him its due Weight, he is not guilty of *Hereſy*. — *Errare poſſum*; Hæreticus *eſſe nolo*, is a celebrated Maxim of St. *Auguſtine*.

Tertullian, in his Treatiſe *of Preſcriptions*, defines *Hereſy* by *Choice*; agreeably to the Etymology of the Word. — A Heretic, in this Senſe, is one who of his own Choice, on his own Bottom, invents, propoſes, or even embraces, any new Dogma, or Article of Faith.

The Word is form'd of the *Greek*, αἵρεσις, which, among the Antients, had none of that odious Signification attach'd to it by Eccleſiaſtical Writers. It only ſignified a *peculiar Opinion*, or *Dogma*. — In this Senſe they ſaid, the *Hereſy* of the Stoicks, of the Peripateticks, &c. meaning their Sect, their Syſtem, &c.

HERESY, is ſometimes alſo uſed, by Extenſion, for a Propoſition that is notoriouſly falſe in ſome other Science beſides Theology.

Thus, it is a *Hereſy* in Morals, to ſay that a Man muſt be grateful. It is a *Hereſy* in Geometry, to ſay that two Triangles, whoſe Angles are ſimilar, are not proportional.

HERETIC, a Perſon who maintains or adheres to a *Hereſy*. See HERESY.

A real *Heretic*, is properly he who maintains a falſe Opinion out of a Spirit of Obſtinacy, Faction, or Hypocriſy. — A *Heretic* makes Profeſſion of Chriſtianity, by which he is diſtinguiſhed from an *Infidel*, *Jew*, and *Idolater*.

A Man does not become a *Heretic* by doing a Thing condemn'd, or forbidden by the Goſpel, and, of Conſequence, repugnant to the Chriſtian Faith; but by a ſtiff Adherence to an Opinion oppoſite to ſome Article of the Chriſtian Faith, whether it regard Speculation or Practice.

The Sects of *Hereticks* who have diſturbed the Church are innumerable. See SECT.

The Emperor *Maximus*, who uſurped the Throne from *Gratian*, was the firſt that decreed the Pains of Death to *Hereticks*.

By our own Law, *Hereticks* were antiently to be burnt. And there was a Writ, *de Hæretico comburendo*, which lay for that Purpoſe; but it is taken away by Stat. *Car.* II. See HÆRETICO, &c.

HERISSON, or HERSILLON, in Fortification, a Beam armed with Iron Spikes, the Points whereof are turn'd outward; ſupported by a Pivot, on which it turns; and ſerving as a Barrier to block up a Paſſage.

Heriſſons are frequently placed before Gates; eſpecially the Wicket Doors of a Town, or Fortreſs, to ſecure thoſe Paſſages, which muſt of Neceſſity be frequently opened and ſhut.

HERITAGE. See INHERITANCE.

HERMAPHRODITE, a Perſon who has both the Sexes; or the genital Parts both of Male, and Female. See SEX, &c.

The *Greeks* call them *Androgynes*, q. d. *Men-women*. See ANDROGYNOUS.

Naturaliſts diſtinguiſh four Kinds of *Hermaphrodites*: Whereof the laſt are the perfect *Hermaphrodites*, or thoſe which have the *Pudenda* of both Kinds; but theſe are rarely found. 'Tis affirm'd, however, that there were two ſuch *Hermaphrodites* married to each other; and that each begot Children upon the other. See various Inſtances of *Hermaphrodites* in a Diſſertation of M. *Loffhagon* in the *Nouv. Lit. Mar. Balth.* 1704. p. 105. Bauhin, *de Hermaphrod.* Ludov. Bonaciot. *Tract. de Part. Form.* C. 9. Aldrovand. *De Monſtr.* C. 1. Paul Zacch. *Quæſt. Med. Legal.* T. I. *L.* VII. §. 8.

Others diſpute all that has been ſaid of the Subject; maintaining, that the ill Conformation of the Parts of Generation, the Teſticles being detain'd or conceal'd in Men, and the Clitoris longer than ordinary in Women; have been the ſole Occaſion of the Miſtake.

Dr. *Quincy* thinks, that the frequent Uſe of Laſcivious, Frictious, and Titillations, may contribute greatly to the Extention of the Clitoris; and make it paſs with the Ignorant for a Penis. This, he adds, was the Caſe in the celebrated Inſtance of the two Nuns at *Rome*, who after they had lived Women for many Years, became Men: But on what Grounds we do not know.

'The extraordinary Size of the Clitoris, ſays Dr. *Drake*, 'and its Propendance, ſometimes, out of the Body in In-'fants, makes the Women miſtake ſuch Children for that 'Sort of Monſters call'd *Hermaphrodites*. Of this Kind, 'I had one brought to me, the Clitoris whereof hung out 'of the Body ſo far, at about three Years old, that it re-'ſembled very much a Penis; but it wanted a Perfora-'tion; and inſtead of that, juſt behind it, the Urine 'iſſued at a Hole, which was nothing elſe but the Corner 'of the Rima; the Clitoris filling all the reſt of the 'Orifice: So that the Parents miſtook it for a Boy, 'and as ſuch chriſten'd it; but the Neighbours called it 'an *Hermaphrodite*. Anthropol. *p.* 148.

But we have an authentic Account, in the Hiſtory of the Royal Academy of Sciences, of a real *Hermaphrodite*; which may put the Point out of Queſtion. — The Perſon had all the external Characters of a Woman in the Face, Neck, Breaſts, Hips, and *Pudendum*; and accordingly had been baptized in that Quality, and named *Margaret*; but had withal the real Characters of a Man, and a very able one. — The *Pudendum Muliebre* appear'd very well, but was not above two Fingers breadth deep; out of the middle of the *Rima*, or Aperture thereof, there hung a pretty bulky *Penis*, which in an Erection came out eight Inches. The *Penis* was well form'd, except that it had no Prepuce, nor was accompanied with any apparent Teſticles. The Urine and Seed came out at it as in Men; and what was very extraordinary, the *Menſes* flow'd thro' the ſame, and this very regularly once a Month.

The Perſon was brought Sick to the Hoſpital of St. *James* at *Thouloufe*; and the Account was given by M. *Veay*, Surgeon of the ſame Hoſpital; who adds, that having ſhewn the whole to ſeveral Phyſicians, and the Vicars General, they order'd the Party to take the Name and Habit of a Man; it being apparent, that he could do the Office of a Man, but not that of a Woman.

The Interpreters, and Commentators on the Civil Law, hold, that an *Hermaphrodite*, who has choſe the Male Sex, as that which prevails moſt in him; may no longer do the Office of a Woman. And the *French* Lawyers produce an Arret of the Parliament of *Paris*, whereby a young *Hermaphrodite* was condemn'd to be burnt on that very Account.

At *Athens*, and *Rome*, they look'd on *Hermaphrodites* as ominous Monſters, and precipitated them into the Sea; as we are inform'd by *Alexander ab Alexandro*.

S. de Rennefort relates, that at *Surat* there are Abundance of *Hermaphrodites*; who, with Women's Cloaths, wear Men's Turbans, to diſtinguiſh them, and let all the World know they have two Sexes.

In 1376, *Albert*, Biſhop of *Bremen*, and Brother of the Duke of *Brunſwic*, was accuſed by *John de Tzeſtezulete*, or *Ceſtervel*, Dean of his Chapter, with being an *Hermaphrodite*; but he cleared himſelf.

J. Frederic Mayer, a *Lutheran* Divine, has an expreſs Diſſertation, to prove that an *Hermaphrodite* cannot be a Prieſt: It was printed at *Grypſwald* in 1705. And *Willenberg*, another *Lutheran* of *Dantzick*, has wrote to prove them excluded from all Civil Employments, like Women.

The Word is form'd of the *Greek*, ἑρμαφρόδιτος, a Compound of ἑρμῆς, *Mercury*, and ἀφροδίτη, *Venus*, q. d. a Mixture of *Mercury* and *Venus*, i. e. of *Male* and *Female*.

For, it is to be obſerved, *Hermaphroditus* was originally a proper Name; applied, by the Heathen Mythologiſts; to a fabulous Deity, whom ſome repreſent as a Son of *Hermes*, Mercury, and *Aphrodites*, Venus; and who being deſperately in Love with the Nymph *Salmacida*, obtain'd of the Gods to have his Body and hers united into one. Others ſay, that the God *Hermaphroditus* was conceiv'd as a Compoſition of *Mercury* and *Venus*, to exhibit the Union between Eloquence, or rather Commerce, whereof *Mercury* was God; with Pleaſure, whereof *Venus* was the proper Deity. Laſtly, others think this Junction intended to ſhew that *Venus*, Pleaſure, was of both Sexes: As, in Effect, the Poet *Calvus* calls *Venus* a God.

Pollentemque Deum Venerem.

As alſo *Virgil*, Æneid. *Lib.* II.

Diſcedo ac ducente Deo flammam inter & hoſtes
Expedior ——

Heſychius obſerves M. *Spon*, calls Venus *Aphroditos*; and *Theophraſtus* affirms, that *Aphroditos*, or *Venus*, is *Hermaphroditus*; and that in the Iſland of *Cyprus* ſhe has a Statue, which repreſents her with a Beard like a Man.

HERMAPHRODITE, is alſo applied, metaphorically, to divers other Things beſide Men.

The lateſt Botaniſts and Floriſts, make a Diviſion of Plants, which they call *Hermaphrodites*; as having both the Male and Female Parts of Generation, *viz.* the Stamina and Piſtil in the ſame Flower. See PLANT, FLOWER, GENERATION, PISTIL, *&c.*

Divers of the Inſect and Reptile Kind, are alſo *Hermaphrodites*; particularly Worms, Snails, *&c.* See INSECT, *&c.*

In the Memoirs of the *French* Academy, we have an Account of a very extraordinary Kind of *Hermaphrodites*, which not only have both Sexes, but do the Office of both at the ſame Time. — Such are Earth-Worms, the round tail'd Worms found in the Inteſtines of Men and Horſes; Land-Snails, and thoſe of freſh Waters; and all the Sorts of Leaches. And as all theſe are Reptiles, and without Bones, M. *Poupart* concludes it probable, that all other Inſects which have thoſe two Characters, are alſo *Hermaphrodites*.

The Method of Coupling, practiſed in this Claſs of *Hermaphrodites*, may be illuſtrated in the Inſtance of Earth-Worms. Theſe little Serpents creep, two by two, into Holes proper to receive them; where they diſpoſe their Bodies in ſuch Manner, as that the Head of the one is turn'd to the Tail of the other. Being thus ſtretch'd out length-wiſe, a little conical Button, or *Papilla*, is thruſt forth by each, and received into an Aperture of the other.

Theſe Animals, being Male at one End of the Body, and Female at the other; and the Body flexible withal; M. *Homberg* does not think it impoſſible but that an Earth-Worm may couple with it ſelf; and be both the Father and Mother of its young.

HERMATHENA, in Antiquity, a Figure repreſenting *Mercury* and *Minerva* both in one.

M. *Spon* gives divers Figures of *Hermathenæ*, in his *Rech. Cur. de l'Antiquite*, p. 98. They are a Sort of Statues rais'd on ſquare Pedeſtals, after the Manner of *Hermes*; only that the Attributes of *Minerva* are added thereto. See HERMES.

The Word is a Compound of *Hermes*, Mercury; and *Athena*, a *Greek* Name of *Minerva*.

HERMERACLES, in Antiquity, a Figure compounded of *Mercury* and *Hercules*.

M. *Spon* gives us a Type of an *Hermeracles*, *Rech. Cur. de l'Antiq.* p. 96. *fig.* xiii. The Name *Hermeracles*, he obſerves, was given to a Divinity, repreſented after the Manner of *Hermes*, with the additional Attributes of *Hercules*, viz. a Lion's Skin and a Club. — This he aſcribes to the Cuſtom among the *Greeks*, of placing the Statues of *Mercury* and *Hercules* in the Academy, and *Gymnaſiums*, as both the one and the other preſided over the Exerciſes of the Youth.

HERMES, among Antiquaries, a Sort of Figure or Statue, of the God *Mercury*; uſually made of Marble, tho' ſometimes of Braſs, without Arms or Legs; and planted by the *Greeks* and *Romans* in their Croſs-ways.

Servius gives us the Origin hereof, in his Comment on the VIIIth Book of the *Æneid*. Some Shepherds, ſays he, having one Day caught *Mercury*, call'd by the Greeks *Hermes*, aſleep, on a Mountain; they cut off his Hands; from which he, as well as the Mountain where the Action was done, became denominated *Cyllenius*, from κύλλος, *maim'd*: And thence, adds *Servius*, it is, that certain Statues without Arms are denominated *Hermes*'s, *Hermetes*.

But this Etymology of the Epithet *Cyllenius*, contradicts moſt of the other antient Authors, who derive it hence, that *Mercury* was born at *Cyllenus*, a City of *Arcadia*, or even on the Mountain *Cyllenus* it ſelf, which had been thus call'd before him.

Suidas gives a Moral Explication of this Cuſtom of making the Statues of *Mercury* without Arms. The *Hermetes*, ſays he, were Statues of Stone placed at the Veſtibles, or Porches of the Doors, and Temples at *Athens*; For this Reaſon, that as *Mercury* was held the God of Speech and of Truth, ſquare and cubical Statues were peculiarly proper; having this in common with Truth, that on what Side ſoever they are view'd, they always appear the ſame.

It muſt be obſerved, that *Athens* abounded more than any other Place in *Hermes*'s: There were Abundance of very ſignal ones in divers Parts of the City; and they were one of the principal Ornaments of the Place. They were alſo placed in the high Roads and Croſs-ways, by Reaſon *Mercury*, who was the Courier of the Gods, preſided over the High-ways: Whence his Surname of *Trivius*, from *Trivium*, and that of *Viacus*, from *Via*.

From *Suidas*'s Account above cited, it appears, that the Terms, *Termini*, uſed among us in the Doors, Balconies, *&c.* of our Buildings; take their Origin from theſe *Athenian Hermes*'s; and that it were more proper to call them *Hermetes* than *Termini*; for that tho' the Roman *Termini* were ſquare Stones, whereon a Head was frequently placed, yet they were rather uſed as Land-Marks, and mere-Stones, than as Ornaments of Building. See TERMINI.

HERMETIC, or HERMETICAL *Art*, a Name given to Chymiſtry, on a Suppoſition that *Hermes Triſmegiſtus* was the Inventor thereof, or excell'd therein. See CHYMISTRY.

We know but little of this *Hermes*, only that he was an antient King of *Egypt*, 1000 Years prior to *Æſculapius*. *Zozimus Panopolitanus* mentions him as having wrote of *Natural Things*; and there are ſeveral Pieces ſtill extant under his Name, but all ſuppoſititious. See VOLUME.

HERMETICAL *Philoſophy*, is that which undertakes to ſolve and explain all the Phænomena of Nature, from the three Chymical Principles, Salt, Sulphur, and Mercury. See PHILOSOPHY. See alſo PRINCIPLE, *&c.*

A conſiderable Augmentation was made to the antient *Hermetical Philoſophy* by the modern Doctrine of Alcali and Acid. See ALCALI and ACID.

HERMETICAL *Phyſic*, or *Medicine*, is that Syſtem, or Hypotheſis, in the Art of Healing, which explains the Cauſes of Diſeaſes, and the Operations of Medicines on the Principles of the *Hermetical Philoſophy*; and particularly on the Syſtem of Alcali and Acid. See MEDICINE and CHYMISTRY.

HERMETICAL *Seal*, a Manner of ſtopping or cloſing Glaſs Veſſels, for Chymical Operations, ſo very accurately, that nothing can exhale, or eſcape; not even the moſt ſubtile Spirits.

It is perform'd by heating the Neck of the Matraſs, or other Veſſel, in the Flame of a Lamp, till it be ready to melt; and then with a Pair of Pinchers twiſting it cloſe together. — This they call putting on *Hermes's Seal*.

Tho', there are other Ways of *ſealing* Veſſels *Hermetically*, viz. by ſtopping them with a Plug, or Stopple of Glaſs, well luted into the Neck of the Veſſel. — Or, by turning another *Ovum Philoſophicum* upon that wherein the Matter is contain'd.

HERMHARPOCRATES, in Antiquity, a Deity, or Figure of a Deity, compoſed of *Mercury*, and *Harpocrates*, the God of Silence.

M. *Spon*,

M. *Spon* gives us an *Hermharpocrates*, in his *Rech. Cur. de l'Antiquite*, p. 98. *fig.* xv. having Wings on his Feet, like *Mercury*; and laying his Finger on his Mouth, like *Harpocrates*. 'Tis probable they might mean by this Combination, that Silence is ſometimes Eloquent.

HERMIANS, HERMIANI, or HERMIOTITÆ, a Sect of Hereticks, in the IId Century; thus called from their Leader *Hermias*.

One of their diſtinguiſhing Tenets was, that God is Corporeal. They are alſo call'd *Seleucians*. See SELEUCIANS.

HERMIT, or EREMIT, EREMITA, a devout Perſon, retir'd into a Solitude, to be more at Leiſure for Contemplation, and to diſencumber himſelf of the Affairs of the World. See ANCHORET.

The Word is form'd of the *Greek*, ἔρημος, *Eremus*, Wilderneſs; and, according to the Etymology, ſhould rather be wrote *Eremit*, the Spirit being ſoft.

A *Hermit* is not reputed a Religious, unleſs he have made the Vows. See MONK, Vow, *&c.*

Paul, ſirnamed the *Hermit*, *Paulus Eremitanus*, is uſually reckon'd the firſt *Hermit*; tho' St. *Jerom*, at the Beginning of the Life of that Saint, ſays, it is not known who was the firſt. — Some go back to St. *John* the *Baptiſt*, and others to *Elias*.

Others make St. *Anthony* the Founder of the *Hermetical* Life: But others take him to have only rekindled and heighten'd the Fervour thereof; and hold, that the Diſciples of that Saint own'd S. *Paul* of *Thebes* for the firſt that practiſed it. — The Perſecutions of *Decius* and *Valerian* are ſuppoſed to have been the Occaſion.

Several of the antient *Hermits*, as S. *Anthony*, &c. tho' they lived in Deſarts; had yet Numbers of Religious accompanying them. See SOLITARY.

There are alſo divers Orders and Congregations of Religious, diſtinguiſhed by the Title of *Hermits*; as, *Hermits* of St. *Auguſtin*, of St. *John Baptiſt*, of St. *Jerom*, of St. *Paul*, &c.

HERMITS *of St. Auguſtin*, is a religious Order, more frequently call'd *Auguſtins*, or *Auſtin* Friars. See AUGUSTIN.

It is commonly pretended to have been inſtituted by that Father; but without much Ground. This is pretty certain, he laid the Foundations of a Monaſtic Order about the Year 388, and retired to his Father's Eſtate near *Tagaſta*, to lead a religious Life, with ſome Companions: But it does not at all appear, that this Order has ſubſiſted ever ſince; nor that the *Hermits* of St. *Auguſtin* are deſcended without Interruption from them.

This Order, in Reality, only commenced under Pope *Alexander* IV, in the middle of the XIIIth Century; and was form'd gradually by the Union of divers Congregations, which had no Rule, or at leaſt had not that of St. *Auguſtin*. — Theſe Congregations were thoſe of *John Bonites*, the moſt antient of all; that of the *Hermits* of *Tuſcany*; that of the *Sacheld*; thoſe of *Vallerſuta*; of St. *Blaiſe*; of St. *Benedict de Monte Fabulo*; of the *Tower of Palmes*; of *Sancta Maria de Marcetta*; of St. *James de Molinio*, and *de Loupſavo* near *Lucca*.

This Coalition was not made by *Innocent* IV. as moſt Hiſtorians of the Order contend: All that Pontiff did, was to unite ſome *Hermits* in *Tuſcany*, to whom he gave the Rule of St. *Auguſtin*: But theſe were a diſtinct Body from thoſe juſt mention'd. — It was *Alexander* IV. that made the grand Union; as appears from his Bull, publiſhed in the *Mare magnum* of the *Auguſtins*.

That Pontiff undertook this Union from the firſt Year of his Pontificate, *viz.* the Year 1254. It was the Year 1256, ere the Superiors of all the Congregations could be got together. In the general Chapter the Union was effected: *Lanfranc Septala*, a *Milaneze*, was choſen General; and the Order divided into four Provinces, *viz.* thoſe of *France*, *Germany*, *Spain* and *Italy*.

Since that, other Orders have been united to the *Hermits* of St. *Auguſtin*; as, the poor Catholicks, *&c.* and the Order now conſiſts of 42 Provinces.

After ſo many Unions, the Order began to divide again into ſeparate Congregations, according to the Relaxations, and Reformations that afterwards got footing. — Such, are the *Barefooted Hermits* of St. *Auguſtin*; the Congregation of *Centorbi*, or the *Sicilian Reform*; the Congregation of the *Colorites* in *Calabria*, &c.

There are alſo ſeveral Congregations of Nuns, under the Appellation of *Hermits of St. Auguſtin*.

As alſo a third Order of *Hermits of St. Auguſtin*. See THIRD *Order*.

HERMITS *of Brittini*, was a Congregation form'd under Pope *Gregory* IX. who gave them the Rule of St. *Auguſtin*.

Their firſt *Hermitage*, or Abode, was in a ſolitary Place, call'd *Brittini*, in the Marquiſate of *Ancona*; whence their Name. — They led a very auſtere Life; never eat any Meat, and faſted much.

HERMITS *of Camalduli*. See CAMALDULI.

HERMITS *of St. John Baptiſt*, was a religious Order in *Navarre*; whoſe principal Convent, or *Hermitage*, was ſeven Leagues from *Pampelona*.

Till the Time of *Gregory* XIII, they lived under the Obedience of the Biſhop of that City; but the Pope confirm'd them a Religious Order, approved their Conſtitutions, and admitted 'em to make the Vows. — Their Way of Living was exceeding auſtere: They went bare-footed, wore no Linnen, lay on Boards, with a large Stone for a Pillow, and bore a large wooden Croſs on their Breaſts.

Their Houſe was a Kind of *Laura*, rather than a Convent; canton'd out into Cells, in which they lived ſolitary, in the middle of a Wood. See LAURA.

HERMITS *of St. Jerom*. See JERONIMITES.

HERMITS *of St. Paul the firſt Hermit*, is an Order form'd in the XIIIth Century, by the Union of two Bodies of *Hermits* in *Hungary*; viz. thoſe of St. *James de Patach*, and thoſe of *Piſilia* near *Zante*.

Upon their being incorporated, they choſe St. *Paul* the firſt *Hermit*, for the common Patron, and Protector of their Order; and aſſumed his Name. — They multiplied very conſiderably in *Hungary*, *Germany*, *Poland*, and other Provinces; and came to have ſeventy Monaſteries in *Hungary* alone: But the Revolutions and Wars in that Kingdom reduced them again.

HERMITAGE, properly ſignifies a Convent of *Hermits*. See HERMIT and CONVENT.

The Name was alſo popularly attributed to any Religious Cell, built and endowed in a private and recluſe Place; and thus annexed to ſome large Abbey, of which the ſuperior was call'd *Hermita*. See SOLITARY, RECLUSE, *&c.*

HERMITAN, in Phyſiology, a dry North, and North Eaſterly Wind, or Breeze, uſually blowing on the Coaſts of *Guinea* in *Africa*. See WIND and BREEZE.

The *Hermitan* ſometimes alſo blows from other Points.

HERMODACTYL, in Medicine, a Drug uſed as a gentle Purgative, *&c.* See PURGATIVE.

Naturaliſts are not agreed as to the Origin of this Drug. — Some will have it the Root, and others the Fruit of a Plant. To reconcile them, one might probably allow two Kind of *Hermodactyls*; the one a Root, the other a Fruit.

The Fruit is about the Size of a little Cheſſnut, in Figure reſembling a Heart; ruddy without, very white within; of a light fungous Subſtance; without Fibres; eaſily broke, and reducible into a Powder like Flower, of a ſweetiſh Taſt, but ſomewhat viſcid. It is brought to us dried from *Egypt* and *Syria*.

Authors differ as to the Plant which bears it. In the common Opinion it paſſes for a Sort of *Colchicum*: Others take it for a tuberous *Iris*.

Hermodactyls are chiefly uſed to purge pituitous Humours of the Brain and Joynts. — They are ſo efficacious in ſcowering the mucilaginous Glands, and preſerving them from the Lodgments of gritty Matters, which occaſion the Gout and arthritic Complaint; that they are denominated, by ſome Writers, *Anima Articulorum*. — They alſo promote Sweat.

HERMOGENIANS, a Sect of antient Hereticks, denominated from their Leader *Hermogenes*; who lived towards the Cloſe of the IId Century. See HERESY.

Hermogenes eſtabliſh'd *Matter* as his firſt Principle; and made *Idea* the Mother of all the Elements. See IDEA, *&c.*

The *Hermogenians* were divided into ſeveral Branches, under their reſpective Chieftains, viz. *Hermians*, *Seleucians*, *Materiarii*, &c. See HERMIANS, SELEUCIANS, *&c.*

The *Manichees* ſprung from the *Hermogenians*. See MANICHEES.

HERNIA, in Medicine, *&c.* a Deſcent of the Inteſtines, or *Omentum*, out of their natural Place; or, rather, the Tumour form'd by that Deſcent; popularly called a *Rupture*. See DESCENT and RUPTURE.

When the *Peritonæum* happens to be broken, or extraordinarily dilated; the *Viſcera*, and particularly the Caul and ſmall Guts, are apt to fall out of their Place, and to form theſe Sorts of Tumours called *Hernia's*.

They happen moſt uſually in the *Inguen*, or Groin; the Scrotum, and Navel: Tho, ſometimes, in other Places; as above or below the Navel; in the Side, far above the *Inguen*, in the upper Part of the Thigh, near the Spine, *&c.*

Hernia's are occaſion'd by Blows, violent Concuſſions, over-ſtretching in Vomiting, hard Labour, or Wind; from which laſt Cauſe it is, that they are ſo frequent in Children, and ſo eaſily help'd by timely Cure: In Adults they are generally incurable. From *Hernia's* frequently ariſe the

the Iliac Paſſion, and ſometimes Inflammations, and even Gangrenes of the Inteſtines.

Hernia's are variouſly denominated, both according to the Parts diſplaced, and to thoſe whereon they fall.

A Deſcent of the Inteſtines into the Scrotum, which is the moſt uſual Kind of Rupture, is call'd *Enterocele*. See ENTEROCELE.

If, inſtead of the Inteſtines, the *Omentum* be fallen; it is called *Epiplocele*. See EPIPLOCELE.

A Deſcent of both, is called *Entero-Epiplocele*. See ENTERO-EPIPLOCELE.

If the Inteſtines fall on the Navel, it is call'd *Omphalocele*. See OMPHALOCELE.

If they fall thro' the Perforation of the *Obliquus Deſcendens* into the Groin; it is called *Bubonocele*, or *Inguinalis*. See BUBONOCELE.

There are alſo a ſpurious Sort of *Hernia's*, or Tumours of the Teſtes, *&c.* occaſion'd, not by the Deſcent of any of the ſolid Parts, but by a Coagmentation of ſome of the Fluids.

When the Teſticles are ſwell'd, and diſtended with a watery Humour, it is called a *Hydrocele*, or *Hernia Aquoſa*. See HYDROCELE.

When with Wind, *Pneumatocele*, or *Hernia Ventoſa*. See PNEUMATOCELE.

When the Tumour is owing to a Mole, or Excreſcence of Fleſh, it is call'd *Sarcocele*, or *Hernia Carnoſa*. See SARCOCELE.

When to a Dilatation of the Veſſels, in Manner of a Varix, *Circocele*, or *Hernia Varicoſa*. See VARIX, *&c.*

A Kind of prominent Tumour in the Throat, is frequently call'd *Bronchocele*, or *Hernia Gutturalis*. See BRONCHOCELE.

Some late Authors alſo ſpeak of *Hernia's*, or Deſcents of the Bladder into the Scrotum; but theſe are rare. — M. *Mery* concludes, that they never ariſe from mere Accident; but when they do happen, it muſt be the Effect of an original ill Conformation. — His Reaſon is, that the Bladder of Urine is too big to paſs thro' the *Annuli* or Rings, which the Inteſtines paſs thro'; beſide that it is faſten'd too ſtrongly on all Sides to admit of a Deſcent.

M. *Petit*, however, is of a different Sentiment; and maintains that *Hernias* of the Bladder may be produced after the ordinary Manner of others. See the *Memoires de l'Acad.* An. 1717.

The Word is Latin, *Hernia*, and originally ſignifies the ſame with *Tumor Scroti*; call'd alſo *Ramex*.

Priſcian obſerves, that the antient *Marſi* gave the Appellation *Herna* to Rocks: Whence, ſome will have *Hernia's* thus called *propter duritiem*, on Account of their Hardneſs. — *Scaliger* chuſes rather to derive the Word from the *Greek*, ἕρνος, *Ramus*, Branch.

HERO, in the antient Theology and Mythology, was a great and illuſtrious Perſon, of mortal Nature; tho', by the Populace, ſuppoſed to partake of Immortality; and, after his Death, placed by them in the Number of the Gods. See GOD.

Hero's were, properly, Perſons partly of divine, and partly of human Extraction; being begot between a Deity and a Mortal: As *Achilles*, who was the Son of the Goddeſs *Thetis*, by *Peleus*; or *Hercules*, who was the Son of *Jupiter* and *Alcmena*.

A *Hero*, then, coincides with what we otherwiſe call a *Demi-God*: Accordingly, *Lucian* defines a *Hero* to be a Medium between God and Man; or, rather, a Compoſition of both. See DEMI-*God*.

The Word is form'd of the Latin *Heros*, and that of the *Greek*, ἥρως, *Semi-deus*, Demi-god.

St. Auguſtin, *de Civit. Dei*, Lib. X. obſerves, that it is highly probable, ſome one of *Juno*'s Sons was originally called by this Name; that Goddeſs being called in *Greek* ἥρα: Or, it may be, that great Men have been diſtinguiſhed by this Appellation, in Alluſion to the Opinion of the Antients, that virtuous Perſons, after their Deaths, inhabited the wide Expanſe of Air, which is *Juno*'s Province.

Iſidore inclines to think, that *Hero's* were thus call'd, *quaſi aeroes, aerei*, Perſons of ſuperior Merit, and worthy of Heaven. — *Plato* derives the Word from the *Greek*, ἔρως, *Amor*, as intimating the *Hero's* to have ariſen from the Copulation of a God with a mortal Woman; or of a Goddeſs with a Man. — Others derive the Name from the *Greek*, ἐρεῖν, *dicere*, to ſpeak; the *Heroes* being Perſons who by their Eloquence led the People at their Pleaſure: Others, laſtly, derive the Word from the *Greek*, ἥρα, *Terra*, Earth; the *Heroes*, on their Principle, being the *Dii Terreſtres*, or Gods of the Earth.

HERO, is alſo uſed, in a more extenſive Senſe, for a great, illuſtrious, and extraordinary Perſonage; particularly, in reſpect of Valour, Courage, Intrepidity, and other military Virtues.

Fa. *Bouhours* makes this Diſtinction between a *Great* Man and a *Hero*, that the latter is more daring, fiery, and enterprizing; and the former, more prudent, thoughtful, and reſerved: — In this Senſe we properly ſay, *Alexander* was a *Hero*, *Julius Cæſar* a great Man.

HERO *of a Poem*, or *Romance*, is the principal Perſonage, or he who has the Top-Part therein. See POEM, ROMANCE, *&c.*

The *Hero* of the Iliad is *Achilles*; of the Odyſſee, *Ulyſſes*; of the Æneid, *Æneas*; of *Taſſo*'s Jeruſalem, *Godfrey* of *Bulloign*; of *Milton*'s Paradice Loſt, *Adam*; tho' Mr. *Dryden* will have the *Devil* to be *Milton*'s *Hero*; in Regard he gets the better of *Adam*, and drives him out of Paradice.

The Character of *Achilles*, is the inexorable Wrath of a haughty, valiant, unjuſt, revengeful Prince: That of *Ulyſſes*, is the wiſe and prudent Diſſimulation of a courageous King, whoſe Conſtancy nothing could ſhake: That of *Æneas*, is Piety, Gentleneſs, Good-Nature, and Humanity; ſuſtain'd, like the others, with an invincible Courage. See CHARACTER.

Many of the Criticks find Fault with the *Hero* of the *Æneid*. — He is too ſenſible and delicate; and wants of the Fire, Firmneſs, and uncontrollable Spirit, remarkable in the *Hero* of the *Iliad*. — Piety, Tenderneſs, and Submiſſion to the Gods, are the Virtues of the middle Claſs of Mankind: They do not ſtrike and command enough for a *Hero*, who is to be the Inſtrument of ſuch notable Exploits. — *St. Evremond* looks on *Æneas* as fitter to have been the Founder of a Religious Order, than of an Empire.

Fa. *Boſſu* defends *Virgil*'s *Hero*, or at leaſt *Virgil*, with admirable Addreſs. — *Æneas*'s Character, he obſerves, was not to be form'd on the Model, either of *Achilles*, or *Ulyſſes*; nor to be of the ſame Kind with them; as the Fable, the Deſign of the *Æneid*, was very different from thoſe of the *Iliad* and *Odyſſee*. See FABLE, ACTION, *&c.*

What *Virgil* had in View, was to make the *Romans* receive a new Kind of Government; and a new Maſter: This Maſter, then, muſt have all the Qualities requiſite for the Founder of a State, and all the Virtues which make a Prince beloved. — The Violence of *Achilles* was of Conſequence precluded; ſo was the Diſſimulation of *Ulyſſes*; that being a Quality which renders a Man ſuſpected, not beloved.

Virgil was reſtrained in his Choice; his *Hero* was to be of the Genius of *Auguſtus*: The Poet was in the Condition of a Painter, who is obliged to accommodate a Piece of Hiſtory to the Model of a Face that is given him. — The Characters of *Homer*'s two *Heroes*, as being directly oppoſite to his Deſign, he has thrown upon *Turnus* and *Mezentius*, who are the Counterparts to his *Hero*.

'Tis diſputed among the Criticks, whether it be neceſſarily required, that the *Hero* of an Epic Poem be a good and virtuous Man? — Fa. *Boſſu* maintains the Negative: Between a *Hero* in Morality, and a *Hero* in Poetry, the ſame Diſtinction is to be made as between Moral, and Poetical Goodneſs: — Hence, as the Manners of *Achilles*, and *Mezentius*, are poetically as Good as thoſe of *Ulyſſes* and *Æneas*; ſo thoſe two cruel and unjuſt Men, are as regular poetical *Heroes*, as theſe two juſt, wiſe, and good Men. See MANNERS.

Ariſtotle, indeed, repreſents the *Heroic* Virtue, as a Virtue more than human; and, of Conſequence, *Heroes*, as divine Perſons, whom the Excellency of their Nature raiſes above our Claſs: But this, he ſays in his Books of Morality; in his Poeticks he ſpeaks another Language. — The prime Perſon of a Poem, whom we call the *Hero*, he obſerves, muſt neither be good nor bad, but between both: He muſt not either be ſuperior to the Generality of Mankind by his Virtue and Juſtice; nor inferior to them by his Crimes and Wickedneſs. The Moral, and Epic *Heroes*, therefore, even on *Ariſtotle*'s Principles, have nothing in common with each other: The one muſt be rais'd above Mankind; and the other muſt not be on a Level with the moſt perfect of Men.

In Effect, both reaſon, the Nature of the Poem which is to be a Fable, the Practice of *Homer*, and the Rules of *Ariſtotle* and *Horace* agree, that ſo far is it from being neceſſary that the *Hero* of an *Epopea* be a perfect, faultleſs Man; that it is not neceſſary he be an honeſt Man: And that 'tis no Ways irregular to make him as perfidious as *Ixion*; as unnatural as *Medea*; or as brutal as *Achilles*. See MANNERS.

'Tis another Subject of Controverſy among the Criticks, whether the Cataſtrophe, or Concluſion of the Action, is neceſſarily to leave the *Hero* happy, and at Eaſe; or whether it be allowable to leave him unhappy?

The general Practice of the *Heroic* Poets ſtands for the Affirmative: We have ſcarce one Example of a *Hero* who is overcome, and remains unhappy: Excepting *Adam* in *Milton*.

In Tragedy, the Caſe is different: Unhappy Cataſtrophes, according to *Ariſtotle*, are preferable to happy ones; and were always much better received among the Antients. Indeed, one Reaſon may be, that in the popular States of *Greece*, Monarchs being odious, nothing pleas'd them better than to ſee the Misfortunes of Kings: And even among us, where that Conſideration does not hold, yet the unhappy Concluſion has its Advantage. — The Tragic Scene is the Throne of the Paſſions; and Terror and Pity are there to rule in a peculiar Manner: Now thoſe Paſſions ariſe the moſt naturally from unhappy Events; and the Audience, quitting the Theatre, full of the Misfortunes wherewith it was cloſed, preſerve their Concern much longer, and feel more forcible Effects from it, than if their Tears had been wiped away, and their Sighs ſmother'd in the Satisfaction of a more happy *Peripetia*. See TRAGEDY, CATASTROPHE, and PERIPETIA.

But theſe Reaſons have no Place in the Epopea; which is not intended ſo much to purge the Paſſions, as to remove ill Habitudes. — But 'tis true withal, that the Epopea does not exclude all unhappy Concluſions: The Nature of Epic Fable, is ſuch as admits equally of good and bad Perſons for the prime Parts; the unhappy Adventure of a Lamb unjuſtly devour'd by a Wolf, is a Subject every Way as inſtructive, and as regular, as the Generoſity of a Lyon, who lets himſelf be diſarmed of his Rage by the Innocence of the ſame Lamb.

'Tis true, if the Poet propoſed his *Hero* as a Pattern of Perfection for Imitation, the Misfortunes falling on him would ſuit very ill with the Deſign: But this was doubtleſs the fartheſt Thing in the Intentions of the great Maſters of the Epopea above-mentioned. — The only Reaſon, perhaps, that can be given for the uniform Practice of the Poets in this Reſpect, is, than an Epic Poem, containing an Action of much more Extent than that of a Tragic Poem, the Reader would not be ſo well ſatisfied, if, after ſo many Labours and Difficulties as the *Hero* is brought to ſtruggle withal, he ſhould not, at laſt, be brought off; but periſh miſerably. There is ſomething, no doubt, great and good in the *Hero*, which, in the Courſe of the Poem, makes us concern'd for him; ſo, that after ſo long an Acquaintance, we cannot leave him miſerable, without ſome Anxiety; which it is not the Buſineſs of the Poet to raiſe. See EPIC *Poem*.

HEROIC, ſomething belonging to a *Hero*, or *Heroine*. See HERO.

Thus we ſay, *Heroic* Actions, *Heroic* Virtue, *Heroic* Style, *Heroic* Verſe, *Heroic* Poet, *Heroic* Age, *&c.*

HEROIC *Poem*, is that which undertakes to deſcribe ſome extraordinary Action, or Enterprize. See POEM.

Homer, *Virgil*, *Statius*, *Lucan*, *Taſſo*, and *Milton*, have compoſed *Heroic Poems*. See ILIAD, ÆNEID, *&c.*

In this Senſe, *Heroic Poem* coincides with an *Epic Poem*. See EPIC.

HEROIC *Poetry*. See EPIC *Poetry*.

HEROIC *Age*, is that Age or Period of the World, wherein the *Heroes*, or thoſe called by the Poets the *Children of the Gods*, are ſuppoſed to have lived.

The *Heroic Age* coincides with the fabulous Age. See FABULOUS.

HEROIC *Verſe*, is that wherein *Heroic* Poems are uſually compoſed; or that proper for ſuch Poems. See VERSE.

In the *Greek* and *Latin*, Hexameter Verſes are peculiarly denominated *Heroic Verſes*, as being alone uſed by *Homer*, *Virgil*, &c. See HEXAMETER.

Alexandrian Verſes of twelve Syllables, were formerly call'd *Heroic Verſes*, as being ſuppoſed the only Verſe proper for *Heroic* Poetry; but the later Writers uſe Verſes of ten Syllables. See ALEXANDRIAN.

HEROINE, a Woman that has the Qualities and Virtues of a *Hero*; or that has done ſome Heroic Action. See HERO.

HERODIANS, a Sect among the *Jews*, at the Time of *Jeſus Chriſt*; mention'd by St. *Matthew* XXII. 16. and St. *Mark* III. 6.

The Criticks, and Commentators on the New Teſtament, are very much divided with regard to the *Herodians*. — St. *Jerom*, in his Dialogue againſt the *Luciferians*, takes the Name to have been given to ſuch as own'd *Herod* for the Meſſiah: And *Tertullian* and St. *Epiphanius* are of the ſame Sentiment. — But the ſame *Jerom*, in his Comment on St. *Matthew*, treats the ſame Opinion as ridiculous; and maintains, that the *Phariſees* gave this Appellation, by Way of Deriſion, to *Herod*'s Soldiers, who paid Tribute to the *Romans*: Agreeably to which, the *Syriac* Interpreters render the Word by the *Domeſticks of Herod*, i. e. his Courtiers.

M. *Simon*, in his Notes on the 22d Chapter of *Matthew*, advances a more probable Opinion. — The Name *Herodian*, he imagines, to have been given to ſuch as adhered to *Herod*'s Party and Intereſt, and were for preſerving the Government in his Family; about which there were great Diviſions among the *Jews*.

Fa. *Hardouin*, will have the *Herodians* and *Sadducees* to have been the ſame Thing. See SADDUCEES.

HERPES, in Medicine, a cutaneous Heat or Inflammation, occaſioning a Roughneſs of the Skin, by Means of a Number of little Puſtules ſpreading this Way and that.

The Word is form'd of the *Greek*, ἕρπω, *paulatim gradior*, *repo*, by Reaſon the Eruptions creep from Place to Place.

There are divers Kinds of this Diſeaſe:

The *ſimple* HERPES, is a ſingle Puſtule or two, riſing chiefly on the Face, of a whitiſh or yellowiſh Colour, pointed, and with an inflamed Baſe. — Theſe dry away of their own Accord, upon letting out the little Drop of Pus contain'd in them.

The ſecond Species of *Herpes*, is what we otherwiſe call *Serpigo*; and in *Engliſh*, a *Tetter*, or *Ring-worm*. See SERPIGO and TETTER.

Milliary HERPES, is an Aſſemblage of innumerable little Puſtules, under the Cuticle, of the Size of Millet Seeds: Popularly call'd the *Shingles*. See SHINGLES.

The *Herpes Milliaris*, according to *Wiſeman*, approaches very nearly to the Nature of the *Pſora*; and therefore to be cured with Mercurial Catharticks, *&c.* See PSORA.

HERPES *Exedens*, is of a more corroſive Kind; the Puſtules are ruddy, and attended with an itching; and ulcerate the Parts they riſe on.

HERRING, See FISH and FISHERY.

Herrings are ſometimes preſcribed in Medicine, by Way of Cataplaſms, to the Feet, in Fevers; as being ſuppoſed to draw the febrile Matter downwards. Tho', 'tis more probable, this Effect ſhould be owing to the Salt uſed in the Pickle.

Pickled HERRING, *Red* HERRING, } See *Herring* FISHERY.

HERRING *Buſs*, a Veſſel proper for the *Herring* Fiſhery. See FISHERY.

HERRING *Cob*, is a young *Herring*. See *Herring* FISHING.

HERRING *Fiſhery*, See *Herring* FISHERY.

There are divers Names given to *Herrings*, according to the different Manners wherein they are ordered, as,

1°. *Sea-Sticks*, being ſuch as are catched all the Fiſhing Seaſon, and are but once packed. — A Barrel of theſe holds ſix or eight Hundred; eight Barrels to the Tun, by Law: An Hundred of *Herrings* is to be a Hundred and twenty; a Laſt ten Thouſand; and they commonly reckon fourteen Barrels to the Laſt. See LAST, *&c.*

There are others reckon'd on Shore, called *repacked Herrings*: Seventeen Barrel of *Sea-Sticks* make from twelve to fourteen of repacked ones.

The Manner of Repacking, is to take the *Herrings*, waſh them out in their own Pickle, and lay them orderly in a freſh Barrel. Theſe have no Salt put to them, but are cloſe packed, and headed up by a ſworn Cooper, with Pickle, when the Barrel is half full; the Pickle is Brine, ſo ſtrong as that the *Herring* will ſwim in it.

2°. *Summers*, are ſuch as the *Dutch* Chafers, or Divers, catch from *June* to the 15*th* of *July*. — Theſe are ſold away in *Sea-Sticks*, to be ſpent preſently, in Regard of their Fatneſs; for that they will not endure Repacking: They go one with another, full and ſhotten; but the repacked *Herrings* are ſorted, the full *Herrings* by themſelves.

3°. The *ſhotten* and *ſick Herrings* by themſelves; the Barrel whereof is to be mark'd diſtinctly.

4°. *Crux Herrings*, which are ſuch as are caught after the 14*th* of *September*. — Theſe are cured with Salt upon Salt, and are carefully ſorted out, all full *Herrings*, and uſed in the Repacking.

5°. *Corred Herrings*, ſerve to make *Red Herrings*, being ſuch as are taken in the *Yarmouth* Seas, from the End of *Auguſt* to the middle of *October*, provided they can be carried aſhore within a Week, more or leſs, after their taking. — Theſe are never gipped, but rowed in Salt, for the better preſerving of them, till they can be brought on Shore; and ſuch as are kept to make *Red Herrings*, are waſhed in great Vats in freſh Water before they are hanged up in the *Herring-Hangs*, or *Red Herring* Houſes.

As for the *Manner of ſalting Herrings*. — The Nets being haled on board, the Fiſhes are taken out, and put into the War-backs, which ſtand on one Side of the Veſſels: — When all the Nets are thus unloaded, one fills the Gippers Baſket. — The Gippers cut their Throats, take out the Guts, and fling out the full *Herrings* into one Baſket, and the ſhotten into another: — One Man takes the full Baſket when they are gipt, and carries them to the Rower-back, wherein there is Salt. — One Boy rows and ſtirs them about in the Salt; another

them thus rowed, and carries them in Baſkets to the Packers. — Four Men pack the *Herrings* into one Barrel, and lay them, one by one, ſtraight and even; and another Man, when the Barrel is full, takes it from the Packer. — It is let ſtand a Day or more open to ſettle, that the Salt may melt and diſſolve to Pickle; after which they are fill'd up, and the Barrel headed. — The Pickle to be ſtrong enough to ſuſtain a *Herring*; otherwiſe the Fiſh decay in it.

HERRING *Silver*, was Money formerly paid in lieu of a certain Quantity of *Herrings*, for a Religious Houſe.

HERSE, in Fortification, a Lattice, or Portcullice, in Form of an *Harrow*; beſet with Iron Spikes.

It is uſually hung by a Cord faſten'd to a Moulinet; to be cut, in Caſe of Surprize, or when the firſt Gate is broken with a Petard; that the *Herſe* may fall, and ſtop up the Paſſage of the Gate, or other Entrance of a Fortreſs.

Theſe *Herſes* are alſo often laid in the Roads, to incommode the March as well of the Horſe, as the Infantry.

The *Herſe* is otherwiſe call'd a *Sarraſin*, or *Cataract*; and when it conſiſts of ſtrait Stakes, without any Croſs-pieces, it is call'd *Orgues*. See ORGUES, *&c.*

The Word *Herſe* is *French*, and literally ſignifies *Harrow*; being form'd of the Latin *Herpix*, or *Hirpex*; which denote the ſame Thing.

HERSILLON, or HERISSON, in the military Art, a Name given to a Sort of Planks, or Beams, ten or twelve Foot long, whoſe two Sides are drove full of Spikes, or Nails, to incommode the March of the Infantry, or Cavalry. See HERISSON.

HESPER, HESPERUS, in Aſtronomy, a Star call'd alſo *Veſper*, *Phoſphor*, *Phoſphorus*, *Lucifer*, and the *Morning Star*. See PHOSPHORUS, VESPER, *&c.*

The Word is form'd of the *Greek*, ἕσπερος, and ſuppoſed to have been originally the proper Name of a Man, Brother of *Atlas*, and Father of the *Heſperides*. See HESPERIDES.

Diodorus, L. III. relates, that *Heſperus* having aſcended to the Top of Mount *Atlas*, the better to obſerve and contemplate the Stars, never return'd more; and that hence he was fabled to have been changed into a Star.

HESPERIDES, in the antient Mythology, were the Daughters of *Heſper*, or *Heſperus* a Brother of *Atlas*.

The *Heſperides* were three in Number, *Ægle*, *Arethuſa*, and *Heſperarethuſa* — *Heſiod*, in his *Theogony*, makes them the Daughters of *Nox*, Night; and ſeats them in the ſame Place with the *Gorgones*, viz. at the Extremities of the Weſt, near Mount *Atlas*: 'Tis on that Account he makes them the Daughters of *Night*, by reaſon the Sun ſets there.

The *Heſperides* are repreſented by the Antients, as having the keeping of certain golden Apples, on t'other ſide the Ocean. The Poets give them a Dragon to watch the Garden where the Fruit grows: This Dragon *Hercules* ſlew, and carried off the Apples.

Pliny and *Solinus* will have the Dragon to be no other than an Arm of the Sea, wherewith the Garden was incompaſs'd; and which defended the Entrance thereof. And *Varro* ſuppoſes that the Golden Apples were nothing but Sheep. Others, with more Probability, ſay they were Oranges.

The *Garden of the Heſperides*, *Heſperii Horti*, or *Horti Heſperidum*, are placed by ſome Authors at *Larache*, a City of *Fez*; by others, at *Berniche*, a City of *Barca*, which tallies better with the Fable. Others, take the Province of *Suſa* in *Morocco*, for the Iſland wherein the Garden was ſeated. Laſtly, *Rudbecks* places theſe fortunate Iſlands, and the Garden of *Heſperides*, in *Sweden*. See FORTUNATE.

HESYCHASTES, a Perſon who keeps himſelf vacant and at Leiſure, to attend the better, and with the leſs Interruption, to the Contemplation of divine Things.

The Name was chiefly uſed by the Antients for ſuch among the Monks as did not employ themſelves in any Labour of the Hands, but renounced all bodily Action, to reſign themſelves wholly to Prayer and Meditation.

The Word is *Greek*, form'd of ἡσυχάζω, *quieſco*, *quieti indulgeo*, a Derivative of ἥσυχος, *quietus*, quiet. *Heſychaſtes* in *Greek*, anſwers to the literal Senſe of *Quietiſt* in *Engliſh*.

HETERIARCH, HETERIARCHA, in Antiquity, an Officer in the *Greek* Empire; whereof there were two Species: The one call'd ſimply *Heteriarcha*; and the other, *great Hetriarcha*, who had the Direction of the former.

Their principal Function was to command the Troops of the Allies; beſides which, they had ſome other Duties in the Emperor's Court, deſcribed by *Codin*, *de Officiis*, C. 5. *n.* 30, 31, 32, 37.

The Word is form'd of the *Greek*, ἑταῖρος, *Socius*, Companion, Ally, and ἀρχὴ, *Imperium*, Command.

HETEROCLITE, HETEROCLITON, in Grammar, an irregular, or anomalous Word, which either in Declenſion, Conjugation, or Regimen, deviates from the ordinary Rules of Grammar. See ANOMALOUS, IRREGULAR, *&c.*

The Word is peculiarly affected to Nouns, which vary, or are irregular, in Point of Declenſion; having fewer Caſes, Numbers, *&c.* than ordinary; or are of one Declenſion in one Number, and another in another. See NOUN, DECLENSION, *&c.*

We have varying *Heteroclites*, defective, and redundant *Heteroclites*, &c.

Under the Claſs of *Heteroclites*, come *Aptotes*, *Diptotes*, *Monaptotes*, *Triptotes*, *Tetraptotes*, *Pentaptotes*, &c. See APTOTE, DIPTOTE, *&c.*

The Word is *Greek*, ἑτερόκλιτος, form'd of ἕτερος, *alter*, another, different, and κλίνω, *I decline*.

HETERODOX, in Polemical Theology, ſomething that is contrary to the Faith or Doctrine eſtabliſh'd in the true Church.

Thus, we ſay, a *Heterodox* Opinion, a *Heterodox* Divine, *&c.*

The Word ſtands in Oppoſition to *Orthodox*. See ORTHODOX.

It is form'd of the *Greek*, ἑτερόδοξος, a Compound of ἕτερος, *alter*, and δόξα, *Opinion*.

HETERODROMUS *Vectis*, in Mechanicks, a Lever wherein the Fulcrum, or Point of Suſpenſion, is between the Weight and the Power. See LEVER.

This is what we otherwiſe call a *Lever of the firſt Kind*. — Such is that repreſented *Tab. Mechanicks*, *Fig.* 1.

If either the Weight be in the middle between the Power and the Fulcrum; or the Power between the Weight and the Fulcrum, the Lever is denominated *Homodromus*. — Such are thoſe repreſented *Fig.* 2 and 3.

HETEROGENEITY, in Phyſicks, the Quality, or Diſpoſition, which denominates a Thing *Heterogeneous*.

The Word is alſo uſed for the *Heterogeneous* Parts themſelves. — In this Senſe, the *Heterogeneities* of a Body are the ſame Thing with the *Impurities* thereof.

Heterogeneity, is a Term of a very lax Signification, and brought by the Chymiſts to ſerve almoſt for any Thing they do not underſtand; ſo that all Diſagreement, or Inaptitude to Mixture between any Bodies, is imputed to the *Heterogeneity* of their Parts.

But, ſo far as the Term may be made uſe of, to convey any diſtinct Signification, it muſt be by conſidering natural Bodies under different Sortments, according as they are diverſified by Figure, Bulk, Motion, and their more ſenſible Properties: So that thoſe of different Sortments are *Heterogeneous* to one another, and the Parts of the ſame Sortment, homogeneous. See HOMOGENEOUS.

Thus the Diviſion Chymiſtry makes of Bodies into Oils, Salts, Spirits, *&c.* may be reckoned, with Reſpect to one another, *Heterogeneous*; tho' the Parts of each Diviſion are among themſelves Homogeneous.

In Effect, they are two Terms, which ſerve frequently for a Refuge to Ignorance; otherwiſe the common Terms of *like* and *unlike* might ſerve every whit as well. *Quincy*.

HETEROGENEOUS, or HETEROGENEAL, literally imports ſomething of a different Nature, or that conſiſts of Parts of different Kinds: In Oppoſition to *Homogeneous*. See HOMOGENEOUS.

Thus, we ſay, Milk is a *Heterogeneous* Body; compoſed of Butter, Cheeſe, and Whey. See MILK.

The Refining of a Metal, is the purging it of all its *Heterogeneous* Parts. See REFINING.

The Word is *Greek*, form'd of ἕτερος, *alter*, different, and γένος, *Genus*, Kind; *q. d.* compoſed of different Kinds of Parts.

HETEROGENEOUS, is particularly applied in Mechanicks, to thoſe Bodies whoſe Denſity is unequal in different Parts of their Bulk. See DENSITY.

Or, *Heterogeneous* Bodies are ſuch, whoſe Gravities are not proportionable to their Bulks. See GRAVITY.

Bodies equally denſe, or ſolid in every Part, or whoſe Gravity is proportionable to their Bulk, are ſaid to be Homogeneous. See BODY, *&c.*

HETEROGENEOUS *Light*, is that which conſiſts of Parts or Rays of different Refrangibility, Reflexibility, and Colour. See LIGHT, RAY, REFRANGIBILITY, *&c.*

HETEROGENEOUS *Nouns*, in Grammar, are ſuch as have one Gender in the Singular Number, and another in the Plural. See GENDER, *&c.*

HETEROGENEOUS *Numbers*, are thoſe referr'd to different Units, or Integers. See NUMBER.

HETEROGENEOUS *Quantities*, are thoſe which are of ſuch different Kind and Conſideration, as that one of them

taken

taken any Number of Times, never equals or exceeds the other. See QUANTITY.

HETEROGENEOUS *Surds*, are ſuch as have different radical Signs, as, $\sqrt{^2}$ a a, and $\sqrt{^3}$: b b : $\sqrt{^5}$ 9, and $\sqrt{^7}$ 19.

How to reduce *Heterogeneous Surds* to Homogeneous ones; ſee under the Article SURDS.

HETERORHYTHMUS, a Term uſed by ſome fanciful Writers, for a Courſe of Life unſuitable to the Age of thoſe who live it.

The ſame is alſo applied to Pulſes, when they beat variouſly or irregularly in Diſeaſes. See PULSE.

The Word is compounded of the *Greek*, ἕτερος, and ῥυθμὸς. See RHYME.

HETEROSCII, in Geography, a Term vulgarly applied to thoſe Inhabitants of the Earth, whoſe Shadow, at Noon-tide is always projected the ſame Way. See SHADOW.

In this Senſe, the Inhabitants of the temperate Zones are denominated *Heteroſcii*. See ZONE.

HETEROSCII, however, in Strictneſs, and according to the Origin and Reaſon of the Word, is a Term of Relation; and denotes thoſe Inhabitants, which, during the whole Year, have their Noon-tide Shadows projected different Ways from each other.

Thus, we who inhabit the Northern temperate Zone, are *Heteroſcii* with Regard to thoſe who inhabit the Southern temperate Zone: And thoſe are *Heteroſcii* with Reſpect to us.

From this Definition it follows, that only the Inhabitants of the two temperate Zones are *Heteroſcii*; nor is the Word ordinarily applied to any other. Tho', in Reality, there is always one Part of the torrid Zone, whoſe Inhabitants are *Heteroſcii* with Regard to thoſe of the reſt, and with Regard to thoſe of one of the temperate Zones, except at the Time of the Solſtices. And even at that Time all of the torrid Zone are *Heteroſcii* with Regard to thoſe of one of the temperate Zones.

But as this is variable, and the People of the torrid Zone have their Shadow now on this, and then on that Side; the Cuſtom is to call them *Amphiſcii*, and not *Heteroſcii*. See AMPHISCII.

The Word is *Greek*, form'd of ἕτερος, *other, different*; and σκία, *Shadow*.

HETEROUSII, HETEROUSIANS, a Sect, or Branch of *Arians*; the Followers of *Aetius*, and from him alſo denominated *Aetians*. See AETIANS.

They were called *Heterouſiani*, by Reaſon they held, not that the Son of God was of a Subſtance like, ſimilar to that of the Father; which was the Doctrine of another Branch of *Arians*, thence called *Homoouſians*, *Homooufii*: But that he was of another Subſtance different from that of the Father. See ARIAN and HOMOOUSIAN.

The Word is *Greek*, compoſed of ἕτερος, *alter*, and οὐσία, *Subſtance*.

HEXACHORD, in the antient Muſic, a Concord commonly called by the Moderns, a *Sixth*. See CONCORD and SIXTH.

The *Hexachord* is two-fold, *Greater* and *Leſſer*. — The *Greater Hexachord*, is compoſed of two greater Tones, two leſſer Tones, and one greater Semitone; which make five Intervals. The *Leſſer Hexachord* conſiſts only of two greater Tones, one leſſer Tone, and two greater Semitones. See TONE.

The Proportion of the former, in Numbers, is as 3 to 5; and that of the other, as 5 to 8.

The Word is *Greek*, compounded of ἕξ, *Sex*, Six; and χορδὴ, *Corda*, Chord, or String.

HEXAEDRON, or HEXAHEDRON, in Geometry, one of the five regular Bodies, popularly call'd a *Cube*. See CUBE and REGULAR *Body*.

The Square of the Side of a *Hexaedron*, is in a ſubtriple Ratio to the Square of the Diameter of the circumſcribed Sphere. — Hence, the Side of the *Hexaedron* is to the Side of the Sphere it is inſcribed in, as 1 to the $\sqrt{3}$; and conſequently incommenſurable thereto.

The Word is *Greek*, form'd of ἕξ, *Sex*, Six; and ἕδρα, *Sedes*, Seat.

HEXAGON, in Geometry, a Figure of ſix Sides, and as many Angles. See FIGURE and POLYGON.

If theſe Sides and Angles be equal, it is called a *Regular Hexagon*. See REGULAR.

The Side of a *Hexagon* is demonſtrated to be equal to the Radius of a Circle circumſcribed about the ſame. See CIRCLE and RADIUS.

Hence, a regular *Hexagon* is inſcribed in a Circle, by ſetting the Radius off ſix Times upon the Periphery. See INSCRIBED.

To deſcribe a *Hexagon* on a given Line A B, (*Tab. Geometry, Fig.* 84.) draw an Equilateral Triangle A C B; the Vertex C will be the Centre of a Circle, which will circumſcribe the *Hexagon* required. See CIRCUMSCRIBING.

In Fortification, a *Hexagon* is a Fortreſs with ſix Baſtions. See BASTION.

The Word is *Greek*, form'd of ἕξ, *Sex*, Six, and γωνία, *Angulus*, Angle.

HEXAMERON, a Name given to divers Writings both of antient and modern Authors, containing Commentaries, or Diſcourſes, on the firſt Chapter of *Geneſis*; wherein is delivered the Hiſtory of the Creation, or the firſt ſix Days of the World.

St. *Baſil*, St. *Ambroſe*, &c. have wrote *Hexamerons*.

The Word is *Greek*, ἑξάμερον, compoſed of ἕξ, *Sex*, Six, and ἡμέρα, which in the *Doric* Dialect is wrote ἁμέρα, *Day*.

HEXAMETER, in the antient Poetry, a Verſe uſed by *Greek* and *Latin* Writers, conſiſting of ſix Feet. See FOOT and VERSE.

The firſt four Feet of a *Hexameter*, may be indifferently either *Dactyls* or Spondees; but the laſt Foot, in Strictneſs, is always to be a Spondee; and the laſt but one a Dactyl. Such is that of *Homer*,

Εἰς ὕδωρ μ' ἔῤῥιψας, ἔχει θεὸς ἔκδικον ὅμμα.

And that of *Virgil*,

Diſcite Juſtitiam moniti & non temnere Divos.

Hexameter Verſes are divided into *Heroic*; which are to be grave and majeſtical, ſuitable to the Dignity of Heroic Poetry: And *Satyrical*, which may be more looſe and negligent, as thoſe of *Horace*. See HEROIC, *&c.*

Epic Poems, as the Iliad, Odyſſee, Æneid, *&c.* conſiſt of *Hexameter* Verſes alone: Elegies and Epiſtles ordinarily conſiſt alternately of *Hexameters* and Pentameters. See PENTAMETER.

Some of the *French* and *Engliſh* Poets have attempted to compoſe in *Hexameter* Verſes, but without Succeſs. *Jodelle* made the firſt Eſſay in 1553, with a Diſtich in Praiſe of *Olivier de Magny*, which *Paſquier* repreſents as a Maſter-piece. 'Tis this,

Phœbus, Amour, Cypris, veut Sauver, nourrir & orner
Ton Vers, & ton Chef, d'Umbre, de Flamme, de Fleurs.

But this Kind of Poetry pleaſes no Body. The Modern Languages are not at all fit for a Kind of Verſe whoſe Cadence depends altogether on long and ſhort Syllables. See QUANTITY, VERSE, *&c.*

The Word is *Greek*, compoſed of ἕξ, *Six*, and μέτρον, *Menſura*, Meaſure, Foot.

HEXAMILION, EXAMILLION, in Antiquity, a celebrated Wall built by the Emperor *Emanuel*, over the Iſthmus of *Corinth*.

It took its Name from ἕξ, *Six*, and μιλιον, which in the vulgar *Greek* ſignifies a Mile; as being ſix Miles long.

The Deſign of the *Hexamilion*, was to defend *Peloponneſus* from the Incurſions of the *Barbarians*. — *Amurath* II. having rais'd the Siege of *Conſtantinople*, in the Year 1424; demoliſh'd the *Hexamilion*, tho' he had before concluded a Peace with the *Greek* Emperor.

The *Venetians* reſtor'd it in the Year 1463, by thirty Thouſand Workmen, employ'd for fifteen Days, and cover'd by an Army commanded by *Bartholdo d'Eſte*, General of the Land Forces, and *Louis Loredano*, General of the Sea.

The Infidels made ſeveral Attempts upon it, but were repulſed, and obliged to retire from the Neighbourhood thereof. But *Bartholdo* being kill'd at the Siege of *Corinth*, which was attempted ſoon after; *Bertino Calcinato*, who took on him the Command of the Army, abandon'd, upon the Approach of the Beglerbeg, both the Siege and the Defence of the Wall, which had coſt them ſo dear: Upon which it was finally demoliſh'd.

HEXAPLA, or EXAPLA, in Church Hiſtory, a Bible diſpoſed in ſix Columns, containing the Text, and divers Verſions thereof; compiled and publiſhed by *Origen*. See BIBLE.

Euſebius, *Hiſt. Eccl.* L. VI. *C.* 16. relates that *Origen*, after his Return from *Rome* under *Caracalla*, applied himſelf to learn *Hebrew*; and began to collect the ſeveral Verſions that had been made of the ſacred Writings, and of theſe to compoſe his *Tetrapla* and *Hexapla*: Others, however, will not allow him to have begun till the Time of *Alexander*, after he had retired into *Paleſtine*, about the Year 231.

To conceive what this *Hexapla* was, it muſt be obſerv'd, that beſide the Tranſlation of the ſacred Writings, call'd the *Septuagint*, made under *Ptolomy Philadelphus*, above 270 Years before Chriſt; the Scripture had been ſince tranſlated into *Greek* by other Interpreters. The firſt of thoſe Verſions, (or, reckoning the *Septuagint*, the ſecond) was that of *Aquila*, about the Year of Chriſt 140: The third was that of *Symmachus*, publiſhed, as is commonly ſuppoſed,

ſuppoſed, under *Marcus Aurelius:* The fourth was that of *Theodoſian*, under *Commodus:* The fifth was found at *Jericho*, in the Reign of *Caracalla*, about the Year 217: And the ſixth was diſcover'd at *Nicopolis*, about the Year 228. Laſtly, *Origen* himſelf recover'd Part of a ſeventh, containing only the *Pſalms*. See VERSION.

Now *Origen*, who had held frequent Diſputations with the *Jews* in *Egypt* and *Paleſtine*, obſerving that they always objected againſt thoſe Paſſages of Scripture quoted againſt them; and appeal'd to the *Hebrew* Text; the better to vindicate thoſe Paſſages, and confound the *Jews*, by ſhewing that the Seventy had given the Senſe of the *Hebrew*; or rather to ſhew, by a Number of different Verſions, what the real Senſe of the *Hebrew* was: undertook to reduce all theſe ſeveral Verſions into a Body, along with the *Hebrew* Text; ſo as they might be eaſily confronted, and afford a mutual Light to each other.

In Order to this, he made Choice of eight Columns: In the firſt he gave the *Hebrew* Text in *Hebrew* Characters: In the ſecond, the ſame Text in *Greek* Characters. The reſt were filled with the ſeveral Verſions abovementioned; all the Columns anſwering Verſe for Verſe, and Phraſe for Phraſe. In the *Pſalms* there was a ninth Column for the ſeventh Verſion.

This Work *Origen* call'd Ἑξαπλα, *Hexapla*, q. d. *Sextuple*, or a Work of ſix Columns; as only regarding the firſt ſix *Greek* Verſions.

Indeed, S. *Epiphanius*, taking in likewiſe the two Columns of the Text, calls the Work *Octapla*, as conſiſting of eight Columns. See OCTAPLA.

This celebrated Work periſh'd long ago: Tho' ſeveral of the antient Writers have preſerved us Pieces thereof; particularly S. *Chryſoſtom* on the *Pſalms*, *Philopomes* in his *Hexameron*, &c. — Some modern Writers have endeavoured to collect Fragments of the *Hexapla*, particularly *Druſius*, and Fa. *Montfaucon*.

HEXASTYLE, HEXASTYLOS, in the antient Architecture, a Building with ſix Columns in Front. See COLUMN.

The Temple of Honour and Virtue at *Rome*, built by *Mutius*, was a *Hexaſtyle*. See TEMPLE.

The Word is compoſed of ἕξ, *Six*, and στύλος, *Column*.

HEYRS, in Husbandry, are young timber Trees, uſually left for Standards in felling of Woods or Copſes. See TIMBER, FELLING, STANDARD, &c.

HIATUS, a *Latin* Term, properly ſignifying the Aperture of the Mouth; from the Verb *hiare*, to gape.

It is variouſly uſed in Works of Literature, &c. to denote a *Chaſm*, or *Gap*. Particularly in Verſes, where there is a claſhing of Vowels, by ſome Words ending with a Vowel, and the following one beginning with another. — Tho' oft the Ear the open Vowels tire.

This claſhing of Vowels, ſo diſagreeable to the Ear, is called a *Hiatus* in Proſe as well as Verſe. — The *Romans* were ſo very careful to avoid it, that they always ſuppreſs'd the preceding Vowel even in Proſe; as is obſerved by *Cicero* in his *Orator*.

The Word *Hiatus* is alſo uſed for a Defect in a Manuſcript Copy; where ſomething is loſt, or effaced, by the Injuries of Time, or otherwiſe.

In a theatrical Piece, there is ſaid to be a *Hiatus*, when a Scene is not well connected to the next, but leaves the Action interrupted. See SCENE.

In Matters of Genealogy, *Hiatus* is an Interruption in a Line or Series of Deſcendants. — Thoſe Proofs of eight Hundred Years are impoſſible, by Reaſon of the frequent *Hiatus's* occaſion'd by Civil Wars, *Gothic* Inundations, &c.

HICKUP, HICCOUGH, or HICKET, *Singultus*, in Medicine, a ſudden irregular Inſpiration; wherein the Stomach, and the Parts contain'd in the lower Venter, are driven from below, upwards.

The *Hickup* is not a Diſorder of the Stomach, as is uſually imagined, but a convulſive Motion of the *Diaphragma*; whereby that Muſcle retiring impetuouſly downwards, impels the Parts beneath it.

It is occaſion'd by ſharp Humours; a too great Plenitude of the Stomach; a Bit of any Thing ſtopp'd at its upper Orifice; or, in the general, by any Thing capable of irritating the Nerves of the *Diaphragma*.

The Remedy for the *Hiccough*, according to *Hippocrates*, is to fetch the Breath very long, or even to ſtop the Breath for ſome Time. A Sneezing happening upon a *Hiccough* generally cures it; the Diaphragm, ſhook by the violent Expiration, being apt to throw off what before irritated it.

The Word is form'd of the Flemiſh *Hick*, which ſignifies the ſame Thing. Others derive it *ab* hiſcendo; others, *a difficili Anhelitu*.

HIDAGE, or HYDAGE, was an extraordinary Tax; antiently payable to the King for every Hide of Land. See HIDE.

Sunt etiam quædam communes Præſtationes, quæ Servitia non dicuntur, nec de Conſuetudine veniunt, niſi cum neceſſitas intervenerit, vel cum Rex venerit; ſicut ſunt Hidagia, Coragia, & Carvagia, *& alia plura de neceſſitate & ex conſenſu communi totius regni introducta, & quæ ad dominum non pertinent*, &c. Bracton *Lib.* II. Cap. 6.

King *Æthelred*, in the Year of Chriſt 994, upon the Landing of the *Danes* at *Sandwich*, taxed all his Lands by *Hides*. Every 310 *Hides* of Land found one Ship furniſhed; and every 8 *Hides* found one *Jack*, and one Saddle for the Defence of the Realm.

Wilhelmus Conqueſtor *de unaquaque* Hida *per* Angliam *ſex ſolidos accepit. Floren. Wigorn. in* An. 1084.

The Word *Hidage* is alſo uſed for a being quit of that Tax; which was alſo call'd *Hyde-Gild*.

HIDE, the Skin of a Beaſt; particularly that of a Bullock or Cow. See SKIN and LEATHER.

We have *Hides* of divers Denominations, according to their State, Quality, &c.

Raw HIDE, or *Green* HIDE, is that which has not undergone any Preparation; being in the ſame Condition as when taken off the Carcaſe.

Salted HIDE, is a green *Hide*, ſeaſon'd with Sea-Salt and Alum, or Salt-Petre; to prevent its ſpoiling and corrupting, either by keeping it too long in Cellars, or in tranſporting it too far in a hot Seaſon.

There are alſo *Hides dried in the Hair*, ſent from *America*; particularly thoſe of Buffelo's, &c. See BUCANEER.

Tann'd HIDE, is a *Hide* either green, ſalted or dried, further dreſſed and prepared by the Tanner, by paring off the Hair, and ſteeping it in Pits of Lime and Tan. See TANNING.

Curried HIDE, is that which after tanning, has paſſed thro' the Curriers Hands, and has thus received its laſt Preparation, and is fitted for Uſe. See CURRYING.

HIDE, HYDE, or HYDA, in our antient Cuſtoms, was a Meaſure, or Quantity of Land, containing ſo much as could be yearly till'd with a ſingle Plough. See PLOUGH *Land*.

Beda calls the *Hide* of Land *Familia*, and defines it to be ſo much as was ſufficient for the ordinary Maintenance of one Family. See FAMILY.

In other Authors it is called *Manſum*, *Manens*, *Caſata*, *Carucata*, *Sullinga*, &c. See CARUCATA.

Crompton, in his *Juriſdict.* Fol. 222, ſays a *Hide* of Land, contains one hundred Acres: He adds, that eight *Hides* make a *Knight's Fee*. In an antient Manuſcript the *Hide* is fix'd at 120 Acres.

But Sir *Edward Coke* adds, that a Knight's Fee, a *Hide*, or Plough-Land, a Yard-Land, and an Oxgang of Land do not contain any certain, determinate Number of Acres. See KNIGHT's *Fee*, YARD *Land*, &c.

The Diſtribution of *England* into *Hides* of Land is very antient; there being mention made of it in the Laws of King *John*, Cap. 14. *Henricus* I. *Maritand, filiæ ſuæ gratia Imperatori, cepit ab unaquaque* Hida *Angliæ tres Sol.* Spelman.

HIDE-*Bound*, a Diſorder of a Horſe, or other Beaſt, wherein his Skin ſticks ſo tight to his Ribs and Back, as not to be looſen'd from it with the Hand.

The Diſorder is ſometimes owing to Poverty and bad keeping; at other Times to over Riding or a Surfeit, the Horſe being ſuffered when he is hot, to ſtand long in the wet; or to a morbid Dryneſs of the Blood, which not having its natural Courſe, cauſes the Skin to ſhrink up, and cleave to the Bones.

HIDE-*Bound*, among Husbandmen. — Trees are ſaid to be ſo when the Bark ſticks too cloſe. See BARK.

HIDEL, in our antient Statutes, ſignifies a Place of Protection, or a Sanctuary. See SANCTUARY.

HIDGILD, in the Laws of King *Canute*, is explained by *Pretium redemptionis aut manumiſſionis Servi*; from the *Saxon* hiðe, *i. e.* the Skin, and gild, *pretium*, i. e. the Price by which he redeemed his Skin from being whipp'd. See GILD.

Si liber feſtis dictis operetur, perdat libertatem; ſi ſervus, corium perdat, vel Hidgildum, *i. e.* let him be whipped, which was the Puniſhment for Servants. *Vel* Hidgildum, *i. e.* let him pay for his Skin; by which Payment he is to be excuſed from Whipping.

HIDROTICKS, or rather HYDROTICKS, in Medicine, are the ſame with *Sudorificks*. See SUDORIFICKS.

Carduus Benedictus, Zedoary, Gayac, Angelica, &c. are of the Number of *Hidroticks*, or *Hidrotic* Medicines.

The Word is compoſed of the *Greek*, ἱδρὼς, *Sweat*.

HIERACITES, HIERACITÆ, a Sect of antient Hereticks; denominated from their Leader *Hieracas*.

This *Hereſiarch* was by Nation an *Egyptian*; and, beſide his Mother-Tongue, was a Maſter of the *Greek*, and well ſeen in all the polite Parts of Learning. Being born a Chriſtian, he had been brought up to the Study of the Holy Scriptures, whereof he had a more than ordinary Acquaintance; ſo that he wrote Commentaries on ſome of them: But, by an ill Uſe of his Knowledge, he fell into divers Errors, in which his Intereſt and Authority among the Monks of *Egypt* procured him Abundance of Followers.

He abſolutely denied the Reſurrection of the Body; maintaining that the Soul alone roſe again; and that the Reſurrection was altogether ſpiritual. — *Epiphanius* ſurmiſes that he might have imbibed this Error from *Origen*.

The ſame *Hieracas*, and his Followers likewiſe condemn'd Marriage; being of Opinion that it was only allowed under the Old Teſtament, and till the Coming of Jeſus Chriſt; but that under the New Law, all Marriage was prohibited, as incompatible with the Kingdom of God.

S. *Epiphanius* produces the Paſſages of Scripture whereon he founded this Doctrine. He adds, that *Hieracas* did not give into *Origen*'s Error with Regard to the Myſtery of the Trinity, but allow'd the Son to be really and truly begotten of the Father: He was alſo Orthodox with reſpect to the Holy Ghoſt; excepting for ſome Peculiarities received from the *Melchiſedechians*, on which he had refined. He lived a very auſtere Life, and promoted the ſame among his Followers: But after his Death they degenerated a-pace.

HIERA PICRA, in Pharmacy, a Kind of Electuary, firſt deſcribed by *Galen*; compoſed of Aloes, Cinnamon, Mace, Aſarabacca, Spicanardi, Saffron, Maſtic and Honey.

It is uſed to purge and cleanſe the Stomach; remove Obſtructions, promote the Menſes and Hæmorrhoids, and ſweeten the Blood. Tho' its chief Uſe among us, is in making the *Tinctura ſacra*. See TINCTURA.

It is denominated from the *Greek*, ἱερὸς, *ſacer*, holy, by Reaſon of its rare Virtues; and πικρὸς, *amarus*, bitter; Aloes, which is the Baſe thereof, rendering it extremely bitter. See ALOES.

There is another *Hiera*, call'd *Hiera Diacolocynthidos Pachii*, by Reaſon *Colocynthis* is the Baſe thereof, and that it was firſt uſed with good Succeſs by *Pachius* of *Antioch*, in divers obſtinate Diſeaſes. — It is compoſed of *Colocynthis*, *Opoponax*, *Ariſtolochia rotunda*, *Agaric*, and other Ingredients.

It is uſed in Epilepſies, Apoplexies, Palſies, and Lethargies, to excite the Menſes, and promote the Expulſion of the After-birth.

There is alſo a third Sort of *Hiera*, call'd *Liberanus*; but rarely uſed. — Dr. *Quincy* ſays, 'tis one of the moſt ridiculous Medleys ever contrived. It paſſes for a Cordial, *&c.*

HIERARCHY, HIERARCHIA, in Theology, the Order, or Subordination, among the ſeveral Choirs, or Ranks of Angels. See ANGEL.

St. *Dionyſius*, and other of the antient Writers, eſtabliſh nine Choirs, or Orders of celeſtial Spirits, *viz.* Seraphim, Cherubim, Thrones, Dominions, Principalities, Powers, Virtues, Angels and Archangels: And theſe he divides into three *Hierarchies*. See SERAPH, CHERUB, *&c.*

The Word is *Greek*, form'd of ἱερὸς, *ſacer*, holy, and ἀρχὴ, *Principatus*, Principality, *q. d.* ἱερὰ ἀρχὴ, *ſacer Principatus*, holy Principality or Command; and Principality in holy Things.

HIERARCHY, is alſo uſed on Earth, for the Subordination between Prelates and other Eccleſiaſticks. See ECCLESIASTICAL *Polity*.

Archbiſhops, Biſhops, Prieſts, and Deacons, compoſe the *Hierarchy* of the Church of *England*. In that of *Rome*, the Pope has likewiſe a Place at the Head of the *Hierarchi*.

Fa. *Cellot*, a Jeſuit of *Paris*, has publiſhed a Volume expreſs, *de Hierarchia* and *Hierarchis*, L. IX, on the *Hierarchy*, and thoſe who compoſe it. He there diſtinguiſhes a created, and an increated *Hierarchy*; a divine, and a human or eccleſiaſtical *Hierarchy*; and in this, a *Hierarchy* of Juriſdiction, a *Hierarchy* of Order, and a *Hierarchy* of Graces the moſt ſublime of all. — He defines *Hierarchy*, in the general, a Principality, Command, or Superiority in holy Things: *Principatus*, or *Imperium in rebus Sacris*. He holds, that *Hierarchy* excludes all below Biſhops; and that neither Prieſts nor Deacons can be reckon'd among the Number of *Hierarchy*. *Bellarmin*, *Hallier*, *Aurelius*, &c. he holds, were all miſtaken, and did not diſtinguiſh between being of the *Hierarchy*, and being under it. According to him, to *be of*, or *in the Hierarchy*, are the ſame Thing; and are only applicable to thoſe who govern the Church, or have ſome Part in the Adminiſtration thereof: On the contrary, to be under the *Hierarchy*, is to be ruled or governed by the *Hierarchy*.

Cellot will not admit of any Difference between theſe three Expreſſions. To prove that they all denote the ſame Thing, he inſtances in the Caſe of Monarchy, alledg'd for the ſame Purpoſe by *P. Aurelius*: Urging, that in a Monarchy, all, even the Subjects are in the Monarchy, of the Monarchy, or under the Monarchy; and that none are excluded but Foreigners: And that the Caſe is the ſame in the *Hierarchy*.

HIERATIC *Paper*, among the Antients, was the fineſt Sort of Paper; which was ſet apart only for ſacred or religious Uſes. See PAPER.

HIEROGLYPHIC, a Symbol, or Myſtic Figure, uſed among the antient *Egyptians*, to cover, or conceal the Secrets of their Theology. See CHARACTER.

Hieroglyphicks are properly Emblems, or Signs of divine, ſacred, or ſupernatural Things; by which they are diſtinguiſhed from common *Symbols*, which are Signs of ſenſible and natural Things. See SYMBOL.

Hermes Triſmegiſtus, is commonly eſteemed the Inventor of *Hieroglyphicks*: He firſt introduced them into the Heathen Theology; from whence they have been tranſplanted into the *Jewiſh* and *Chriſtian*.

The Word is compoſed of the *Greek*, ἱερὸς, *ſacer*, holy, and γλύφειν, *ſculpere*, to engrave; it being the Cuſtom to have the Walls, Doors, *&c.* of their Temples, Obeliſks, *&c.* engraven with ſuch Figures.

Sacred Things, ſays *Hippocrates*, ſhould only be communicated to ſacred Perſons. — Hence it was, that the antient *Egyptians* communicated to none but their Kings and Prieſts, and thoſe who were to ſucceed to the Prieſthood and the Crown, the Secrets of Nature, and the Myſteries of their Morality and Hiſtory; and this, by a Kind of Cabbala, which at the ſame Time that it inſtructed them, only amuſed the reſt of the People. — Hence the Uſe of *Hieroglyphicks*, or myſtic Figures, to veil their Morality, Politicks, *&c.* from prophane Eyes. *Spon.* This Author, it may be obſerved, and many others, do not keep to the preciſe Character of a *Hieroglyphic*, but apply it to prophane as well as divine Things.

Hieroglyphicks are a Kind of real Characters, which do not only denote, but in ſome Meaſure expreſs the Things. — Thus, according to *Clemens Alexandrin.* Strom. 5. A Lion is the *Hieroglyphic* of Strength and Fortitude; a Bullock, of Agriculture; a Horſe, of Liberty; a Sphinx of Subtlety, *&c.* See HIEROGLYPHICAL.

HIEROGLYPHICAL, ſomething containing a *Hieroglyphic*. See HIEROGLYPHIC.

In *Egypt* are ſtill found divers Obeliſks, Figures, *&c.* full of *Hieroglyphical* Figures or Characters. See HIEROGRAMMATEI.

'From the inmoſt Receſſes of the Dome, ſays *Apuleius*, 'he brings forth certain Books wrote in myſtic, unintel-'ligible Characters; conſiſting partly of Figures of Ani-'mals, apparently ſuggeſting ſome compendious Sayings; 'and partly of Knots, and Flouriſhes; all abundantly 'ſecured from the too curious Eyes of profane Readers. 'The religious Rites of the *Egyptians*, are moſtly involved in ſuch Figures of Animals, which are hence called 'ἱερογλυφικὰ γράμματα, *Hieroglyphical Letters*.

HIEROGRAMMATEI, among the antient *Egyptians*, were the Prieſts appointed to explain the Myſteries of Religion, and to direct the Performance of the Ceremonies thereof.

The *Hierogrammatei* invented and wrote Hieroglyphicks, and Hieroglyphical Books, and occaſionally explain'd 'em, with other Matters relating to the Doctrines of Religion. If we may believe *Suidas*, they were alſo Prophets; at leaſt, he relates, that a *Hierogrammateus* foretold to an antient King of *Egypt*, that there would be an *Iſraelite* of great Wiſdom, Virtue and Renown, who ſhould humble *Egypt*.

The *Hierogrammatei* were always near the King, to aſſiſt him with their Informations and Councils: The better to fit them for this, they made uſe of the Skill and Knowledge they had acquired in the Stars, and the Motions of the heavenly Lights; and even of the Writings of their Predeceſſors, wherein their Functions and Duties were deliver'd. They were exempted from all civil Employments; were reputed the firſt Perſons in Dignity next the King; and bore a Kind of Scepter in form of a Plough-ſhare.

After *Egypt* became a Province of the *Roman* Empire, the *Hierogrammatei* ſunk into Neglect.

HIEROMNEMON, an Officer in the antient *Greek* Church; whoſe principal Function was, to ſtand behind the Patriarch at the Sacraments, Ceremonies, *&c.* and ſhew him the Prayers, Pſalms, *&c.* he was to rehearſe. — He alſo cloath'd the Patriarch in his pontifical Robes; and aſſign'd the Places of all thoſe who had a Right to be around him, when ſeated on his Throne; as the Maſter of the Ceremonies now does to the Pope.

The *Hieromnemon* was commonly a Deacon; when he was in Prieſt's Orders, as it ſometimes happen'd, he was excuſed from dreſſing the Pope in his pontifical Habits. Whether he were Deacon, or Prieſt, he had under him an Officer named *Caſtriſius*. He had alſo the keeping of the Book entituled *Contacion*, or Book of Ordination; and that call'd *Enthronianiſmus*, which was a Sort of Ritual.

The Word is compoſed of the *Greek*, ἱερὸς, *ſacred*, and μνήμων, one who adverтiſes, or puts in Mind of.

HIERONYMITES, or *Hermits of St. Jerom.* See JERONYMITES and HERMIT.

The Word is compounded of ἱερὸς, *holy*, and ονομα, *Name*.

HIEROPHANTES, or HIEROPHANTA, in Antiquity, a Prieſt among the *Athenians*. See PRIEST.

The *Hierophantes* was properly the Prieſt of the Goddeſs *Hecate:* At leaſt, the Title was only given to the Prieſts when they performed the Sacrifices of that Goddeſs, and in reſpect of her.

St. *Jerom* ſays, that the *Hierophantes* extinguiſhed the Fire of Luſt, by drinking *Cicuta*, or the Juice of Hemlock; or even by making themſelves Eunuchs. — *Appollodorus* obſerves, that it was the *Hierophanta* who inſtructed Perſons initiated into the Religion, in the Myſteries and Duties thereof; and that it was hence he derived his Name. For the ſame Reaſon he was alſo called *Prophetes*, Prophet. — He had Officers under him to do the ſame Thing, or to aſſiſt him therein, who were alſo called *Prophetes* and *Exegetes*, i. e. Explainers of divine Things.

To the *Hierophantes* it belonged to dreſs and adorn the Statues of the Gods, and to bear them in Proceſſions and Ceremonies.

The Word comes from ἱερὸς, *holy*, *ſacred*, and φαινω, *I appear*.

HIEROPHYLAX, an Officer in the *Greek* Church. — His Quality is that of Guardian, or Keeper of the holy Things, Utenſils, Veſtments, &c. anſwering to our *Sacriſtan*, or Sexton. See SACRISTAN.

The Word is compoſed of ἱερὸς, *ſacer*, and φύλαξ, *Keeper*, of φυλάτω, *I keep*.

HIEROSCOPY, HIEROSCOPIA, a Kind of Divination, perform'd by conſidering the Victim, and every Thing that occurs during the Courſe of the Sacrifice. See SACRIFICE and VICTIM.

The Word is form'd of ἱερὸς, *ſacer*, and σκοπέω, *I conſider*.

HIGH, *Altus*, a Term of Relation, applied to a Body, conſider'd according to its third Dimenſion, or its Elevation above the Horizon, or even above the Ground. See HEIGHT.

Thus, we ſay, the Pike of *Tenariff* is reputed the *higheſt* Mountain in the World. See MOUNTAIN.

The Monument is 202 Foot *high* from the Ground. See MONUMENT.

The Tower of St. *Paul's*, before its firſt burning down in 1086, was 520 Foot *high*; on this was a Pole of Copper, and on that a Croſs 15 Foot and a half high. — The Towers of *Notre Dame* at *Paris*, ſo much talk'd of, are 212 Foot *high*, &c. See ALTITUDE.

HIGH, is alſo uſed to denote a Perſon in Power, Dignity, &c. See TITLE and QUALITY.

Thus God is frequently called in Scripture the *moſt high*. So on Earth we ſay, *high* and puiſſant Lord, Prince, &c. — The States General of the United Provinces, are called their *High Mightineſſes*. See STATES, &c.

So in *England* we ſay, *High* Court of Parliament. See PARLIAMENT.

Lord *High* Chancellor, } See { CHANCELLOR.
Lord *High* Treaſurer, } See { TREASURER.

HIGH, in Muſic, is ſometimes uſed in the ſame Senſe with *loud*, in Oppoſition to *low:* And ſometimes in the ſame Senſe with *Acute*, in Oppoſition to *Grave*. See SOUND, ACUTENESS, GRAVITY, &c.

HIGH *Bearing-Cock*, is a Term uſed with Reſpect to Fighting Cocks; denoting one larger than the Cock he fights withal. — As a Low Bearing Cock is one overmatched for Height.

HIGH-*Dutch*, is the *German* Tongue in its greateſt Purity, &c. as ſpoken in *Miſnia*, &c. See LANGUAGE. See alſo GERMAN, DUTCH, &c.

HIGH *Operation*, in Chirurgery, is a Method of extracting the Stone; thus call'd, by Reaſon the Stone is taken out at the upper Part of the Bladder. See STONE.

For the Method of performing the *High* Operation. See LITHOTOMY.

The *High* Operation is ſaid to have been firſt practiſed by *Roſſy*, others ſay by *Franco* a Chirurgeon of *Lauſan*. It has been lately retriev'd by Mr. *Douglas*, and now practiſed with good Succeſs by Mr. *Cheſelden*, and others.

HIGH *Relievo*, See RELIEVO.

HIGH *Sea*, or *Ocean*, is that far from Land. See SEA and OCEAN.

HIGH *Water*, is that State of the Tides when they ceaſe to flow. See TIDES, FLUX, &c.

HIGHNESS, a Quality, or Title of Honour given to Princes. See TITLE and QUALITY.

The Kings of *England* and *Spain* had formerly no other Title but that of *Highneſs*; the firſt, till the Time of *James* I. and the ſecond, till that of *Charles* V. See MAJESTY.

The petty Princes of *Italy* began firſt to be complemented with the Title of *Highneſs* in the Year 1630. — The Duke of *Orleans* aſſumed the Title of *Royal Highneſs*, in the Year 1631, to diſtinguiſh himſelf from the other Princes of *France*.

The Duke of *Savoy*, now King of *Sardinia*, bore the Title of *Royal Highneſs*, on Account of his Pretenſions to the Kingdom of *Cyprus*. — 'Tis ſaid that Duke only took the Title of *Royal Highneſs*, to put himſelf above the Duke of *Florence*, who was called great Duke; but the great Duke has ſince aſſumed the Title of *Royal Highneſs*, to put himſelf on a Level with the Duke of *Savoy*.

The Prince of *Conde* firſt took the Title of *Moſt ſerene Highneſs*, leaving that of ſimple *Highneſs* to the natural Princes.

HIIS *Teſtibus*, q. d. *Theſe Witneſſes*; was a Phraſe antiently added in the end of a Deed that was written in the ſame Hand with the Deed; upon which the Witneſſes were called, the Deed read, and then their Names entred. See DEED and WITNESS.

This Clauſe of *Hiis teſtibus*, in Subjects Deeds, continued till, and in, the Reign of *Hen.* VIII. but is now wholly omitted. *Coke* on *Littleton*.

HILARIA, in Antiquity, Feaſts celebrated every Year, by the *Romans*, on the eighth of the Calends of *April*, in Honour of the Mother of the Gods. See FEAST.

The *Hilaria* were ſolemnized with great Pomp, and rejoycing. Every Perſon dreſs'd himſelf as he pleas'd, and took the Marks, or Badges, of whatever Dignity, or Quality, he had a Fancy for.

The *Romans* took this Feaſt originally from the *Greeks*; who call'd it ΑΝΑΒΑΣΙΣ, q. d. *Aſcenſus:* The Eve of that Day they ſpent in Tears and Lamentations, and thence denominated it ΚΑΤΑΒΑΣΙΣ, *Deſcenſus*.

Afterwards, the *Greeks* took the Name ΙΑΑΡΙΑ, from the *Romans*; as appears from *Photius*, in his Extract of the Life of the Philoſopher *Iſidore*.

Caſaubon maintains, that beſide this particular Signification, the Word *Hilaria* was alſo a general Name for all Solemn, or Feaſt Days, whether public or private and domeſtic. But *Salmaſius* does not allow of this.

Triſtan, T. I. *p.* 482. diſtinguiſhes between *Hilaria* and *Hilariæ*. The former, according to him, were public rejoycings; and the latter, Prayers made in Conſequence thereof; or even of any private Feaſt, or Rejoycing, as a Marriage, &c. The public laſted ſeveral Days; during which, all Mourning, and Funeral Ceremonies, were ſuſpended.

The *Hilaria*, were firſt inſtituted in Honour of the Mother of the Gods, as is obſerved by *Macrobius*, L. I. *C.* 10. and *Lampridius*, in his Life of *Alexander Severus*; being apparently intended to expreſs the Joy conceiv'd at the Birth of the Gods.

HILARODE, or HILARODUS, in the antient Muſic and Poetry, a Sort of Poet among the *Greeks*, who went about ſinging little gay diverting Poems, or Songs; tho' ſomewhat graver than the *Ionic* Pieces. See RHAPSODUS.

The *Hilarodes* appear'd dreſs'd in white, and were crown'd with Gold. At firſt they wore Shoes; but afterwards aſſumed the *Crepida*, which was only a Soal, tied over the Foot with Straps.

They did not ſing alone; but had always a little Boy, or Girl, to attend them, playing on ſome Inſtrument.

From the Streets, they were at length introduced into the Tragedy; as the Magodes were into Comedy. See MAGODES, TRAGEDY. &c.

The *Hilarodes* were afterwards call'd *Simodes*, from a Poet named *Simus*, who excell'd in this Kind of Poetry.

The Word is compounded of ἱλαρὸς, *joyful*, and ᾠδὴ, *Singing*, *Song*. See HILARODIA.

HILARODIA, a Poem, or Compoſition in Verſe, made, or ſung by a Sort of Rhapſodiſts call'd *Hilarodes*. See HILARODE.

Scaliger holds *Hilarodia*, *Hilaro-Tragedia*, *Phlyacography*, and the *Rhintonic* Fable, to be all Names for the ſame Thing. See HILARO-TRAGEDIA.

HILARO-TRAGEDIA, a dramatic Performance, partly tragic, or ſerious; and partly comic, or merry. See DRAMA.

Scaliger, *Poet.* L. I. *C.* 52. holds, the *Hilaro-Tragedia* and Hilarodia, to be one and the ſame Thing. Others, rather take the *Hilaro-Tragedia* to have been pretty nearly what we call a *Tragi-Comedy*. Others, again, will have it to have been a pure Tragedy, only terminating with a happy Cataſtrophe, which brings the Hero out of a wretched into a fortunate State. — But the firſt Opinion ſeems the moſt probable, and the beſt warranted. See TRAGEDY.

Suidas

Suidas mentions one *Rhinton*, as the Inventor of this Kind of Poem: Whence it was alſo called *Rhintonica fabula*.

HILARY *Term*. See TERM.

HILL. See MOUNTAIN.

HILLOCK. See MOUNT.

HIN, a *Hebrew* Meaſure, containing the ſixth Part of an Epha; or one Wine Gallon and two Pints. See MEASURE, EPHA, *&c.*

HIND, a Female Stag of the third Year. See HUNTING.

HIND *Calf*, a Hart of the firſt Year. See HUNTING.

HIND *Hand*, in the Manage. See HAND.

HINDENI *Homines*, antiently ſignified a Society of Men; from the *Saxon* hindene, *Societas*.

In the Time of our *Saxon* Anceſtors, all Men were ranked into three Claſſes; the *Loweſt*, the *Middle*, and the *Higheſt*; and were valued according to the Claſs they were in; that in Caſe an Injury were done by any one, Satisfaction might be made according to the Value, or Worth of the Man it was done to.

The *Loweſt* were thoſe who were worth ten Pounds, or two hundred Shillings; call'd *Viri ducentini*, or *Twyhindemen*, and their Wives *Twyhinda's*.

The *Middle* were valued at ſix hundred Shillings; and were called *Sixhindemen*, and their Wives *Sixhinda's*.

The *Higheſt* were valued at twelve hundred Shillings; and were called *Twelvehindimen*, and their Wives the *Twelvehinda's*. See TWIHINDI, and TWELVEHINDI.

HINE, or HIND, in the *Saxon* Language, ſignifies a Servant, or one of the Family: But it is now taken in a more reſtrictive Senſe, for a Servant at Husbandry; and the Maſter-*hine*, is he that overſees the reſt.

HINGES, in Building, thoſe neceſſary Irons, by Means whereof Doors, Lids, Folds of Tables, *&c.* make their Motion, whether of opening, ſhutting, or folding, *&c.* See DOOR, *&c.*

The Species of *Hinges* are many, *viz.* Bed, Box, Butts, Caſement; *Lancaſhire*, and ſmooth-filed; Caſting, Cheſt-black, *Lancaſhire*, ſmooth-filed, Coach, Deſk, Dovetails, Eſſes, Folding, Garnets, Dozen-ware-long, Dozen-ware-ſhort, Weighty-long, Weighty-ſhort, Lamb-heads, Port, Side-*Lancaſhire*, Side ſmooth filed, Side with riſing Joynts; *Lancaſhire*, and ſmooth filed, Side with Squares, Screw, Scuttle, Shutter; *Lancaſhire*, and ſmooth filed, Stall, Trunk of ſundry Sorts, Joynts; *Lancaſhire*, Dozen-ware with Hooks, Dozen-ware long, Dozen-ware ſhort, Weighty long, Weighty-ſhort.

HIP. See HAUNCH.

HIP-*Shot*, a Diſorder of a Horſe, when he has wrung or ſprained his Haunches, or Hips, ſo as to relax the Ligaments, that keep the Bone in its due Place.

The Signs are, that the Horſe will halt much, and go aſide long, trailing his Leg after him; and the *Hip* which is hurt will be lower than the other; the Fleſh falling away on the Side of his Buttock.

HIPS, in Building, are thoſe Pieces of Timber, placed at the Corners of a Roof. See ROOF.

The *Hips* are much longer than the Rafters, by Reaſon of their oblique Poſition, and are placed not with a right or ſquare Angle, but a very oblique one; and by Conſequence are not, at leaſt ought to be, ſquare at any Angle, as Rafters are not at all, but Level at every one of 'em; and which is yet more, as Rafters have but four Plains, theſe commonly have five. See RAFTER.

They are commonly, by Country Workmen, called Corners: Some call them *principal Rafters*, and others *Sleepers*. Indeed, *Hips* and *Sleepers* are much the ſame; only the *Sleepers* lie in the Vallies, and joyn at Top with the *Hips*; but thoſe Surfaces or Plains, which make the Back of the *Hip*, are the under Sides of the Sleeper.

The *Backs of a Hip*, are thoſe two Superficies, or Plains, on the outſide of the *Hip*, which lie parallel, both in Reſpect of their Length and Breadth, with the Superficies of the adjoyning Side, and End of the Roof.

HIP-*Mould*, is by ſome uſed for the back of the *Hip*. — Others underſtand it of a Prototype, or Pattern, commonly made of a Piece of thin Wainſcot; by which the Back, and the Sides of the *Hip* are ſet out.

HIP-*Roof*, among Builders, called alſo *Italian* Roof; is a Roof which has neither Gable Head, nor Shread Head, or Jerkin Head; which laſt, are both Gable and *Hip* at the ſame End. See ROOF.

A *Hip-Roof* has Rafters as long, and with the Angles at the Foot, *&c.* at the Ends of Building, as it has at the Sides; and the Feet of the Rafters on the Ends of ſuch Buildings as have *Hip-Roofs*, ſtand on the ſame Plane, *viz.* parallel with the Horizon, and at the ſame Height from the Foundation, with Rafters on the Sides of the Roof.

HIP-*Tyles*. See TYLE.

HIPPEUS, or EQUINUS, in Phyſiology, a Sort of Comet which ſome Writers ſuppoſe to bear a Reſemblance to a Horſe.

But the Shape of this Kind of Comet is not always alike; being ſometimes oval, and ſometimes imitating a Rhomboides. — So its Train is ſometimes ſpread from the Front, or Fore-part, and ſometimes from the hind Part.

Hence, this Claſs of Comets is diſtinguiſhed into *Equinus Barbatus*, *Equinus Quadrangularis*, and *Equinus Ellipticus*. See COMET.

HIPPIATRICE, the Art of curing the Diſeaſes of Brutes, and particularly *Horſes*.

This we rather call the *Farrier*'s Art. See FARRIER.

The Word is compoſed of ἵππος, *Horſe*, and ἰατρὸς, *Phyſician*.

HIPPOCENTAUR, in Antiquity, a fabulous Monſter, ſuppoſed to be half Horſe, and half Man.

What gave Occaſion to the Fable, was, a People of *Theſſaly*, inhabiting near Mount *Pelion*, who became thus denominated, by reaſon they were the firſt that taught the Art of Mounting on Horſeback; which occaſion'd ſome of their Neighbours to imagine that the Horſe and Man made but one Animal. See HORSEMANSHIP.

The *Hippocentaurs* differ'd from the Centaurs, in this, that the latter only rode Bullocks, and the former Horſes, as the Names themſelves intimate. See CENTAUR.

Pliny affirms, he had ſeen a real *Hippocentaur* at *Rome*. — On the Medals of *Gallian*, is repreſented a Centaur drawing a Bow, or holding a Globe in the right Hand, and the Helm of a Ship in the left; with this Inſcription, APOLLINI CONS. AUG. *To Apollo the Conſervator of Auguſtus*. — *Triſtan* conſiders both the one and the other, as a Symbol of the Protection *Gallian* had received from *Apollo* in his Wars againſt the *Perſians*.

The Word is pure *Greek*, form'd of ἵππος, *Equus*, Horſe, and κεντέω, *pungo*, I prick, ſpur, and ταῦρος, *Taurus*, Bull.

HIPPOCRAS, or HYPOCRAS. See HYPOCRAS.

HIPPOCRATES'S *Sleeve*, *Manica Hippocratis*, a Kind of Filter, or ſtraining Bag, form'd by joyning the oppoſite Angles of a ſquare Piece of Flannel, in Form of a Pyramid; and uſed to percolate, or ſtrain Syrups, Decoctions, *&c.* for Clarification. See FILTRE, FILTRATION, *&c.*

HIPPOCRATICA *Facies*, See FACIES *Hippocratica*.

HIPPODROME, HIPPODROMUS, in Antiquity, a Liſt, or Courſe, wherein their Horſe Races were perform'd; as alſo their Horſes exerciſed.

The Word is *Greek*, compoſed of ἵππος, *Equus*, Horſe, and δρόμος, *Curſus*, of the Verb δίδρομαω, *curro*, I run.

HIPPOLAPATHUM, in Natural Hiſtory, a Species of Lapathum, call'd alſo *Monk's Rhubarb*. See RHUBARB.

HIPPOMANES, a Sort of Poiſon, famous among the Antients as an Ingredient in amorous Philters, or Charms. See POISON, PHILTER, and CHARM.

Naturaliſts are not agreed about the Nature of the *Hippomanes*. — *Pliny* deſcribes it as a blackiſh Caruncle, found on the Head of a new born Colt; which the Dam bites off, and eats, aſſoon as ſhe is delivered. He adds, that if ſhe be prevented herein by any others cutting it off before, ſhe will not take to, nor bring up, the young.

Servius and *Columella* deſcribe it as a poiſonous Matter, trickling from the *Pudendum* of a Mare, when proud, or longing for the Horſe.

At the End of Monſ. *Bayle*'s Dictionary, is a very learned Diſſertation on the *Hippomanes*; and all its Virtues both real and pretended.

The Word is *Greek*, ἱππομανὲς, compounded of ἵππος, *Equus*, Horſe, and μανια, *Furor*, Fury, Madneſs.

HIPPOPODES, or HIPPOPEDES, in the antient Geography, an Appellation given to certain People, ſituate on the Banks of the *Scythian* Sea; as being ſuppoſed to have Horſe's Feet.

The *Hippopedes* are mention'd by *Dionyſius*, Geogr. *v.* 310. *Mela*, L. III. *C.* 6. *Pliny*, L. IV. *C.* 3. And St. *Auguſtin*, de Civit. *L.* XVI. C. 8. But the Truth is, they had this Appellation given them on Occaſion of their Swiftneſs, or Lightneſs of Foot.

The Word is compoſed of ἵππος, *Horſe*, and πὸς, *Pes*, Foot.

HIPPUS, in Medicine, an Affection of the Eyes, wherein they continually ſhake and tremble; and thus repreſent Objects as if continually fluctuating. See EYE.

It is thus called from the *Greek*, ἵππος, *Horſe*; in regard the Objects appear to ſhift as much as when we are riding. *Blanchard*.

HIRCUS, in Anatomy, a Part of the Auricle, or outer Ear. See EAR.

The *Hircus* is that Eminence next the Temples. See AURICLE.

The Word is *Latin*, and ſignifies Goat.

HIRCUS, in Aſtronomy, a fixed Star; the ſame with *Capella*. See CAPELLA.

HIRCUS,

HIRCUS, is alſo uſed by ſome Writers for a Comet, encompaſſed as it were with a Main, ſeemingly rough and hairy. See COMET.

HISSING, an Appellation given by Grammarians to the three Conſonants, S, X, and Z. See CONSONANT. See alſo S, X, and Z.

HISTERIC, See HYSTERIC.

HISTIODROMIA, or HYSTIODROMIA, the Art of Sailing, or of conducting Veſſels on the Sea. See SAILING.

Hiſtiodromia is the ſame with what we otherwiſe call *Navigation*. See NAVIGATION.

Hiſtiodromia turns on four Points, any two whereof being given, the other two are eaſily found from 'em by the Loxodromic Tables, Sines, Tangents, Secants, Mertor's Chart, *&c.*

Theſe four Things are, the Difference of Latitude, Difference of Longitude, the Courſe, and the Diſtance run. See LONGITUDE, LATITUDE, RHUMB and DISTANCE.

The Word is *Greek*, compoſed of ἱστίον, a *Sail*, of ἱστός, the *Maſt* of a Ship, which comes from ἵστημι, *ſto*, I ſtand; and δρόμος, *Courſe*, of δρέμω, *I run*.

HISTORICAL, ſomething that relates to Hiſtory. See HISTORY.

Thus, we ſay, *Hiſtorical Truth*, *Hiſtorical Style*, &c. The Donation of *Conſtantin*, the Reality of a Pope *Joan*, &c. are *Hiſtorical* Points, very much controverted.

Henry Stevens has publiſhed a *Hiſtorical* and Poetical Dictionary; ſince improved and augmented by *Morery*. Mr. *Bayle* has given us an *Hiſtorical* and Critical Dictionary: *Diodorus Siculus*, *Vignier*, and Biſhop *Nicholſon*, *Hiſtorical* Libraries.

The *Hiſtorical* Art conſiſts chiefly in the arranging and diſpoſing of the various Incidents, ſo as to conſtitute one uniform, well connected whole. Fa. *Daniel*.

The principal Qualities of the *Hiſtorical* Style, are Perſpicuity and Brevity. See STYLE.

HISTORICAL *Column*, is that whoſe Shaft is adorned with Baſſo-Relievo's carved all around from Bottom to Top, repreſenting the Hiſtory and Actions of ſome illuſtrious Perſon. See COLUMN.

In *Hiſtorical Columns*, the Figures may be either diſpoſed in a ſpiral Line, continued from one End to the other; as in the *Trajan* Column at *Rome*: Or in diſtinct Bands, or Circles, containing ſo many different Subjects.

HISTORIOGRAPHER, a profeſs'd Hiſtorian, or Writer of Hiſtory; or a Perſon who applies himſelf peculiarly thereto. See HISTORY.

The Term is chiefly uſed for a Perſon who has a peculiar Charge and Commiſſion to write the Hiſtory of his Time. — The *Hiſtoriographer* to his Majeſty is an Officer under the Lord Chamberlain: His Salary 200 *l. per Ann.*

The Word is compoſed of the *Greek*, ἱστορία, *Hiſtory*, and γράφω, *ſcribo*, I write.

HISTORY, a Recital, or Deſcription of Things as they are, or have been; in a continued, orderly Narration of the principal Facts and Circumſtances thereof. See ANNALS.

The Word is *Greek*, ἱστορία, *Hiſtoria*, and literally denotes a *Search of curious Things*, or a *Deſire of knowing*, or even a *Rehearſal of Things we have ſeen*; being form'd of the Verb ἱστορεῖν, which properly ſignifies to *know a Thing by having ſeen it*. Tho' the Idea affected to the Term *Hiſtory*, is now much more extenſive; and we apply it to a *Narration of divers memorable Things*, even tho' the Relator only takes them from the Report of others.

The Origin of the Word is from the Verb ἵστημι, *I know*; and hence it is, that among the Antients ſeveral of their great Men were call'd *Polyhiſtores*, q. d. Perſons of various, and general Knowledge. See POLYHISTORES.

Hiſtory is divided, with Regard to its Subject, into the *Hiſtory of Nature*, and the *Hiſtory of Actions*.

HISTORY *of Nature*, or *Natural* HISTORY, is a Deſcription of natural Bodies; whether terreſtrial, as Animals, Vegetables, Foſſils, Fire, Water, Air, Meteors, *&c.* or Celeſtial, as the Stars, Planets, Comets, *&c.* See NATURE, *&c.*

Such are *Ariſtotle*'s, *Diaſcorides*'s, *Aldrovandus*'s, &c. *Hiſtories*: Such alſo are *Ray*'s and *Geſners* Hiſtory of Quadrupeds; *Willoughby*'s *Hiſtories* of Birds, Fiſhes, *&c.* Such, laſtly, are Mr. *Flamſteed*'s Hiſtoria *celeſtis*, or *Hiſtory* of the heavenly Bodies.

Natural Hiſtory is the ſame with what we otherwiſe call *Phyſiology*. See PHYSIOLOGY.

HISTORY, with Regard to Actions, is a continued Relation of a Series of memorable Events, in the Affairs, either of a ſingle Perſon, a Nation, or ſeveral Perſons and Nations; and whether included in a great, or a little Space of Time.

Thus, *Thucydides* has wrote the *Hiſtory* of *Greece*; *Livy* of *Rome*; *Mezeray*, and Fa. *Daniel*, of *France*; *Tyrrel*, and *Echard*, the *Hiſtory* of *England*; *Buchanan* of *Scotland*; *Clarendon*, the *Hiſtory* of the Rebellion; *Thuanus*, Biſhop *Burnet*, &c. the *Hiſtory* of their own Lives and Times.

Euſebius, *Baronius*, &c. have wrote the *Hiſtory* of the Church; Biſhop *Burnet* that of the Reformation, *&c.*

Several Authors have wrote on the Method of Reading, and Studying *Hiſtory*; and, among the reſt *Lucian*, *Bodinus*, *Voſſius* the elder, *Whear*, *Patrici*, *Beni*, *Maſcardi*, *de Silhon*, F. *le Moine*, Fa. *Rapin*, the Abbot *de St. Real*, Fa. *Thomaſſin*, &c.

Hiſtory is divided into *Antient* and *Modern*, *Univerſal* and *Particular*, *Sacred* and *Profane*.

Fa. *Meneſtrier* gives us the proper Characters of the divers Kinds of *Hiſtory*, with great Accuracy. — He diſtinguiſhes *Hiſtory*, with Regard both to its Matter, and its Form; and gives curious Inſtances of each particular.

Hiſtory, with Regard to its Matter, is either Sacred, or Natural, or Civil, or Perſonal, or Singular.

Sacred HISTORY, is that which lays before us the Myſteries and Ceremonies of Religion, Viſions or Appearances of the Deity, *&c.* Miracles, and other ſupernatural Things, whereof God alone is the Author. — Such are the Book of *Geneſis*, the Goſpels, Apocalypſe, *&c.* See MIRACLE, GOSPEL, REVELATION.

Natural HISTORY, is a Deſcription of the Singularities of Nature; its Irregularities and Prodigies; and the Alterations it undergoes in the Birth, Progreſs, End, and Uſe of Things. — Such is *Ariſtotle*'s *Hiſtory* of Animals; *Theophraſtus*'s *Hiſtory* of Plants; and the entire Body of *Natural Hiſtory*, by *Pliny*: Such alſo are *Acoſta*'s Natural *Hiſtory* of the *Indies*; Plott's *Hiſtory* of *Staffordſhire*, &c.

Civil HISTORY, is that of People, States, Republicks, Communities, Cities, *&c.* — Such are thoſe of *Thucydides*, *Halicarnaſſæus*, *Livy*, *Polybius*, *Mezeray*, Fa. *Daniel*, *Milton*, *Buchanan*, &c.

Perſonal HISTORY, is that which gives the Portrait, or Life of ſome ſingle Perſon. — Such are the Lives of *Plutarch*, *Corn. Nepos*, *Suetonius*, &c. The Lives of the Painters, Poets, Philoſophers, Saints, *&c.*

Perſonal Hiſtory, is the ſame with what we otherwiſe call *Biography*. See BIOGRAPHY.

Singular HISTORY, is that which deſcribes a ſingle Action, Siege, Battel, or even War, Expedition, *&c.*

Hiſtory, with Regard to its Form, is either *ſimple*, or *figurate*, or *mix'd*.

Simple Hiſtory, is that deliver'd without any Art or foreign Ornament; being only a naked, and faithful Recital of Things, juſt in the Manner, and Order wherein they paſs'd. — Such are the Chronicles of the *Eaſtern* Empire; the Faſti; Chronological Tables, Journals, *&c.* See FASTI.

Figurate Hiſtory, is that which is further enrich'd with Ornaments, by the Wit, Ingenuity, and Addreſs of the Hiſtorian. — Such are the Political, and Moral *Hiſtories* of the *Greeks*, *Romans*, and moſt of the Moderns.

This latter is a Kind of rational *Hiſtory*; which, without ſtopping at the Shell or Outſide, the Appearances of Things, diſcovers the Springs and Movements of the ſeveral Events; enters into the Thoughts, the Breaſts of the Perſons concern'd therein; diſcovers their Intentions and Views; and by the Reſult of enterprizing Undertakings, diſcovers the Prudence or Weakneſs, wherewith they were laid, conducted, *&c.*

Theſe are much the moſt uſeful, and entertaining *Hiſtories*. — To this Claſs, may be peculiarly referr'd the *Hiſtories* and Annals of *Tacitus*, among the Antients; and thoſe of *Guiccardin*, *Petavius*, and Biſhop *Burnet* among the Moderns.

Mix'd Hiſtory, is that which, beſide the Ornaments of figured *Hiſtory*, calls in the Proofs and Authorities of ſimple *Hiſtory*; furniſhing authentic Memoirs, or original Letters, Manifeſto's, Declarations, *&c.* to vouch the Truth of what is ſaid. — Such are the *Hiſtories*, or Collections of *Ruſhworth*; Monſ. *Rapin Thoyras*'s *Hiſtory* of *England*; the Genealogical *Hiſtories* of *Ducheſne*; Monſ. *de Marca*'s *Hiſtory* of *Bearn*, &c.

HISTORY, is alſo uſed for a Romance; or a fabulous, but probable Relation, of a Series of Actions or Adventures feign'd or invented by the Writer. — Such is the *Hiſtory* of the Civil Wars of *Granada*; the *Hiſtory* of *Don Quixot*; the Ethiopic *Hiſtory* of *Heliodorus*, &c. See ROMANCE.

HISTORY, in Painting, is a Picture compoſed of divers Figures, or Perſons, repreſenting ſome Tranſaction, or Piece of *Hiſtory*, either real or feign'd. See PAINTING.

Painters are diſtinguiſh'd into Portrait Painters, Flower and Fruit Painters, Painters of Beaſts and Land-ſkips, and *Hiſtory* Painters. — The firſt Place is univerſally allow'd to *Hiſtory* Painters, as the moſt difficult, maſterly, and ſublime Province. See ORDONNANCE.

HISTRIO, in the antient Comedy, was a *Buffoon*, or Droll, who acted ſome humorous Part to excite Laughter and Merriment. See COMEDY.

HOAR-*Froſt*, *Pruina*. See FROST and PRUINA.

HOARSENESS, *Raucedo*, a Diminution of the Voice. See VOICE.

The Part here affected is the Aſpera Arteria, and particularly its Head or the Larynx. See ASPERA and LARYNX.

The next Cauſe of *Hoarſeneſs* is a too plenteous Effuſion of thin Lympha upon the Part.

Hoarſeneſs is a Sort of Catarrhal Indiſpoſition, ariſing from a too great Acrimony or Saltneſs of the Lymph. See CATARRH.

Sperma Ceti, Decoct. Rapar. & Rob. Paſſular, are approv'd Remedies herein. --- Where the Diſorder is inveterate, Incidents and Expectorants are frequently of Service.

HOBBLERS, in our ancient Cuſtoms, were Men, who, by their Tenure, were oblig'd to maintain a little light Nag, or Hobby, for the certifying any Invaſion toward the Sea Side.

The Name was alſo uſed for certain *Iriſh* Knights, who uſed to ſerve as light Horſemen upon *Hobbies*.

HOBBY, a Sort of Hawk that preys upon ſmall Game, as Doves, Larks, &c. See HAWK.

HOBITS, a Sort of ſmall Mortars, uſed for annoying the Enemy at a Diſtance with ſmall Bombs. See MORTAR and BOMB.

HOC-*Tueſday Money*, or HOKE-*Day Money*, a Tribute anciently paid the Landlord, for giving his Tenants and Bondmen Leave to celebrate *Hock-day*, or *Hoke-day*; in Memory of the Expulſion of the domineering *Danes*. See HOKE *Day*.

HOD, a Sort of Tray for carrying Mortar, in uſe among Bricklayers.

HODEGOS, a Term purely *Greek*, ſignifying *Guide*.

The Word is chiefly uſed as the Title of a Book compos'd by *Anaſtaſius* the *Sinaite*, toward the Cloſe of the Vth Century; being a Method of diſputing againſt the Hereticks, particularly the Acephali.

Mr. *Toland* has alſo publiſh'd a Diſſertation under the ſame Title. Its Subject is the Pillar of Fire, &c. which went before the *Iſraelites*, as a Guide in the Deſart.

HODGE-*podge*, or HOTCH-*potch*, a Diſh of Meat cut to Pieces, and ſtrew'd with ſeveral Sorts of Things together.

HODGE-*podge*, or HOTCH-*pot*, in Law, is the putting together of Lands, of ſeveral Tenures, for the more equal dividing of them. See HOTCH-*pot*.

HODMAN, a young Scholar admitted from *Weſtminſter* School to be Student in *Chriſt's Church* College in *Oxford*. See SCHOOL.

HOE, or HOW, a Husband-man's Tool, made like a Cooper's Adz, to cut up Weeds in Gardens, Fields, &c.

This Inſtrument is of great Uſe, and ſhould be more employ'd than it is, in hacking and clearing the ſeveral Corners, Creeks, and Patches of Land, in ſpare Times of the Year, which would be no ſmall Advantage thereto.

HOG-*ſteer*, among Hunters, a wild Boar of three Years old. See HUNTING.

HOGGET, or HOGREL, is a young Sheep of the ſecond Year.

HOGINHINE, or rather AGENHINE, *q. d. ſervus proprius*, or *third Night own Servant*; is he that comes Gueſtwiſe to an Inn or Houſe, and lies there the third Night: After this he was accounted of that Family; and if he offended the King's Peace, his Hoſt was anſwerable for him. See THIRD *Night awn Hine*.

HOGOE, properly, HAUT-GOUT, a Meſs in Cookery, denominated from its high Savour or Reliſh.

Its Preparations, Ingredients, &c. are various. --- Its Baſis is uſually ſome Meat, *e. gr.* Leg of Mutton, minc'd with Suet and ſavoury Herbs, as Shalot, Thyme, Spinage, &c. added thereto, with ſeaſoning of Salt and Pepper, and Yolks of Eggs: The whole work'd up into a Ball, and thus boil'd; frequently, in the Body of a Cabbage, firſt faſhion'd like a Duck, or other Fowl, with a Head ſtuck on. --- It remains to be ſerv'd up with a proper Sauce, as Butter, Yolks of Eggs, Anchovies, &c.

HOGSHEAD, a Meaſure, or Veſſel of Wine, or Oil; containing the fourth Part of a Tun; or 63 Gallons. See MEASURE, TUN, GALLON, &c.

Two of theſe *Hogſheads* make a Pipe or But. See PIPE.

The Diſtillers weigh their Veſſels when full, and for a *Hogſhead* allow 4 hundred Weight, 2 Quarters, and 22 Pound, Cask and Liquor.

HOKE-*day*, or HOCK-*day*, or HOCK-*Tueſday*, in our ancient Cuſtoms, *Dies Martis quem quindenam Paſchæ vocant*; the ſecond *Tueſday* after *Eaſter* Week.

This Day was very remarkable in former Times, inſomuch as to be uſed on the ſame Footing with *Michaelmas*, for a general Term or Time of Account. --- We find Leaſes without Date reſerving ſo much Rent payable *ad duos Anni terminos, ſcil. ad le* Hoke-day, & *ad Feſtum Sancti Mich.* See HOCK-*Tueſday Money*.

In Accounts of *Magdalen* College in *Oxford*, there is yearly an Allowance, *pro mulieribus Hockantibus*, of ſome Manors of theirs in *Hampſhire*; where the Men *hock* the Women on *Mondays*, & *contra* on *Tueſdays*. --- The Meaning of it is, that on that Day the Women in Merriment ſtop the Ways with Ropes, and pull Paſſengers to them, deſiring ſomething to be laid out in pious Uſes.

HOLD *of a Ship*, the loweſt Part of the Ship; including all that Part lying between the Keelſon, and the lower Deck. See SHIP, &c.

In the *Hold* are the Steward's Room, the Powder Room, the Bread Room, and the Boatſwain's Room; divided from each other by Bulk-Heads.

The *Hold* is the Store Room in a Merchant Ship, or the Place wherein the Goods, at leaſt all the heavier and more cumberſome, are ſtow'd. The reſt are diſpos'd between the two Decks; at leaſt in *Dutch* Ships, which have their *Holds* very ſhallow, and the Space between the Decks, high.

To find the Burthen of a Ship, the *Hold* is to be meaſur'd. See BURTHEN.

HOLD-*faſt*, an Iron Hook in Shape of the Letter S, fix'd in a Wall to retain and ſupport it.

HOLLAND, in the Commerce of Linnen, a fine, white, even, cloſe kind of Linnen Cloth, chiefly uſed for Shirts, Sheets, &c. See LINNEN.

It is wrought in the Provinces of *Holland*, *Frizeland*, and other Parts of the United Provinces; whence the Appellation.

The principal Mart or Staple of this Cloth is at *Haerlem*, whither it is ſent from moſt other Parts as ſoon as wove, there to be whiten'd the enſuing Spring.

That manufactur'd in *Frizeland* is the moſt eſteem'd, and call'd *Frize Holland*. It is the ſtrongeſt, and the beſt colour'd of any of that Fineneſs. --- It is never callender'd, nor thicken'd with Pap, as the reſt; but is imported juſt as it comes from the Whitſter. --- It is diſtinguiſh'd by its being Yard, Quarter, and half wide; which is half a Quarter more than thoſe commonly call'd *Frize Hollands*, which are not right.

Gulix Holland is very white and fine, and is chiefly uſed for Shirts; being the ſtrongeſt of any for its Fineneſs, except true *Frize*. 'Tis juſt Yard wide.

Alcamore Holland, is a very ſtrong Cloth, and wears exceeding well. 'Tis about Yard, Quarter, and half wide.

HOLLOW, in Architecture, a Concave Moulding, about a Quadrant of a Circle; by ſome call'd *Caſement*, by others an *Abacus*. See CASEMENT, &c.

HOLLOW *Square*, is a Body of Foot drawn up with an empty Space in the Middle, for the Colours, Drums, and Baggage; facing, and cover'd by the Pikes every Way to oppoſe the Horſe. See SQUARE.

HOLLOW *Tower*, in Fortification, is a Rounding made of the Remainder of two Briſures, to join the Curtain to the Orillon; where the ſmall Shot are play'd, that they may not be ſo much expos'd to the View of the Enemy. See TOWER, &c.

HOLM, HULMUS, ſignifies as much as *Inſula amnica*, a River-Iſland, according to *Bede*; or plain graſſy Ground upon the Water-ſides, or in the Water, according to *Cambden* ---*Cum duobus* Holmis *in Campis de Wedonc.* Mon.

Hence, where any Place is call'd by that Name, or where this Syllable is join'd with any other in the Names of Places, it ſignifies a Place ſurrounded with Waters. --- As the *Flatholmes*, the *Stepholmes*, near *Briſtol*. --- If the Situation of the Place be not near the Water, it may ſignify a hilly Place; for *Holm* in *Saxon*, is in *Engliſh* an Hill, or Cliff.

HOLOCAUST, a kind of Sacrifice, wherein the whole Offering is burnt or conſum'd by Fire; call'd alſo in the Scripture, *Burnt-offering*. See SACRIFICE and OFFERING.

The Word is *Greek*, ὁλόκαυστον, ὁλοκάυτωμα, compounded of ὁλος, *totus*, whole; and καίω, *Uro*, *Igne Abſumo*, I conſume with Fire.

HOLOGRAPH, in the Civil Law, ſomething written wholly in the Hand-writing of the Perſon who ſigns it.

The Word is chiefly uſed in ſpeaking of a Teſtament, written wholly in the Teſtator's own Hand. See TESTAMENT.

The *Romans* did not approve of *Holographic* Teſtaments; and tho' *Valentinian* authoriz'd them by a Novel, they are not uſed where the Civil Law is in full Force.

The Word is *Greek*, compos'd of ὅλος, all, and γράφω, I write.

HOLOMETER, a Mathematical Inſtrument, ſerving univerſally for the taking of all Sorts of Meaſures, both on the Earth, and in the Heavens.

The *Holometer* is the ſame with *Pantometer*. See PANTOMETER.

The Word is *Greek*, compos'd of ὅλος, and μετρέω, I meaſure.

HOLSOM. --A Ship is ſaid to be *holſom* at Sea, when ſhe will hull, try, and ride well without rolling or labouring.

HOLYNESS, or HOLINESS, *Sanctity*; the Quality which conſtitutes or denominates a Perſon or Thing *holy*; *i. e.* free or exempt of Sin. See SIN.

HOLYNESS is alſo us'd in reſpect of Perſons and Things that are *ſacred*, *i. e.* ſet apart to the Service of God, and the Uſes of Religion. See SACRED and SAINT.

In this Senſe we ſay *holy* Days, *holy* Ordinances, the *holy* Bible, *holy* Goſpels, *holy* War, *&c.* --- The *Roman* Catholicks call the Inquiſition the *holy* Tribunal; the See of *Rome*, the *holy* See, *&c.* See INQUISITION, *&c.*

Holy Oil, *holy* Water, *&c.* See OIL, WATER, *&c.*

Paleſtine is particularly call'd the *holy* Land, and *Jeruſalem* the *holy* City. --- Princes formerly made a Practice of going to ſignalize their Religion in the *holy* Land; who, if they had had any Religion, would have ſtaid at Home. See CROISADE.

In the *Romiſh* Countries, one Third of the Year is taken up in *holy* Days, Saints Days, *&c.* In *Scotland*, they obſerve no ſtated *holy* Days, beſide *Sundays*.

Holy Week, is the laſt Week of Lent, call'd alſo *Paſſion Week*. See LENT and PASSION.

Holy Thurſday, is what we otherwiſe call *Maunday Thurſday*. See MAUNDAY.

Holy Year is ſometimes us'd for the Year of Jubilee. See JUBILEE.

In the *Jewiſh* Tabernacle, and afterwards in the Temple, were two Places; the one call'd the *Holy*, *Sanctorum*; and the other, which was more retir'd, the *Holy of Holies*, *Sanctum Sanctorum*, or the Sanctuary. See SANCTUARY.

The *Holy* was ſeparated from the *Holy of Holies* by a Veil.--- In this latter Place was the Ark of the Covenant kept. See ARK.

HOLYNESS is alſo a Title or Quality attributed to the Pope; as that of Majeſty is to Kings. See TITLE, QUALITY, *&c.*

Even Kings writing to the Pope, addreſs him under the venerable Appellation of your *Holyneſs*, or *Holy* Father; in *Latin Sanctiſſime*, or *Beatiſſime Pater*. See POPE.

Anciently the ſame Title, *Holyneſs*, was given to all Biſhops; as appears in St. *Auguſtin*, *Fortunatus*, *Nicholas* I. *Caſſiodore*, &c. --- St. *Gregory* compliments ſome of his cotemporary Biſhops with *Your Beatitude*, *Your Holyneſs*.

The *Greek* Emperors of *Conſtantinople* were alſo addreſs'd under the Title of *Holyneſs*, in regard of their being anointed with *holy* Oil at their Coronations. --- *Du Cange* adds, that ſome of the Kings of *England* have had the ſame Title; and that the Orientals have frequently refus'd it to the Pope.

Order of the HOLY *Ghoſt*, is a military Order in *France*, the principal, in Point of Dignity, in that Kingdom. See ORDER and KNIGHT.

It was inſtituted by King *Henry* III. in 1569, in Memory of three great Events happening on the ſame Day, *viz.* his Birth, Acceſſion to the Crown of *France*, and Election to that of *Poland*; and is to conſiſt of 100 Knights only; who, to be admitted, are to make Proof of their Nobility for three Deſcents.

The King is the Grand Maſter or Sovereign, and takes the Oath as ſuch on his Coronation Day; whereby he ſolemnly vows to maintain for ever the Order of the *Holy Ghoſt*, without ever ſuffering it to ſhrink, fall, or diminiſh, ſo long as it is in his Power to hinder it; and never to attempt to alter or diſpenſe with any of the irrevocable Statutes of the Order.

The Knights are all to wear a Gold Croſs, hung about the Neck by a blue Silk Ribbon or Collar; and the Officers and Commanders are alſo to wear a Croſs ſewed on the left Side of their Cloaks, Robes, and other upper Garment.

Before they receive the Order of the *Holy Ghoſt*, that of St. *Michael* is conferr'd, as a neceſſary Degree; for which Reaſon their Arms are ſurounded with a double Collar.

Croſs of the HOLY *Ghoſt*, in Heraldry. --- A *Croſs of the Holy Ghoſt* conſiſts of a Circle in the Middle, and on it the *Holy Ghoſt* in Figure of a Dove: the four Arms are drawn narrow from the Centre, and widening to the Ends, where the returning Lines divide each of them into two ſharp Points, upon each of which is a Pearl. See CROSS.

From the Intervals of the Circle between the Arms, iſſue four Flower-de-luces. --- This is the Croſs worn by the Knights of the Order of the *Holy Ghoſt* in *France*.

HOLY-*Rood Day*, a Feſtival obſerv'd by the *Roman* Catholicks, in Memory of the Exaltation of our Saviour's Croſs. See EXALTATION *of the Croſs*.

HOLY-*water Sprinkle*, among Hunters, ſignifies the Tail of a Fox. See TAIL.

HOMAGE, or HOMMAGE, in its general and literal Senſe, denotes the Reverence, Reſpect, and Submiſſion which a Perſon yields his Maſter, Lord, Prince, or other Superior. See LORD, *&c.*

HOMAGE, HOMAGIUM, HOMINIUM, in Law, is an Engagement or Promiſe of Fidelity, which the Vaſſal or Tenant who holds a Fee, renders to the Lord when admitted thereto. See FEE, VASSAL, LORD, *&c.*

The Word is form'd of the *Latin*, *Homo*, Man; by reaſon when the Tenant takes this Oath, he ſays, *Ego devenio homo veſter*, *I become your Man*: For the ſame Reaſon, *Homage* is call'd *Manhood*: So the *Homage* of his Tenant, and the Manhood of his Tenant, is all one. *Coke on Littl.* fol. 64.

In the original Grants of Lands and Tenements by Way of Fee, the Lord did not only tye his Tenants to certain Services; but alſo took a Submiſſion, with Promiſe and Oath to be true and loyal to him as their Lord and Benefactor.

This Submiſſion, *&c.* is call'd *Homage*, the Form whereof, as appointed by Stat. 17 *Edw.* II. is in theſe Words: When a Free-man ſhall do *homage* to his Lord, of whom he holdeth in Chief, he ſhall hold his Hands together between the Hands of his Lord, and ſhall ſay thus: "I become your "Man from this Day forth for my Life, for Member, and "for worldly Honour; and ſhall owe you my Faith for the "Land I hold of you, ſaving the Faith that I owe unto "our Sovereign Lord the King, and to mine other Lords.

In this Manner the Lord of the Fee, for which *Homage* is due, takes *Homage* of every Tenant as he comes to the Land or Fee. *Glanvil*, indeed, excepts Women; who only perform *Homage* by their Husbands; in regard *Homage* is ſuppos'd to have a more immediate Relation to Service in War; but *Fitzherbert* denies the Exception, *Nat. Brev.* fol. 157.

He adds, that Biſhops do no *Homage*, but only Fealty, and, probably, for the ſame Reaſon as Women. Yet do we read, that the Archbiſhop of *Canterbury* does *Homage* on his Knees to our Kings at their Coronation; and that the Biſhop of *Man* is *Homager* to the Earl of *Derby*.

Fulbec reconciles this: By our Law, ſays he, a religious Man may do *homage*; but may not ſay to the Lord, *Ego devenio homo veſter*; becauſe he has already profeſs'd himſelf to be only God's Man; but he may ſay to him, "I do unto "you *Homage*, and to you ſhall be faithful and loyal.

Homage and Fealty, or Faith, are two diſtinct Things, different Duties. See FEALTY.

Originally, *Homage* was perform'd by the Gentleman, and Fealty by the Peaſant. Others ſay, that *Homage* was that perform'd to the Lord himſelf; and Fealty to his Seneſchal or Steward, for his Lord. --- 'Tis added, that he who holds Lands for Term of Life, owes *Homage*, but not Fealty.

Biſhops take the Oath of Fealty and Loyalty to the King for the Temporalities they hold of him; but without *Homage* or Vaſſalage. See TEMPORALITY.

HOMAGE-*Liege* was a more extenſive Kind of *Homage*, whereby the Vaſſal held of the Lord, not only for his Lands, but for his Perſon. --- So that the Lord might uſe him againſt all Mankind, whether within or without the Kingdom, excepting the King. See LIEGE.

This Kind of *Homage* was render'd bare-headed, with the Hands join'd on the Goſpels, one Knee on the Ground, and without Sword, Girdle, or Spurs. --- By which it was diſtinguiſh'd from *Frank Homage*. See FRANK.

There are alſo other Diſtinctions of *Homage*, as,

Plain Homage, or *Homage* of a Fee, where no Oath of Fidelity is taken.

Homage of Devotion, which is a Donation made the Church, and does not import any Duty or Service at all.

Homage of Peace, which a Perſon makes to another after a Reconciliation, as an Aſſurance that he will no longer diſturb his Peace, *&c.*

Homage, again, is divided into *new*, *i. e.* that perform'd upon the Grant of the Fee; and *Auncęſtrel*.

HOMAGE *Auncęſtrel*, is where a Man, and his Anceſtors, Time out of Mind, have held their Land of the Lord and his Anceſtors by *Homage*.

If ſuch Lord have receiv'd *Homage*, he is bound to acquit the Tenant againſt all other Lords above him, of every Manner of Service: And if the Tenant has done *Homage* to his Lord, and is impleaded, and vouches the Lord to warranty, the Lord is bound to warrant him; and if the Tenant loſe, he ſhall recover in Value againſt the Lord, ſo much of the Lands as he had at that Time of the Voucher, or any Time after. See VOUCHER.

HOMAGE is alſo us'd for the Jury in a Court-Baron; becauſe commonly conſiſting of ſuch as pay *Homage* to the Lord of the Fee. See JURY and COURT-*Baron*.

HOMAGE is alſo taken, in ſome Caſes, for the particular Place or Diſtrict where the Services are to be perform'd.

HOMAGER, a Perſon that does, or is bound to do, *Homage* to another. See HOMAGE.

This Lordſhip is ſo extenſive, that there are above 120 Tenants or *Homagers* therein.

HOMAGIO *reſpectuando*, is a Writ iſſu'd out to the Eſcheator, commanding him to deliver Seiſin of Lands to the Heir that is at full Age, notwithſtanding his *Homage* not being done.

HOMESOKEN, or rather HAMSÖKEN, the Privilege or Freedom which every Man hath in his Houſe. — Hence he who invades that Freedom, is properly ſaid *facere Homeſoken*. See HAMSOKEN.

This ſeems to be what we now call *Burglary*, which is a Crime of a very heinous Nature, as being not only a Breach of the King's Peace, but a Breach of that Liberty which a Man hath in his Houſe, which, as we commonly ſay, ſhould be his Caſtle, and therefore ought not to be invaded. *Bracton lib.* 3. See BURGLARY.

The Word is alſo us'd for an Impunity to thoſe who have committed this Crime.—Hamſokne, *hoc eſt quietus eſſe de amerciamentis pro ingreſſu hoſpitii violenter & ſine licentia contra pacem Regis, & quod teneatis placita de hujuſmodi tranſgreſſione in curia veſtra. W. Thorn*, 2030.

HOME-*ſtall*, a Manſion Houſe or Seat in the Country. See MANSION.

HOMER, or OMER, a *Jewiſh* Meaſure, containing the tenth Part of the *Epha*. See MEASURE and EPHA.

HOMICIDE, in common Law, the killing of a Man.

It is divided into *voluntary* and *caſual*.

Voluntary Homicide, is that which is deliberate, and committed with a ſet Purpoſe and Mind to kill; and is either with a precedent Malice, or without. --- The former is Murder, and is a felonious killing, with Malice prepenſe, any Perſon in the Realm, living under the King's Protection. See MURDER and MANSLAUGHTER.

Caſual Homicide, is either merely caſual or mix'd. --- Merely *caſual*, is when a Perſon kills another by pure Miſchance, being about his lawful Occaſions; as in the Caſe of an Ax ſlipping out of a Man's Hand, or falling off the Helve while he is felling a Tree. See *Chance* MEDLEY.

It is accounted *mix'd*, when there is Negligence, or ſome other unwarrantable Circumſtance, attending the Action.

HOMILY, or HOMELY, originally ſignify'd a Conference or Meeting; but has ſince been apply'd to an Exhortation, or Sermon deliver'd to the People. See SERMON.

The *Greek* Word, *Homilia*, ſays M. *Fleury*, ſignifies a familiar Diſcourſe; like the *Latin*, *Sermo*: And Diſcourſes deliver'd in the Church took theſe Denominations, to intimate that they were not Harangues, or Matters of Oſtentation and Flouriſh, like thoſe of prophane Orators; but familiar Diſcourſes, as of a Maſter to his Diſciples, or a Father to his Children.

All the *Homilies* of the *Greek* and *Latin* Fathers are compos'd by Biſhops.---We have none of *Tertullian*, *Clemens Alexandrinus*, and other learned Perſons; by reaſon, in the firſt Ages, none but Biſhops were admitted to preach.

The Privilege was not ordinarily allow'd to Prieſts till toward the Vth Century. --- St. *Chryſoſtom* was the firſt Prieſt that preach'd ſtatedly: *Origen* and St. *Auguſtin* alſo preach'd, but it was by a peculiar Licence or Privilege.

Photius diſtinguiſhes *Homily* from *Sermon*; in that the *Homily* was perform'd in a more familiar Manner; the Prelate interrogating and talking to the People; and they, in their Turn, anſwering and interrogating him: So that it was properly a Converſation; whereas the Sermon was deliver'd with more Form, and in the Pulpit, after the Manner of the Orators.

There are ſeveral fine *Homilies* of the Fathers ſtill extant; and particularly of St. *Chryſoſtom*, St. *Gregory*, &c.

The Word is *Greek*, ὁμιλία; form'd of ὅμιλ⊙, *Cœtus*, Aſſembly, Council.

HOMINE *capto in Withernamium*, a Writ for apprehending him that has taken any Bondman or Woman, and led him or her out of the County; ſo that he or ſhe cannot be replevy'd according to Law. See WITHERNAM.

HOMINE *Replegiando*, a Writ for the Bailing of a Man out of Priſon. See BAIL, REPLEVY, &c.

HOMINICOLÆ, HOMINCOLÆ, in Antiquity, a Name which the Apollinariſts gave to the Orthodox, to denote them Worſhippers of a *Man*. See APOLLINARISTS.

As the Orthodox maintain'd that Jeſus Chriſt was God-man; the Apollinariſts accus'd them of adoring a Man, and call'd them *Hominicoles*.

The Word is form'd of the *Latin*, *homo*, *hominis*, Man, and *colo*, I worſhip.

HOMOCENTRIC, in Aſtronomy, a Term of the ſame Import with *concentric*. See CONCENTRIC.

The Hypotheſis of *Ptolomy* is explain'd by means of divers *homocentric* and excentric Circles. See EXCENTRIC, &c.

The Word is *Greek*, compos'd of ὁμὸς, alike, ſimilar, and κεντρον, Centre.

HOMOEOPTOTON, ομοιοπτωτον, a Figure in Rhetorick, where ſeveral Members of a Sentence end in like Caſes.

HOMOEOTELEUTON, ομοιοτελευτον, a Figure in Rhetorick, where ſeveral Members of a Sentence end alike.

HOMOGENEOUS, or HOMOGENEAL, is a Term apply'd to various Subjects, to denote, that they conſiſt of ſimilar Parts, or Parts of the ſame Nature and Kind. — In contra-diſtinction to *Heterogeneous*, where the Parts are of different Natures, &c.

Natural Bodies, for the generality, are compos'd of *homogeneous* Parts; as a Diamond, a Metal, &c. — Artificial Bodies, on the contrary, are Aſſemblages of *heterogeneous* Parts, or Parts of different Qualities; as a Building, of Stone, Wood, &c. See HETEROGENEAL.

The Word is compos'd of the *Greek*, ὁμὸς, *idem*, or *æqualis*, and γεν⊙, *Genus*, Kind.

HOMOGENEAL *Light*, is that whoſe Rays are all of one and the ſame Colour, Degree of Refrangibility and Reflexibility. See LIGHT and RAY.

HOMOGENEAL *Numbers*, are thoſe of the ſame Kind and Nature. See NUMBER.

HOMOGENEAL *Surds*, are ſuch as have one common radical Sign; as $\sqrt[3]{:27}$, and $\sqrt[3]{:3}$. See SURD.

HOMOGENEUM, *Comparationis*, in Algebra, the known Quantity in an Equation; call'd alſo *Abſolute Number*. See EQUATION, &c.

It is call'd *Homogeneum Comparationis*, of *Compariſon*, to diſtinguiſh it from the other Terms; which tho' *homogeneous* as well as this, *i. e.* always rais'd to the ſame Degree of Power, are not the Quantities to which Things are here *compar'd* or referr'd.

HOMOIOMERICAL Principles, a peculiar Kind of Principles, ſuppos'd, by *Anaxagoras*, in all mix'd Bodies; being determinate Numbers of ſuch ſimilar Principles, as, when they came to become Parts, *e. gr.* of an Animal Body, would there make ſuch Maſſes and Combinations as their Nature requir'd, *viz.* the Sanguinary Particles would then meet all together and make Blood, the Urinous Particles conſtitute Urine, the Oſſeous ones Bones, the Carneous Fleſh, &c. See PRINCIPLE.

HOMOLOGATION, in the Civil Law, the Act of confirming or rendering a Thing more valid and ſolemn, by a Publication, Repetition, or Recognition thereof.

The Creditors have ſign'd the Contract; there remains nothing but to get it *homologated*.

The Word comes from the *Greek*, ὁμολογία, Conſent, Aſſent, form'd of ὁμὸς, *ſimilis*, alike, and λογ⊙ of λέγειν, *dicere*, to ſay, *q. d.* to ſay the ſame thing, to conſent, agree.

HOMOLOGOUS, in Geometry, is apply'd to the Sides of ſimilar Figures; which are ſaid to be *homologous*, or in Proportion to each other. See SIMILAR.

Thus, the Baſe of one Triangle, is *homologous* to the Baſe of another ſimilar Triangle: So, in ſimilar Triangles, the Sides oppoſite to equal Angles, are ſaid to be *homologous*. See TRIANGLE.

Equiangular or ſimilar Triangles, have their *homologous* Sides proportional.

All ſimilar Rectangles are to each other, as the Squares of their *homologous* Sides. See RECTANGLE.

The Word is *Greek*, compos'd of ὁμ⊙, Similar, and λογ⊙, Ratio, Reaſon, *q. d.* Quantities alike to each other in Ratio. --- So, if the Ratio of A to B, be the ſame as of C to D; here A is *homologous* to C, as B to D; by reaſon of the Similitude between the Antecedents and Conſequents. The two Antecedents, and the two Conſequents, then, in any continu'd Geometrical Proportion, are *homologous* Terms. See PROPORTION.

HOMOLOGOUS *Things*, in Logick, are ſuch as agree in Name, but are of different Natures. --- Theſe coincide with what we otherwiſe call *Equivocal Terms*. See EQUIVOCAL.

HOMONYMIA, in Logic, an *Equivocation*. See HOMONYMUS, &c.

HOMONYMUS, or HOMONYMOUS, in Logic, is apply'd to a Word which has two different Meanings; or expreſſes two Things of different Nature and Quality.

Homonymous is the ſame as *Equivocal*. See EQUIVOCAL.

The Word is compos'd of ὁμὸς, *ſimilis*, and the Ionic ονυμα for ονομα, *nomen*, Name.

HOMOOUSIOS, ομοουσιος, among Divines, a Being of the ſame Subſtance or Eſſence. See SUBSTANCE. See alſo PERSON, &c.

HOMOOUSIANS, HOMOUSIANS, HOMOUSIONS, HOMOUSIONISTS, HOMOUSIASTS, are Names which the Arians anciently gave to the Orthodox, by reaſon they held that God the Son is *Homooufios*, *i. e.* conſubſtantial with the Father. See HETEROUSIANS.

Huneric, King of the *Vandals*, publiſh'd a Reſcript, directed to all the *Homouſian* Biſhops. See PERSON, &c.

The Word is *Greek*, ὁμούσι⊙, or ομοὐσιας, ſignifying *of the ſame Subſtance*.

HOMOPHAGI, among the ancient Geographers, a Name given to certain Nations who fed on raw Fleſh; as the *Scythians*, &c.

The Word is form'd of ὠμ⊙, crude, raw; and φάγω, I eat.

HOMUNCIONATES, a Name the Arians gave to the Orthodox, in the IVth Century; by reaſon they admitted two Subſtances and two Natures in Jeſus Chriſt.

HOMUNCIONISTS, a Sect of Hereticks, the Followers of *Photin*; and from him alſo call'd *Photinians*. See PHOTINIANS.

They had this Appellation in reſpect of their denying the two Natures in Jeſus Chriſt, and holding that he was only mere Man.

The Word is form'd of the *Latin*, *Homuncio*, a Diminutive of *homo*, Man; *q. d.* little Man.

HOMUNCIONITES, were a Sect of ancient Hereticks, whoſe diſtinguiſhing Dogma it was, that the Image of God was impreſs'd on the Body, not on the Soul or Mind of Man.

HOND-*habend*, in our ancient Cuſtoms, from the *Saxon*, *hond*, Hand, and *habens*, having; a Circumſtance of a manifeſt Theft, when the Party is taken with the Mainor, or Mainover, *i. e.* the Thing ſtolen in his Hand.

Bracton alſo uſes *Hand-berend* in the ſame Senſe. *Sc. Latro manifeſtus.* See HAND-*habend.*

So in *Fleta*, *Furtum manifeſtum eſt ubi aliquis latro deprehenſus ſeiſitus de aliquo latrocinio* Hand-habbind, & Backberinde, & *inſecutus fuerit per aliquem cujus res aliqua fuerit, quæ dicitur Seeborgh, & tunc licet inſecutori rem ſuam petere criminaliter ut furatam.*

It alſo ſignifies the Right which the Lord hath to judge and determine of this Offence in his Court.

HONE, a fine Sort of *Whet-ſtone*, whereon to ſet a Razor or Penknife.

It is of a yellowiſh Colour, being Holly-wood petrify'd or chang'd into Stone, by lying in the Water for a certain Seaſon. See PETRIFACTION.

Of theſe there are ſaid to be ſome in *Oxfordſhire*, that will be thus petrify'd in a very ſhort Time.

HONEY, *Mel*, a ſweet ſort of Juice ſuck'd from Vegetables by the Bees, and repoſited in their Combs. See WAX.

Honey is properly one of the Juices afforded by the Flowers, and is found to exude from all Sorts thereof; the very bittereſt, as Aloes and Colocynth, not excepted.

In all Male Flowers that have Utricles at the Bottom of the Petala, is found a viſcid, ruddy, ſweet Juice in good Plenty; whence it is, that we ſee the Children gather Cowſlips, Fox-gloves, *Honey*-ſuckles, &c. and ſuck the *Honey* from them. --- The Bees too viſit theſe Flowers; and putting in their Proboſcides, or Trunks, ſuck out the *Honey-Juice*, and load their Stomachs therewith; to be afterwards diſcharg'd and laid up in their Combs: --- So that *Honey* is a vegetable Subſtance.

In the Belly of the Bee is a ſmall tranſparent Bladder, which is the proper Receptacle of the *Honey*: When the Animal finds this full, it returns, enters one of the Cells, and diſcharges it there by that Part of the Head ſituate between the two Jaws, which it extends wider than ordinary, moving its Head at the ſame time this way and that. --- If a Drop happen to be ill plac'd, it ſucks it up again by its Proboſcis, and diſcharges it a-new. --- When a Cell is fill'd with *Honey*, they ſtop it up with Wax for Winter Store. See WAX.

Honey was anciently taken for a Dew that fell or deſcended on the Flowers; but what proves this a Miſtake, is, that the Bees only gather it after the Sun is up, when there is no Dew left: It muſt therefore be either a Liquor prepar'd in the Flower, and excreted by its proper Veſſels, like Manna. See MANNA.

Or rather, it appears to be the fine Duſt, or Farina Fecundans of the Apices. --- For, according to the Obſervations of M. *du Vernay*, the Bees, when in the Search of *Honey*, fix on no other Parts but the Stamina and Apices, and not on ſuch as yield any other Liquor. See FARINA.

What is very remarkable, is, that *Honey*, in Virtue of its vegetable Nature, is diſcover'd by M. *Lemery* to contain Iron; which Diſcovery may ſerve as an Anſwer to M. *Geoffroy*'s Chymical Queſtion, *viz.* Whether there is any Part of a Plant without Iron? For if ſo delicate an Extract from the fineſt Part of the Flower, and this further elaborated in the little Viſcera of the Inſect, be not void of Iron, we may deſpair of ſeeing any ſo. See IRON.

We have two Kinds of *Honey*, *white* and *yellow*. --- The white, call'd alſo *Virgin Honey*, trickles out ſpontaneouſly from the Comb, by turning it up or breaking it.

The ſecond is ſqueez'd from the Combs in a Preſs, after having firſt ſoften'd them with a little Water over the Fire. --- There is alſo an intermediate Sort, of a yellowiſh white Colour, drawn by Expreſſion, without Fire.

The *Honey* left to ſtand two or three Days, purges itſelf; throwing up a Scum of Wax and other Droſs, which is to be taken off.

Some Naturaliſts will have the *Honey* to be of a different Quality, according to the Difference of the Flowers or Plants the Bees ſuck it from. --- Accordingly *Strabo* relates, that there is a Kind of *Honey* in *Pontus*, which is a ſtrong Poiſon; being procur'd by Bees which feed upon Aconite and Wormwood.

F. *Lamberti*, in his Account of *Mingrelia*, aſſures us of the contrary; and affirms it the beſt *Honey* in the World, by reaſon of the great Quantity of Bawm growing there. --- He adds, that there is another very white Kind of *Honey*, hard as Sugar, and which does not ſtick to the Hands.

The Ancients rank'd Sugar and Manna among the Species of *Honey*. See SUGAR and MANNA.

Honey has conſiderable medicinal Virtues; being reputed a good Detergent and Cleanſer; and in that Quality uſed both internally and externally, for the Viſcera, Wounds, Ulcers, &c.

Honey is the Baſis of ſeveral Compoſitions in Pharmacy. --- Of *Honey*, with the Addition of Roſes or Violets, Mercurialis, &c. is made *Mel Roſatum*, *Mercuriale*, &c.

There is alſo a *Mel Scilliticum*, or a Preparation of Squillæ: *Mel Paſſulatum Violatum*, made with Raiſins boil'd in hot Water: And *Mel Anthoſatum*, made of Roſemary Flowers.

The Chymiſts alſo draw a Water, a Spirit, an Oil, &c. from *Honey*.

Honey is alſo an Ingredient in ſeveral Drinks, as *Mum*, *Metheglin*, &c. See MUM, METHEGLIN, &c.

Wild HONEY. *S. Adauman*, Abbot of *Hii*, in his Deſcription of the holy Places, obſerves, that in the Place where St. *John Baptiſt* liv'd in the Deſart, there are Locuſts which the poor People boil with Oil, and a Sort of Herbs with large long Leaves, of a Milk Colour, and a Taſte like that of *Honey*; and that this is what in Scripture is call'd *wild Honey*.

HONEY-*Dew*, is a ſweet-taſted Dew, found early in the Morning on the Leaves of divers Sorts of Plants. See DEW.

Honey-Dews, or *Mildews*, are of a very different Nature from Blaſtings, being caus'd by the condenſing of a fat moiſt Exhalation, rais'd in a hot dry Summer, from Plants and Bloſſoms; as alſo from the Earth; which, by the Coolneſs and Serenity of the Air in the Night, or in the upper clear Region of the Air, is thicken'd into a fat gluey Matter, and falls to the Earth again; Part whereof reſts upon Oak Leaves, and ſome other Trees, whoſe Leaves are ſmooth, and do not eaſily admit the Moiſture into them.

Gaſſendus holds, that a viſcid Juice tranſpiring out of the Leaves, helps to compoſe this *Honey*, or to convert the Dew falling on them into a *Honey* Subſtance, which before had nothing of it: And hence he accounts for the Reaſon why we find it on ſome Trees, and not on others.

This *Honey-Dew* falling on the Ears and Stalks of Wheat, beſmears them with a different Colour from the natural; and being of a clammy Subſtance, ſo binds up the young, tender, and cloſe Ears of the Wheat, by the Heat of the Sun, that it prevents the Growth and Compleating of the perfect Grain therein.

A Shower of Rain ſucceeding preſently after the Fall thereof, or the Wind blowing ſtiffly, are the only natural Remedies againſt it.

HONEY-*Comb*, a waxen Structure, full of Cells, fram'd by the Bees to depoſit their *Honey*, Eggs, &c. See CELL, WAX, HONEY, &c.

The great Sagacity and Contrivance of the Bees in making their *Combs*, have often been admir'd. --- Their Labour is diſtributed regularly among them; ſometimes thoſe Bees that carry the Wax in their Jaws and Chaps, moiſten and mollify it with ſome Liquor that they diſtil upon it; the ſame ſometimes build the Walls of their hexagonal Cells; but ſometimes others do it; but thoſe that form the Cells never poliſh them. --- Others come and make the Angles more exact, and cloſe and ſmooth the Superficies. --- And as in the doing of this, ſome ſmall Bits of Wax are pared off, there are ſome whoſe Buſineſs is to take theſe, that they may not be loſt.

M. *Maraldi* has alſo obſerv'd, that thoſe Bees that poliſh the Walls, work longer than thoſe that build them; as if Poliſhing were not ſo laborious as Building.

They begin their Work at the Top of the Hive, faſtening it to the moſt ſolid Part thereof: Thence it deſcends downwards, being continu'd from Top to Bottom, and from one Side to another; and to make it the more Solid, they uſe a Sort of temper'd Wax that is pretty much like Glue. The Form of the Cells, of which the *Honey-Comb* is made, is hexagonal; a Figure that, beſides what is common with a Square and equilateral Triangle, has the Advantage of including a greater Space within the ſame Surface.

HONEY-*Comb*, in Gunnery, is a Flaw in the Metal of a Piece of Ordnance when it is ill caſt, and ſpongeous.

HONI *Soit Qui Mal y Penſe*, q. d. *Evil to him that thinks Evil*; the Motto of the moſt noble Order of the Knights of the Garter. See GARTER.

HONOR, HONORABLE, HONORARY } See { HONOUR. HONOURABLE. HONOURARY.

HONORIACI, in Antiquity, a Species or Order of Soldiery, under the Eaſtern Empire. — It was the *Honoriaci* that introduc'd the *Goths*, *Vandals*, *Alani*, *Suevi*, &c. into *Spain*.

Didymus and *Verinianus*, two Brothers, had, with great Vigilance and Valour, defended the Paſſages of the *Pyreneans* againſt the Barbarians for ſome time, at their own Expence; but being at length kill'd, the Emperor *Conſtans* appointed the *Honoriaci* to defend thoſe Paſſages, who, not contented to lay them open to all the Nations of the North then ravaging the *Gauls*, join'd themſelves to 'em.

HONOUR, HONOR.— Beſide its literal Senſe, wherein it denotes a Teſtimony or Token of Eſteem and Submiſſion, *Honour* is particularly apply'd in our Cuſtoms to the more noble Kinds of Seignories or Lordſhips; whereof other inferior Lordſhips or Manors hold, or depend. See SEIGNORY.

As a Manor conſiſts of ſeveral Tenements, Services, Cuſtoms, &c. (See MANOR, SERVICE, &c.) So an *Honour* contains divers Manors, Knights-Fees, &c.

It was alſo formerly call'd *Beneficium* or *Royal Fee*; being always held of the King in Capite. *Spelman*. Anciently, *Honor* ſignify'd the ſame as *Baronia*. See BARONY.

By Stat. 37. *Hen.* 8. cap. 18. The King is impower'd by Letters Patent to erect four ſeveral *Honours*, *viz. Weſtminſter*, *Kingſton upon Hull*, St. *Oſythe*, and *Donnington*; and as many other *Honours* as he will. — The Manner of creating theſe *Honours*, may be gather'd from the Stat. 33 *Hen.* 8. cap. 37, &c.

Maids of HONOUR, are young Ladies, in the Queen's or Princeſs's Houſhold, whoſe Office is to attend the Queen, &c. when ſhe goes abroad, &c. They are ſix in Number, and their Salary 300*l. per Annum* each.

The *French* call *Chevaliers de* HONNEUR, *Knights*, or *Gentlemen of* HONOUR, the Gentlemen Uſhers of Queens and Princeſſes, who attend them, give them their Hand, &c. See USHER.

Counſellors of HONOUR, or *honorary Counſellors*, are ſuch as have a Right to enter or ſit in Aſſemblies, Courts, &c. to deliberate or give Judgment in the ſame, tho' they do not properly and ordinarily belong thereto.

The *Honours of the Louvre*, are certain Privileges affected to divers Dignities or Offices, particularly thoſe of Duke, Peer, Chancellor, &c. as, to enter the *Louvre* in a Coach; to have the Tabouret or Stool in the Queen's Preſence, &c.

The *Honours of the Houſe*, are certain Ceremonies obſerv'd in receiving Viſits, making Entertainments, &c. perform'd either by the Maſter himſelf, or by ſome Perſon appointed for that Purpoſe; as, to go and receive the Gueſts, to conduct them out again, to ſee they be well ſeated, help them to the choice Bits, &c. And all this in a polite agreeable Manner.

The *Honours of the City*, are the publick Offices or Employments thereof.— He has been Conſtable, Overſeer of the Poor, and Church-warden, of his Pariſh; Common-Councilman, Alderman, and laſtly Mayor: He has paſs'd all the *Honours* of the City.

The *Honours of the Church*, are the Rights belonging to the Patron, &c. As a Seat and Sepulchre in the Chancel, to be firſt ſerv'd with the conſecrated Bread and Wine, &c.

The *Honours* is alſo us'd for the principal Parts of the Apparatus of great Ceremonies; as Coronations, Conſecrations, Chriſtenings, &c. Such are the Oil, Tapers, &c. — Such Lords or Ladies bore the *Honours* at ſuch a Ceremony. In Obſequies, they anciently preſented the *Honours*, that is, the Shield, Creſt, Sword, Gantlets, Spurs, Banner, Horſe, &c.

Funeral Honours, are the Ceremonies perform'd at the Interments of great Men; as Hangings, Hearſes, Funeral Harangues, &c.

HONOUR *Courts*, are Courts held within the *Honours*, or Seignories above mention'd. See COURT.

HONOUR *Point*, in Heraldry, is that next above the Centre of the Eſcutcheon; dividing the upper Part into two equal Portions. See ESCUTCHEON.

HONOURABLE *Amends*, *Amende* HONORABLE, an infamous Kind of Puniſhment, us'd in *France*, &c. on Traytors, Parricides, Sacrilegious Perſons, and other heinous Criminals.

It conſiſts in this, that the Offender is deliver'd up to the common Hangman, who having ſtript him to his Shirt, and put a Rope about his Neck, and a Wax Taper in his Hand, leads him to the Court, where he is to beg Pardon of God, the King, the Court, and his Country.

Sometimes the Puniſhment ends here; and ſometimes Death or the Galleys are added.

HONOURABLE, or HONORABLE *Ordinaries*, in Heraldry, are the principal Ordinaries or Bearings, which, when in their full Extent, may poſſeſs one Third of the Field. See ORDINARY.

Some only allow of nine, *viz.* the *Croſs*, *Chief*, *Pale*, *Bend*, *Feſſe*, *Chevron*, *Salteer*, *Giron*, and *Eſcutcheon*: Others add more, *viz.* the *Bar*, *Bordure*, &c. See each under its proper Article, CROSS, CHIEF, PALE, &c.

HONOURARY, or HONORARY, is underſtood of a Perſon who bears or poſſeſſes ſome Quality or Title, only for the Name's Sake, without doing any of the Functions thereto belonging, or receiving any of the Advantages thereof.

Thus we ſay, *honourary* Counſellors. See *Counſellors of* HONOUR.

In the College of Phyſicians, *London*, are four *Honourary* Fellows. See COLLEGE.

The Royal Academy of Sciences at *Paris*, conſiſts of four Claſſes of Members, *viz. Honourary*, Penſionary, Aſſociates, and Adjuncts. See ACADEMY.

The *Honourary* are to be twelve in Number, and all Inhabitants of the Kingdom.

HONOURARY *Services*, are ſuch as relate to the Tenure of grand Sergeanty, and are commonly join'd with ſome *Honour*. See SERVICE.

HONOURARY is alſo us'd for a Lawyer's Fee; or a Salary given to publick Profeſſors of any Art or Science.

HONOURARY *Tutor*, is a Perſon of Quality appointed to have an Eye over the Adminiſtration of the Affairs of a Minor; while the Onerary Tutors have the real effective Management thereof. See TUTOR, &c.

HONTEFONGENTHEF, a Thief taken hond-habend, *i. e.* having the Thing ſtolen in his Hand. See HOND-*halend*.

HOOD. See CNAPEROON and CUCULLUS.

HOOD, in Falconry, is a Piece of Leather, wherewith the Head of a Hawk, Falcon, or the like, is cover'd. See HAWK, FALCON, &c.

After ſeeling a young Hawk, ſhe is to be fitted with a large eaſy *Hood*, which is to be taken off and put on very often, watching her two Nights; and handling her frequently and gently about the Head. When you perceive ſhe has no Averſion to the *Hood*, unſeel her in an Evening by Candle-light, continuing to handle, *hood* and *unhood* her, as before; till at laſt ſhe takes no Offence, but will patiently endure handling. See HAWKING.

After unſeeling, anoint with the Finger and Spittle the Place where the ſeeling Thread was drawn through; then *hood* her, and hold her on your Fiſt all Night.

As ſoon as ſhe is well reclaim'd, let her ſit upon a Perch; but every Night keep her on the Fiſt three or four Hours, ſtroaking, *hooding*, and *unhooding*, &c. And thus you may do in the Day-time, when ſhe hath learn'd to feed eagerly, and without Fear.

HOOF, *Ungula*, the horny Part which covers the Feet of divers Animals, as Horſes, Bullocks, &c. See HORN.

The *Hoof* ſerves much the ſame Purpoſes as the Nails of ſome Animals, and the Claws of others. See NAIL.

The *Hoof* of a Horſe ſurrounds the Sole and the Coffin Bone. — To be good, it ſhould be of a dark Colour, ſomewhat ſhining, high, ſmooth, of a round Shape, but a little larger below than above; ſhort, that the Horſe may tread more on the Toe than on the Heel; ſomewhat hollow within, having a narrow Fruſh, and broad Heels. See HORSE.

The *Hoof* ſhould not have Circles, which are a Sign of its being brittle, and that that Horſe, having been often ſhod, has had his Feet ſpoil'd by the many Pieces broke out of it. — A white *Hoof* is commonly brittle.

To judge whether the *Hoof* be good and ſtanch, lift up the Foot, and conſider if it have a Shoe forg'd purpoſely for it, and be very much pierc'd, and the Holes made in unuſual Parts, as wanting Horn enough to take hold by in thoſe Places where the Nails are commonly driven.

Sometimes they are forc'd to pierce the Shoes nigh the Heels, becauſe the fore-part is bad; it being otherwiſe unuſual to drive the Nails near the Heels, except the Toe be ſo much ſpl t and broke as not to bear Nails.

If the *Hoof* be not round, but broad, and ſpreading out at the Sides and Quarters, the Horſe commonly has narrow Heels, and, in Time, will be flat-footed; which Sort of Foot is weak, and will not long carry a Shoe, nor travel far, but ſurbate: And that treading more on his Heels than Toes, will cauſe him to go low on his Paſterns.

If the *Hoof* be long, it will make him tread altogether on his Heels. — If crooked, *viz.* broad without and narrow within, ſo that the Horſe is ſplay-footed, it will cauſe him to tread too much inward, and cut or interfere. — If the Fruſh be broad, the Heels will be weak and ſoft. — If the Heels be narrow and tender, the Horſe will in time grow *Hoof*-bound.

The Infirmities to which *Hoofs* are liable, are, the caſting of the *Hoof*, *Hoof*-bound, *Hoof*-hard, *Hoof*-hurt, looſe *Hoof*, falſe Quarters, &c.

Caſting of the HOOF. — A Horſe is ſaid to *caſt his Hoof*, when the whole Coffin of the *Hoof* becomes looſen'd, and

falls off from the Bone. --- This may be remedy'd by Care and proper Application; a new *Hoof* being procurable, if the Coffin Bone, &c. be not hurt.

Horſes ſometimes caſt their *Hoofs* by reaſon of ſome Prick, Stub, foundring, ſurbating, or other Accident, that cauſes an Impoſthumation in the Foot; ſo that the *Hoof*, and ſometimes the Coffin Bone, being ſpungy and eaſily broken, fall off in large Pieces. The laſt when it happens is deſperate.

Hoof-*bound*, is a ſhrinking in of an Horſe's *Hoof* on the Top, and at the Heel; which makes the Skin ſtare above the *Hoof*, and to grow over the ſame.

It befals an Horſe divers ways, either by keeping him too dry in the Stable, by ſtrait ſhoeing, or by ſome unnatural Heat after foundering.

Hoof-*hurt*. --- In labouring Beaſts, eſpecially Oxen, if the *Hoof* be hurt with a Coulter or Share, it may be cur'd by a Salve of Pitch and Greaſe mix'd with Powder of Brimſtone, diſſolv'd together, and with an hot Iron melted in the ſere *Hoof* or Clee.

Hoof-*looſen'd*, is a Diſſolution or dividing of the Horn or Coffin of a Horſe's *Hoof* from the Fleſh, at the ſetting on of the Coronet.

If the parting be round about the Coronet, it comes by means of foundering; if in part, then by a Prick of ſome Channel-nail, Quitter-bone, Retreat, Gravelling, Cloying, or the like.

The Signs of being looſen'd by foundering, is its breaking firſt in the fore Part of the Coronet, right againſt the Toes; becauſe the Humour always deſcends towards the Toe. --- If it proceeds from pricking, graveling, or the like, the *Hoof* will looſen round about equally, even at firſt. --- If occaſion'd by a Quitter-bone, or Hurt on the Coronet, it will break right above the grieved Part, and rarely be ſeen to go any farther.

Hoof-*ſwell'd*, is an Infirmity that ſometimes befals young Horſes, when they are over-rid, or wrought hard, which makes them ſwell in that Part, by reaſon of the Blood falling down and ſettling there; which if not ſpeedily remov'd will beget a wet Spavin.

HOOK in Angling, &c. See Angling, &c.

HOOKS, in Buildings, &c. are of various Sorts; ſome of Iron, and others of Braſs.

1°. *Armour Hooks*, which are generally of Braſs, and are to lay up Arms upon, as Guns, Muskets, half Pikes, Pikes, Javelins, &c. 2°. Caſement *Hooks*. 3°. Chimney *Hooks*, which are made both of Braſs and Iron, and of different Faſhions: Their Uſe is to ſet the Tongs and Fire-ſhovel againſt. 4°. Curtain *Hooks*. 5°. *Hooks* for Doors, Gates, &c. 6°. Double Line *Hooks*, large and ſmall. 7°. Single Line *Hooks*, large and ſmall. 8°. Tenter *Hooks* of various Sorts. See Tenter.

HOOK-*pins*, in Architecture, are taper Iron Pins, only with a *Hook*-head, to pin the Frame of a Roof or Floor together.

HOOP, a Meaſure of a Peck. See Peck.

HOP, or Hops, a Plant of the reptile Kind, whoſe Flower is a principal Ingredient in Beer, and other Malt Liquors. See Brewing. See alſo Beer and Malt-*Liquor*.

The *Hop* creeps like Snake-weed, unleſs it find Pales or Shrubs to hang to; or unleſs they who cultivate it, plant Poles for the Purpoſe. --- Its Stem is long, flexible, rough, and hairy. --- Its Leaf indented like that of the Vine, and cover'd with a kind of prickly Down like that of the Cucumber. Its Flowers are of a greeniſh Yellow, reſembling, both as to Form and Size, thoſe of the Female Elm; and grow in a kind of Bunch or Cluſter. In this Flower is a blackiſh bitter Grain contain'd, which is the Seed of the *Hop*.

In the Spring time, while the Bud is yet tender, the Tops of the Plant being cut off, and boil'd, are eat like Aſparagus; and found effectual to looſen the Body: The Heads and Tendrils are good to purify the Blood in the Scorbutus, and moſt cutaneous Diſeaſes: Decoctions of the Flowers, and Syrops thereof, are of uſe againſt peſtilential Fevers: Juleps and Apozems are alſo prepar'd with *Hops*, for Hypochondriacal and Hyſterical Affections, and to promote the Menſes.

The Propagation and Culture of *Hops*, being a Point of ſome Nicety, as well as great Advantage, we ſhall lay down a little Syſtem thereof. --- 'Tis certain there is nothing in all the rural Employments, that, under prudent Management, turns to more account; very large Eſtates having been rais'd by this Commodity in a few Years paſt. --- *Switzer* tells us, he has known Ground yield 30*l. per Annum per* Acre, planted therewith: To ſay nothing of the great Number of Poor that are employ'd therein, *viz.* in the Planting, Soiling, Digging, Houghing, Poling, Tying, Picking, &c.

Culture of Hops, *and* Hop *Gardens.*

Hops are of divers Kinds: *Mortimer* reckons four, *viz.* the *wild Garlic Hop*, which is not worth propagating; the *long and ſquare Garlic Hop*, which, tho' valuable, yet on account of the Redneſs towards the Stalk, does not bear the beſt Price; the *long white Hop*, which is the moſt beautiful and fertile; and the *oval Hop*. Another Author diſtinguiſhes the *Hops* to be cultivated into the white and grey Binds; the latter being a large ſquare *Hop*, more hardy, and bearing a plentifuller Crop than the former; tho' it does not ripen ſo early.

For the Soil of Hops. --- There is ſcarce any but may ſerve, except ſtoney, rocky, and ſtiff Clay Ground: The beſt, however, is that which is light, deep, and rich; which will be the better if Sand be mix'd with it: A black Garden Mould is alſo excellent. If the Ground be cold, ſtiff, and ſour, the beſt Means of Improvement is to burn-beat it. *Mortimer* adds, that in *Kent*, where they eſteem new Land beſt for *Hops*, they plant their *Hop* Gardens with Cherry Trees and Apple Trees, at a good Diſtance; that when the Land is paſt the beſt for *Hops*, (which happens in about ten Years) the Cherry Trees may begin to bear; and 30 Years after, when the Cherry Trees are ſpent, the Apple Trees may be in Perfection.

For the planting of Hops. --- The Ground is firſt to be prepar'd by tilling it the Beginning of the Winter, either with the Plough or Spade. In *October*, (and ſometimes, tho' rarely, in *March*) they proceed to plant; marking out the Places where each Hillock or little Plantation is to be. Some plant in Squares, Checquer-wiſe, which is the moſt convenient Form, where they intend, in the Courſe of the Tillage, to plough with Horſes between the Hills: But the beſt Form for the *Hop*, as well as the moſt pleaſing to the Eye, is the *Quincunx*. See Quincunx.

If the Ground be poor, or ſtiff, 'tis neceſſary ſome good Mould, or elſe a Compoſt of Manure and Earth, be laid in Holes a Foot ſquare, in the ſeveral Places where the Hills are to be. --- The Diſtance of the Hills in dry hot Ground may be ſix Foot; but in moiſt and rich Ground, ſubject to bear large Hops, eight or nine.

For planting, the largeſt Sets are to be choſen, eight or ten Inches long, having each three or four Joints. Theſe to be ſet in Holes, made for the Purpoſe, one at each Corner of a Hole, and a Fifth in the Middle, raiſing the Earth two or three Inches about.

For the dreſſing of Hops. --- If the *Hop*-Ground be old, and wore out of Heart, they find it convenient to dig about them, toward the Beginning of each Winter, and take away a Quantity of the old Earth; its Place to be ſupply'd with what is fatter and freſher. --- If the *Hops* be in good Heart, Manuring and Pruning is moſt adviſable. In order to this, they pull down the Hills, and undermine all about, till they come near the principal Roots. This done, taking off the Earth from the Roots, they find by the Colour, &c. which are new Shoots, and which old ones; and cut off all the new ones. --- When the Roots are thus dreſs'd, the new Mould or Manure to be apply'd.

For the Poling. --- The Time is when the *Hops* begin to appear above Ground: The Number and Dimenſions of the Poles to be adjuſted to the Diſtance of the Hills, the Nature of the Soil, and Strength of the *Hop*. --- To prevent *Houſling*, the Poles are to be made to lean outwards; and particularly toward the South, to receive more of the Sun's Beams; it being Matter of Obſervation, that a leaning Pole bears more *Hops* than an upright one.

As to tying. --- When the *Hops* are got two or three Foot above Ground, the next Buſineſs is to conduct and tye them to ſuch Poles as are empty, and at a proper Diſtance for them. --- They are to be ty'd with wither'd Ruſhes, or Woollen Yarn; but not ſo cloſe as to hinder their climbing up the Poles: Two or three Strings may ſuffice for a Pole. This Operation to be attended to in *April* and *May*.

About Midſummer, when they ceaſe to run in Length, and begin to branch, ſuch of them as are not yet got up to the Tops of the Poles, ſhould have their Heads nipp'd off, or elſe be diverted from the Pole, that they may branch the better; which is more for the Increaſe of the *Hop*, than its extending in Length.

Sometimes in *May*, after Rain, the Hills are to be made up with a Hoe, or Spade, or by ploughing; which will be a Means to deſtroy the Weeds: And 'tis neceſſary, if the Spring or Summer prove dry, to water them twice or thrice in a Seaſon.

Hops blow toward the latter End of *July*; and the forward ones are ripe by the Cloſe of *Auguſt*. --- Their Ripeneſs is diſcover'd by their fragrant Scent, their changing of Colour, being eaſily pull'd, and by the browniſh Colour of the Seed.

Hops are to be gather'd when they look a little browniſh, and that without delay: the moſt expeditious Way, is, to make a Frame with four ſhort Poles or Sticks, laid on four Forks driven into the Ground, of ſuch Breadth, as to contain either the Hair-Cloth of your Kiln, or a Blanket tacked round it about the Edges. --- On this Device, the Poles, with the *Hops* on them, may be laid, being either ſupported by Forks, or the Edges of the Frame; at each Side whereof, the Pickers may ſtand, and pick the *Hops* into it. --- When the Blanket or Hair-Cloth is full, untack it, carry it away, and place another, or the ſame empty'd, in the ſame Frame again; and this Frame may be daily remov'd, with little Trouble, to ſome new Place of the Garden near the Work.

Hops muſt not be gather'd while wet; but if the Dew be on them, or a Shower of Rain has taken them, the Pole may be ſhaken, and they'll dry the ſooner: If they be over-ripe, they'll be apt to ſhed their Seed, wherein conſiſts their chief Strength; neither will they look ſo green, but ſomewhat brown, which much leſſens their Value; though ſome let them ſtand as long as they can, becauſe they waſte leſs in the dropping; for four Pounds of undry'd *Hops*, thorough ripe, will make one of dry; whereas five Pounds of thoſe ſcarely ripe, yet in their Prime, make but one; ſo that 'tis judg'd the Proprietors get more in the thorough-ripe *Hop* by the Weight, than they loſe in the Colour.

As faſt as the *Hops* are pick'd, they muſt be *dry'd*: Some among us, eſpecially the *Flemmings* and *Hollanders*, make uſe of an *Ooſt* or Kiln for this Purpoſe: Others dry them on the ordinary Malt Kiln in an Hair-Cloth: But the beſt Way, is to make a Bed of flat Ledges, about an Inch thick, and two or three Inches broad, ſawn, and laid one acroſs the other, Checkerwiſe, the flat Way; the Diſtances about three Inches, or the like; the Ledges ſo enter'd, are put into another, that the Floor may be even and ſmooth: This Bed may reſt on two or three Joyces ſet edgewiſe, to ſupport it from ſinking; then cover it with large double Tin ſolder'd together at each Joynt; and ſo order the Ledges before they are laid, that the Joynts of the Tin may always lie over the Middle of a Ledge; and when the Bed is wholly cover'd with Tin, fit Boards about the Edges of the Kiln to keep up the *Hops*, only let the one Side be to remove, that the Hops may be ſhoved off as before. The *Hops* may be turn'd on this Tin-Bed or Floor with great Safety, and ſmall Expence of Fuel; beſide that, any manner of Fuel will ſerve for this Purpoſe as well as Charcoal, the Smoak not paſſing thro' the *Hops*: But it muſt not be forgot, to make Conveyances for it at the ſeveral Corners and Sides of the Kiln.

The *turning of Hops* after the eaſieſt and moſt ſecure Manner, is found to be not only a Waſte and Injury to the *Hop*, but alſo an Expence of Fuel and Time; yet it may be prevented, in Caſe the upper Bed, whereon the *Hops* lie, have a Cover that may be let down and rais'd at Pleaſure; which Cover may be tinn'd over, by nailing ſingle Tin Plates to the Face of it, that when the *Hops* begin to dry, and are ready to be burnt, you may let down this Cover within a Foot and leſs of the *Hops*, which will reflect the Heat upon them, that the uppermoſt *Hop* will be as ſoon dry as the lower, and every *Hop* equally dry'd.

The *Method of bagging Hops*, (after they have lain a Month more to cool and toughen) is to make a round or ſquare Hole in an upper Floor, big enough for a Man with eaſe to go up and down, and turn and wind in it; then tack a Hoop about the Mouth of the Bag faſt with Packthread, that it may bear the Weight of the *Hops* when full, and of the Man that treads them: That done, let the Bag down thro' the Hole, and the Hoop will reſt above, ſo as to keep the Bag from ſliding wholly thro'; into this Bag caſt a few *Hops*, and before you go in to tread, let an handful of *Hops* be tyed at each lower Corner with a Piece of Packthread, to make, as it were, a Taſſel, whereby the Bag, when full, may be conveniently lifted or remov'd; then go into the Bag, and tread the *Hops* on every Side, another ſtill caſting in as faſt as you require, till it be full: When 'tis well trodden and fill'd, let the Bag down by unripping the Loop, and cloſe the Mouth of the Bag, filling the two upper Corners as you did the lower: This Bag, if well pack'd and dry'd, will keep ſeveral Years in a dry Place; only Care muſt be taken, that Mice do not ſpoil or waſte the *Hops*; not that they'll eat them, but make their Neſts therein.

HOPLITES, Hoplitæ, in Antiquity, were ſuch of the Candidates at the *Olympic* and other ſacred Games, as ran Races in Armour. See Game.

One of the fineſt Pieces of the famous *Parrhaſius*, was a Painting which repreſented two *Hoplites*; the one running, and ſeeming to ſweat large Drops; and the other laying his Arms down, as quite ſpent and out of Breath. *Pliny* l. xxxv. c. 10, and *Paſchas. de Coronis*, l. vi. cap. 14.

The Word is *Greek* ὁπλίτης, form'd of ὅπλον, Armour.

HOPLOMACHI, in Antiquity, were a Species of Gladiators. See Gladiator.

The *Hoplomachi* were thoſe who fought in Armour, either compleatly arm'd from Head to Foot, or only with a Cask and Cuiraſſe.

The Word is compos'd of the *Greek* ὅπλον, Armour, and μαχομαι, I fight.

HOPPER, a Veſſel wherein Seed-Corn is carry'd at the Time of Sowing. See Sowing.

The Word is alſo uſed for that wooden Trough in a Mill, into which the Corn is put to be ground. See Mill.

HORARY, ſomething relating to *Hora*, *Hour*. See Hour.

Horary *Circles* of the Globe. See Globe.

Horary *Circles*, or *Lines*, in Dialling, are the Lines or Circles which mark the Hours on Sun-dials. See Dial.

The *Horary Motion of the Earth*, *i.e.* the Arch it deſcribes in the Space of an Hour, is 15 Degrees; not accurately, (for the Earth moves with different Velocity, according to its greater or leſs Diſtance from the Sun) but near enough for ordinary Computations. See Earth.

HORD, Horde, Horda, in Geography, is uſed for a Company or Body of wandering People which have no ſettled Abode or Habitation; but ſtrole about *Aſia* and *Africa*, dwelling in Chariots, or under Tents, to be ready to ſhift as ſoon as Herbage, Fruits, and the preſent Province is eaten bare.

Hord is properly the Name which the *Tartars*, who inhabit beyond the *Volga*, in the Kingdoms of *Aſtracan* and *Bulgaria*, give to their Villages.

A *Hord* conſiſts of 50 or 60 Tents rang'd in a Circle, leaving an open Place in the Middle. --- The Inhabitants of each *Hord* uſually form a military Company or Troop; the eldeſt whereof is commonly the Captain, and depends on the General, or Prince of the whole Nation.

The Term *Hord* is a *Tartarian* Word, and literally denotes a *Multitude*.

HORDEATUM, a liquid Medicine, made of Barley, beat and boil'd with other ſuitable Ingredients.

HORDEOLUM, in Medicine, a ſmall Tubercle ariſing on the Palpebræ or Eye-lids. See Palpebræ.

It is thus call'd from the *Latin*, *Hordeum*, Barley, as reſembling a Barley Corn.

The Cure of the *Hordeolum* and *Grando*, is by Diſcutients and Suppuratives.

HORDICALIA, or Hordicidia, in Antiquity, a religious Feaſt held among the *Romans*, wherein they ſacrific'd Cattle big with young. See Feast.

This Feaſt fell on the 15th of *April*; on which Day they ſacrific'd thirty Cows big with Calf, to the Goddeſs *Tethys*, or *Terra*, Earth: Part of them were ſacrific'd in the Temple of *Jupiter*. --- They were burnt, at firſt, by the Pontifices; afterwards, by the eldeſt of the Veſtal Virgins.

Alexand. ab Alexandro Genial. Dier. writes *Hordalis dies*; and from him, ſome of the Moderns call the Feaſt *Hordalia*; but *Varro* writes it *Hordicalia*, and *Feſtus*, *Hordicidia*.

The Word *Hordicidia* is form'd of *horda*; which *Feſtus* explains by *prægnans*, pregnant; and *cædo*, I ſacrifice. *Ovid*, in his *Faſti*, l. iv. v. 631, deſcribes *horda*, or *forda*, to be *Bos prægnans*; of φορὰς, *gravida*.

HORIZON, or Horison, in Aſtronomy, a great Circle of the Sphere, dividing the World into two Parts or Hemiſpheres; the one upper, and viſible; the other lower, and hid. See Circle and Hemisphere.

The Word is pure *Greek*, and literally ſignifies *bounding* or *terminating the Sight*; being form'd of ὁρίζω, *termino*, *definio*, I bound, I limit; whence it is alſo call'd *Finiter*, Finiſher.

The *Horizon* is either *Rational* or *Senſible*.

The *rational*, *true*, or *Aſtronomical* Horizon, which is alſo call'd ſimply and abſolutely the *Horizon*, is a great Circle, whoſe Plane paſſes thro' the Centre of the Earth, and whoſe Poles are the *Zenith* and *Nadir*.

Such is the Circle H R (Tab. Aſtronomy, Fig. 52.) whoſe Poles are the *Zenith* and *Nadir*: Whence it follows, that the ſeveral Points of the *Horizon* are a Quadrant diſtant from the *Zenith* and *Nadir*.

The Meridian and Vertical Circles, all cut the rational *Horizon* at right Angles, and into two equal Parts. See Meridian and Vertical *Circle*.

The *ſenſible*, *viſible*, or *apparent* Horizon, is a leſſer Circle of the Sphere, as *hr*, which divides the viſible Part of the Sphere from the inviſible.

Its Poles, too, are the *Zenith* and *Nadir*: And conſequently the *ſenſible Horizon* is parallel to the *rational*; and it is cut at right Angles, and into two equal Parts by the Verticals.

The *ſenſible Horizon* is divided into Eaſtern and Weſtern.

The *Eaſtern* or *Ortive* Horizon, is that Part of the *Horizon* wherein the heavenly Bodies riſe. See Rising.

The *Weſtern* or *Occidual* Horizon, is that wherein the Stars ſet. See Setting.

HORIZON, in Geography, is a Circle paſſing over a given Part of the Earth, and dividing the viſible Part of the Earth and Heavens, from that which is inviſible. See EARTH.

The Altitude or Elevation of any Point of the Sphere, is an Arch of a Vertical Circle, intercepted between it and the ſenſible *Horizon*. See ALTITUDE and ELEVATION.

This is peculiarly denominated *ſenſible Horizon*, to diſtinguiſh it from the *rational* or *true*, which paſſes thro' the Centre of the Earth; as already obſerv'd.

By *ſenſible Horizon* is alſo frequently meant a Circle, which determines the Segment of the Surface of the Earth, over which the Eye can reach; call'd alſo the *Phyſical Horizon*.

In this Senſe we ſay, a ſpacious *Horizon*, a narrow ſcanty *Horizon*. To find the *Extent of the Horizon*, or how far a Man's Proſpect reaches, by means of the Height of his Eye, ſuppoſing the Earth an uninterrupted Globe, is a common Caſe of right-angled plain Triangles, where two Sides and an oppoſite Angle are given. --- Thus, ſuppoſe AHB (Tab. Geography, Fig. 8.) a great Circle of the terraqueous Globe, C the Centre, HC its Semidiameter, and E the Height of the Eye; ſince HE is a Tangent, the Angle at H is a right Angle; ſo that there are given HC, 398,386 Miles, or 21,034781 *Engliſh* Feet, CE the ſame Length at the Height of the Eye on the Maſt of a Ship, or at only a Man's Height, &c. added to it, and EHC the oppoſite right Angle.

By theſe three Parts given, it is eaſy to find all the other Parts of the Triangle. ---And firſt, for the Angle at C, in order to find the Side HE; the Proportion is, as the Side CE to the Angle at H, ſo is the Side HC to the Angle at E; which being ſubſtracted from 90 Degrees, the Remainder is the Angle at C. Then, as the Angle at E is to its oppoſite Side HC; or elſe, as the Angle at H is to its oppoſite Side CE; ſo the Angle at C to its oppoſite Side EH, the viſible *Horizon*.

Or the Labour may be ſhorten'd by adding together the Logarithm of the Sum of two given Sides, and the Logarithm of their Difference; the half of which two Logarithms, is the Logarithm of the Side requir'd, nearly. For an Example, we will take the two Sides in Yards, by reaſon ſcarce any Table of Logarithms will ſerve us any farther: the Semi-diameter of the Earth is 7,011594 Yards; the Height of the Eye is two Yards more, the Sum of both Sides is 14,023190.

Logar. of which Sum is - - -	7,1468468
Logar. of two Yards, the Differ. is	0,3010300
Sum of both Logar. - - - -	7,4478768
The half Sum - - - - - -	3,7239384

is the Logarithm of 5296 Yards = three Miles, which is the Length of the Line EH, or Diſtance the Eye can reach at ſix Feet Height.

This, at leaſt, would be the Diſtance on a perfect Globe, did the viſual Rays come to the Eye in a ſtrait Line; but by means of the Refractions of the Atmoſphere, diſtant Objects on the *Horizon* appear higher than really they are, and may be ſeen at a greater Diſtance, eſpecially on the Sea, which is a Matter of great Uſe, eſpecially to diſcover the Land, Rocks, &c.

Father *Laval*, Profeſſor of Hydrography at *Marſeilles*, found that the *Horizon* of his Obſervatory to the Sea-ward was never more than 15 Minutes, nor leſs than 13 ½; that is, the Arch of the Circumference of the Earth, intercepted between the Obſervatory and the *Horizon*, fluctuated between thoſe two Quantities; whence M. *Caſſini* deduces, that the Extent of the *Horizon* is ſeven *French* Leagues of three Miles each; and that the Obſervatory is 175 Foot high.

The Extent of the *Horizon*, at the ſame Place, and the ſame Height, is very ſubject to vary, by means of Differences in the Atmoſphere, which occaſion others in the Refractions. See REFRACTION.

When the Sea was full, or the North-Weſt or South-Eaſt Wind blew, and the Air hazy about the *Horizon*, F. *Laval* always found his *Horizon* the lower; *i. e.* the Refraction which ſhould raiſe it in that Caſe was leſs than ordinary. --- And yet on the common Principles, the Air being now much charged with Vapours, the very contrary were rather to be expected. --- This makes M. *Caſſini* ſuſpect, that there is ſome other refractive Matter in the Atmoſphere, beſide the Air itſelf.

The ſame Author obſerves, that at a Height much greater than that of F. *Laval*'s Obſervatory, he found the Arch terminated by the *Horizon* to the Seaward, 42', without any ſenſible Variation; whence he concludes, that the Variations are the greater, as the Height is the leſs; which may ſeem contrary to what he had aſſerted in another Place, *viz.* that the Variations in the apparent Altitudes of Bodies are greater, as theſe Objects are more remote, by reaſon they are ſeen thro' the larger Quantity of Air, which is all liable to be vary'd. --- But the Contradiction may be ſolv'd.

HORIZON *of the Globe*. See GLOBE.

HORIZONTAL, ſomething that has a Regard to the *Horizon*, is taken in the *Horizon*, or on a Level with the *Horizon*. See HORIZON.

In this Senſe we ſay, a *Horizontal* Plane, *Horizontal* Line, *Horizontal* Diſtance, &c.

HORIZONTAL *Plane*, is that which is parallel to the *Horizon* of the Place; or nothing inclin'd thereto. See PLANE.

The Buſineſs of Levelling, is to find whether two Points be in the *horizontal* Plane; or how much the Deviation is. See LEVELLING.

HORIZONTAL *Plane*, in Perſpective, is a Plane parallel to the *Horizon*, paſſing thro' the Eye, and cutting the Perſpective Plane at right Angles. See PERSPECTIVE *Plane*.

HORIZONTAL *Line*, in Perſpective, is a right Line drawn thro' the principal Point, parallel to the *Horizon*: Or, it is the Interſection of the *horizontal* and perſpective Planes.

Such is the Line PQ (Tab. Perſpective, Fig. 12.) paſſing thro' the principal Point F.

HORIZONTAL *Dial*, is that drawn on a Plane parallel to the *Horizon*; having its Gnomon, or Style elevated according to the Altitude of the Pole of the Place it is deſign'd for.

Horizontal Dials are, of all others, the moſt ſimple and eaſy. ---The Manner of deſcribing them, ſee under the Article DIALLING.

HORIZONTAL *Range*, or *Level Range* of a Piece of Ordnance, is the Line it deſcribes, when directed parallel to the *Horizon*, or *horizontal* Line. See RANGE.

Dr. *Halley* gives two very ready Theorems, the one to find the greateſt *horizontal* Range at 45 Degrees Elevation, in any Shot made upon any inclin'd Plane, with any Elevation of the Piece whatſoever; and the other to find Elevations proper to ſtrike a given Object with any Force, greater than what ſufficeth to reach it with the middle Elevation.

1°. A Shot being made on an inclin'd Plane: having the *horizontal* Diſtance of the Object it ſtrikes, with the Elevation of the Piece, and the Angle at the Gun between the Object and the Perpendicular; to find the greateſt *horizontal* Range of that Piece laden with the ſame Charge; that is half the Latus Rectum of all the Parabolæ made with the ſame Impetus. --- Take half the Diſtance of the Object from the Nadir, and the Difference of the given Elevation from that half; ſubſtract the verſed Sine of that Difference from the verſed Sine of the Diſtance of the Object from the Zenith: The Difference of thoſe verſed Sines, will be to the Sine of the Diſtance of the Object from the Zenith, as the *horizontal* Diſtance of the Object ſtruck, to the greateſt Range at 45 Degrees.

2°. Having the greateſt *horizontal* Range of a Gun, the *horizontal* Diſtance and Angle of Inclination of an Object to the Perpendicular; to find the two Elevations neceſſary to ſtrike that Object. --- Halve the Diſtance of the Object from the Nadir; this Half is equal to the half Sum of the two Elevations ſought: Then ſay, As the greateſt *horizontal* Range is to the *horizontal* Diſtance of the Object, ſo is the Sine of the Angle of Inclination, or Diſtance of the Object from the Perpendicular, to a fourth Proportional; which Fourth being ſubſtracted from the verſed Sine of the Diſtance of the Object from the Zenith, leaves the verſed Sine of half the Difference of the Elevations ſought; which Elevations are therefore had, by ſubſtracting that half of the Difference to and from the aforeſaid half Sum. See PROJECTILE.

HORIZONTAL *Shelters*, among Gardeners, are Defences diſpos'd parallel to the *Horizon* for tender Plants, Bloſſoms, and Fruits in the Spring, againſt Blaſts and pinching Nights.

The uſual Shelters that have obtain'd, are Baſs-mats, and other warm Coverings, which are roll'd up in the Day-time, and let down in the Night. --- In lieu of theſe, the Revd. Mr. *Lawrence* firſt propos'd *horizontal Shelters*, chiefly on this Principle, that moſt of our Froſts and Blaſts fall perpendicularly; *i. e.* the condens'd Vapours falling from the upper Region, do, at Night, form themſelves toward the Surface of the Earth, into Drops of Dews, ſubject to be frozen by the Coldneſs of the Air. See DEW, FROST, &c.

The *horizontal Shelters* are to be made by laying Rows of Tyles, at certain Diſtances one above another, in the Structure of the Wall, ſo as to project or hang over the Plane of the Wall, to carry off the Dew, Wet, &c. --- 'Tis an Inconvenience objected to this Method, that it is difficult to lead a Tree rightly among the Tyles, or to keep its Figure duly fill'd up.

HORIZONTAL *Parallax*, HORIZONTAL *Refraction*, HORIZONTAL *Projection*, HORIZONTAL *Diſtance* } See { PARALLAX. REFRACTION. MAP. DISTANCE.

HORN, *Cornu*, a hard callous Subſtance, growing on the Head of divers Animals. See ANIMAL and HEAD.

'Tis laid down as a Rule by ſome Naturaliſts, that no Animals have *Horns* but thoſe that are cloven-footed.

The *Horns* are uſually a double Part; inſomuch that there is but one Exception, and this too controverted. See UNICORN.

The *Horns* of a Deer are properly call'd his *Head*. See HEAD.

In the Hiſtory of the *French* Academy of Sciences, we have an Account of a Bullock's *Horn* dug out of the Ground in ploughing, which had ſhot forth fibrous Roots, and appear'd to have grown or vegetated after the Manner of a Plant.

Horns make a conſiderable Article in the Arts and Manufactures. --- Bullocks *Horns* ſoften'd by the Fire, ſerve to make Lanthorns, Combs, Inkhorns, Tobacco-Boxes, &c.

Horn is ſometimes alſo uſed for the Hoof of a Horſe, &c. See HOOF.

Hart's-HORN, *Cornu Cervi*. --- The Scrapings or Raſpings of the *Horn* of this Animal are medicinal, and uſed in Aſtringent Draughts, Ptiſans, &c. with that Intention.

It yields by Diſtillation a very penetrative volatile Spirit. See SPIRIT, &c.

Ammons HORN. See CORNU *Ammonis*.

HORN is alſo a Sort of muſical Inſtrument, of the Wind Kind; chiefly uſed in Hunting, to animate and bring together the Dogs, and the Hunters. See HUNTING.

The *Horn* may have all the Extent of the Trumpet. See TRUMPET.

The Term anciently was, *Wind a Horn*; all *Horns* being in thoſe Times compaſs'd: But ſince ſtraight *Horns* are come in faſhion, they ſay, *Blow a Horn*, and ſometimes, *Sound a Horn*.

There are various Leſſons on the *Horn*; as the *Recheat*, *Double Recheat*, *Royal Recheat*, *Running* or *Farewel Recheat*, &c. See RECHEAT.

The *Hebrews* made uſe of *Horns* form'd of Rams *Horns*, to proclaim the Jubilee; whence the Name *Jubilee*. See JUBILEE.

HORN, in Anatomy. See CORNU, MATRIX, &c.

HORN, in Architecture, is ſometimes uſed for *Volute*. See VOLUTE.

HORN *of Plenty*. See CORNU COPIA.

HORN *with Horn*, or *Horn under Horn (cornutum cum cornuto)* when there is Common *per cauſe de vicinage*, Intercommoning of horned Beaſts. See COMMON and INTERCOMMON.

HORN *Work*, in Fortification, a Sort of Out-work advancing toward the Field, to cover and defend a Curtain, Baſtion, or other Place ſuſpected to be weaker than the reſt; as alſo to poſſeſs a Height, &c. See OUT-*work*.

It conſiſts of two Demi-Baſtions, as L M N and O P Q, Tab. Fortification, Fig. 12. and a Curtain N O. --- Its Sides or Wings are uſually parallel; tho' ſometimes they approach or contract toward the Place, forming what they call a *Queue d'Aronde*, or *Swallows Tail*. See QUEUE *d'Aronde*.

When the Wings are too long, they ſometimes make Epaulements to flank them. --- The Parts of the *Horn-work* next the Country, are to be furniſh'd with a Parapet.

Two *Horn-works* join'd together, make a Crown-work. See CROWN-*work*.

HORN *Beam Pollengers*, are Trees which have been lopp'd, and are of about twenty Years Growth. See TREE and LOPPING.

HORNGELD and HORNETE, (from the *Saxon*, *Horn*, and *Geld*, Payment) ſignifies a Tax within the Foreſt, to be paid for the feeding of *horned* Beaſts. See GELD.

To be free of this, is a Privilege granted by the King to ſuch as he thinks good. --- *Quietum eſſe omni collectione in Foreſta de Beſtiis cornutis aſſes. Et ſint quieti de omnibus Geldis, & Danegeldis, & Wodgeldis, & Senegeldis, &* Horngeldis, &c. See SUBSIDY.

A Horſe is ſaid to be *Horn hipped*, when the Tops of the two Haunch Bones appear too high.

HORNAGIUM, HORNAGE, in our ancient Law Books, ſeems to import the ſame with Horngeld. See HORNGELD.

HORODICTIC *Quadrant*. See QUADRANT.

HOROGRAPHY, the Art of making or conſtructing Dials; call'd alſo *Horologiography*, *Gnomonica*, *Sciaterica*, *Photoſciaterica*, &c. See DIALLING.

The Word is compounded of ὥρα, *hora*, Time, Hour, and γράφω, *ſcribo*, I write.

HOROLOGIOGRAPHY, the Art of making or conſtructing Dials. See DIALLING.

HOROLOGIUM, a common Name among the *Latin* Writers, for any Inſtrument or Machine to meaſure the Hours withal. See CHRONOMETER.

Such are our Clocks, Watches, Sun-Dials, &c. See CLOCK, WATCH, DIAL, &c. See alſo CLEPSYDRA.

The Word is originally *Greek*, ὡρολόγιον, compos'd of ὥρα, *hora*, Time, Hour, and λόγος, Speech, Diſcourſe.

HOROLOGIUM, HOROLOGION, is alſo a Name the *Greeks* give to their Liturgy or Breviary; by reaſon it contains the daily *Hours*, or the ſeveral Offices to be rehears'd each Day. See HOUR.

The *Greeks* call it ὡρολόγιον, which anſwers to what in *Latin* and *Engliſh* we call *Diurnum*, or *Diurnal*.

The Ὡρολόγιον is the Breviary of the *Greeks*. See BREVIARY.

HOROPTER, in Opticks, is a right Line, drawn thro' the Point where the two Optic Axes meet, parallel to that which joins the Centres of the two Eyes, or the two Pupils.

Such is the Line A B (Tab. Opticks, Fig. 67.) drawn thro' the Point of Concourſe C, of the Optic Axes of the Eyes D and E, parallel to H I, which joins the Centres of the Eyes H and I.

It is call'd *Horopter*, as being found by Experience to be the Limit of diſtinct Viſion. See VISION.

Plane of the HOROPTER. See PLANE *of the Horopter*.

HOROSCOPE, in Aſtrology, is the Degree of the Aſcendant, or Star riſing above the Horizon, at any certain Time when a Prediction is to be made of a future Event; as, the Fortune of a Perſon then born, the Succeſs of a Deſign then laid, the Weather, &c. See ASCENDANT.

Mercury and *Venus* were in the *Horoſcope*, &c. They were anciently ſo infatuated with *Horoſcopes*, that *Albertus Magnus* is ſaid to have had the Temerity to draw that of Jeſus Chriſt.

The Word is *Greek*, compos'd of ὥρα, *hora*, Hour, and the Verb σκέπτομαι, *ſpecto*, *conſidero*, I conſider. --- The *Latins* call it *Cardo Orientalis*.

HOROSCOPE is alſo uſed for a Scheme or Figure of the twelve Houſes, *i. e.* the twelve Signs of the Zodiac, wherein is mark'd the Diſpoſition of the Heavens for the given Time. See HOUSE and FIGURE.

Thus we ſay, to draw a *Horoſcope*, conſtruct a *Horoſcope*, &c. We call it more peculiarly *calculating* a Nativity, when the Life and Fortune of a Perſon are the Subject of the Prediction: For they draw *Horoſcopes* of Cities, great Enterprizes, &c.

Lunar HOROSCOPE, is the Point which the Moon iſſues out of, when the Sun is in the aſcending Point of the Eaſt.

This is alſo call'd the *Part of Fortune*. See PART.

HOROSCOPE, is alſo a Mathematical Inſtrument, in manner of a Planiſphere; but now diſuſed. See PLANISPHERE.

It was invented by *J. Paduanus*, who compoſed a ſpecial Treatiſe thereon.

HORROR, HORROUR, ſtrictly ſignifies ſuch an Exceſs of Fear, as makes a Perſon tremble. --- In Phyſick it denotes ſuch a Shuddering or Quivering as precedes an Ague Fit; and is often join'd with Rigores and Lumbagines. See AGUE, FEVER, &c.

Thro' Ignorance of this Acceptation, ſome have underſtood Fear to be accounted by Authors among the antecedent Symptoms of thoſe Diſtempers.

HORS *de ſon fee*, *q. d.* out of his Fee, is an Exception to avoid an Action brought for Rent iſſuing out of certain Land, by him that pretends to be the Lord, or for ſome Cuſtoms and Services. --- For if the Defendant can prove the Land to be without the Compaſs of his Fee, the Action falls. See DISTRICT.

HORSE, a Domeſtick Quadruped, of great Uſe in the Affairs of Agriculture, Commerce, War, Sporting, &c.

The *Horſe* makes the Subject of a very extenſive Art, call'd *Horſemanſhip*, conſiſting of divers ſubordinate Arts or Branches. See HORSEMANSHIP.

From the ſame Beaſt ariſe the Profeſſions of Chivalry, Knighthood, &c. See CHEVALIER, &c.

Authors are divided as to the Time when Men firſt began to mount *Horſes*. — The Scholiaſts of *Euripides*, and *Euſtathius* on the IId Book of the Iliad, ſpeak as if the Ancients had been unacquainted with the Uſe of Saddle *Horſes*, and had only uſed them to draw Chariots, &c. They add, that Courſes on *Horſe*-back were not introduc'd at the Olympic Games, before the 85th Olympiad. — But this can ſcarce be; in regard the Centaurs, to whom the Invention is attributed, liv'd long before that Time. See CENTAUR.

It appears likewiſe from *Pauſanias*, that there were *Horſe* Courſes even in the Time of *Hercules*, the Inſtitutor of the Olympic Games. See OLYMPIC.

The Parts of a *Horſe*'s Body furniſh a great Variety of Terms, by no means to be overlook'd. — The Skin and Coat are call'd the *Hair*; the long Hair on the Neck the *Main*; the Fore-top the *Toping* or *Tuke*; the Hair behind, on the Feet, the *Fetlock* or *Fetter-lock*; that growing over the Top of the Hoof, the *Coronet* or *Cronet*; that on the Eye-lids, the *Brills*. —The Ridge whereon the Main grows, is call'd the *Creſt* or *Criſt*; the fore Part, from the Neck to the fore Legs, the *Briſket* or *Cheſt*; the Mark frequently running down his Face, the *Rache*; and that in the Forehead, the *Star*. — The

Top of the Shoulder Blades, at the ſetting on of the Neck, is call'd the *Withers*; the Place where the Saddle is ſet, the *Dock*; and a Bruiſe or Hurt thereon, a *Navel-gall*; the Middle of the Back, from the Main to the Hips, the *Reins*; the Extremity of the Reins above the Hips, the *Croupe*; the Tail, the *Dock* or *Runt*; the hollow or ſinking of the Back-bone, the *Sway*; the hind Part of the Belly, next the Genital, the *Flank*; that nearer the Thighs, the *Groins*; the looſe Skin wherein the Yard is, the *Sheath*; and the fore Parts of the Shoulders, next the Breaſts, the *Fillets*. — The uppermoſt Part of the hind Leg, next the Buttock, is call'd the *Stiffle* or *Stiffle Joint*; the after Joint, or bending of the hind Leg, the *Chambrel* or *Elbow*; the inner, the *Ham* or *Hough*; the Joint at the Fetlock, the *Paſtern*, *Ancle*, or *Fetlock Joint*; the Foot, above the Hoof of the Ancle Joint, the *Coronet*. — The Part from the Withers to the Top Joint of the Thigh, is call'd the *Shoulder*; the middle Joint of the fore Leg, the *Knee*; the right Leg before, the *farther Leg*; and the left, the *nearer*. — The Hoof is call'd the *Horn*; the Hollow of the Hoof, the *Coffin*; the tender Part of the Hoof, next the Heel, the *Fruſh*; the Ball of the Foot, the *Frog*; the Part to be pared or cut off the Hoof when overgrown, the *Rift*; the fore Part of the Hoof the *Toes*; the hind Part, where there is a Riſing in the Middle of the Sole, the *Heel*; and the Inſides meeting on the Heel, the *Quarters*. — *Of moſt of theſe a further Account will be found under their reſpective Articles.*

The Maſters in this Art lay it down, that a Horſe to be good, and well made, muſt have three Parts like thoſe of a Woman, *viz.* the Breaſt, which is to be broad, the Hips round, and the Main long; three of a Lion, *viz.* Countenance, Intrepidity, and Fire; three of a Bullock, *viz.* the Eye, Noſtril, and Joint; three of a Sheep, *viz.* the Noſe, Gentleneſs, and Patience; three of a Mule, Strength, Conſtancy, and Foot; three of a Deer, Head, Leg, and Hair ſhort; three of a Wolf, Throat, Neck, and Hearing; three of a Fox, Ear, Tail, and Trot; three of a Serpent, Memory, Sight, and Turning; three of a Hare or Cat, Running, Walking, and Suppleneſs.

Horſes are diſtinguiſh'd into divers Kinds, and differently denominated, with regard to their Strain or Country. — As the *Neapolitan*, known by his Hawk Noſe. — The *Spaniſh Genet*, by his ſmall Limbs. — The *Barb*, by his fine Head and deep Hoof. — The *Dutch*, by the Roughneſs of his Legs. — The *Engliſh* by his ſtrong knitting together, *&c.* — The *Flandrin*, &c. See GENET, BARB, *&c.*

Horſes are alſo diſtinguiſh'd with regard to the Uſes or Offices they are reſerv'd for; as, the Coach *Horſe*, War *Horſe*, Hunting *Horſe*, Running *Horſe*, Pack *Horſe*, &c. See COACH, HUNTING, *&c.*

Horſes are alſo diſtinguiſh'd with regard to their Colours; as — *A Bay*, which admits of divers Shades or Caſts, *viz.* a black Bay, brown Bay, dapple Bay; all which have conſtantly black Mains and Tails. — *Dun* and *Mouſe Dun*, having frequently a black Liſt along the Back, which denominates them Flea-back'd. — *Flea-bitten*, which is white ſpotted with red. — *Grey*, Dapple Grey, Silver Grey, Sad or Powder'd Grey, Black Grey, Sandy Grey, and Iron Grey. — *Griſſel* or *Rount*, a light Fleſh Colour intermix'd with white. — *Peach Colour*, or *Bloſſom Colour*. — *Pyebald*, which conſiſts of two Colours, one of them white. — *Roan*, a Bay, Black, or Sorrel, intermix'd with white Hairs. — *Rubican*, Black or Sorrel, with white Hairs ſcatter'd about his Body. — *Sorrel*, Common Sorrel, Red or Cow-colour'd Sorrel, bright or light-colour'd Sorrel, burnt Sorrel; all chiefly diſtinguiſh'd by the Colour of their Manes. — *Starling Colour*, reſembling a browniſh or blackiſh Grey, only more freckled, or intermix'd with white. — *Tyger Colour*, much the ſame with the brand. ed Grey, only the Spots ſmaller. — *Wolf Colour*. — *Deer Colour*. — *Black*. — *White*, &c.

Theſe Colours are generally conſider'd as Symbolical of the Nature, Qualities, *&c.* of the Beaſts; and accordingly their Value is much influenc'd hereby. — The dapple Grey is priz'd for Beauty; the brown Bay for Service; the Black with Silver Hair for Courage; the Roan for Countenance; the Sorrel, Black without white, and Iron Grey, are reputed hot and fiery; the bright Grey, Flea-bitten, and Black with white Spots, are ſanguine; the White, Dun, and Pye-bald, phlegmatic and heavy; the Mouſe Dun, red Bay, and blue Grey, are dull; the Peach Colour rarely prove obedient to the Spur; the Sorrel ſeldom fail of being good, eſpecially if their Legs, Tails, and Manes be black; and the ſame may be ſaid of the Flea-bitten, at leaſt thoſe ſo mark'd in the fore Parts, or over the whole Body; for when only behind 'tis an ill Sign.

Indeed 'tis hard laying down any univerſal Rules. — The White, which promiſe the leaſt, prove good when black about the Eyes and Noſtrils. And there are excellent Iron Greys, tho' they are not reputed a good Colour.

For the Age, Teeth, Mark, &c. *of Horſes*. See AGE, TEETH, MARK, *&c.*

For the Furniture, &c. *of a Horſe*. See SADDLE, BRIDLE, BIT, *&c.*

HORSE is alſo us'd, in the Military Language, to expreſs the Cavalry. See CAVALRY.

The Army conſiſted of 30000 Foot, and 10000 *Horſe*. See INFANTRY.

The *Horſe* includes *Horſe* Guards, *Horſe* Granadiers, and Troopers. — Dragoons are alſo frequently comprehended under the Name, tho' they fight on Foot. See HORSE *Guards*, GRANADIER, DRAGOON, *&c.*

Horſe Guards, by the *Spaniards* call'd *Guardas de a Cavallo*; by the *French*, *Gardes de Corps*; the *Germans*, *Leibgardy*; and by the *Engliſh* uſually *Life Guards*; are the Guards of the King's Perſon and Body, conſiſting of 800 Men, well arm'd and equipp'd. See GUARD.

They are divided into three *Troops*; and to each is now added, by Eſtabliſhment, a Troop of Granadiers, conſiſting of 64 Men; all under the Command of a Captain. See TROOP, GRANADIER, CAPTAIN, *&c.*

Each Troop of *Horſe* Guards is divided into four Diviſions or Squadrons; two of which, conſiſting of 100 Men, commanded by a principal commiſſion'd Officer, two Brigadiers, and two Sub-brigadiers, with two Trumpets, mount the Guard, one Day in ſix, and are reliev'd in their Turns.

Their Duty is, by Parties from the Guard, to attend the King's Perſon when he goes out near Home. — When he goes out of Town, he is attended by Detachments out of all the three Troops.

One of the three *Captains of the Horſe Guards* attends on the King when he walks on foot, immediately next his Perſon; carrying in his Hand an Ebony Staff or Truncheon with a Gold Head.

One Diviſion of Granadiers mounts with a Diviſion of the Troop to which they belong; and go out on ſmall Parties from the Guard, perform Centinel Duty on foot, attend the King alſo on foot, *&c.*

Maſter of the HORSE. See MASTER *of the Horſe*.

Light HORSE, includes all the *Horſe* except thoſe of the Life Guard.

The Term *Light Horſe* is ſometimes apply'd to an independent Troop; or a Troop not embody'd into a Regiment.

The Denomination aroſe hence, that anciently they were lightly arm'd, in Compariſon of the Royal Guard, which were arm'd at all Points.

HORSE, is alſo a Term uſed in various of the Arts and Manufactories, for ſomething that helps to ſuſtain their Work from the Ground, for the more commodious working at it.

The *Horſe* uſed by the Tanners, Skinners, call'd alſo the *Leg*, is a Piece of Wood cut hollow and roundiſh, four or five Foot long, and placed aſlope; upon which they pare their Skins to get off the Dirt, Hair, Fleſh, *&c.* See TANNING, CURRYING, CHAMOISING, *&c.*

Horſe is alſo uſed in Carpentry for a Piece of Wood jointed acroſs two other perpendicular ones, to ſuſtain the Boards, Planks, *&c.* which make Bridges over ſmall Rivers; and on divers other Occaſions.

Wooden Horſe. See EQUULEUS.

HORSE is alſo a Rope in a Ship, made faſt to one of the Fore-maſt Shrouds; having a dead Man's Eye at its End, through which the Pendant of the Sprit-ſail Sheets is reev'd.

HORSE is alſo a Cant Name lately introduc'd into the Affair of Lotteries, for the Chance or Benefit of a Ticket or Number for one or more Days, upon Condition, if it be drawn a Prize within the Time covenanted for, of returning to the Seller an undrawn Ticket. See CHANCE and LOTTERY.

To determine the Value of a *Horſe*. — Multiply the Amount of the Prizes in the Lottery by the Time the *Horſe* is hired for; and from the Product ſubtract the Amount of the Number of Prizes by the Value of an undrawn Ticket into the Time of the *Horſe*: The Remainder being divided by the Number of Tickets into the whole Time of drawing, the Quotient is the Value of the *Horſe*. See GAMING.

HORSEMANSHIP, the Art of breaking, diſciplining, and managing *Horſes*. See HORSE.

Horſemanſhip, in its Latitude, includes what relates to the Make, Colour, Age, Temper, and Qualities of *Horſes*; their reſpective Countries and Climates, with the Manner of breeding, propagating, *&c.* the Diſcovery of the Uſes or Services they are fitteſt for, whether the Wars, the Race, the Saddle, or Labour; and forwarding and accommodating them thereto.

In this general Senſe, it alſo includes the Knowledge of the Defects and Diſeaſes of *Horſes*, and the Remedies proper for the ſame; with the ſeveral Operations requiſite thereto, as *Docking*, *Gelding*, *Shoeing*, &c. And thus takes in the Farrier's Province. See FARRIER. See alſo DOCKING, GELDING, SHOEING, *&c.*

But the Word is in a more peculiar Manner underſtood of the Art of *Riding*; or of directing a *Horſe* to Advantage, not only in the ordinary Motions, but more eſpecially in the managing or making him work, upon Volts, Airs, &c. See MANAGE, RIDING, VOLT, AIR, &c.

HORSE *Shoe*, a Cover or Defence for the Sole of a *Horſe*'s Foot. See SHOE, HOOF, &c.

Of theſe there are ſeveral Sorts; as — 1°. The *Planch Shoe*, or *Pancelet*, which is ſaid to make a good Foot, and a bad Leg; as cauſing the Foot to grow beyond the Meaſure of the Leg. It is choſe for a weak Heel, and will laſt longer than any other *Shoe*; being borrow'd from the Moil which has weak Heels and Fruſhes to keep the Feet from Stones and Gravel.

2°. *Shoes with Calkins*, which, tho' intended to ſecure the *Horſe* from ſliding, yet are reputed by many to do him more harm than good, in that he cannot tread evenly upon the Ground, whereby many times he wrenches his Foot, or ſtrains ſome Sinew, eſpecially upon ſtoney Ways, where Stones will not ſuffer the Calkins to enter. *Double Calkins* are leſs hurtful, as he treads evener with them than on the ſingle Calkins; but then they muſt not be over long or ſharp-pointed, but rather ſhort and flat.

3°. There are *Shoes with Rings*, firſt invented to make the *Horſe* lift his Feet up high; tho' ſuch *Shoes* are more painful than helpful, beſide the Unhandſomeneſs of the Sight. — This Defect is moſt incident to *Horſes* that have not ſound Hoofs; for tender Feet fear to touch the Ground that is hard: But what is intended for Remedy, proves a Prejudice to the *Horſe*, by adding high Calkins, or Rings to his *Shoes*, as by that means his Heels are made weaker than before.

4°. *Shoes* with *ſwelling Welts or Borders* round about them, are us'd in *Germany*, &c. which being higher than the Heads of the Nails, ſave them from wearing. — Theſe are the beſt Sort of laſting *Shoes*, if made of well temper'd Stuff, as they wear equally in all Parts, and the *Horſe* treads evenly upon them.

5° Others, who uſe to paſs Mountains, where Smiths are not ſo eaſily met with, carry *Shoes* about them, with Vices, whereby they faſten them to the *Horſe*'s Hoofs without the Help of the Hammer or Nail: Yet is this more for Shew than Service; for though ſuch *Shoe* may ſave a *Horſe*'s Feet from Stones, yet it ſo pinches his Hoof that he goes with Pain, and perhaps injures it more than the Stones do. — On ſuch emergent Occaſions, therefore, it were better to make Uſe of the *Joint Shoe*, which is made of two Pieces, with a flat Rivet Nail joining them together in the Toe, ſo that it may be taken both wide and narrow to ſerve any Foot.

6°. The *Patten Shoe* is us'd for a *Horſe* that is burnt in the Hip, Stiffle, or Shoulder, as it cauſes him to bear upon that Leg the Grief is on, and conſequently makes him uſe it the better.

8°. The *Panton* or *Pantable Shoe*, which opens the Heels, and helps Hoof-binding. — To which may be added the *half Panton Shoe*.

HORSE *Shoe* in Fortification, is a Work ſometimes of a round, ſometimes of an oval Figure, rais'd in the Ditch of a marſhy Place, or in low Grounds, and border'd with a Parapet.

Its Uſe is to ſecure a Gate, or to ſerve as a Lodgment for Soldiers, to prevent Surprizes, or to relieve an over-tedious Defence.

HORSE *Shoe Head*, a Diſeaſe in Infants, wherein the Sutures of the Head are too open, or too great a Vacuity is left between them; ſo that the Aperture ſhall not be totally clos'd up, or the Cranium in that Part be ſo hard as the reſt for ſome Years after. See SUTURE.

This Openneſs is found to be increas'd upon the Child's catching Cold. When the Diſeaſe continues long, 'tis reputed a Sign of Weakneſs and ſhort Life. In this Caſe 'tis uſual to rub the Head every now and then with warm Rum or Brandy, mix'd with the white of an Egg, and Palm Oil.

Sometimes the Diſorder ariſes from a Collection of Waters in the Head, call'd a *Hydrocephalus*. See HYDROCEPHALUS.

HORSE *Meaſure*, is a Rod of Box, to ſlide out of a Cane, with a Square at the End, being divided into Hands and Inches, to meaſure the Height of *Horſes*. See HAND.

HORSHAM *Stone*, is a kind of thin broad Slate, of a greyiſh Colour; formerly much uſed, eſpecially in *Suſſex*, to heal or cover Churches and Chancels, great Houſes, &c. See STONE, SLATE, COVERING, &c.

It is call'd *Horſham Stone*, becauſe chiefly brought from the Town of *Horſham*.

HORTAGILERS, in the Grand Signor's Court, are Upholſterers, or Tapiſtry-hangers. See TAPISTRY.

There is no City better or more orderly regulated than the Grand Signor's Camp: And to have a Notion of the Magnificence of that Prince, he muſt be ſeen in that Equipage; he being much better lodg'd and accommodated there, than at *Conſtantinople*, or any other City in his Dominions.

He has always two Tents or Pavilions, and two Sets of Furniture entire; that while he is in one, they may ſtretch or ſpread the other.

In order to this, he has conſtantly four hundred *Hortagilers* or Upholſterers in his Retinue, who go a Day's Journey before him, to fix on a proper Place. They firſt prepare that of the Sultan, then thoſe of the Officers of the Port, and the *Beglierbegs*, according to their Rank.

HORTICULTURE, the Art of Gardening. See GARDENING.

The Word is compounded of *Hortus*, Garden, and *colo*, I till, dreſs, &c.

HOSANNA, in the *Hebrew* Ceremonies, was a Prayer which they rehears'd on the ſeveral Days of their Feaſt of Tabernacles. See TABERNACLE.

It was thus call'd, by reaſon there was a frequent Repetition therein of the Word הושיעה נא, *ſerva nunc*, or *ſerva precor*, *i. e. Save us now*, or *Save us, we pray*.

There are divers of theſe *Hoſannas*. — The *Jews* call them *Hoſchanmoth*, *i e.* the *Hoſannas*. — Some are rehears'd on the firſt Day, others on the ſecond, &c. which they call *Hoſanna* of the firſt Day, *Hoſanna* of the ſecond Day, &c.

HOSANNA *Rabba*, or *Grand* HOSANNA, is a Name they give to their Feaſt of Tabernacles, which laſts eight Days; by reaſon, during the Courſe thereof, they are frequently calling for the Aſſiſtance of God, the Forgiveneſs of their Sins, and his Bleſſing on the new Year; and to that Purpoſe make great uſe of the *Hoſchannoth* or Prayers above mention'd.

The *Jews*, alſo, apply the Term *Hoſanna Rabba*, in a more peculiar Manner, to the ſeventh Day of the Feaſt of Tabernacles; by reaſon they apply themſelves more immediately on that Day to invoke the divine Bleſſing, &c.

HOSE, from the *Saxon*, *Hoſa*, a Stocking. See STOCKING.

HOSE *in Hoſe*, among Botaniſts, ſignifies one long Husk within another.

HOSE-*Husk*, in Botany, a long round *Husk* within another, as in Pinks, Julyflowers, &c. See FLOWER.

HOSPITAL, popularly SPITTAL, a Place or Building erected, out of Charity, for the Reception and Support of the Poor, Aged, Infirm, and otherwiſe helpleſs. See CHARITY.

The Word is form'd of the *Latin*, *Hoſpes*, Hoſt, Stranger. See HOST.

In the firſt Ages of the Church, the Biſhop had the immediate Charge of all the Poor, both ſound and diſeas'd; as alſo of Widows, Orphans, Strangers, &c.—When the Churches came to have fix'd Revenues allotted them, it was decreed, that, at leaſt, one fourth Part thereof ſhould go to the Relief of the Poor; and to provide for them the more commodiouſly, divers Houſes of Charity were built, which are ſince denominated *Hoſpitals*. See TITHE.

They were govern'd wholly by the Prieſts and Deacons, under the Inſpection of the Biſhop. See BISHOP, &c.

In Courſe of Time, ſeparate Revenues were aſſign'd for the *Hoſpitals*; and particular Perſons, out of Motives of Piety and Charity, gave Lands, and Money for erecting of *Hoſpitals*.

When the Church Diſcipline began to relax, the Prieſts, who till then had been the Adminiſtrators of *Hoſpitals*, converted them into a Sort of Benefices, which they held at Pleaſure, without giving account thereof to any Body; reſerving the greateſt Part of the Income to their own Uſe; ſo that the Intentions of the Founders were fruſtrated. — To remove this Abuſe, the Council of *Vienna* expreſly prohibited the giving any *Hoſpital* to ſecular Prieſts in the Way of a Benefice; and directed the Adminiſtration thereof to be given to ſufficient and reſponſible Laymen, who ſhould take an Oath, like that of Tutors, for the faithful Diſcharge thereof; and be accountable to the Ordinaries. — This Decree was executed and confirm'd by the Council of *Trent*. See OECONOMUS.

In *England*, *Hoſpitals* founded for the mere Relief of the Indigent and Neceſſitous, are peculiarly call'd *Alms-houſes*; the Name *Hoſpital* being reſerv'd to thoſe deſtin'd for the Sick, Aged, Young, &c.—The Principal of theſe are, The *Royal* HOSPITAL for diſabled Soldiers, commonly call'd *Chelſea College*. See COLLEGE.

It was founded by King *Charles* II. carry'd on by King *James* II. and finiſh'd by King *William* and Queen *Mary*.

The Building is very ſpacious and magnificent: Its Figure is a Π; the middle or front Part whereof conſiſts of a Chapel and Hall; the other two Lines being four Stories high, divided into Wards or Galleries, two in each Story, containing each twenty-ſix diſtinct Apartments for the Foot Soldiers. At each of the four Corners of the main Building, there is a Pavilion, in one whereof is the Governor's Lodging and the Council Chamber; the other being Lodgings for ſeveral of the Officers of the Houſe. Beſide the main

Building

Building, there are four Wings or Out-buildings; one for the *Infirmary*, another for ſeveral Officers of the Houſe, another for old maim'd Officers of Horſe and Foot; and the fourth for the Baker, Laundreſs, *&c.*

The Number of ordinary Penſioners is 476; beſide the Officers and Servants of the Houſe: The out, or extraordinary Penſioners, are alſo very numerous; and theſe, upon Occaſion, do Duty in the ſeveral Garriſons, from whence Draughts are made for the Army, *&c.* See INVALIDS.

The Penſioners are all provided with Cloaths, Diet, Waſhing, Lodging, Firing, and one Day's Pay in every Week for ſpending Money.

The Qualifications requir'd to be admitted of this Body, are, that each Perſon bring a Certificate from his ſuperior Officer, that he has been maim'd or diſabled in the Service of the Crown; or that he has ſerv'd the Crown 20 Years, which muſt be made appear by Muſter-Rolls.

To defray the Charges of this *Hoſpital*, there is a conſiderable Sum paid yearly out of the Poundage of the Army; beſide one Day's Pay of each Officer, and each common Soldier, every Year; which, in Time of War, amounts to 13 or 14000*l.*

For the Adminiſtration of this *Hoſpital*, there is a Governor, Lieutenant-Governor, Major, Treaſurer, *&c.*

Greenwich HOSPITAL, is a Retreat for Seamen, who, by Age, Wounds, or other Accidents, are diſabled from Service; and for the Widows and Children of ſuch as are ſlain in the Service.

This, in Point of Magnificence and Spaciouſneſs, excels even *Chelſea Hoſpital*. A good Part of it was built in K. *Charles* II's Time, at the Expence of 36000*l.* It was much promoted by King *William*; and finiſh'd under Queen *Anne* and King *George*.

The Number of Penſioners entertain'd in this *Hoſpital* is 300. To each hundred Men are allow'd ſix Nurſes, being the Widows of Seamen.

The Victualling is according to the Allowance of *Chelſea Hoſpital*, *viz.* four Men to a Meſs; each Meſs to contain four Pound of Fleſh, a Gallon of Beer, *&c.*

It is adminiſter'd by a Governor, Lieutenant-Governor, Captain, Lieutenant, Chaplain, Steward, Phyſician, *&c.*

Chriſt's HOSPITAL, popularly call'd the *Blue Coat* HOSPITAL, was anciently a Monaſtery of Grey Friars, founded by *Raihere*, the firſt Prior thereof, in the Time of *Henry* I. diſſolv'd by *Henry* VIII. and converted by *Edward* VI. into an *Hoſpital* for poor Children, who are ſupply'd with all Neceſſaries and Conveniencies, cloath'd, dieted, and taught.

Since its firſt Endowment it has receiv'd abundance of new Donations. A great Part of it was burnt down by the great Fire; but is again rebuilt by the Care of the Governors, tho' not without incurring a great Debt, and anticipating the Revenues of the *Hoſpital*.

Formerly, a thouſand poor Children, moſt of them Orphans, were maintain'd on this Foundation; and ſix or ſeven Score yearly put out Apprentices, and the Maids to Service; but the Number, thro' the Deficiency of the Funds, is now much leſs.

Here were two Mathematical Schools; the firſt founded by King *Charles* II; but they are now united. Youths are there taught ſeveral Parts of practical Mathematicks, particularly Navigation, to fit them for Apprentices to Maſters of Ships: To ſay nothing of the Grammar School, (whence the moſt pregnant Boys are yearly ſent to the Univerſity) Writing School, Drawing School, *&c.*

The Officers of this *Hoſpital* are a Preſident, Treaſurer, Governors, *&c.*

St. *Bartholomew*'s HOSPITAL adjoins to *Chriſt*'s *Hoſpital*, and formerly belong'd to the ſame Grey Friars.

At the Diſſolution of Monaſteries, *Henry* VIII. left 500 Marks a Year to it for the Relief of poor People; but it was more largely endow'd for the Uſe of ſick and lame Perſons only, by *Edward* VI.

It is govern'd by a Preſident, Treaſurer, *&c.* with other Officers. It is furniſh'd with two Phyſicians, and three Maſter Surgeons, beſide as many Aſſiſtant Surgeons.

In this *Hoſpital*, with two others depending on it, the one at *Kingſland*, the other call'd the *Lock* in *Southwark*, are about 300 Patients, provided with Lodging, Diet, Phyſick, Chirurgery, *&c.*

St. *Thomas*'s HOSPITAL, in *Southwark*, is for the ſame Purpoſes as that of St. *Bartholomew*.

It was originally founded an *Hoſpital*, by *Richard*, Prior of *Bermondſey*, in 1213; ſurrender'd to King *Henry* VIII; and given by *Edward* VI. to the Citizens of *London*, for an *Hoſpital* for infirm and lame People.

It conſiſts of four quadrangular Courts: In the firſt are ſix Wards for Women; in the ſecond, two Chapels, the leſſer for the private Uſe of the *Hoſpital*, and the larger Parochial: In the ſame Court are the Houſes of the Treaſurer, and other Officers: In the third Court are ſix or ſeven Wards for Men. The fourth has alſo three Wards, Baths hot and cold, a Chirurgery, Apothecary's Shop, *&c.*

There are about 3000 Perſons taken in and diſcharg'd out of this *Hoſpital* yearly.

The Governors of this *Hoſpital* are the Lord Mayor and Court of Aldermen, with about 260 other Citizens. Among which are a Preſident, Treaſurer, *&c.* two Phyſicians, and three Surgeons.

Guy's HOSPITAL, or the HOSPITAL *of the Incurables*, is the Foundation of that wealthy Citizen and Bookſeller, *Thomas Guy*, Eſq;

It is chiefly intended for reputed incurable Perſons; and is even to take in yearly a certain Number of Patients turn'd out of the other *Hoſpitals*, particularly *Bethlehem*, as incurable.

The Founder beſtow'd 50000*l.* on the Building in his Life-time; and, by Will, endow'd it with 200000*l.* at his Death, in 1724: The greateſt Benefaction, without Diſpute, that ever was left by any one private Man.

Its Officers are a Preſident and Governors, moſt of which are the ſame with thoſe of St. *Thomas*'s *Hoſpital*, which is in the Neighbourhood thereof, with a Treaſurer, two Phyſicians, two Surgeons, *&c.*

BETHLEHEM *Hoſpital*, BRIDEWEL *Hoſpital*, SUTTON'S *Hoſpital* - } See { BETHLEHEM. BRIDEWELL. CHARTER-*houſe*.

HOSPITALER, one that entertains and provides for poor People, Travellers, *&c.*

The Name is chiefly apply'd to certain Communities of Religious. --- As the *Hoſpitalers* of *Elſefort* in *Eſſex*, inſtituted to take Care of Lepers; *Hoſpitalers* of St. *John Baptiſt* of *Coventry*; *Hoſpitalers* of St. *Julian*; *Hoſpitalers* of St. *Leonard* at *York*, &c.

The Religious *Hoſpitalers* generally follow the Rule of St. *Auguſtin*. Moſt of them pretend that St. *Martha* was their firſt Foundreſs, and chuſe her for their Patron, by reaſon ſhe entertain'd Jeſus Chriſt at her Houſe. Some of them go back to the Patriarch *Abraham*.

There are alſo *Hoſpitallers* among the military Orders; ſuch are the Knights of St. *Lazarus*, and St. *John* of *Jeruſalem*.

HOSPITALERS, HOSPITALARII, were a certain Order of Religious Knights, ſo call'd, becauſe they built an *Hoſpital* at *Jeruſalem*, wherein the Pilgrims were receiv'd. --- To theſe Pope *Clement* the Fifth transferr'd the Effects and Revenues of the Templars; whom, by a Council held at *Vienna*, he ſuppreſs'd, for their many and great Miſdemeanors. See TEMPLAR.

Theſe *Hoſpitalers* were otherwiſe call'd Knights of St. *John* of *Jeruſalem*, and are now the ſame with thoſe whom we call Knights of St. *John* of *Malta*. See MALTA.

HOSPITIUM, an Inn; a Term peculiarly us'd in our Law Books for an *Inns of Court*. See INNS *of Court*.

HOSPITIUM is alſo us'd for a little Convent, which the Religious built for the Reception of Strangers and Travellers of the ſame Order, who have occaſion to ſtay with them ſome time.

Moſt of the *Hoſpitia*, or *Inns*, in Time became fix'd Convents. See CONVENT.

HOSPODAR, the Title borne by the Princes of *Walachia* and *Moldavia*. See PRINCE.

The *Hoſpodars* of *Walachia* and *Moldavia*, receive the Inveſtiture of thoſe Principalities from the Grand Signor, by a Veſt and a Standard, which he gives them.

They are ſometimes depos'd by him; tho', in other Reſpects, they have the Sovereign Power within their States.

HOST, HOSPES, a Term of mutual Relation, apply'd both to a Perſon who lodges and entertains another, and to the Perſon thus lodg'd, *&c.*

Thus, the Inn-keeper ſays, he has a good *Hoſt*, in ſpeaking of the Traveller who lodges with him: And the Traveller, again, ſays, he has a kind *Hoſt*, in ſpeaking of his Landlord.

The Word is form'd of the *Latin*, *Hoſpes*, which ſome will have thus call'd, *quaſi hoſtium*, or *oſtium petens*; for *oſtium* was anciently wrote with an Aſpirate.

It muſt be obſerv'd, then, that it was the Cuſtom among the Ancients, when any Stranger ask'd for Lodging, for the Maſter of the Houſe, and the Stranger, each of them to ſet a Foot on their own Side of the Threſhold, and ſwear they would neither of them do any Harm to the other. --- It was this Ceremony that rais'd ſo much Horror againſt thoſe who violated the Law, or Right of Hoſpitality on either Side; inaſmuch as they were look'd on as perjur'd.

Inſtead of *Hoſpes*, the ancient *Latins* call'd it *Hoſtis*; as *Cicero* himſelf informs us: Tho', in Courſe of Time, *Hoſtis* came to ſignify an Enemy; ſo much was the Notion of *Hoſpitality* alter'd.

HOST is alſo us'd by Way of Abbreviation for *Hoſtia*, a Victim or Sacrifice to the Deity. See HOSTIA.

In this Senſe, *Hoſt* is more immediately underſtood of the Perſon of the Word incarnate, who was offer'd up a *Hoſt* or *Hoſtia* to the Father, on the Croſs; for the Sins of Mankind.

Host is peculiarly us'd in the *Romiſh* Church for the Body of Jeſus Chriſt, contain'd under the Species of Bread and Wine, which is offer'd up every Day, a new *Hoſt* or Sacrifice in the Maſs. See Mass.

Pope *Gregory* IX. firſt decreed a Bell to be rung, as the Signal for the People to betake themſelves to the Adoration of the *Hoſt*.

The Veſſel wherein the *Hoſts* are kept, is call'd the *Cibory*.

HOSTAGE, a Perſon left as Surety for the Performance of the Articles of a Treaty. See Treaty.

When two Enemies are on the Point of concluding a Treaty or Capitulation, 'tis frequent for them to give *Hoſtages* on each Side, as Sureties for the Execution of what is contain'd therein.

The Garriſon of ſuch a Place has capitulated, and given *Hoſtages*. Such an Officer was given as an *Hoſtage*.---The Word is form'd of *Hoſt*, and that of *Hoſpes*. See Host.

A *Hoſtage* is either a Principal or an Acceſſary, according to the State of the Caſe. He is only an Acceſſary, when, for Inſtance, a Prince promiſes Fidelity to another, and gives up his Son, or ſome other great Lord, to aſſure his Engagement, without any further Stipulation. For, here, if the Prince fail of his Word, the *Hoſtage* is no ways accountable for it.

But the *Hoſtage* becomes a Principal, when it is expreſly ſtipulated, that he ſhall be anſwerable for the Event: For Inſtance, if a City engage to ſurrender, in Caſe it be not reliev'd in ſo many Days; and to ſecure the Engagement give *Hoſtages*; theſe *Hoſtages* are what a Surety is to a Creditor for Debt of his Principal. So that if the Relief do not come, and yet the Citizens refuſe to ſurrender, the *Hoſtages* ſtand in their Place, become Principals, and liable to be puniſh'd for the Prevarication of thoſe they have become Surety for.

A *Hoſtage* given for another Perſon, becomes free when the Perſon dies.

HOSTEL, or Hotel, a *French* Term, anciently ſignifying a Houſe, or Dwelling-place.

It is now more commonly uſed for the Palaces or Houſes of the King, Princes, and great Lords. In this Senſe they ſay, the *Hotel de Conde*, *Hotel de Conti*, *Hotel du Louvre*, &c.

The Grand *Prevot de l'Hotel* is the firſt Judge of the Officers of the King's Houſhold. His Juriſdiction is much like that of the Lord Steward of the Houſhold of the King of *England*. See Steward.

The *Hotel de Ville* is what we call a *Town-houſe*, or *Town-hall*. See Hall.

HOTEL-Dieu, is a common Name for the chief Hoſpital for the Reception of ſick Perſons, in moſt of the Cities of *France*. See Hospital.

The *Hotel de Mars*, is an Hoſpital near *Paris* of the ſame Nature with *Chelſea* Hoſpital.

HOSTIA, Host, in Antiquity, a Victim offer'd in Sacrifice to a Deity. See Victim.

The Word *Hoſtia* is form'd *ab hoſtibus*, it being the Cuſtom to offer one before they join'd Battel, to render the Gods propitious; or after the Battel was over, to give them Thanks.

Iſidore, on this Word, remarks, that the Name *Hoſtia* was given to thoſe Sacrifices which they offer'd before they march'd to attack the Enemy; *ante quam*, ſays he, *ad Hoſtem pergerent*; in Contra-diſtinction from *Victims*, which were properly thoſe offer'd after the Victory: However, *Ovid* confounds the two, when he ſays,

Victima quæ cecidit dextrâ Victrice vocatur;
Hoſtibus a Domitis Hoſtia *nomen habet.*

Fronton makes another Diſtinction: According to him, *Victima* was a grand Oblation, and *Hoſtia* a ſmaller and leſs conſiderable one.

But be the Cuſtom in this reſpect what it will, 'tis generally allow'd that the Word *Hoſtia* comes from *Hoſtis*, Enemy: Tho' there are ſome who derive it from the *Latin* Verb *Hoſtio*, q. d. *ferio*, I ſtrike, ſmite.

HOSTILITY, the Action of an Enemy. --- During a Truce, all *Hoſtilities* are to ceaſe on both Sides: Such a City ſtands neuter, and commits no *Hoſtilities* on either Side.

The Word is *Latin*, *Hoſtilitas*, form'd of the Primitive *Hoſtis*, which ſignifies Enemy; and which anciently ſignify'd *Stranger*, *Hoſpes*. See Host.

HOT-Bath. See Bath and Thermæ.

Hot-Bed, a Piece of Earth or Soil plentifully enrich'd with Manure, and defended from cold Winds, &c. to forward the Growth of Plants, and force Vegetation, when the Seaſon or the Climate of itſelf is not warm enough. See Soil, Manure, Vegetation, &c.

By means of *hot Beds* skilfully manag'd, we can ſo nearly imitate the Temperature of other Climates, that Seeds of Plants brought from any Country between the Tropicks, may be made to flouriſh even under the Poles. See Exotic.

Heat and Humidity being the great Inſtruments of Vegetation; to promote the Growth of any Plants, theſe muſt be duly proportion'd, ſo as neither to exceed nor come ſhort of the Bounds Nature has allotted for it. ---Too much Heat we find rather ſcorches a Plant than makes it grow; and too much Moiſture frequently chills it, unleſs quickly exhaled from the Roots. --- With us, a moderate Heat is found the moſt eligible; ſuch as is rais'd by the Ferment of wet Straw and Horſe-litter, which, from the Earth lying thereon, will ſend forth, for ſome time, a gentle Steam, impregnated with vegetative Salts. See Plant, Water, &c.

The uſual Way of making *hot* Beds, is of Horſe-litter and Graſs mix'd together, and left on an Heap for eight or ten Days to putrefy; and then remov'd into a Bed, and cover'd up with Glaſſes or Frames. --- Others chuſe to take Horſe Dung a Month or ſix Weeks old, and make a Seed-Bed of it about four Foot high, and cover it up with Straw a Foot thick, which is to be remov'd in three or four Days, and its Place ſupply'd either with Cows Dung, or the laſt Years Ridges.

The Proceſs of ordering a good ſerviceable *hot Bed*, for the cuſtomary raiſing of Colliflowers, Cucumbers, Melons, Radiſhes, and other tender Plants and Flowers in *January* or *February*, is directed by Mr. *Mortimer* in Manner following:

Provide a warm Place defended from all Winds, by being inclos'd with a Pale or Hedge, made of Reeds or Straw, about ſix or ſeven Foot high, of ſuch Diſtance or Capacity as Occaſion requires. --- Within this Incloſure raiſe a Bed two or three Foot high, and three Foot over, of freſh Horſe Dung, about ſix or eight Days old; then tread it down very hard on the Top, make it level, and if you think fit, edge it round with Boards or Bricks, laying fine rich Mould about three or four Inches thick on it: When the extream Heat of the Bed is over, which you may perceive by thruſting in your Finger; plant your Seeds at pleaſure, and ſet your Forks four or five Inches above the Bed, to ſupport a Frame made of Sticks, and cover'd with Straw or Baſs-mat, in order to ſecure the Seeds and Plants from Cold and Wet; only the Covering may be open'd in a warm Day, for an Hour before Noon, and an Hour after. --- But take Care to earth up your Plants as they ſhoot in Height; and when able to bear the Cold, they may be tranſplanted.

In *Holland* they make uſe of *hot* Beds made of Sand; which are not ſo apt to raiſe unwholſome Damps as thoſe of Horſe Dung. --- The *Dutch* likewiſe make *hot* Beds of Tanner's Bark, which, when once rightly prepar'd, will maintain an equable Heat for ſix Months.

Bradley, with very good Reaſon, propoſes a Thermometer to be us'd to regulate the Heat of *hot* Beds. --- For Plants that are either to be brought up in a colder Seaſon, or a colder Climate than what they naturally require; you are to take the Height at which the Thermometer ſtands in their proper Seaſon or Clime, as a Standard; and by applying a Thermometer to the *hot* Bed, judge whether the Heat is to be intended or remitted. --- Thus a *hot* Bed for Cucumbers muſt be kept, to raiſe the Spirit in the Glaſs, to the ſame Height as the natural Temperature of the Weather will raiſe it to about the latter End of *May* and *June*, when Cucumbers will grow abroad without any artificial Heat or Shelter. See Heat and Thermometer.

Hot-House. See Stove, Sudatory, Hypocaustum, &c.

Hot-Shoots, or Hovilses, a Sort of factitious or compound Fuel, made of a third Part of any Coal, Pit, Sea, or Charcoal, mix'd with Loam. See Fuel.

Theſe Ingredients are to be made up into Balls, moiſten'd with a little Urine, or in any other Form at Pleaſure; and expos'd to the Air till thoroughly dry. --- Then may they be built into the moſt orderly Fire imaginable, affording a glowing, ſolemn, and conſtant Heat for ſeven or eight Hours without ſtirring. This Mixture is frequently us'd in ſome Parts to ſlacken the impetuous devouring of the Fire, and keep Coals from conſuming too faſt.

HOTCH-pot, or Hodg-podge. See Hodg-podge.

A Man being ſeiz'd of thirty Acres of Land in Fee, hath two Daughters, and gives with one of them ten Acres in Frank-Marriage, and dies ſeiz'd of the other twenty. If now ſhe that is thus marry'd will have any Part of the twenty Acres, ſhe muſt put her Lands given in Frank-Marriage in *Hotch-pot*, that is, ſhe muſt refuſe to take the ſole Profits of the ten Acres, but ſuffer them to be mingled with the other twenty, to the End an equal Diviſion may be made of the whole thirty between her and her Siſter. --- Thus for her ten Acres ſhe will be intitled to fifteen. *Coke on Littl.*

HOTTS, or HUTTS, the Pounces and round Balls of Leather ſtuffed, or ty'd on the ſharp End of fighting Cocks Spurs; to keep them from hurting one another in ſparring or breathing themſelves.

HOUGH, the Joint of the hind Leg of a Beaſt. See HAM.

To *Hough*, or *cut the Houghs*, is to *ham-ſtring*. See HAMSTRING.

HOUGH *bonny*, is a hard round Swelling or Tumor growing upon the Tip or Elbow of the Hoof or *Hough*.

It generally proceeds from ſome Stroke or Bruiſe; and if neglected till the Subſtance of the Swelling becomes hard like Glue, proves difficult to cure.

HOUND, *Canis Venaticus*, a Hunting Dog. See HUNTING.

Hounds may be diſtinguiſh'd, with regard to the Manner of their Hunting, into ſuch as find out and purſue the Game by Sight, and the Quickneſs and Swiftneſs of their Motion; of which Kind are the *Gaze Hound*, *Agaſæus*; and *Grey Hound*, *Canis Graius*; the *Terrier*, &c. and thoſe which find and purſue the Game by the Goodneſs of their Smell.

The Species of ſcenting Dogs may be divided farther into *Hounds*, ſimply ſo call'd, and *Blood Hounds*, each whereof admits of ſome Diverſities.

1°. As to *Hounds*, ſimply thus call'd, in *Latin*, *Canes Venatici*, *Odoratores*, *Sagaces*, &c. — Thoſe which are all of one Colour, as white, black, &c. are the moſt valu'd; then thoſe ſpotted with red: Thoſe ſpotted with dun are little priz'd, as wanting Courage and Hardineſs. — Fallow *Hounds* are of good Scent, and hardy, not fearing the Water: They keep the Chaſe well without Change; but not ſo ſwift as the white: They love the Hart above any other Chaſe, having little Stomach for the Hare, &c. whence they are not ſo fit for private Gentlemen; beſide that, they are apt to run at tame Beaſts.

The dun *Hounds* are of more general Uſe, being fit for all Chaſes. — Their Sagacity and Fidelity in knowing and ſticking to their Maſter's Voice and Horn, and none elſe, are much admir'd: They alſo underſtand each other, and know which are Babblers, which Lyers, &c. — They are of different Sizes and Qualities in the ſeveral Countries, &c. Mountainous and Woodland Parts breed a tall heavy Sort, call'd *ſlow Hounds*: Moderate Soils, where the Champaign and Covert ſhare pretty equally, produce a middle-ſized *Hound* of a nimbler Make.

The Marks of a good and fair *Hound* are, to be of a middle Proportion, rather long than round; the Noſtrils wide; Back, bowed; Fillets, great; Haunches, large; Ham, ſtraight; Tail, big near the Reins, and the reſt ſlender to the End; the Leg, big; the Sole, dry; and Claws, large.

For the Terms uſed in reſpect of Hounds, *their Noiſes*, &c. See HUNTING.

To enter a young *Hound*; after having taught him to know the Hollow and the Sound of the Horn, at about eighteen Months old he may be taken into the Field. The beſt Method to initiate him, is to take a live Hare, and trail her upon the Ground, this Way, then that; and, at length, hide her at a proper Diſtance. Then ſetting the *Hound* near the Trail, he will take Wind, and run to and fro about the Fields, Woods, Paths, &c. till he find which Way ſhe had gone: As he approaches nearer the lodged Hare, he will mend his Pace, and at laſt leap on his Prey, which he muſt be ſuffer'd to kill, and bringing it to his Maſter with Triumph, muſt be rewarded and encourag'd. — This done, he may be let run in a Pack of old *Hounds* to confirm and perfect him.

It ought to be noted, that whatever young *Hounds* are firſt enter'd at and rewarded with, they will ever after covet moſt; ſo that if they be intended, *e. gr.* for the Hart, they muſt not be enter'd at the Hind.

2. The *Grey-hound* might deſerve the firſt Place, by reaſon of his Swiftneſs, Strength, and Sagacity in purſuing his Game; ſuch being the Nature of this Dog, that he is well ſcented to find out, ſpeedy and quick of Foot to follow, fierce and ſtrong to overcome, yet ſilent, coming upon his Prey unawares.

The Make and Proportions requir'd in a good *Grey-hound*, are, that he have a long Body, ſtrong, and pretty large, a neat ſharp Head, ſparkling Eyes, a long Mouth, and ſharp Teeth, little Ears, with thin Griſtles in them, a ſtraight, broad, and ſtrong Breaſt, his fore Legs ſtraight and ſhort, his hind Legs long and ſtraight, broad Shoulders, round Ribs, fleſhy Buttocks, but not fat, a long Tail ſtrong and full of Sinews.

Of this Kind, thoſe are always fitteſt to be choſen among the Whelps that weigh lighteſt; for they will be ſooner at the Game, and ſo hang upon it, hindering its Swiftneſs, till the heavier and ſtrong *Hounds* come in to offer their Aſſiſtance; whence, beſide what has been already ſaid, 'tis requiſite for a *Grey-hound* to have large Sides, and a broad Midriff, that he may take his Breath in and out the more eaſily; his Belly ſhould alſo be ſmall, which otherwiſe would obſtruct the Swiftneſs of his Courſe; his Legs long, and his Hairs thin and ſoft.

The Huntſman is to lead theſe *Hounds* on his left Hand, if he be on Foot, and on the Right if on Horſeback. — The beſt Time to try and train them to the Game, is at twelve Months old, tho' ſome begin ſooner, with the Males at ten, and the Females at eight Months old, which laſt are generally more ſwift than the Dogs: They ſhould be kept in a Slip, while abroad, till they ſee their Courſe; neither ſhould you looſen a young Dog 'till the Game has been a conſiderable Time on Foot, being apt, by over Eagerneſs at the Prey, to ſtrain his Limbs.

3°. The *Gaze-hound*, or *Beagle*, is a Dog more beholden to the Sharpneſs of Sight, than his Noſe or Smelling; by Virtue whereof, he makes excellent Sport with the Fox and Hare.—He is alſo noted as exquiſite in chuſing of one that is not lank or lean, but full, fat and round, which, if it happen to return, and be mingled again with the Reſidue of the Herd, he will ſoon ſpy out, and leave the reſt untouch'd, never ceaſing, after he has ſeparated it from its Company, till he has weary'd it to Death.

Theſe Dogs are much us'd in the North of *England*, and on Champion Ground, rather than buſhy and woody Places, and by Horſemen more than Footmen. — If at any time he happen to take a wrong Way, upon the uſual Sign made by his Maſter, he immediately returns, takes the right and ready Courſe, beginning his Chaſe afreſh, with a clear Voice and ſwift Foot, following the Game with as much Courage as at firſt.

4°. The *Blood-hound* differs nothing in Quality from the *Scottiſh Slut Hound*, ſaving that it is more longly ſiz'd, and not always of the ſame Colour; but ſometimes red, ſanded, black, white, and ſpotted, &c. tho' moſt commonly either brown or red.

Their Nature is, that being ſet on by the Voice and Words of their Leader, to caſt about for the Setting of the preſent Game, and having found it, they will never ceaſe purſuing it with full Cry till it is tir'd, without changing for any other.

They ſeldom bark, except in their Chaſe, and are very obedient and attentive to the Voice of their Leader. — Thoſe that are really good, when they have found the Hare, make Shew thereof to the Huntſman by running more ſpeedily, and with Geſture of Head, Eyes, Ears, and Tail, winding to the Form or Hare's Muſe, never giving over Proſecution, with a Gallant Noiſe.

They have good and hard Feet, and ſtately Stomachs; and are very properly denominated *ſanguinary* or *Blood-hounds*, by reaſon of their extraordinary Scent; for if their Game be only wounded, ſo that it eſcapes the Huntſman's Hands, or if it be kill'd, and never ſo cleanly carry'd away, theſe Dogs, by their exquiſite Smell, will betray it, and not be wanting, either by Nimbleneſs or Greedineſs, to come at it, provided there be any Stains of Blood. — Nay, tho' by all the Cunning and Foreſight imaginable, a Beaſt be convey'd away without Spot or Blood, yet through the roughеſt and moſt crooked Ways and Meanders, will this Dog find out the Deer-ſtealer, and even in the thickeſt Throng, will, by his Smell, ſeparate and pick him out. See BLOOD-*hound*.

5°. The *Terrier*, or *Harrier* only hunts the Fox or Badger; being thus call'd, becauſe, after the Manner of a Ferret in ſearching for Coneys, he leaps into the Ground, and affrights or attacks the Beaſt, either tearing them in Pieces, or haling them out by Force; or, at leaſt, driving them out of their Harbours, to be taken in a Net, or otherwiſe.

The Huntſmen have commonly a Couple of *Terriers*, that they may put in a freſh one, as Occaſion ſerves, to relieve the other.

The Time of entering the *Terrier*, is when he is near a Twelve-Month old: If it be not done within that Time, they will hardly be brought to take the Earth. This entering and fleſhing of them may be perform'd ſeveral Ways. — Firſt, when the Foxes and Badgers have young Cubs, take an old *Terrier*, ſet him into the Ground, and when he begins to bay, hold the young one at the Hole or Mouth of the Earth, that he may liſten and hear the old ones Bay.

The old Fox or Badger being taken, ſo that nothing remains within but the Cubs, couple up the old ones, and put in the Young in their Stead, encouraging them by crying, To him, To him. — If they take any Cub within, let them do with it what they liſt; not forgetting to give the old *Terriers* their Reward, which is Blood and Livers fry'd with Cheeſe and ſome of their Greaſe; ſhewing them Heads and Skins to encourage them.

HOUR, *Hora*, an aliquot Part of a natural Day, uſually a 24th, ſometimes a 12th. See DAY.

An

An *Hour*, with us, is a Measure or Quantity of Time, equal to a 24th Part of the natural Day, or Nycthemeron; or the Duration of $\frac{1}{24}$th Part of the Earth's diurnal Rotation. 15 Degrees of the Equator answer to an *Hour*; tho' not precisely, but near enough for common Use. See TIME.

It is divided into 60 Minutes; the Minute into 60 Seconds, &c. See MINUTE.

The Division of the Day into *Hours* is very ancient; as is shewn by *Kircher*, *Oedip. Ægypt.* T. II. P. II. Class VII. c. 8. Tho' the Passages he quotes from Scripture do not prove it. --- The most ancient *Hour* is that of the 12th Part of the Day. *Herodotus*, lib. II. observes, that the *Greeks* learnt from the *Ægyptians*, among other Things, the Method of dividing the Day into twelve Parts.

The Astronomers of *Cathaya*, &c. Bishop *Beveridge* observes, still retain this Division. They call the *Hour Chag*; and to each *Chag* give a peculiar Name, taken from some Animal: The 1st is call'd *Zeth*, Mouse; the 2d *Chiu*, Bullock; the 3d *Zem*, Leopard; the 4th *Mau*, Hare; the 5th *Chin*, Crocodile, &c.

The Division of the Day into 24 *Hours*, was not known to the *Romans* before the first *Punic* War. --- Till that Time they only regulated their Days by the Rising and Setting of the Sun.

They divided the twelve *Hours* of their Day into four, *viz. Prime*, which commenc'd at six o'Clock; *Third* at nine, *Sixth* at twelve, and *None* at three. They also divided the Night into four Watches, each containing three *Hours*.

The Origin of the Word *Hour*, *hora*, comes, according to some Authors, from a Surname of the Sun, the Father of *Hours*, whom the *Ægyptians* call *Horus*. Others derive it from the *Greek*, ὁρίζειν, to terminate, distinguish, &c.

Others, from the Word *Urine*, which the *Greeks* call οὖρον; holding, that *Trismegistus* was the first that settled the Division of *Hours*, which he did from Observation of an Animal consecrated to *Serapis*, nam'd *Cynocephalus*, which makes Water twelve Times a Day, and as often in the Night; at equal Intervals.

There are divers Kinds of *Hours*, us'd by Chronologers, Astronomers, Dialists, &c.

Hours are divided into *equal* and *unequal*.

Equal, are the 24th Parts of a Day and Night precisely; that is, the Time wherein 15 Degrees of the Equator mount above the Horizon.

These are also call'd *Equinoctial Hours*, because measur'd on the Equinoctial; and *Astronomical*, because us'd by Astronomers.

They are also differently denominated, according to the Manner of accounting them.

Babylonish HOURS are equal *Hours*, reckon'd from Sunrise in a continu'd Series of twenty-four. See BABYLONISH *Hour*.

Italian HOURS are equal *Hours*, reckon'd from Sunset, in a continu'd Series of twenty-four. See ITALIAN *Hour*.

Astronomical HOURS are equal *Hours*, reckon'd from Noon, or Mid-day, in a continu'd Series of twenty-four. See ASTRONOMICAL.

European HOURS are equal *Hours*, reckon'd from Mid-night; twelve from thence to Noon, and from Noon to Mid-night twelve more.

Unequal or *temporary Hours*, are 12th Parts of the artificial Day or Night. The Obliquity of the Sphere renders these more or less unequal at different Times; so that they only agree with the equal *Hours* at the Times of the Equinoxes.

Jewish, or *planetary*, or *ancient* HOURS, are twelfth Parts of the artificial Day or Night.

Hence, as 'tis only in the Time of the Equinoxes that the artificial Day is equal to the Night; 'tis then only that the *Hours* of the Day are equal to those of the Night: At other Times they will be always either increasing or decreasing.

They are call'd *Ancient* or *Jewish Hours*, because us'd by the Ancients, and still among the *Jews*. They are call'd *Planetary Hours*, by reason the Astrologers pretend, that a new Planet comes to predominate every *Hour*; and that the Day takes its Denomination from that which predominates the first *Hour* thereof: As *Monday* from the Moon, &c.

HOURS, *Horæ*, among the ancient Poets, were certain Goddesses, the Daughters of *Jupiter* and *Themis*: They were three in Number, *Eunomia*, *Dice*, and *Irene*. To which were afterwards added two more, *Carpo* and *Tallote*.

Homer makes them the Door-keepers of Heaven. *Ovid* allots them the Employment of harnessing the Horses of the Sun: *Jungere Equos Titan velocibus imperat* Horis.

HOURS, *Horæ*, in the *Romish* Church, are certain Prayers perform'd at stated Times of the Day; as *Mattins*, *Vespers*, *Lauds*. See MATTINS, &c.

The lesser *Hours*, are *Prime*, *Tierce*, *Sixth*, and *None*. --- They are thus call'd, as being to be rehears'd at certain *Hours* prescrib'd by the Canons of that Church, in Commemoration of the Mysteries accomplish'd at those *Hours*.

These *Hours* were anciently call'd *Course*, *Cursus*. F. *Mabillon* has a Dissertation on these *Hours*, intitled, *de Cursu Gallicano*. The first Constitution enjoining the Observation of these *Hours*, is of the IXth Century, being found in a Capitular of *Heiton*, Bishop of *Basil*, directed to his Curates, importing, that the Priests shall never be absent at the Canonical *Hours* either by Day or Night.

Prayers of forty Hours, are publick Prayers continu'd for the Space of three Days successively, and without Intermission, before the Holy Sacrament, to obtain the Assistance of Heaven on some important Occasion. --- In these Days, Care is taken, that the Holy Sacrament be expos'd forty *Hours*, *viz.* 13 or 14 *Hours* each Day.

HOUR-CIRCLES, or HORARY-*Circles*, in Astronomy, &c. are great Circles, meeting in the Poles of the World, and crossing the Equinoctial at Right Angles; the same as Meridians. See MERIDIAN.

They are suppos'd to be drawn through every 15th Degree of the Equinoctial and Equator, and on both Globes are supply'd by the Meridian, *Hour-Circle*, and Index. See GLOBE.

The Planes of the *Hour-Circles* are perpendicular to the Plane of the Equinoctial, which they divide into 24 equal Parts.

HOUR-GLASS, a popular Kind of Chronometer or Clepsydra, serving to measure the Flux of Time, by the Descent or Running of Sand out of one Glass Vessel into another. See CHRONOMETER.

The best *Hour-Glasses* are those, which, instead of Sand, have Egg-shells well dry'd in the Oven, then beaten fine and sifted.

Hour-Glasses are much us'd at Sea for Reckoning, &c. See RECKONING, LOG, &c.

There are also a Sort of *Hour-Glasses*, which depend on the Flux of Water or other Liquid, more properly call'd *Clepsydræ*. See CLEPSYDRA.

HOUR-LINES, on a Dial, arise from the Intersections of the Plane of the Dial, with the several Planes of the *Hour*-Circles in the Sphere, and therefore must be all Right Lines. See DIAL and DIALLING.

HOUSAGE, a Fee which a Carrier or other Person pays for laying up Goods in a *House*.

HOUSE, a Habitation, or Place built with Conveniencies to live in; or a Building wherein to shelter a Man's Person and Goods from the Inclemencies of the Weather, and the Injuries of ill-dispos'd Persons. See BUILDING.

We say a Brick *House*, a Stone *House*, a *House* of two Stories, of three Stories, a Manor *House*, a Farm *House*, &c. See BRICK, STONE, STORY, MANOR, &c.

Ancient *Rome* consisted of 48000 insulated *Houses*. See INSULATED.

A Pleasure *House* or Country *House*, is that built for a Person to enjoy and divert himself occasionally in. This is the *Villa* of the ancient *Romans*; and what in *Spain* and *Portugal* they call *Quinta*; in *Provence*, *Cassine*; in some other Parts of *France*, *Closerie*; in *Italy*, *Vigna*.

In this Sense the Word *Vigna* is sometimes us'd in *English* to denote the Country Seats of the Noble *Romans*; as the *Vigna Farnese*, *Vigna Borghese*, &c. ---The Citizens of *Paris* have also their *Maisons de Bouteilles*, Bottle-*houses*, to retire to, and entertain their Friends; which, in *Latin*, might be call'd *Micæ*, the Emperor *Domitian* having a *House* built for the like Purpose, mention'd under this Name by *Martial*, lib. II. *Epig.* 59.

'Tis a Thing principally to be aim'd at, in the Site or Situation of a Country *House* or Seat, that it have Wood and Water near it: If it cannot be conveniently built among Trees, yet there are few Places where Trees may not be speedily rais'd about it. See TREE, PLANTING, TRANSPLANTING, &c.

It is far better to have a *House* defended by Trees than Hills; for Trees yield a cooling, refreshing, sweet, and healthy Air, and Shade, during the Heat of the Summer, and very much break the cold Winds and Tempests from every Coast in the Winter. --- The Hills, according as they are situated, defend only from some certain Winds; and if they are on the North Side of the *House*, as they defend from the cold Air in the Winter, so they also deprive you of the cool refreshing Breezes, which are commonly blown from thence in the Summer. --- And if the Hills are situated on the South Side, it then proves also very inconvenient.

A *House* should not be too low seated, since this precludes the Convenience of Cellars. --- If you cannot avoid building on low Grounds, set the first Floor above the Ground the higher, to supply what you want to sink in your Cellar in the Ground; for in such low and moist Grounds, it conduces much to the Dryness and Healthiness of the Air, to have Cellars under the *House*, so that the Floors be good, and ceiled underneath.

Houses

Houſes built too high, in Places obvious to the Winds, and not well defended by Hills or Trees, require more Materials to build them, and more alſo of Reparations to maintain them; and are not ſo commodious to the Inhabitants as the lower built *Houſes*, which may be at a much eaſier Rate, and alſo as compleat and beautiful as the other.

In Buildings or *Houſes* not above two Stories with the Ground Room, and not exceeding twenty Foot to the Raiſon-Place, and upon a good Foundation; the Length of two Bricks, or eighteen Inches for the heading Courſe, will be ſufficient for the Ground Work of any common Structure, and ſix or ſeven Courſes above the Earth to a Water-Table, where the Thickneſs of the Walls are abated, or taken in, on either Side, the Thickneſs of a Brick, namely two Inches and a Quarter.

For large and high *Houſes* or Buildings of three, four, or five Stories with the Garrets, the Walls of ſuch Edifices ought to be from the Foundation to the firſt Water-Table, three heading Courſes of Brick, or 28 Inches at leaſt; and at every Story a Water-Table, or taken in on the Inſide for the Summers, Girders, and Joints to reſt upon, laid into the Middle, or one Quarter of the Wall at leaſt, for the better Bond. --- But as for the innermoſt or partition Wall, a half Brick will be ſufficiently thick; and for the upper Stories, nine Inches, or a Brick length, will ſuffice.

The Parts, Proportions, *&c.* of the *Houſes* in *London*, are regulated by a Statute made for Rebuilding the City after Fire. --- By this it is enacted, That the *Houſes of the firſt and leaſt Sort of Building*, fronting By-ſtreets or Lanes, ſhall be two Stories high, beſide Cellars and Garrets; the Cellars ſix Foot and an half high, if the Springs of Water hinder not; and the firſt Story nine Foot from the Floor to the Ceiling, and the ſecond Story as much: That all the Walls in Front and Rear be, as high as the firſt Story, full the Thickneſs of the Length of two Bricks; and thence upwards to the Garrets, of the Thickneſs of one Brick and an half; and that the Thickneſs of the Garret Walls on the back Part, be left to the Diſcretion of the Builder, ſo that the ſame be not leſs than one Brick Length; and that the Thickneſs of the Party Wall in the Garret, be of the Thickneſs of the Length of one Brick at leaſt.

That the *Houſes* of the *ſecond Sort of Building*, fronting Streets and Lanes of Note, and the River of *Thames*, conſiſt of three Stories high, beſide Cellars and Garrets; that the Cellars thereof be ſix Foot and an half high, if the Springs hinder not; that the firſt Story contain full ten Feet in Height from the Floor to the Ceiling; the ſecond ten Foot, the third nine Foot; that all the ſaid Walls in the Front and Rear, as high as the firſt Story, be two Bricks and an half thick, and from thence upward to the Garret Floor of one Brick and an half thick; and the Thickneſs of the Garret Walls on the back Part, be left to the Diſcretion of the Builder, ſo that the ſame may not be leſs than one Brick thick: And alſo that the Thickneſs of the Party Walls between every *Houſe* of this ſecond and larger Sort of Building, be two Bricks thick, as high as the firſt Story, and thence upward to the Garrets of the Thickneſs of one Brick and an half.

Alſo that the *Houſes of the third Sort of Buildings*, fronting the high and principal Streets, ſhall conſiſt of four Stories high, beſides Cellars and Garrets; that the firſt Story contain full ten Foot in Height from the Floor to the Ceiling, the ſecond ten Foot and an half, and the third nine Foot, the fourth eight Foot and an half; that all the ſaid Walls in the Front and Rear, as high as the firſt Story, be two Bricks and an half in Thickneſs, and from thence upwards to the Garret Floor, of the Thickneſs of one Brick and an half; and that the Thickneſs of the Garret Walls on the back Part, be not leſs than one Brick; and alſo that the Party Walls between every *Houſe* of this third and larger Sort of Building, be two Bricks thick as high as the firſt Floor, and thence upwards to the Garret Floor one Brick and an half.

Alſo, that in all *Houſes of the fourth Sort of Buildings*, being Manſion *Houſes*, and of the greateſt Bigneſs, not fronting any Streets or Lanes as aforeſaid, the Number of Stories, and the Height thereof, ſhall be left to the Diſcretion of the Builder, ſo as he exceed not five Stories.

The ſame Act alſo enjoins, that no Timber be laid within twelve Inches of the fore Side of the Chimney Jambs; and that all Joyſts on the Back of any Chimney, be laid, with a Trimmer, at ſix Inches diſtant from the Back; as alſo, that no Timber be laid within the Tunnel of any Chimney, upon Penalty to the Workman for every Day's Default, of 10*s.* and 10*s.* every Week it continues unreform'd.

Add, That as the Buildings of *London* join one upon another, and almoſt every ſeveral *Houſe* hath a diſtinct Proprietor, the Parliament hath decreed, that the Wall dividing the Proprietors Ground, ſhall be built at the equal Charge of both the Owners: Whence it will not be impertinent to ſhew how theſe Party Walls are valu'd.

Now, all Brick-works, whether one, two, three, four, or any other Number of Brick Lengths in Thickneſs, are all to be reduc'd to the Thickneſs of a Brick and a half.

It hath been obſerv'd, that about 4500 of Bricks, of about 16*s.* *per* 1000; a hundred and a Quarter of Lime, at 10*s.* *per* Hundred; two Loads and a half of Sand, at 3*s.* *per* Load, will compleatly raiſe one Rod of Brick-work of a Brick and a half Thickneſs. See BRICK, *&c.*

And thus much will a Rod of Party Wall, the Materials only, reduc'd to a Brick and a half thick, amount to, at the former ſuppos'd Rates; to which may be added for Workmanſhip 1*l.* 8*s.*

So that for every Rod of Party Wall they allow 3*l.* apiece; whence, if a Party Wall be meaſur'd, and the Meaſure when reduc'd to a Brick and a half, be found to contain ſixteen Rods; that ſixteen multiply'd by 3*l.* giveth 48*l.* and ſo much is the one Proprietor to allow the other. See MEASURING, *&c.*

HOUSE *of Correction*. See CORRECTION.

Work-HOUSE. See WORK-*Houſe* and RASPHUYS. See alſo BRIDEWELL.

Town-HOUSE, or *Hall*, is a Place where the Officers and Magiſtrates of a Town or City hold their Meetings, for the due Adminiſtration of their Laws and Policy. See HALL, GILD, *&c.*

HOUSE is alſo us'd for a Convent or Monaſtery. See CONVENT, *&c.*

The Chief of ſuch an Order has ſo many *Houſes* dependent on it. --- There have been Reforms made of ſeveral religious *Houſes*.

Regular Prieſts give the Name *Houſes* to the Places they reſide in, and not that of Convents or Monaſteries, which properly belong to ſimple Friars. --- Thus we ſay, the *Jeſuits Houſe*, the *Barnabites* or *Theatins Houſe*.

The Jeſuits have both profeſs'd *Houſes* and Colleges for Novices, which they call *Houſes* of Probation.

They have alſo *Houſes* of Retreat for Spiritual Exerciſes, where they receive ſecular Perſons and Eccleſiaſticks, diſpos'd to practiſe the ſame with them, for eight or ten Days. See JESUITS.

HOUSE is alſo us'd for one of the Eſtates of the Kingdom aſſembled in Parliament. See PARLIAMENT.

Thus we ſay, the *Houſe* of Lords, the *Houſe* of Commons, *&c.* See COMMONS, *&c.*

HOUSE is alſo us'd for a Noble Family; or a Race of illuſtrious Perſons iſſu'd from the ſame Stock.

In this Senſe we ſay, the *Houſe* or Family of the *Stewarts*, the *Bourbons*, the *Houſe* of *Hanover*, of *Auſtria*, of *Lorrain*, of *Savoy*, &c.

HOUSE, in Aſtrology, is a twelfth Part of the Heavens. See HEAVEN.

The Diviſion of the Heavens into *Houſes* is founded on this, that the Stars and Planets when found herein have certain Influences, either good or evil ones, upon ſublunary Bodies; and to each *Houſe* is aſſign'd its particular Virtue or Influence; upon the Conſideration whereof they draw Horoſcopes. See INFLUENCE, HOROSCOPE, *&c.*

This Diviſion is made by ſix great Circles, call'd *Circles of Poſition*, which cut each other in the common Interſection of the Meridian and Horizon, in the common Way of Domifying, which is that of *Regiomontanus*: For the Ancients had three other Ways. See POSITION, DOMIFYING, *&c.*

Theſe Circles divide the Equator into twelve equal Parts, without any regard to the Zodiac.

The Horizon and Meridian are two Circles of the Cœleſtial *Houſes*, which divide the Heavens into four equal Parts, each whereof comprehends four *Houſes*. --- There are ſix above the Horizon, and as many below it; ſix Eaſtern, and ſix Weſtern ones.

The Theme or Figure of the Heavens alſo conſiſts of twelve Triangles, which are likewiſe call'd *Houſes*; wherein are laid down the Stars, Signs, and Planets, compriz'd within the reſpective Spaces of the Circles of Poſition. See THEME.

Each Planet has two certain *Houſes*, wherein it exerts its ſelf with peculiar Vigour; *Leo* is the Sun's *Houſe*, and *Cancer* that of the Moon; *Capricorn* is *Saturn*'s, &c.

Some call the *Houſes* *Dodecatemories*, and *Angles*; but that Name is more immediately appropriated to the twelve Signs or Diviſions of the Zodiac. See DODECATEMORY.

The Aſtrological *Houſes* have their particular Names according to their Qualities. --- The firſt is the *Houſe of Life*; being the Aſcendant, and containing five Degrees above the Horizon, the reſt beneath it. The ſecond is the *Houſe of Riches*. The third the *Houſe of Brothers*. The fourth, in the loweſt Part of Heaven, the *Houſe of Relations*, and Angle of the Earth. The fifth, the *Houſe of Children*. The ſixth, the *Houſe of Health*. The ſeventh, the *Houſe of Marriage*, and the Angle of the Weſt. The eighth, the *Houſe of Death*, and upper Gate. The ninth, the *Houſe of Piety*. The tenth, the *Houſe of Offices*. The eleventh, the

Houſe

Houſe of Friends. And the twelfth, the *Houſe of Enemies.*

It is popularly, and, as it were, poetically ſaid, that the Sun has twelve *Houſes*; by which are meant the twelve Signs; tho', in reality, it has only one Sign, *viz. Leo:* beſide, the Diviſion of *Houſes* is made by the Equator, and not the Zodiac.

They begin numbering the *Houſes* with the Aſcendant, and paſs thence to the Nadir, or *Fundas Cœli*; ſo as the Vertical Point makes the 10th.

HOUSE-*bote*, a Term compounded of *Houſe* and Bote, *Compenſation*; ſignifying Eſtovers, or an Allowance of Timber out of the Lord's Wood, for the Repair and Upholding a *Houſe* or Tenement.

Houſe-bote (ſays *Coke on Littl.* fol. 41. *b.*) is twofold, *viz. Eſtoverium ædificandi & ardendi.* See ESTOVERS.

HOUSE-*robbing*, or HOUSE-*breaking*, (from the *Saxon Houſebrice*) the robbing or plundering a Man in ſome Part of his *Houſe*, or Booth or Stall in a Fair or Market; the Owner, or his Wife, Children, or Servants, being within the ſame. See ROBBING.

This was Felony by Stat. 23 *Hen.* 8. and 3 *Edw.* 6. But is ſince made Felony, though none be within the *Houſe*, 39 *Eliz.* See BURGLARY.

HOUSE-*wife's Cloth*, is a middle Sort of Linnen Cloth between fine and coarſe, for Family Uſes.

HOUSHOLD, the Family or Domeſticks of a Prince or private Perſon. See FAMILY and DOMESTIC.

The Civil Government of the King's Court belongs chiefly to the *Lord Steward of the Houſhold.* See STEWARD. --- He has Authority over all Officers and Servants of the *King's Houſe*, except thoſe of the Chapel, Chamber, and Stable, who are under the Juriſdiction of the Lord Chamberlain, Maſter of the Horſe, and Dean of the Chapel. See CHAMBERLAIN, MASTER *of the Horſe*, and CHAPEL.

Under the Lord Steward are a Treaſurer of the *Houſhold*, Comptroller, Cofferer, Maſter of the *Houſhold*, Clerks of the Green Cloth, *&c.* See TREASURER, COMPTROLLER, COFFERER, GREEN *Cloth*, &c.

The *Troops of the Houſhold* are the Horſe Guards, Horſe Granadiers, and Foot Guards. See HORSE *Guard*, &c. --- The *Houſhold* Troops of *France* are call'd the *Gendarmerie.* See GENDARMES.

HOUSHOLD *Days*, are four ſolemn Feſtivals in the Year, when the King, after divine Service, offers a Bezant of Gold to God on the Altar. --- Theſe *Houſhold* Days are *Chriſtmas*, *Eaſter*, *Whitſunday*, and *All-Saints.* See BEZANT.

The *Houſhold* Days are part of the twelve Collar and Offering Days. See COLLAR *Day.*

HOUSING, or HOUSSE, a Cover laid over the Saddle of a Horſe, in order to ſave it from the Weather, Dirt, *&c.*

The Cavaliers appear'd with their embroider'd *Houſings.* --- The Word is form'd of the *French*, *Houſſe*, which ſignifies the ſame Thing, tho' it anciently ſignify'd a kind of Hood wore by Country People.

Shoe HOUSING, a Piece of Cloth border'd with a Fringe, oftentimes put round the Saddle, to cover the Croupe, and hang down to the lower Part of the Belly, to ſave the Stockings of thoſe that ride without Boots.

Boot HOUSING, is a Piece of Stuff faſten'd to the hinder Part of the Saddle, that covers a Horſe's Croupe, either for the Sake of Ornament, or to hide the Horſe's Leanneſs, or to ſave the Cloaths of the Rider from being daub'd and ſoil'd by the Sweat of the Horſe.

HOW, among Gardeners. See HOE.

HOWKER, or HOUCRE, a Veſſel much us'd by the *Dutch*; built ſomething like a Pink, but rigg'd and maſted like an Hoy. See FLOATING *Veſſel.*

They carry from 50 to 200 Tun; and with a ſmall Number of Hands will go to the *Eaſt-Indies.*

They tack ſoon and ſhort, will ſail well, and lie near the Wind; and live almoſt in any Sea.

HOZING of Dogs, the cutting the Balls of their Feet. See EXPEDITATING.

HOY, a ſmall Veſſel or Bark, whoſe Yards are not acroſs, nor the Sails ſquare, like thoſe of Ships, but the Sails like a Miſſen; ſo that ſhe can lie nearer than a Veſſel with croſs Sails can do.

HOYSE, or HOISE, the Sea Word for haling up any thing into the Ship, for getting up a Yard, *&c.* --- Thus they ſay, *Hoiſe* up the Yard, *Hoiſe* the Water in, *&c.*

HUCKLE *Bone*, the Hip Bone. See HIP *Bone.*

HUCKSTER, one that ſells Proviſions, or ſmall Wares, by Retail. See RETAIL.

HUDSON'S-BAY *Company.* See COMPANY.

HUE *and* CRY, a Law Phraſe. --- *Hue* ſignifies the Complaint of the Party robb'd, *&c.* and *Cry* the Purſuit of the Felon on the Highway, by deſcribing the Party, and giving Notice to ſeveral Conſtables from one Town to another, who are oblig'd to call upon the Pariſh for Aid in ſeeking the Felon, till he be apprehended, or, at leaſt, purſu'd to the Sea-ſide.

The *Normans* had a Purſuit with a Cry after Offenders, not unlike this; which they call'd *Clamor de Haro.* See HARO.

Hue is us'd alone, Anno 1 *Edw.* I. Stat. 2. --- In ancient Records it is call'd *Hutefium & clamor.* See VOCIFERATIO.

HUERS. See CONDERS.

HUG, or *Corniſh* HUG, a Term us'd in Wreſtling, when one has an Adverſary on his Breaſt, and holds him faſt there.

HUGUENOTS, an Appellation given to the Calviniſts of *France.* See CALVINIST.

The Name had its firſt Riſe in 1560; but Authors are not agreed as to the Origin and Occaſion thereof. *Paſquier*, *Menage*, &c. give us divers Etymologies, but none of them are ſtuck to.

Du Verdier derives it from *John Hus*, whoſe Opinions the *Huguenots* chiefly receive, and *Guenon*, Ape, *q. d. Hus's* Apes. See HUSSITES.

Coquille deduces the Name from *Hugues Capet*, whoſe Right of Succeſſion to the Crown, the Calviniſts maintain'd againſt thoſe of the Houſe of *Guiſe*, who pretended to be the Succeſſors of *Charlemaign.*

Others derive it from one *Hughes*, *Hugh*, a Sacramentarian, who had aſſerted much the ſame Doctrines as the *Huguenots*, under *Charles* VI.

Others fetch it from the *Swiſs* Word *Henſquenaux*, *i. e.* ſeditious People; or from *Eidgnoſſen*, *i. e.* Allies or Aſſociates in Faith, which is the Opinion *Maimbourg* inclines to, who hence concludes, that *Huguenot* is originally no Term of Reproach.

Caſtelnau Mauviſſiere, in his Memoirs, maintains them to have been thus call'd by the Populace, as being of leſs Value than a little Piece of Money of the ſame Name, being a Maille or Farthing, which, in the Time of *Hugh Caper*, was call'd *Huguenot*, *q. d.* not worth a Farthing.

Others take the Name to have been firſt given by way of Deriſion to a certain *German*, who being taken and examin'd as to the Conſpiracy of *Amboiſe*, before the Cardinal *de Lorrain*, was confounded, and ſtopp'd ſhort in the Beginning of his Harangue, which began with *Huc nos venimus.*

But the moſt plauſible Opinion is that of *Paſquier*, who obſerves, that at *Tours* the People have a Notion of a Spright or Goblin, call'd King *Hugon*, who ſtroles about in the Night Time; whence, as thoſe of the Religion met chiefly in the Night Time to pray, *&c.* they call'd 'em *Huguenots*, *q. d.* Diſciples of King *Hugon*: For it was at *Tours* they were firſt denominated. --- This Opinion F. *Daniel* aſſents to.

HUISSIER, a *French* Name for *Uſher*, *Sergeant*, and *Beadle.* See USHER, SERGEANT, and BEADLE.

HULKS, are large Veſſels, having their Gun Decks from 113 to 150 Foot long, and from 31 to 40 Foot broad. --- They will carry from 400 to 1000 Tuns. --- But their chief Uſe is for ſetting in Maſts into Ships, and the like: Though anciently the Word *Hulka* ſeems to ſignify a ſmall Veſſel.

HULL *of a Ship*, is her main Body, without any Maſts, Yards, Sails, or Rigging. See SHIP.

To *hull*, or *lie a hull*, is underſtood of a Ship, when, either in a dead Calm, (to preſerve her from beating her Sails againſt the Maſts) or in a Storm, when ſhe cannot carry all her Sails; they are taken in to preſerve them; ſo that nothing but her Maſts, Yards, and Riggings are abroad, and her Helm ty'd down to the Lee-Side of the Ship. --- In this State ſhe will lie eaſily under the Sea, if ſhe be a good Sailor; and make her Way one Point before the Beam.

To ſtrike a HULL, in the Sea Language, is to lie cloſely or obſcurely in the Sea in a Storm, or to tarry for ſome Conſort, bearing no Sail, with the Helm laſh'd a Lee.

HUMAN, ſomething that relates to Man, or the Nature of Man. See MAN and NATURE.

The *human* Body is the Subject of Medicine. See BODY.

Epicurus and his Followers deny that the Gods concern themſelves with *human* Affairs. See EPICUREANS.

Faith is diſtinguiſh'd into Divine and *Human.* See FAITH.

HUMANITY, the Nature of Man, or that which denominates him *human.*

Neſtorius would not allow the Infirmities of *Humanity* to be attributed to the Deity; nor the Attributes of the Deity to *Humanity.* See NESTORIANS.

HUMANITIES is alſo us'd, plurally, for the *Humaniores Literæ*, *i. e.* the Study of the *Greek* and *Latin* Tongues, Grammar, Rhetoric, Poetry, and the ancient Poets, Orators, and Hiſtorians. See PHILOLOGY.

Such a Student has gone thro' his *Humanities* with Applauſe: *Calvin* perform'd his *Humanities* in the College *de la Marche* at *Paris*.

HUMECTATION, *Moiſtening*, in Pharmacy, the preparing of a Medicine, by ſteeping it a while in Water, in order to ſoften and moiſten it when too dry, to cleanſe it, or to prevent its ſubtile Parts from being diſſipated in grinding it, or the like. See HUMIDITY.

The Term is alſo us'd for the Application of moiſtening or ſuppling Remedies. --- In this Senſe we ſay, Embrocations, Emplaſters, Unctions, *Humectations*, Fomentations, *&c.*

The Word is *Latin*, *Humectatio*, of *Humor*, Moiſture.

HUMERUS, in Anatomy, or *Os* HUMERI, the uppermoſt Bone of the Arm, popularly call'd the *Shoulder Bone*; extending from the Scapula or Shoulder-blade, to the upper End of the Cubitus, or Elbow. See ARM and SHOULDER, *&c.*

The *Humerus*, is a large, long, round fiſtular Bone, of a pretty hard, compact Subſtance; and its inward Cavity, which contains the Marrow, pretty long and large.

At its upper End it has a large round Head, which is cover'd with a very ſmooth Cartilage, and receiv'd into the Cavity of the Scapula, which makes a Juncture per Arthrodiam. --- This Head of the Bone being much larger than the Socket into which it is receiv'd, the Part extant is ſtrictly embrac'd by a Ligament, one Edge of which is faſten'd to the Margin of the Cartilaginous Socket of the Scapula, and the other to the lower Part of the Head of this Bone, thereby uniting them firmly together; yet ſo as to leave the Motion the freeſt of all the Articulations of the Body, and therefore liable to Diſlocations. See SCAPULA.

At the lower End of the *Humerus* are two Proceſſes, cover'd each with a Cartilage; the external and leſſer receiving the Extremity of the Radius; and the internal, the Head of the Cubitus. See RADIUS.

On the Out-ſide of each of theſe Proceſſes, is a ſmall Eminence, to which are faſten'd the Ligaments and Heads of the Muſcles that move the Carpus and Fingers. See CARPUS.

In this Bone are alſo three Sinus's; one on the fore Side of the large Proceſs, receiving a Proceſs of the Cubitus; another on the back Part which receives the Olecranum; and the third, a ſmall ſemilunar one between the two Proceſſes, anſwering to the Eminence of the Sinus's of the Cubitus. See CUBITUS.

The later Anatomiſts allow this Bone five different Motions, *viz.* upwards, downwards, forwards, backwards, and rotatory; and five Pair of Muſcles for Performance of the ſame, *viz.* the *Deltoides*, *Teres*, *Pectoralis*, *Infraſpinatus*, *Subſcapularis*, &c. See each under its proper Article, DELTOIDES, TERES, *&c.*

HUMID, HUMIDUM, *moiſt*. See HUMIDITY.

The School Philoſophers make Water the *primum Humidum*, the firſt of *humid* Bodies, and the Cauſe or Principle of *Humidity* in others, which are more or leſs moiſt, as they partake more or leſs of this Element. See WATER and ELEMENT.

HUMIDITY, or *Moiſture*, the Quality or Power of wetting or moiſtening other Bodies. See QUALITY.

Ariſtotle defines *Humidity*, by a paſſive Quality which indiſpoſes a Body from being retain'd in its own Bounds, but makes it eaſily retain'd in thoſe of another: which amounts to the ſame as his Definition of Fluidity. See FLUIDITY.

Others of the Peripatetick School, make *Humidity* a Quality whereby a Body is *humid*, *i. e.* moiſtens other Bodies, and, in moiſtening, ſoftens and diſpoſes them to receive any Figure or Impreſſion.

The modern Writers conſider *Humidity* as a particular Species of Fluidity; and define it a Fluor, which being apply'd on a ſolid Body, adheres thereto, and communicates the Quality to other Bodies. --- Others, ſomewhat more accurately, call *Humidity* the Power whereby a Body moiſtens another: But what that Power is, they do not ſhew.

But of this we are certain, that *Humidity* is no more than a Sort of relative Mode. --- So far as the component Particles of a Fluid, compar'd with reſpect to the Pores and Particles of other Bodies, or the Texture thereof, are apt and diſpos'd to enter thoſe Pores, or ſtick to thoſe Particles; ſo far is that Fluid *humid*: On the contrary, ſo far as there is a Repugnance or Incongruity between the Particles, *&c.* in reſpect of ſuch Bodies, the Fluid is not *humid*.

Thus Quickſilver is not moiſt in reſpect to our Hands or Cloaths, and other Things, which it will not ſtick to; but it may be call'd *humid* in reference to Gold, Tin, or Lead, to whoſe Surfaces it will preſently adhere, and render them ſoft and moiſt.

Even Water itſelf, which wets almoſt every thing, and is the great Standard of Moiſture and *Humidity*, is not capable of wetting all Things; for it ſtands, or runs off in globular Drops on the Leaves of Cabbages, and many other Plants; and it will not wet the Feathers of Ducks, Swans, and other Water-Fowl.

Add, that the Texture alone may cauſe the Fluid to be *humid*, as is plain, in that neither Quickſilver alone, Lead, or Biſmuth, will ſtick upon Glaſs; yet being mix'd together, they will form a Maſs that will do ſo; as appears from ſuch a Compoſition being frequently us'd in foliating Looking-Glaſſes. See FOLIATING.

HUMIDIUM *Radicale*, or *Radical Moiſture*. See RADICAL.

This, in reality, ſeems to amount to no more than the pureſt and moſt defecate Part of the nutritious Matter, in a Condition ready to be aſſimulated. See NUTRITION.

By too much Heat, as in Fevers, Hectics, *&c.* this *Humidity* is too haſtily exhauſted and ſpent.

HUMILIATION, the Act of *humbling*, *i. e.* of abating a Perſon's Pride, and bringing him lower in his own Opinion.

In this Senſe, *Humiliation* ſtands contra-diſtinguiſh'd from Mortification: *Humiliation* brings down the Mind; Mortification ſubdues the Fleſh. See MORTIFICATION.

HUMILIS *Muſculus*. See EYE.

HUMOR, or HUMOUR. See HUMOUR.

HUMORISTS, or *gli* HUMORISTI, HUMOURISTS, HUMORISTÆ, the Title of a celebrated Academy of learned Men at *Rome*. See ACADEMY.

The Academy of *Humoriſts* was eſtabliſh'd by *Paul Mancini*, who made uſe of *Gaſpard Silvianus* to aſſemble together all the Men eminent for Learning about *Rome*, and form them into a Society; as is obſerv'd by *Janus Niceus* in his Elogy of *Silvianus*, Part I. p. 32.

The Deviſe of this Academy is a Cloud, which being rais'd from the Salt Water of the Sea, returns again in Freſh; with this *Hemiſtick* of *Lucretius*, l. vi. *Redit agmine dulci*. *Jerom Alexander*, a *Humoriſt*, has three expreſs Diſcourſes on this Deviſe.

The Obſequies of M. *Peyresc* were celebrated in the Academy of the *Humoriſts*, whereof he was a Member, in above forty different Languages. *Gaſſendi de Vita Peyreskii*, l. vi. p. 399.

HUMOROSI, the Name of an Academy eſtabliſh'd at *Cortona* in *Italy*. See ACADEMY.

The *Humoroſi* of *Cortona* muſt not be confounded with the *gli Humoriſti* of *Rome*. See HUMORISTS.

HUMOUR, or HUMOR, in its general Senſe, ſignifies the ſame as *Liquor* or *Liquid*. See LIQUID and FLUID.

The Word is *Latin*, *Humor*, form'd of the *Greek* ὑγμα, *Pluvia*, Rain, of ὕω, *Pluo*.

HUMOUR, in Medicine, is apply'd to any Juice, or fluid Part of the Body, as the *Chyle*, *Blood*, *Milk*, *Fat*, *Serum*, *Lymph*, *Spirits*, *Bile*, *Seed*, *Salival* and *Pancreatic* Juices, *&c.* See each under its proper Head, CHYLE, BLOOD, BILE, *&c.*

The *four Humours* ſo much talk'd of by the ancient Phyſicians, are four liquid Subſtances, which they ſuppoſe to moiſten the whole Body of all Animals, and to be the Cauſe of the divers Temperaments thereof. See TEMPERAMENT.

Theſe are *Phlegm*, *Pituita*, *Blood*, *Bile*, and *Melancholly*. See PHLEGM, PITUITA, *&c.*

But the Moderns do not allow of theſe Diviſions. The *Humours* they rather chuſe to diſtinguiſh into *Nutritious*, or *Alimentary*, as *Chyle* and *Blood*; thoſe ſeparated from the Blood, as *Bile*, *Saliva*, *Urine*, &c. and thoſe return'd into the Blood.

Humours, again, are diſtinguiſh'd into *natural* or ſalutary, and *morbid* or corrupted. --- To the former Claſs belong all the Juices ordinarily ſecreted for the Uſes of the Body.

To the latter belong thoſe compound *Humours* which thicken, and grow putrid; cauſing Tumors, Abſceſſes, Obſtructions, and moſt Diſeaſes. See DISEASE.

Theſe are diſtinguiſh'd by various Names, *Malignant*, *Aduſt*, *Acrimonious*, *Corroſive*, *Crude*, *Peccant*, &c. See MALIGNANT, ADUST, *&c.*

HUMOUR is alſo us'd for the particular Temperament or Conſtitution of a Perſon, conſider'd as ariſing from the Prevalence of this or that *Humour*, or Juice of the Body. See TEMPERAMENT.

Thus we ſay, a Bilious Coleric *Humour*; a Phlegmatic *Humour*; a Melancholic, Reſtleſs, Hypochondriac *Humour*; a Sanguine, Gay, Sprightly *Humour*, &c. See SANGUINE, *&c.*

HUMOURS *of the Eye*. --- Anatomiſts and Opticians diſtinguiſh three particular *Humours* in the Eye, which they call the *Aqueous*, *Cryſtallin*, and *Vitrious*. See EYE.

The *Aqueous*, or *Watery Humour*, is plac'd in the anterior or fore Part of the Eye, which it poſſeſſes; and is thus call'd, becauſe clear and fluid like Water. See AQUEOUS.

The *Vitrious*, or *Glaſſy Humour*, fills the poſterior Part of the Eye; and is denominated from its Reſemblance of melted Glaſs. See VITRIOUS.

The *Cryſtalline Humour* is plac'd between the other two; and is thus call'd from its Solidity and Tranſparency, reſembling that of a Cryſtal. See CRYSTALLINE.

Theſe three *Humours* have each their Share in the Refraction of the Rays of Light neceſſary to Viſion. See VISION and REFRACTION.

Authors, both ancient and modern, ſpeak of the Regeneration of the *Humours* of the Eye; and give us Inſtances of their Reproduction, when by any Accident they had been let out. But their Inſtances generally go no farther than to the Aqueous and Vitrious *Humours*.

Borhy, only, in a Letter to *Bartholine*, ſays as much of the Cryſtalline. --- He affirms, that he has ſlit the Pupil of the Eye of divers Animals, and ſqueez'd out all the *Humours*, even the Cryſtalline, and has again perfectly reſtor'd them to Sight; and that the Eyes of the Birds, whereon the Operation had been perform'd, inſtead of being damag'd thereby, were render'd more lively and vigorous than uſual. He adds, that he had perform'd the ſame Experiment on divers Perſons, with ſo much Succeſs, that there remain'd not the ſmalleſt Appearance of a Cicatrix in the Eye.

HUMOUR is alſo us'd in Dramatic Poetry, for a ſubordinate or weaker Species of what the Criticks call *Manners*. See MANNERS.

Humour is uſually look'd on as peculiar to the *Engliſh* Drama; at leaſt, our Comic Poets have excell'd therein, and carry'd it beyond thoſe of any other Nation: Ours is perhaps the only Language that has a Name for it.

Humour is uſually conſider'd by our Criticks, as a fainter or weaker Paſſion peculiar to Comic Characters, as being found in Perſons of a lower Degree than thoſe proper for Tragedy. See CHARACTER and TRAGEDY.

Every Paſſion may be ſaid to have two different Faces, one that is ſerious, great, formidable, and ſolemn, which is for Tragedy; and another that is low, ridiculous, and fit for Comedy; which laſt is what we call *Humour*. See PASSION and COMEDY.

Wit only becomes few Characters: 'Tis a Breach of Character to make one half the Perſons in a Modern, or, indeed, in any Comedy, talk wittily and finely; at leaſt at all Times and on all Occaſions. --- To entertain the Audience, therefore, and keep the Dramatic Perſons from going into the common beaten familiar Ways and Forms of ſpeaking and thinking, recourſe is to be had to ſomething to hold the Place of Wit, that ſhall ſerve in lieu thereof, and divert the Audience, without going out of Character: And this does *Humour*; which therefore is to be look'd on as the true Wit of Comedy.

A very great Judge, the Duke of *Buckingham*, makes *Humour* to be all: Wit, according to him, ſhould never be us'd, but to add an Agreeableneſs to ſome proper and juſt Sentiment, which, without ſome ſuch Turn, might paſs without its Effect. See WIT.

HUNDRED, *Centum*, *Cent.* the Number of ten Times ten; or the Square of ten. See NUMBER.

The Place of *Hundreds* makes the third in Order in the *Arabic* Numeration. See NUMERATION.

We uſually expreſs the Quantity or Proportion of the Profits made in the Way of Commerce, *&c.* by the *Hundred*. --- They ask two and a half *per Cent.* or in the *Hundred*, for remitting Money to ſuch a City. The legal Intereſt of Money is 5 *per Cent.* or in the *Hundred*. See EXCHANGE, REMITTANCE, INTEREST, *&c.*

HUNDRED, is alſo us'd as a Meaſure to expreſs a certain Quantity or Number of Things. --- A *Hundred* of Salt at *Amſterdam* is 14 Tons.

Deal Boards are ſix Score to the *Hundred*, call'd the *long Hundred*. --- Pales and Laths are five Score to the *Hundred*, if five Foot long, and ſix Score of three Foot long.

HUNDRED *Weight*, or the *great Hundred*. See QUINTAL.

HUNDRED, HUNDREDUM, *Centuria*, is alſo a Part or Diviſion of a Shire or County. See SHIRE and COUNTY.

It was ſo call'd, either becauſe of old each *Hundred* found 100 Fidejuſſors or Sureties of the King's Peace, or 100 able Men for his War. See DECENNA, FRANK-*pledge*, &c.

Others rather think it ſo call'd, becauſe originally compos'd of an *hundred* Families. --- 'Tis true *Brompton* tells us, that an *Hundred* contains *centum Villas*; and *Giraldus Cambrenſis* writes, that the *Iſle of Man* hath 343 Villas: But in theſe Places the Word *Villa* muſt be taken for a Country Family; for it cannot mean a Village, becauſe there are not above 40 Villages in that Iſland. See VILLAGE.

So, where *Lambard* tells us that an *Hundred* is ſo call'd, *a numero centum hominum*, it muſt be underſtood of an *hundred* Men, who are Heads and Chiefs of ſo many Families.

Hundreds were firſt ordain'd by King *Alfred*, the 29th King of the Weſt *Saxons*: *Alfredus Rex* (ſays *Lambard*, *verbo* centuria) *ubi cum Guthrumo Dano fœdus inierat, prudentiſſimum olim a Jethrone Moiſi datum ſecutus conſilium, Angliam, primus in Satrapias*, Centurias, *& decurias partitus eſt. --- Satrapium, Shyre, à* Scyrian *(quod partiri ſignificat) nominavit, Centuriam*, Hundred; *& Decuriam, Toothing ſive Tienmantale*, i. e. *Decemvirale Collegium, appellavit; atque iiſdem nominibus vel hodie vocantur*, &c.

This dividing of Counties into *Hundreds*, for the better Government, King *Alfred* borrow'd from *Germany*; where *Centa* or *Centina* is a Juriſdiction over 100 Towns.

This is the Original of *Hundreds*, which ſtill retain the Name; but their Juriſdiction is devolv'd to the County-Court, ſome few excepted, which have been by Privilege annex'd to the Crown, or granted to ſome great Subject, and ſo remain ſtill in the Nature of a Franchiſe. See COURT.

This has been ever ſince the Stat. 14 *Edw.* III. whereby theſe *Hundred* Courts, formerly farm'd out by the Sheriff to other Men, were all, or moſt Part, reduc'd to the County Court, and ſo remain at preſent: So that where we read now of *Hundred* Courts, they are to be underſtood of ſeveral Franchiſes, wherein the Sheriff has not to do by his ordinary Authority, except they of the *Hundred* refuſe to do their Office.

The Word *Hundredum* is ſometimes alſo us'd for an Immunity or Privilege, whereby a Man is quit of the *Hundred*-penny, or Cuſtom due to the *Hundred*. See TURN and WARD.

HUNDRED-*lagh*, from *Hundred*, and the *Saxon*, *Laga*, Law, ſignifies the *Hundred* Court; from which all the Officers of the King's Foreſt were freed by the Charter of *Canutus*. See WARSCOT.

HUNDRED *Secta*, the Payment of perſonal Attendance ordering Suit and Service at the *Hundred Court*.

HUNDREDERS, HUNDREDARII, are Men impanell'd, or fit to be impannell'd, of a Jury, upon any Controverſy, dwelling within the *Hundred* where the Land in Queſtion lies. See JURY.

The Word *Hundreder* is alſo us'd for him who hath the Juriſdiction of an *Hundred*, and holds the *Hundred* Court. See HEAD-*Borough*.

Sometimes it is alſo us'd for the Bailiff of an *Hundred*. See BAILIFF.

HUNGARY *Water*, *Aqua* HUNGARICA, a diſtill'd Water, denominated from a Queen of *Hungary*, for whoſe Uſe it was firſt prepar'd. See WATER.

Hungary Water is one of the diſtill'd Waters of the Shops; and is directed in the College Diſpenſatory, to be made of Roſemary Flowers infus'd ſome Days in rectify'd Spirit of Wine, and thus diſtill'd. See DISTILLATION.

Its Virtues are much the ſame as thoſe of the Simple it is drawn from. See ROSEMARY.

HUNGER, *Fames*, a natural Appetite or Deſire of Food. See APPETITE and FOOD.

Hunger is properly diſtinguiſh'd into Natural and Animal: *Natural Hunger* is an Irritation of the Stomach, occaſion'd by Faſting; *Animal Hunger* is the Senſation or Perception of that Irritation, and the Deſire of Food conſequent thereon.

There are various Opinions as to the Nature, Cauſe, and Definition of *Hunger*; the Point having been controverted from *Ariſtotle* to our Time. --- *Galen* defines it a painful Senſation, ariſing from a Divulſion of the Stomach; The other Peripateticks call it an Appetite or Deſire of Hot and Dry: Which two Syſtems ſome Authors have endeavour'd to reconcile by taking them both in; and, accordingly define *Hunger* a natural Appetite or Deſire of Hot and Dry, occaſion'd by a painful Divulſion of the Membranes of the Stomach, ariſing from an Emptineſs thereof. See STOMACH.

The modern Philoſophers ſpeak more accurately and intelligibly on the Point --- *Hunger* is generally conſider'd by them as owing to the Sharpneſs or Acrimony of the Liquor contain'd in the Stomach, which vellicating the Fibres thereof, occaſions this uneaſy Senſation. --- They add, that the occaſional Cauſe of this Vellication, is the Emptineſs of the Stomach, which not furniſhing Food for the Stomach-Liquor to be employ'd on, expoſes its inner Membrane to the Action thereof.

In effect, 'tis generally agreed, that there is ſome menſtruous Juice or Humour continually diſcharg'd from the excretory Ducts of the neighbouring Glands into the Stomach, to aſſiſt in the Diſſolution and Digeſtion of the Food; and that this ſame Liquor, after the Food is gone, falls upon the Stomach itſelf, irritates its Nerves ſo ſtrongly, as to propagate the Impreſſion to the Brain, and thus produce the Perception of *Hunger*. See DIGESTION.

This Juice ſome will have to be acid, by reaſon Bodies of that Claſs are uſed to whet the Appetite and excite *Hunger*; and that fatty Bodies more readily remove it than others, by their adhering to the Acid Spicula, and blunting the Points thereof. See ACID.

Others denying the Exiſtence of any ſuch Stomach-Liquor, and accounting for Digeſtion without; it deny *Hunger* to have any Dependence thereon. --- The dry Attrition of the Coats of the Stomach, according to them, is the only Cauſe.

Thus it is that the *Indians* elude their *Hunger*, by ſwallowing Pills made of Tobacco Leaves and calcin'd Shells: Theſe Pills take away the Appetite, both as the Tobacco Leaves gradually diminiſh the Senſibility of the Stomach, and as the calcin'd Shells abſorb the Salino-acid Menſtruum.

Thus

Thus alſo it is, that poor People frequently ſmoak Tobacco to deceive their *Hunger*, not to ſatisfy it; for Tobacco affords no Nutriment; but it occaſions a plentiful Spitting, and by this Means diſcharges the Body of the corroſive Humour which cauſes *Hunger*.

This Syſtem Dr. *Drake* thus lays down: — When all the Chyme and Chyle is preſs'd out, the Stomach, which follows the Motions of its Contents, is again, by means of its muſcular Coat, reduc'd to a State of Contraction, and by that Means the Inner is brought to lay in Folds, which touching, and by means of the Periſtaltick Motion, rubbing lightly, upon one another, produce that gentle Senſe of fretting or Vellication, which we call *Hunger*, which being felt firſt in the upper Orifice, which is firſt evacuated, begins there to prompt us to repleniſh: But as by Degrees the Remainder of the Contents are expell'd, this Friction or Rubbing of the Membranes upon each other, ſpreads gradually over the whole Stomach, and renders our *Hunger* more urgent and impatient, till, by a new Repletion, we take away the Cauſe.

Others think the Blood, deriv'd from the adjacent Ramifications of Arteries into the Stomach, ſufficient to account for *Hunger*, without the Mediation either of Attrition or the Menſtruum. — The Maſs of Blood itſelf, they obſerve, is render'd acid thro' Abſtinence from Food; its ſoft balſamic Parts having been carry'd into all Parts of the Body, and lodg'd therein as Nutriment, to ſupply the Abſence of thoſe wore off and exhal'd: To which it may be added, that the Velocity of the Blood is conſiderably augmented a good while after eating, beyond what it was during the Action of Digeſtion.

Hence it is, that Perſons of a bilious Conſtitution, young People, and thoſe who labour hard, muſt ſooner find themſelves *hungry* than others. 2°. That *Hunger*, if it hold long, occaſions a violent Heat, and even ſometimes a Fever. 3°. That thoſe whoſe Humours are craſs and viſcid, are leſs incommoded with *Hunger* than others.

In effect, we obſerve, that ſome Animals, whoſe Humours are found to have thoſe Conditions, as Tortoiſes, &c. will live a long time without Food. — For Man, ſix or ſeven Days are commonly ſuppos'd the Limit within which, if he take no ſolid Food, he dies; tho' we have Inſtances of Abſtinence which far ſurpaſs this. See ABSTINENCE and FASTING.

HUNGRY *Evil*, is an unnatural and over-haſty Greedineſs in a Horſe, to devour his Meat faſter than he can chew it; and may be known by his ſnatching at it as if he would devour it whole.

HUNTING, the Art or Act of purſuing and chaſing Beaſts of Game. See GAME.

In its general Senſe *Hunting* includes the Purſuit both of hairy and feather'd Game; but in its more proper and reſtrain'd Signification, it is only applicable to Beaſts of Venery and Chace. See BEAST. See alſo FOWLING.

F. *de Launay*, Profeſſor of the *French* Laws, has an expreſs Treatiſe of *Hunting*. — From thoſe Words of God to *Adam*, *Gen.* i. 26 and 28. and to *Noah*, *Gen.* ix. 2, 3. *Hunting* was conſider'd as a Right devolv'd, or made over to Man; And the following Ages appear to have been of the ſame Sentiment, Accordingly we find that among the more civiliz'd Nations, as the *Perſians*, *Greeks*, and *Romans*, it made one of their genteeler Diverſions; and as to the wilder and more barbarous, it ſerv'd them for Food and Neceſſaries. — The *Roman* Juriſprudence, which was form'd on the Manners of the firſt Ages, made a Law of it; and eſtabliſh'd it as a Maxim, that as the natural Right of Things which have no Maſter, belongs to the firſt Poſſeſſor, wild Beaſts, Birds, and Fiſhes, are the Property of whoever can take them firſt.

But the Northern Nations of Barbarians, who over-run the *Roman* Empire, bringing with them a ſtronger Taſte for the Diverſion; and the People being now poſſeſs'd of other, and more eaſy Means of Subſiſtence from the Lands and Poſſeſſions of thoſe they had vanquiſh'd; their Chiefs and Leaders began to appropriate the Right of *Hunting*, and, inſtead of a natural Right, to make it a Royal one. — Thus it continues to this Day; the Right of *Hunting*, among us, belonging only to the King, and thoſe who derive it from him. See KING, LORD, &c.

And hence all our Laws and Charters of the Foreſt, Laws and Regulations for Preſervation of the Game, &c. See FOREST and GAME.

Hunting is practis'd in a different Manner, and with a different Apparatus, according to the Nature, Genius, and Addreſs of the particular Beaſt which is the Subject thereof. — Theſe Beaſts are the Hart, Hind, Hare, Boar, Wolf, Buck, Doe, Fox, Marten, and Roe; the five firſt whereof are denominated Beaſts of the *Foreſt*, or *Venery*, *Sylveſtres*; and the five latter, Beaſts of the *Field*, or of *Chace*, *Campeſtres*.

The Gentlemen and Maſters of the Sport have fram'd a new Set of Terms, which may be call'd the *Hunting Language*; a little View or Vocabulary whereof we ſhall here give the Reader.

The Terms, then, us'd for Beaſts of Venery and Chace, as they are in Company, are theſe. — They ſay, A *Herd* of Harts, and all Manner of Deer. — A *Bevy* of Roes. — A *Sounder* of Swine. — A *Rout* of Wolves. — A *Richeſs* of Martens. — A *Brace* or *Leaſh* of Bucks, Foxes, or Hares. — A *Couple* of Rabbets or Conies.

There are alſo Terms for their Lodging. — A Hart is ſaid to *Harbour*. — A Buck *Lodges*. — A Roe *Beds*. — A Hare *Seats* or *Forms*. — A Coney *Sits*. — A Fox *Kennels*. — A Marten *Trees*. — An Otter *Watches*. — A Badger *Earths*. — A Boar *Couches*.

Hence, to expreſs their diſlodging, we ſay, *Unharbour* the Hart. — *Rouſe* the Buck. — *Start* the Hare. — *Bolt* the Coney. — *Unkennel* the Fox. — *Tree* the Marten. — *Vent* the Otter. — *Dig* the Badger. — *Rear* the Boar.

The Terms for their Noiſe at Rutting Time are as follows: — A Hart *Belleth*. — A Buck *Grouns* or *Troats*. — A Roe *Bellows*. — A Hare *Beats* or *Taps*. — An Otter *Whines*. — A Boar *Freams*. — A Fox *Barks*. — A Badger *Shrieks*. — A Wolf *Howls*. — A Goat *Rattles*.

Terms for their Copulation. — A Hart or Buck goes to *Rut*. — A Roe goes to *Tourn*. — A Boar goes to *Brim*. — A Hare or Coney go to *Buck*. — A Fox goes to *Clickitting*. — A Wolf goes to *Match* or *Make*. — An Otter *Hunteth* for his Kind.

Terms for the Footing and Treading. — Of a Hart we ſay the *Slot*. — Of a Buck, and all fallow Deer, the *View*. — Of all Deer, if on the Graſs, and ſcarce viſible, the *Foiling*. — Of a Fox the *Print*; and other the like Vermin the *Footing*. — Of an Otter the *Marks*. — Of a Boar the *Track*. — The Hare, when in open Field, is ſaid to *Sore*; when ſhe winds about to deceive the Hounds, ſhe *Doubles*; when ſhe beats on the hard Highway, and her Footing come to be perceiv'd, ſhe *Pricketh*: In Snow, it is call'd the *Trace* of the Hare.

The Tail of a Hart, Buck, or other Deer, is call'd the *Single*. — That of a Boar, the *Wreath*. — Of a Fox, the *Bruſh* or *Drag*; and the Tip at the End, the *Chape*. — Of a Wolf, the *Stern*. — Of a Hare and Coney, the *Scut*.

The Ordure or Excrement of a Hart, and all Deer, is call'd *Fewments* or *Fewiſhing*. — Of a Hare, *Crotiles* or *Crotiſing*. — Of a Boar, *Leſſes*. — Of a Fox, the *Billiting*; and of other the like Vermin, the *Fuants*. — Of an Otter, the *Spraints*.

As to the Heads of Deer, ſomething has already been ſpoken under the Article HEAD.

For the Attire, or Parts thereof, thoſe of a Stag, if perfect, are the *Bur*, the *Pearls*, the little *Knobs* on it, the *Beam*, the *Gutters*, the *Antler*, the *Sur-Antler*, *Royal*, *Sur-Royal*, and all at Top the *Croches*. — Of the Buck, the *Bur*, *Beam*, *Brow-Antler*, *Black-Antler*, *Advancer*, *Palm*, and *Spellers*.

If the Croches grow in the Form of a Man's Hand, it is call'd a *Palmed Head*. — Heads bearing not above three or four, and the Croches placed aloft, all of one Height, are call'd *Crowned Heads*. — Heads having doubling Croches, are call'd *Forked Heads*, becauſe the Croches are planted on the Top of the Beam like Forks.

They ſay, a *Litter* of Cubs, a *Neſt* of Rabbets, a Squirrels *Dray*.

The Terms us'd in reſpect of the Dogs, &c. are as follow. — Of Greyhounds, two make a *Brace*; of Hounds, a *Couple*. — Of Greyhounds, three make a *Leaſh*; of Hounds, a *Couple* and *Half*. — They ſay, *let ſlip* a Greyhound; and *caſt off* a Hound. — The String wherein a Greyhound is led, is call'd a *Leaſh*; and that of a Hound a *Lyome*. — The Greyhound has his *Collar*, and the Hound his *Couples*. — We ſay a *Kennel* of Hounds, and a *Pack* of Beagles.

Styles or Manners of HUNTING.

The Styles or Manners of *Hunting* are various, according to the Country, the Beaſt, and the Means whereby he is to be caught.

The *Hunting* us'd by the Ancients, was much like that now practis'd for the Rain Deer; which is ſeldom *hunted* at Force, or with Hounds; but only drawn with a Blood-hound, and foreſtall'd with Nets and Engines. — Thus did they with all Beaſts; whence a Dog is never commended by them for Opening, before he has diſcover'd where the Beaſt lies: Hence, they were not in any Manner curious as to the Muſick of their Hounds, or the Compoſition of their Kennel or Pack, either for Deepneſs, Loudneſs, or Sweetneſs of Cry, which is a principal Point in the *Hunting* of our Days.

Their *Huntſmen*, indeed, were accuſtom'd to ſhout and make a great Noiſe, as *Virgil* obſerves in the third of his *Georgicks*: *Ingentem clamore premes ad retia Cervum*. But that Confuſion was only to bring the Deer to the Nets laid for him.

The

The *Sicilian* Way of *Hunting* had ſomething in it very extraordinary. --- The Nobles or Gentry being inform'd which Way a Herd of Deer paſs'd, gave Notice to one another, and appointed a Meeting; every one bringing with him a Croſs-bow or Long-bow, and a Bundle of Staves ſhod with Iron, the Heads bored, with a Cord paſſing thro' 'em all: Thus provided, they came to the Herd, and caſting themſelves about in a large Ring, ſurrounded the Deer. --- Then each taking his Stand, unbound his Faggot, ſet up his Stake, and ty'd the End of the Cord to that of his next Neighbour, at the Diſtance of ten Foot from one another. --- Then taking Feathers, dy'd in Crimſon, and faſten'd on a Thread, they ty'd them to the Cord; ſo that with the leaſt Breath of Wind, they would whirl round. --- Which done, the Perſons who kept the Stands withdrew, and hid themſelves in the next Covert.

Then the chief Ranger entering within the Line with Hounds to draw after the Herd, rous'd the Game with their Cry; which flying towards the Line, were turn'd off, and ſtill gazing on the ſhaking and ſhining Feathers, wander'd about as if kept in with a real Wall or Pale.

The Ranger ſtill purſued, and calling every Perſon by Name, as he paſſed by their Stand, commanded him to ſhoot the firſt, third, or ſixth, as he pleas'd; and if any of them miſs'd, or ſingled out another than that aſſign'd him, it was counted a grievous Diſgrace.

By ſuch Means, as they paſs'd by the ſeveral Stations, the whole Herd was kill'd by the ſeveral Hands. *Pierus Hiercglyphic.* lib. 7. cap. 6.

Hunting, as practis'd among us, is chiefly perform'd with Dogs; of which we have various Kinds, accommodated to the various Kinds of Game; as *Hounds*, *Grey-hounds*, *Staunch Hounds*, *Blood-hounds*, *Terriers*, &c. See HOUND.

In the Kennels or Packs they generally rank them under the Heads of *Enterers*, *Drivers*, *Flyers*, *Tyers*, &c.

On ſome Occaſions, Nets, Spears, and Inſtruments for digging the Ground, are alſo requir'd: Nor is the *Hunting*-Horn to be omitted. See HORN.

The uſual Chaſes among us, are the *Hart*, *Buck*, *Roe*, *Hare*, *Fox*, *Badger*, and *Otter*. --- We ſhall here give what relates to each thereof.

By the way let it be obſerv'd, with regard to the Seaſons of Beaſts, that Hart and Buck *Hunting* begins at the End of Fencer Month, which is a Fortnight after *Midſummer*, and laſts till *Holy Rood-Day*. --- The Hind and Doe come in Courſe on *Holy-Rood-Day*, and laſt till *Candlemas*. — Fox *Hunting* comes in at *Chriſtmas*, and holds till the *Annunciation*. — Roe *Hunting* begins at *Michaelmas*, and ends at *Candlemas*. — Hare *Hunting* commences at *Michaelmas*, and goes out at the End of *February*. — Where the Wolf and Boar are hunted, the Seaſon for each begins at *Chriſtmas*; the firſt ending at the *Annunciation*, the ſecond at the *Purification*.

Here, too, is the Place for ſome general Terms and Phraſes, more immediately uſed in the Progreſs of the Sport itſelf: What belong to the ſeveral Sorts of Game, in particular, being reſerv'd for the reſpective Articles.

When the Hounds, then, being caſt off, and finding the Scent of ſome Game, begin to open and cry; they are ſaid to *challenge*. — When they are too buſy, e'er the Scent be good, they are ſaid to *babble*. — When too buſy where the Scent is good, they *bawl*. — When they run it end-ways orderly, holding in together merrily, and making it good, they are ſaid to be in *full Cry*. — When they run along without Opening at all, it is call'd *running Mute*.

When Spaniels open in the String, or a Grey-hound in the Courſe, they are ſaid to *Lapſe*.

When Beagles bark and cry at their Prey, they are ſaid to *yearn*.

When the Dogs hit the Scent the contrary Way, they are ſaid to *draw amiſs*.

When they take freſh Scent, and quit the former Chaſe for a new one, it is call'd *Hunting Change*.

When they *hunt* the Game by the Heel or Track, they are ſaid to *hunt Counter*.

When the Chaſe goes off, and returns again, traverſing the ſame Ground, it is call'd *Hunting the Foil*.

When the Dogs run at a whole Herd of Deer, inſtead of a ſingle one, it is call'd *Running Riot*.

Dogs ſet in readineſs where the Game is expected to come by, and caſt off after the other Hounds are paſs'd, are call'd a *Relay*. — If they be caſt off e'er the other Dogs be come up, it is call'd a *Vauntlay*.

When finding where the Chaſe has been, they make a Proffer to enter, but return, it is call'd a *Blemiſh*.

A Leſſon on the Horn to encourage the Hounds, is nam'd a *Call*, or a *Recheat*. — That blown at the Death of a Deer, is call'd the *Mort*. — The Part belonging to the Dogs of any Chaſe they have kill'd, is the *Reward*. — They ſay, *take off* a Deer's Skin; *ſtrip* or *caſe* a Hare, Fox, and all Sort of Vermin; which is done by beginning at the Snout, and turning the Skin over the Ears, down to the Tail.

Hart HUNTING, or HUNTING *of Red Deer*. --- This Animal, the firſt Year is call'd a *Calf* or *Hind-Calf*. --- The ſecond Year, a *Knobber*. --- The third, a *Brock*. --- The fourth, a *Staggard*. --- The fifth, a *Stag*. --- The ſixth, a *Hart*.

The Female is call'd a *Hind*. --- The firſt Year ſhe is a *Calf*. --- The ſecond, a *Hearſe*, and ſometimes a *Brocket's Siſter*. --- The third, a *Hind*.

Terms occurring more eſpecially in *Hunting* the Hart, and not yet explain'd, are as follow: --- The Print or Impreſſion where a Deer has lain, is call'd a *Layer*: If it be in Covert, or a Thicket, it is call'd his *Harbour*. --- Where a Deer has paſs'd into a Thicket, leaving Marks whereby his Bulk may be gueſs'd at, it is call'd an *Entry*. --- When they caſt their Heads, they are ſaid to *Mew*. --- When they rub their Heads againſt Trees to bring off the Pills of their Horns, they are ſaid to *Fray*. --- When a Deer hard *hunted* takes to Swimming in the Water, ſhe is ſaid to go to *Soil*. --- When they turn Head againſt the Hounds, they are ſaid to *Bay*. --- When the Hounds touch the Scent, and draw on till they put up the Hart, they are ſaid to *draw on the Slot*.

As to the Nature and Qualities of the Hart, it is to be obſerv'd that he is an excellent Swimmer; there being Inſtances, when ſore *hunted*, of his plunging into the Sea, and being kill'd by Fiſhermen 12 Miles from Land. --- When in going to rut, they have occaſion to croſs a great River, or Arm of the Sea, 'tis ſaid they aſſemble in great Herds; the ſtrongeſt goes in firſt, and the next of Strength follows; and ſo one after the other, relieving themſelves by ſtaying their Heads on the Buttocks of each other.

The Hind commonly carries her Calf eight or nine Months, which uſually falls in *May*: Some have two at once; and they eat up the Skin wherein the Calf laid. --- As the Young grows up, ſhe teaches it to run, leap, and how to defend itſelf from the Hounds.

The Hart is amaz'd at hearing any Call, or whiſtle in his Fiſt: If you cry *ware*, *ware*, or *take heed*, you will ſee him inſtantly turn back, and make ſome little Stand. --- His Senſe of Hearing is very perfect when his Head and Ears are erected; but very imperfect when he holds them down: Hence, when he pricks up his Ears, he is known to be apprehenſive of Danger. When he is on Foot, and not afraid, he wonders and takes Pleaſure to gaze at every thing he ſees.

The Hart is very long-liv'd, commonly reaching to an hundred Years, or upwards. --- The principal Marks of his Age are taken from his Head; yet is this ſomewhat precarious, ſome having more Croches thereon at the ſame Age than others. --- Thoſe are accounted to excell in Beauty of Horns, which bear them high.

The Horns do not grow to the Bone or Scalp, but only to the Skin, branching into many Spears, and falling off once a Year, in the Spring. --- Tho' ſolid throughout, as Stones, yet, if they remain awhile in the Air, they grow very light and friable, diſcovering themſelves to be no other than an earthly Subſtance, concrete and harden'd with a ſtrong Heat into the Form of Bones. See HEAD.

The Horns being fallen, they retire and hide themſelves in the Shades, to avoid the Annoyance of Flies; and only come out to feed in the Night. --- Their new Horns appear at firſt like Bunches, very ſoft and tender; but by the Increaſe of the Sun's Heat, at length grow harder, and are cover'd with a rough Skin, call'd a *Velvet Head*. --- As that Skin dries, they daily try the Strength of their new Heads upon Trees, which not only burniſhes and ſcrapes off the Roughneſs, but, by the Pain they feel, hereby admoniſhes them how long to forbear the Company of their Fellows; for when the Horn grows inſenſible, they return to their former Condition.

The taking of this Beaſt requires a deal of Art and Attention. --- "The deceitful and ſubtle Hart, ſays *Geſner*, "by Windings and Turnings deceives its Hunters, no leſs "than the Harts of *Meandros* flying from the terrible Cry "of *Diana*'s Hounds: the prudent *Hunter*, therefore, muſt "frame his Dogs, as *Pythagoras* did his Scholars, with "Words of Art, to ſet them on, and take them off at Pleaſure. See HOUND.

When he goes for Sport, he is firſt to encompaſs the Beaſt, *en ſon giſte*, in her own Layer; and thus unharbour her in the View of the Dogs, that ſo they may never loſe her Slot or Footing. --- But Note, a deal of Choice and Diſcretion is here requir'd; for he may not ſet off upon every one, either of the Herd, or thoſe which wander ſolitary: The young, the ſmall, &c. are to be paſs'd over; and partly by Sight, and partly by the Footing, Fewmets, the largeneſs of the Layer, &c. he muſt make Judgment of the Game, ſingling out for that Purpoſe the largeſt Head in the whole Herd.

There are divers Means for knowing an old Hart, *viz.* by the *Slot*, the *Entries*, the *Abatures* and *Foils*, the *Fewmets*, *Gate* and *Walks*, *Fraying-ſtocks*, *Head* and *Branches*.

1°. As to the *Slot*. --- The Treadings of the Hart's Foot are to be carefully noted: If you find the Treadings of two,

the one long, and the other round, yet equally big, the longeſt Slot declares the largeſt Hart: Add, that the old Hart's hind Foot never over-reaches the fore Foot, as that of the young ones does. --- 2°. The Fewmiſhing is chiefly to be judg'd of in *April* or *May*: If it be large and thick, it ſignifies the Hart to be old. --- 3°. To know the Heighth and Thickneſs of the Hart, obſerve his *Entries* and *Galleries* into the Thickets, and what Boughs he hath over-ſtridden; and mark from thence the Heighth of his Belly from the Ground; for a young Deer uſually creeps low as he paſſes to his Harbour, and goes thro' Places which the old one, being ſtiff and ſtately, will not ſtoop to. --- 4°. By his Gate it may be known whether the Hart be large, and whether he will ſtand long before the Hounds: If he have a long Step, he will ſtand long; being ſwift, light, and well-breath'd: If he have a great Slot, which is the Sign of an old Deer, he will be a Laſter. --- As to his *Fraying-Poſt*, note, that the older the Hart is, the ſooner he goeth to fray, and the greater is the Tree he chuſes to fray upon; it being neceſſary it be ſuch as may not bend.

Now, to ſeek or find out a Hart in his Haunt, or Feeding-Place, it is to be obſerv'd, that he changes his manner of feeding every Month. --- From the Concluſion of the Rutting time, which is in *November*, they feed in Heaths and broomy Places. --- In *December* they herd together, and withdraw into the Strength of the Foreſts, to ſhelter themſelves from the ſeverer Weather, feeding on Holm Trees, Elder Trees, Brambles, &c. The three following Months they leave herding, but keep four or five in Company, and in the Corners of the Foreſt, will feed on the Winter Paſture, ſometimes making their Incurſions into the neighbouring Corn Fields, if they can perceive the Blades of Wheat, Rye, &c. appear above Ground. --- In *April* and *May* they reſt in Thickets and ſhady Places, ſtirring very little till Rutting-time, unleſs diſturb'd. --- The three ſucceeding Months they are in their Pride of Greaſe, and reſort to Spring Copſes and Corn Fields. --- In *September* and *October* they leave the Thickets, and go to Rut; during which Seaſon, they have no certain Place either for Food or Harbour.

Having found out the Game, the *Hunters* diſcouple and caſt off the Dogs; and, ſome on Horſeback, others on Foot, follow the Cry with the utmoſt Art, Obſervation, and Speed; remembering and preventing the ſubtle Turnings and Headings of the Hart; ſtanding with Dexterity and Intrepidity to leap Hedge, Pales, Ditch, &c.

The utmoſt Addreſs and Circumſpection is to be uſed to keep to the Beaſt firſt attempted, and prevent the Dogs from purſuing any other: This, in effect, makes one of the principal Difficulties and Glories of the Chace; the Beaſt having a hundred Devices to put off ſome other Head for his own: Sometimes he will ſend forth ſome other little Deer in his Stead into the Dogs Way, lying cloſe the while himſelf; on which Occaſion the *Huntſman* is to ſound a Retreat, and break off the Dogs, and take in Leam, till the Game be recover'd.

Sometimes he will purpoſely ſeek out for other Deer at Layer, and rouſe them, to make the Hounds *hunt* change, himſelf lying down flat in ſome of their Layers upon his Belly, to make the Hounds over-ſhoot him: Add, that they may neither ſcent or vent him, he will gather up his fore Feet under his Belly, and blow or breathe on ſome moiſt Place of the Ground; ſo that the Hounds ſhall paſs within a Yard, without apprehending him. --- He will break into one Thicket after another to find Deer, rouſing, gathering them together, and herding with them; and even beating ſome of them into his Treads, that he may the more eaſily eſcape. — Finding himſelf ſpent, he will break herd, and fall a doubling and croſſing in ſome hard beaten Highway; always running againſt the Wind, not only to cool himſelf, but the better to hear the Voice of the Purſuers.

The laſt Refuge of a Hart ſorely *hunted*, is the Soil; keeping the Middle, for fear, leſt by touching a Bough, or the like, he may give Scent to the Hounds. He always ſwims againſt the Stream, whence the old Rule, *He that will his Chace find, let him try up the River, and down the Wind.* In taking Soil, he will ſometimes cover himſelf under Water, ſo as to ſhew nothing but his Noſe.

Where Opportunity of Water fails, he will fly into Herds of Cattel, as Cows, Sheep, &c. and will ſometimes leap on an Ox, Cow, or the like, laying the fore Part of his Body thereon, that ſo touching the Earth only with his hinder Feet, he may leave a ſmall, or no Scent behind. — What is further ſtill, the chief *Huntſman* to *Lewis* XII. relates, that a Hart which they were in hard Chace of, leap'd into a great tall white Thorn, which grew in a ſhadowy Place, and there ſtood aloft, till he was thruſt through by a *Huntſman*, rather than he would ſtir.

This being done, the *Hunter* with his Horn windeth the Fall of the Beaſt; upon which every one approaches, the ſkilfuleſt opens the Beaſt, rewarding the Hounds with what properly belongs to them; the *Huntſman*, at the ſame time, dipping Bread in the Skin and Blood of the Beaſt to give the Hounds their full Satisfaction.

The Hart is known to be ſpent by his running ſtiff, high, and lompering; by his Mouth being black and dry, without Foam on it, and his Tongue hanging out; tho' he will ſometimes cloſe his Mouth to deceive the Spectators: And by his Slot; for he will ſometimes cloſe his Claws together, as if he went at Leiſure, and ſtraight again open them wide, making great Glidings, and hitting his Dew Claws upon the Ground, &c.

When quite ſpent, and cloſe beſet, or intercepted on all Sides, the Hart uſually takes to Bay, and makes Force with his Head againſt the firſt Man or Dog that cloſes in upon him, unleſs prevented with a Spear, Sword, or the like. — Hence 'tis very dangerous going in to a Hart at Bay, eſpecially at Rutting-time, for then they are more fierce.

The Hart being kill'd, his Death is ſolemniz'd with great Ceremony. --- The firſt Thing, when the *Huntſmen* come in, is to cry *ware Haunch*, that the Hounds may not break into the Deer: Having ſecur'd this, they cut his Throat, and blood the younger Hounds, to make them love a Deer, and learn to leap at his Throat. Then having blown the *Mort*, and all the Company being come in, the moſt diſtinguiſh'd Perſon, who has not *taken Say* before, takes up the Knife, and lays it croſs the Belly of the Deer, (ſome of the Aſſiſtants holding by the fore Legs, and at the ſame Time the *Huntſman* drawing down the Pizzle) and thus draws the Knife along the Middle of the Belly, beginning near the Brisket, cutting deep enough to diſcover how fat he is. Then the moſt ſkilful Perſon breaks up the Deer, by firſt ſlitting the Skin from the cutting of the Throat downward, making the Arber, that the Ordure may not break forth, and then paunching him, and rewarding the Hounds therewith.

Laſtly, the Perſon that took the Say, being preſented with a drawn Hanger, he is to cut off the Head; which done, and the Hounds rewarded therewith, the concluding Ceremony, if a Buck, is a Double, if a Stag, a Treble, Mort blown by one, and a Recheat in Conſort by all that have Horns: The whole concluded with a general *Whoo, Whoop.*

Buck HUNTING, or HUNTING of Fallow Deer. — The Buck the firſt Year, is call'd a *Fawn.* — The ſecond Year, a *Pricket.* — The third, a *Sorel.* — The fourth, a *Sore.* — The fifth, a *Buck of the firſt Head.* — The ſixth Year, a *Great Buck.*

The Female is call'd *Doe* or *Doo.* — The firſt Year, a *Fawn.* — The ſecond, a *Tegg.* — The third, a *Doe.*

This Beaſt is common in moſt Countries, being as corpulent as a Hart, but in moſt Things reſembling more a Roe, except in Colour; which is various, but moſt commonly branded or ſandy on the Back, having a black Liſt all along on the Ridge, and the Belly and Sides ſpotted with white.

The Male has Horns not much differing from a Hart, except in Largeneſs, and that they grow out of the Head like Fingers out of the Hand; whence it is call'd *Cervus Palmatus.* The Female is without Horns.

Leſs Art and Skill are requir'd in lodging a Buck, than in harbouring a Hart; nor does there need ſo much drawing after: 'Tis ſufficient that you judge by the View, and mark what Grove or Covert he enters; for he does not wander and rove ſo often as a Hart, nor ſo frequently change his Layer.

When hard *hunted*, he takes to ſome ſtrong Hold or Covert he is acquainted with; not flying far before the Hounds, nor croſſing nor doubling, noruſing any of the Subtleties the Hart is accuſtom'd to.

The Buck will beat a Brook, but ſeldom a great River, as the Hart; nor can he ſtay ſo long at Soil.

The greateſt Subtlety a *Huntſman* need uſe in *Hunting* the Buck, is to beware of *Hunting* Counter or Change, becauſe of the Plenty of Fallow Deer, which uſe to come more directly upon the Hounds than the Red Deer do.

The Buck herds more than the Hart, and lieth in the dryeſt Places: But if he be at large, unconfin'd in a Park, he herds but little from *May* to *Auguſt*, becauſe the Flies trouble him. He takes Delight in hilly Places, but chuſes the Dales to feed in.

Roe HUNTING. — The Roe, the firſt Year, is call'd a *Kid.* — The ſecond, a *Gyrle.* — The third, a *Hemuſe.* — The fourth, a *Roe-Buck of the firſt Head.* — The fifth Year, a *Fair Roe Buck.*

We have no Roe Deer in *England*; but they abound in *Scotland*, *Germany*, *Africa*, &c. And it ſhould ſeem they had been more common among us, our ancient *Huntſmen* ſtill retaining the proper Terms for the Chace.

They make good Chace, ſtand long, and fly end-way. — When a Roe croſſes and doubles, it is call'd *Trapyning.*

Their Swiftneſs appears not only on Earth, but in Waters, thro' which they cut their Way as with Oars; whence they love Lakes and Streams, breaking the Floods to come at freſh Paſture, feeding on Ruſhes, &c.

Horns

Horns only grow on the Male; being ſet with ſix or ſeven Branches, not palm'd, but Branchy, yet ſhorter than Fallow Deer. After Rutting he caſts his Head.

They are ſaid never to wink, not even when aſleep; for which Conceit their Blood is preſcrib'd to Perſons dim-ſighted or pur-blind. --- The Tail of this Beaſt is leſs and ſhorter than that of a Fallow Deer, inſomuch, that it is queſtion'd whether it ought to have that Denomination.

They keep moſt in Mountains among the Rocks; and when *hunted*, *Martial* tells us, will hang thereon with their Horns, to delude the Dogs. --- They are often taken by counterfeiting of their Voice, which the *Huntſman* does by the Aſſiſtance of a Leaf in his Mouth.

When *hunted*, they turn much, and often, and will come back on the Dogs directly, when they can no longer endure. They alſo take Soil, as the Hart; and will hang by a Bough in ſuch a Manner, as that nothing ſhall appear but their Snout.

Hare HUNTING. — A Hare, the firſt Year, is call'd a *Leveret*. — The ſecond Year, a *Hare*. — The third, a *Great Hare*.

A Hare is call'd in *Hebrew*, *Arnebet*; which being Feminine, poſſeſs'd a great many with the Notion that all Hares were Females. --- He is call'd *Lagos* by the *Greeks*, for his immoderate Luſt, and by the ſame Nation *Ptoox*, for his Fear; and by the *Latins*, *Lepus*, *quaſi levi-pes*, to denote Swiftneſs of Feet.

There are four Sorts of Hares. --- Some live in the Mountains, ſome in the Fields, ſome in the Marſhes, and ſome any where indifferently.

Thoſe of the Mountains are the moſt ſwift, and thoſe of the Marſhes the ſloweſt: The wandering Hares are moſt difficult and dangerous to follow.

Each Part and Member of the Hare is form'd for Celerity; the Head is round and ſhort, of a convenient Length; the Ears long and lofty, to hear the Enemy at a Diſtance, and ſave itſelf in Time; the Lips continually move, ſleeping and waking; and the Eye is too big and round for the Lid to cover it, even when aſleep, ſo that the Creature ſleeps as it were on the Watch. The Breaſt is capacious, and fitted to take more Breath than any other Beaſt.

They feed abroad to conceal their Forms; and never drink, but content themſelves with the Dew. Her Ears lead the Way in her Chaſe; for with one of them ſhe hearkeneth to the Cry of the Dogs, the other being ſtretch'd forth like a Sail to promote her Courſe.

The Hares of the Mountains often exerciſe themſelves in Vallies and Plains, and, thro' Practice, grow acquainted with the neareſt Ways to their Forms. Thoſe which frequent Buſhes and Brakes, are not able to endure Labour, nor very ſwift, as being tender footed, and growing fat thro' Diſcontinuance of Exerciſe.

When the Hare has left the Dogs far behind, ſhe goes to ſome Hill or Riſing Ground, where, raiſing on her hinder Legs, ſhe obſerves at what Diſtance her Purſuers are.

The Scent is naturally ſtronger in Wood Hares than Field Hares; but in all Sorts it is ſtrongeſt when they feed on Green Corn. --- In Winter Mornings, the Scent does not lie till the Froſt be a little thaw'd: And it may be added, that a Hare always leaves more Scent when ſhe goes to Relief, than when ſhe goes to Form.

Her Footſteps are more ſeen in Winter than Summer, becauſe, as the Nights are longer, they travel farther. --- Their Prints are very uncertain at the full Moon; at which Time they leap and play together. The Young, it is to be obſerv'd, tread heavier than the Old, by reaſon their Limbs are weaker.

A Buck, or Male Hare, is known by his beating the hard Highways, feeding farther out in the Plains, and making his Doublings of a greater Compaſs than the Female, who keeps cloſe by ſome Covert Side, turning, winding, and croſſing in the Buſhes like a Coney, and rarely running out an End; whereas the Buck, having once made a Turn or two about his Form, then farewel Hounds, for he will frequently lead them five or ſix Miles without once turning his Head: Add, that the Buck is known, at his riſing out of Form, by his hinder Parts, which are more white, or his Shoulders redder than the Does.

The Hare regulates her Conduct according to the Weather. --- In a moiſt Day, ſhe holds the Highways more than at any other Time, by reaſon the Scent is then moſt apt to lie; and if ſhe come at the Side of any young Grove or Spring, ſhe forbears to enter, but ſquats down a-ſide thereof, till the Hounds have over-ſhot her; upon which ſhe returns the ſame Way ſhe came, without turning into any Covert, for Fear of the Wet and Dew hanging on the Boughs.

Regard is alſo to be had to the Place where the Hare ſits, and upon what Wind; for if her Form be either upon the North or South Wind, ſhe will not willingly run into the Wind, but aſide, or down the Wind: On the contrary, if ſhe Form in the Water, 'tis a Sign ſhe is foul and meaſled, and in the Courſe will make all her Doublings and Croſſings about Brook Sides, and near Plaſhes; for her Scent, under this Condition, being very ſtrong, ſhe needs a Place that will take but little.

Sometimes, when *hunted* down, ſhe will ſtart a freſh Hare, and ſquat in the ſame Form: Other times, ſhe will creep under the Door of a Sheep-Coat, and hide among the Sheep, or run among a Flock of Sheep; and not without the utmoſt Difficulty be taken from among them. --- Add, that ſome will take the Ground like a Coney; which is call'd going to *Vault*.

Some Hares will go up one Side of the Hedge, and come down the other; and we have known a Hare, that being ſorely *hunted*, has got upon a Quickſet Hedge, and ran a good way on the Top thereof, and then leap'd off upon the Ground: And 'tis no unuſual Thing for them to take themſelves to Furz Buſhes, and leap from one to another, whereby the Hounds are frequently in Default.

A Hare does not live above ſeven Years, at moſt, eſpecially the Buck: And if he and the Doe keep one Quarter, they will not ſuffer any ſtrange Hare to ſit by them; whence the Proverb, *The more you* hunt, *the more Hares you ſhall have*; ſince, having kill'd one Hare, another comes and poſſeſſes his Form.

By the Way it is to be obſerv'd, that to enter a young Kennel of Hounds, regard muſt be had to the Nature of the Country, and of the Quarry; for, according to the Place wherein they are enter'd, and the Game firſt given them, will they afterwards prove. Thus, if they be enter'd in a Champion Country, they will ever after more delight to *hunt* there than in any other Place, *&c.*

Having found where a Hare hath reliev'd in ſome Paſture or Corn Field; to find her Form, the Seaſon of the Year, and the State of the Weather, are to be conſider'd. --- In the Spring or Summer, a Hare will not ſit in the Buſhes, becauſe frequently offended with Piſmires, Snakes, and Adders; but will ſit in Corn Fields and open Places. --- In Winter, they chuſe to ſit near Towns and Villages, in Tufts of Thorns and Brambles, eſpecially when the Wind is Northerly or Southerly. --- According to the Seaſon and Nature of the Place where the Hare is accuſtom'd to ſit, there beat with your Hounds and ſtart her; which is better Sport than Trailing of her from her Relief to her Form. --- Having ſtarted her, ſtep in; and hollow in the Hounds till they have undertaken it, crying, *That*, *That*, or *There*, *There*, and go on with full Cry; then Recheat them, and follow at a Diſtance, taking Care not to forward them too much at firſt, as being apt, in the firſt Heat, to over-ſhoot the Game. --- Above all Things mind the firſt Doubling the Hare makes, which is to be a Key or Direction for the whole Day; all the other Doublings ſhe afterwards makes being like the firſt. --- According to the Policies you ſee her uſe, and the Place where you *hunt*, make your Compaſs, to help the Defaults, great or little, long or ſhort; always ſeeking the moiſteſt and moſt commodious Places for the Hounds to ſcent in.

Fox HUNTING. — This Animal, the firſt Year, is call'd a *Cub*. — The ſecond, a *Fox*. — The third, an *Old Fox*.

His Nature, in many Reſpects, is like that of a Wolf; and both bring the ſame Number of Cubs at a Litter; but the Fox litters deep under Ground, which the Wolf does not.

A Bitch Fox is hard to take, when bragged, and with Cub, in regard ſhe lies near her Burrow, into which ſhe runs upon Hearing the leaſt Noiſe; indeed 'tis no eaſy Matter to take her at any Time, as being a Beaſt of exceeding Subtlety.

What makes Fox *Hunting* the more entertaining, is, the ſtrong hot Scent he affords, which keeps up an excellent Cry; but as his Scent is hotter at Hand, ſo it dies ſooner than that of a Hare, *&c.* Add, that he never flies far before the Hounds, as not truſting to his Legs, or the Champion Ground, but has Recourſe to the ſtrongeſt Coverts. --- When he can no longer ſtand up before the Hounds, he takes Earth, and muſt be dug out. --- When cours'd by Greyhounds on a plain, his laſt Refuge is uſually to piſs on his Tail, and ſlap it in their Faces as they come near him; ſometimes ſquirting his thicker Excrement upon them, to make them give over the Courſe.

When a Bitch goes a Clicketing, and ſeeks the Dog, ſhe cries with a hollow Voice, not unlike the hollowing of a mad Dog; and the like Noiſe ſhe makes when ſhe miſſes any of her Cubs; but never cries at all when ſhe is killing, but defends herſelf in Silence to the laſt Gaſp.

The Fox is taken with Hounds, Greyhounds, Terriers, Nets, and Gins. --- Of Terriers there are two Sorts, the one crook-leg'd, and commonly ſhort-hair'd, which take Earth well, and lie long at Fox or Badger; the other ſhagged and ſtraight-leg'd, which will not only *hunt* above Ground as others, but alſo enter the Earth with great Fury, tho' they cannot ſtay in ſo long, by reaſon of their Vehemence.

The Fox chuſes to Earth in Ground hard to dig, as in Clay or Stoney Ground, or amongſt the Roots of Trees; and his Earth has commonly but one Hole, which goes ſtraight a long Way in, before it come at their Couch. He ſometimes by Craft poſſeſſes himſelf of a Badger's old Burrow, which has Variety of Chambers, Holes, and Angles. *Geſner* relates, that he frequently cheats the Badger of his Habitation, by laying his Excrements at the Mouth of his Burrow: Add, that the Wolf being an Enemy to the Fox, this latter ſecures his Earth, by laying an Herb call'd *Sea-Onion* in the Mouth thereof, which the Wolf has a natural Averſion to, ſo that he never comes near the Place where it either lies or grows.

Badger HUNTING. --- A Badger is call'd by ſeveral Names, *viz.* a *Gray Brock*, *Boreſon*, or *Bauſon*. --- The Male is a *Badger* or *Borepig*, and the Female a *Sow*.

This Beaſt is very frequent in *Italy*, *Sicily*, the *Alpine* and *Helvetian* Coaſts; and not uncommon in *France* and *England*.

There are two Kinds, the one reſembling a Dog in his Feet, and the other a Hog by his cloven Hoof: They differ too in their Snout and Colour, the one reſembling that of a Dog, the other of a Swine: The firſt has a greyer or whiter Coat than the other, and goes farther out to prey: They differ alſo in their Meat, the one eating Fleſh and Carrion like a Dog, the other Roots and Fruit like a Hog.

A late Author likewiſe mentions two Sorts of Badgers, but in a different Manner; the one, according to him, caſting his Flaunts long, like a Fox, having his Reſidence in Rocks, and making his Burrow very deep; whereas the Burrows of the other are made in light Ground, and have more Variety of Cells and Chambers: The one is call'd the *Badger-pig*, and the other the *Badger-whelp*; or the one may be call'd *Canine*, and the other *Swiniſh*: The firſt hath his Noſe, Throat, and Ears yelloviſh, and is much blacker and higher legg'd than the latter. Both live on Fleſh, hunting greedily after Carrion; and are pernicious to Warrens, eſpecially when big with young.

When the Badger Earths; after they have dug a good Depth, they make uſe of an Expedient to carry off the Earth. --- In order to which, one of them lies down on his Back, and on his Belly the reſt lay the Earth; thus taking his hind Feet in his Mouth, they draw the Belly laden Badger out of the Hole or Cave, and having disburden'd him, he re-enters, and repeats the Labour till the Work be compleated.

The Badger is a very ſleepy Beaſt, eſpecially in the Day-time, ſeldom ſtirring abroad but in the Night; whence the Denomination *Lucifuga*, *q. d.* Avoider of the Light.

The Badger is a deep biting Beaſt, having very ſharp Teeth; to guard againſt the Effects whereof, it is uſual to put great broad Collars about the Dogs Necks. His Back is broad, and his Legs longer on the right Side than the left, whence he runs beſt on the Side of a Hill or Cart-Road Way. He fights on his Back, and by this means is at Liberty to uſe both his Teeth and Nails: He has a Faculty of blowing up his Skin after a ſtrange Manner, by which he defends himſelf againſt any Blow or Bite of the Dogs; ſo that you may thraſh your Heart out on his Back; but a ſmall Stroak on the Noſe diſpatches him preſently.

In *Italy* and *Germany* they eat the Fleſh of Badgers, boiling it with Pears; but in *England* it is not liked, being of a ſweet rankiſh Taſte. 'Tis beſt in *September*; and of the two Kinds, the Swiniſh Badger is the beſt Meat.

They are long Livers, and generally grow blind by meer Age; from which Time they never ſtir out of their Holes, but are fed by the reſt.

The Method of *Hunting* the Badger is thus: --- Seek the Earths and Burrows where he lies, and in a clear Moon-ſhine Night go and ſtop all the Holes but one or two, and therein place Sacks, faſten'd with drawing Strings, which may ſhut him in as ſoon as he ſtrains the Bag. --- The Bags thus ſet, caſt off your Hounds, and beat all the Groves, Hedges, or Tufts within a Mile or two. What Badgers are abroad, being alarm'd by the Dogs, will ſtraight repair to their Earths, and ſo be taken.

He that ſtays to watch the Sacks, muſt ſtand cloſe, and upon a clear Wind; elſe the Badger will find him, and fly ſome other Way for Safety. If the Hounds either encounter him, or undertake the Chaſe before he can get into his Earth, he will ſtand at Bay like a Boar, and make excellent Sport.

If the Badger be attack'd in his Earth; as ſoon as he perceives the Terriers yearn him, he will ſtop the Hole between the Dogs and himſelf; and if the Dog continues baying, he removes his Baggage with him, and goes into another Appartment or Chamber, of which he uſually has half a Dozen in the Burrow; thus retreating from one to the other, till he can go no further, and barricading the Way as he goes.

Otter HUNTING --- The Otter is ſuppos'd by ſome, of the Caſtor or Beaver Kind, being, like it, an amphibious Creature, and living both in the Water and on Land; beſide that, the Reſemblance in Point of Shape is ſuch, as, were his Tail off, he were in all Reſpects like the Beaver; differing in nothing but Habitation, the Beaver frequenting both the ſalt Water and the freſh, but the Otter only the freſh. See CASTOR.

Tho' the Otter live much in the Water, he does not breathe like Fiſhes, but after the Manner of Quadrupeds. --- He is web-footed, like our Water Fowl, and can endure to be under Water a long Time without Reſpiration: And yet in Fiſhing he is frequently found to pop up his Noſe for Breath. --- He has an admirable Smell, whereby he will directly wind a Fiſh in the Water a Mile or two off; and is a moſt pernicious Beaſt to a Fiſh-pond, his Dexterity at diving, and hunting under Water being ſuch, that ſcarce any Fiſh can eſcape him: If by painful *hunting* aſhore he cannot fill his Belly, he will feed on Herbs, Snails, or Frogs: He will ſwim a fiſhing two Miles together, always againſt the Stream, that when his Belly is full, the Current may carry him down again to his Lodging, which is near the Water, artificially built with Boughs, Sprigs, and Sticks couch'd together in fine Order.

The Fleſh of this Beaſt is cold and filthy, as feeding on ſtinking Fiſh; for which Reaſon it is not eaten among us: Tho' among the *Germans* it is a pretty common Food; and the *Carthuſian* Fryars, who are forbidden to eat all Manner of Fleſh, are allow'd this. Some in *England* have, of late, ſaid much in Praiſe of Otter Pye.

The Otter is to be *hunted* by particular Dogs, call'd *Otter Hounds*; and alſo with ſpecial Inſtruments, call'd *Otter Spears*.

To find him out, ſome are to go on one Side the River, and ſome on the other; beating all the Way on the Banks, with the Dogs following. --- Thus it is ſoon found if there be an Otter in that Quarter; for the Otter cannot endure long in the Water, but muſt come forth to make his Spraints, and in the Night ſometimes to feed on Graſs and other Herbs. If the Hounds find an Otter, look in the ſoft and moiſt Places, to learn by the Prints which Way he bent his Head: If theſe make no Diſcovery, it may be partly perceiv'd by the Spraints. --- This done, follow the Hound, and lodge him as a Hart or Deer.

The Otter always endeavours to keep to the Water, where he is Maſter. --- In *Hunting* him therefore, you are to be ready with your Spears, to watch his Vents, for that is the chief Advantage: If you perceive where he ſwims under Water, ſtrive to get a Stand before him, where you expect he will Vent, and there endeavour to ſtrike him with the Spear: If you miſs, purſue him with the Hounds; which, if they be good, and well enter'd, will come chaunting and trailing along by the River Side, and beat every Tree-Root, every Oſier-Bed, and Tuft of Bull-Ruſhes; nay, ſometimes, they will take the Water, and beat it like a Spaniel; by which Means the Otter can hardly eſcape.

If the Beaſt find himſelf wounded with a Spear, he makes to Land, where he will maintain a furious Battle with the Dogs.

HURDLES, in Fortification, Twigs of Willows or Oſiers, interwoven cloſe together, and uſually laden with Earth. Their Uſe is to render Batteries firm, or to conſolidate the Paſſages over muddy Ditches, or to cover Traverſes and Lodgments for the Defence of the Workmen, againſt the artificial Fires or Stones that may be caſt upon them.

HURDLES, in Husbandry, are Frames made either of ſplitted Timber, or of Hazle Rods, platted together; to ſerve for Gates in Encloſures, or to make Sheepfolds, *&c.*

HURDS, or HARDS *of Flax* or *Hemp*, the coarſer Parts, ſeparated in the Dreſſings from the Tear or fine Stuff. See HEMP and FLAX.

HURLE *Bone*, in an Horſe, is a Bone near the Middle of the Buttock; very apt to go out of its Sockets with a Slip or Strain.

HURLERS, a ſquare Set of Stones in *Cornwall*, ſo call'd from an odd Opinion advanc'd by the common People, that they are ſo many Men petrify'd or chang'd into Stones, for profaning the Sabbath-Day by *hurling* the Ball, an Exerciſe for which the People of that Country have been always famous.

HURTS, in Heraldry, by ſome wrote HEURTS, and by others HUERTS, are azure or blue Roundles. See ROUNDLE.

The *Engliſh* Heralds diſtinguiſh between the Colours of Roundles, and give them different Names agreeable thereto: Thoſe of other Nations content themſelves to call theſe *Torteaux d' Azure*; and in other Caſes, only add the reſpective Colour to the Term *Torteaux*.

But theſe being blue, ſome will have them ſignify Bruiſes or Contuſions in the Fleſh, which oft turn to that Colour; others ſuppoſe them Hurtle Berries.

HURRICANE, a *Whirlwind*; or a Storm of Wind arising from a Contrariety and Oppoſition of ſeveral Winds. See WIND and WHIRLWIND.

Hurricanes are frequent in the *Eaſt* and *Weſt Indies*; making terrible Ravages in the Iſlands thereof; blowing down Houſes, rooting up Trees, and even whole Woods, &c.

They begin in the North, but turn round; and in a little time veer thro' all the Points of the Compaſs.

'Tis the Cuſtom for the *French* and *Engliſh* Inhabitants in the *Caribbee Iſlands*, to ſend every Year about *June* to the Native *Caribbees* of St. *Dominico* and St. *Vincent*, to know whether there will be any *Hurricanes* that Year: And about ten or twelve Days e'er any *Hurricane* come, they conſtantly ſend them Word.

The Prognoſticks thoſe Barbarians go by, are given us by Capt. *Langford*, who, in 1697, engag'd one of them, by Civilities, to reveal them to him.

'Tis one of their Principles, that all *Hurricanes* come either on the Day of the Full, Change, or Quarter of the Moon; each of which is diſcover'd by a Number of Phænomena the preceding Quarters, as, a turbulent Sky, Sun red, univerſal Calm, the Stars appearing red, Noiſes in Hollows or Cavities of the Earth, ſtrong Smell of the Sea, a ſettled weſterly Wind, &c.

That Author aſſures us, he receiv'd this Benefit from the Information, that whereas *Hurricanes* are ſo dreadful, that all Ships are afraid to put out to Sea while they laſt, and chuſe rather to periſh at Anchor in the Roads; yet, with good Management, a Veſſel may lie out at Sea in theſe, as ſafely as other Storms, by taking Care the Ports be well barr'd and calked, the Topmaſts and Tops taken down, the Yards a port laced, and the Doors and Windows ſecur'd. --- With theſe Precautions, that experienc'd Navigator preſerv'd his Veſſel in two great *Hurricanes*, and taught others how to do the ſame, by putting out from Port, where they would inevitably have periſh'd. And from the Prognoſticks above, he foretold ſeveral *Hurricanes* at Land.

He adds, that all *Hurricanes* begin from the North, and turn to the Weſtward, till arriving at the South-Eaſt, their Force is ſpent.

The Cauſe he ſuggeſts to be the Sun's leaving the Zenith of thoſe Places, and going back towards the South; and the repelling or bounding back of the Wind, occaſion'd by the calming of the general Trade Wind. *Philoſophical Tranſactions*, N°. 246.

HUSBAND, *Maritus*, a Man join'd or contracted with a Woman, in Marriage. See MARRIAGE.

By the Laws of *England*, the Wife is ſuppos'd wholly under the Dominion of her *Husband*, nor can act or will any thing of herſelf. See WIFE, FEME, &c.

In *Germany*, the Power of the *Husband* is not ſo extenſive; even the Princes of the Empire have not a Sovereign and Deſpotic Power over their Wives and Children. --- *Pagenſtecher*, a *German* Lawyer, has a Diſſertation to prove, that, by the Law of Nature, a *Husband* has not a deſpotic Power over his Wife; and that Marriage is not Monarchy. He ſtruggles hard to explain that Paſſage of St. *Paul* to the *Epheſians*, cap. v. 22. conſiſtently with his Scheme.

J. Philip Palthen, Profeſſor of Law at *Gryphſwald*, gives us a very learned Diſſertation on the *Husband* of a Queen, who is not King, *De Marito Reginæ*. He defines him a Man marry'd with a Princeſs that holds a Crown by Right of Inheritance, but who only contracted Marriage with him, on Condition that the Marriage ſhould not change his Condition, nor give him any Command over his Wife, or joint Authority with her; nor intitle him to ſucceed to any of her Royalties after her Deceaſe, without the Intervention of ſome further Act. Hence he concludes, that in ſuch Caſe 'tis the Queen is really King. See QUEEN and KING.

This, however, does not hinder but the *Husband* may be a King elſewhere, and in that Quality ſuperior to his Wife; for a Maiden Queen may either marry a Sovereign Prince, or a Subject, and this either of her own Realm, or another: Of all which Caſes he gives Inſtances: As, that of *Ferdinand* and *Iſabella*, whoſe Marriage did not give any Authority to the one over the Kingdom of *Arragon*, nor to the other over that of *Caſtile*; of *Joan*, Daughter of *Iſabella*, and *Philip* of *Auſtria*; *Philip* II. of *Spain*, and *Mary* Queen of *England*; the two *Joans* Queens of *Naples*; *Mary* Queen of *Scots*, and the Dauphin of *France*; and laſtly, Queen *Anne*, whoſe *Husband* was her Subject, yielded Homage to her as her Vaſſal, and took an Oath of Fidelity to her as her Miniſter. M. *Palthen* proceeds to examine in what Kingdoms this may happen; and ſhews, that it cannot be in an elective Kingdom, nor an uſufructuary one; whence he concludes, that we ſhall never ſee it in *Poland*, *France*, or *Germany*; but that there are Inſtances of it in all the other Monarchies, of any ſtanding, in *Europe*. He goes on to ſhew, that a Queen ought not to marry a King; that it is no Violation of the Conjugal Society, for her Husband to be ſubject to her; and anſwers all the Difficulties that may be ſtarted with regard thereto, particularly from Paſſages of Scripture, as *Iſ.* iii. 11. *Cor.* xiv. 34. *Gen.* iii. 6. *Eph.* v. 23. *Col.* iii. 18, &c.

HUSK, among Botaniſts, the Part which a Flower grows out of. See FLOWER.

Of theſe there are ſeveral Kinds, as *bulbous* or *round Husks*, *Bottle Husks*, *middle Husks*, *Foot Husks*, *Hoſe Husks*, &c. See HOSE-*Husk*, &c.

HUSSARS, HUSSARDS, or HUSSARTS, an Order or Species of Soldiery in *Poland* and *Hungary*, commonly oppos'd to the Ottoman Cavalry.

The *Huſſars* are Horſemen, cloath'd in Tygers and other Skins, and garniſh'd and ſet out with Plumes of Feathers. Their Arms are the Sabre and Bayonet.

They are very reſolute; firm Partiſans; and better in a haſty Expedition, than a ſet Battle.

The Emperor and King of *France* have of theſe *Huſſars* in their Service.

HUSSITES, a Party of Reformers, the Followers of *John Hus*. See REFORMATION.

John Hus, from whom the *Huſſites* take their Name, was born in a little Village of *Bohemia*, call'd *Hus*. --- He fell into the Sentiments of *Wicklif* and the *Waldenſes*; and in the Year 1407, began openly to oppoſe and preach againſt divers Errors in Doctrine, as well as Corruptions in Point of Diſcipline, then reigning in the Church. See WICKLIFFISTS and WALDENSES.

He was condemn'd, with *Jerom* of *Prague*, by the Council of *Conſtance*, and burnt, in the Year 1415: But his Diſciples ſtill ſtuck to his Doctrines. --- *Joh. Ziſca*, being put at their Head in *Bohemia*, maintain'd War a long Time againſt the Emperor *Sigiſmond*, with great Succeſs. And *Procopius Holy*, another of their Leaders, conducted them with equal Courage.

The *Huſſites* ſpread over all *Bohemia* and *Hungary*, and even *Sileſia* and *Poland*; and there are ſome Remains of them ſtill ſubſiſting in all thoſe Parts.

HUSTINGS, HUSTINGUM, from the *Saxon*, *Hus*, Houſe, and *Thing*, Cauſe; *q. d. domus cauſarum*, a Houſe where Cauſes are heard; or rather, from *Huſtinge*, Court or Council: Is the principal and higheſt Court in *London*, held in *Guild-hall*. See COURT and GUILD *hall*.

Of the great Antiquity of this Court, we find this Mention in the Laws of King *Edward* the Confeſſor. --- *Debet etiam in* London *quæ eſt caput Regni & Legum, ſemper curia Domini Regis ſingulis ſeptimanis, Die Lunæ* Huſtingis *ſedere & teneri: fundata erat olim & ædificata ad inſtar & ad modum & in memoriam veteris magnæ Trojæ, & uſque in hodiernum diem, Leges, & Jura & Dignitates, & Libertates Regiaſque conſuetudines ſuas una ſemper inviolabilitate conſervat.* Taylor's Hiſt. of Gavel-kind.

This Court is held before the Mayor and Aldermen of *London*. --- Error or Attaint lies there of a Judgment or falſe Verdict in the Sheriffs Courts.

Other Cities and Towns had alſo Courts of the ſame Name, as *Wincheſter*, *Lincoln*, *York*, *Shippey*, &c.

HUT, from the *Saxon*, *Hutte*, a ſmall Cottage or Hovel. See COTTAGE and HOVEL.

The Word is alſo us'd for the Soldiers Lodges in the Field. See BARRACK.

HUXING *of the Pike*, among Fiſhermen, a particular Method of catching that Fiſh; very diverting. See *Pike* FISHING.

For this Purpoſe, they take thirty or forty as large Bladders as can be got; blow them up, and tye them cloſe and ſtrong; and at the Mouth of each, tye a Line, longer or ſhorter, according to the Depth of the Water. At the End of the Line is faſten'd an armed Hook, artificially baited; and thus they are put into the Water with the Advantage of the Wind, that they may gently move up and down the Pond.

Now, when a Maſter Pike has ſtruck himſelf, it affords a deal of Entertainment to ſee him bounce it about in the Water with a Bladder at his Tail; at laſt, when they perceive him almoſt ſpent, they take him up.

HYACINTH, or JACINTH, in Natural Hiſtory, a precious Stone; thus call'd from its Reſemblance of the Purple Flower nam'd *Hyacinth*. See PRECIOUS *Stone*.

There are four Sorts of *Hyacinths*: thoſe intermix'd with a Vermillion Colour; thoſe of a Saffron Colour; thoſe of an Amber Colour; and, laſtly, thoſe of a white, intermix'd with a ſlight red.

Hyacinths, again, are diſtinguiſh'd into Oriental and Occidental. The Oriental come from *Calicut* and *Cambaya*, and are equal in Hardneſs to the Oriental Amethyſt. --- The Occidental are found in *Bohemia* and *Portugal*, which are a Degree ſofter.

The Stone graves or cuts fine, and would be more us'd for Seals, &c. but that the Graving frequently coſts more than the Stone.

The Antients us'd it for Amulets and Taliſmans; and bore it about their Neck, or ſet in Rings, &c. ſuppoſing it to have the Virtue of ſecuring them from the Plague, &c.

The *Hyacinth* us'd in Medicine, and whereof the Confection of *Hyacinth* is made, is a different Stone, of which there are three ſeveral Sorts: The firſt about the Bigneſs and Figure of a Grain of Salt, and pretty ſoft: The 2d ruddy, and ſhap'd like the Point of a Diamond, found in divers Parts of *Italy*, *Sileſia*, *Bohemia*, &c. The third is white, intermix'd with yellow, and ſome other Colours; being found in the ſame Places as the red.

In Strictneſs, only the firſt Kind ſhould be us'd in the Confection of *Hyacinth*; but the Druggiſts and Apothecaries frequently ſubſtitute the other.

Confection of HYACINTH, is a thin cordial Electuary, compos'd of divers Kinds of precious Stones, particularly of that whoſe Denomination it bears, with certain Earths, Seeds, Roots, Coral, Hartſhorn, and divers other Ingredients, well mix'd, and ground together. See CONFECTION *of Hyacinth*.

HYACINTHIA, in Antiquity, Feaſts held at *Sparta*, in Honour of *Apollo*, and in Commemoration of his Favourite *Hyacinth*.

This *Hyacinth* was the Son of *Amyclas*, King of *Sparta*, and was belov'd both by *Apollo* and *Zephyrus*. The Youth ſhewing moſt Inclination to the former, his Rival grew Jealous; and, to be reveng'd, one Day, as *Apollo* was playing at the *Diſcus*, *i. e.* Quoits with *Hyacinth*, *Zephyrus* turn'd the Direction of a Quoit which *Apollo* had pitch'd, full upon the Head of the unhappy *Hyacinth*, who fell down dead. *Apollo* transform'd him into a Flower of the ſame Name: And as a farther Token of Reſpect, inſtituted this Feaſt.

The *Hyacinthia* laſted three Days; the firſt and third whereof were employ'd in bewailing the Death of *Hyacinth*, and the ſecond in Feaſting and Rejoycing.

The People who aſſiſted at the Ceremony were crown'd with Ivy; by reaſon, ſays *Voſſius*, *de Idolol.* l. ii. c. 14. that *Bacchus* and *Apollo* were the ſame Perſon.

HYBISTRICA, in Antiquity, a ſolemn Feaſt, held among the *Greeks*, with Sacrifices and other Ceremonies; whereat the Men attended in the Apparel of Women, and the Women in that of Men, to do Honour to *Venus* in Quality either of a God, or a Goddeſs, or both.

Or, according to the Account given by others, the *Hybiſtrica* was a Feaſt celebrated at *Argos*, wherein the Women, being dreſs'd like Men, inſulted their Husbands, and treated them with all Marks of Superiority, in Memory of the *Argian* Dames having anciently defended their Country with ſingular Courage againſt *Cleomenes* and *Demaratus*.

Plutarch ſpeaks of this Feaſt in his Treatiſe of the great Actions of Women. — The Name, he obſerves, ſignifies *Infamy*; which is well accommodated to the Occaſion, wherein the Women ſtrutted it about in Cloaks, while the Men were oblig'd to dangle in Petticoats.

HYADES, in Aſtronomy, are ſeven Stars, famous among the Poets for the bringing of Rain. — Whence their Name, from the *Greek*, ὗειν, *Pluere*, to rain.

Their Place is in the Bull's Head; The Principal of them in the left Eye, by the *Arabs* call'd *Aldebaran*. Their Longitudes, Latitudes, &c. ſee among thoſe of the other Stars in the Conſtellation TAURUS.

The Poets feign them the Daughters of *Atlas* and *Ethra*. Their Brother *Hyas* being torn to Pieces by a Lioneſs, they wept his Death with ſuch Vehemence, that the Gods, in Compaſſion to them, tranſlated them into Heaven, and plac'd them in the Bull's Forehead, where they continue to weep; this Conſtellation being ſuppos'd to preſage Rain.

Tho' others of the Poets repreſent the *Hyades* as *Bacchus*'s Nurſes, and the ſame with the *Dodonides*, who fearing the Reſentment of *Juno*, and flying from the Cruelty of King *Lycurgus*, were tranſlated by *Jupiter* into Heaven.

HYDATIS, in Medicine, a Diſeaſe of the Eyes, conſiſting of a fatty Subſtance or Excreſcence, growing under the Skin of the upper Eye-lid; by which the whole Eye-lid, in Children, is ſometimes render'd Oedematous. See EYE.

HYDATIS is alſo us'd, among the modern Phyſicians, for a little Bladder of Water, occaſionally found in divers Parts of the Body. See HYDATIDES.

HYDATIDES, in Medicine, are little tranſparent Bags or Bladders full of Water, frequently found in divers Parts of the Body.

Hydatides are moſt common in dropſical Perſons, and are ſuppos'd to ariſe from a Diſtention and Rupture of the Lymphæducts; being found chiefly in the Parts abounding in thoſe Veſſels, as the Liver, Lungs, &c. — They are alſo ſometimes found in Icterical Caſes, See JAUNDICE, &c.

We have Inſtances of *Hydatides* voided both by Stool, by Urine, and by Vomiting. — They are of all Sizes, from a Pin's Head to a Pullet's Egg.

The Word is form'd of the *Greek*, ὕδωρ, Water, which, in the genitive Caſe, gives ὕδατος, whence ὑδατὶς, *Hydatis*. See HYDATIS.

HYDATOIDES, a Name ſome Authors give to the Aqueous Humour of the Eye, inclos'd between the Cornea and Uvea. See AQUEOUS *Humour*.

The Word is compos'd of ὕδος, ὕδατος, Water, and εἶδος, Form, Reſemblance.

HYDATOSCOPIA, call'd alſo HYDROMANCY, a kind of Divination, or Method of foretelling future Events, by means of Water. See HYDROMANCY.

There is a natural or allowable Kind of *Hydatoſcopia*: It conſiſts in foretelling Storms, Tempeſts, Hurricanes, &c. from natural Signs or Indications in the Sea, Air, Clouds, &c.

The Word is compounded of ὕδατος, the Genitive of ὕδωρ, Water, and σκοπέω, I view, I conſider.

HYDE *of Land*. See HIDE.

HYDE-*gyld*, from the *Saxon*, *Hydgyld*, a Price or Ranſom paid to ſave one's Skin from beating: Alſo the ſame with Hidage. See HEDGELD.

HYDRA, a Southern Conſtellation, conſiſting of twenty-ſix Stars, and imagin'd to repreſent a Water-Serpent. See CONSTELLATION and STAR.

Stars in the Conſtellation HYDRA.

Names and Situation of the Stars.	Signs.	Longitude ° ′ ″	Latitude. ° ′ ″	Mag.
	♌	5 32 11	22 29 15	4 3
		9 17 52	25 46 06	6
N. of thoſe preced. in the Head		5 59 03	12 25 37	4
S. of thoſe preced. agt. theNoſt.		6 53 14	14 38 05	5
		11 58 02	29 44 42	6
5				
In the Aperture of the Mouth		7 59 12	14 17 10	4
		7 47 49	11 58 23	5
North of two in the Forehead		8 01 52	11 07 59	4
South in the Forehead		8 35 04	11 35 00	5
		11 31 06	20 26 05	5 6
10				
		13 15 41	23 50 45	6
In the hind Part of the Head		10 15 18	11 00 03	4
		14 31 58	24 18 44	6
Precd. of 2 in Root of the Neck		13 04 05	11 03 45	6
		18 08 22	23 53 09	6
15				
		18 26 01	24 00 29	6
		18 34 32	22 11 31	6
Subſeq. in the Root of the Neck		15 57 04	13 02 47	4
		19 23 26	21 08 10	6
		20 14 28	23 23 33	6
20				
		22 12 42	26 11 13	6
		21 29 56	23 50 49	6
Small one over the Heart		21 09 15	19 15 08	6
		23 04 56	22 57 49	6
		22 57 59	22 24 32	2
25				
Mid. of 3 in bending of theNeck		21 15 42	16 44 01	5
South		21 25 41	15 00 03	5
		23 42 29	19 15 01	7
		25 49 39	22 15 00	7
Laſt of 3 in bending of the Neck		23 19 19	14 18 17	4
30				
		26 53 18	23 06 24	6
That following the Heart		28 21 17	26 37 06	5
That following this	♍	1 23 33	26 05 14	4
	♌	28 57 20	19 43 16	7
That, again, foll. this to the N.	♍	4 01 45	23 11 31	5
35				
		3 22 09	18 24 47	6
		5 07 52	22 29 43	7
Anoth. behind this, and moreN.		5 04 10	22 01 02	4
		3 33 37	18 20 37	6
		5 03 01	17 24 10	7
40				
Preced. of three following theſe		10 44 50	24 40 10	4
as in a right Line]		12 22 47	24 08 24	5
		15 52 28	30 11 53	7
		12 58 27	23 14 02	7
Middle of 3 in the right Line		13 45 56	23 29 50	5
45				
Small one following this		15 54 24	23 04 24	6
Laſt of three in the right Line		16 03 39	21 49 28	4
		17 26 16	23 45 03	7
Contig. to Bottom of the Cup		18 44 33	24 59 42	6
South beneath Baſe of the Cup		25 01 40	30 16 31	5
50				
		26 14 11	30 41 12	6
North beneath Baſe of the Cup		24 15 35	25 37 33	4
In △, againſt the laſt { Preced.	♒	3 37 39	31 35 14	3 4
and South Bend of { South		6 47 40	33 26 12	4
the Tail { Laſt		9 04 42	31 27 56	4
55				

Names and Situation of the Stars.	Signs	Longitude ° ′ ″	Latitude. ° ′ ″	Mag.
Antepenultimate of the Tail	♐	20 32 08	14 33 15	5 6
Laſt but one of Tail beh. *Corvus*		22 42 30	13 43 18	3
	♏	1 59 34	12 02 06	6
In the Extremity of the Tail		4 18 31	13 00 37	4
60		5 52 38	13 04 11	6
		8 20 00	12 54 21	5
		9 55 55	14 02 26	5
Informes following Hydra's Tail, between Libra, Centaurus, and Lupus.		12 28 42	8 57 04	5 6
		12 49 10	9 01 56	6
65		13 01 49	9 26 50	6
		14 08 58	11 03 09	5
		15 52 01	10 13 50	6 7
		16 43 19	10 23 52	6 7

HYDRAGOGUES, a Species of purgative Medicines; being ſuch as are ſuppos'd peculiarly fitted to diſcharge ſerous, or watery Humours. See PURGATIVES.

The ſtrongeſt Catharticks, Dr. *Quincy* obſerves, chiefly anſwer to the Character of *Hydragogues*; in that by their forcible ſhaking and vellicating the Bowels and their Appendages, they ſqueeze out Water enough to make the Stools appear little elſe. See CATHARTIC.

The principal *Hydragogues*, on the common Opinion, are the Juices of Elder, of the Root of Iris, of Soldanella, Mechoacan, Jalap, &c.

In the general, all ſudorific, aperitive, and diuretic Medicines, are *Hydragogues*.

The Word is form'd of ὕδωρ, Water, and ἀγειν, to draw, to lead.

HYDRARGYRUM, a Name the Chymiſts give to Mercury or Quickſilver. See MERCURY.

The Word is *Greek*, form'd of ὕδωρ, *aqua*, Water, and ἄργυρος, *argentum*, Silver, *q. d. Water of Silver*, by reaſon of its reſembling liquid or melted Silver.

HYDRAULICKS, that Part of Staticks which conſiders the Motion of Fluids, and particularly Water; with the Application thereof in artificial Water-works. See WATER.

To *Hydraulicks* belong, not only the conducting and raiſing of Water, with the conſtructing of Engines for thoſe Purpoſes; but alſo the Laws of the Motion of fluid Bodies. See MOTION.

Hydroſtaticks explain the Equilibrium of Fluids, or the Gravitation of Fluids at reſt: Upon removing that Equilibrium, Motion enſues; and here *Hydraulicks* commence.

Hydraulicks, therefore, ſuppoſe Hydroſtaticks; and the generality of Writers, from the immediate Relation between the two, join them together, and call them both either *Hydraulicks* or Hydroſtaticks. See HYDROSTATICKS.

The Laws of *Hydraulicks* the Reader will find under the Article FLUID.

And the Art of raiſing Waters; with the ſeveral Machines employ'd for that Purpoſe, as *Siphons*, *Pumps*, *Syringes*, *Fountains*, *Jets d'Eau*, *Fire-Engines*, &c. are deſcrib'd under their proper Articles, SIPHON, PUMP, SYRINGE, FOUNTAIN, FIRE-*Engine*, &c.

The Word is deriv'd from the *Greek*, ὑδραυλος, *ſounding Water*, form'd of ὕδωρ, *aqua*, Water, and αὐλὸς, *Tibia*, Pipe or Flute: The Reaſon whereof is this; that at the Time of the firſt Invention of Organs, being unacquainted with the Method of applying Bellows to blow them, they made uſe of a Cataract or Fall of Water to make a Wind, and ſound them. See ORGAN.

The principal Writers who have cultivated and improv'd the *Hydraulicks*, are *Jo. Ceva*, in his *Geometria Motus*: *Jo. Bap. Balianus*, *De Motu Naturali Gravium, Solidorum & Liquidorum*: *Mariotte*, in his *Mouvement des Eaux & autres Fluides*: *Dom. Guglielmini*, in his *Menſura Aquarum Fluentium*, where the higher Laws of *Hydraulicks* are reduc'd to Practice: Sir *Iſ. Newton*, in *Phil. Nat. Princ. Mathemat.* And *Varignon*, in the Memoirs of the Royal Academy of Sciences.

As to *Hydraulick* Machines, *Hero* of *Alexandria* is the firſt who has wrote thereon. Of the Moderns, the Principal are, *Solomon de Caux*, in a *French* Treatiſe of *Machines, and chiefly of Hydraulick ones*: *Caſp. Schottus* in his *Mechanica Hydraulico Pneumatica*: *De Chales* in his *Mundus Mathematicus*; *Boecler* in his *Architectura Curioſa*: And *Luc. Anthonius Portius*.

HYDRAULO-PNEUMATICAL, a compound Term apply'd, by ſome Authors, to ſuch Engines as raiſe Water by means of the Spring of the Air. See AIR, WATER, ENGINE.

Mr. *Boyle* mentions a very pretty Fountain, which he calls *Hydraulo-Pneumatical*; made by the Spring of the Air preſſing up Water in a Pipe, upon the Air's being exhauſted out of a Receiver, and thus the Weight of the Atmoſphere taken off. See FOUNTAIN, VACUUM, &c.

HYDRELÆON, or HYDRELÆUM, in Pharmacy, a Mixture of common Oil and Water. See OIL and WATER.

Hydrelæon taken internally, excites Vomiting; externally, it is Anodyne, and promotes Suppuration.

The Word is a Compound of the *Greek*, ὕδωρ, *aqua*, Water, and ἔλαιον, *Oleum*, Oil.

HYDRENTEROCELE, in Medicine, a Hernia, or Tumor occaſion'd by a Deſcent of the Inteſtines, and Water along with them, into the Scrotum. See HERNIA.

The Word is compounded of ὕδωρ, Water; ἔντερον, Inteſtine; and κήλη, Tumor.

HYDROCANISTERIUM, a *Fire-Engine*; or a Machine which ſpouts Water plentifully and with Force, to be apply'd to the extinguiſhing of Fires and Conflagrations of Houſes, &c. See FIRE, SPOUTING, &c.

We have various Contrivances to this Effect. --- The firſt, and which is, as it were, the Baſis of the reſt, is a Pump incloſ'd in a Ciſtula or wooden Vehicle fill'd with Water, and mounted on Wheels; the Pump being wrought with long Levers which come out of the Ciſtula; and the Water it raiſes directed to the Place by means of a jointed Tube. See PUMP.

The *Dutch* and others uſe a long flexible Tube of Leather, Sail Cloth, or the like, which they carry or conduct in the Hand from one Room to another, as Occaſion requires; ſo that the Engine may be apply'd where the Fire is only within-ſide, and does not burſt out to expoſe it to its external Action.

To improve on this original Fire-Engine, they have ſince contriv'd to make it yield a continu'd Stream; by ſubſtituting a forcing or preſſing Pump in lieu of the ſucking Pump. See FORCING *Pump*.

HYDROCELE, in Medicine, a Swelling or Bloating of the outer Integument or Skin of the Scrotum, occaſion'd by watery Humours caſt or detain'd therein.

The Word is form'd of the *Greek*, ὕδωρ, Water, and βαλλω, I caſt.

The *Hydrocele* is diſtinguiſh'd from an Hernia or Deſcent, in that the firſt is form'd by ſlow Degrees, and the latter all at once. See HERNIA.

Youth is moſt expos'd to the *Hydrocele*. --- It is cur'd by drying Medicines; or by letting out the Water with a Lancet, a Seton, or the like. --- But theſe only amount to a palliative Cure: To go to the Bottom of the Diſeaſe, recourſe muſt be had to Cauteries.

The Word is compounded of the *Greek*, ὕδωρ, *aqua*, and κήλη, Tumor.

HYDROCEPHALUS, or HYDROCEPHALE, in Medicine, a *watery Head*, or Dropſy in the Head. See HEAD.

The *Hydrocephalus* is a Congeſtion of Water in the Head, ſo as to diſtend and render it ſoft. See DROPSY.

There are three Kinds of *Hydrocephali*. The firſt, when the Water is gather'd between the Skull and the Skin: The ſecond, when between the Skull and the Brain: And the third, when the Water is collected in the Ventricles of the Brain.

Children are more liable to *Hydrocephali*, than Adults; by reaſon their Head is ſoft, and has been much compreſs'd in the Womb; or, perhaps, by their having been too roughly handled by the Midwife. --- Add, that the Bones of Childrens Heads being very ſoft, and their Sutures not yet exactly cloſ'd; they eaſily open, and give Way to an Influx of Water from without; whereas in Adults, the Bones of the Cranium are very hard, and cloſely bound together. See CRANIUM.

The *Hydrocephalus* is a Diſeaſe very difficult to cure. --- There is no Remedy but by ſevere bliſtering on the Sutures. --- It ſometimes ends in mortal Convulſions, and ſometimes in Lethargies or Apoplexies.

The Head, in this Caſe, is ſometimes extended to a prodigious Bulk; ſo that the Perſon cannot bear or ſuſtain it. Of this we have an extraordinary Inſtance given us by Dr. *Freind*, of a Girl two Years old, whoſe Head was 26 Inches in Circumference. *Philoſoph. Tranſact.* N°. 318.

The Word is *Greek*, form'd of ὕδωρ, Water, and κεφαλὴ, *Caput*, Head.

HYDROGRAPHICAL *Maps*, more uſually call'd *Sea Charts*, are Projections of ſome Part of the Sea, in Plano; for the Uſe of Navigation. See MAP and NAVIGATION.

In theſe are laid down all the Rhumbs or Points of the Compaſs, the Meridians, Parallels, &c. with the Coaſts, Capes, Iſlands, Rocks, Shoals, Shallows, &c. in their proper Places, Proportions, &c.

Chriſtopher Columbus, the firſt great Diſcoverer of *America*, was a Man that earn'd his living by making and ſelling *Hydrographical Maps*. He happen'd to be Heir of the Memoirs or Journals of a noted Pilot, one *Alonſo Sanchez de Huelva*, Captain of a Ship, who, by Chance, had been driven by a Storm to the Iſland of St. *Domingo*, and dy'd at *Columbus*'s Houſe ſoon after his Return. This gave *Columbus*

lumbus the first Hint to attempt a Discovery of the *West-Indies*, in which he succeeded.

For the Construction of the several Kinds of Hydrographical Maps; See CHART.

For their Uses; See SAILING.

HYDROGRAPHY, that Part of Geography which considers the *Sea*; principally, as it is navigable. See SEA and GEOGRAPHY.

Hydrography teaches how to describe, and measure the Sea; gives an Account of its Tides, Counter-tides, Currents, Soundings, Bays, Gulphs, &c. as also its Rocks, Shelves, Sands, Shallows, Promontories, Harbours, Distances, &c. from Port to Port, with all that is remarkable, either out at Sea, or on the Coast.

Some of the best Authors use the Term in a more extensive Sense; so as to denote the same with *Navigation*.

In this Sense *Hydrography* includes the Doctrine of Sailing; the Art of making Sea Charts, with the Uses thereof; and every thing necessary to be known, in order to the safest and most expeditious Performance of a Voyage. See NAVIGATION. See also SAILING, CHART, &c.

Hydrography is the most perfect of all the Mathematical Sciences; there being scarce any thing wanting to its Perfection, but the Discovery of the Longitude. See LONGITUDE.

The Jesuits *Ricciolus*, *Fournier*, and *De Chales*, are the principal Writers on the Subject of *Hydrography*.

In *France*, they have Professors of *Hydrography* establish'd in all their Sea Ports, who are to instruct the Youth intended for the Sea, in all the Parts of Navigation, Sailing, Steering, &c. with the several Branches of Mathematicks necessary thereto; as Arithmetick, the Doctrine of the Sphere, Trigonometry.

They are Royal Professors, and teach Gratis; having Salaries allow'd them by the King. They are also charg'd with the Examination of Pilots, &c.

The Word is compounded of the *Greek*, ὕδωρ, *aqua*, Water, and γράφω, *scribo*, *describo*, I write, describe.

HYDROMANCY, HYDROMANTIA, the Act or Art of divining or foretelling future Events by means of Water. See DIVINATION.

Hydromancy is one of the four general Kinds of Divination; the other three, respecting the other Elements, *viz.* Fire, Air, and Earth, are denominated *Pyromancy*, *Aeromancy*, and *Geomancy*.

Varro mentions the *Persians* as the first Inventors of *Hydromancy*; adding, that *Numa Pompilius* and *Pythagoras* made use thereof. See HYDATOSCOPY.

The Writers in Opticks, furnish us with divers *Hydromantic* Machines, Vessels, &c.

To Construct a Hydromantic Machine, *by Means whereof an Image or Object shall be remov'd out of the Sight of the Spectator, and restor'd again at Pleasure; without altering the Position either of the one or the other.*

Provide two Vessels ABF and CGLK (Tab. Hydraulicks, Fig. 31.) the uppermost fill'd with Water, and sustain'd by three little Pillars, one whereof, BC, is hollow, and furnish'd with a Cock B.

Let the lower Vessel CL be divided by a Partition HI, into two Parts; the lower whereof may be open'd or clos'd by means of the Cock P.

Upon the Partition place an Image, which the Spectator in O cannot see by a direct Ray GL.

If now the Cock B be open'd; the Water descending into the Cavity CI, the Ray GL will be refracted from the Perpendicular GR to O; so that the Spectator will now see the Image by the refracted Ray OG. — And again, shutting the Cock B, and opening the other P, the Water will descend into the lower Cavity HL; whence, the Refraction ceasing, no Rays will now come from the Object to the Eye. — But, shutting the Cock P again, and opening the other B, the Water will fill the Cavity again, and bring the Object in Sight of O afresh. See REFRACTION.

To make a Hydromantic Vessel, *which shall exhibit the Images of external Objects, as if swimming in Water.*

Provide a Cylindrical Vessel ABCD, (Tab. Hydraulicks, Fig. 32.) divided into two Cavities by a Glass EF, not perfectly polish'd: In G apply a Lens Convex on both Sides; and in H incline a plain Mirror of an Elliptic Figure under an Angle of 45°; and let IH and HG be something less than the Distance of the Focus of the Lens G; so that the Place of the Images of Objects radiating thro' the same, may fall within the Cavity of the upper Vessel. — Let the inner Cavity be blacken'd, and the upper fill'd with clear Water.

If now the Vessel be dispos'd in a dark Place, so as the Lens be turn'd toward an Object illumin'd by the Sun; its Image will be seen as swimming in the Water.

The Word is *Greek*, compos'd of ὕδωρ, Water, and μαντεία, Divination.

HYDROMEL, a Drink made of Water and Honey; call'd by the *Greeks* μελίκρατον.

Hydromel is Honey diluted with a sufficient Quantity of Water, and fermented by a long and gentle Heat. See HONEY.

Under the Class of *Hydromels* come our Mead, and Metheglin. See MEAD and METHEGLIN.

Hydromel is either *Simple*, call'd also *aqueous*, where Honey and Water are the only Ingredients, which may be prepar'd at any Time; or *Compound*, when other Drugs are added, to improve and exalt the Flavour and Virtues.

'Tis particularly call'd *Vinous Hydromel*, when it equals the Strength of Wine; which it is brought to do, not only by the great Quantity of Honey us'd in it, but also by its long Coction, Insolation, &c. This is only made in the Heat of Summer.

Vinous Hydromel, (the same with what we otherwise call Mead, &c.) is made of Rain Water and the best Honey boil'd together, and skum'd from Time to Time till they become of a Consistence to sustain an Egg. This done, the Liquor is expos'd to the Sun for 40 Days, to dispose it to ferment; then, adding some *Spanish* Wine, and keeping it two or three Months, it acquires a Flavour scarce inferior to Malmsey. — It fuddles readily; and the drunken Fit holds longer than that produc'd by Wines, by reason of its more viscid Consistence.

Hydromel is the common Drink of the *Poles* and *Russians*. *Diodorus Siculus*, lib. V. and *Aristotle*, relate, that the *Celtiberi* and *Taulantii*, ancient People of *Illyria*, drank *Hydromel* instead of Wine.

The Word is compos'd of ὕδωρ, Water, and μέλι, *Mel*, Honey.

HYDROMETER, an Instrument wherewith to measure the Gravity, Density, Velocity, Force, or other Property or Circumstance of Water. See WATER.

That wherewith the specific Gravity of Water is determin'd, is more usually call'd an *Aræometer* or *Water-poise*. See ARÆOMETER and WATER-*poise*.

The Word is compounded of the *Greek*, ὕδωρ, Water, and μετρον, Measure.

HYDROMETRIA, HYDROMETRY, the Mensuration of Waters, and other fluid Bodies, their Gravity, Force, Velocity, Quantity, &c. See WATER and FLUID.

Hydrometria includes both Hydrostaticks and Hydraulicks. See HYDROSTATICKS and HYDRAULICKS.

The Term is modern, and very little in use. — The first Instance where we meet with it, is in the Year 1694, when a new Chair or Professorship of *Hydrometry* was founded in the University of *Boulogne*, in Favour of *S. Guglielmini*, who had carry'd the Doctrine of Running Waters, with respect to Rivers, Canals, Dikes, Bridges, &c. to an unusual Length. See RIVER, WAVE, &c.

HYDROMPHALUS, in Medicine, a Tumor in the Navel, arising from a Collection of Water.

The *Hydromphalus* is distinguish'd from other Tumors of the Navel by its being very soft, and yet not tractable or obedient to the Touch, so as to diminish or enlarge by compressing it. When view'd, plac'd between the Eye and the Light, it is found transparent.

The *Hydromphalus* is discuss'd by emollient and resolutive Medicines. It is also also cur'd by a Puncture made in the Middle of the Navel.

The Word is form'd of the *Greek*, ὕδωρ, Water, and ὀμφαλὸς, *umbilicus*, Navel.

HYDROMYSTES, or HYDROMYSTA, a Name given to certain Officers in the *Greek* Church, whose Business was to make the holy Water, and sprinkle it on the People. See *Holy* WATER.

The Word is compounded of ὕδωρ, *aqua*, Water, and μύστης, a Person set apart for the Offices of Religion.

HYDROPARASTATES, or HYDROPARASTES, a Sect of Hereticks, the Followers of *Tatian*, call'd also *Encratites*, *Apotactites*, *Saccophori*, *Severiani*, and *Aquarians*. See ENCRATITES and AQUARIANS, &c.

The *Hydroparastates* were a Branch of *Manichees*, whose distinguishing Tenet was, that Water should be us'd in the Eucharist instead of Wine.

The Word is form'd of the *Greek*, ὕδωρ, Water, and παίσημι, I present, I offer.

HYDROPHOBIA, in Medicine, an Aversion or Dread of Water; a Symptom arising in Persons bitten by a mad Dog, or other Beast.

Tho' the Term *Hydrophobia* do, in Strictness, only denote this one Symptom; yet is it frequently apply'd to the whole Disease consequent on such Bite, with all its Symptoms.

The Word is *Greek*, compounded of ὕδωρ, Water, and φοβος, *Timor*, Fear, of φοβεμαι, *timeo*, I fear.

The History of this horrible Disease, as given by *Cœlius Aurelianus*, Dr. *Mead*, *Etmuller*, *Lister*, &c. is as follows:

The Bite of a mad Dog is attended with this ſurprizing Circumſtance, that its Effects frequently do not diſcover themſelves till after the Cauſe is forgot; the Wound itſelf cloſing and healing like any other common Wound. But, ſome time after, direful Symptoms enſue: Uſually they commence in about forty Days; ſometimes in ſixty, ſometimes not till ſix Months, and ſometimes not till a Year, or even two. The firſt Thing obſerv'd, is a wandering Pain throughout the whole Body, but chiefly about the wounded Part: The Patient grows anxious and melancholly, and very prone to Anger; complaining of every Thing, as the ambient Air, the Heavineſs of his Bed Cloaths, &c. He vomits; his Pulſe intermits, and ſomewhat of a Tremor is obſerv'd, with Convulſions of the Nerves and Tendons: Along with theſe he feels an inward Heat and Thirſt: At laſt the grand Symptom appears, which denominates the Diſeaſe, *viz.* the *Aquæ Pavor*, or Dread of Water, ſo that he cannot bear ſo much as the Sight of any Liquid, without the utmoſt Conſternation; much leſs can he ſwallow the ſmalleſt Drop. This is the Pathogonomic Sign of the Diſeaſe's being come to its Height; and never happens till two or three Days before the Patient's Death; the Diſeaſe being then, by the unanimous Conſent both of ancient and modern Phyſicians, abſolutely incurable.

With this there are other concomitant Symptoms. --- He foams at the Mouth, his Eyes ſtare, he cannot ſwallow his Spittle without Pain, and his *Penis* is conſtantly erected: Some bark and ſnarl like Dogs, and actually fancy themſelves transform'd into thoſe Creatures, and, in the Height of their Madneſs, are ready to fly upon and tear to Pieces the By-ſtanders. --- *Palmarius* obſerves, that the *Hydrophobous* Patient cannot bear to look in a Glaſs, or any tranſparent Body: And that he never recovers, unleſs he know himſelf in a Glaſs; this being a Sign that the Poiſon has not yet laid hold of the vital Parts.

It may be added, that the *Hydrophobia* is not only occaſion'd by the Bite of a mad Dog, but alſo of other Brutes, as Cats, Foxes, Wolves, Horſes, Mules, Bullocks, and even Cocks, &c. or of a Man in the like Condition.

Nor is any Bite or Wound at all neceſſary; the Saliva of a mad Dog, &c. being apt to convey the Diſeaſe by mere Contact, or Application to the Skin. --- Thus, we have an Inſtance in the *Philoſophical Tranſactions*, of two Men catching the Diſeaſe by putting their Fingers in the Mouth of a Puppy that had been bit by its mad Dam, and feeling its Tongue and Throat: And the like Inſtance we have in the ſame Work, of two Children in *Ireland*, who, by touching and handling the Head of a Dog that had been bit by a mad Dog, and waſhing the Wound, cur'd the Dog, but caught the Diſeaſe themſelves.

For the Nature and Cauſe of the Hydrophobia; --- Dr. *Mead*, from ſeveral Hiſtories of particular Caſes, concludes, that the *Hydrophobia* is the Effect of a particular Kind of Inflammation of the Blood, accompany'd with ſo great a Tenſion and Dryneſs of the nervous Membranes, and ſuch an Elaſticity and Force of the Fluid with which they are fill'd, that the moſt common Repreſentations are made to the Mind with too great Effect; ſo that the uſual Impreſſions on the Organs cannot be ſuffer'd. --- Hence that Timorouſneſs, unaccountable Anxiety, and Diſquietude, which are always the Forerunners of the *Dread of Liquids*; as alſo, the Pain often felt in making of Water, and the ſtrange Averſions ſometimes found in Patients at the Sight of any thing white, the Retina being hurt and griev'd by the lively Impreſſions of that Colour thereon. --- Nor is it hard to conceive, that when the Saliva is hot, and the Throat inflam'd and dry, the Swallowing of Drink ſhould cauſe ſuch an intolerable Agony.

M. *Tauvry*, from a nice Diſſection and Examen of the Parts of a Perſon dead hereof, conjectures, that the Saliva and Bile are the Fluids firſt infected; and that the Patient vomiting a Mixture hereof, the Throat becomes excoriated thereby; and hence that Horror for all Foods, and particularly Water, in regard this diſſolves thoſe grievous Salts contain'd in the Saliva and Bile. He adds, That the Nature of the Poiſon is ſuch, as diſſolves the balſamic and nutritious Part of the Blood, whence the Veins are dry'd up, ſo as not to admit any Blood from the Arteries; and the Arterial Blood by this means ſuſtaining the Action and Impreſſion of its Veſſels for ſo long a Time, is ſtill further diſſolv'd, attenuated, and ſpiritualiz'd, and thus ſent, in too great Quantity, and with too great Rapidity, to the Brain; whence thoſe Convulſions, Diſtractions, &c.

Dr. *Liſter*, from the remarkable Hiſtory of *J. Corton*, whom he attended under this Diſeaſe, concludes, 1°. That ſome of the organic Parts of his Body were actually transform'd into, or affected after the Nature of a Dog, eſpecially the Gula, Tongue, &c. ſo that any Fluid offer'd him in the erect Poſture of a Man, was frightful, as well as difficult to take, as much as it would be for us to get a Dog to drink ſtanding on his hind Legs. But this was not all; for when he was turn'd upon his Belly, and would have acted the Dog, he could not drink; tho' the Sight of the Liquor in that Poſture gave him as much Pleaſure, as in the other Poſture it did Pain; and tho' he frequently put out his Tongue, and lapp'd, yet he could not endure to take any thing Liquid into his Month, as tho' ſomething hinder'd him within. 2°. That his Spittle was envenom'd; for as oft as he ſwallow'd it, his Stomach vehemently abhorring it, it went to his Heart, as he ſaid, and was preſent Death to him: And ſo Liquid Things coming nearer to the Conſiſtence of Spittle, might give him the greater Terror, as they tended to promote the Diſcharge of Saliva into his Mouth; and for the ſame Reaſon might be more difficult to ſwallow than ſolid Things.

As to the Cure of the Hydrophobia, Dr. *Mead*, after *Galen*, recommends it, in this as in other venomous Caſes, to enlarge the Wound by a circular Inciſion, to apply a Cautery to it, and to keep it open for at leaſt forty Days. But if this Method ſeem too cruel, it may ſuffice to extract the Poiſon by clapping a Cupping-glaſs on the Place, having firſt made a deep Scarification. The Doctor adds, he has known a Perſon freſh bitten, happily ſav'd by the ſole Application of the *Unguentum Ægyptiacum* exceedingly hot.

If theſe external Precautions have not been us'd, or not in Time, recourſe muſt be had to internal Remedies: Alexipharmachicks muſt be drank; among which, the Aſhes of River Lobſters, or Cray Fiſh, are principally extoll'd by all the ancient Phyſicians; ſo that *Galen* affirms, no Body had ever dy'd who uſed this Remedy. Theſe Aſhes to be taken to the Quantity of one or two Spoonfuls every Day for forty Days ſucceſſively, either alone, or with Gentian Root and Frankincenſe in Wine.

But the frequent and ſudden plunging of the Patient over Head and Ears in the Salt Sea Water, is the beſt and ſureſt Preſervative againſt this Diſeaſe.

Etmuller recommends Cardiacks and Alexipharmachicks, but all in a double Doſe, and long continu'd; and Garlic, Rue, and Salt to be beat together, and apply'd in form of a Cataplaſm over the Wound. Purging with Hellebore and Mercurius Dulcis is alſo good; and Cantharides are a Sort of Specific. Scarrifying is commended; and after the Scarrification, an Onion roaſted under the Aſhes, to be apply'd. But the readieſt Remedy, he adds, is burning the Place affected with a red hot Iron, which effectually removes all the Malignity. If the Phyſician be not call'd till late, a Cupping-glaſs is to be apply'd very hot: An Iſſue near the Place may likewiſe be of Service.

Sir *Theod. Mayerne* gives the following Preſcriptions for the Bite of a mad Dog. Pluck the Feathers from the Breech of an old Cock, and apply it bare to the Bite: If the Dog were mad, the Cock will ſwell and die, and the Perſon bitten will do well: If the Cock dies not, the Dog was not mad. *Philoſoph. Tranſact.* N°. 191.

'Tis a common Notion, that a Hair of the ſame Dog apply'd on the Bite, attracts the Venom, and works a Cure: But a Phyſician of *Roſtock*, in a formal Diſſertation ſome Years ago, prov'd this a popular Error; and that the Remedy was more like to do harm than good.

The Marks whereby to know that a Dog is mad, are, his neither eating nor drinking, foaming at the Mouth and Noſtrils, looking ſad and ſullen, and running at any thing in his Way, whether Man or Beaſt, known or unknown, without barking. --- *Baldus*, a famous Lawyer, dy'd of the *Hydrophobia* four Months after his being bit in the Lip by a little Dog. And the ſame is ſaid of *Diogenes* the Cynic.

The Members of the Royal Academy of Sciences, furniſh us with various Inſtances of Perſons cur'd of the Diſeaſe by various Means. --- M. *Poupart* mentions a Woman perfectly recover'd by bleeding her to a Deliquium, binding her in a Chair for a Year, and feeding her all that Time with Bread and Water. --- M. *Berger* relates, that of ſeveral Perſons bitten, two were cur'd by bleeding them in the Forehead. --- M. *du Hamel* adds, that he has known Salt Water apply'd on the Wound, effect a Cure. --- Divers Caſes are produc'd of thoſe cur'd of the *Aquæ Pavor*, by being overwhelm'd with a great Quantity of Water; and one, by being only ty'd to a Tree, and 200 Pails of Water thrown on him. --- But the beſt Inſtance is that of M. *Morin*. A Maid of twenty Years of Age having all the Symptoms, was bath'd in a Tub of River Water, wherein a Buſhel of Salt had been diſſolv'd. They plung'd her naked again and again, till, harraſs'd almoſt to Death, they left her in it quite ſenſeleſs.---When ſhe came to herſelf, ſhe was ſurpriz'd to find herſelf looking at the Water without any Concern. *Hiſtoire del Acad. An.* 1709.

HYDROPHORIA, in Antiquity, a Feaſt or Funeral Ceremony, held among the *Athenians* and People of *Ægina*, in Memory of thoſe who periſh'd in the Deluge. See DELUGE.

The Word is form'd of the *Greek*, ὕδωρ, Water, and φερω, I bear, or carry off.

HYDROPIC, a dropſical Patient; or a Perſon ſwell'd and bloated with the Abundance of Water or Wind. See DROPSY.

The Word is form'd of ὕδωρ, Water, and ὤψ, *Facies*, Face.

HYDROPS, in Medicine. See DROPSY.

The Word is originally *Greek*, ὑδρωψ, of ὕδωρ and ὤψ.

HYDROPS *ad Matulam*, a Term ſometimes uſed for a *Diabetes*. See DIABETES.

HYDROPOTES, in Medicine, are ſuch as drink nothing but Water. See WATER.

It has long been controverted among Phyſicians, whether or no the *Hydropotes* live longer than other Perſons. See DRINK.

The Word is *Greek*, ὑδροπότης, of ὕδωρ, Water, and ποτης, *Potor*, Drinker, of πινω, *bibo*, I drink.

HYDROSCOPE, an Inſtrument anciently uſed for the meaſuring of Time. See CHRONOMETER.

The *Hydroſcope* was a Kind of Water-clock; conſiſting of a cylindrical Tube, Conical at Bottom: The Cylinder was graduated, or mark'd out with Diviſions, to which the Top of the Water becoming ſucceſſively contiguous, as it trickled out of the Vertex of the Cone, pointed out the Hour.

Syneſius deſcribes the *Hydroſcope* at large in one of his Letters. See CLEPSYDRA.

The Word is *Greek*, ὑδροσκόπιον, form'd of ὕδωρ, Water, and σκοπεω, I view, I conſider.

HYDROSTATICAL *Ballance*, a kind of Ballance contriv'd for the eaſy and exact finding the Specific Gravities of Bodies both Liquid and Solid. See SPECIFIC *Gravity*.

The Inſtrument is of conſiderable Uſe in eſtimating the Degree of Purity of Bodies of all Kinds; the Quality and Richneſs of Metals, Ores, Minerals, &c. the Proportions in any Mixture, Adulteration, or the like: Of all which, the Specific Weight is the only adequate Judge. See WEIGHT, METAL, GOLD, MIXTURE, &c.

The *Hydroſtatical Ballance* is founded on this Theorem of *Archimedes*, That a Body heavier than Water, weighs leſs in Water than in Air, by the Weight of as much Water as is equal to it in Bulk. --- Whence, if we ſubſtract the Weight of the Body in Water from its Weight in Air, the Difference gives the Weight of as much Water as is equal in Magnitude to the Solid propos'd.

Having, therefore, two Bodies, the one firm, the other fluid, together with the Weight of each apart; to find their Proportion, divide the greater by the leſſer, the Quotient compar'd to one that is an Unite, will be the Antecedent of the Proportion deſir'd.

The Inſtrument, with all its Apparatus, is repreſented Tab. Hydroſtaticks, Fig. 34. and needs little Deſcription.

To uſe it, the Weights E are ſo adjuſted, as to ballance what is to be hung on the other End of the Beam; in which State the Inſtrument is ready for Application.

Now, *to find the Specific Gravity of a Fluid.*---Hang to the other End of the Beam the little Scale F, and to the Bottom of the Scale the Bubble G; then fill a Cylindrical Veſſel OP about two Thirds with common Water; and when the Bubble is let into it, the Beam will remain in an horizontal Poſition, if the Water be of the ſame Specific Gravity as that in which the Bubble was adjuſted: If it be not, there will be a Variation; which is to be corrected by means of little Weights for that Purpoſe.

Having thus adjuſted the Bubble in that Water, the Specific Gravity of any other Fluid will be found by weighing the Bubble therein; and ſince you always weigh ſo much of the Liquid as is equal to the Bulk of the Bubble, if there be any Variation between ſuch Quantity, and the like Quantity of Water, it will be diſcover'd by putting Weights into the aſcending Scale.

2°. *To find the Specific Weight of a Solid.* --- Inſtead of the Bubble, hang on the Bucket HIK, and the Beam will be in Æquilibrio: Put the Solid intended to be examin'd therein, and counter-poiſe it with Weights in the other Scale: This done, note the Weight, and disburthen the Scales of the Solid and its Counter-poiſe, and ſink the Bucket into the Glaſs of Water. --- Then, as the Bucket will loſe as much of its Weight, as is the Weight of an equal Bulk of Water; add the Scale R upon the Part, which will bring all to an Æquilibrium. --- Laſtly, Put the Solid into the Bucket, and counter-poiſe it again with Weights; and as it anſwers in its Proportion to Water, it may be judg'd either genuine or adulterate, by comparing it to a Standard of that Species of Bodies to which it is ſuppoſed to belong.

HYDROSTATICKS, the Doctrine of Gravitation in Fluids; or that Part of Mechanicks which conſiders the Weight or Gravity of fluid Bodies, particularly Water; and of ſolid Bodies immerg'd therein. See GRAVITY and GRAVITATION.

To *Hydroſtaticks* belong whatever relates to the Gravities and Equilibria of Liquors; with the Art of weighing Bodies in Water, in order to eſtimate their Specific Gravities. --- Mr. *Boyle* has apply'd *Hydroſtaticks* to good Purpoſe, in examining and proving the Goodneſs and Purity of Metals, Minerals, and other Bodies, particularly Fluids, in an expreſs Treatiſe, entitled, *Medicina Hydroſtatica*. See HYDROSTATICAL *Ballance*.

The Word is *Greek*, compos'd of ὕδωρ, Water, and στατικὴ, Staticks, of στατὸς, *ſtans*, ſtanding, of ἵστημι, *ſto*, *ſiſto*, I ſtand, I ſtop: *Hydroſtaticks* being conceiv'd as the Doctrine of the Equilibrium of Liquors. See EQUILIBRIUM and STATICKS.

The Laws of HYDROSTATICKS, *with the Application thereof; ſee deliver'd at large under the Articles* FLUID and SPECIFIC *Gravity*.

Hydroſtaticks are frequently confounded with *Hydraulicks*, by reaſon of the Affinity of the Subjects; and ſeveral Authors chuſe to treat of the two promiſcuouſly. See HYDRAULICKS.

The eldeſt Writer on *Hydroſtaticks* is *Archimides*, who firſt deliver'd the Laws thereof in his Book *de inſidentibus humido*. *Marin. Gietaldus* firſt brought his Doctrines to Experiment, in his *Archimedes promotus*: And from him Mr. *Oughtred* took the greateſt Part of what he has given us on this Subject. Monſ. *Mariotte*, in a *French* Treatiſe, publiſh'd at *Paris* in 1686, *Of the Motion of Water and other Fluids*, gives moſt of the Propoſitions of *Hydroſtaticks* and Hydraulicks, prov'd by Reaſon, and confirm'd by Experiments: Nor are Mr. *Boyle's Hydroſtatical Paradoxes*, and *Medicina Hydroſtatica*, to be overlook'd: The Jeſuit *Fr. Tertius de Lanis*, in the IIId Tome of his *Magiſterium Naturæ & Artis*, lays down the Doctrines of *Hydroſtaticks* more amply than they are elſewhere found. F. *Lamy*, in the 2d Part of his Mechanicks, entitled, *Traite de l'Equilibre des Liqueurs*, delivers the fundamental Laws of *Hydroſtaticks*, and Hydraulicks; and the like is done by Dr. *Wallis*, in his *Mechanica*. Laſtly, Sir *Iſ. Newton* gives ſome of the ſublimer Matters in the 2d Book of his *Philoſoph. Nat. Princip. Mathemat.*

HYDROTICKS, in Medicine, *Sudorificks*; or Remedies that promote Sweat. See SUDORIFICKS.

The Word is *Greek*, form'd of ὕδωρ, *aqua*, Water.

HYGIEINA, that Branch of Medicine which conſiders *Health*; and diſcovers proper Means and Remedies, with their Uſe, in the Preſervation and Recovery of that State. See MEDICINE and HEALTH.

The Objects of this Branch of Medicine are the Non-Naturals. See NON-*Naturals*.

Hygieina may be divided into three Parts; *Prophylactice*, which foreſees and prevents Diſeaſes; *Synteritice*, employ'd in preſerving Health; and *Analeptice*, whoſe Office is to cure Diſeaſes, and reſtore Health. See PROPHYLACTICE, &c.

The Word is *Greek*, Υγιεινη, of ὑγιὴς, ſound, healthy.

HYGROCYRSOCELE, in Medicine, a Branch of a Vein ſwell'd with ill Blood, or other Humours. See VAREX.

The Word is compos'd of ὑγρὸς, *humidus*, and κιρσοκήλη, or rather κιρσοκήλη, *ramex varicoſus*.

HYGROMETER, a Machine or Inſtrument whereby to meaſure the Degrees of Dryneſs or Moiſture of the Air. See AIR, HUMIDITY, &c.

The Word is compounded of the *Greek*, ὑγρὸς, *humidus*, moiſt, and μετρέω, *metior*, I meaſure. See HYGROSCOPE.

There are divers Kinds of *Hygroſcopes*; for, whatever Body either ſwells or ſhrinks by Dryneſs or Moiſture, is capable of being form'd into an *Hygrometer*. --- Such are Woods of moſt Kinds, particularly Aſh, Deal, Poplar, &c. Such alſo is a Cat-gut, the Beard of a wild Cat, &c. See WOOD, &c.

The beſt and moſt uſual Contrivances for this Purpoſe, are as follow:

Conſtruction of a HYGROSCOPE.

Stretch a hempen Cord, or a Fiddle-ſtring, as AB (Tab. Pneumaticks, Fig. 7.) along a Wall, bringing it over a Truckle or Pulley B; and to the other Extreme D, tye a Weight E; into which fit a Style or Index FG.---On the ſame Wall fit a Plate of Metal HI, divided into any Number of equal Parts: And the *Hygroſcope* is compleat.

For it is Matter of undoubted Obſervation, that Moiſture ſenſibly ſhortens the Length of Cords and Strings; and that, as the Moiſture evaporates, they return to their former Length: And the like may be ſaid of a Fiddle-ſtring. --- The Weight, therefore, in the preſent Caſe, upon an Increaſe of the Moiſture of the Air, will aſcend; and, upon a Diminution of the ſame, deſcend.

Hence, as the Index FG will ſhew the Spaces of Aſcent and Deſcent; and thoſe Spaces are equal to the Increments and Decrements of the Length of the Cord or Gut ABD; the Inſtrument will diſcover, whether the Air be more or leſs humid now, than it was at another given Time.

Or thus:

If a more ſenſible and accurate *Hygroſcope* be requir'd, ſtrain a Whipcord or Fiddle-ſtring over ſeveral Truckles or Pulleys A, B, C, D, E, F, and G, (Fig. 8.) and proceed with the reſt as in the former Example. Nor does it matter whether the ſeveral Parts of the Cord AB, BC, CD, DE, EF

Tab. Hydraulicks & Hydrostaticks

Fig. 1. Archimedes Screw

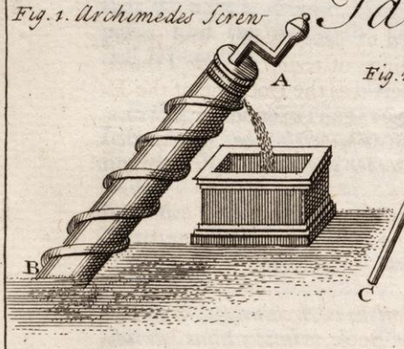


Fig. 2. Siphon

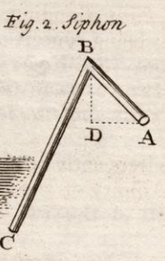
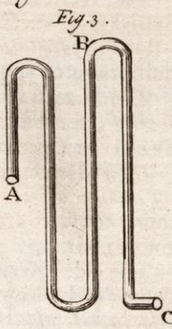


Fig. 3.



Siphon

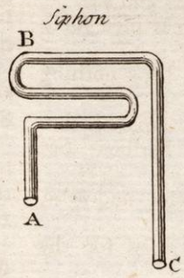


Fig 4. Siphon

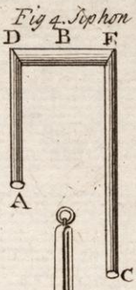


Fig. 5. Sipho Wurtembergicus

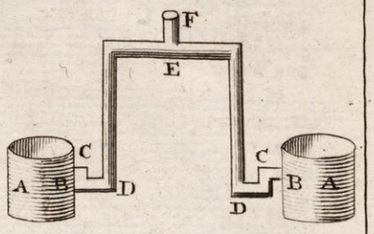


Fig. 6. Fluid

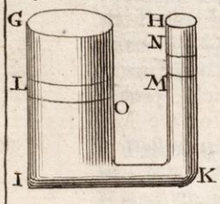


Fig. 7. Fluid

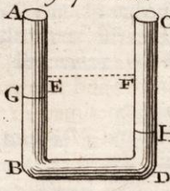


Fig. 8. Fluid

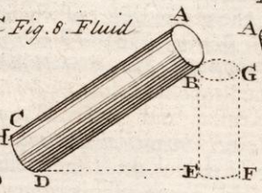


Fig. 9. Fluid



Fig. 10 & 11. Fluid

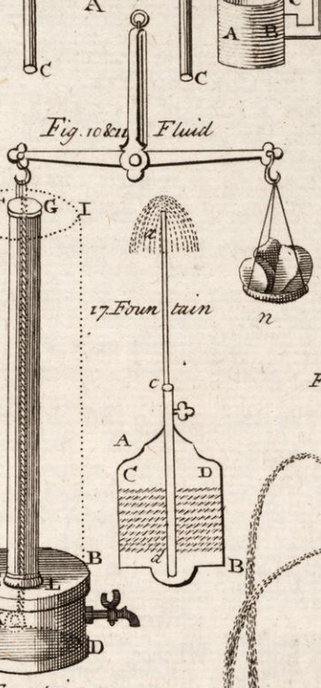


Fig. 12. and 13. Fluid

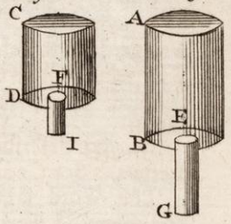


Fig. 14. Fluid



Fig. 15. Fluid

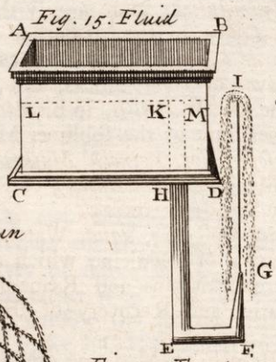
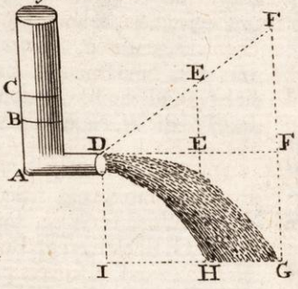


Fig. 16 Fluid



17. Fountain

Fig. 18 Fountain

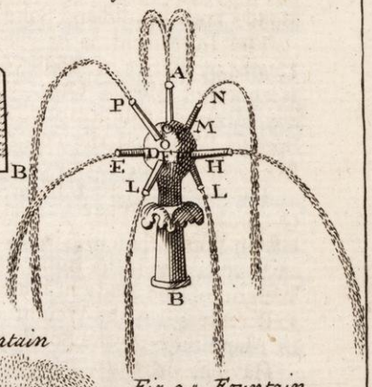


Fig. 19. Fountain

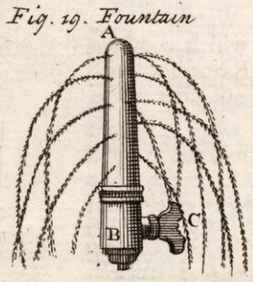


Fig. 20. Fountain

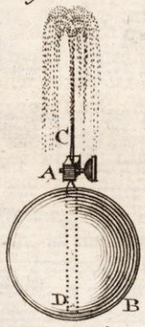


Fig. 21. Fountain



Fig. 22. Fountain



Fig. 23. Fountain

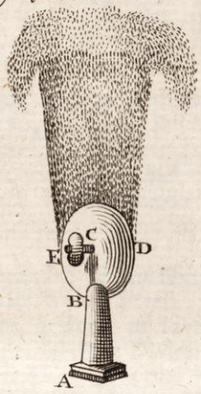


Fig. 24. Fountain

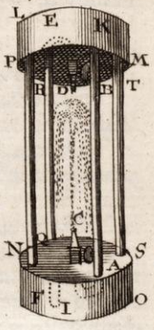


Fig. 25. Fountain

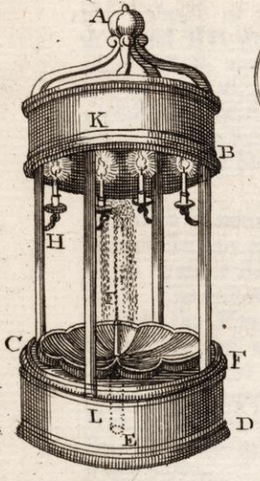


Fig. 26. Syringe

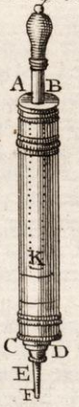


Fig. 27. Pump

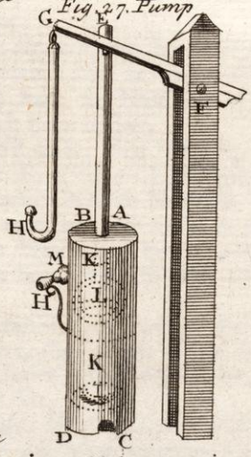


Fig. 28. Pump.

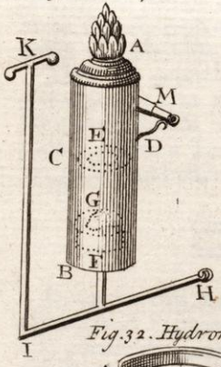


Fig. 29. Ctesebes Pump.

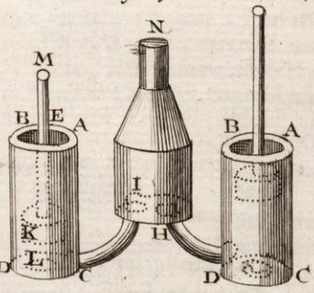


Fig. 32. Hydromantic.



Fig. 34. Hydro-statical Ballance

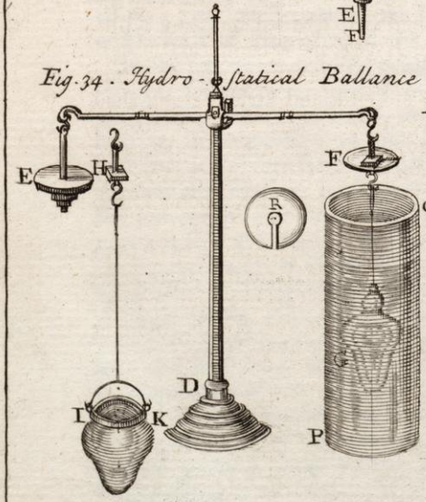


Fig. 31. Hydromantic

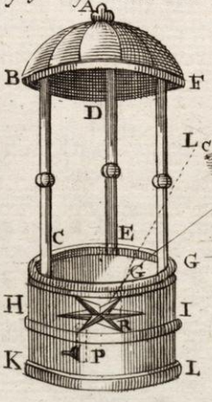


Fig. 30. Wave



Fig. 33. Wave

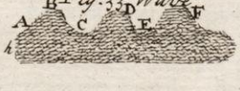


Fig. 32. Wave

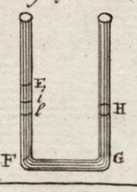
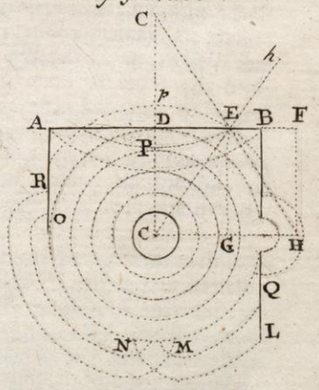
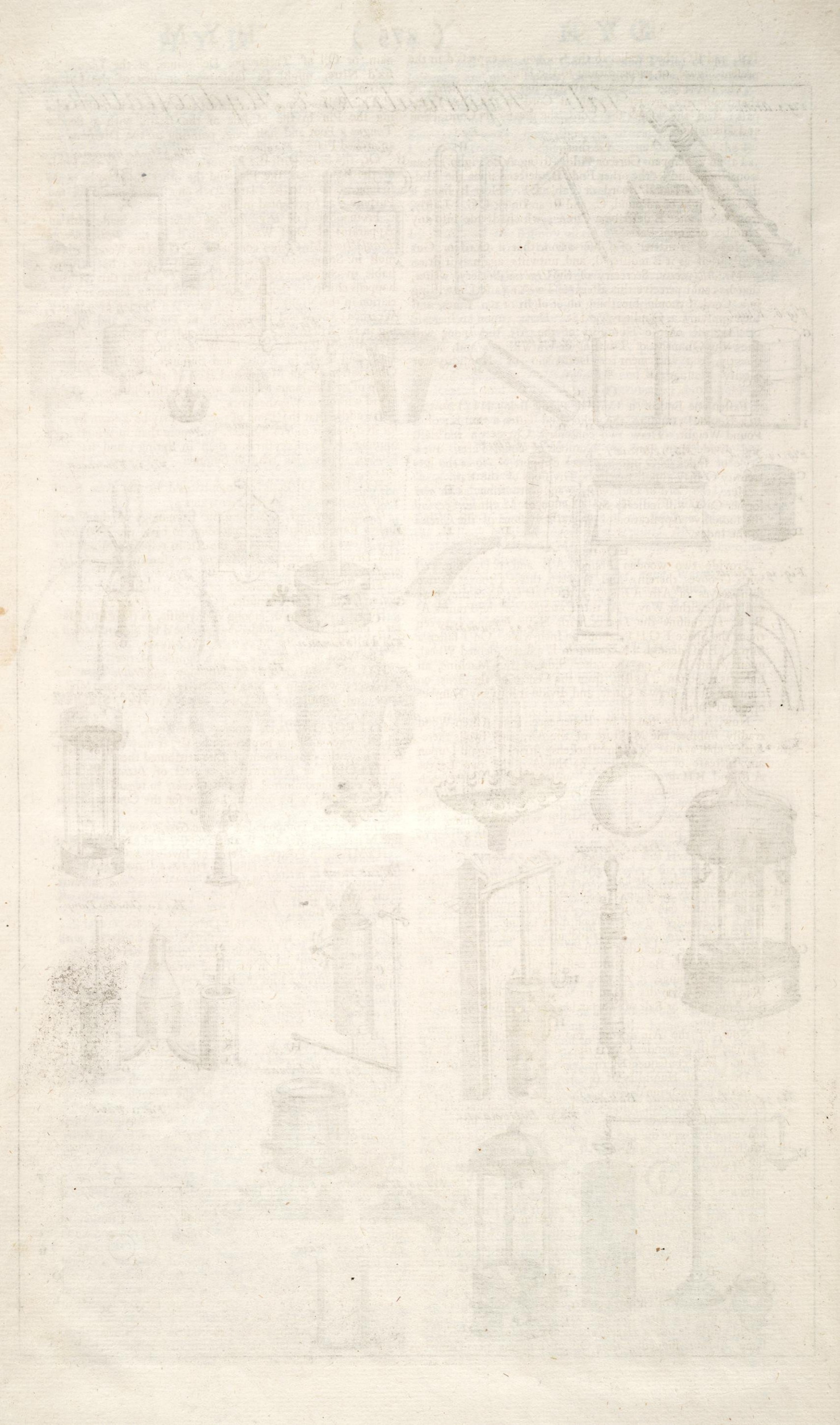


Fig. 31. Wave





EF, and FG, be parallel to the Horizon, as expreſs'd in the preſent Figure, or perpendicular to the ſame.

The Advantage of this, above the former *Hygrometer*, is, that we have a greater Length of Cord in the ſame Compaſs: And the longer the Cord, the greater its Contraction and Dilatation.

Or thus:

Faſten a hempen Cord or Fiddle-ſtring AB (Fig. 9.) to an Iron Hook, and let the other End, B, deſcend upon the Middle of a horizontal Board or Table EF. Near B hang a leaden Weight of a Pound, C, and fit an Index CG. Laſtly, from the Center B deſcribe a Circle; which divide into any Number of equal Parts.

Now, it is matter of Obſervation, that a Cord or Gut twiſts itſelf as it is moiſten'd, and untwiſts again as it dries. --- Mr. *Molyneux*, Secretary of the *Dublin* Society, writes, that he could perceive this alternate Twiſting and Untwiſting in a Cord, by only breathing on it eight or ten times, and then applying a Candle toward it. Hence, upon an Increaſe or Decreaſe of the Humidity of the Air, the Index will ſhew the Quantity of Twiſting or Untwiſting; and, conſequently, the Increment or Decrement of Humidity or Siccity.

Or thus:

Faſten one End of a Cord or Fiddle-ſtring HI (Fig. 10.) to a Hook H; and to the other End faſten a Ball K, of a Pound Weight. Draw two concentric Circles on the Ball, and divide them into any Number of equal Parts. Fit a Style or Index NO into a proper Support N, ſo as the Extremity O may almoſt touch the Diviſions of the Ball.

Here, the Cord or Gut twiſting and untwiſting, as in the former Caſe, will indicate the Change of Moiſture, *&c.* by the ſucceſſive Application of ſeveral Diviſions of the Circles to the Index.

Or thus:

Provide two wooden Frames AB and CD, (Fig. 11.) with Grooves therein; and between thoſe Grooves fit two thin Leaves of Aſh AEFC, and GBDH, ſo as they may eaſily ſlide either Way. At the Extremes of the Frames A, B, C, D, confine the Leaves with Nails, leaving between them the Space EGHF, about an Inch wide. On I faſten a Slip of Braſs dented, IK; and in L a little dented Wheel, upon whoſe Axis, on the other Side of the Machine, an Index is to be put. Laſtly, from the Centre of the Axis, on the ſame Side, draw a Circle, and divide it into any Number of equal Parts.

Now, it being found by Experience, that Aſhen Wood readily imbibes the Moiſture of the Air, and ſwells therewith; and as that Moiſture ſlackens, ſhrinks again; upon any Increaſe of the Moiſture of the Air, the two Leaves AF and BH growing turgid, will approach nearer each other: And, again, as the Moiſture abates, they will ſhrink, and again recede.---Hence, as the Diſtance of the Leaves can neither be increas'd nor diminiſh'd without turning the Wheel L, the Index will point out the Changes in reſpect of Humidity and Siccity.

Or thus:

It is to be noted, that all the *Hygrometers* above deſcrib'd become ſenſibly leſs and leſs accurate; and, at length, undergo no ſenſible Alteration at all from the Humidity of the Air. The following one is much more laſting.

Take the *Manoſcope*, deſcrib'd under that Article, and, inſtead of the exhauſted Ball E, (Fig. 12.) ſubſtitute a Spunge, or other Body, which eaſily imbibes Moiſture. To prepare the Spunge, it may be neceſſary firſt to waſh it in Water; and when dry again, in Water or Vinegar wherein Sal Ammoniac or Salt of Tartar has been diſſolv'd, and let it dry again.

Now, if the Air become moiſt, the Spunge growing heavier, will preponderate; if dry, the Spunge will be hoiſted up; and, conſequently, the Index will ſhew the Increaſe or Decreaſe of Humidity of the Air.

In the laſt mention'd *Hygroſcope*, Mr. *Gould*, in the *Philoſophical Tranſactions*, inſtead of a Spunge, recommends Oil of Vitriol, which is found to grow inſenſibly lighter or heavier, in Proportion to the leſſer or greater Quantity of Moiſture it imbibes from the Air; ſo that being ſatiated in the moiſteſt Weather, it afterwards retains or loſes its acquir'd Weight, as the Air proves more or leſs moiſt. --- The Alteration is ſo great, that in the Space of 57 Days, it has been known to change its Weight from three Drams to nine; and has ſhifted an Index or Tongue of a Ballance 30 Degrees. --- A ſingle Grain, after its full Increaſe, has vary'd its Equilibrium ſo ſenſibly, that the Tongue of a Ballance only an Inch and half long, deſcrib'd an Arch one Third of an Inch in Compaſs; which Arch would have been almoſt three Inches, if the Tongue had been one Foot, even with ſo ſmall a Quantity of Liquor; conſequently, if more Liquor expanded under a large Surface were us'd, a Pair of Scales might afford as nice a *Hygroſcope* as any yet invented. --- The ſame Author ſuggeſts, that Oil of Sulphur per Campanam, or Oil of Tartar per Deliquium, or the Liquor of fix'd Nitre, might be ſubſtituted in lieu of the Oil of Vitriol.

This Ballance may be contriv'd two Ways; by either having the Pin in the Middle of the Beam, with a ſlender Tongue a Foot and half long, pointing to the Diviſions on an arched Plate; as repreſented in Fig. 12.

Or, the Scale with the Liquor may be hung to the Point of the Beam near the Pin, and the other Extreme be made ſo long, as to deſcribe a large Arch on a Board plac'd for the Purpoſe; as repreſented in Fig. 13.

From a Series of *Hygroſcopical* Obſervations made with an Apparatus of Deal Wood, deſcrib'd in the *Philoſophical Tranſactions*, Mr. *Coniers* concludes; 1°. That the Wood ſhrinks moſt in Summer, and ſwells moſt in Winter; but is moſt liable to change at Spring and Fall. 2°. That this Motion happens chiefly in the Day-time; there being ſcarce any Variation in the Night. 3°. That there is a Motion even in dry Weather; the Wood ſwelling in the Forenoon, and ſhrinking in the Afternoon. 4°. The Wood, by Night as well as Day, uſually ſhrinks when the Wind is in the North, North-Eaſt, and Eaſt, in Winter and Summer. 5°. By conſtant Obſervation of the Motion and Reſt of the Wood, with the Help of a Thermometer, one may tell the Situation of the Wind without a Weather-cock. See WIND.

He adds, that the Time of the Year may be known by it; for in Spring it moves quicker, and more than in Winter; in Summer it is more ſhrunk than in Spring; and has leſs Motion in Autumn than in Summer. See SEASON, WEATHER, *&c.*

HYGROSCOPE, is commonly us'd in the ſame Senſe with *Hygrometer*. See HYGROMETER.

Wolfius, however, regarding the Etymology of the Word, makes ſome Difference. According to him, the *Hygroſcope* only ſhews the Alterations of the Air in reſpect of Humidity and Dryneſs; but the *Hygrometer* meaſures them. A *Hygroſcope*, therefore, is a leſs accurate Hygrometer.

The Word is compounded of ὑγρὸς, moiſt, and σκοπέω, *video, ſpecto*, I ſee, I conſider.

HYLE, or HYLEC, among Alchymiſts, is their firſt Matter; or it is Matter conſider'd as produc'd by Nature herſelf; call'd alſo *Chaos*. See MATTER, ALCHYMY, *&c.*

The Word is *Greek*, ὕλη, which ſignifies Matter.

HYLEG, or HYLECH, in Aſtrology, an *Arabic* Term for a Planet; which in a Man's Nativity becomes the Moderator and Significator of Life. See NATIVITY, SIGNIFICATOR, *&c.*

HYLEGIAL *Places*, among Aſtrologers, are ſuch, in which, when a Planet happens to be ſet, it may be ſaid to be fit to have the Government of Life attributed thereto.

HYLOBII, or HYLOBIANS, a Sect of *Indian* Philoſophers, thus denominated by the *Greeks*, in regard they retir'd to Foreſts, to be more at Leiſure for the Contemplation of Nature.

The Name is compounded of the *Greek*, ὕλη, which, beſide Matter, ſignifies alſo Wood, Foreſt; and βιὸς, Life.

HYMEN, in Poetry, a Term of Invocation.---*Hymen* or *Hymenæus*, is properly a fabulous Divinity, ſuppos'd by the Ancients to preſide over Marriages; and who accordingly was invok'd in Epithalamiums and other matrimonial Ceremonies, under this Formula, *Hymen o Hymenæe.*

The Poets generally give this Deity a Chaplet of Roſes; and repreſent him as it were diſſolv'd and enervated with Pleaſures; dreſs'd in a yellow Robe, and Shoes of the ſame Colour; with a Torch in his Hand.---*Catullus*, in one of his Epigrams, addreſſes him thus:

Cinge tempora floribus,
Suave olentis Amaraci.

It was for this Reaſon, that the new marry'd Couple bore Garlands of Flowers on the Wedding-Day: Which Cuſtom alſo obtain'd among the *Hebrews*; and even among the Chriſtians, during the firſt Ages of the Church, as appears from *Tertullian*, *de Corona Militari*, where he ſays, *Coronant & Nuptæ Sponſos.*---S. *Chryſoſtom* likewiſe mentions theſe Crowns of Flowers; and to this Day the *Greeks* call Marriage στεφανωμα, in reſpect of this Crown or Garland. See CROWN and GARLAND.

HYMEN, in Anatomy, is a thin Membrane or Skin, reſembling a Piece of fine Parchment, ſuppos'd to be ſtretch'd in the Neck of the Womb of Virgins, below the Nymphæ; and to be broke when they are deflower'd; an Effuſion of Blood following the Breach. See DEFLORATION and VIRGIN.

The *Hymen* is generally look'd upon as the Teſt of Virginity; and when broke, or withdrawn, ſhews, that the Perſon is not in a State of Innocence.---This Notion is very ancient. Among the *Hebrews*, it was the Cuſtom for the Parents to ſave the Blood ſhed on this Occaſion, as a Token of the Virginity of their Daughter; and to ſend the Sheets, next Day, to the Husband's Relations. And the like is ſaid to be ſtill

practis'd

practis'd in *Portugal*, and ſome other Countries. See VIRGINITY.

And yet Authors are not agreed as to the Exiſtence of ſuch *Hymen*. Nothing, Dr. *Drake* obſerves, has employ'd the Curioſity of Anatomiſts, in diſſecting the Organs of Generation in Women, more than this Part: They differ not only as to its Figure, Subſtance, Place, Perforation, but even its Reality; ſome poſitively affirming, and others flatly denying it.

De Graaf himſelf, the moſt accurate Inquirer into the Structure of theſe Organs, confeſſes, he always ſought it in vain, tho' in the moſt unſuſpected Subjects and Ages: All he cou'd find, was a different Degree of Streightneſs or Wideneſs; and different Corrugations, which were greater or leſs according to the reſpective Ages; the Aperture being ſtill the leſs, and the Rugoſities the greater, as the Subject was younger, and more untouch'd.

Dr. *Drake*, on the other Hand, declares, that in all the Subjects he had had Opportunity to examine, he does not remember to have miſs'd the *Hymen* ſo much as once, where he had reaſon to depend on finding it. The faireſt View he ever had of it, was in a Maid who dy'd at 30 Years of Age: In this, he found it a Membrane of ſome Strength furniſh'd with fleſhy Fibres, in Figure round, and perforated in the Middle with a ſmall Hole capable of admitting the End of a Woman's little Finger, ſituate a little above the Orifice of the urinary Paſſage, at the Entrance of the Vagina of the Womb.

In Infants, it is a fine thin Membrane, not very conſpicuous, becauſe of the natural Streightneſs of the Paſſage itſelf, which does not admit of any great Expanſion in ſo little a Room; which might lead *de Graaf* into a Notion of its being no more than a Corrugation.

This Membrane, like moſt others, does probably grow more diſtinct, as well as firm, by Age. That it is ſometimes very ſtrong and impervious, may be collected from the Hiſtory of a Caſe reported by Mr. *Cowper*: In a marry'd Woman, 20 Years of Age, the *Hymen* was found altogether impervious, ſo as to detain the Menſes, and to be driven out by the Preſſure thereof, beyond the Labia of the Pudendum, not unlike a Prolapſus of the Uterus. On dividing it, at leaſt a Gallon of grumous Blood came forth. It ſeems the Husband, being deny'd a Paſſage that Way, had found another thro' the Meatus Urinarius, which was found very open, and its Sides extruded like the Anus of a Cock. See MEATUS.

Upon a Rupture of the *Hymen*, its Parts ſhrinking up, are ſuppos'd to form thoſe little fleſhy Knots, call'd *Carunculæ Myrtiformes*. See MYRTIFORMES *Carunculæ*.

HYMEN is alſo us'd by Botaniſts for a fine delicate Skin, wherewith Flowers are incloſ'd while in the Bud, and which burſts as the Flower blows or opens. See BUD.

The *Hymen* is particularly us'd in ſpeaking of Roſes.

HYMN, a Song or Ode in Honour of God; or, a Poem proper to be ſung, compos'd in Honour of ſome Deity. See SONG and ODE.

The *Hymns* or Odes of the Ancients generally conſiſted of three Stanzas or Couplets; the firſt call'd *Strophe*; the ſecond, *Antiſtrophe*; and the laſt *Epode*. See STROPHE, ANTISTROPHE, and EPODE.

The Word is form'd of the *Greek*, ὕμνος, *Hymn*, of the Verb ὑδω, *celebro*, I celebrate. — *Iſidore*, on this Word, remarks, that *Hymn* is properly a Song of Joy, full of the Praiſes of God; by which, according to him, it is diſtinguiſh'd from *Threna*, which is a mourning Song, full of Lamentation. See THRENA.

St. *Hilary*, Biſhop of *Poictiers*, is ſaid to have been the firſt that compos'd *Hymns* to be ſung in Churches: He was follow'd by St. *Ambroſe*. Moſt of thoſe in the *Roman* Breviary were compos'd by *Prudentius*. They have been tranſlated into *French* Verſe by the Meſſieurs *de Port Royal*. See PSALM.

The *Te Deum* is alſo commonly call'd a *Hymn*, tho' it be not in Verſe; ſo is the *Gloria in excelſis*. See TE DEUM and GLORIA *in excelſis*.

In the *Greek* Liturgy, there are four Kinds of *Hymns*; but then the Word is not taken in the Senſe of a Praiſe offer'd in Verſe, but ſimply of Laud or Praiſe.---The Angelic *Hymn*, or *Gloria in excelſis*, makes the firſt Kind; the Triſagion the ſecond; the Cherubic *Hymn* the third; and the *Hymn* of Victory and Triumph, call'd ἐπινίκιος, the laſt. See TRISAGION.

HYOIDES, in Anatomy.---The *Os Hyoides*, call'd alſo *Bicorne*, is a Bone ſituate at the Root of the Tongue, making, as it were, the Baſis or Foundation thereof. See TONGUE.

It is thus call'd from its imperfect Reſemblance of the *Greek* Upſilon υ; the Word being form'd of υ and εἶδος, Form; for which Reaſon it is alſo call'd *Ypſiloides* and *Hypſiloides*.

It generally conſiſts, in Adults, of three little Bones; and in Children of five or ſix. The middle Bone of the three, which is the ſhorteſt and broadeſt, is call'd the *Baſis*, and the two Side Bones *Cornua* or *Horns*; whence alſo the Appellations *Bicorne* and *Ceratoides*.

The Baſis of the *Hyoides* is about a Thumb's Breadth long on the outer Side, which is convex; the inner being concave. It is half a Finger broad, and has a ſmall Protuberance in the Middle. The Cornua are an Inch and half long, and broader at Bottom than at the Extremes, which are about two Inches aſunder.

It has two cartilaginous Proceſſes, call'd *Cornicula*, faſten'd about the Juncture of its Cornua with the Baſis. They are ty'd to the Proceſſus Styloides by long ſlender Ligaments; tho' ſometimes between them and the Styloides there is found a ſmall Muſcle, beſide the *Styloceratohyoideus*.

The Baſis of this Bone lies, as it were, on the Head of the Larynx; and its Horns are faſten'd by Ligaments to the upper Proceſſes of the *Cartilago Scutiformis*, and Styloides. See LARYNX, SCUTIFORMIS, &c.

It is mov'd by five Pair of Muſcles, *viz.* the *Sternohyoideum*, the *Coracohyoides*, the *Mylohyoideum*, *Geniohyoideum*, and *Stylohyoideum*. See each under its proper Article STERNOHYOIDEUM, CORACOHYOIDES, &c.

HYOTHYROIDES, in Anatomy, a Pair of Muſcles of the Larynx. See LARYNX.

They riſe from the anterior Part of the Os Hyoides, and are inſerted into the Cartilago Thyroides.---They ſerve as Antagoniſts to the Sternothyroides; and lift up the Thyroid Cartilage.

The Word is compounded of *Hyoides* and *Thyroides*. See THYROIDES, &c.

HYPALLAGE, or *Immutation*, a Grammatical Figure, whereby, of different Expreſſions which give the ſame Idea, we make Choice of that which is leaſt us'd; or, when there is a mutual Permutation or Change of Caſes, Moods, Regimens, &c. See FIGURE.

As, in this Inſtance, *Dare Claſſibus Auſtros*, inſtead of *Dare Claſſes Auſtris*.

The Word is *Greek*, ὑπαλλαγὴ, form'd of ὑπαλλαττω, I change; compos'd of ὑπω and ἀλλαττω, I change; of ἀλλος, *alter*, another.

HYPAPANTE, or HYPANTE, a Name which the *Greeks* give to the Feaſt of the Purification of the Holy Virgin; or the Preſentation of Jeſus in the Temple. See PURIFICATION.

The Word literally expreſſes *meeting*; by reaſon of the Meeting of old *Simeon* and *Anna* the Propheteſs in the Temple, at the Time the Child Jeſus was brought thither.

The Words *Hypante* and *Hypapante* are *Greek*, ὑπάντη and ὑπαπάντη, which properly ſignify humble and lowly Meeting; being compounded of ὑπὸ, under, beneath, and ἀντάω, I meet, of ἀντὶ, *contra*, againſt.

HYPER, a *Greek* Word, us'd in the Compoſition of divers Terms deriv'd from that Language.

The *Greek* Prepoſition, ὑπὲρ, *hyper*, literally ſignifies above, beyond; and, in Compoſition, expreſſes ſome Exceſs, or ſomething beyond the Signification of the ſimple Word it is join'd with. --- Hence,

HYPERBATON, in Grammar and Rhetoric, a Tranſpoſition; or, a figurative Conſtruction, inverting the natural and proper Order of the Terms of a Diſcourſe. See TRANSPOSITION.

The *Hyperbaton*, *Longinus* obſerves, is no other than a Tranſpoſal of Sentiments or Words out of the natural Order and Method of Diſcourſe; and always implies great Violence or Strength of Paſſion, which naturally hurries a Man out of himſelf, and diſtracts him variouſly.---*Thucydides* is moſt liberal in *Hyperbatons*.

Quintilian calls the *Hyperbaton*, *Verbi tranſgreſſio*. --- It is of uſe to enliven and animate the Diſcourſe: It is very proper to expreſs a violent Paſſion, and repreſent an Agitation of Mind in the livelieſt Manner.

The Word is deriv'd of the *Greek*, ὑπερβαίνω, *tranſgredior*, I go beyond; form'd of ὑπερ, *ultra*, beyond, and βαίνω, *eo*, I go.

HYPERBOLA, in Geometry, one of the Curve Lines, form'd by the Section of a Cone. See CONIC *Section*.

The *Hyperbola* ariſes when the Plane that cuts the Cone is not parallel to one of its Sides, as it is in the *Parabola*; but diverges from it outwards, not inward, as in the *Ellipſis*. See PARABOLA and ELLIPSIS.

Thus: If the Cone ABC (Tab. Conicks, Fig. 27.) be ſo cut, as that the Axis of the Section DQ continu'd, concur with the Side of the Cone AC, continu'd to E; the Curve ariſing from this Section is an *Hyperbola*. See CONE.

Some Authors define the *Hyperbola* to be a Section of the Cone, by a Plane parallel to its Axis. But this Definition is faulty: For tho' it be true that ſuch a Section really deſcribes a *Hyperbola*; yet it is likewiſe true, that a thouſand others may be deſcrib'd where the Plane is not parallel to the Axis, and which of Conſequence are not included in the Definition.

Authors ſometimes call the Plane terminated by this Curve, by *Hyperbola*; and in reſpect hereof, call the Curve itſelf the *Hyperbolic Line*.

A *Hyperbola* may be defin'd, with reſpect to its Properties, to be a Curve Line, wherein the Square of the Semi-ordinate is to the Rectangle of the Abſciſs into a right Line compounded

pounded of the ſame Abſciſs, and a given right Line call'd the Tranſverſe Axis, as another given right Line, call'd the Parameter of the Axis, is to the Tranſverſe Axis: Or, it is a Curve Line, wherein $ay^2 = abx + bxx$, that is, $b : a = y^2 : ax + x^2$.

In the *Hyperbola*, a mean Proportional between the tranſverſe Axis and Parameter, is call'd the *Conjugate Axis*: And if the Tranſverſe Axis AB (Tab. Conicks, Fig. 27.) be join'd directly to the Axis AX, and be biſſected in C; the Point C is call'd the *Centre of the Hyperbola*. See Axis and Centre.

If a right Line DE paſs thro' the Vertex A, (Fig. 20.) parallel to the Ordinates *Mm*, it is a *Tangent to the Hyperbola* in A. See Tangent.

If a right Line DE be drawn thro' the Vertex A of an *Hyperbola*, parallel to the Ordinates *Mm*, and be equal to the Conjugate Axis, *viz.* the Parts DA and AE equal to the Semi-axis; and right Lines CF and CG be drawn from the Centre C thro' D and E; thoſe Lines are call'd *Aſſymptotes of the Hyperbola*. See Assymptotes.

The Square of the right Line CI or AI, is call'd the *Power of the Hyberbola*. See Power.

Properties of the Hyperbola.

In the *Hyberbola*, the Squares of the Semi-ordinates are to each other, as Rectangles of the Abſciſs into a certain right Line compos'd of the Abſciſs and Tranſverſe Axis. --- Hence, as the Abſciſſes x increaſe, the Rectangles $ax + x^2$, and, conſequently, the Squares of the Semi-ordinates y^2, and therefore the Semi-ordinates themſelves, increaſe. The *Hyperbola*, therefore, continually recedes from its Axis.

2°. The Square of the Conjugate Axis, is to the Square of the Tranſverſe, as the Parameter, to the Tranſverſe Axis. --- And hence, ſince $b : a :: PM^2 : AP.PB$, the Square of the Conjugate Axis, is to the Square of the Tranſverſe; as the Square of the Semi-ordinate is to the Rectangle of the Abſciſs into a Line compos'd of the Abſciſs and Tranſverſe Axis.

3°. *To deſcribe an Hyperbola*, in a continu'd Motion; the Tranſverſe Axis, and the Diſtance from the Vertex being given. In the two Foci F and *f*, (Fig. 28.) fix two Nails or Pins; and to one of them, in F, tye a Thread FMC, faſtening the other End C to the Ruler C*f*, which exceeds the ſame by the Tranſverſe Axis AB. The other End of the Ruler being perforated, put it on the Pin *f*; and fixing a Style to the Thread, move the Ruler. Thus will the Style trace out an *Hyperbola*.

Again, with the ſame Data, any Number of Points in an *Hyperbola* are eaſily found, which may be connected into an *Hyperbola*. Thus, from the Focus *f*, with any Interval greater than AB, deſcribe an Arch; and making $fb = AB$; with the remaining Interval *bm*, from the Point F, draw another Arch interſecting the former in *m*: For, as $fm - Fm = AB$; *m* is a Point in the *Hyperbola*. And ſo of the reſt.

4°. If in an *Hyperbola*, the Semi-ordinate PM, Fig. 20. be produc'd till it meet the Aſymptote in R; the Difference of the Squares of PM and PR is equal to the Square of the Conjugate Semi-axis DA.---Hence, as the Semi-ordinate PM increaſes, the right Line PR decreaſes, and conſequently MR; and therefore the *Hyperbola* itſelf approaches nearer to the Aſymptote; but it can never abſolutely meet it, becauſe, as $PR^2 - PM^2 = DA^2$; it is impoſſible $PR^2 - PM^2 - PM^2$ ſhould ever become $= 0$.

5°. In an *Hyperbola*, the Rectangle of MR and M*r*, is equal to the Difference of the Squares PR^2 and PM^2. --- And hence, the ſame Rectangle is equal to the Square of the Conjugate Semi-axis DA; and conſequently all Rectangles form'd in the ſame Manner are equal.

6°. If *qm* be parallel to the Aſymptote CF, the Rectangle of *qm* into C*q* is equal to the Power of the *Hyperbola*. --- And hence, 1°. If we make $CI = AI = a$, $Cq = x$, and $qm = y$, we ſhall have $a^2 = xy$; which is the Equation expreſſing the Nature of the *Hyperbola* within its Aſymptotes. 2°. The Aſymptotes therefore being given in Poſition, and the Side of the Power of CI or AI; if in one of the Aſymptotes CG, you take any Number of Abſciſſes; ſo many Semi-ordinates will be found, and by them any Number of Points in an *Hyperbola* will be determin'd by finding third Proportionals to the Abſciſs, and the Side of the Power CI. --- 3°. If the Abſciſſes be not computed from the Centre C, but from ſome other Point L; and CL be ſuppos'd $= b$; we ſhall have $Cq = b + x$; and conſequently $a^2 = by + xy$.

7°. In the *Hyperbola*, as the Tranſverſe Axis is to the Parameter; ſo is the Aggregate of the Tranſverſe Semi-axis and Abſciſs, to the Subnormal: And as the Aggregate of the Tranſverſe Semi-axis and Abſciſs is to the Abſciſs; ſo is the Aggregate of the entire Tranſverſe Axis and Abſciſs to the Subtangent. See Subnormal and Subtangent.

8°. If within the Aſymptotes of an *Hyperbola*, from a Point thereof, *m*, (Fig. 29.) be drawn two right Lines H*m* and *m*K, and other two LN and NO, parallel to the ſame; H*m*, *m*K = LN, NO. And the ſame will hold, if you draw LN*o* parallel to the right Line thus drawn H*mk*, *viz.* in this Caſe likewiſe $Hm.mk = LN.No$. --- Conſequently, all Rectangles form'd after this Manner of right Lines drawn parallel either to the ſame Line H*k*, or to two, H*m* and *m*K, are equal to each other.

9°. If a right Line H*k*, be drawn in any Manner between the Aſymptotes of an *Hyperbola*; the Segments HE and *m*K intercepted on each Side between the *Hyperbola* and Aſymptotes are equal. --- And hence, if $Em = o$; the right Line H*k* is a Tangent to the *Hyperbola*: Conſequently, the Tangent FD intercepted between the Aſymptotes, is biſſected in the Point of Contact V. Laſtly, the Rectangle of the Segments H*m* and *mk*, parallel to the Tangent FD, is equal to the Square of half the Tangent DV.

10°. The Square of the Semi-ordinate in an *Hyperbola*, is to the Rectangle of the Abſciſs, and Aggregate of the Tranſverſe Diameter AB, (Fig. 30.) and Abſciſs AP, as the Square of the Conjugate Semi-diameter AD, is to the Square of the Tranſverſe Semi-diameter CA. --- Hence, if you ſuppoſe AP x, and $2r^2 = AB = a$, you will have $v^2 r^2 = ax + x^2$; conſequently $y^2 = (c^2 ax + c^2 x^2) : \frac{1}{4} aa = \frac{4c^2 x}{a} + \frac{4c^2 x^2}{a^2}$. Make $4c^2 : a = b$; then will $y^2 = bx + bx^2 : a$. So that the ſame Equation defines the Nature of the *Hyperbola* in reſpect of its Diameter, as expreſſes it in reſpect of its Axis; and the Parameter is a third Proportional to the Conjugate Diameters DE and AB.

11°. If from the Vertex A, and any Point of a Parabola N, you draw AF and TN parallel to the Aſymptote CR; the Rectangle of TN into TC, will be equal to the Rectangle of FA into FC. --- Hence, if $TC = x$, $TN = y$; the Equation expreſſing the Nature of a *Hyperbola* within Aſymptotes, in reſpect of its Diameter, will be $xy = ab$.

12°. An Aſymptote being taken for a Diameter; divided into equal Parts, and thro' all the Diviſions, which form ſo many Abſciſſes continually increaſing equally, Ordinates to the Curve being drawn, parallel to the other Aſymptote; the Abſciſſes will repreſent an infinite Series of natural Numbers; and the correſponding *Hyperbolic* or Aſymptotic Spaces, will repreſent the Series of Logarithms of the ſame Numbers. See Logarithm and Logarithmic *Curve*.

Hence, different *Hyperbola's* will furniſh different Series of Logarithms to the ſame Series of natural Numbers; ſo that to determine any particular Series of Logarithms, choice muſt be made of ſome particular *Hyperbola*. --- Now, the moſt ſimple of all the *Hyperbola's* is the Equilateral one; *i. e.* whoſe Aſymptotes make a right Angle between them. This, M. *de Lagni* alledges in Favour of the Binary Arithmetic, as being the Reſult of ſuch Equilateral *Hyperbola*. See *Binary* Arithmetic.

For the Locus of an Hyperbola. See Locus.

For the Quadrature of an Hyperbola. See Quadrature.

Equilateral Hyperbola, is that wherein the Conjugate Axis AB (Fig. 20.) and DE are equal.

Properties of the Equilateral Hyperbola.

Since the Parameter is a third Proportional to the Conjugate Axis, it is alſo equal to the Axis.

Wherefore, if in the Equation $y^2 = bx + bx^2 : a$, you ſuppoſe $b = a$; the Equation $y^2 = ax + x^2$ will expreſs the Nature of the Equilateral *Hyperbola*.

And hence, the Squares of the Ordinates y^2 and z^2, are to each other as $ax + x^2$ and $av + v^2$: That is, as the Rectangles of the Abſciſſes into right Lines compos'd of the Abſciſs and Parameter.

If you ſuppoſe $CP = x$, $CA = r$, and $AP = x - r$, and $PB = r + x$. Conſequently $y^2 = x^2 - x^2$.

And ſince AE = CA; the Angle ACE will be half right; and conſequently the Angle of the Aſymptotes FCG a right Angle.

Infinite Hyperbola's, or Hyperbola's *of the higher Kinds*, are thoſe defin'd by the Equation $ay^m + ^n = bx^m (a + x)^n$. See Hyperboloides.

Hence, in infinite *Hyperbola's* $ay^m + ^n$, $av^m + ^n = bx^m (a + x)^n : bz^m (a + z)^n$: That is, $y^m + ^n : v^m + ^n = x^m (a + x)^n : z^m (a + z)^n$.

As the *Hyperbola* of the firſt Kind or Order has two Aſymptotes, that of the ſecond Kind or Order has three, that of the third, four, &c. See Asymptote, Curve, &c.

In reſpect of theſe, the *Hyperbola* of the firſt Kind, is call'd the *Apollonian* or *Conical Hyperbola*.

Apollonian Hyperbola is the common *Hyperbola*, or the *Hyperbola* of the firſt Kind: Thus call'd in Contradiſtinction to the *Hyperbola's* of the higher Kinds.

HYPERBOLE, in Rhetoric, a Figure, whereby the Truth and Reality of Things is exceſſively either enlarg'd or diminiſh'd.

As, He ran ſwifter than the Wind; He went ſlower than a Tortoiſe, &c.

The Character of an *Hyperbole* is to exaggerate or extenuate the Idea of the Thing ſpoke of, beyond the Bounds of Truth, or even Probability.

Hyperbole's, ſays *Seneca*, lye without deceiving; they lead the Mind to Truths by Fictions, they convey the Sentiment intended, by expreſſing it in Terms which render it incredible --- The *Hyperbole* promiſes too much, to make you conceive enough.

Ariſtotle obſerves, that *Hyperbole's* are the favourite Figures of young Authors, who love Exceſs and Exaggeration; ſo that Philoſophers ſhould not uſe them without a great deal of Reſerve.

The Pitch to which an *Hyperbole* may be carry'd, is a Point of great Delicacy: To carry it too far, is to deſtroy it: It is of the Nature of a Bow-ſtring, which, by immoderate Tenſion, ſlackens; and frequently has an Effect quite contrary to that intended. *Longinus*.

Thoſe *Hyperbole's* are beſt, which are latent, and are not taken for *Hyperbole's*. For this Reaſon, they ſhould ſcarce ever be us'd but in a Paſſion, and in the Middle of ſome important Incident: Such is the *Hyperbole* of *Herodotus*, ſpeaking of the *Lacedæmonians*, who fought at *Thermopylæ*, "They "defended themſelves, for ſome time, with the Arms that "were left them, and at laſt with their Hands and Teeth; "till the Barbarians, continually ſhooting, buried them, as "it were, with their Arrows." Now, what Likelihood is there that naked Men ſhould defend themſelves with their Hands and Teeth againſt armed Men; and that ſo many Perſons ſhould be buried under their Enemies Arrows? Yet does there appear ſome Probability in the Thing, by reaſon it is not ſought for the Sake of the Figure; but the *Hyperbole* ſeems to ariſe out of the Subject itſelf. *Id.*

Of the like Kind is that Paſſage of a Comic Poet mention'd by *Longinus*: He had Lands in the Country no larger than a *Lacedæmonian* Epiſtle. See LACONIC.

There are certain Manners of tempering the Harſhneſs of *Hyperbole's*, and giving them an Air of Probability. *Virgil* ſays, That to ſee the Fleets of *Anthony* and *Auguſtus* at the Battel of *Actium*, one would have taken them for the *Cyclades* floating on the Water: And *Florus* ſpeaking of the Expedition wherewith the *Romans* built a Number of Veſſels in the firſt *Punic* War, ſays, It ſeem'd, not that the Ships were built by Workmen, but that the Trees were transform'd into Ships by the Gods. They do not ſay that the Ships were floating Iſlands; nor that the Trees were metamorphoſed into Ships; but only that one might have taken them to be ſo. This Precaution ſerves as a Kind of Paſſport to the *Hyperbole*, if we may be allow'd the Phraſe, and makes it go down even in Proſe: For what is excus'd before 'tis ſaid, is always heard favourably, how incredible ſoever it be. *Bouhours*.

The Word is *Greek*, ὑπερβολη, *ſuperlatio*, form'd of the Verb ὑπερβάλλειν, *exſuperare*, to exceed, ſurpaſs by far.

HYPERBOLIC, ſomething relating either to an *Hyperbole*, or an *Hyperbola*. See HYPERBOLA and HYPERBOLE.

Thus we ſay, an *Hyperbolic* Expreſſion; an *Hyperbolic* Image, &c.

HYPERBOLIC *Line* is us'd by ſome Authors for what we call the *Hyperbola* itſelf.

In their Senſe, the plane Surface terminated by the Curve Line, is call'd the *Hyperbola*; and the Curve Line that terminates it, the *Hyperbolic Line*.

HYPERBOLIC *Leg* of a Curve, is that which approaches infinitely near to ſome Aſymptote.

Sir *Iſ. Newton* reduces all Curves, both of the firſt and of the higher Kinds, into thoſe with *Hyperbolic Legs*, and thoſe with Parabolic ones. See CURVE.

HYPERBOLIC *Conoid*. See CONOID.

HYPERBOLIC *Solid*. See CUBATURE.

HYPERBOLIC *Mirrour*. See MIRROR.

HYPERBOLICAL *Cylindroid*, is a ſolid Figure, whoſe Generation is given by Sir *Chriſtopher Wren*, in the *Philoſophical Tranſactions*.

Two oppoſite *Hyperbola's* being join'd by the Tranſverſe Axis, and thro' the Centre a right Line being drawn at right Angles to that Axis; and about that, as an Axis, the *Hyperbola's* being ſuppos'd to revolve; by ſuch Revolution, a Body will be generated, which is call'd the *Hyperbolic Cylindroid*, whoſe Baſes and all Sections parallel to them will be Circles. In a ſubſequent *Tranſaction*, the ſame Author applies the new Figure to the grinding of *Hyperbolical* Glaſſes; affirming, that they muſt be form'd this Way, or not at all. See MIRROR.

HYPERBOLI-FORM *Figures*, are ſuch Curves as approach, in their Properties, to the Nature of the *Hyperbola*; call'd alſo *Hyperboloids*.

HYPERBOLOIDES, are *Hyperbola's* of the higher Kind, wherein $m > 1$ and $n > 1$. *e.gr.* $ay^3 = bx^2(a+x)$.

HYPERBOREAN, in the ancient Geography.---The Ancients denominated thoſe People and Places *Hyperborean*, which were to the Northward of the *Scythians*. They had but very little Acquaintance with theſe *Hyperborean* Regions; and all they tell us of them is very precarious, much of it falſe.

Diodorus Siculus ſays, the *Hyperboreans* were thus call'd by reaſon they dwelt beyond the Wind *Boreas*; ὑπὲρ ſignifying above or beyond, and βορέης, *Boreas*, the North Wind. This Etymology is very natural and plauſible; notwithſtanding all that *Rudbecks* has ſaid againſt it, who would have the Word to be originally *Gothic*, and to ſignify Nobility. See BOREAS.

Herodotus doubts, whether or no there were any ſuch Thing as *Hyperborean* Nations. *Strabo*, who profeſſes that he believes there are, does not take *Hyperborean* to ſignify *beyond Boreas* or the North, as *Herodotus* underſtood it: The Prepoſition ὑπὲρ, in this Caſe, he ſuppoſes only to help form a Superlative; ſo that *Hyperborean*, on his Principle, means no more than *moſt Northern*: So that it appears the Ancients ſcarce knew themſelves what the Name meant.

HYPERCATALECTIC, in the *Greek* and *Latin* Poetry, is apply'd to Verſes which have one or two Syllables too much; or beyond the Meaſure of regular Verſe. See VERSE.

The *Greek* and *Latin* Verſes are diſtinguiſh'd, with reſpect to their Meaſure, into four Kinds: Acatalectic Verſes, where nothing is wanting at the End; Catalectic, which want a Syllable at the End; Brachicatalectic, which want a whole Foot at the End; and, laſtly, *Hypercatalectic*, which have one or two Syllables too many.---Theſe laſt are alſo call'd *Hypermeters*. See ACATALECTIC, CATALECTIC, &c.

The Word is *Greek*, compos'd of ὑπὲρ, over, beyond, and καταλήγω, I put to the Number, I add; ſo that *Hyper catalectic* denotes as much as *ſuper-added*.

HYPERCATHARSIS, in Medicine, *Super-purgation*; a too violent and exceſſive Purgation. See PURGE, PURGATION, and PURGATIVE.

The Word is compounded of the *Greek*, υπερ, *ſupra*, and καθαιρω, I purge.

HYPERCRISIS, in Medicine, an immoderate critical Excretion. See CRISIS.

Thus, when a Fever terminates in a Looſeneſs, the Humours ſometimes flow off faſter than the Strength can bear, and are therefore to be check'd.---This is a *Hypercriſis*.

The Word is compounded of υπερ *ſupra*, and κεισις, *Criſis*, Judgment.

HYPERCRITIC, an over-rigid Cenſor, or Critic; one who will let nothing paſs, but animadverts ſeverely on the ſlighteſt Fault. See CRITICISM.

The Word is compounded of ὑπὲρ, *ſuper*, above, beyond, and κριτικὸς, of κριτὴς, *Judex*; of κρίνω, *Judico*, I judge.

HYPERDULIA, in the *Romiſh* Theology, is the Worſhip render'd to the Holy Virgin. See VIRGIN.

The Worſhip offer'd to Saints is call'd *Dulia*; and that to the Mother of God, *Hyperdulia*; as being ſuperior to the former. See WORSHIP.

The Word is *Greek*, ὑπερδουλεία, compos'd of ὑπὲρ, above, and δουλεια, Worſhip, Service.

HYPERMETER, in the ancient Poetry, the ſame with *Hypercatalectic*. See HYPERCATALECTIC.

The Word is compos'd of ὑπὲρ, *ſuper*, and μετρον, Meaſure.

HYPERTHYRON, in the ancient Architecture, a Sort of Table, us'd after the manner of a Frieze, over the Jambs of Doric Doors and Gates, and the Lintels of Windows. It lies immediately under the Corona; and is by our Workmen uſually call'd the *King-piece*. See DOOR, WINDOW, &c.

The Word is form'd of ὑπὲρ, *ſuper*, over, and θύρα, *janua*, Gate.

HYPERSARCOSIS, in Medicine and Chirurgery, an Exceſs of Fleſh; or rather, a fleſhy Excreſcence, ſuch as thoſe generally ariſing on the Lips of Wounds, &c. See EXCRESCENCE, WOUND, FUNGOUS, &c.

HYPÆTHROS, HYPÆTHRON, HYPETHRE, HYPÆTROS, in the ancient Architecture, a Kind of Temple, open a-top, and thereby expos'd to the Air. See TEMPLE.

The *Hypethron*, according to *Vitruvius*, is any open Building or Portico, ſuch as anciently were certain Temples that had no Roof or Covering. --- Of this we have an Inſtance in the Temple of *Jupiter Olympius*, built by *Coſſatius*, a *Roman* Architect, at *Athens*.

Of *Hypæthrons*, ſome were Decaſtyle, others Picnoſtyle. But they had all Rows of Columns within-ſide, forming a kind of Periſtyle; which was eſſential to this Sort of Temple. See PERISTYLE.

The Word is form'd of ὑπὸ, *ſub*, under, and ἀὴρ, Air.

HYPHEN, an Accent or Character in Grammar, which implies, that two Words are to be join'd or connected into one Compound Word. --- As, Male-Sanus, Male-Administration. See ACCENT, CHARACTER, &c.

HYPNOTICK, in Medicine, a Remedy which promotes or induces Sleep; call'd alſo *Soporific*, *Opiate*, &c. See SOPORIFIC, OPIATES, &c.

The Word comes from the *Greek* υπνος, *ſomnus*, Sleep.

HYPO, a *Greek* Particle, retain'd in the Compoſition of divers Words borrow'd from that Language.

The *Greek* Prepoſition ὑπὸ, *Hypo*, literally denotes *under*, *beneath*: In which Senſe it ſtands oppos'd to ὑπερ, *ſuper*, above.

HYPOBOLE, in Rhetoric, a Figure whereby we anſwer before-hand, to what we apprehend the Adverſary will object.

The Word comes from the *Greek*, ὑπὸ, and βάλλω, *jacio*, I caſt.

HYPOCATHARSIS, in Medicine, a too faint or feeble Purgation. See PURGATION.

The Word is compounded of υπο, *ſub*, under, and καθαιρω, I purge.

HYPOCAUSTUM, among the *Greeks* and *Romans*, was a ſubterraneous Place, wherein was a Furnace that ſerv'd to heat the Baths. --- *Vitruvius* calls it *Caldarium*. See BATH, &c.

The Ancients had properly two Sorts of *Hypocauſta*; the one call'd by *Cicero Vaporarium*, and by others *Laconicum* or *Sudatio*; which was a large ſweating Bath, in which were three brazen Veſſels, call'd *Caldarium*, *Tepidarium*, and *Frigidarium*, according to the Water contain'd therein.

The other Sort of *Hypocauſtum*, was a Sort of *Fornax* or Kiln to heat their Winter Parlours, *Cœnatiunculæ Hybernæ*.

The latter *Hypocauſtum* was call'd *Alveus* and *Fornax*; and the Man that tended the Fire *Fornacator*.

The *Hypocauſtum* among the Moderns, is that Part or Place where the Fire is kept that warms a Stove or Hothouſe. See STOVE.

The Word is *Greek*, ὑποκαύστον, form'd of the Prepoſition ὑπὸ, *ſub*, under, and the Verb καίω, *incendo*, I burn.

HYPOCHYMA, or HYPOCHYSIS, in Medicine, a Diſeaſe of the Eyes, popularly call'd *Cataracts*. See CATARACT.

The Word is *Greek*, ὑπόχυμα, which literally denotes ſhedding, Effuſion, or pouring out; the Diſeaſe having formerly been ſuppos'd to ariſe from an Effuſion of ſome viſcid Humour upon the Pupil.

HYPOCHYSIS, in Medicine. See HYPOCHYMA.

HYPOCISTIS, in Medicine, a Juice, us'd in the Compoſition of Treacle, &c. See TREACLE, &c.

The *Hypociſtis* is the Juice, of a Shoot of the ſame Name, ſprouting out from the Foot of a kind of Ciſtus Tree, call'd *Laudanum*; common enough in the hot Countries. See LAUDANUM.

The Shoot grows about a Foot high; and one, two, or three Inches thick; ſomewhat bigger at Top than at Bottom; ſoft, ſucculent, of a yelloviſh Colour, and ſurrounded from Space to Space with a Sort of Rings, or browniſh Knots.

When gather'd, they pound it in a Mortar, and expreſs the Juice: That done, they evaporate it on the Fire till it come to the Conſiſtence of a hard blackiſh Extract, like *Spaniſh* Liquorice. Then they make it up into little Cakes for Carriage.

It is of a tart aſtringent Taſte, and us'd to ſtop Fluxes of the Belly, Vomitings, and Hemorrhages; tho' anciently much more than at preſent. It is alſo an Ingredient in Treacle, and ſome Unguents.

It is ſometimes us'd as a Subſtitute to Acacia.---Dr. *Quincy* ſays, it is the more powerful of the two. See ACACIA.

The Word is *Greek*, form'd of ὑπὸ, under, and κίστος, *Ciſtus*.

HYPOCONDRIA, or HYPOCHONDRIA, in Anatomy, a Space on each Side the Epigaſtric Region, or upper Part of the lower Belly. See ABDOMEN and EPIGASTRIC.

The *Hypocondria* compoſe the upper Part of the Epigaſtrium. They are ſituate on each Side, between the Cartilago Enſiformis, and the Cartilages of the Ribs, and the Tip of the Breaſt; and are divided, with reſpect to their Situation, into *Right* and *Left*.

In the *Right Hypocondrium* the Liver is found; and in the *Left* the Spleen, and a great Part of the Stomach. See LIVER, SPLEEN, &c.

Hippocrates ſometimes uſes the Word *Hypocondrium* for the whole lower Venter or Belly. See VENTER.

The *Hypocondria* are ſubject to divers Diſorders. See HYPOCONDRIAC *Diſeaſe*.

The Word is compos'd of the Prepoſition ὑπὸ, *ſub*, under, and χόνδρος, Cartilage; *q. d. Cartilagini Subjacens*, or under the Cartilages of the Ribs, &c. See CARTILAGE.

HYPOCONDRIAC *Diſeaſe*, *Affection*, or *Paſſion*, is the ſame with what we popularly call the *Spleen*, *Vapours*, &c. See DISEASE.

The *Hypocondriac* is a very comprehenſive Diſeaſe: It is variouſly denominated, according to the various Symptoms it is attended with, and the various Parts where it is ſuppos'd to be ſeated, or in which it ariſes.

When conceiv'd as ſituate in the *Hypocondriac* Regions, or ariſing from ſome Diſorder of the Parts contain'd therein, *viz.* the Spleen, Liver, &c. it is properly call'd the *Hypocondriacal Diſeaſe*, *Spleen*, &c.

When conceiv'd as owing to ſome Diſorder of the Womb, it is call'd *Hyſteric Affection*, &c. See HYSTERIC.

And laſtly, when the flatulent Rumblings in the Inteſtines, Belches, &c. are conſider'd, it is call'd the *Vapours*. See VAPOURS.

The *Hypocondriac* is a very common and obſtinate Diſeaſe: Few Men of a ſedentary Life, and fewer Women, are free from it: Its Symptoms are very numerous: The moſt uſual, are a Pain in the Stomach, Windineſs, Vomitings, a Swelling or Diſtenſion of the *Hypocondrium's* or upper Part of the Belly, Noiſes and Rumblings in the lower Venter, wandering Pains, a Conſtriction of the Breaſt, Difficulty of Breathing, Palpitation of the Heart, Faintings, Vigiliæ, Inquietudes, Swimming of the Head, Fear, Suſpicions, Melancholy, Deliriums, &c. Not that all theſe Accidents befal every Perſon ſeiz'd with this Diſeaſe; but ſometimes ſome of them, and at other Times others, according to the Conſtitution, &c. of the Patient.

In effect, the *Hypocondriacal* is a very vague, indeterminate Sort of Diſorder. Dr. *Sydenham* obſerves, that its Symptoms ape or emulate thoſe of moſt other Diſeaſes; and that whatever Part it is in, it produces ſomewhat like the common Diſeaſes of that Part.---Thus, in the Head, it produces a Sort of Apoplexy; Fits like the Epilepſy, call'd *Hyſteric* Fits; intolerable Head-ach, &c. In Perſons affected with the Chloroſis, it produces a Palpitation of the Heart; ſometimes, tho' rarely, it ſeizes the Lungs, and cauſes a continual dry Cough: It alſo imitates the Cholic, and Iliac Paſſion, and ſometimes the Stone, Jaundice, &c. In the Inteſtines it produces a Diarrhæa; in the Stomach, Nauſeas: Sometimes it ſeizes the external Parts, and particularly the Back, which it renders chilly and painful; and the Legs and Thighs, which it ſwells ſo as to reſemble the Dropſy: Seizing the Teeth, it reſembles the Scurvy (indeed, *Etmuller* makes the Scurvy itſelf to be only a great Degree of this Diſeaſe). Laſtly, which is the moſt unhappy Circumſtance of all, the Patient is more affected in Mind than in Body.

The Seat of this Diſeaſe is commonly ſuppos'd to be in the Animal Spirits, and the nervous Syſtem. Its Cauſe is referr'd to an acid Salt abounding in the Maſs of Blood; to which the ill Diſpoſition of the Stomach, and the other Parts contain'd in the Epigaſtrium, may greatly contribute. *Purcell* aſſigns Crudities and Indigeſtions as the prime Cauſe. According to *Sydenham*, vehement Motions of the Body, or more uſually violent Perturbations of the Mind, as Grief, Anger, Fear, &c. are its procatarctic Cauſes.

For the Cure, the principal Indication is to purify and ſtrengthen the Blood, which is to be effected, after proper Evacuations, by Chalybeats, Bitters, Strengthners, and Volatile Spirits. The Cortex has alſo notable Virtues in this Diſeaſe; as alſo a Milk Diet. Riding is admirable. *Sydenham*.

HYPOCONDRIACAL *Medicines*, are Remedies proper in the *Hypocondriac Diſeaſe*.

Such are all thoſe which tend to purify the Blood, Humours, and Spirits; as Chervil, Balm, Agrimony, and the other Cephalic and Cardiac Herbs: Such alſo are thoſe which purge Melancholy or Atrabilis, and thoſe which diſpel Wind and Vapours; and all Medicines good for Diſorders of the Nerves, particularly Vervain both Male and Female; but above all, frequent, gentle, Anodyne Purges.

HYPOCONDRIACAL *Regions*. See HYPOCONDRIA.

HYPOCRAS, or rather HIPPOCRAS, *Vinum Hippocraticum*, a kind of medicated Wine. See WINE.

Hypocras is a Drink or Beverage compos'd of Wine, with Spices and other Ingredients infus'd therein; much us'd among the *French* by Way of Dram after Meals.

There are various Kinds of *Hypocras*, according to the Kind of Wine, and the other additional Ingredients made uſe of; white *Hypocras*, red *Hypocras*, Claret *Hypocras*, Strawberry *Hypocras*, *Hypocras* without Wine, Cyder *Hypocras*, &c.

That directed in our College Diſpenſatory, is to be made of Cloves, Ginger, Cinnamon, and Nutmegs, beat, infus'd in Canary, with Sugar; to the Infuſion, Milk, a Lemon, and ſome Slips of Roſemary to be put, and the whole ſtrain'd thro' a Flannel.

It is recommended as a Cordial, good in Paralytic, Apoplectic, and all nervous Caſes.

Menage approves the Conjecture of thoſe who derive *Hypocras* from *Hyppocrates*, as ſuppoſing him the Inventor hereof. --- Others derive the Word from the *Greek* ὑπὸ and κεραννυμι, to mix.

HYPODROME. See HIPPODROME.

HYPOGÆUM,

HYPOGÆUM, in the ancient Architecture, a Name common to all the Parts of a Building that are under Ground; as the Cellars, Butteries, and the like Places.

The Word is form'd of the *Greek* ὑπό, under, and γαῖα, *Terra*, Earth.

HYPOGÆUM, ὑπόγαιον, in Aſtrology, is a Place under Ground, otherwiſe call'd the *Imum Cœli*.

HYPOGASTRIC *Region*. See HYPOGASTRIUM.

HYPOGASTRIC *Artery*, is an Artery ariſing from the Iliaca Interna, and diſtributed to the Bladder, the Rectum, and the Genital Parts, particularly in Women. See ARTERY.

HYPOGASTRIC *Vein* ariſes in the ſame Parts, and diſcharges itſelf into the Iliaca Interna. See VEIN.

HYPOGASTRIUM, in Anatomy, the lower Part of the Belly, or lower Venter; commencing from two or three Inches below the Navel, and extending to the Os Pubis. See VENTER and ABDOMEN.

The Word is *Greek*, form'd of ὑπό, *ſub*, under, and γαστὴρ, *Venter*, Belly.

HYPOGLOSSIS, or HYPOGLOTTIS, in Medicine, an Inflammation or Ulceration under the Tongue; call'd alſo *Ranula*. See RANULA.

HYPOGLOTTIS, in Anatomy, is a Name given to two Glands of the Tongue. See TONGUE.

There are four large Glands of the Tongue; two of them call'd *Hypoglottides*, ſituate under it, near the Venæ Ranulares; and two more on the two Sides of the Tongue. They all filtrate a kind of ſerous Matter, of the Nature of Saliva, which they diſcharge into the Mouth by little Ducts near the Gums.

The Word is *Greek*, compos'd of ὑπό, *ſub*, under, and γλῶτλα, *Lingua*, Tongue.

HYPOMOCHLION, in Mechanicks, the Fulcrum of a Lever; or the Point which ſuſtains its Preſſure, when employ'd either in raiſing or lowering Bodies. See LEVER.

The *Hypomochlion* is frequently a Roller ſet under the Lever; or under Stones, Pieces of Timber, &c. that they may be the more eaſily lifted up or remov'd.

The Word is *Greek*, form'd of ὑπὸ, *ſub*, under, and μοχλὸς, *Vectis*, Lever.

HYPOPYON, in Medicine, a Diſeaſe of the Eyes.---It conſiſts in a Collection of Pus, under or behind the Cornea; which ſometimes covers the whole Pupil, and obſtructs the Light. See EYE.

Some will have it the ſame with *Unguis*; but the more accurate make a Difference. See UNGUIS.

The *Hypopyon* ariſes from a Rupture of the Veſſels in the Uvea; occaſion'd either by ſome external Violence, or the Acrimony of the Blood therein.

'Tis very difficult of Cure. --- The Suppuration is to be prevented by proper Cataplaſms; or, if theſe have not Effect, is to be promoted. See SUPPURATION.

The Word is *Greek*, ὑπόπυον; form'd of ὑπὸ, *ſub*, under, and πυον, Pus.

HYPORCHEMA, in the *Greek* Poetry, a Poem compos'd in divers Kinds of Verſes, and of different Lengths. They were always very ſhort; and full of Pyrrhic Feet.

HYPOSPATISMUS, in the ancient Chirurgery. M. *Dionis* takes it to have been an Operation practis'd among the Ancients, by making three Inciſions in the Forehead, to the very Bone, about two Inches long; in order to cut or divide all the Veſſels between thoſe Inciſions. The Deſign of the Operation was to prevent Defluxions on the Eyes.

The Word comes from the *Greek*, ὑποσπασμὸς; form'd of ὑπὸ, under, and σπάσθη, *Spatula*; by reaſon after the Inciſions were made, they thruſt a Spatula all along between the Pericranium and the Fleſh.

HYPOSTASIS, a *Greek* Term, literally ſignifying *Subſiſtence*; uſed in Theology for *Perſon*.

Thus we hold, that there is but one Nature in God, and three *Hypoſtaſes*. See PERSON, TRINITY, &c.

The Word *Hypoſtaſis* is *Greek*, ὑπόστασις, *Subſiſtentia*; compounded of ὑπὸ, *ſub*, under, and ἵστημι, or στάω, *ſto*, *exiſto*, I ſtand, I exiſt.

The Term *Hypoſtaſis* is of a very ancient ſtanding in the Church. St. *Cyril* repeats it divers Times, as alſo the Phraſe *Union according to Hypoſtaſis*. The firſt Time it occurs in all Chriſtian Antiquity, is in a Letter of that Father to *Neſtorius*, where he uſes it inſtead of πρόσωπον, the Word we commonly render *Perſon*, which did not ſeem expreſſive enough. "The Philoſophers, ſays St. *Cyril*, have allow'd three *Hy-* "*poſtaſes*: They have extended the Divinity to three *Hy-* "*poſtaſes*: They have even ſometimes uſed the Word Tri- "nity: And nothing was wanting but to have admitted the "Conſubſtantiality of the three *Hypoſtaſes*, to ſhew the "Unity of the divine Nature, excluſive of all Triplicity "in reſpect of Diſtinction of Nature, and not to hold it "neceſſary to conceive any reſpective Inferiority of *Hy-* "*poſtaſes*."

This Term occaſion'd great Diſſentions in the ancient Church; firſt among the *Greeks*, and afterwards alſo among the *Latins*.

In the Council of *Nice*, *Hypoſtaſis* was defin'd to denote the ſame with *Eſſence* or *Subſtance*; ſo that it was Hereſy to ſay that Jeſus Chriſt was of a different *Hypoſtaſis* from the Father; but Cuſtom alter'd its Meaning. ---- In the Neceſſity they were under of expreſſing themſelves ſtrongly againſt the *Sabellians*, the *Greeks* made Choice of the Word *Hypoſtaſis*, and the *Latins* of *Perſona*; which Change prov'd the Occaſion of endleſs Diſagreement. Thoſe who took the Word *Hypoſtaſis* in its ancient Signification, could not bear to hear of three *Hypoſtaſes*, which, according to them, were ſo many divine Eſſences or Subſtances. And yet they who uſed the Word in the new Senſe againſt the *Sabellians*, all along declar'd, that they meant by it three Individuals, or three Subjects which ſubſiſt alike, and not three different Eſſences or Subſtances: So that in their Senſe, they admitted three *Hypoſtaſes* in one and the ſame Eſſence.

Others, by Eſſence, underſtood a common and indefinite Nature, as Humanity is to all Men in the general; and by *Hypoſtaſis*, a ſingle Nature, peculiar to each Individual, as each Man in particular is a Modification of the whole human Nature or Eſſence.---But this laſt Signification, which ſome attribute to St. *Baſil*, if apply'd to the Deity, would imply Tritheiſm: For if the three Perſons in the Trinity be three *Hypoſtaſes*, juſt as *Peter*, *James*, and *John* are, there are manifeſtly three Gods.

HYPOSTASIS, in Medicine, is the Sediment of the Urine, or that thick heavy Part of the Urine which ſubſides and ſettles at Bottom. See SEDIMENT. See alſo URINE.

HYPOSTATICAL, in Theology, is a Term uſed in ſpeaking of the Myſtery of the Incarnation.

The *Hypoſtatical Union*, is the Union of the human Nature with the Divine. See INCARNATION.

The Word was united *hypoſtatically* to the human Nature in the Perſon of Jeſus Chriſt.

HYPOSTATICAL *Principles*, among the Chymiſts, and particularly Paracelſiſts, are the three Chymical Elements, *Salt*, *Sulphur*, and *Mercury*; call'd alſo the *Tria prima*. See PRINCIPLE and ELEMENT.

HYPOTENAR, in Anatomy, the ſecond Muſcle of the little Finger. See MUSCLE and FINGER.

The *Hypotenar* ariſes from the little Bone of the Carpus, ſituate over the others, and is inſerted externally into the firſt Bone of the little Finger, which it ſerves to withdraw from the reſt.

The ſixth and laſt Muſcle of the Toes is alſo call'd *Hypotenar* or Abductor. See ABDUCTOR.

The Word is compounded of ὑπὸ, *ſub*, and *tenar*, a Muſcle of the Thumb. See TENAR.

HYPOTHECA, in the Civil Law, an Obligation, whereby the Effects of a Debtor are made over to his Creditor, to ſecure his Debt: The ſame with *Mortgage* in the Common Law. See MORTGAGE.

As the *Hypotheca* is an Engagement procur'd on Purpoſe for the Security of the Creditor, various Means have been made uſe of to ſecure to him the Benefit of the Convention. The Uſe of the Pawn or Pledge is the moſt ancient; which is almoſt the ſame Thing with the *Hypotheca*; all the Difference conſiſting in this, that the Pledge is put into the Creditor's Hands; whereas, in a ſimple *Hypotheca*, the Thing remain'd in the Poſſeſſion of the Debtor. It was found more eaſy and commodious to engage an Eſtate by a ſimple Covenant, than by an actual Delivery: Accordingly the Expedient was firſt practis'd among the *Greeks*; and from them the *Romans* borrow'd both the Name and the Thing; only the *Greeks*, the better to prevent Frauds, uſed to affix ſome viſible Mark on the Thing, that the Publick might know it was mortgag'd by the Proprietor: But the *Romans*, looking on ſuch Advertiſements as injurious to the Debtor, forbad the Uſe of them.

The *Roman* Lawyers diſtinguiſh'd four Kinds of *Hypotheca*'s: The *Conventional*, which was with the Will and Conſent of both Parties: The *Legal*, which was appointed by Law, and for that Reaſon call'd *Tacit*: The *Prætor*'s *Pledge*, when by the Flight or Non-appearing of the Debtor, the Creditor was put in Poſſeſſion of his Effects: And the *Judiciary*, when the Creditor was put in Poſſeſſion by Virtue of a Sentence of the Court.

The Conventional *Hypotheca* is ſub-divided into *general* and *ſpecial*. The *Hypotheca* is *general*, when all the Debtor's Effects, both preſent and future, are engag'd to the Creditor. It is *ſpecial*, when limited to one or more particular Things.

For the tacit *Hypotheca*, the Civilians reckon no leſs than 26 different Species thereof.

The Word comes from the *Greek*, ὑποθήκη, a Thing ſubject to ſome Obligation; of the Verb ὑποτίθεμαι, *ſupponor*, I am ſubjected; of τίθεμι, *pono*, I put.

HYPOTHENUSE, or HYPOTENUSE, in Geometry, is the longeſt Side of a right-angled Triangle; or that Side which

which ſubtends, or is oppoſite to, the right Angle. See TRIANGLE.

Thus, in the Triangle KML, (Tab. Geometry, Fig. 71.) the Side ML, oppoſite to the right Angle K, is call'd the *Hypothenuſe*.

'Tis a celebrated Problem in Geometry, that in every rectilinear right-angled Triangle, as KML; the Square of the *Hypothenuſe* ML, is equal to the Squares of both the other Sides, KL and KM.---This is particularly call'd the *Pythagorean* Problem, from its Inventor *Pythagoras*, who is ſaid to have ſacrific'd a Hecatomb to the Muſes, in Gratitude for their aſſiſting him therein. See PROBLEM, &c.

The Word is *Greek*, ὑποτείνουσα, *ſubtendens*, form'd of ὑποτείνω, *ſubtendo*, I ſubtend.

HYPOTHESIS, in Logic, is a Propoſition or Principle which we ſuppoſe, or take for granted, in order to draw Concluſions therefrom, for the Proof of a Point in Queſtion. See SUPPOSITION and PRINCIPLE.

In Diſputation, they frequently make falſe *Hypotheſes*, in order to draw their Antagoniſts into Abſurdities; and even in Geometry, Truths are deducible from ſuch falſe *Hypotheſes*. --- Thus, If the Sky ſhould fall, we ſhould catch Larks: The Conſequence is good, tho' drawn from a falſe *Hypotheſis*.

The Word is *Greek*, ὑπόθεσις, form'd of ὑπὸ, *ſub*, under, and θέσις, *poſitio*; of τίθημι, *pono*, I put.

Every Conditional or Hypothetical Propoſition, may be diſtinguiſh'd into *Hypotheſis* and Theſis: The firſt rehearſes the Conditions under which any Thing is affirm'd or deny'd; and the latter is the Thing itſelf affirm'd or deny'd. See HYPOTHETICAL.

Thus, in the Propoſition, a Triangle is half of a Parallelogram, if the Baſes and Altitudes of the two be equal: The latter Part is the *Hypotheſis*, if the Baſes, &c. and the former the Theſis, a Triangle is half a Parallelogram. See THESIS.

In ſtrict Logic, we are never to paſs from the *Hypotheſis* to the Theſis; that is, the Principle ſuppos'd muſt be prov'd to be true, e'er we require the Conſequence to be allow'd.

HYPOTHESIS, in Phyſicks, &c. is a kind of Syſtem, laid down from our own Imagination, whereby to account for ſome Phænomenon or Appearance of Nature. --- Thus we have *Hypotheſes* to account for the *Tides*, for *Gravity*, for *Magnetiſm*, for the *Deluge*, &c. See TIDES, GRAVITY, MAGNETISM, DELUGE, &c.

The real and ſcientific Cauſes of natural Things generally lie very deep: Obſervation and Experiment, the proper Means of arriving at them, are in moſt Caſes extremely ſlow; and the human Mind impatient: Hence we are frequently driven to feign or invent ſomething which may ſeem like the Cauſe, and which is calculated to anſwer the ſeveral Phænomena; ſo that it may poſſibly be the true Cauſe.

Philoſophers are divided as to the Uſe of ſuch Fictions or *Hypotheſes*, which are much leſs current now than formerly. --- The lateſt and beſt Writers are for excluding *Hypotheſes*, and ſtanding wholly on Obſervation and Experiment. See EXPERIMENTAL *Philoſophy*.

Whatever is not deduc'd from Phænomena, ſays Sir *Iſ. Newton*, is an *Hypotheſis*; and *Hypotheſes*, whether Metaphyſical, or Phyſical, or Mechanical, or of occult Qualities, have no Place in Experimental Philoſophy. *Phil. Nat. Prin. Math. in Calce*.

The *Carteſians* take upon them to ſuppoſe what Affections in the primary Particles of Matter they pleaſe; juſt what Figures, what Magnitudes, what Motions, and what Situations they find for their Purpoſe. --- They alſo feign certain unſeen, unknown Fluids, and endue them with the moſt arbitrary Properties; give them a Subtility which enables them to pervade the Pores of all Bodies, and make them agitated with the moſt unaccountable Motions. But is not this to ſet aſide the real Conſtitution of Things, and to ſubſtitute Dreams in their Place! Truth is ſcarce attainable even by the ſureſt Obſervations; and will fanciful Conjectures ever come at it? They who found their Speculations on *Hypotheſes*; even tho' they argue from them regularly according to the ſtricteſt Laws of Mechanicks, may be ſaid to compoſe an elegant and artful Fable; but 'tis ſtill only a Fable. *Cotes in præfat. ad Newton. Princip.*

HYPOTHESIS is particularly apply'd, in Aſtronomy, to the ſeveral Syſtems of the Heavens: Or the divers Manners wherein different Aſtronomers have ſuppos'd the heavenly Bodies to be rang'd, mov'd, &c. See SYSTEM.

The principal *Hypotheſes*, are the *Ptolomaic*, *Copernican*, and *Tychonic*. See PTOLOMAIC, COPERNICAN, TYCHONIC, &c.

The *Copernican* is now become ſo current, and is ſo well warranted by Obſervation; that the Retainers thereto, hold it injurious to call it an *Hypotheſis*.

HYPOTHETICAL *Propoſition*, is a Combination of two Categorical Propoſitions, the latter whereof follows from the former, which is diſtinguiſh'd by the Particle *if*. See PROPOSITION.

If he be a Man, he is an Animal: If the *Turk* ſleep, the Cock crows: If you repent, you ſhall be forgiven. See CONDITIONAL.

HYPOTRACHELION, in Medicine, is the lower Part of the Neck. See NECK.

It is thus call'd from ὑπὸ, *ſub*, under, and τράχηλος, *Collum*, Neck.

In Architecture, *Hypotrachelion* is uſed for a little Freeze in the *Tuſcan* and *Doric* Capital, between the Aſtragal and Annulets; call'd alſo *Colarin*, *Gorgerin*, &c. See COLARIN, &c.

It is alſo apply'd by ſome Authors in a more general Senſe, for the Neck of any Column; or that Part of the Capital thereof below the Aſtragal. See COLUMN and ASTRAGAL.

HYPOTYPOSIS, in Rhetoric, a Figure whereby a Thing is ſo livelily deſcrib'd or painted, that it does not ſeem to be read or heard, but actually ſeen, or preſented before the Eyes. See DESCRIPTION.

Such is that elegant one of *Cicero*, wherein he paints the Barbarity of *Verres*: *Ipſe Inflammatus ſcelere & furore in forum venit. Ardebant Oculi; toto ex ore crudelitas emanabat. Expectabant omnes quo tandem progreſſurus, aut quid nam acturus eſſet; cum repente Hominem corripi, atque in foro medio nudari ac deligari, & Virgas expedire jubet. Clamabat ille miſer ſe Civem eſſe Romanum*, &c.

The *Hypotypoſis* is frequently uſed by the Poets, and particularly *Virgil*, who abounds in Paintings.

The Word is *Greek*, ὑποτύπωσις, form'd of the Verb ὑποτυπόω, *per figuram demonſtro*, I ſhew, repreſent, or make any Thing be ſeen, of τύπτω, *Verbero*.

HYPOZOMA, in Anatomy, a Name given to ſuch Membranes as ſeparate two Cavities. See MEMBRANE.

In this Senſe, the Mediaſtinum is a *Hypozoma*.

HYPSILOGLOSSUS, in Anatomy. See BASIOGLOSSUS.

HYPSILOIDES, in Anatomy. See HYOIDES.

HYPSISTARII, HYPSISTARIANS, a Sect of Hereticks in the IVth Century; thus call'd from the Profeſſion they made of worſhipping the moſt High God, in *Greek* call'd Ὑψίστος, *Hypſiſtos*.

The Doctrine of the *Hypſiſtarians*, was an Aſſemblage of Paganiſm, Judaiſm, and Chriſtianity. They ador'd the moſt High God with the Chriſtians; but they alſo rever'd Fire and Lamps with the Heathens; and obſerv'd the Sabbath, and the Diſtinction of clean and unclean Things, with the *Jews*.

The *Hypſiſtarii* bore a near Reſemblance to the *Euphemites* or *Maſſalians*. See MASSALIAN.

HYSSOP, HYSSOPUS, a medicinal Herb, of a deterging cleanſing Quality, and chiefly uſed in Diſeaſes of the Breaſt and Lungs. See DETERGENT.

It is a ſtanding Ingredient in pectoral Apozems. --- There is alſo a Syrop, and a ſimple diſtill'd Water from it, us'd in the Shops. See WATER, &c.

It has alſo a Faculty to comfort and ſtrengthen; and is prevalent againſt Melancholy and Phlegm. --- It is propogated only by Slips.

Its Tops and Flowers reduc'd to Powder, are by ſome reſerv'd to ſtrew upon the colder Sallad Herbs. See SALLAD.

HYSSOPIC *Art*, a Name which *Paracelſus* gave to Chymiſtry, conſider'd as that Art purifies Metals, Minerals, &c. In Alluſion to that Text in the Pſalms, Purge me with *Hyſſop*, and I ſhall be clean. See CHYMISTRY.

HYSTERALGY, in Medicine, a Pain in the Matrix or Womb, occaſion'd by an Inflammation, or other Diſorder therein.

The Word is compounded of the *Greek*, ὑστέρα, *Matrix*, Womb; and ἄλγος, *dolor*, Pain.

HYSTERIC *Affection* or *Paſſion*, a Diſeaſe in Women, call'd alſo *Suffocation of the Womb*, and *Fits of the Mother*.

Hyſteric Affection is generally uſed by Authors promiſcuouſly with *Hypocondriac Affection*; the two Diſeaſes being ſuppos'd to be, in reality, the ſame. --- They only differ in Point of Relations and Circumſtance.

The *Hyſteric* is properly a Species or Branch of the Hypocondriac, peculiar to Women, and ſuppos'd to ariſe from ſome Diſorder of the Womb. See HYPOCONDRIAC *Affection*.

One of the Symptoms or Effects of Hypocondriac Diſeaſes is Convulſions, and Fits not unlike thoſe of the Epilepſy; theſe we call *Hyſteric* Fits; and the Diſeaſe that produces them, the *Hyſteric Affection*. *Sydenham*.

The Name *Hyſteric* is form'd of the *Greek*, ὑστέρα, *Uterus*, Womb; the Patient frequently fancying a Ball rolling in the Abdomen, and ſometimes riſing to the Throat, which ſome weakly enough have attributed to an Elevation of the Womb.

It is particularly denominated *Hyſteric Suffocation*, from one of its principal Symptoms, which is a Contraction of the Breaſt, and a Difficulty of Breathing.

Some Women under this Diſorder, fancy a Rope ty'd about their Necks, ready to ſtrangle them; and others, a Piece got into their Throats, which they cannot ſwallow, but ſtops their Breaſt: Some will even remain a good while as if really ſtrangled, without any Senſe or Motion.

The more common Symptoms or Accidents of this Diſeaſe, are a Swimming of the Head, Dazzling of the Eyes, Inquietudes, Pains of the Abdomen, Belches, Nauſeas, Vomitings, Deliriums, Convulſions. It is not always attended with all theſe Symptoms, but ſometimes with more, and ſometimes with leſs, and thoſe more or leſs violent.

Dr. *Purcel* deſcribes a *Hyſteric* Paroxyſm, as beginning with a Senſe of Coldneſs creeping up the Back, and afterwards ſpreading over the whole Body; Then enſues a Head-ach, and ſometimes a Palpitation of the Heart, with a fainting, from which the Patient ſoon recovers. Sometimes, after the Coldneſs, ſucceeds a remarkable Heat, which brings on the fore-mention'd Symptoms. *Baglivi* adds, that *Hyſteric* Women feel a Senſe of Cold in the Crown of the Head; and this he takes to be the chief Diagnoſtic of the Diſeaſe.

The ordinary Cauſes of this Diſorder are violent Paſſions, Rage, Love, Grief, ill News, ſweet Smells, *&c.* As for the popular Notion of malignant Vapours riſing from the Womb, and occaſioning all theſe Symptoms; the Learned all diſcard it, and hold Men as ſubject to the Diſeaſe as Women. The real Cauſe is in the Animal Spirits, and the nervous Syſtem; and the Affection does not differ from the Hypocondriac.

For the Cure; as many of the Symptoms are convulſive, Antiſpaſmodicks are indicated. During the Paroxyſm, fœtid Things, whether internally or externally apply'd, are of Advantage; particularly Caſtoreum, the Smoak of burnt Horn, or burnt Feathers held to the Noſe. Volatile Spirits alſo help to wake the Patient out of the Paroxyſm; as alſo tickling in the Soles of the Feet. Where 'tis ſeverer than ordinary, recourſe muſt be had to Punction, Scarification, Veſicatories, Cauſticks, *&c.* See HYSTERIC *Medicines.*

HYSTERICKS, or HYSTERIC *Medicines*, are Remedies proper to remove *Hyſteric* Affections; particularly Diſorders of the Womb.

There are divers Species of *Hyſtericks*: Some evacuate or cleanſe the Womb, by expelling any Impurities lodg'd therein: Others tend to ſtop immoderate Fluxes thereof: And others ſtrengthen the Tone of the Womb.

According to Dr. *Quincy*, *Hyſteric* Affections ariſe either from too titillating, or too uneaſy Senſations: The former proceed from that Irritation of the Nerves, which the Make and Secretion of thoſe Parts have naturally ſubjected them to, and which, in ſome Sorts of Conſtitutions, ariſe to that Degree, as to draw the whole Syſtem into Diſorder, and occaſion a ſurprizing Variety of Symptoms; *e. gr.* ſeveral Sorts of Convulſions, and Species of Madneſs; which therefore are by ſome termed *Furores Uterini.* See UTERINE.

Theſe Diſorders ſeem moſt effectually allay'd, by ſuch Things as are in a Manner the Reverſe of Cordials, and are both in Smell and Taſte very offenſive and diſagreeable: They ſeem to anſwer this End by ſuffocating, as it were, the Spirits, and damping their inordinate Sallies, ſo that ſuch Stimulation ceaſes, and the Fibres return to their natural Tone and Motions: For as what is grateful to the Senſes, gives an inexpreſſible Emotion to the fine nervous Filaments; ſo does what is fœtid and diſagreeable quite deſtroy that Emotion, and deaden it: And as the former Kind conſiſt chiefly of fine ſubtile volatile Parts, by which, as before explain'd under CEPHALICKS, they are fitter to enter the Nerves; ſo theſe are generally of a clammy viſcous Contexture, and thereby the fitter to envelope and entangle that ſubtile Juice; whereby its Motion is much retarded, and conſequently the Fibres render'd leſs ſpungy.

HYSTEROLOGY, HYSTEROLOGIA, in Rhetoric, a vitious Manner of ſpeaking, wherein the natural Order of Things is inverted; call'd by the *Greeks*, ὕστερον and πρώτερον, *q. d.* to put the firſt Thing where the laſt ſhould be.

The Word is *Greek*, ὑστερολογία, ſignifying a Diſcourſe inverted.

HYSTEROMATOCY, in Chirurgery, an Operation more uſually call'd in our Language the *Cæſarian Operation* or *Section.* See CÆSARIAN.

HYSTERON-PROTERON, ὕστερον πρότερον. See HYSTEROLOGY.

HYSTEROTOMIA, in Anatomy, an Anatomical Diſſection of the Uterus, or Womb. See MATRIX.

The Word is form'd of the *Greek*, ὑστέρα, *Matrix*, Womb, and τέμνω, *ſeco*, I cut, I diſſect.

HYTH, a Port, Wharf, or little Haven, to embark or land Wares at. --- Such are *Queen-hyth*, now *Maidenhead*, *&c.* See PORT, HAVEN, *&c.*

HUMANITIES REFERENCE

NON-CIRCULATING

HUMANITIES